Rock solid resources.
Proven advice.™

NEXGEN ENERGY LTD.

TECHNICAL REPORT ON THE PRELIMINARY ECONOMIC ASSESSMENT OF THE ARROW DEPOSIT, ROOK I PROPERTY, PROVINCE OF SASKATCHEWAN, CANADA

NI 43-101 Report

Qualified Persons:
Jason J. Cox, P.Eng.
David M. Robson, P.Eng., M.B.A.
Mark B. Mathisen, C.P.G.
David A. Ross, M.Sc., P.Geo.
Val Coetzee, M.Eng., Pr.Eng.
Mark Wittrup, M.Sc., P.Eng., P.Geo.

September 14, 2017
Effective July 31, 2017

Report Control Form

Document Title	Technical Report on the Preliminary Economic Assessment of the Arrow Deposit, Rook I Property, Saskatchewan, Canada		
Client Name & Address	NexGen Energy Ltd. Suite 3150, 1021 West Hastings Street, Vancouver, BC, V6E 0C3		
Document Reference	Project #2790	***Status & Issue No.***	FINAL Version
Effective Date	July 31, 2017		
Lead Author	Jason J. Cox David M. Robson Mark Mathisen David Ross Val Coetzee Mark Wittrup	(Signed) (Signed) (Signed) (Signed) (Signed) (Signed)	
Peer Reviewer	Torben Jensen	(Signed)	
Project Manager Approval	Jason J. Cox	(Signed)	
Project Director Approval	Graham G. Clow	(Signed)	

Report Distribution

Name	No. of Copies
Client	
RPA Filing	1 (project box)

Roscoe Postle Associates Inc.
55 University Avenue, Suite 501
Toronto, ON M5J 2H7
Canada
Tel: +1 416 947 0907
Fax: +1 416 947 0395
mining@rpacan.com

FORWARD LOOKING INFORMATION

The information contained herein contains "forward-looking statements" within the meaning of the United States Private Securities Litigation Reform Act of 1995 and "forward-looking information" within the meaning of applicable Canadian securities legislation. "Forward-looking information" includes, but is not limited to, statements with respect to the activities, events or developments that NexGen Energy Ltd. expects or anticipates will or may occur in the future, including, without limitation, disclosure regarding the economics and project parameters presented in the preliminary economic assessment referred to herein as the PEA, including, without limitation, IRR, NPV and other costs and economic information (including the price of uranium), possible events, conditions or financial performance that is based on assumptions about future economic conditions and courses of action; the timing and costs of future development and exploration activities on the Rook I Project; success of development and exploration activities; permitting timelines and requirements; timelines for technical reports and further studies, including a pre-feasibility study; planned exploration and development of properties and the results thereof; and planned expenditures and budgets and the execution thereof. Generally, but not always, forward-looking information and statements can be identified by the use of words such as "plans", "expects", "is expected", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates", or "believes" or the negative connotation thereof or variations of such words and phrases or state that certain actions, events or results "may", "could", "would", "might" or "will be taken", "occur" or "be achieved" or the negative connotation thereof.

Forward-looking information and statements are based on the then current expectations, beliefs, assumptions, estimates and forecasts about NexGen Energy Ltd.'s business and the industry and markets in which it operates. Forward-looking information and statements are made based upon numerous assumptions, including among others, the results of planned exploration activities are as anticipated, the price of uranium, the cost of planned exploration and development activities, that financing will be available if and when needed and on reasonable terms, that third party contractors, equipment, supplies and governmental and other approvals required to conduct NexGen Energy Ltd.'s planned exploration and development activities will be available on reasonable terms and in a timely manner and that general business and economic conditions will not change in a material adverse manner. Although the assumptions made by NexGen Energy Ltd. and the authors of this Technical Report in providing forward looking information or making forward looking statements are considered reasonable at this time, there can be no assurance that such assumptions will prove to be accurate.

Forward-looking information and statements also involve known and unknown risks and uncertainties and other factors, which may cause actual results, performances and achievements of NexGen Energy Ltd. to differ materially from any projections of results, performances and achievements of NexGen Energy Ltd. expressed or implied by such forward-looking information or statements, including, among others, negative operating cash flow and dependence on third party financing, uncertainty of the availability of additional financing, the risk that pending assay results will not confirm previously announced preliminary results, imprecision of mineral resource estimates, the appeal of alternate sources of energy and sustained low uranium prices, aboriginal title and consultation issues, exploration risks, reliance upon key management and other personnel, deficiencies in the NexGen Energy Ltd.'s title to its properties, uninsurable risks, failure to manage conflicts of interest, failure to obtain or maintain required permits and licenses, changes in laws, regulations and policy, competition for resources and financing and other factors discussed or referred to in NexGen Energy Ltd.'s Annual Information Form dated March 31, 2017 under "Risk Factors".

Although the NexGen Energy Ltd. and the authors of this Technical Report have attempted to identify important factors that could cause actual results to differ materially from those contained in the forward-looking information or implied by forward-looking information, there may be other factors that cause results not to be as anticipated, estimated or intended.

There can be no assurance that forward-looking information and statements will prove to be accurate, as actual results and future events could differ materially from those anticipated, estimated or intended. Accordingly, readers should not place undue reliance on forward-looking statements or information. Neither NexGen Energy Ltd. nor the authors of this Technical Report undertakes any obligation to update or reissue forward-looking information as a result of new information or events except as required by applicable securities laws.

TABLE OF CONTENTS

PAGE

LIST OF TABLES

PAGE

LIST OF FIGURES

PAGE

1 SUMMARY

EXECUTIVE SUMMARY

INTRODUCTION

Roscoe Postle Associates Inc. (RPA) was retained by NexGen Energy Ltd. (NexGen) to lead a consortium of consulting groups to prepare an independent Technical Report on NexGen's Rook I Project (the Project or the Property) in Saskatchewan, Canada. The consortium consisted of RPA, DRA Americas Inc. (DRA), BGC Engineering Inc. (BGC), Clifton Associates Ltd. (Clifton), and Arcadis Canada Inc. (Arcadis). This Technical Report has been prepared in accordance with National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (NI 43-101). The purpose of this Technical Report is to summarize the results of a Preliminary Economic Assessment (PEA) of the Project announced by NexGen on July 31, 2017.

RPA, BGC, and Clifton visited the Property on May 18, 2017. RPA also visited the Property from January 22 to 25, 2017, during an active drilling campaign.

NexGen is a Canadian uranium development and exploration company, primarily engaged in the development and expansion of the Rook I Project. NexGen is listed on the Toronto Stock Exchange (symbol NXE) and on the NYSE MKT (symbol NXE).

The PEA is based on underground mining and processing of 1,450 tonnes per day (tpd) via acid leaching, solvent extraction, and precipitation. The Project has the capacity to produce up to 29 million lb U_3O_8 per year in the form of yellowcake.

This preliminary economic assessment summarized in this Technical Report is considered by RPA to meet the requirements of a "Preliminary Economic Assessment" as defined in NI 43-101. The economic analysis contained in this Technical Report is based, in part, on Inferred Resources, and is preliminary in nature. Inferred Resources are considered too geologically speculative to have mining and economic considerations applied to them and to be categorized as Mineral Reserves. There is no certainty that the economic forecasts contained herein will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

CONCLUSIONS

In RPA's opinion, positive economic results can be achieved for the Project. Using a long-term price of US$50 per lb U_3O_8, the economic analysis shows a post-tax internal rate of return (IRR) of 56.7%, and a post-tax net present value (NPV) discounted at 10% of C$2,952 million. The NPV discounted at 8% is C$3,486 million, while the NPV discounted at 12% is C$2,508 million. RPA offers the following conclusions by area:

GEOLOGY AND MINERAL RESOURCE ESTIMATE

A Mineral Resource was estimated for the Project, based on 220 diamond drill holes totalling 132,744 m, and based on a $65/lb uranium price at a cut-off grade of 0.25% U_3O_8. The Indicated Mineral Resource estimate totals 1.18 million tonnes at an average grade of 6.88% U_3O_8 for a total of 179.5 million pounds U_3O_8. The Inferred Mineral Resource estimate totals 4.25 million tonnes at an average grade of 1.30% U_3O_8 for a total of 122.1 million pounds U_3O_8. The Mineral Resource estimate relates only to the Arrow Deposit and does not include drilling elsewhere on the Rook I Property. The effective date of the Mineral Resource estimate is December 20, 2016. Estimated block model grades are based on chemical assays only. The deposit is open in many directions.

MINING METHODS AND GEOTECHNICAL CONSIDERATIONS

The Arrow Deposit is a structurally controlled northeast-southwest trending sub-vertical high-grade uranium deposit. The deposit is overlain by approximately 100 m of glacial overburden, with the mineralization hosted exclusively in basement lithologies below the unconformity. Although the bedrock is generally competent, rock strengths in the sedimentary rocks and mineralization have been degraded by alteration. A key technical challenge to developing the operation will be shaft construction in saturated and unconsolidated overburden, very poor to fair quality sedimentary rock with potentially significant groundwater inflows if left unmanaged and the poor quality rock at the unconformity contact.

To mitigate this risk, artificial ground freezing after the local site is levelled and prior to any excavation below the groundwater table is assumed. This method is considered feasible for both ground support and groundwater control during shaft-sinking, and has commonly been used at other uranium operations in the Athabasca Basin of northern Saskatchewan. Based on conceptual mine shaft locations, a combined thickness of 125 m of overburden, sedimentary and poor-quality rock will require freezing. To freeze the ground, freeze holes spaced at 1.2 m, as well as instrumentation and pressure relief holes to an approximate depth of 125 m, have been assumed for preliminary cost estimation.

Underground mining will be carried out, using mechanized longhole retreat methods in both transverse and longitudinal orientations. Mining is planned at nominally 1,450 tpd, and mined material will be transported to surface through a shaft.

MINERAL PROCESSING

Metallurgical test work completed to date indicates that a recovery of 96% is appropriate.

The process route developed by DRA for the Project is based on unit processes commonly used in uranium process plants across the world, including northern Saskatchewan. As the Project becomes better defined, some modifications, revisions, and optimizations to the process plant layout are possible.

ENVIRONMENTAL, PERMITTING, AND SOCIAL CONSIDERATIONS

Key areas of consideration arising from the review of environmental and sociological aspects include:

- Consultation: To date, the level of consultation and engagement appears appropriate for an advanced exploration project. Moving forward, more direct consultation with local Indigenous groups (i.e., First Nations and Metis) will be required to support the Environmental Impact Assessment (EIA), and ultimately to gain Project approvals.

- Lake Impact: Minimizing impacts to the lake will be very important. The PEA has considered and included maximizing water re-use, which minimizes the need for freshwater. Further, the PEA has included that discharge water will be treated to a high quality.

- Baseline Studies: NexGen plans to start most of the social, physical, and bio-physical programs required to support feasibility level studies, the environmental impact assessment, engineering, and licensing in the near term.

- Risk: The main physical danger to the operation is forest fire and NexGen has maintained close relationships with the local Wildfire Management based in Buffalo Narrows.

- Radiation Management during Exploration: NexGen has a radiation protection program in place with proper core and cuttings handling, zone control and monitoring. Radiation exposure levels are low and commensurate with the types of site activities. NexGen should continue its effective radiation protection program.

RISKS AND UNCERTAINTIES

RPA has assessed critical areas of the Project and identified key risks associated with the technical and cost assumptions used. In all cases, the level of risk refers to a subjective assessment as to how the identified risk could affect the achievement of the Project objectives. The risks identified are in addition to the general risks associated with mining projects, including, but not limited to:

- general business, social, economic, political, regulatory and competitive uncertainties;
- changes in project parameters as development plans are refined;
- changes in labour costs or other costs of production;
- adverse fluctuations in commodity prices;
- failure to comply with laws and regulations or other regulatory requirements;
- the inability to retain key management employees and shortages of skilled personnel and contractors.

A summary of key Project related risks is shown in Table 1-1. The following definitions have been employed by RPA in assigning risk factors to the various aspects and components of the Project:

- **Low Risk** - Risks that could or may have a relatively insignificant impact on the character or nature of the deposit and/or its economics. Generally, these risks can be mitigated by normal management processes combined with minor cost adjustments or schedule allowances.

- **Moderate Risk** - Risks that are considered to be average or typical for a deposit of this nature. These risks are generally recognizable and, through good planning and technical practices, can be minimized so that the impact on the deposit or its economics is manageable.

- **High Risks** - Risks that are largely uncontrollable, unpredictable, unusual, or are considered not to be typical for a deposit of a particular type. Good technical practices and quality planning are no guarantee of successful exploitation. These risks can have a major impact on the economics of a deposit of this nature including significant disruption of schedule, significant cost increases, and degradation of physical performance.

TABLE 1-1 RISKS AND UNCERTAINTIES
NexGen Energy Ltd. – Rook I Property

Project Element	Issue	Risk Level	Mitigation
Geology	Resource tonnes and grade estimates	Low	Infill drilling is required in areas classified as Inferred. There is upside potential to increase resources in all directions.
Mining	Adverse shaft sinking conditions	Low	Conduct geotechnical and hydrogeological assessment in the area of planned shaft locations.
	Ground conditions within the altered rock	Low	Geotechnical drilling and analysis will further refine ground support requirements.
Process and Tailings	Uranium recovery	Low	Test work supports recovery assumption. Additional test work will allow optimization of flowsheet.
	Underground Tailings Management Facility	Moderate	The conceptual tailings facility must be studied in further detail.
Environment and Permitting	Permitting	Moderate	Begin EIA process and wider consultation.
	Management of exposure to radiation	Moderate	Issues need further analysis and modelling, and calibration to other northern Saskatchewan operations.
Construction Schedule	Artificial ground freezing and shaft construction	Moderate	Requires detailed planning and control. Further information on geotechnical conditions will refine schedule estimates.
Pre-production Capital Cost Estimate	Shaft sinking and construction	Moderate	Geotechnical data collection and analysis will result in refined design and cost estimates.
Operating Cost Estimate	Cost of key materials and supplies	Low	Close management of purchasing and logistics.

RECOMMENDATIONS

The Project should be advanced to the pre-feasibility (PFS) stage. Recommendations by area are as follows:

GEOLOGY AND MINERAL RESOURCES

- The Rook I Property hosts a significant uranium deposit and merits considerable exploration and development work. The primary objectives are to advance engineering work, expand the existing Arrow resource estimate, and explore elsewhere on the Property. Work will include:
  - Step-out and infill drilling at the Arrow deposit; and
  - Further exploration drilling at Harpoon, Bow, Cannon, Camp East Area A, and South Arrow occurrences

- The following changes should be made in future resource estimation updates:
  - Increase the minimum number of samples per estimate from four to five to help constrain the high grade values.
  - Increase the minimum number of samples used per drill hole from three to four.
  - Use classification integer value to flag Inferred resource, i.e., “3” to distinguish from surrounding waste rock and change Indicated to the value “2”.
  - Ensure that the high grade wireframes maintain at least a one-metre thickness and do not pinch-out within the surrounding low grade wireframes after performing Boolean operations in Vulcan software.

MINING METHODS AND GEOTECHNICAL CONSIDERATIONS

- Complete a detailed geotechnical and hydrogeological investigation of the rock mass and overburden to verify rock mass rating (RMR) input parameters, including field and laboratory testing for intact rock strength (IRS) to properly evaluate the accuracy, joint spacing conditions and to test the bedrock groundwater conditions, spatial variability and support crown pillar dimensions analyses.

- Complete confirmatory analyses to ensure that artificial freezing for earth support and groundwater control during shaft sinking is feasible, including duration of freeze time and freeze hole frequency and dimensions.

- Carry out optimization of mining method and remote or autonomous equipment selection for resource recovery, production rate, radiation exposure, etc.

- Assess rock mass quality on a stope by stope basis to determine alterations to the stope dimensions and support at the work face to mine each stope safely.

MINERAL PROCESSING

- Conduct further test work to prove the performance and efficiency of the processing steps post leach. This test work should include:
  - Mineralogy
  - Milling
  - Leaching
  - Solid-liquid separation
  - Solvent extraction
  - Mo removal
  - Product precipitation
  - Tailings characterization, including suitability for use as a cemented fill
  - Analysis of the composition of the waste rock, including an assessment of acid rock drainage (ARD) potential

- Implement the results of further test work into the process design for ongoing optimization purposes, and to validate the assumptions used in the PEA study.

- As the Project advances, carry out a more detailed assessment of the quantities and recoverability, and marketing potential of by-products.

- Perform further optimization of process plant layout based on better definition of process and utilities design.

PROJECT INFRASTRUCTURE

- Conduct an options study that considers alternative power sources to determine the optimal energy supply arrangement. Diesel, liquefied natural gas (LNG), and high-voltage transmission line options should be considered.
- Complete assessment of heat recovery and an energy balance.
- Conduct a trade-off study to determine the optimal effluent treatment system.
- Conduct a trade-off study to determine the optimal tailings management system.

ENVIRONMENTAL, PERMITTING, AND SOCIAL CONSIDERATIONS

- Conduct social, physical, and bio-physical baseline programs required to support feasibility level studies, the EIA, engineering, and licensing.
- Complete design and justification for the final tailings management plan which will be required for the EIA, licensing and operation, and additional baseline geological, hydrogeological, and geotechnical work will be required to support the preferred option in the EIA and licensing.
- Complete acid rock drainage work on the waste rock to ensure the latter does not require special handling on surface.
- Complete a full physical and bio-physical environmental baseline program to support the large data requirements for the environmental risk assessment and the pathways modelling. Most of this work has yet to be completed, although there are plans in place to start this work when appropriate.

BUDGET

Drilling is planned in two phases with a Phase I budget of $141.5 million (Table 1-2). Phase II totalling $64.0 million is contingent on results from Phase I. RPA has reviewed the scope of work and is in agreement with the proposed budget.

TABLE 1-2 PROPOSED BUDGET
NexGen Energy Ltd. – Rook I Property

Phase and Item	Value (C$ millions)
Phase I	
Infill and expansion drilling (575 holes for 315,000 m)	125.0
Drilling on the Patterson Corridor (75 holes for 38,000 m)	15.0
Site Characterization and Geotechnical Study	1.0
Related support studies including mineralogy and metallurgical studies	0.5
Total Phase I	**141.5**

Phase and Item	Value (C$ millions)
Phase II	
Permitting and Engineering Studies	8.0
Geotechnical Investigation and Analysis	2.0
Metallurgical Testwork	0.8
Environmental Data Collection	1.2
Pre-Feasibility Study (PFS)	2.0
Additional exploration drilling	50.0
Total Phase II	**64.0**

TECHNICAL SUMMARY

PROPERTY DESCRIPTION AND LOCATION

The Rook I Property is located in northern Saskatchewan, approximately 40 km east of the Alberta border. The Property lies approximately 150 km north of the town of La Loche and 640 km northwest of the city of Saskatoon. The Rook I Property covers parts of National Topographic System (NTS) map sheets 74F/7, 74F/10, and 74F/11.

OWNERSHIP

The Property consists of 32 contiguous mineral dispositions (claims) totalling 35,065 ha. NexGen acquired the Property in December 2012 and has a 100% interest in the claims. Six of the claims are subject to: (i) a 2% net smelter return royalty (NSR); and (ii) a 10% production carried interest, however, the Arrow Deposit is not located on any of these claims. The NSR may be reduced to 1% upon payment of C$1 million. The 10% production carried interest provides for the owner to be carried to the date of commercial production.

All claims are in good standing until at least 2019 and the claim that hosts the Arrow Deposit, S-113927, is in good standing until 2038.

GEOLOGY AND MINERALIZATION

The Rook I Property is located along the southwestern rim of the Athabasca Basin and straddles the Athabasca/basement unconformity. The Lloyd Domain basement rocks are northeast trending Archean and Aphebian granitic and metasedimentary gneisses, the latter containing graphitic biotite gneisses within which uranium mineralization can occur. Overlying these are flat lying sandstones with conglomeratic horizons that make up the mid-Proterozoic

Athabasca Group. In the western part of the Rook I Property, remnants of Devonian sandstones are occasionally seen in drill core. These are overlain by flat lying Cretaceous Mannville Group mudstones, siltstones, and sandstones with coaly horizons. Thick deposits of sandy glacial material cover all of the Rook I Property area.

Uranium mineralization is known to occur at six locations on the Rook I Property: 1) Arrow Deposit, 2) Harpoon occurrence, 3) Bow occurrence, 4) Cannon occurrence, 5) Camp East occurrence, and 6) Area A occurrence, the most significant of which is the Arrow Deposit.

In the Arrow Deposit, mineralization occurs as locally dense accumulations of massive uraninite in close association with clay and graphitic mylonites. In the Harpoon holes, mineralization occurs as semi-massive to massive uraninite veining within a chloritic and graphitic shear zone that is heavily clay altered. In the Area A and Bow holes, the uranium mineralization occurs in intense clay and chlorite altered graphitic biotite gneisses below the unconformity. Low grade mineralization over narrow interval in the Cannon area occurs in close association with chloritic and graphitic mylonites. The type of mineralization and relationships between geological structures and anomalous radioactivity at Camp East has not yet been determined.

EXPLORATION STATUS

Since acquiring the Rook I Property in December 2012, NexGen has carried out exploration consisting of ground gravity surveys, ground DC resistivity and induced polarization surveys, an airborne magnetic-radiometric-very low frequency (VLF) survey, an airborne Versatile Time-Domain electromagnetic (VTEM) survey, an airborne Z-Axis Tipper electromagnetic (ZTEM) survey, an airborne gravity survey, a radon-in-water geochemical survey, and a ground radiometric and boulder prospecting program. Diamond drilling programs have also tested several targets on the Property which resulted in the discovery of the Arrow Deposit in AR-14-01 (formerly known as RK-14-21) in February 2014.

Mineralization at the Arrow Deposit is defined in an area of 885 m (strike) x 290 m (width) x 850 m (vertical, starting from 100 m below surface down to 950 m), and is open in all directions. The deposit consists of at least five steeply dipping shears, named A1 through A5, which locally host high grade uranium mineralization

Regional drilling completed by NexGen in 2015, 2016, and 2017 along the Patterson conductive corridor also identified new uranium discoveries at Harpoon, Bow, Cannon, Camp East, and South Arrow.

MINERAL RESOURCE ESTIMATE

The Arrow Mineral Resource estimate is based on results of surface diamond drilling campaigns from 2014 to 2016. The effective date of the Mineral Resource estimate is December 20, 2016. The Mineral Resources of the Arrow Deposit are classified as Indicated and Inferred based on drill hole spacing and apparent continuity of mineralization, and is shown in Table 1-3.

RPA has reviewed the geology, structure, and mineralization at the Arrow Deposit from 220 diamond drill holes and audited 3D wireframe models developed by NexGen which represent 0.05% U_3O_8 grade envelopes with a minimum thickness of one metre. Of the 220 drill holes completed, 13 drill holes were abandoned before reaching their target depth, are considered restarts, and were not used in the Mineral Resource estimate.

TABLE 1-3 MINERAL RESOURCE SUMMARY – DECEMBER 20, 2016
NexGen Energy Ltd. – Rook I Property

Classification	Structure	Tonnage (Tonnes)	Grade (U_3O_8 %)	Contained Metal (U_3O_8 lb)
Indicated	A2-HG	400,000	18.84	164,900,000
	A2	790,000	0.84	14,500,000
Indicated Total		**1,180,000**	**6.88**	**179,500,000**
Inferred	A1	860,000	0.76	14,300,000
	A2-HG	30,000	12.72	8,600,000
	A2	1,100,000	0.76	18,500,000
	A3-HG	150,000	8.74	28,200,000
	A3	1,460,000	1.16	37,300,000
	A4	550,000	1.07	12,900,000
	Southwest Arrow	110,000	0.94	2,300,000
Inferred Total		**4,250,000**	**1.30**	**122,100,000**

Notes:

1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are reported at a cut-off grade of 0.25% U_3O_8 based on a long-term price of US$65 per lb U_3O_8 and estimated mining costs.
3. A minimum mining width of 1.0 m was used.
4. Numbers may not add due to rounding.

Based on 5,344 dry bulk density determinations for the Arrow Deposit, NexGen developed a formula relating bulk density to grade which was used to assign a density value to each assay. Bulk density values were then used to weight grades during the resource estimation process and to convert volume to tonnage.

High grade values were capped and their influence restricted during the block estimation process. Capping and restriction of high grade assays at the Arrow Deposit were considered to be necessary because apparent erratic high grade outliers can have a disproportionate effect on average grade. Very high grade outliers were capped at 40% U_3O_8 within the A3 HG domain and 6%, 8%, 10%, 20%, and 25% U_3O_8 in the other domains, resulting in a total of 154 capped values. No capping was applied to assays in the A2-HG domain.

The variables density (D) and grade multiplied by density (GxD) were interpolated using ordinary kriging (OK) in the A2-HG domains, with inverse distance squared (ID^2) on all remaining mineralized domains, with a minimum of four to a maximum of 14 composites per block estimate with a maximum of three composites per drill hole. Hard boundaries were used to limit the use of composites between domains. Block grade (GxD_D) was derived from the interpolated GxD value by dividing that value by the interpolated density (D) value for each block.

The resulting block model was validated by swath plots, volumetric comparison, visual inspection, parallel secondary estimation using inverse distance cubed (ID^3), and statistical comparison. As well, the mean block grade at zero cut-off was compared to the mean of the composited assay data to ensure that there was no global bias.

MINING METHODS AND GEOTECHNICAL CONSIDERATIONS

Access to the underground will be via a main shaft, with a second shaft, developed to approximately the same depth and used for return air. A third shaft will be excavated for the delivery of fresh air and to act as an alternate egress. It is assumed that artificial ground freezing would be implemented prior to shaft sinking and construction. In addition to a pressure relief and three instrumentation holes, freeze holes will be spaced approximately 1.0 m to 1.5 m to an approximate depth of 125 m to freeze overburden and low quality rock mass.

The mining method for the underground will be longhole retreat mining in both transverse and longitudinal methods based on current block model information. Underground stopes are planned on 30 m sub-levels. Stope lengths are 15 m in strike and have a variable width (hangingwall to footwall), typically from two to ten metres, with a maximum width of 20 m and an average width of approximately two metres.

The ventilation system for the mine is a push-pull system with two fresh air raises and one exhaust raise. Push-pull ventilation systems have been used extensively in uranium mines in the Athabasca Basin.

A three-year pre-production period is envisaged for the Project. The critical path for completing construction is the sinking of the first two shafts, and the connection of development between the two. Many of the underground infrastructure systems need to be operational prior to the commencement of commercial production, including the dewatering system, underground tailings management facility (UGTMF), ground support systems, material handling systems, and management systems. On surface, the process plant will commence construction in Year -2, and be ready for commercial production by the beginning of Year 1. The mine life is estimated to be 15 years.

MINERAL PROCESSING

The process plant is envisaged as a conventional uranium processing facility. The conceptual mill design will have a nominal feed rate of 511,000 tonnes per annum (tpa) and will have the capacity to produce approximately 29 million pounds per year of U_3O_8. The mill will have an estimated U_3O_8 recovery of 96%. The major components of the process plant are the following:

- Crushing, Milling and Classification
- Acidic Leaching
- Counter Current Decantation (CCD)
- Tailings Neutralization, Thickening, and Disposal
- Pregnant Leach Solution (PLS) Clarification
- Solvent Extraction (SX)
- Molybdenum Removal
- Ammonium Diuranate (ADU) Precipitation
- Product Drying and Packaging

PROJECT INFRASTRUCTURE

Project infrastructure will consist of:

- Access Road: The site is accessible from Highway 955 via a 15 km road. This road can be utilized for both construction and operation of the mine, with minimal improvements. In addition, a series of roads will be constructed to connect various aspects of the operation together.

- Power Supply: A 14 MW diesel power generating station is planned for the property, designed for an "n+2" redundancy configuration. A power grid will be established on site to distribute the power to the underground mine, process plant, camp, and ancillary buildings.

- Propane: Liquefied propane gas (LPG) will primarily be used in the process plant.

- Fuel Storage: In addition to LPG, the site will require diesel for several applications, as well as small amounts of gasoline for light-duty vehicles on surface.

- Explosives: An explosives storage area is planned for the Project, and will be located in an area that is a suitable distance away from other buildings and offices.

- Surface Buildings
  - Maintenance shop primarily for surface support equipment, with a separate underground maintenance shop to service underground mobile equipment.
  - Permanent camp to house 290 people on a fly-in, fly-out rotation.
  - Process building to house the grinding, leaching, CCD, SX, and drying and packaging areas.
  - Dry facility, warehousing, and administration building

- Airstrip: An airstrip will be constructed at the Project, and will function as the primary mechanism for moving people to and from the work site.

- Miscellaneous Services: Allowances were made for a site-wide fire protection system, potable water system, and water effluent treatment system.

- Tailings Storage Facility (TSF): A TSF will be constructed to accommodate the estimated two million m^3 of tailings generated over the life of the Project.

- Waste Rock and Overburden Dumps and Stockpiles.

- UGTMF: All of the tailings generated from the process plant will be filtered in preparation for use as cemented paste fill, with the excess stored underground. The first priority of the cemented paste is to fill the stopes (or voids) created by mining. Due to the swell factor of broken rock compared to in-situ rock, not all tailings can be returned to the same voids in which they originally came from. For this reason, purpose-built underground excavation chambers are planned to store the excess cemented paste generated from tailings.

ENVIRONMENTAL, PERMITTING, AND SOCIAL CONSIDERATIONS

Clifton conducted a review of NexGen's licensing, permitting, and environmental aspects for a conceptual development of the Arrow Deposit at the PEA level. The review was completed from an environmental, social, and governance (ESG) perspective through a document and internet search, examination of the applicable Acts and Regulations, a review of the conceptual project as presented in the PEA, discussions with NexGen staff, and a site visit. The Project appears to be in compliance with applicable regulations governing exploration, drilling, and land use in northern Saskatchewan. NexGen staff and contractors are aware of their duties with respect to safety, environmental protection and radiation protection, and have appropriate programs or procedures in place.

Overall, the Project area was neat and orderly with the level of clearing and disturbance appearing somewhat less when compared to similar projects in northern Saskatchewan. The Project is visited frequently by Saskatchewan Conservation officers to ensure compliance. While the information at this stage of review is somewhat limited and based upon the Project as proposed in the PEA, the following environmental, social, and governance items should be considered by NexGen moving forward.

- The use of underground tailings disposal will help create a relatively small surface footprint and will make decommissioning and abandonment relatively straightforward, thereby minimizing long term environmental liabilities.

- Patterson Lake is likely to receive treated effluent from a future project. Given the downstream sensitivities along the Clearwater and Athabasca river drainages, NexGen should design the mine to maximize water re-use, minimize the need for freshwater, and discharge treated water of high quality.

- NexGen is planning to start most of the social, physical, and bio-physical baseline programs required to support feasibility level studies, the environmental impact assessment, engineering, and licensing imminently. The rate limiting step to production is the Canadian Nuclear Safety Commission's licensing processes in order to gain a Licence to Operate. NexGen continues to review its strategy and schedule to inform the start of this work.

- NexGen's local community engagement with La Loche, Buffalo Narrows, the Clearwater River Dene Nation, the Meadow Lake Tribal Council, and other west side impact communities has been adequate for an advanced exploration project. Additional work will be required on the more formal consultation as required by the governments to support the EIA and licensing processes.

- The main physical danger to the operation is forest fire and NexGen has maintained close relationships with the local Wildfire Management base in Buffalo Narrows. This was particularly important in 2016 and 2017 when fires were only a few kilometres from the camp. NexGen should continue to maintain its fire readiness per their Emergency Response Plan.

- NexGen has a radiation protection program in place with proper core and cuttings handling, zone control and monitoring. Radiation exposure levels are low and commensurate with the types of site activities. NexGen should continue its effective radiation protection program.

- As NexGen proceeds through the regulatory approvals process, additional safety, environmental, and social governance is required to support regulatory requirements for management systems.

- NexGen has demonstrated a commitment to occupational health and safety, and environmental protection with effective programs at site. NexGen is encouraged to continue to review and maintain these programs.

CAPITAL AND OPERATING COSTS

RPA and DRA have estimated capital costs for the Project based on comparable projects, first-principles, subscription-based cost services, budgetary quotes from vendors and contractors, and information within RPA's and DRA's respective project databases. Resulting estimated capital costs have been extensively baselined to comparable projects. Arcadis, Clifton, and BGC have provided input, where appropriate, to develop the capital cost estimate. Broadly, pre-production capital costs are divided among the areas of underground mining, processing, general infrastructure, indirect expenses, and contingency. Sustaining capital costs are related to underground mine equipment and development, process plant maintenance, tailings facility construction and mine closure (Table 1-4).

TABLE 1-4 SUMMARY OF CAPITAL COSTS
NexGen Energy Ltd. – Rook I Property

Description	Units	Cost
Underground Mining	C$ millions	324.1
Processing	C$ millions	243.9
Infrastructure	C$ millions	143.1
Subtotal Pre-Production Direct Costs	**C$ millions**	**711.1**
Pre-Production Indirect Costs	C$ millions	241.0
Subtotal Direct and Indirect	**C$ millions**	**952.1**
Contingency	C$ millions	237.1
Total Initial Capital Cost	**C$ millions**	**1,189.2**
Sustaining	C$ millions	403.6
Closure	C$ millions	64.0
Total	**C$ millions**	**1,656.8**

Operating costs were estimated for the Project and allocated to one of mining, processing, or general and administration (G&A). Life of Mine (LOM) operating costs are summarized in Table 1-5.

TABLE 1-5 LIFE OF MINE OPERATING COSTS
NexGen Energy Ltd. – Rook I Property

Description	LOM Cost (C$ millions)	Average Annual (C$ millions)	Unit Cost (C$/t processed)	Unit Cost (C$/lb U_3O_8)
Mining	963.9	66.7	132	3.61
Processing	810.8	56.3	111	3.03
General and Administration	462.0	32.0	63	1.73
Total	**2,236.7**	**154.9**	**306**	**8.37**

ECONOMIC ANALYSIS

The economic analysis contained in this Technical Report is based, in part, on Inferred Resources, and is preliminary in nature. Inferred Resources are considered too geologically speculative to have mining and economic considerations applied to them and to be categorized as Mineral Reserves. There is no certainty that economic forecasts on which the PEA is based will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

The economic analysis was prepared using the following general assumptions and exclusions:

- No allowance has been made for cost inflation or escalation.
- No allowance has been made for corporate costs.
- The capital structure is assumed to be 100% equity, unleveraged.
- The model is assessed in constant Canadian Dollars, as of the second quarter of 2017.
- No allowance for working capital has been made in the financial analysis.
- The Project has no salvage value at the end of the mine life.

ECONOMIC CRITERIA

Economic criteria used in the cash flow model includes:

- A long-term price of uranium of US$50 per pound U_3O_8, based on long-term forecasts.
- 100% of uranium sold at the long-term price.
- The recovery and sale of by-products was excluded from the cash flow model.
- Exchange rate of C$1.00 = US$0.80.

- Life of mine processing of 7,310 kt grading 1.73% U_3O_8.
- Nominal 511 kt of processed material per year during steady state operations.
- Mine life of 15 years.
- Overall recovery of 96%, including a ramp-up in recovery for Year 1.
- Total recovered yellowcake of 267.2 million pounds.
- Transportation costs of C$740 per tonne yellowcake, with presumed destination of Port Hope, Ontario.
- Royalties calculated in accordance with “Guideline: Uranium Royalty System, Government of Saskatchewan, June 2014”.
- Unit operating costs of C$306 per tonne of processed material, or C$8.37 per pound of U_3O_8.
- Pre-production capital costs of C$1,189 million, spread over three years.
- Sustaining capital costs (including reclamation) of C$468 million, spread over the mine life.

The cash flow model is summarized in Table 1-6.

TABLE 1-6 CASH FLOW SUMMARY
NexGen Energy Ltd. - Rook i Property

	INPUTS	UNITS	TOTAL	Yr -3	Yr -2	Yr -1	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15
MINING																					
Underground																					
Operating Days	350	days	339	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	145
Ore Tonnes mined per day		tpd	1,442	-	-	65	1,253	1,478	1,491	1,482	1,445	1,449	1,469	1,423	1,473	1,466	1,466	1,447	1,494	1,398	1,411
Total Tonnes moved per day		tpd	1,442	-	-	65	1,253	1,478	1,491	1,482	1,445	1,449	1,469	1,423	1,473	1,466	1,466	1,447	1,494	1,398	1,411
Ore Tonnes mined per year		ktpa	7,310	-	-	23	439	517	522	519	506	507	514	498	515	513	513	507	523	489	205
U3O8 Grade		%	1.73%	0.00%	0.00%	1.90%	2.98%	2.61%	2.53%	2.53%	2.51%	2.30%	1.90%	1.77%	1.17%	1.14%	0.97%	0.82%	0.78%	0.76%	0.73%
Contained U3O8		'000 lbs U3O8	279,242	-	-	958	28,857	29,723	29,101	28,933	27,978	25,754	21,586	19,457	13,343	12,859	11,018	9,167	8,964	8,247	3,298
Total Moved		**kt**	**7,310**	**-**	**-**	**23**	**439**	**517**	**522**	**519**	**506**	**507**	**514**	**498**	**515**	**513**	**513**	**507**	**523**	**489**	**205**
PROCESSING																					
Mill Feed																					
Tonnes Processed		kt	7,310	-	-	-	460	511	511	511	511	511	511	511	511	511	511	511	511	511	207
Head Grade		%	1.73%	0.00%	0.00%	0.00%	2.93%	2.62%	2.56%	2.55%	2.50%	2.30%	1.91%	1.76%	1.18%	1.14%	0.98%	0.83%	0.78%	0.76%	0.73%
Contained U3O8		'000 lbs U3O8	279,245	-	-	-	29,749	29,520	28,838	28,678	28,108	25,858	21,501	19,871	13,260	12,814	11,020	9,302	8,770	8,617	3,339
Process Recovery																					
Recovery	96.0%	%	95.9%	0.0%	0.0%	0.0%	91.4%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%
Recovered U_3O_8		'000 lbs U3O8	267,203	-	-	-	27,187	28,398	27,742	27,588	27,040	24,875	20,684	19,116	12,756	12,327	10,602	8,949	8,437	8,290	3,212
REVENUE																					
Metal Prices		**Input Units**																			
Long-Term U3O8 Price	$ 50	US$ / lb U3O8	$ 50				$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50
Exchange Rate	$ 0.80	US$ / C$	$ 0.80				$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80
Realized Price		C$ / lb U3O8	$ 63				$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63
Total Gross Revenue		**C$ '000**	**$ 16,700,172**				**1,699,211**	**1,774,863**	**1,733,883**	**1,724,266**	**1,689,975**	**1,554,705**	**1,292,748**	**1,194,771**	**797,256**	**770,423**	**662,606**	**559,290**	**527,312**	**518,111**	**200,752**
Charges																					
Transportation	$740.00 C$/t product	C$ '000	$ 89,690				9,126	9,532	9,312	9,260	9,076	8,350	6,943	6,417	4,282	4,138	3,559	3,004	2,832	2,783	1,078
Total Charges		**C$ '000**	**$ 89,690**				**9,126**	**9,532**	**9,312**	**9,260**	**9,076**	**8,350**	**6,943**	**6,417**	**4,282**	**4,138**	**3,559**	**3,004**	**2,832**	**2,783**	**1,078**
Net Smelter Return		**C$ '000**	**$ 16,610,482**				**$ 1,690,085**	**$ 1,765,331**	**$ 1,724,571**	**$ 1,715,006**	**$ 1,680,899**	**$ 1,546,355**	**$ 1,285,806**	**$ 1,188,355**	**$ 792,974**	**$ 766,285**	**$ 659,048**	**$ 556,286**	**$ 524,480**	**$ 515,329**	**$ 199,674**
Royalties																					
Gov't SK Gross Revenue Royalty		C$ '000	$ 1,204,260	-	-	-	122,531	127,987	125,031	124,338	121,865	112,111	93,221	86,156	57,491	55,556	47,781	40,331	38,025	37,361	14,476
Total Royalties		**C$ '000**	**$ 1,204,260**				**$ 122,531**	**$ 127,987**	**$ 125,031**	**$ 124,338**	**$ 121,865**	**$ 112,111**	**$ 93,221**	**$ 86,156**	**$ 57,491**	**$ 55,556**	**$ 47,781**	**$ 40,331**	**$ 38,025**	**$ 37,361**	**$ 14,476**
Net Revenue		**C$ '000**	**$ 15,406,222**				**$ 1,567,554**	**$ 1,637,345**	**$ 1,599,539**	**$ 1,590,668**	**$ 1,559,034**	**$ 1,434,245**	**$ 1,192,585**	**$ 1,102,199**	**$ 735,484**	**$ 710,729**	**$ 611,267**	**$ 515,955**	**$ 486,456**	**$ 477,967**	**$ 185,198**
Unit NSR - Tonnes Processed		C$ / t proc	$ 2,108				$ 3,408	$ 3,204	$ 3,130	$ 3,113	$ 3,051	$ 2,807	$ 2,334	$ 2,157	$ 1,439	$ 1,391	$ 1,196	$ 1,010	$ 952	$ 935	$ 895
Unit NSR - Pounds Produced		C$ / lb U3O8	$ 58				$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 55
		US$ / t proc	1,686																		
		US$ / lb U3O8	46																		
OPERATING COSTS																					
Underground Mining		C$ '000	963,925	-	-	-	63,487	65,440	65,364	64,882	64,558	64,487	64,879	64,296	64,688	65,580	70,457	72,362	73,289	69,442	30,713
Processing		C$ '000	810,793	-	-	-	48,945	54,502	57,540	59,475	59,442	58,984	58,007	57,704	56,249	56,328	56,086	55,840	55,848	52,565	23,277
Surface & GA		C$ '000	461,994	-	-	-	31,833	31,830	31,831	31,832	31,832	31,832	31,831	31,831	31,831	31,954	32,445	32,445	32,445	32,445	13,776
Total Operating Cost		**C$ '000**	**2,236,711**	**-**	**-**	**-**	**144,266**	**151,773**	**154,735**	**156,189**	**155,833**	**155,303**	**154,718**	**153,832**	**152,767**	**153,861**	**158,987**	**160,647**	**161,582**	**154,452**	**67,767**
UNIT OPERATING COSTS																					
Underground Mining		C$ / t proc	132				138	128	128	127	126	126	127	126	127	128	138	142	143	136	148
Processing		C$ / t proc	111				106	107	113	116	116	115	114	113	110	110	110	109	109	103	112
Surface & GA		C$ / t proc	63				69	62	62	62	62	62	62	62	62	63	63	63	63	63	67
Total Operating Cost		**C$ / t proc**	**306**				**314**	**297**	**303**	**306**	**305**	**304**	**303**	**301**	**299**	**301**	**311**	**314**	**316**	**302**	**327**
Total Operating Cost		US$ / t proc	245																		
Underground Mining		C$ / lb U3O8	3.61				2.34	2.30	2.36	2.35	2.39	2.59	3.14	3.36	5.07	5.32	6.65	8.09	8.69	8.38	9.56
Processing		C$ / lb U3O8	3.03				1.80	1.92	2.07	2.16	2.20	2.37	2.80	3.02	4.41	4.57	5.29	6.24	6.62	6.34	7.25
Surface & GA		C$ / lb U3O8	1.73				1.17	1.12	1.15	1.15	1.18	1.28	1.54	1.67	2.50	2.59	3.06	3.63	3.85	3.91	4.29
Unit Operating Cost		**C$ / lb U3O8**	**8.37**				**5.31**	**5.34**	**5.58**	**5.66**	**5.76**	**6.24**	**7.48**	**8.05**	**11.98**	**12.48**	**15.00**	**17.95**	**19.15**	**18.63**	**21.10**
Operating Cash Flow		C$ '000	**$ 13,169,511**	**-**	**-**	**-**	**1,423,288**	**1,485,572**	**1,444,804**	**1,434,478**	**1,403,201**	**1,278,941**	**1,037,867**	**948,367**	**582,717**	**556,868**	**452,279**	**355,308**	**324,874**	**323,515**	**117,431**
		C$ / t proc	$ 1,802																		
CAPITAL COST																					
Pre-Production Direct Cost																					
Mining		C$ '000	$ 324,132	$ 33,628	$ 182,999	$ 107,505	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Processing		C$ '000	$ 243,888	$ -	$ 155,044	$ 88,844	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Infrastructure		C$ '000	$ 143,099	$ 19,250	$ 23,500	$ 100,349	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Direct Cost		**C$ '000**	**$ 711,120**	**$ 52,878**	**$ 361,543**	**$ 296,698**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Indirect Costs																					
EPCM / Owners / Indirect Cost		C$ '000	$ 240,967	$ 18,397	$ 125,693	$ 96,877	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Subtotal Costs		**C$ '000**	**$ 952,087**	**$ 71,276**	**$ 487,236**	**$ 393,575**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Contingency		C$ '000	$ 237,075	$ 18,714	$ 124,225	$ 94,135	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Initial Capital Cost		**C$ '000**	**$ 1,189,162**	**$ 89,990**	**$ 611,461**	**$ 487,710**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

	INPUTS	UNITS	TOTAL	Yr -3	Yr -2	Yr -1	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Sustaining Capital													
UG Mining Equipment		C$ '000	$ 34,261	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 22,033	$ 6,033	$ -
UG Mine Development		C$ '000	$ 170,789	$ -	$ -	$ -	$ 35,480	$ 30,959	$ 13,488	$ 4,891	$ 4,891	$ 4,161	$ 5,088
Process		C$ '000	$ 23,743				$ 1,601	$ 1,609	$ 1,609	$ 1,609	$ 1,609	$ 1,609	$ 1,609
Infrastructure		C$ '000	$ 174,847	$ -	$ -	$ -	$ 17,811	$ 14,249	$ 23,036	$ 16,632	$ 16,632	$ 16,632	$ 16,632
Total Sustaining Capital		**C$ '000**	**$ 403,639**	**$ -**	**$ -**	**$ -**	**$ 54,893**	**$ 46,817**	**$ 38,134**	**$ 23,132**	**$ 45,165**	**$ 28,435**	**$ 23,329**
Reclamation and Closure		C$ '000	$ 64,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Capital Cost		**C$ '000**	**$ 1,656,800**	**$ 89,990**	**$ 611,461**	**$ 487,710**	**$ 54,893**	**$ 46,817**	**$ 38,134**	**$ 23,132**	**$ 45,165**	**$ 28,435**	**$ 23,329**
CASH FLOW													
Pre-Tax Cashflow		C$ '000	$ 11,512,710	$ (89,990)	$ (611,461)	$ (487,710)	$ 1,368,395	$ 1,438,755	$ 1,406,671	$ 1,411,347	$ 1,358,036	$ 1,250,506	$ 1,014,538
Cumulative Pre-Tax Cashflow		C$ '000		$ (89,990)	$ (701,451)	$ (1,189,162)	$ 179,233	$ 1,617,989	$ 3,024,660	$ 4,436,006	$ 5,794,043	$ 7,044,549	$ 8,059,087
Taxes													
Less SK Profit Royalties		C$ '000	$ 1,774,224	$ -	$ -	$ -	$ 31,699	$ 220,842	$ 215,913	$ 216,587	$ 208,494	$ 191,981	$ 155,843
EBITDA		C$ '000	$ 11,395,287	$ -	$ -	$ -	$ 1,391,588	$ 1,264,730	$ 1,228,891	$ 1,217,891	$ 1,194,707	$ 1,086,960	$ 882,023
Less Deductions		C$ '000	$ 1,872,690	$ 37,049	$ 78,068	$ 108,628	$ 481,873	$ 232,287	$ 180,042	$ 139,360	$ 111,479	$ 91,576	$ 74,516
Taxable Earnings		C$ '000	$ 9,522,596	$ (37,049)	$ (78,068)	$ (108,628)	$ 909,716	$ 1,032,443	$ 1,048,849	$ 1,078,531	$ 1,083,229	$ 995,384	$ 807,507
Federal Corporate Income Tax	15.0%	C$ '000	$ 1,461,951	$ -	$ -	$ -	$ 136,457	$ 154,867	$ 157,327	$ 161,780	$ 162,484	$ 149,308	$ 121,126
Provincial Corporate Income Tax	12.0%	C$ '000	$ 1,169,561	$ -	$ -	$ -	$ 109,166	$ 123,893	$ 125,862	$ 129,424	$ 129,987	$ 119,446	$ 96,901
Net Profit		C$ '000	$ 6,891,084	$ (37,049)	$ (78,068)	$ (108,628)	$ 664,092	$ 753,684	$ 765,660	$ 787,327	$ 790,757	$ 726,630	$ 589,480
After-Tax Cash Flow		C$ '000	$ 7,106,974	$ (89,990)	$ (611,461)	$ (487,710)	$ 1,091,072	$ 939,153	$ 907,568	$ 903,556	$ 857,071	$ 789,771	$ 640,667
Cumulative After-Tax Cash Flow		C$ '000		$ (89,990)	$ (701,451)	$ (1,189,162)	$ (98,089)	$ 841,064	$ 1,748,633	$ 2,652,189	$ 3,509,259	$ 4,299,031	$ 4,939,698
PROJECT ECONOMICS													
Pre-Tax Payback Period		yrs	0.9	0	0	0	0.87	-	-	-	-	-	-
Pre-Tax IRR		%	74.9%										
Pre-tax NPV @ 8%	8%	C$ '000	$5,780,989										
Pre-tax NPV @ 10%	10%	C$ '000	$4,933,721										
Pre-tax NPV @ 12%	12%	C$ '000	$4,229,400										
Post-Tax Payback Period		yrs	1.1	0	0	0	1.00	0.10	-	-	-	-	-
Post-Tax IRR		%	56.7%										
Post-Tax NPV @ 8%	8%	C$ '000	$3,486,346										
Post-Tax NPV @ 10%	10%	C$ '000	$2,951,749										
Post-Tax NPV @ 12%	12%	C$ '000	$2,507,723										

	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15
Sustaining Capital								
UG Mining Equipment	$ -	$ 1,239	$ 4,956	$ -	$ -	$ -	$ -	$ -
UG Mine Development	$ 4,709	$ 20,075	$ 18,875	$ 17,449	$ 8,791	$ 1,932	$ -	$ -
Process	$ 1,609	$ 1,609	$ 1,609	$ 1,609	$ 1,609	$ 1,609	$ 1,549	$ 1,283
Infrastructure	$ 16,632	$ 11,642	$ 8,316	$ 8,316	$ 8,316	$ -	$ -	$ -
Total Sustaining Capital	**$ 22,950**	**$ 34,565**	**$ 33,756**	**$ 27,374**	**$ 18,716**	**$ 3,541**	**$ 1,549**	**$ 1,283**
Reclamation and Closure	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 64,000
Total Capital Cost	**$ 22,950**	**$ 34,565**	**$ 33,756**	**$ 27,374**	**$ 18,716**	**$ 3,541**	**$ 1,549**	**$ 65,283**
CASH FLOW								
Pre-Tax Cashflow	$ 925,418	$ 548,151	$ 523,113	$ 424,905	$ 336,592	$ 321,333	$ 321,965	$ 52,147
Cumulative Pre-Tax Cashflow	$ 8,984,504	$ 9,532,656	$ 10,055,768	$ 10,480,674	$ 10,817,265	$ 11,138,598	$ 11,460,563	$ 11,512,710
Taxes								
Less SK Profit Royalties	$ 142,198	$ 84,482	$ 80,650	$ 65,613	$ 52,073	$ 49,694	$ 49,763	$ 8,391
EBITDA	$ 806,169	$ 498,235	$ 476,219	$ 386,666	$ 303,235	$ 275,180	$ 273,752	$ 109,040
Less Deductions	$ 61,078	$ 55,305	$ 50,079	$ 45,099	$ 38,123	$ 29,909	$ 22,304	$ 35,916
Taxable Earnings	$ 745,091	$ 442,930	$ 426,139	$ 341,568	$ 265,112	$ 245,272	$ 251,448	$ 73,124
Federal Corporate Income Tax	$ 111,764	$ 66,439	$ 63,921	$ 51,235	$ 39,767	$ 36,791	$ 37,717	$ 10,969
Provincial Corporate Income Tax	$ 89,411	$ 53,152	$ 51,137	$ 40,988	$ 31,813	$ 29,433	$ 30,174	$ 8,775
Net Profit	$ 543,916	$ 323,339	$ 311,082	$ 249,344	$ 193,531	$ 179,048	$ 183,557	$ 53,380
After-Tax Cash Flow	$ 582,045	$ 344,079	$ 327,405	$ 267,069	$ 212,938	$ 205,415	$ 204,311	$ 24,013
Cumulative After-Tax Cash Flow	$ 5,521,743	$ 5,865,822	$ 6,193,227	$ 6,460,296	$ 6,673,234	$ 6,878,650	$ 7,082,961	$ 7,106,974
PROJECT ECONOMICS								
Pre-Tax Payback Period	-							
Post-Tax Payback Period	-							

CASH FLOW ANALYSIS

Based on the economic criteria discussed previously, a summary of the cash flow is shown in Table 1-7.

TABLE 1-7 SUMMARY OF CASH FLOW
NexGen Energy Ltd. – Rook I Property

Description	Units	Value
Gross Revenue	C$ millions	16,700.2
Less: Transportation	C$ millions	(89.7)
Net Smelter Return	C$ millions	16,610.5
Less: Provincial Revenue Royalties	C$ millions	(1,204.3)
Net Revenue	C$ millions	15,406.2
Less: Total Operating Costs	C$ millions	(2,236.7)
Operating Cash Flow	C$ millions	13,169.5
Less: Capital Costs	C$ millions	(1,656.8)
Pre-Tax Cash Flow	C$ millions	11,512.7
Less: Provincial Profit Royalties	C$ millions	(1,774.2)
Less: Taxes	C$ millions	(2,631.5)
Post-Tax Cash Flow	**C$ millions**	**7,107.0**

Based on the input parameters, a summary of the Project economics is shown in Table 1-8.

TABLE 1-8 SUMMARY OF ECONOMIC RESULTS
NexGen Energy Ltd. – Rook I Property

Description	Units	Value
Pre-Tax		
Net Present Value at 8%	C$ millions	5,781.0
Net Present Value at 10%	C$ millions	4,933.7
Net Present Value at 12%	C$ millions	4,229.4
Internal Rate of Return	%	74.9%
Payback Period	years	0.9
After-Tax		
Net Present Value at 8%	C$ millions	3,486.3
Net Present Value at 10%	C$ millions	2,951.7
Net Present Value at 12%	C$ millions	2,507.7
Internal Rate of Return	%	56.7
Payback Period	years	1.1

SENSITIVITY ANALYSIS

The cash flow model was tested for sensitivity to variances in head grade, process recovery, input price of yellowcake, overall operating costs, overall capital costs, and Canadian to United States dollar exchange rate. The resulting post-tax $NPV_{10\%}$ sensitivity is shown in Figure 1-1, and Table 1-9.

FIGURE 1-1 SENSITIVITY ANALYSIS

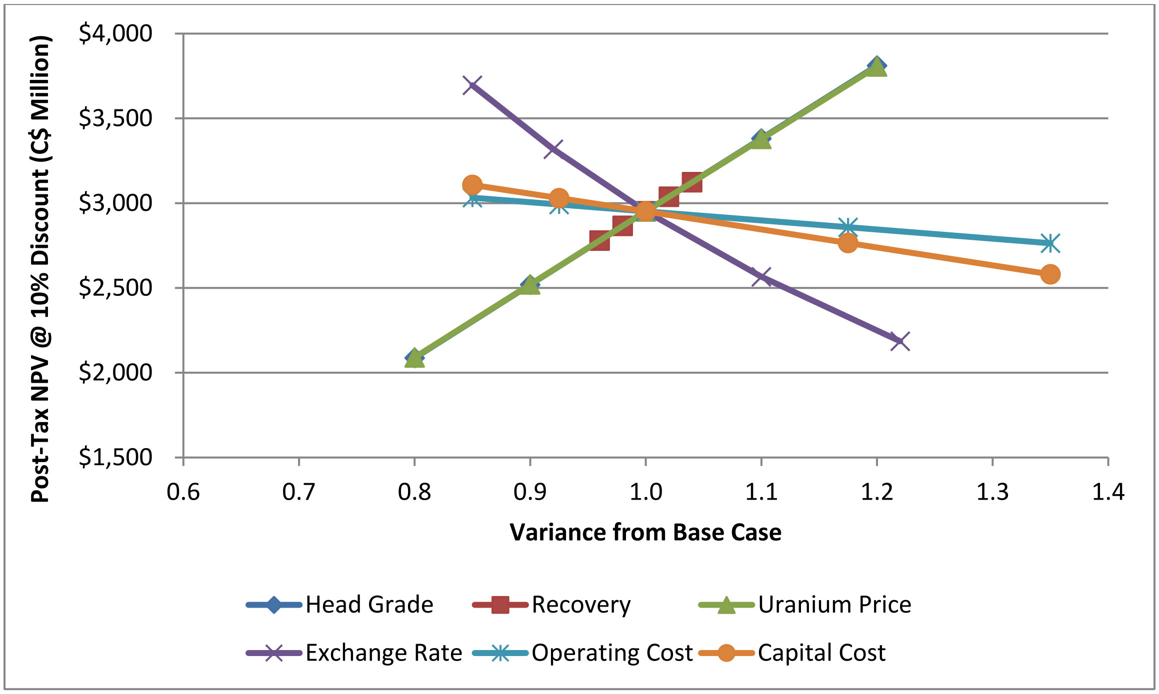


TABLE 1-9 SUMMARY OF SENSITIVITY ANALYSIS
NexGen Energy Ltd. – Rook I Property

Description	Units	Low Case	Mid-Low Case	Base Case	Mid-High Case	High Case
Head Grade	%	1.39%	1.56%	1.73%	1.91%	2.08%
Overall Recovery	%	92.1%	94.0%	95.9%	97.8%	99.7%
Uranium Price	C$ / lb U_3O_8	$50	$56	$63	$69	$75
Exchange Rate	US$/C$	0.68	0.74	0.80	0.88	0.98
Operating Cost	C$/lb	7.1	7.7	8.4	9.8	11.3
Capital Cost	C$ millions	1,408	1,533	1,657	1,947	2,237
Adjustment Factor						
Head Grade	%	-20.0%	-10.0%	NA	10.0%	20.0%
Overall Recovery	%	-4.0%	-2.0%	NA	2.0%	4.0%
Uranium Price	%	-20.0%	-10.0%	NA	10.0%	20.0%
Exchange Rate	%	-15.0%	-8.0%	NA	10.0%	22.0%
Operating Costs	%	-15.0%	-7.5%	NA	17.5%	35.0%
Capital Cost	%	-15.0%	-7.5%	NA	17.5%	35.0%
Post-Tax NPV @ 10% Discount						
Head Grade	C$ millions	2,087.1	2,519.5	2,951.7	3,381.2	3,810.7
Overall Recovery	C$ millions	2,779.3	2,865.9	2,951.7	3,037.6	3,123.5
Uranium Price	C$ millions	2,089.9	2,520.9	2,951.7	3,379.1	3,806.5
Exchange Rate	C$ millions	3,695.2	3,318.1	2,951.7	2,565.8	2,185.4
Operating Costs	C$ millions	3,032.2	2,992.0	2,951.7	2,857.9	2,763.6
Capital Cost	C$ millions	3,107.5	3,029.6	2,951.7	2,765.3	2,580.5

Taxes and depreciation for the Project were modelled based on input from the company, as well as a review of relevant documents.

2 INTRODUCTION

Roscoe Postle Associates Inc. (RPA) was retained by NexGen Energy Ltd. (NexGen) to lead a consortium of consulting groups to prepare an independent Technical Report on NexGen's Rook I Project (the Project or the Property) in Saskatchewan, Canada. The consortium consisted of RPA, DRA Americas Inc. (DRA), BGC Engineering Inc. (BGC), Clifton Associates Ltd. (Clifton), and Arcadis Canada Inc. (Arcadis). This Technical Report has been prepared in accordance with National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (NI 43-101). The purpose of this Technical Report is to support the disclosure of the results of a Preliminary Economic Assessment (PEA) for the Property, made by NexGen in a news release dated July 31, 2017.

NexGen is a Canadian uranium development and exploration company, primarily engaged in the development and expansion of the Rook I Project. NexGen is listed on the Toronto Stock Exchange (symbol NXE) and on NYSE MKT (symbol NXE).

This preliminary economic assessment summarized in this Technical Report is considered by RPA to meet the requirements of a "Preliminary Economic Assessment" as defined in NI 43-101. The economic analysis contained in this Technical Report is based, in part, on Inferred Resources, and is preliminary in nature. Inferred Resources are considered too geologically speculative to have mining and economic considerations applied to them and to be categorized as Mineral Reserves. There is no certainty that the economic forecasts contained herein will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

SOURCES OF INFORMATION

This report was prepared by David M. Robson, P.Eng., M.B.A., RPA Senior Mine Engineer, Jason J. Cox, P. Eng., RPA Principal Mine Engineer, Val Coetzee, Pr.Eng., DRA Process Manager, Mark Wittrup, P.Eng., P.Geo., Clifton Vice President Environmental and Regulatory Affairs, Mark B. Mathisen, C.P.G., RPA Principal Geologist, and David A. Ross, P.Geo., RPA Principal Geologist. All are "Qualified Persons" within the meaning ascribed to that term in NI 43-101.

A site visit was carried out by Mr. Mathisen on January 19 to 20, 2016 and again on January 22 to 25, 2017 during active drilling campaigns. A site visit was carried out by David Robson, Jason Cox, Roland Tosney, BGC Senior Mining Geotechnical Engineer, and Mark Wittrup on May 18, 2017.

The PEA was prepared by independent consultants led by RPA, who carried out resource estimation, mining work, and cost estimation, assisted by BGC (geotechnical aspects), DRA (process and infrastructure), Arcadis (radiological considerations), and Clifton (permitting, tailings, and environmental).

Mr. Cox is responsible for all sections of this Technical Report and shares responsibility with Mr. Robson for Sections 15, 16, 18, 19, and 24. Mr. Cox shares responsibility with his co-authors for Sections 1, 2, 3, 22, 25, 26, and 27 of this report. Mr. Ross and Mr. Mathisen share responsibility for Sections 4 through 12, 14, and 23, and share responsibility with their co-authors for Sections 1, 2, 3, 25, 26, and 27 of this report. Mr. Robson shares responsibility with Mr. Cox for Sections 15, 16, 18, 19, and 24, and shares responsibility with his co-authors for Sections 1, 2, 3, 21, 22, 25, 26, and 27 of this report. Mr. Mark Wittrup is responsible for Section 20, and shares responsibility with his co-authors for Sections 1, 2, 3, 25, 26, and 27 of this report. Mr. Val Coetzee is responsible for Sections 13 and 17, and shares responsibility with his co-authors for Sections 1, 2, 3, 21, 25, 26, and 27 of this report.

The documentation reviewed and other sources of information are listed at the end of this report in Section 27 References.

EFFECTIVE DATE

The effective date of the Mineral Resource estimate reported in Section 14 is December 20, 2016. Diamond drill results from NexGen's winter 2017 campaign and summer 2017 campaign have not been considered in the PEA. Although assay results from the winter 2017 campaign were not available at the time of developing the PEA, RPA reviewed preliminary drill results and is of the opinion that the Mineral Resource contained in this Technical Report is suitable to use as the basis for the PEA. The effective date of the PEA is July 31, 2017.

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 RPA, BGC, DRA, Arcadis, and Clifton for NexGen. The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to RPA, BGC, DRA, Arcadis, and Clifton 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 NexGen and other third party sources.

RPA has relied exclusively on a legal opinion provided by NexGen in respect of the legal matters contained under the heading "Land Tenure" in Section 4 of this Technical Report and RPA expresses no opinion as to the ownership status of the Property.

RPA has relied exclusively on NexGen and their tax advisors in respect of the tax matters contained in Sections 1 and 22 of this Technical Report.

4 PROPERTY DESCRIPTION AND LOCATION

The Rook I Property is located in northern Saskatchewan approximately 40 km east of the Alberta–Saskatchewan border, 150 km north of the town of La Loche and 640 km northwest of the city of Saskatoon (Figure 4-1).

The Property lies within parts of NTS map sheets 74F/7, 74F/10, and 74F/11 and is approximately centred at Universal Transverse Mercator (UTM) coordinates of 620,000 mE and 6,385,000 mN (NAD 83, Zone 12N). It is shaped in a rectangular fashion with approximate dimensions of 38 km (northwest – southeast) by 10 km (northeast – southwest). The Arrow Deposit is located at approximate UTM coordinates of 604,350 mE and 6,393,600 mN.

LAND TENURE

The Rook I Property consists of 32 contiguous mineral claims with a total area of 35,065 ha. All claims are 100% owned by NexGen. Six of the 32 claims are subject to a net smelter return royalty (NSR) of 2% and a 10% production carried interest, however, the Arrow Deposit is located outside those six claims. The Property formerly consisted of nine larger dispositions which were acquired by NexGen in 2012, however, in 2015, NexGen divided eight of those dispositions into 31 smaller dispositions to accommodate a more efficient spreading of mineral assessment credits over the Property (Table 4-1 and Figure 4-2).

All claims are in good standing until at least 2019 and the claim that hosts the Arrow Deposit, S-113927, is in good standing until 2038.

TABLE 4-1 ROOK I CLAIMS
NexGen Energy Ltd. – Rook 1 Property

Disposition Number	Previous Disposition Number	NTS	Record Date	Anniversary Date	In Good Standing to	Area (ha)	Annual Expenditure ($)
S-110932	S-110932	74F/11	17-Mar-08	17-Mar-18	13-Jun-26	2,558	38,370
S-113903	S-110575	74F/10	13-Feb-07	13-Feb-18	13-May-20	673	16,825
S-113904	S-110575	74F/10	13-Feb-07	13-Feb-18	13-May-38	900	22,500
S-113905	S-110575	74F/11, 74F/10	13-Feb-07	13-Feb-18	13-May-20	1,432	35,800
S-113906	S-110575	74F/11, 74F/10	13-Feb-07	13-Feb-18	13-May-38	1,092	27,300
S-113907	S-110574	74F/10	13-Feb-07	13-Feb-18	13-May-22	1,436	35,900
S-113908	S-110574	74F/10	13-Feb-07	13-Feb-18	13-May-22	462	11,550
S-113909	S-110574	74F/10	13-Feb-07	13-Feb-18	13-May-22	492	12,300
S-113910	S-110574	74F/10	13-Feb-07	13-Feb-18	13-May-22	1,029	25,725
S-113911	S-110574	74F/10	13-Feb-07	13-Feb-18	13-May-22	800	20,000
S-113912	S-110573	74F/10	13-Feb-07	13-Feb-18	13-May-19	2,539	63,475
S-113913	S-110573	74F/10	13-Feb-07	13-Feb-18	13-May-19	1,280	32,000
S-113914	S-110573	74F/10	13-Feb-07	13-Feb-18	13-May-19	560	14,000
S-113915	S-110572	74F/10, 74F/7	13-Feb-07	13-Feb-18	13-May-19	1,806	45,150
S-113916	S-110572	74F/10	13-Feb-07	13-Feb-18	13-May-38	1,187	29,675
S-113917	S-110934	74F/10	17-Mar-08	17-Mar-18	13-Jun-38	1,385	20,775
S-113918	S-110934	74F/10, 74F/07	17-Mar-08	17-Mar-18	13-Jun-38	2,481	37,215
S-113919	S-110933	74F/11, 74F/10	17-Mar-08	17-Mar-18	13-Jun-25	1,328	19,920
S-113920	S-110933	74F/11, 74F/10	17-Mar-08	17-Mar-18	13-Jun-25	2,098	31,470
S-113921	S-110931	74F/11	17-Mar-08	17-Mar-18	13-Jun-35	392	5,880
S-113922	S-110931	74F/11	17-Mar-08	17-Mar-18	13-Jun-35	498	7,470
S-113923	S-110931	74F/11	17-Mar-08	17-Mar-18	13-Jun-35	378	5,670
S-113924	S-110931	74F/11	17-Mar-08	17-Mar-18	13-Jun-35	475	7,125
S-113925	S-110931	74F/11	17-Mar-08	17-Mar-18	13-Jun-35	360	5,400
S-113926	S-110931	74F/11	17-Mar-08	17-Mar-18	13-Jun-35	429	6,435
S-113927	S-110931	74F/11	17-Mar-08	17-Mar-18	13-Jun-38	1,514	22,710
S-113928	S-108095	74F/11	17-Mar-05	17-Mar-18	13-Jun-36	920	23,000
S-113929	S-108095	74F/11	17-Mar-05	17-Mar-18	13-Jun-38	811	20,275
S-113930	S-108095	74F/11	17-Mar-05	17-Mar-18	13-Jun-38	303	7,575
S-113931	S-108095	74F/11	17-Mar-05	17-Mar-18	13-Jun-36	1,395	34,875
S-113932	S-108095	74F/11	17-Mar-05	17-Mar-18	13-Jun-38	627	15,675
S-113933	S-108095	74F/11	17-Mar-05	17-Mar-18	13-Jun-36	1,425	35,625
					Total	**35,065**	**737,665**

MINERAL RIGHTS

In Canada, natural resources fall under provincial jurisdiction. All mineral resource rights in the Province of Saskatchewan are governed by the *Crown Minerals Act* and the *Mineral Tenure Registry Regulations, 2012*, that are administered by the Saskatchewan Ministry of the Economy. Mineral rights are owned by the Crown and are distinct from surface rights.

In order to maintain mineral claims in good standing in the Province of Saskatchewan, the claim holder must undertake prescribed minimum exploration work on a yearly basis. The current requirements are $15/ha per year for claims that have existed for 10 years or less and $25/ha per year for claims that have existed in excess of 10 years. Dispositions S-113928 through S-113933 were recorded in 2005 and are subject to minimum work requirements of $25/ha per year. Dispositions S-113903 through S-113916 were recorded in 2007 and are subject to minimum work credits of $25/ha per year beginning in 2017. All other dispositions comprising the Rook I Property are subject to minimum work requirements of $15/ha per year. Excess expenditures can be accumulated as credits for future years and it is also possible to group contiguous claims and apply work from one disposition to several, with a maximum grouping size of 18,000 ha.

Mineral claims in good standing may be converted to mineral lease(s) upon application. Mineral leases allow for mineral extraction, have 10 year terms, and are renewable. Surface facilities constructed in support of mineral extraction require a surface lease. Surface leases have 33 year maximum terms and are also renewable.

As of December 6, 2012, mineral dispositions are defined as electronic mineral claims parcels within the Mineral Administration Registry System (MARS) using a Geographical Information System (GIS). MARS is an electronic tenure system for issuing and administrating mineral permits, claims, and leases that is web based. Mineral claims are now acquired by electronic map staking and administration of the dispositions is also web based.

As of the effective date of this report, all 32 mineral claims comprising the Property are in good standing and registered in the name of NexGen Energy Ltd.

NexGen has the required surface rights associated with the mineral claims that make up the Property and has legal access to the Property, in each case, for its existing exploration program.

ROYALTIES AND OTHER ENCUMBRANCES

Six of the 32 claims that make up the Property are subject to a 2% NSR and a 10% production carried interest. These claims are S-113928, S-113929, S-113930, S-113931, S-113932, and S-113933. The NSR may be reduced to 1% for C$1 million. The 10% production carried interest provides for the owner with a right to 10% of potential future production, provided the owner repays NexGen (from 75% of the holder's share of production) their 10% pro rata portion of the collective expenditure from June 20, 2005. The Mineral Resources reported in Section 14 of this Technical Report do not occur within claims covered by the 2% NSR or 10% production carried interest and therefore the Arrow Deposit is free of royalties.

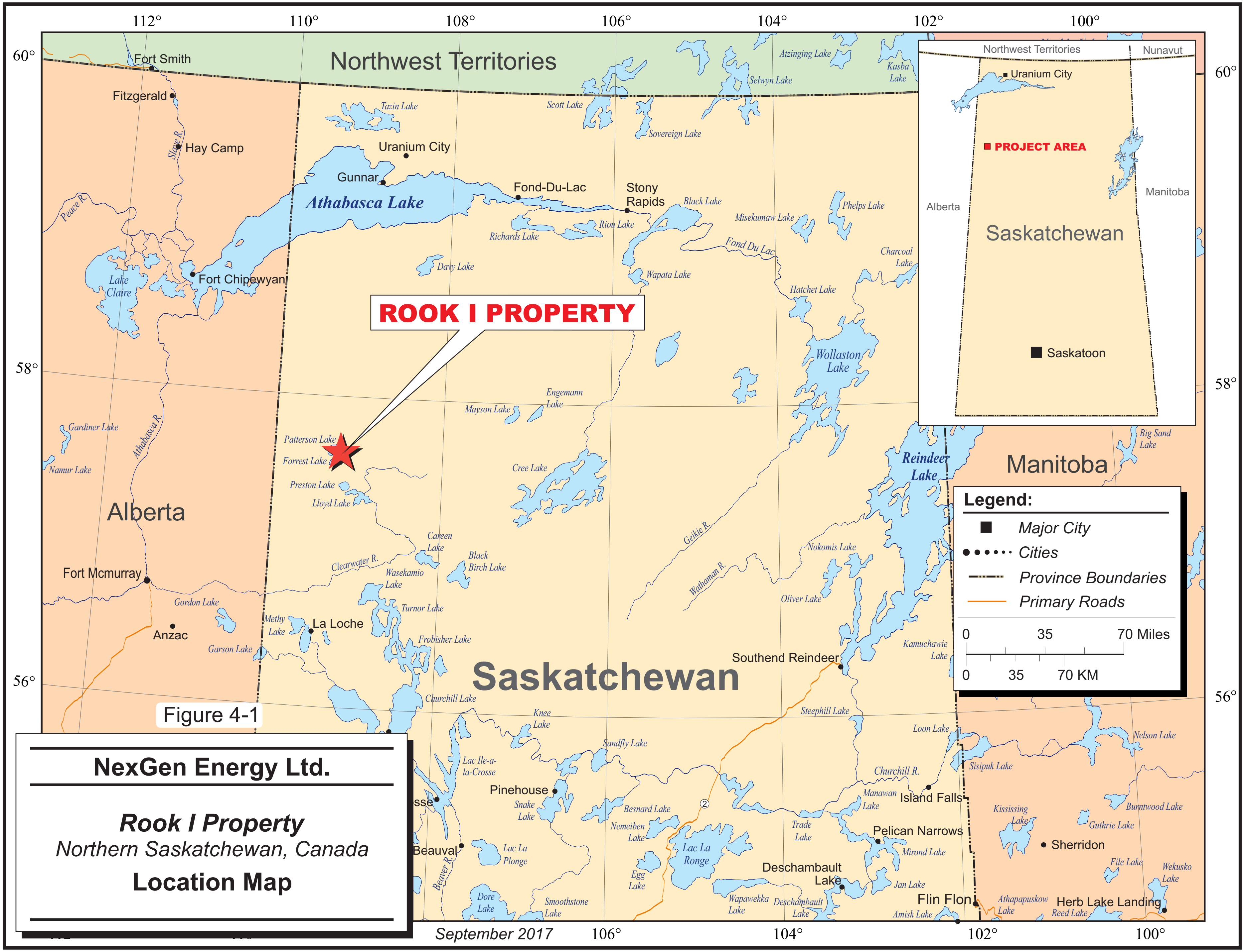
Other than as set forth above, the Property is not subject to any royalties, back-in rights, payments or other agreements and encumbrances.

PERMITTING

In order to conduct exploration activities in Saskatchewan, the owner must be registered in the Province and the requisite permits must be acquired. To carry out exploration on the ground, the following permits are required: (i) a Surface Exploration Permit, (ii) a Forest Product Permit, and (iii) an Aquatic Habitat Protection Permit. Drill programs also require a Term Water Rights permit from the Saskatchewan Watershed Authority and notice must be given to Saskatchewan Environment, the Heritage Resource Branch, and the Water Security Agency. If exploration work is being staged from a temporary work camp, a Temporary Work Camp permit is also required. Temporary work camps typically also trigger the need for a Term Water Rights permit if surface water is to be used for camp purposes. The relevant agency notification requirements also apply. NexGen has all required permits to conduct its proposed mineral exploration, however, additional permits will be required for development.

The Heritage Resource Branch may require an archeological assessment of the exploration area known as a Heritage Resource Impact Assessment (HRIA). A HRIA was completed by NexGen on the Rook I Property in 2015 (Pickering, 2015). Nothing of archeological significance was located or is expected to occur on the Property.

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



NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Location Map

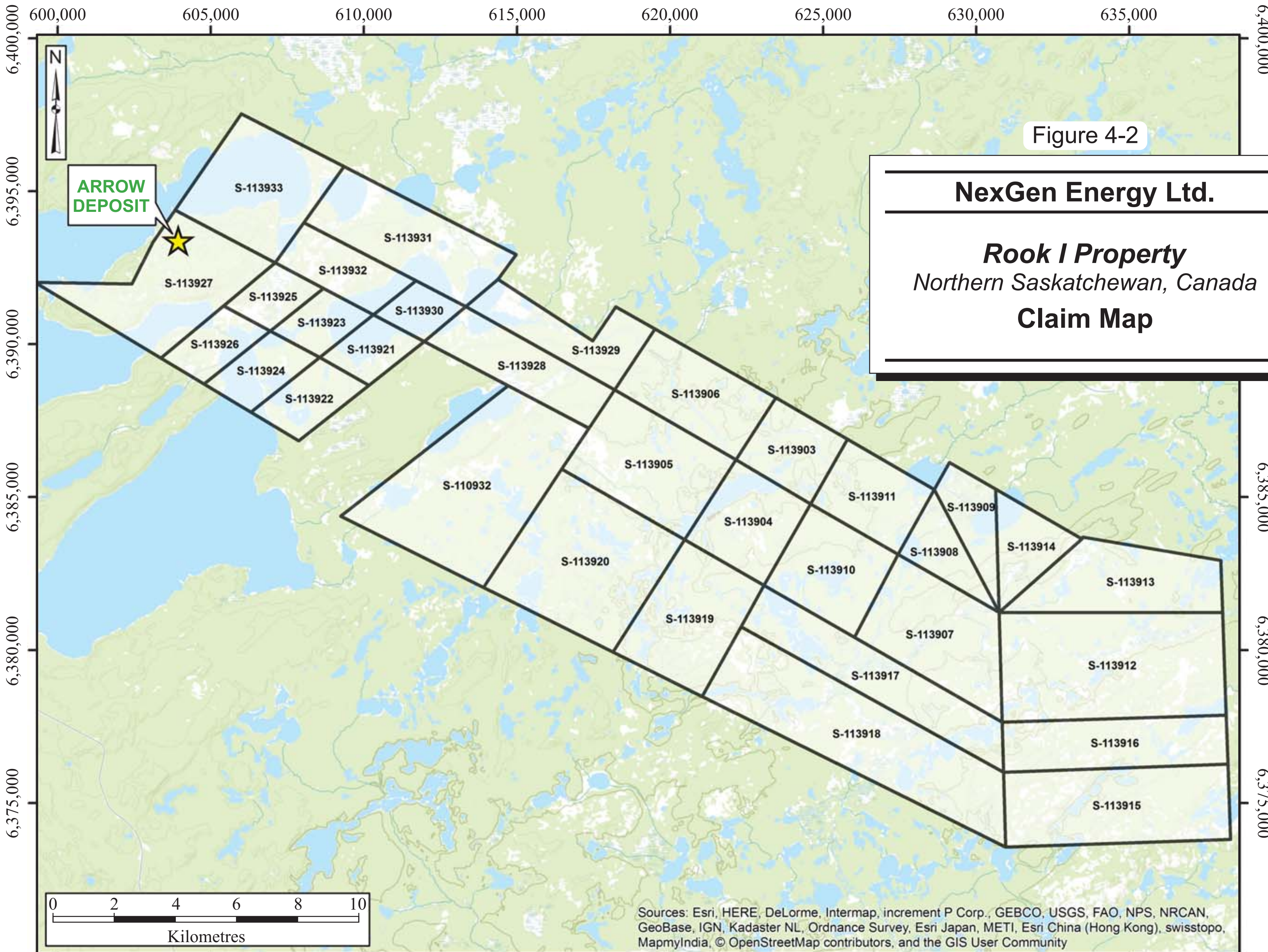


Figure 4-2

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Claim Map

September 2017

Source: NexGen Energy Ltd., 2016.

www.rpacan.com

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

ACCESSIBILITY

The Property is best accessed via all-weather gravel Highway 955, which travels north-south approximately eight kilometres west of the Arrow Deposit. The highway, which is maintained year round by the Provincial Government, leads from La Loche, the nearest population centre, 150 km to the south of the Property, to the Cluff Lake mine site (decommissioned), which is 75 km to the north of the Property. La Loche is connected to Prince Albert and Saskatoon by paved provincial highways. Fort McMurray, Alberta, is 180 km southwest of Rook I and can be reached via winter road between the months of December and April. From Highway 955, a 13 km long all-weather, single lane road provides access to the western portion of the Property including the Arrow Deposit area. In addition, there are several passable four-wheel drive roads and trails that allow for access to much of the Property. Fixed wing aircraft on floats can land on lakes on and near the Property. Remote areas of the Property can be accessed by helicopter.

CLIMATE

The Property has a sub-Arctic climate typical of mid-latitude continental areas. Temperatures range from greater than +30˚C in the summer to colder than –40˚C during the winter. Winters are long and cold, with mean monthly temperatures of below freezing for seven months. Annual precipitation is approximately 0.5 m with half of this as rain during the warmer months and the remainder as 70 cm to 100 cm of snow. Freeze-up normally starts in October and break-up occurs in April. Drilling can be carried out year round, although ground access is affected by freeze-up and break-up. Ground geological and geochemical surveys are typically restricted to the summer months, when the ground is free of snow.

LOCAL RESOURCES

Fuel, groceries, emergency medical services, and basic construction services are available at La Loche, and 100 km to the south of La Loche at Buffalo Narrows, which also has fixed wing float planes for charter. Approximately 20 km to the north on Highway 955 is the Big Bear Camp outfitter lodge which provides food, accommodation, fuel, other supplies and basic services. All other services, including mining personnel, are available in abundance in Prince Albert and Saskatoon.

INFRASTRUCTURE

There is no permanent infrastructure on the Property. There is a power line 70 km south of the Property; however, the amount of power available for a new mining operation is not known. The Property has sufficient space for an open pit or underground mining operation including space for waste rock piles and tailings facilities. Water is readily available. A surface lease would be required from the Provincial government in advance of construction of permanent surface facilities on the Property.

PHYSIOGRAPHY

The topography of the Rook I area is variable with drumlins and lakes/wetlands dominating the northwest and southeast parts of the Property respectively, and lowland lakes, rivers, and muskegs dominating the central part of the Property. Elevations range from 583 MASL on drumlins to 480 MASL in lowland lakes. The elevation of Patterson Lake is 499 m. Bedrock outcrops are very rare, but are known to exist in areas of the eastern half of the Property.

The northwest part of the Property lies over portions of Patterson Lake and Forrest Lake, which are two of the largest waterbodies within 100 km of the Property. Both lakes are part of the Clearwater River watershed. The Clearwater River extends east-southeast from Beet Lake and eventually drains south off the Property.

The Property is covered by boreal forest common to the Canadian Shield. The most common trees are jack pine and black spruce, with few poplar and birch clusters. Tamarack, stunted black spruce, willow, and alder are also common in the lower wetland areas.

Wildlife species common to the area include moose, deer, black bear, wolf, and all other mammal species commonly found in boreal forest ecosystems. Common fish species include pickerel (walleye), lake trout, rainbow trout, northern pike, whitefish, and perch.

6 HISTORY

PRIOR OWNERSHIP

Pursuant to an agreement to purchase mineral claims dated June 20, 2005 (as amended) Titan Uranium Inc. (Titan) purchased disposition S-108095 (now S-113928 through S-113933) from 455702 B.C. Ltd. and 643990 B.C. Ltd. The remainder of the claims comprising the Property were subsequently ground staked by Titan in 2007 and 2008. In 2012, pursuant to a mineral property acquisition agreement between Titan and Mega Uranium Ltd. (Mega), Titan sold the Property to Mega. NexGen acquired the Rook I Property from Mega pursuant to an asset purchase agreement dated November 14, 2012.

EXPLORATION AND DEVELOPMENT HISTORY

Recorded exploration in and around the dispositions comprising the Property commenced in 1968. Bow Valley Company Ltd.'s Permits 1 and 6, Wainoco Oil and Chemicals Ltd.'s Permit 1, and Canada Southern Petroleum and Gas Ltd.'s Permit 6 covered parts of what is now known as the Rook I Property. From 1968 to 1970, these companies flew airborne magnetic and radiometric surveys and carried out prospecting and geochemical sampling. They found little to warrant continued work and relinquished their permits in the early 1970s (source: Saskatchewan Assessment Files (AF) 74F11-0002, 74F11-0001, 74F08-0003, and 74F09-0003). The next recorded work was by Uranerz Exploration and Mining Ltd. (Uranerz) on the Inexco Permits 1 and 2 which covered the Rook I Property. In 1974, Uranerz completed geological mapping, prospecting, lake sediment sampling, and a helicopter borne radiometric survey but found nothing to warrant further work (source: AF74F-0001).

In 1976 and 1977, with the discovery of Key Lake announced, companies started to acquire land in the western part of the Athabasca Basin. Canadian Occidental Petroleum Ltd. (Canoxy) had claims (CBS 4745, 4756, 4747, 4748) covering most of the area of current dispositions S-110932 and S-113921 through S-113933. Houston Oil and Gas Ltd. had one claim (CBS 5680) covering parts of claims S-113903 through S-113906. Hudson Bay Exploration and Development Company Ltd. (HBED) had two small claims covering S-113919 and S-113920 and Kerr Addison Mines Ltd. (Kerr) had claims covering parts of S-113903, S-113904, and S-113907 through S-113914. Saskatchewan Mining Development Corp. (SMDC, now Cameco Corp.) had MPP 1076 (later CBS 8807) which covered parts of S-113929, S-113931, and S-113933.

From 1976 to 1982, these companies completed airborne INPUT electromagnetic (EM) surveys which detected numerous conductors, many of which were subject to ground surveys prior to drilling. Airborne magnetic-radiometric surveys were also carried out and followed up by prospecting, geological mapping, lake sediment surveys, and some soil and rock geochemical sampling. Few anomalies were found other than those located by the airborne and ground EM surveys.

From 1980 to 1982, SMDC drilled 13 holes, PAT-01 to PAT-13, and abandoned one hole on what is now S-113933. PAT-04 intersected weak uranium mineralization (171 ppm U over one metre) in highly altered basement rocks just below the unconformity at 97 m. Drill hole PAT-13 intersected 64 ppm U_3O_8 over a nine metre interval just below the unconformity from 110 m to 119 m (source: AF74F11-0011, 74F11-0024 and AF 74F11-0029). The mineralization and alteration were reported to be similar to that seen at unconformity associated uranium deposits in the Athabasca Basin.

To the east, Kerr drilled 24 holes from 1977 to 1979 in the area of the Property. One hole was completed on claim S-113903. No other holes were completed on the Property. No significant alteration or mineralization was intersected (source: AF74F10-0011, AF74F10-0012 and AF74F10-0016).

HBED drilled two holes in 1982 on claims which cover part of what is now S-113920. The holes hit graphitic gneisses but no radioactivity (source: 74F11-0018).

CanOxy reported drilling 41 holes on its CLU project from 1978 to 1980 but only 20 of these are on the Rook I dispositions. Drilling did not intersect any uranium mineralization but did intersect thick glacial till deposits, basement regolith, and geological structures. The basement rocks were quartz-feldspar-biotite gneisses, with lesser quartz rich gneisses, garnetiferous pyroxene granulites, and graphitic basement gneisses which were often sheared and brecciated. Granitic and granodioritic gneisses were also intersected (source: AF74F11-0012, AF 74F11-0013, and 74F11-0015).

In 1982, exploration waned in the western part of the Athabasca Basin and companies allowed their claims to lapse. There is little work recorded in the Saskatchewan mineral assessment files between 1982 and 2006.

In 2006, Titan carried out MegaTEM and VTEM airborne surveys, which detected and/or confirmed numerous EM anomalies. A ground MaxMin II horizontal loop EM (HLEM) survey completed in 2008 confirmed the presence of many of the airborne anomalies (source: AF74F-0015, AF74F11-0040, AF74F11-0035).

In 2012, Mega completed a ground gravity survey over parts of claims S-113921 through S-113933 (Creamer and Gilman, 2013a) and a number of anomalies were identified. A soil geochemical survey and prospecting program were also completed in the same year (Creamer and Gilman, 2013b). No soil geochemical anomalies or radioactive boulders were identified.

HISTORICAL RESOURCE ESTIMATES

No resource estimates have been prepared by previous owners.

PAST PRODUCTION

There has been no production from the Property up to the effective date of this report.

7 GEOLOGICAL SETTING AND MINERALIZATION

REGIONAL GEOLOGY

The Rook I Property is located along the southwestern rim of the Athabasca Basin, a large Paleoproterozoic-aged, flat-lying, intracontinental, fluvial, redbed sedimentary basin which covers much of northern Saskatchewan and part of northern Alberta (Jefferson et al., 2007). The Athabasca Basin is oval shaped at surface with approximate dimensions of 450 km by 200 km (Figure 7-1) and reaches a maximum thickness of approximately 1,500 m near the centre. It consists principally of unmetamorphosed sandstones with local conglomerate beds that are collectively known as the Athabasca Group. Every geologic unit comprising the Athabasca Group contains cross-bedding and ripple cross-lamination. Most units also contain single-layer thick quartz pebble or granule beds.

The base of the Athabasca Group is marked by an unconformity with the underlying crystalline basement rocks of the Archean to Paleoproterozoic-aged Hearne and Rae provinces to the east and west, respectively, and the Proterozoic Taltson Magmatic Zone (TMZ) to the west (Card et al., 2007). The Rae Province consists mostly of metasedimentary supracrustal sequences as well as granitoid rocks. In contrast, the Hearne Province consists primarily of granitoid gneisses with interleaved supracrustal rocks. The TMZ is characterized as a basement complex that was intruded by both continental magmatic arc granitoid rocks and peraluminous granitoid rocks. The Hearne and Rae Provinces are separated near the centre of the Athabasca Basin by the northeast trending Snowbird Tectonic Zone.

The Athabasca Group basal unconformity is spatially related to all significant uranium occurrences in the region. The basement immediately below the unconformity typically has a paleoweathered profile ranging from a few centimetres to up to 220 m thick where fluid migration was aided by fault zones (MacDonald, 1980). Paleoweathered profiles usually consist of a thin bleached zone at the unconformity which grades into a hematite altered zone and then a chlorite altered zone before alteration features dissipate.

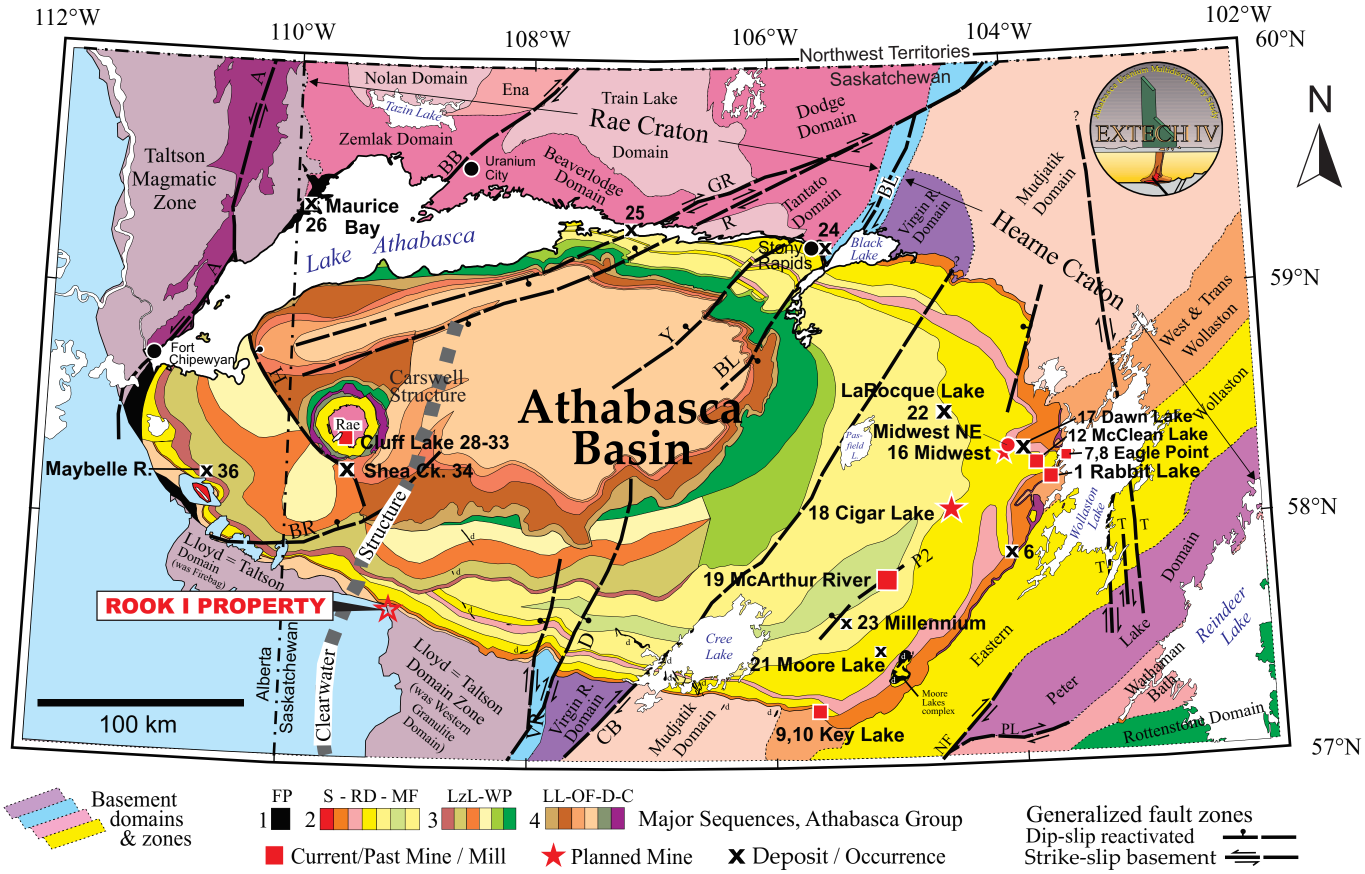


Figure 7-1

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Regional Geology and Uranium Deposits

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

September 2017

The southwest part of the Athabasca Group is overlain by flat lying Phanerozoic rocks of the Western Canada Sedimentary Basin comprised of mudstones, siltstones, and sandstones.

LOCAL AND PROPERTY GEOLOGY

The oldest rocks in the area of the Property occur in the TMZ. Within the Property, the TMZ consists chiefly of granitic, granodioritic, tonalitic, dioritic, and locally gabbroic gneisses (Figure 7-2). There are also local bodies of graphitic and chloritic semipelitic to pelitic gneisses that typically occur as discontinuous, elongate, north-northeast trending lenses and schlieren ranging from less than one kilometre to greater than 10 km in length (Grover et al., 1997). These paragneiss bodies are the chief host rock of uranium mineralization in basement settings in the area including the Arrow Deposit. All lithologies present in the TMZ have been metamorphosed at upper amphibolite to granulate facies conditions.

Immediately west of the Rook I Property are the rocks of the Clearwater Domain, a northeast trending belt of granitic rocks 20 km to 25 km wide. Although poorly exposed, it is marked by an aeromagnetic high that overprints the magnetic signature of the TMZ (Card et al., 2007). Where intersected in drill holes, the felsic intrusive rocks of the Clearwater Domain often show anomalous uranium concentrations. Hence, these rocks may represent the source of uranium for deposits in the area.

The Property straddles the Athabasca Group basal unconformity. Overlying the basement rocks in the area of the Property are the flat lying sandstones of the Athabasca Group. Where intersected in drilling, the Athabasca Group rocks are likely part of the Smart and Manitou Falls Formations. These formations are both characterized by uniform quartz arenite beds and rare pebble conglomerate beds.

Phanerozoic rocks of the Cretaceous Manville Group and Devonian La Loche Formation overlie the Athabasca Group and basement rocks on portions of the western side of the Property and above the Arrow Deposit. The Manville Group is characterized by non-marine and marine shales and sandstones. A coal bed marker horizon at the bottom of the Mannville Group is often observed in drill core. The La Loche Formation consists of arenitic to arkosic sandstones and conglomerates.

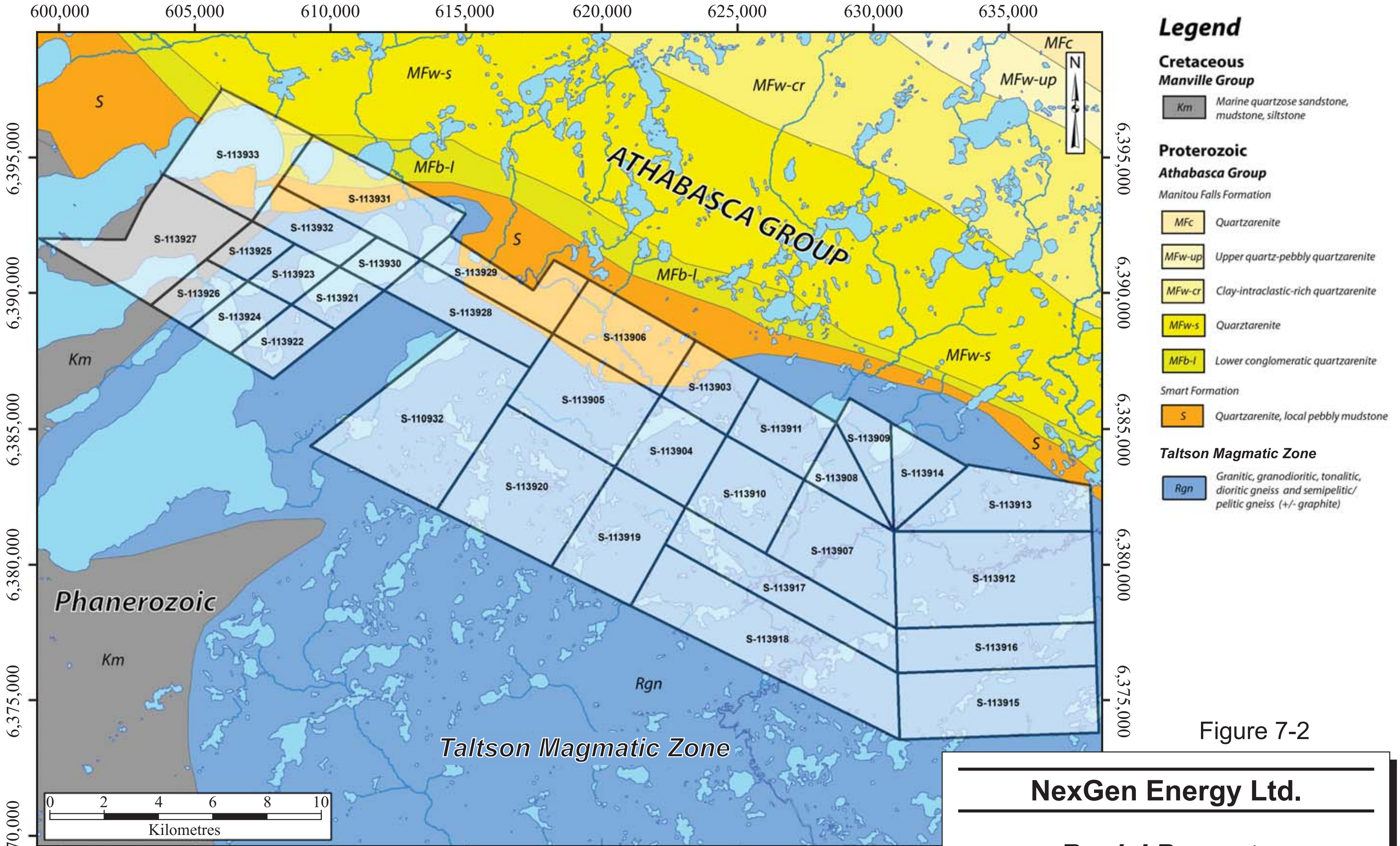


Figure 7-2

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Local Geology

Source: NexGen Energy Ltd., 2016. Saskatchewan Geological Survey, 2016.

September 2017

The Property and surrounding area are covered by Pleistocene glacial deposits composed of sand, Athabasca Group sandstone boulders, and rare basement and Manville Group boulders. Glacial geomorphological topographic features are common and include northeast to east-northeast trending drumlins, outwashes, hummocky terrain, and kettle lakes. The glacial deposits are typically at least 30 m thick and may be up to 100 m thick. Over the Arrow Deposit, glacial overburden is approximately 60 m thick.

MINERALIZATION

As of the effective date of this report, mineralization is known to occur at seven locations on the Rook I Property: 1) Arrow Deposit, 2) Harpoon occurrence, 3) Bow occurrence, 4) Cannon occurrence, 5) Camp East occurrence, 6) Area A occurrence, and 7) South Arrow occurrence, the most significant of which is the Arrow Deposit (Figure 7-3). All uranium mineralization discovered on the Property to date is hosted exclusively in basement lithologies below the unconformity.

ARROW DEPOSIT

Uranium was first discovered at Arrow by NexGen in February of 2014 when drill hole AR-14-01 intersected modest mineralization including 0.16% U_3O_8 over 9.0 m. Subsequent follow-up drilling identified a zone of extensive mineralization highlighted by drill holes AR-16-63c2, which intersected 15.20% U_3O_8 over 42.0 m and an additional 12.99% U_3O_8 over 46.5 m, AR-15-62, which intersected 6.35% U_3O_8 over 124.0 m, and AR-15-44b, which intersected 11.55% U_3O_8 over 56.5 m including 20.0 m at 20.68% U_3O_8 and 1.0 m at 70.0% U_3O_8. These drill holes intersected the mineralization at a low angle and therefore the core lengths do not represent the width of the mineralization. A description of the dimensions of the mineralization is provided in Section 14, Mineral Resource Estimate.

Uranium mineralization at the Arrow Deposit dominantly occurs as uraninite. Other common uranium minerals include coffinite and secondary yellow coloured minerals, currently interpreted to be autunite, carnotite, and/or uranophane. A green coloured secondary uranium mineral interpreted to be torbernite has also been observed very locally. In zones of massive uraninite mineralization, blebs of a glassy black coloured phase with conchoidal fracture currently interpreted to be pyrobitumen are often observed.

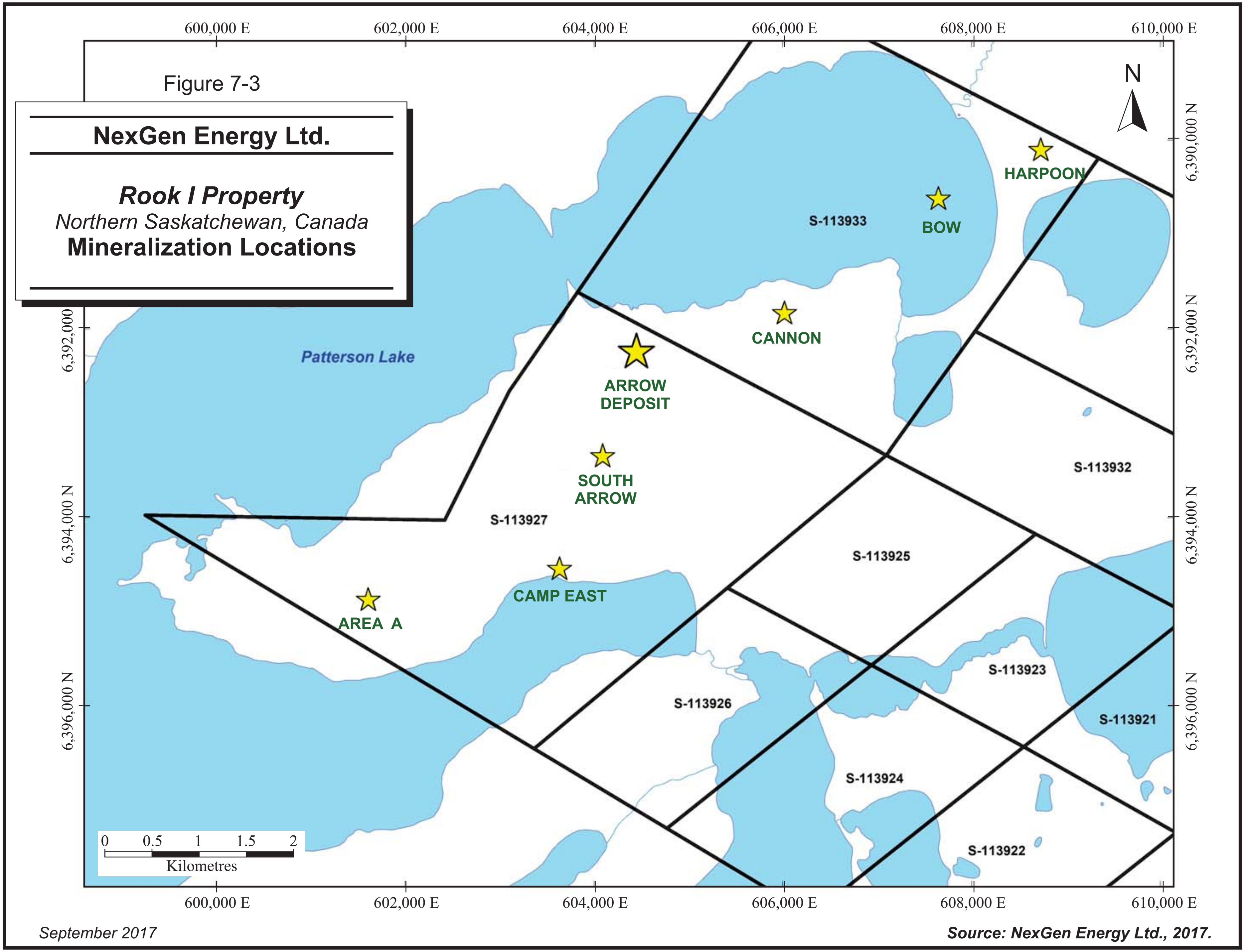


Figure 7-3
NexGen Energy Ltd.
Rook I Property
Northern Saskatchewan, Canada
Mineralization Locations
600,000 E
602,000 E
604,000 E
606,000 E
608,000 E
610,000 E
6,390,000 N
6,392,000 N
6,394,000 N
6,396,000 N
N
Patterson Lake
HARPOON
BOW
S-113933
CANNON
ARROW
DEPOSIT
SOUTH
ARROW
S-113932
S-113927
S-113925
CAMP EAST
AREA A
S-113923
S-113926
S-113921
S-113924
S-113922
0 0.5 1 1.5 2
Kilometres
September 2017
Source: NexGen Energy Ltd., 2017.
www.rpacan.com

Two key but contrasting types of uranium mineralization occur at Arrow:

- Open-space fillings

  Open-space fillings include massive uraninite bodies interpreted to be uranium veins, and breccia bodies where the matrix is comprised nearly exclusively of massive uraninite. Uranium veins and breccias typically range in thickness from less than 0.1 m to greater than one metre and display sharp contacts with the surrounding wall rocks. Individual uranium veins usually occur at parallel to sub-parallel orientations to the regional foliation, however, at least one set of veins cross-cuts the regional foliation. Clasts present in uranium breccias at Arrow are typically fragments of the immediate wall rocks and often contain additional disseminated uraninite mineralization. Uranium breccias occur as both clast supported and matrix supported forms, with the latter typically hosting higher grades. Both styles of open-space filling mineralization are categorized by high uranium grades that can be in excess of 40% U_3O_8 and as high as 80% U_3O_8.

- Chemical replacement styles

  Chemical replacement types of mineralization present at Arrow include disseminated, worm-rock and near complete to complete replacement styles. Disseminated mineralization is typically associated with strong to intense hydrothermal alteration (discussed below) where uraninite occurs as fine to medium grained anhedral crystals and crystal agglomerates spread throughout the host in concentrations of typically less than five modal percent. Worm-rock style mineralization is named for the wormy texture it by definition displays, which is the result of redox reactions between uranium bearing fluids and the host wall rocks. Typically, these redox fronts are less than 10 cm thick. Near to complete uraninite replacement of the host rock has also been observed at Arrow. These zones range in thickness from less than 0.1 m to greater than 1.0 m and, in contrast to open-space fillings, show gradual contacts. Near complete to complete replacement bodies also often contain centimetre sized vugs which may once have been garnet porphyroblasts, pseudomorphs of which are common in the host rocks. The presence of vugs in this style of mineralization and in some zones interpreted to be uraninite veins suggests that in at least some places, the veins may actually be the result of chemical replacement and not open-space filling. Uranium grades associated with chemical replacement styles of mineralization at Arrow range from less than 1% U_3O_8 in disseminated bodies to greater than 70% U_3O_8 in complete replacement bodies.

Hydrothermal alteration that occurs in the vicinity of Arrow is extensive and several distinct styles have been observed. In some areas, mineralization is closely associated with a pervasive quartz-sericite-sudoite-illite alteration assemblage that nearly completely replaces the host rock, although pre-alteration textures are often preserved. In other areas, mineralization is closely associated with pervasive brick red coloured hematite alteration. Another key alteration phase present at Arrow is dravite. Typically, it occurs in centimetre to decimetre wide breccia vein bodies beginning tens of metres from high grade uranium mineralization and increasing in size and frequency closer to mineralization. Carbon buttons are commonly observed in association with dravite. Centimetre sized drusy quartz veins occur ubiquitously in the vicinity of the deposit. Where proximal to high grade mineralization, these veins are often pink coloured.

The Arrow Deposit is currently interpreted as being hosted chiefly in semipelitic gneiss (Figure 7-4) composed almost solely of quartz and garnet porphyroblast pseudomorphs which are now almost exclusively chlorite, hematite, illite, or sudoite. Other minor mineral phases present include plagioclase, potassium feldspar, biotite, muscovite, and amphibole, in varying concentrations. Local bodies of pelitic gneiss have also been observed. This lithology is distinct from semipelitic gneiss as it is defined by lower concentrations of quartz. The geology of the immediate area of the Arrow Deposit is also marked by the presence of a large sill-like intrusive body containing granitic to gabbroic gneisses commonly cross-cut by mineralization.

Uranium mineralization at Arrow is closely associated with narrow, strongly graphitic, pelitic, and graphitic semipelitic gneiss lithologies thought to represent discrete shear zones. High grade uranium zones often occur immediately adjacent to heavily sheared and strongly graphitic zones, but never within them. Deformation likely played a key role in localizing uranium mineralization at Arrow and the area has a complex structural history. The main foliation present in the Arrow area trends towards the northeast and dips sub-vertically to vertically. Currently, mineralization occurs within five discrete, parallel shear panels referred to as the A1 though A5 shears (Figure 7-4). Each shear panel is approximately 50 m wide and contains a number of narrow graphitic shear zones that are oriented parallel to foliation striking at approximately 050° to 060° and dipping vertically to sub-vertically. These graphitic shear zones are host to the uranium mineralized lenses and pods which are also oriented parallel and sub-parallel to the regional foliation. Slickenstriae observed on fault faces within the graphitic shear zones close to high grade uranium mineralization show two general orientations, an older dip-slip orientation and a younger overprinting strike-slip/oblique-slip orientation. This suggests at least two distinct plunge directions.

The mineralization in the Arrow Deposit is sub-vertical and true width is estimated to be from 30% to 50% of reported core lengths based on currently available information.

HARPOON OCCURRENCE

The Harpoon occurrence is located 4.7 km northeast of the Arrow Deposit. The area of the occurrence, which was discovered by NexGen in 2016, has been tested with 23 holes. Semi-massive to massive uraninite veining was first intersected in hole HP-16-08 intermittently over a core length of 17.5 m beginning at 219.5 m down hole. Uraninite mineralization also occurs as worm-rock styles, chemical solution fronts, replacement bodies, and as fracture coatings. It is currently exclusively basement hosted and occurs within a chloritic and graphitic shear zone that is heavily clay altered. Basement lithologies observed in the area of mineralization include both orthogneiss and paragneiss of varying composition.

Mineralization at the Harpoon occurrence is foliation parallel. It strikes towards the northeast at approximately 035° to 045° and dips towards the southeast at approximately 60° to 70°. The occurrence has currently been drilled to within 27 m of the northeast boundary of the Rook I Property. It is likely that Harpoon crosses the Property boundary to the northeast where it may be continuous with the Spitfire occurrence, owned by a joint venture among Cameco Corp. (40%), Areva Inc. (40%), and Purepoint Uranium Group Inc. (20%).

The mineralized footprint at Harpoon has been traced over a strike length of 340 m on the Rook I Property. Further drilling is planned. As of the effective date of this report, all assays are outstanding.

BOW OCCURRENCE

The Bow occurrence is located 3.7 km northeast of the Arrow Deposit. Anomalous uranium concentrations were first identified by SMDC in drill hole PAT-04, which intersected 171 ppm U over 1.0 m in 1980. In total, SMDC drilled 13 holes at Bow from 1980 to 1982. The uranium values occur at or just below the unconformity in fractured, slickensided, and sometimes brecciated sandstone and basement quartz-feldspar-biotite +/- graphite paragneisses with compositions ranging from psammitic to pelitic. Quartzite was also noted in several holes.

Basement rocks are described as strongly bleached and clay altered. While no continuity has been established to date, the alteration and host rocks described are similar to what is seen in unconformity associated uranium deposits elsewhere in the Athabasca Basin.

Drilling completed in this area by NexGen in the winter of 2015 resulted in the intersection of uranium mineralization in BO-15-02, BO-15-10, and BO-15-13. The best intersection was 0.20% U_3O_8 over 9.5 m in drill hole BO-15-10. Bow was not drilled in 2016 due to poor lake ice conditions. Further drilling at Bow is planned.

CANNON OCCURRENCE

The Cannon occurrence is located 1.3 km northeast of the Arrow Deposit and was discovered by NexGen in 2016. Three of eleven holes drilled in the area encountered low-grade uranium mineralization over narrow intervals in basement lithologies. The best hole, CN-16-06, intersected 0.06% U_3O_8 over one metre beginning 256.0 m down hole. Basement lithologies present at the Cannon occurrence area largely consist of semi-pelitic gneiss, pelitic gneiss, quartzite and orthogneiss, with relatively narrow intervals of chloritic and graphitic mylonite, the latter of which host the low-grade uranium mineralization discovered to date.

Strong hydrothermal alteration, which typically includes illite-sudoite-hematite mineral assemblages, was commonly intersected in the basement in the area of the Cannon occurrence. The alteration zones remain open in all directions, and at the unconformity. Further drilling at the Cannon occurrence is planned.

CAMP EAST OCCURRENCE

The Camp East occurrence is located approximately 2.3 km south-southwest of the Arrow Deposit. It was discovered by NexGen in 2016 where two of the six holes drilled intersected weakly anomalous radioactivity over narrow core lengths of one metre or less in basement lithologies (RK-16-98 and RK-16-108), which in the area include semi-pelitic to pelitic gneiss and orthogneiss. Chloritic and locally graphitic shear zones with widths ranging from one metre to tens of metres were intersected in each hole. The relationship between geological structures and anomalous radioactivity at Camp East has not yet been determined.

In addition, both drill holes that intersected anomalous radioactivity also intersected very strong hydrothermal alteration over extensive core lengths intermittently over hundreds of metres.

Two distinctive alteration styles are generally present in the area including (1) near complete to complete silica replacement with accessory clay and hematite and (2) moderate to intense white clay and dravite alteration where near complete to complete clay replacement is observed over core lengths up to 12 m.

AREA A OCCURRENCE

In 2013, drill hole RK-13-05 intersected 330 ppm U_3O_8 over 4.0 m approximately 3.5 km southwest from where the Arrow Deposit would later be discovered. Visible pitchblende was identified within a strongly hematite altered breccia. The mineralization occurs within a 29 m wide shear zone marked by faults, fractures, a variety of veins, and breccias. The host rocks are garnetiferous quartz-plagioclase-biotite gneiss with minor graphite. Follow-up drilling failed to intersect mineralization. Further drilling is currently being considered.

SOUTH ARROW OCCURRENCE

In July 2017, drill hole AR-17-151c1 intersected strong visible pitchblende mineralization on an Arrow-parallel structure located approximately 400 m south of the Arrow Deposit Mineral Resource domains. Mineralization at South Arrow occurs mainly as disseminated and narrow veins of massive pitchblende. It is hosted in heavily silicified intrusive and semi-pelitic gneissic lithologies. In addition, the mineralization occurs in close association with a graphitic-chloritic mylonite and hydrothermal quartz breccia, both of which represent distinct marker horizons.

The South Arrow exploration target was first identified by re-processing of airborne VTEM survey data (Pendrigh and Witherly, 2015). Subsequently, a high-resolution ground 3D DC resistivity and induced polarization (DCIP) survey was completed over an area covering the Arrow Deposit and a portion of the newly identified structure (Rudd and Lepitzki, 2016). The survey showed a resistivity anomaly highly coincident with, and immediately flanking the Arrow Deposit. The survey also identified an additional anomaly coincident with the Arrow-parallel deformation zone first highlighted by the VTEM data.

This new resistivity anomaly, named the South Arrow anomaly, has strikingly similar characteristics to the Arrow anomaly. It has now been tested in four holes, two of which have intersected narrow zones of strong visible pitchblende mineralization, and all of which intersected extensive zones of hydrothermal alteration. Preliminary interpretations from structural measurements collected from oriented drill core suggest that the South Arrow mineralized bodies dip steeply towards the southeast. Assays remain outstanding as of the effective date of this report.

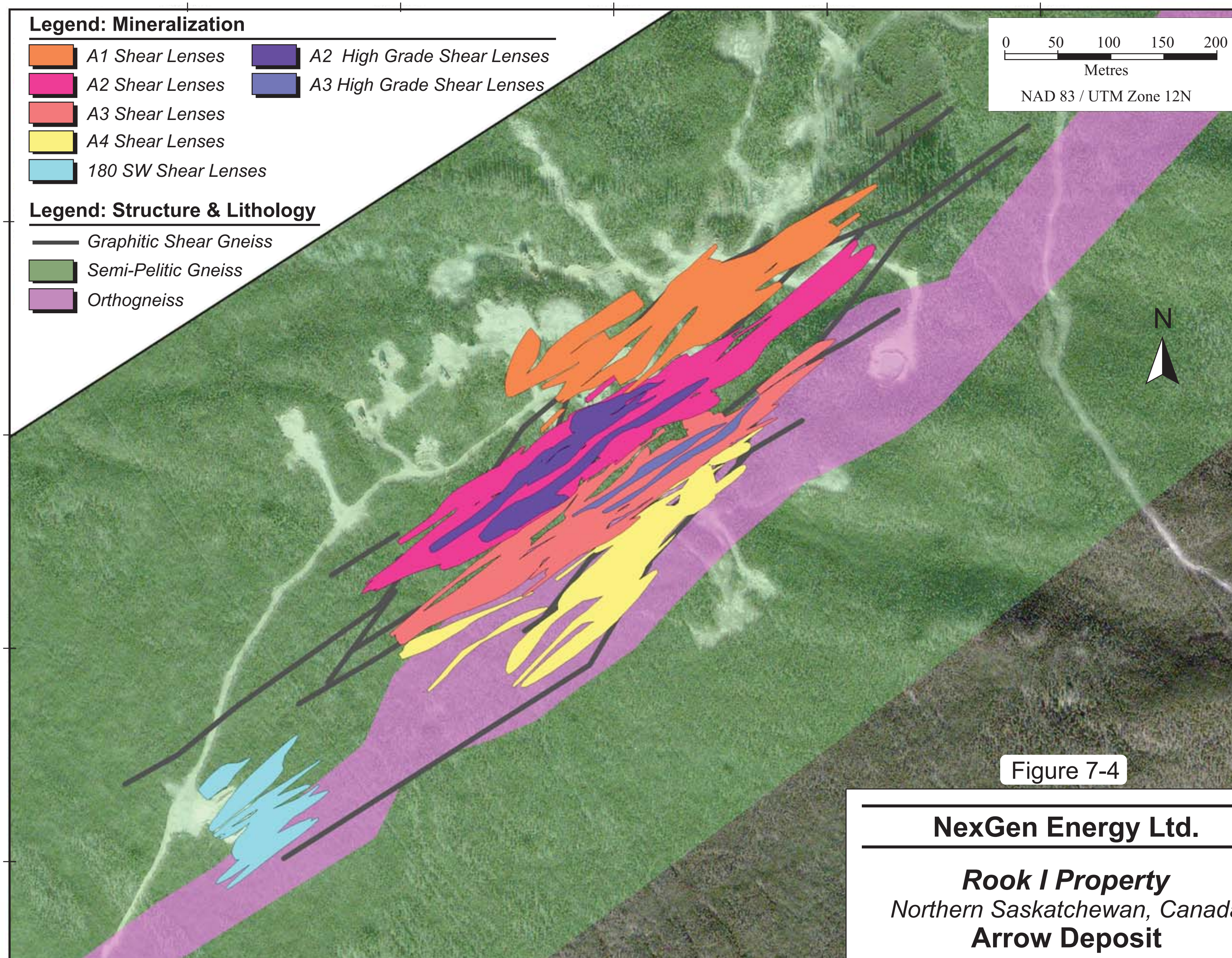


Figure 7-4

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Arrow Deposit
Basement Geology

September 2017

Source: NexGen Energy Ltd., 2017.

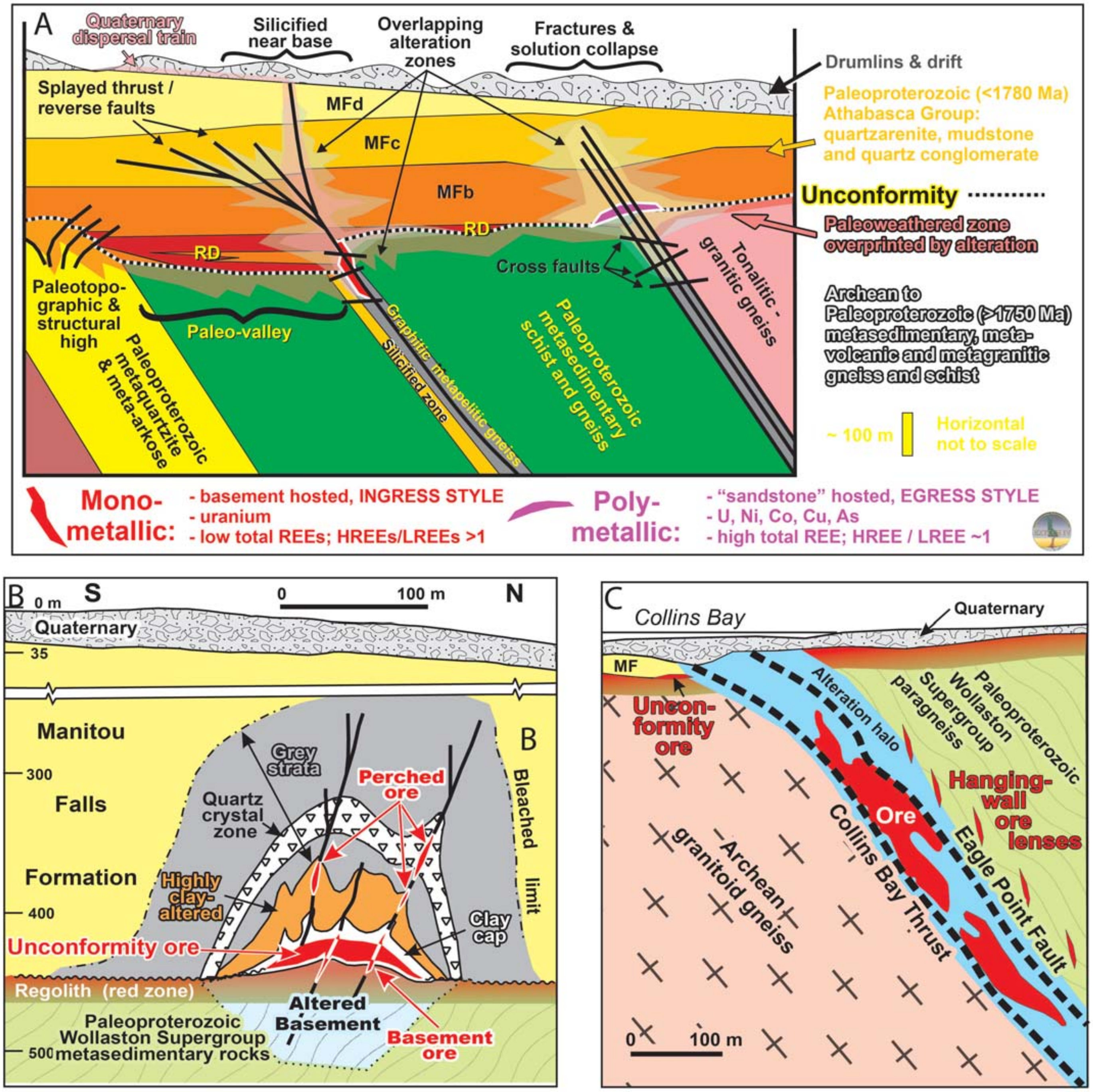
8 DEPOSIT TYPES

The Arrow Deposit and other exploration targets at the Property belong to the unconformity-associated class of uranium deposits. This type of mineralization is spatially associated with unconformities that separate Paleo- to Mesoproterozoic conglomeratic sandstone basins and metamorphosed basement rocks (Jefferson et al., 2007).

At numerous locations in Saskatchewan and fewer in Alberta, uranium deposits have been discovered at, above, and below the Athabasca Group unconformity. Mineralization can occur hundreds of metres into the basement or can be perched up to 100 m above in the sandstone. At Arrow, no uranium has been identified at or above the unconformity; massive veins have been discovered in the basement at depths ranging from immediately below the unconformity to 700 m below it. Typically, uranium is present as uraninite/pitchblende which occurs as veins and semi-massive to massive replacement bodies. In most cases, mineralization is also spatially associated with steeply dipping, graphitic basement structures that have penetrated into the sandstones and offset the unconformity during successive reactivation events. Such structures are thought to represent both important fluid pathways as well as chemical/structural traps for mineralization through geologic time as reactivation events have likely introduced further uranium into mineralized zones and provided a means for remobilization.

Two end members of unconformity-associated mineralization have been identified in the Athabasca Basin (Figure 8-1 and 8-2). Egress type deposits occur at or above the unconformity and are hosted by sandstone. Ingress type deposits occur in basement rocks below the unconformity. The location and style of mineralization present at any deposit is the result of where fluid mixing between oxidizing basin fluids and reducing basement fluids occurred. If the two fluids interacted mostly at or above the unconformity, egress style mineralization is the result. Fluid mixing below the unconformity has led to the formation of ingress style mineralization. Furthermore, egress style mineralization is often polymetallic and may contain appreciable concentrations of nickel, cobalt, arsenic, and lead in addition to uranium. Ingress style mineralization is typically monometallic, containing nearly exclusively uranium.

Unconformity-associated uranium deposits of the Athabasca Basin typically display extensive hydrothermal alteration halos, especially in the sandstones above major deposits where relatively higher porosity/permeability allowed for increased fluid flux. Where mineralization is basement hosted, alteration is typically confined to structures in the basement. Chlorite, hematite, dravite, sudoite, illite, kaolinite, and dickite are often, but not always, key alteration phases associated with mineralization. Silicification and desilicification of sandstones is also empirically associated with mineralization at many deposits, especially those located at the unconformity and in the sandstone.



Features and examples of unconfomity associated-uranium deposits in the eastern part of the Athabasca Basin
(A) Generalized geological features of ingress- (monometallic) and egress (polymetallic) type deposits
(B) Egress type deposit - Cigar Lake
(C) Ingress type deposit - Eagle Point

Figure 8-1

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

General Geological Setting of Unconformity Associated Uranium Mineralization

September 2017

Source: after Jefferson et al., 2007.

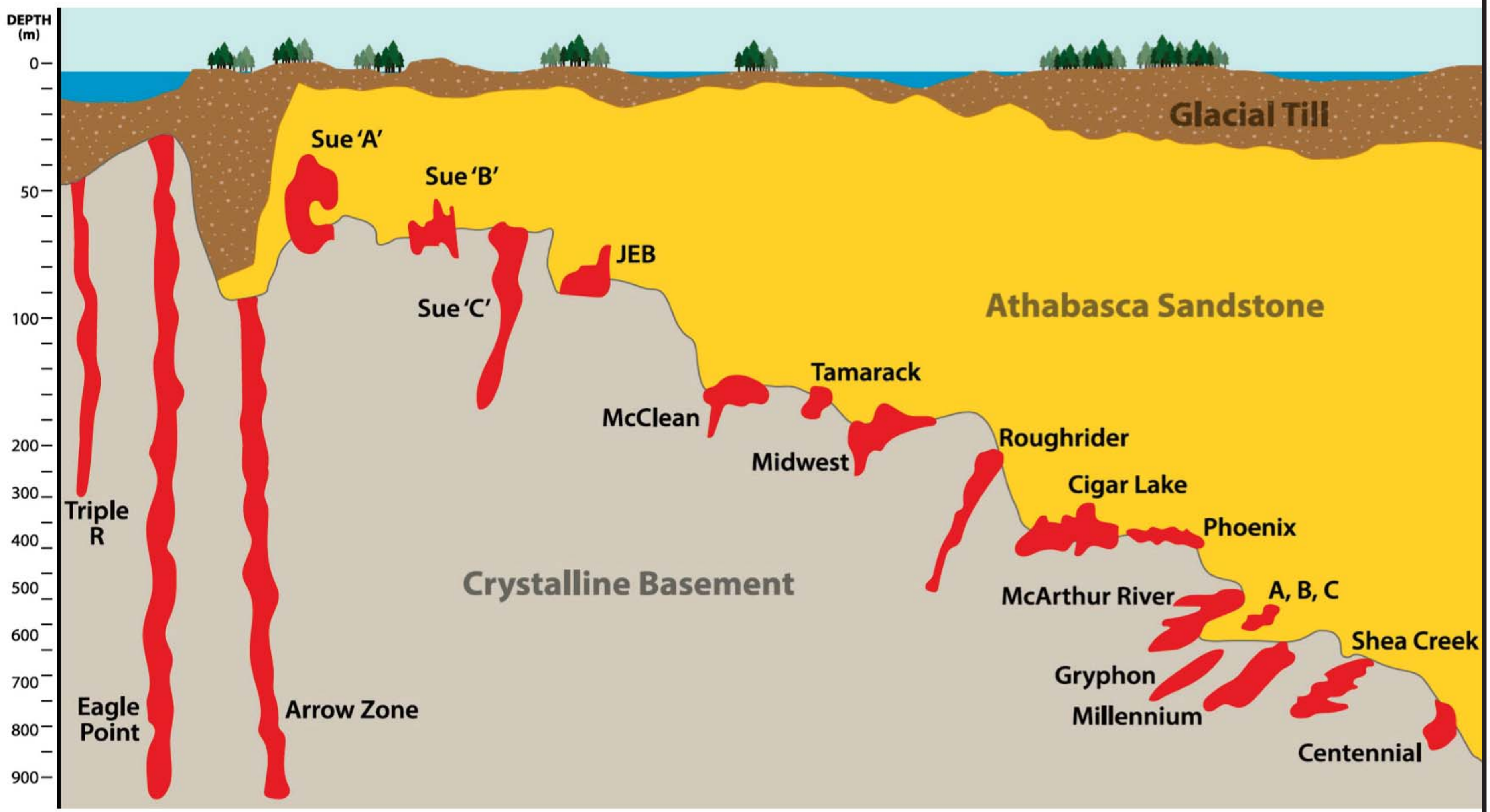


Figure 8-2

NexGen Energy Ltd.

Rook I Property

Northern Saskachewan, Canada

Athabasca Basin Deposit Setting

September 2017

Source: NexGen Energy Ltd., 2017.

9 EXPLORATION

Since acquiring the Rook I Property in December 2012, NexGen has carried out exploration consisting of ground gravity surveys, ground DCIP surveys, an airborne magnetic-radiometric-very low frequency (VLF) survey, an airborne Versatile Time-Domain EM (VTEM) survey, an airborne Z-Axis Tipper EM (ZTEM) survey, an airborne gravity survey, a radon-in-water geochemical survey, and a ground radiometric and boulder prospecting program. Diamond drilling programs have also tested several targets on the Property which resulted in the discovery of the Arrow Deposit in AR-14-01 (formerly known as RK-14-21) in February 2014.

GROUND GEOPHYSICAL SURVEYS

GRAVITY

NexGen completed a ground gravity survey over much of the western half of the Property (Koch, 2015; Koch 2013) (Figure 9-1). The surveys were completed by Discovery Geophysics International Inc. (Discovery) and MWH Geo-Surveys Ltd. (MWH) from the fall of 2013 to the winter of 2015. In total, 12,867 gravity measurements were acquired within the survey areas, including a number of duplicate measurements acquired in areas surveyed by Mega before the Property was acquired by NexGen. Stations were spaced 50 m apart along lines spaced at 200 m and were located by differential GPS. Features identified from the survey results are interpreted to be larger regional trends upon which smaller, more localized features occur. These smaller features, showing both relatively high and low gravity responses, can be the result of hydrothermal alteration in both sandstones and basement rocks. The discovery of the Arrow Deposit was partially the result of drill testing a circular gravity anomaly (gravity low) with an approximate diameter of one kilometre. It is thought that the gravity low present at Arrow is the result of clay alteration (illite/dravite/sudoite) of the basement rocks within and adjacent to the deposit.

DC RESISTIVITY

In 2013, NexGen completed a DC resistivity survey over a small area on the western-most portion of the Property (Koch, 2013b) (Figure 9-2). This survey was completed by Discovery on 200 m spaced grid lines via pole-dipole array with stations spaced at 50 m along lines. Estimated depth penetration based on the array parameters used (n=1 through 8, and 0.5 through 7.5) was approximately 225 m. The survey successfully identified several prospective basement hosted EM anomalies. It also identified a near surface, flat lying conductive horizon interpreted to be carbonaceous Manville Group rocks overlying the basement.

3D DC RESISTIVITY

In 2016, NexGen completed a high resolution 3D DCIP survey over the Arrow Deposit and immediate surrounding area (Rudd and Lepitzki, 2016). This survey was completed by Dias Geophysical Ltd using the proprietary DIAS32 system. A total receiver area of 2.07 km^2 of 3D resistivity and chargeability data were acquired in a 1.44 km by 1.44 km grid. The survey showed a resistivity anomaly highly coincident with and immediately flanking the Arrow Deposit. The survey also identified an un-drilled additional anomaly coincident with an Arrow-parallel deformation zone. As of the effective date of this report, drill testing of this new anomaly was imminently planned.

AIRBORNE GEOPHYSICAL SURVEYS

MAGNETIC-RADIOMETRIC-VLF

In 2013, Goldak Airborne Surveys was contracted by NexGen to fly a high resolution radiometric magnetic gradiometer – VLF EM survey over the entire Rook I Property (Figure 9-3). The survey included 3,491 line-km flown on lines spaced 200 m apart (Goldak, 2013). VLF data acquired as part of the survey has confirmed the widespread presence of basement structures on the Property. Magnetic data acquired suggest highly variable geology on the Property and a complex geological history. Radiometric data acquired show a number of surficial radiometric anomalies.

VTEM

In 2014, Aeroquest Airborne (Geotech) was contracted by NexGen to fly a VTEM survey over a portion of the Rook I Property (Pendrigh and Witherly, 2015) (Figure 9-4). The survey included 793 line-km on lines spaced 100 m apart. Magnetic data was also collected in tandem with EM data. The results showed a number of northeast trending EM conductors, most of which remain untested by drilling. Additionally, the acquired EM data allowed for more precise interpretation of the conductors that host the Arrow Deposit as this survey was both higher powered, and flown at closer line spacing, than any previous airborne EM survey completed in the area by past operators.

ZTEM

In 2016, Geotech Ltd. was contracted by NexGen to carry out a ZTEM survey over a portion of the Property (Pendrigh and Witherly, 2017). The survey was flown parallel to the Patterson conductive corridor and included 584 line-km on lines spaced 100 m apart. Due to the position of the area of interest along the corridor, a non-standard flight orientation parallel to the primary geological strike was chosen. While this is normally not advised for active source technologies such as VTEM, with ZTEM, the fact that the two orthogonal components are recorded allows for effective mapping of fields along both survey lines and tie lines. The results showed that a broad corridor of low resistivity traverses the Property from southwest to northeast (Figure 9-5). The Arrow Deposit occurs within this corridor. The corridor remains largely undrilled and represents a significant exploration opportunity.

GRAVITY

In 2016, CGG Canada Services Ltd. was contracted to acquire HeliFalcon gravity data along the Patterson conductive trend (Pendrigh and Witherly, 2017). The survey included 255 line-km on lines spaced 200 m apart and oriented in a northeast-southwest direction. Similar to the ground gravity survey, features identified from the survey results are interpreted to be larger regional trends upon which smaller, more localized features occur (Figure 9-6). These smaller features, showing both relatively high and low gravity responses, can be the result of hydrothermal alteration in both sandstones and basement rocks. The 2016 airborne survey positively identified the gravity anomaly associated with the Arrow Deposit and correlated very well with the ground gravity survey previously completed by NexGen. This indicates that airborne gravity is an effective regional exploration tool in the search for basement hosted uranium mineralization in the Athabasca Basin.

GEOCHEMICAL SURVEYS

RADON-IN-WATER

In 2015, radon-in-water surveys were conducted by RadonEx Exploration Management Ltd. over parts of Patterson, Beet, and Naomi Lakes (Charlton, 2015) (Figures 9-7 and 9-8). The surveys consisted of the collection of 1,942 near bottom water samples. Radon was measured using electret ionization chamber technology after water samples were collected and stored in glass jars. Samples were spaced 25 m apart on lines generally, but not always, spaced 200 m apart. The results showed multiple areas with anomalous radon gas concentrations.

GEOLOGICAL SURVEYS

GROUND RADIOMETRIC/BOULDER PROSPECTING

In 2014, NexGen carried out a ground radiometric and boulder prospecting program in order to investigate many of the radiometric anomalies identified by the 2013 Goldak Airborne survey (discussed above) (Figure 9-9). Radioactivity was measured at 698 stations, mostly on boulders which were chiefly Athabasca Group sandstones. Rare boulders of basement affinity were also measured. Only two outcrops were observed. Where boulders were not present, background radioactivity was measured every 50 m along survey lines spaced 200 m apart. Several anomalously radioactive boulders were discovered, however, in each case, spectrometer analyses showed the radioactivity to be sourced from thorium. No samples were assayed.

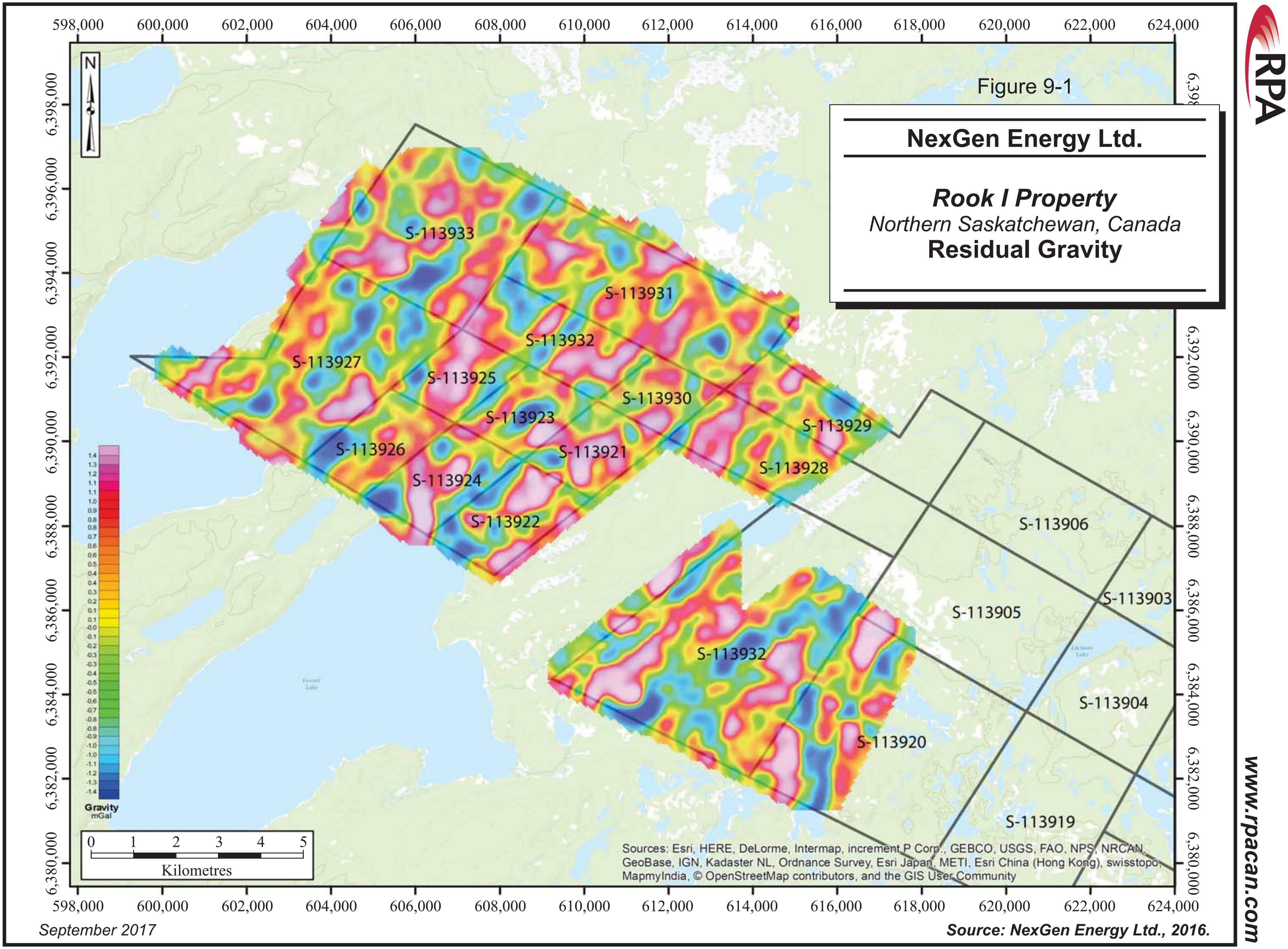
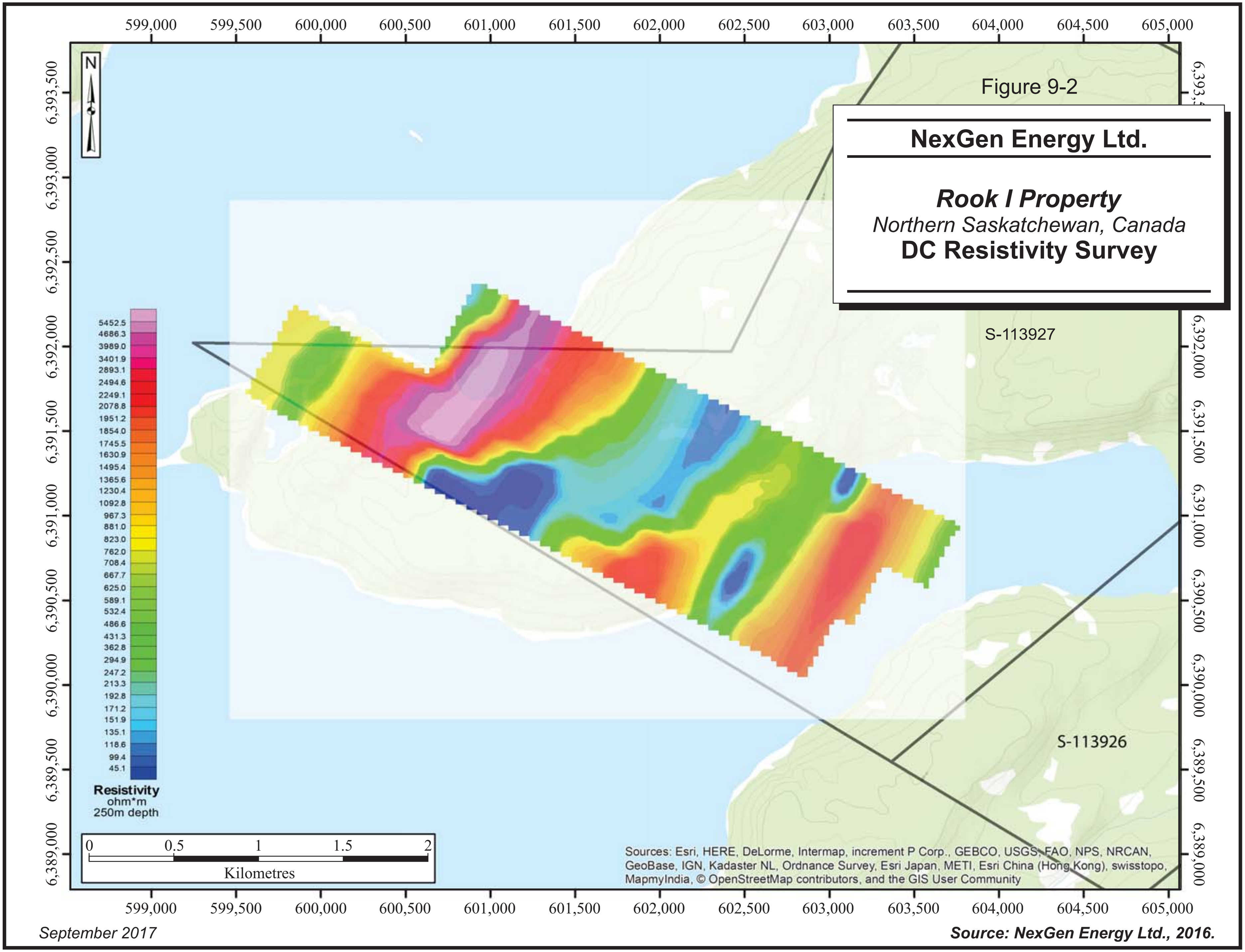


Figure 9-1
NexGen Energy Ltd.
Rook I Property
Northern Saskatchewan, Canada
Residual Gravity
598,000
600,000
602,000
604,000
606,000
608,000
610,000
612,000
614,000
616,000
618,000
620,000
622,000
624,000
6,380,000
6,382,000
6,384,000
6,386,000
6,388,000
6,390,000
6,392,000
6,394,000
6,396,000
6,398,000
N
S-113933
S-113931
S-113932
S-113927
S-113925
S-113930
S-113923
S-113929
S-113926
S-113921
S-113928
S-113924
S-113922
S-113906
S-113905
S-113903
S-113932
S-113904
S-113920
S-113919
Gravity
mGal
0 1 2 3 4 5
Kilometres
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
September 2017
Source: NexGen Energy Ltd., 2016.
RPA
www.rpacan.com



RPA

www.rpacan.com

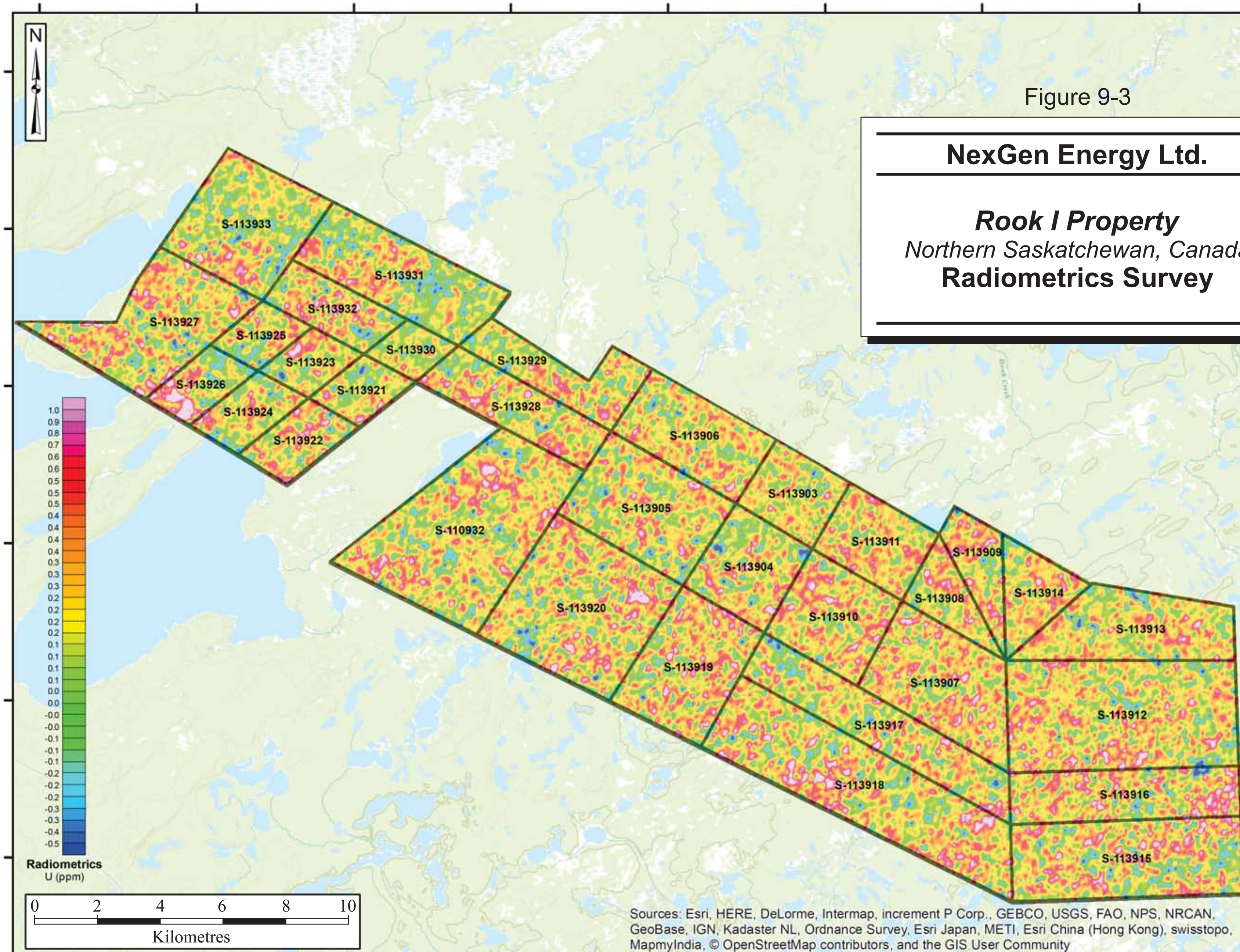


Figure 9-3

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Radiometrics Survey

September 2017

Source: NexGen Energy Ltd., 2016.

RPA

www.rpacan.com

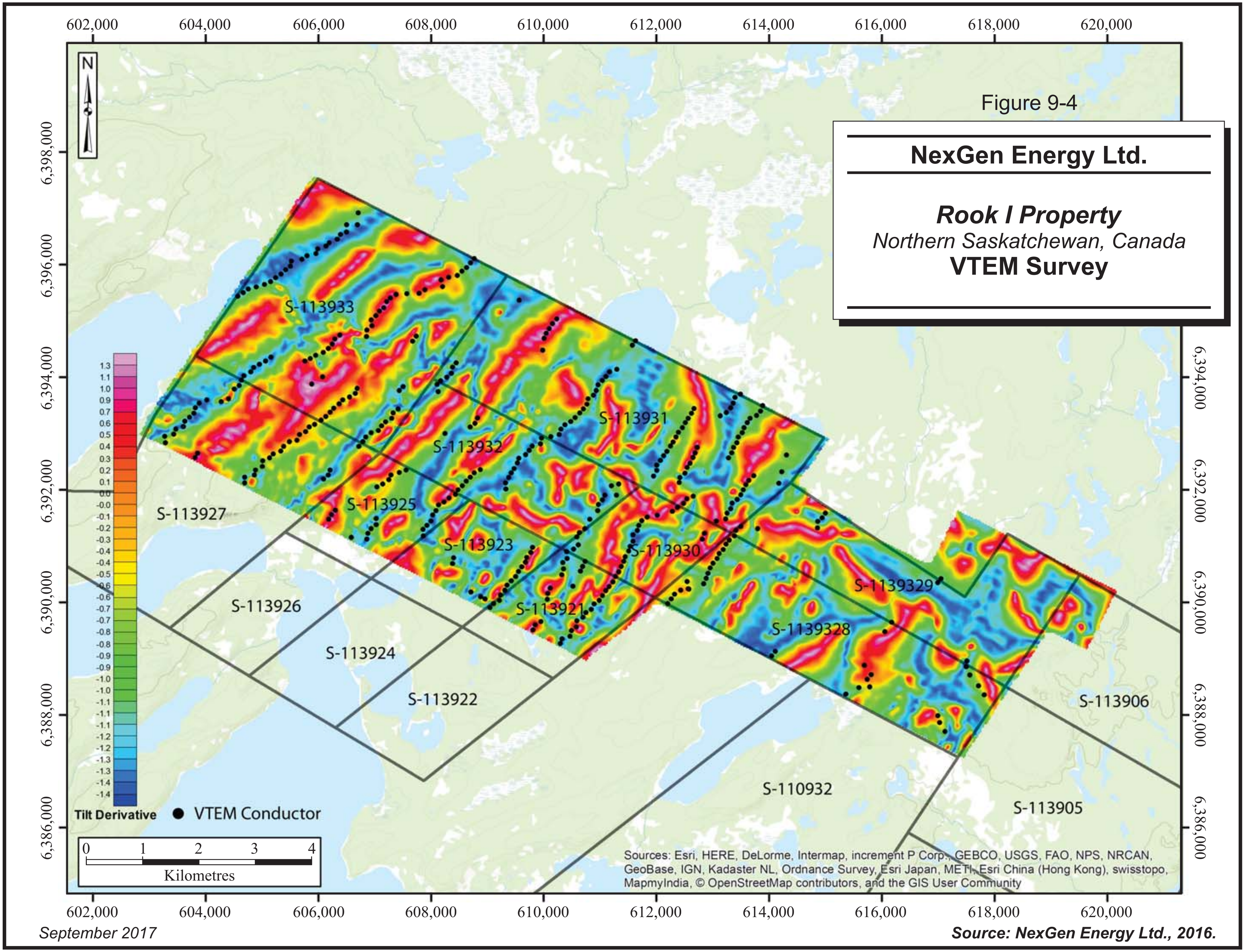


Figure 9-4

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

VTEM Survey

September 2017

Source: NexGen Energy Ltd., 2016.

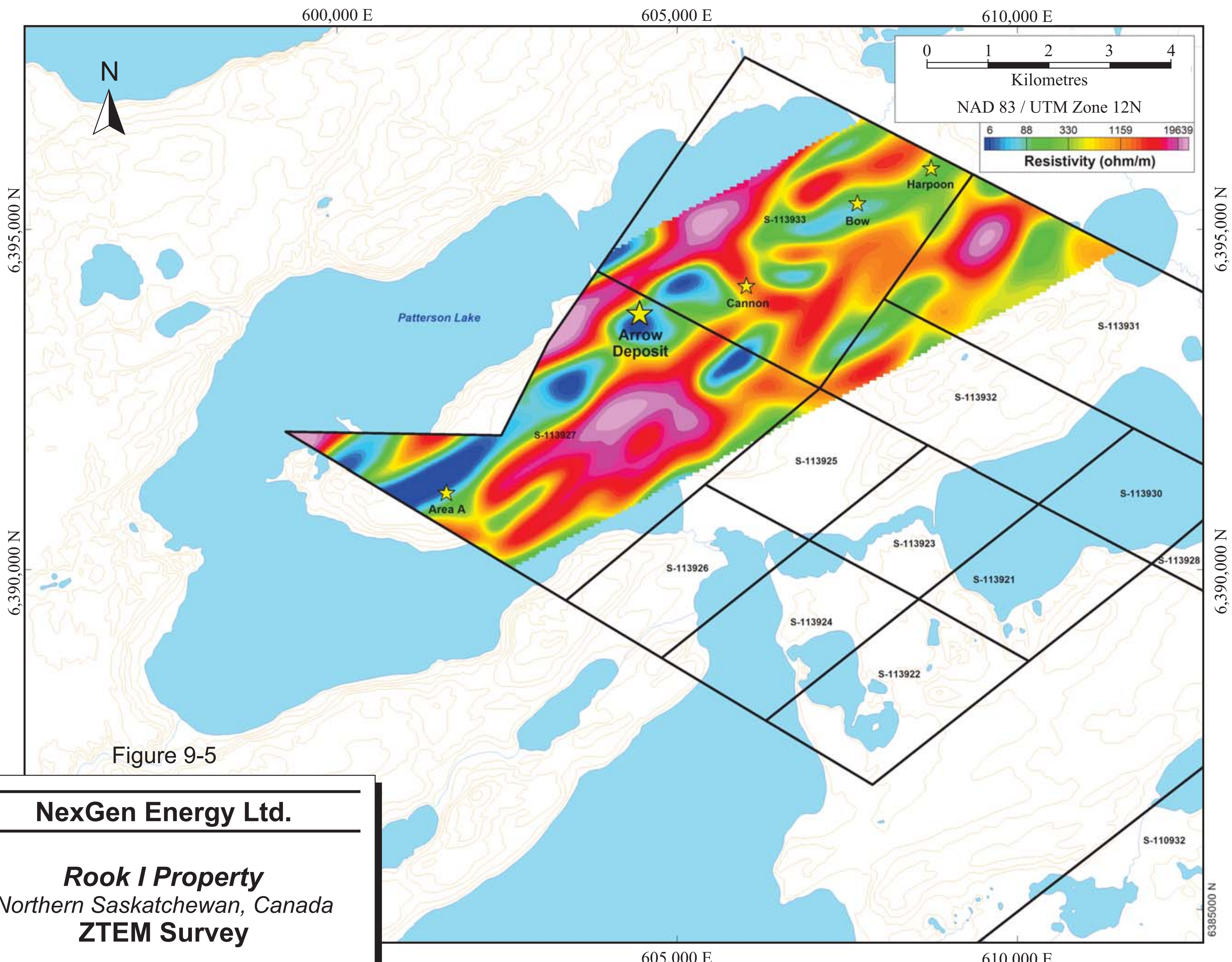


Figure 9-5

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

ZTEM Survey

September 2017

Source: NexGen Energy Ltd., 2017.

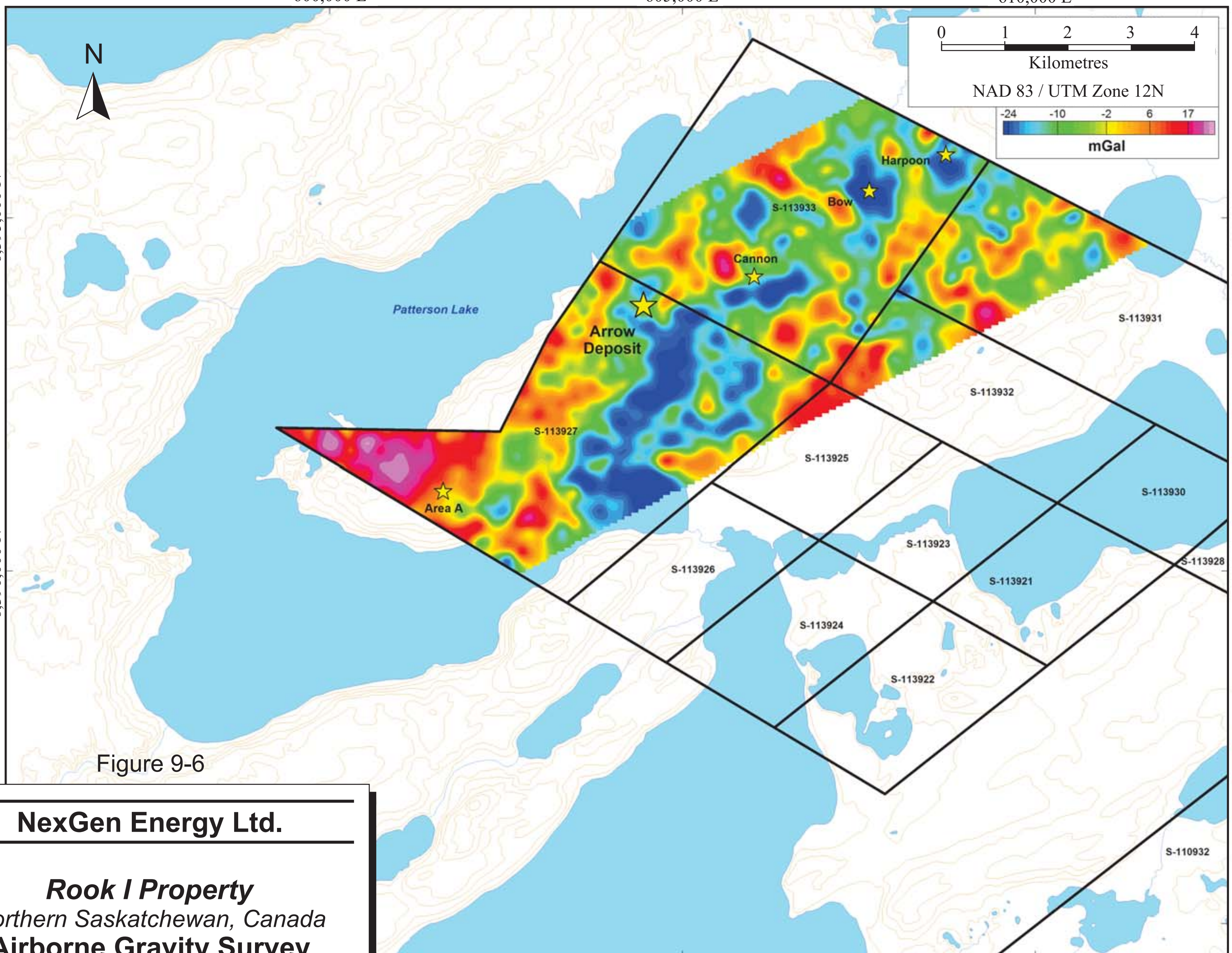


Figure 9-6

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Airborne Gravity Survey

September 2017

Source: NexGen Energy Ltd., 2017.

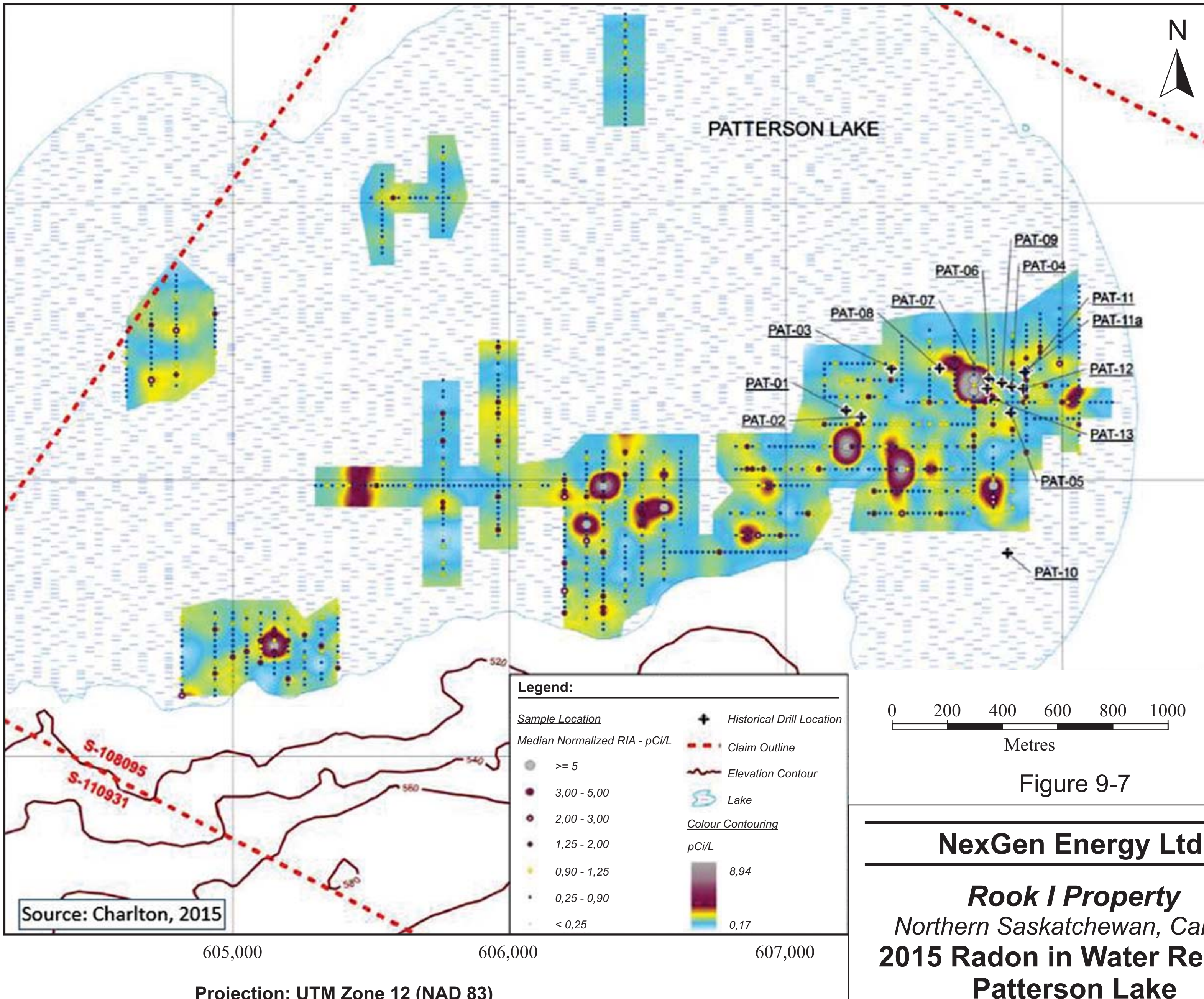


Figure 9-7

NexGen Energy Ltd.

Rook I Property

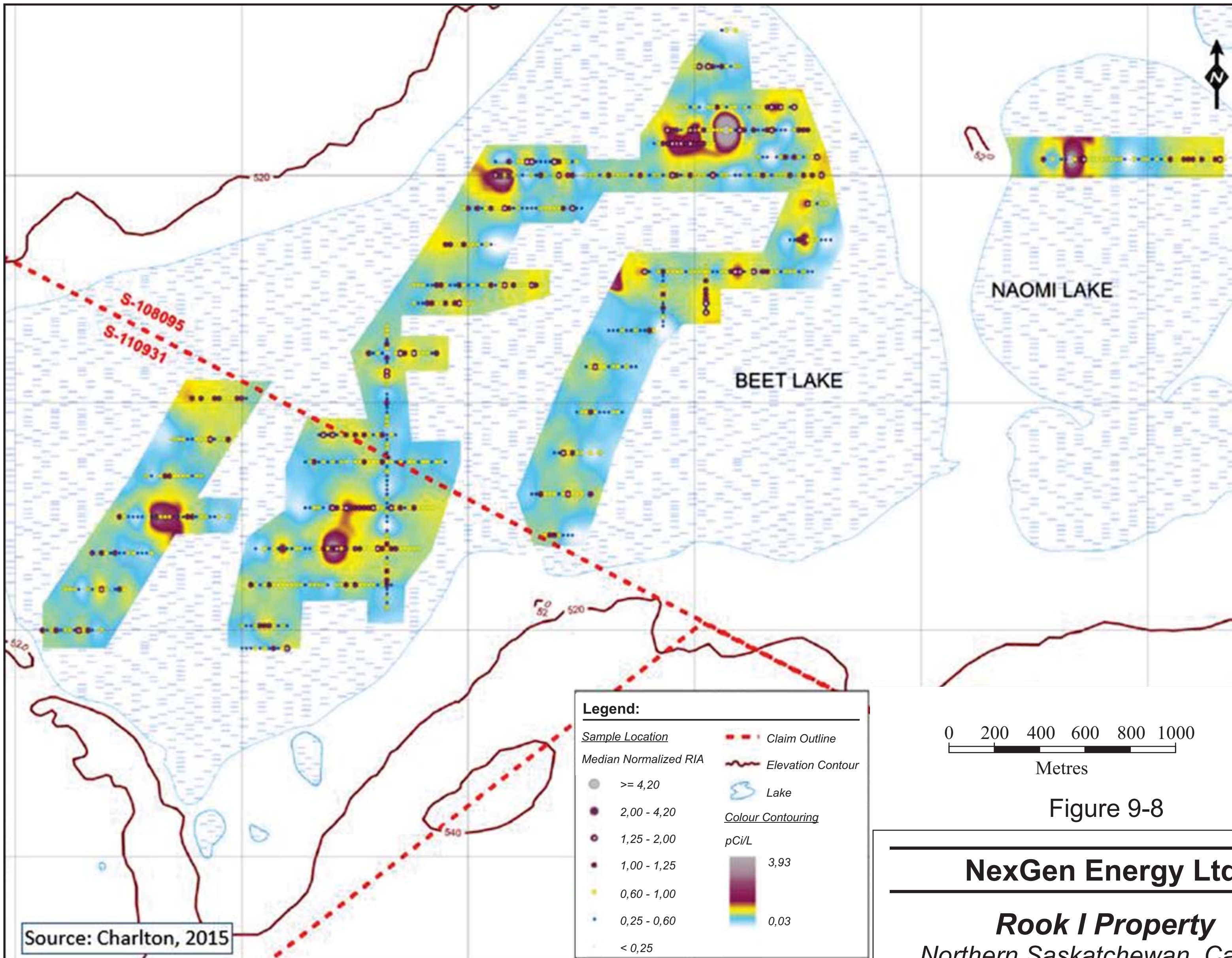
Northern Saskatchewan, Canada

2015 Radon in Water Results
Patterson Lake

September 2017

Source: NexGen Energy Ltd., 2016.

www.rpacan.com



Projection: UTM Zone 12 (NAD 83)

Figure 9-8

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

2015 Radon in Water Results
Beet and Naomi Lakes

September 2017

Source: NexGen Energy Ltd., 2016.

RPA

www.rpacan.com

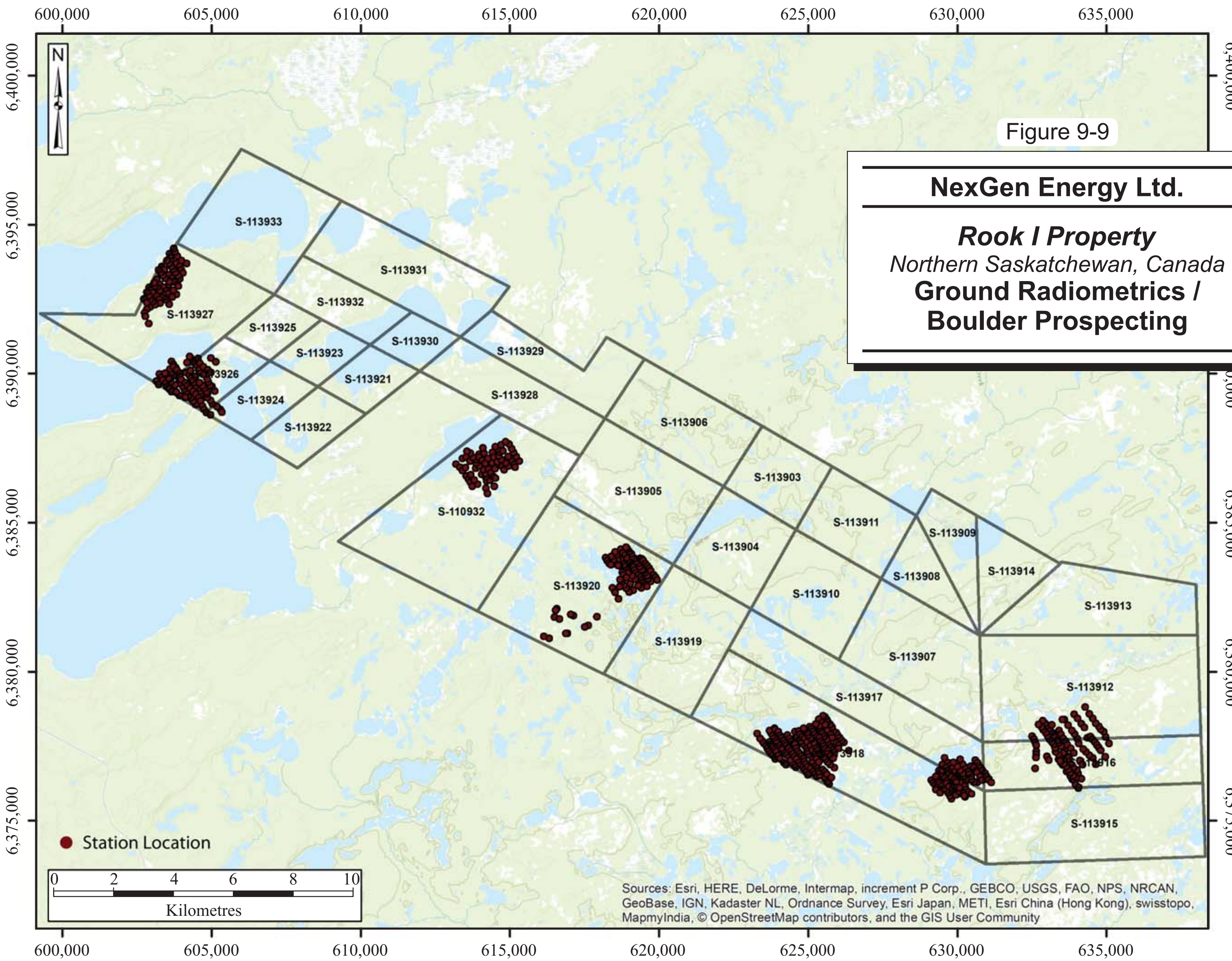
Figure 9-9

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Ground Radiometrics / Boulder Prospecting



September 2017

Source: NexGen Energy Ltd., 2016.

RPA

www.rpacan.com

10 DRILLING

Diamond drilling on the Rook I 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 Property.

As of the effective date of this report, NexGen and its predecessors have completed 456 holes totalling 227,184 m. From 2013 to the effective date of this report, NexGen has completed 418 holes totalling 221,845 m of drilling on the Property. Table 10-1 lists the holes by drilling program. Figure 10-1 illustrates the collar locations of the drill holes. Sample acquisition, preparation, security, and analysis were essentially the same for all drill programs and are described in Section 11.

The mineralization in the Arrow Deposit is sub-vertical and true width is estimated to be from 30% to 50% of reported core lengths based on currently available information. A description of the dimensions of the mineralization is provided in Section 14, Mineral Resource Estimate.

TABLE 10-1 DRILLING PROGRAMS
NexGen Energy Ltd. – Rook I Property

Year	Season	Target Area	Company	Contractor	No. of Holes	Metres Drilled
1977		Rook I Property	Kerr Addison Mines - SMDC JV		1	124
1978		Rook I Property	Canadian Occidental Petroleum Ltd.		2	290
1978		Rook I Property	Hudson Bay Exploration and Development Co. Ltd.		1	297
1979		Rook I Property	Canadian Occidental Petroleum Ltd.		7	800
1980		Rook I Property	Canadian Occidental Petroleum Ltd.		11	1,764
1980		Rook I Property	Saskatchewan Mining Development Corporation		6	746
1982		Rook I Property	Saskatchewan Mining Development Corporation		8	1,070
1982		Rook I Property	Hudson Bay Exploration and Development Co. Ltd.		2	248
2013	Fall	A	NexGen Energy Ltd.	Guardian Drilling Corp.	13	3,029
2013 Total					**13**	**3,029**
2014	Winter	A	NexGen Energy Ltd.	Aggressive Drilling Ltd.	6	1,837
		Arrow	NexGen Energy Ltd.	Aggressive Drilling Ltd.	8	4,642
		Dagger	NexGen Energy Ltd.	Aggressive Drilling Ltd.	3	963
	Summer	A	NexGen Energy Ltd.	Aggressive Drilling Ltd.	3	885
		Arrow	NexGen Energy Ltd.	Aggressive Drilling Ltd.	26	16,094
		B	NexGen Energy Ltd.	Aggressive Drilling Ltd.	3	936
		Dagger	NexGen Energy Ltd.	Aggressive Drilling Ltd.	1	413
		K	NexGen Energy Ltd.	Aggressive Drilling Ltd.	2	558
2014 Total					**52**	**26,328**
2015	Winter	Arrow	NexGen Energy Ltd.	Aggressive Drilling Ltd.	24	12,700
		Bow	NexGen Energy Ltd.	Aggressive Drilling Ltd.	14	5,185
		Fury	NexGen Energy Ltd.	Aggressive Drilling Ltd.	6	1,357
		North Patterson	NexGen Energy Ltd.	Aggressive Drilling Ltd.	10	2,473
2015	Summer	Arrow	NexGen Energy Ltd.	Aggressive Drilling Ltd.	39	26,366
		Derkson	NexGen Energy Ltd.	Aggressive Drilling Ltd.	16	4,670
		NE Bow	NexGen Energy Ltd.	Aggressive Drilling Ltd.	5	1,974
2015 Total					**114**	**54,725**
2016	Winter/Spring	Arrow	NexGen Energy Ltd.	Aggressive Drilling Ltd.	69	36,059
		Arrow Trend	NexGen Energy Ltd.	Aggressive Drilling Ltd.	2	1,746
		Cannon	NexGen Energy Ltd.	Aggressive Drilling Ltd.	11	4,229
		NE Extension	NexGen Energy Ltd.	Aggressive Drilling Ltd.	7	2,721
		North Patterson	NexGen Energy Ltd.	Aggressive Drilling Ltd.	1	408
	Summer	Arrow	NexGen Energy Ltd.	Aggressive Drilling Ltd.	53	37,033
		Arrow Trend	NexGen Energy Ltd.	Aggressive Drilling Ltd.	4	3,546
		Camp East	NexGen Energy Ltd.	Aggressive Drilling Ltd.	6	3,116
		Camp West	NexGen Energy Ltd.	Aggressive Drilling Ltd.	2	850
		Harpoon	NexGen Energy Ltd.	Aggressive Drilling Ltd.	20	7,285
2016 Total					**175**	**96,993**
2017	Winter	Arrow	NexGen Energy Ltd.	Aggressive Drilling Ltd.	56	34,271
		South Arrow	NexGen Energy Ltd.	Aggressive Drilling Ltd.	2	1,792
		Arrow Trend	NexGen Energy Ltd.	Aggressive Drilling Ltd.	6	4,707
2017 Total					**64**	**40,770**
Grand Total					**456**	**227,184**

FALL 2013 DRILL PROGRAM

From August to October 2013, NexGen completed 3,029 m of diamond drilling in 13 drill holes. The contractor was Guardian Drilling Corp. and two rigs were utilized. Drilling was supported by helicopter for most of the program. Drill holes tested targets identified from the 2013 DC resistivity survey in Area A.

Drill holes RK-13-01, RK-13-02, and RK-13-03 targeted a narrow resistivity low on the eastern part of the grid. The low was interpreted to be caused by a graphitic quartz-feldspar gneiss horizon. Drill holes RK-13-04, RK-13-05, RK-13-07, RK-13-09, RK-13-11, and RK-13-13 targeted the east side of a broad resistivity low and holes RK-13-06, RK-13-08, RK-13-10, and RK-13-12 tested the west side of the same low. The broad low is interpreted as a thick sequence of pelitic to semipelitic gneisses with variable graphite content.

Anomalous radioactivity was intersected in RK-13-05 which returned 330 ppm U_3O_8 over four metres. Visible pitchblende was identified within a strongly hematite-altered breccia. The mineralization occurs within a 29 m wide shear zone marked by faults, fractures, a variety of veins, and breccias. The host rocks are garnetiferous quartz-plagioclase-biotite gneiss with minor graphite. Follow-up drilling failed to intersect mineralization.

WINTER 2014 DRILL PROGRAM

From January to March 2014, NexGen completed 7,442 m of diamond drilling in 17 drill holes. All drilling was completed by Aggressive Drilling Ltd. (Aggressive) of Saskatoon, Saskatchewan. The purpose of the drill program was to follow up previously intersected uranium mineralization in hole RK-13-05, as well as test a combination of airborne magnetic, EM, and ground gravity geophysical anomalies that were considered priority targets for uranium mineralization.

Three areas were targeted during the winter 2014 exploration drill season: Area A, Dagger (Area D), and Arrow (Figure 10-1). Anomalous radioactivity was intersected in drill holes AR-14-01 (formerly RK-14-21) through AR-14-08 (formerly RK-14-30) at Arrow. Subsequent assay results confirmed the presence of significant uranium concentrations. These drill holes represent the first discovery of significant mineralization at the Arrow Deposit.

SUMMER 2014 DRILL PROGRAM

A total of 18,886 m of drilling was completed in 35 drill holes by NexGen on the Property from May to September 2014. Three drill rigs were utilized, all operated by Aggressive. The drill holes were primarily designed to follow up on uranium mineralization intersected at the Arrow Deposit during the previous winter season. In addition, regional holes tested a combination of magnetic, EM, and gravity targets in four areas on the Property that included Area A, Area B, Area D (Dagger), and Area K (Figure 10-1).

The program was successful and extensive uranium mineralization was intersected at the Arrow Deposit in several holes including AR-14-15 (3.42% U_3O_8 over 22.35 m and 1.52% U_3O_8 over 32.0 m) and AR-14-30 (10.17% U_3O_8 over 20.0 m and 7.54% U_3O_8 over 63.5 m).

A reinterpretation of the structural setting resulted in the identification of three main mineralized shear zones, the A1 through A3 shears. Both AR-14-15 and AR-14-30 represent the first holes drilled through what would become known as the high grade domain of the A2 shear.

WINTER 2015 DRILL PROGRAM

From January to April 2015, NexGen completed 21,715 m of diamond drilling in 54 drill holes. Four drill rigs were utilized, all operated by Aggressive. The holes were primarily designed to expand the mineralization at the Arrow Deposit. Regional holes continued to test a combination of magnetic, EM, and gravity targets at the Bow and Fury areas (Figure 10-1). At Arrow, drilling continued to intersect strong mineralization. Results are highlighted by AR-15-44b which intersected 11.55% U_3O_8 over 56.5 m including 20.0 m at 20.68% U_3O_8 and 1.0 m at 70.0% U_3O_8 in the high grade domain of the A2 shear.

A new zone of uranium mineralization was also discovered in the Bow area. Now referred to as the Bow occurrence, the best hole in this area to date has been BO-15-10. This hole intersected 0.20% U_3O_8 over 9.5 m. To date, 14 holes have been drilled at Bow. Further drilling is planned.

SUMMER 2015 DRILL PROGRAM

From June to October 2015, 33,010 m of drilling was completed in 60 drill holes on the Property. All diamond drilling was performed by Aggressive with five diamond drill rigs.

For the first time at Rook I, directional core drilling technology was utilized which allows for precise controlled deviation of drill holes and multiple branches drilled from one main pilot hole. The drilling method allows for both precise pierce point control (within three metres) and saves significant drilling metres. Directional drilling was completed by Tech Directional Services Ltd. of Millertown, Newfoundland.

Drill holes of the summer 2015 program were primarily designed to follow up on uranium mineralization intersected at the Arrow Deposit in consecutive seasons since the winter of 2014 (Figure 10-1). All holes at Arrow intersected significant and often intense uranium mineralization. Results are highlighted by AR-15-62 which intersected 6.35% U_3O_8 over 124.0 m including 10.00% U_3O_8 over 78.0 m. In addition, AR-15-49c2 intersected 12.01% U_3O_8 over 50.0 m including 18.0 m at 20.55% U_3O_8.

Regional holes of the summer 2015 program tested a combination of magnetic, EM, and gravity targets on the Property that included an on-land target area 750 m northeast of the Bow occurrence and five on-land target areas within the Derkson conductor corridor in the area of Beet Lake. Highly anomalous uranium concentrations were intersected in one hole in the Bow discovery area. RK-15-69 encountered 0.05% U_3O_8 over 2.5 m. Drill hole RK-15-69 was subsequently renamed to HP-16-03 in concert with the discovery of the Harpoon occurrence during the summer 2016 drill program (described below). Further drilling is planned.

WINTER/SPRING 2016 DRILL PROGRAM

From January to June 2016, 45,613 m of drilling was completed in 90 drill holes on the Property. All diamond drilling was performed by Aggressive with up to six diamond drill rigs. Directional core drilling technology continued to be used to delineate and expand the Arrow Deposit. During the winter/spring 2016 drill program, an initial Inferred Mineral Resource estimate for the Arrow Deposit was published (RPA, 2016).

Drill holes of the winter/spring 2016 program were primarily designed to both infill the Arrow Deposit in support of an Indicated Mineral Resource classification in the A2 high grade domain as well materially expand the footprint of mineralization in support of an expanded Inferred Mineral Resource (Figure 10-1). Before the winter/spring 2016 program, drilling at Arrow was largely completed from northwest to southeast. During this program, and in order to verify the near vertical dip of the mineralization, seven infill holes were drilled in a scissor direction from southeast to northwest. Scissor oriented drilling has verified both the near vertical dip of the mineralization and the thicknesses of the Arrow Deposit resource domains. Results from the Arrow Deposit for the winter/spring 2016 program are highlighted (Table 10-2) by AR-16-63c2 which intersected 15.20% U_3O_8 over 42 m and 12.99% U_3O_8 over 46.5 m. In addition, AR-16-76c1 intersected 11.29% U_3O_8 over 67.5 m, including 9.0 m at 51.35% U_3O_8.

Step-out drilling at the Arrow Deposit during the program was successful and two significant new areas of mineralization were discovered. Firstly, high grade uranium mineralization was identified in the A1 shear for the first time where scissor hole AR-16-84c1 intersected 2.13% U_3O_8 over 28.5 m including 3.99% U_3O_8 over 11.0 m. Secondly, uranium mineralization was intersected 180 m southwest of the Arrow Deposit where drill hole AR-16-90c3 intersected 8.09% U_3O_8 over 13.0 m including 10.33% U_3O_8 over 10.0 m. Mineralization in this area occurs in the likely extensions of the Arrow shears.

The highlight of regional drilling during the winter/spring 2016 drilling program was the discovery of a new area of uranium mineralization which has been named the Cannon occurrence. It was tested with eleven drill holes, three of which intersected narrow zones of low grade uranium mineralization. The best hole, CN-16-06 intersected 0.06% U_3O_8 over 1.0 m.

Continued regional drilling during the winter/spring 2016 program largely tested the interpreted extensions of the conductor hosting Arrow (the Arrow conductor) to the northeast. Firstly, a four-hole fence tested the Arrow conductor 200 m northeast of the Arrow Deposit. Although no mineralization was intersected, prospective hydrothermal alteration and geological structures were encountered. A three-hole fence was subsequently drilled 750 m northeast of the Arrow Deposit targeting a break in the Arrow conductor. Again, no mineralization was intersected, however, prospective hydrothermal alteration and geological structures were identified. Additionally, one hole was drilled 2.5 km northeast of the Arrow Deposit to test another interpreted break in the Arrow conductor. No mineralization was intersected. Two more holes were drilled 650 m southwest of the Arrow Deposit to test a subtle gravity anomaly that is coincident with the Arrow conductor. Both holes intersected Arrow-like semi-pelitic gneisses and prospective graphitic shear zones, but no mineralization was intersected.

SUMMER 2016 DRILL PROGRAM

From June to November 2016, 51,830 m of drilling were completed in 85 drill holes on the Property. All diamond drilling was performed by Aggressive with seven diamond drill rigs.

Directional core drilling technology continued to be used to delineate and expand the Arrow Deposit.

Drill holes of the summer 2016 program were primarily designed to both infill the Arrow Deposit in support of an Indicated Mineral Resource classification in the A2 high grade domain as well as materially expand the footprint of mineralization in support of an expanded Inferred Mineral Resource (Figure 10-1). During the program, 35 of the 53 holes drilled at the Arrow Deposit were drilled in a scissor orientation from southeast to northwest. Scissor oriented drilling again verified both the near vertical dip of the mineralization and the thicknesses of the Arrow Deposit resource domains. Results from the Arrow Deposit for the summer 2016 program are highlighted (Table 10-2) by scissor hole AR-16-98c2 which intersected 7.59% U_3O_8 over 73.5 m, including 51.40% U_3O_8 over 10.0 m. In addition, scissor hole AR-16-91c2 intersected 12.69% U_3O_8 over 40.5 m, including 25.0 m at 19.97% U_3O_8.

TABLE 10-2 2016 DRILLING HIGHLIGHTED DRILL HOLE INTERCEPTS
NexGen Energy Ltd. – Rook I Property

Zone	Drill Hole	Easting	Northing	Orientation	Main Interval				*Including*			
		UTM m	UTM m	Azimuth/Dip	From	To	Length	Grade	*From*	*To*	*Length*	*Grade*
A1 Shear	AR-16-98c1	604441	6393473	327/-73	666.0	687.0	21.0	4.17%	*678.0*	*683.0*	*5.0*	*10.97%*
	AR-16-91c3	604468	6393439	327/-70	628.0	647.0	19.0	0.82%	*639.5*	*643.0*	*3.5*	*3.05%*
					657.0	663.0	6.0	1.02%				
	AR-16-84c1	604491	6393435	328/-70	701.0	729.5	28.5	2.13%	*715.0*	*726.0*	*11.0*	*3.99%*
A2 High Grade Domain	AR-16-111c2	604434	6393404	327/-69	535.0	565.0	30.0	15.07%	*542.5*	*548.5*	*6.0*	*51.97%*
									542.5	*544.5*	*2.0*	*68.20%*
	AR-16-112c2	604397	6393364	327/-70	571.5	612.0	40.5	6.18%	*576.5*	*600.5*	*24.0*	*10.35%*
									583.5	*587.5*	*4.0*	*44.80%*
	AR-16-112c1	604397	6393364	327/-70	568.0	583.0	15.0	3.46%	*577.0*	*582.0*	*5.0*	*10.08%*
	AR-16-110c1	604610	6393454	327/-70	627.5	636.0	8.5	3.82%	*629.0*	*632.0*	*3.0*	*9.98%*
	AR-16-91c3	604468	6393439	327/-70	485.0	503.5	18.5	3.26%	*490.5*	*498.0*	*7.5*	*7.40%*
	AR-16-85c1	604236	6393705	143/-70	460.0	484.0	24.0	4.40%	*465.5*	*469.0*	*3.5*	*29.15%*
	AR-16-84c4	604491	6393435	328/-70	566.0	604.0	38.0	1.92%	*573.5*	*584.5*	*11.0*	*6.15%*
	AR-16-84c3	604491	6393435	328/-70	540.0	571.0	31.0	3.26%	*548.5*	*566.5*	*18.0*	*5.58%*
									560.0	*566.5*	*6.5*	*10.89%*
	AR-16-84c2	604491	6393435	328/-70	535.5	574.5	39.0	2.10%	*554.0*	*574.5*	*18.5*	*4.27%*
	AR-16-80c4	604172	6393695	147/-70	529.0	554.0	25.0	6.38%	*536.0*	*546.0*	*10.0*	*14.66%*
A2 Shear	AR-16-98c2	604441	6393473	327/-73	454.0	527.5	73.5	7.59%	*471.0*	*526.0*	*55.0*	*10.12%*
									501.0	*527.7*	*26.5*	*20.27%*
									502.0	*512.0*	*10.0*	*51.40%*
	AR-16-96c2	604310	6393766	147/-73	551.5	609.0	57.5	4.17%	*591.0*	*601.0*	*10.0*	*15.73%*
	AR-16-91c2	604468	6393439	327/-70	522.0	562.5	40.5	12.69%	*526.0*	*551.0*	*25.0*	*19.97%*
									541.0	*542.5*	*1.5*	*63.93%*
	AR-16-86c1	604263	6393703	142/-71	402.0	446.5	44.5	8.85%	*423.5*	*442.5*	*19.0*	*20.40%*

Zone	Drill Hole	Easting UTM m	Northing UTM m	Orientation Azimuth/Dip	Main Interval From	To	Length	Grade	*Including From*	*To*	*Length*	*Grade*
	AR-16-81c3	604137	6393683	145/-69	546.0	569.0	23.0	17.19%	*428.5*	*433.5*	*5.0*	*39.52%*
									553.5	*563.0*	*9.5*	*39.82%*
									555.0	*560.0*	*5.0*	*49.27%*
	AR-16-78c4	604286	6393759	138/-68	480.5	518.0	37.5	17.60%	*490.0*	*505.0*	*15.0*	*29.92%*
									493.5	*495.0*	*1.5*	*71.93%*
	AR-16-78c1	604286	6393759	138/-68	443.0	480.5	37.5	12.94%	*443.5*	*460.5*	*17.0*	*20.25%*
									451.5	*455.5*	*4.0*	*59.38%*
	AR-16-76c4	604195	6393692	140/-70	537.5	569.5	32.0	1.97%	*556.5*	*566.5*	*10.0*	*5.15%*
					576.5	644.5	68.0	2.09%	*629.0*	*643.5*	*14.5*	*5.08%*
	AR-16-76c3	604195	6393692	140/-70	470.5	544.5	74.0	10.28%	*494.5*	*544.5*	*50.0*	*15.05%*
									515.5	*516.0*	*0.5*	*80.00%*
	AR-16-76c1	604195	6393692	140/-70	441.0	508.5	67.5	11.29%	*496.0*	*505.0*	*9.0*	*51.35%*
									497.0	*497.5*	*0.5*	*79.80%*
	AR-16-74c1	604232	6393748	144/-69	532.5	496.5	47.0	3.41%				
					588.0	604.0	16.0	2.21%				
	AR-16-72c2	604259	6393761	139/-71	564.5	598.0	33.0	4.65%				
					674.0	685.0	11.0	4.08%				
	AR-16-64c3	604284	6393762	154/-63	504.0	532.0	28.0	6.14%	*510.5*	*524.5*	*14.0*	*10.30%*
					536.0	562.5	26.5	3.48%				
	AR-16-63c3	604263	6393704	156/-74	466.0	481.0	15.0	8.28%				
					488.0	607.0	119.0	2.30%				
	AR-16-63c2	604263	6393704	156/-74	458.0	800.0	42.0	15.20%	*469.0*	*500.0*	*31.0*	*20.09%*
					503.5	550.0	46.5	12.99%	*530.0*	*534.0*	*4.0*	*53.48%*
A3 Shear	AR-15-61c2	604184	6393676	140/-74	773.5	784.0	10.5	8.52%				
					804.0	841.0	37.0	6.30%	*826.0*	*841.0*	*15.0*	*10.10%*
	AR-15-57c2	604327	6393758	140/-74	580.5	610.0	29.5	5.89%	*589.0*	*604.5*	*15.5*	*10.27%*
	AR-15-57c3	604327	6393758	140/-74	579.5	630.0	50.5	2.74%				
	AR-16-105c1	604584	6393385	327/-70	609.0	632.5	23.5	2.93%	*612.5*	*628.5*	*16.0*	*4.09%*
					641.5	652.5	11.0	2.31%				
	AR-16-101c2	604595	6393445	327/-70	523.0	534.5	11.5	2.79%	*523.0*	*530.5*	*7.5*	*4.23%*
					552.5	580.0	27.5	0.67%	*552.5*	*557.7*	*5.0*	*2.78%*
A4 Shear	AR-15-41	604307	6393696	140/-75	739.0	759.5	20.5	4.30%	*739.0*	*751.5*	*12.5*	*6.69%*
	AR-15-58c1	604239	6393666	146/-76	875.0	880.0	5.0	7.23%				
					883.0	902.0	19.0	2.01%				
	AR-15-76c1	604195	6393692	140/-70	740.5	768.5	28.0	1.97%				
Southwest Arrow	AR-16-97	604046	6393498	147/-73	750.5	768.5	18.0	2.64%	*753.0*	*759.0*	*6.0*	*5.89%*
	AR-16-90c3	603916	6393392	140/-75	702.5	707.5	5.0	14.35%				
					710.5	723.5	13.0	8.09%	*710.5*	*720.5*	*10.0*	*10.33%*
	AR-16-90c2	603916	6393392	140/-75	774.0	777.5	3.5	3.63%				
	AR-16-82c3	603976	6393407	140/-75	672.0	678.0	6.0	3.46%				
					752.5	758.5	6.0	4.21%				
	AR-16-77c2	603943	6393443	139/-73	614.0	651.0	37.0	0.63%	*623.0*	*633.0*	*10.0*	*1.79%*

Note: The mineralization in the Arrow Deposit is sub-vertical and true width is estimated to be from 30% to 50% of reported core lengths based on currently available information. Hole locations are presented in NAD 83, Zone 12N. Hole orientations are at the hole collar.

During the summer 2016 program, the highlight of regional exploration drilling was the discovery of the Harpoon occurrence with drill hole HP-16-08. The hole intersected 17.0 m of continuous mineralization, including 4.5 m of composite off-scale radioactivity (>10,000 counts per second (cps) to >61,000 cps via handheld RS-120 model scintillometer).

Furthermore, the Harpoon occurrence has currently been drilled to within 27 m of the northeast boundary of the Rook I Property. It is likely that Harpoon crosses the Property boundary to the northeast where it may be continuous with the Spitfire occurrence, owned by a joint venture among Cameco Corp. (40%), Areva Inc. (40%), and Purepoint Uranium Group Inc. (20%),

Regional exploration drilling was also conducted at three other target areas during the summer 2016 program. Firstly, a large airborne ZTEM resistivity anomaly 1.1 km southwest of the Arrow Deposit was tested with a four-hole fence where encouraging clay alteration and graphitic shear zones were intersected. Secondly, coincident gravity and VTEM anomalies were tested with two holes approximately 3 km southwest of the Arrow Deposit. Finally, coincident gravity and VTEM anomalies were tested with six holes approximately 2.3 km south-southwest of the Arrow Deposit. In this area, informally referred to as the Camp East area due to the close proximity to the Rook I camp, narrow intersections of weakly anomalous radioactivity were intersected in two drill holes. In addition, all six drill holes intersected extensive sections of hydrothermal alteration.

WINTER 2017 DRILL CAMPAIGN

The PEA is based on the updated Mineral Resource estimate that includes drilling up to November 2016 and disclosed in a Technical Report dated March 31, 2017 (RPA, 2017), which is reproduced in Section 14 of this Technical Report. At the time of commencing the PEA, the winter 2017 drill campaign, which commenced on January 23, 2017, and was completed on May 7 2017, was ongoing.

The winter 2017 drill campaign consisted of approximately 34,000 m in 56 holes at the Arrow Deposit, 1,792 m in two holes at South Arrow and 4,707 m in six holes along trend from Arrow. The purpose of the holes was threefold: i) to test gaps in drilling at the northeast and southwest ends of the deposit; ii) conduct step-out drilling; and iii) to allow for possible conversion of Inferred Resources to Indicated Resources. Although preliminary indications of mineralization were available based on scintillometer readings, mineral assay results were not available for any of the holes and the data has been excluded from the PEA. RPA reviewed the preliminary scintillometer results for the holes in the vicinity of the Mineral Resource estimate set forth herein and is of the opinion that that estimate remains valid for the purposes of the PEA.

DRILL HOLE SURVEYING

The collar locations of drill holes are spotted and surveyed by differential base station GPS using the UTM Zone 12N NAD83 reference datum. The drill holes have a concise naming convention with the prefix “AR” denoting “Arrow” or “RK” denoting “Rook I” followed by two digits representing the year and the number of the drill hole. In general, most of the drilling was completed in both northwest and southeast directions with drill holes spaced approximately 15 m to 50 m apart based on directional drilling orientation.

The trajectory of all drill holes is determined during drilling with a Reflex instrument in single point mode, which measures the dip and azimuth at 30 m intervals. Both immediately below casing and after completion, all holes at the Arrow Deposit are surveyed via Stockholm Precision Tools north seeking gyro, which measures the dip and azimuth continuously down hole. All holes within the Property are cemented from the bottom of the hole to approximately 5 m above the top of the Devonian sandstones, if present, or to the top of bedrock if not present.

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). 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 NexGen’s camp where the box is initially surveyed with a Radiation Solutions RS-120 scintillometer to determine if any boxes contain mineralization. A threshold of 500 cps is used for Arrow core, and 300 cps for core from elsewhere on the Property. All mineralized core boxes above the threshold, plus a box before and after, is taken to the “hot” shacks for logging and sampling. All other core is moved to be processed in the “cold” logging shacks.

Before the core is split for sampling, depth markers are checked, core is carefully reconstructed, washed, geotechnically logged for lithologies, alteration, structures, and mineralization, rock mass rating (RMR’), resurveyed in detail with scintillometer, photographed (wet), and marked for sampling. Sampling of the holes for assay is guided by the observed geology and readings from a hand-held scintillometer.

Logging and sampling information is entered into a Microsoft Access database template on a laptop computer which is integrated into the Project master digital database on a daily basis.

Core recovery at Arrow is excellent, allowing for representative samples to be taken and accurate analyses to be performed. RPA is not aware of any drilling, sampling, or recovery factors that could materially impact the accuracy and reliability of the results.

In RPA's opinion, the drilling, core handling, logging, and sampling procedures meet or exceed industry standards and are adequate for the purpose of Mineral Resource estimation.

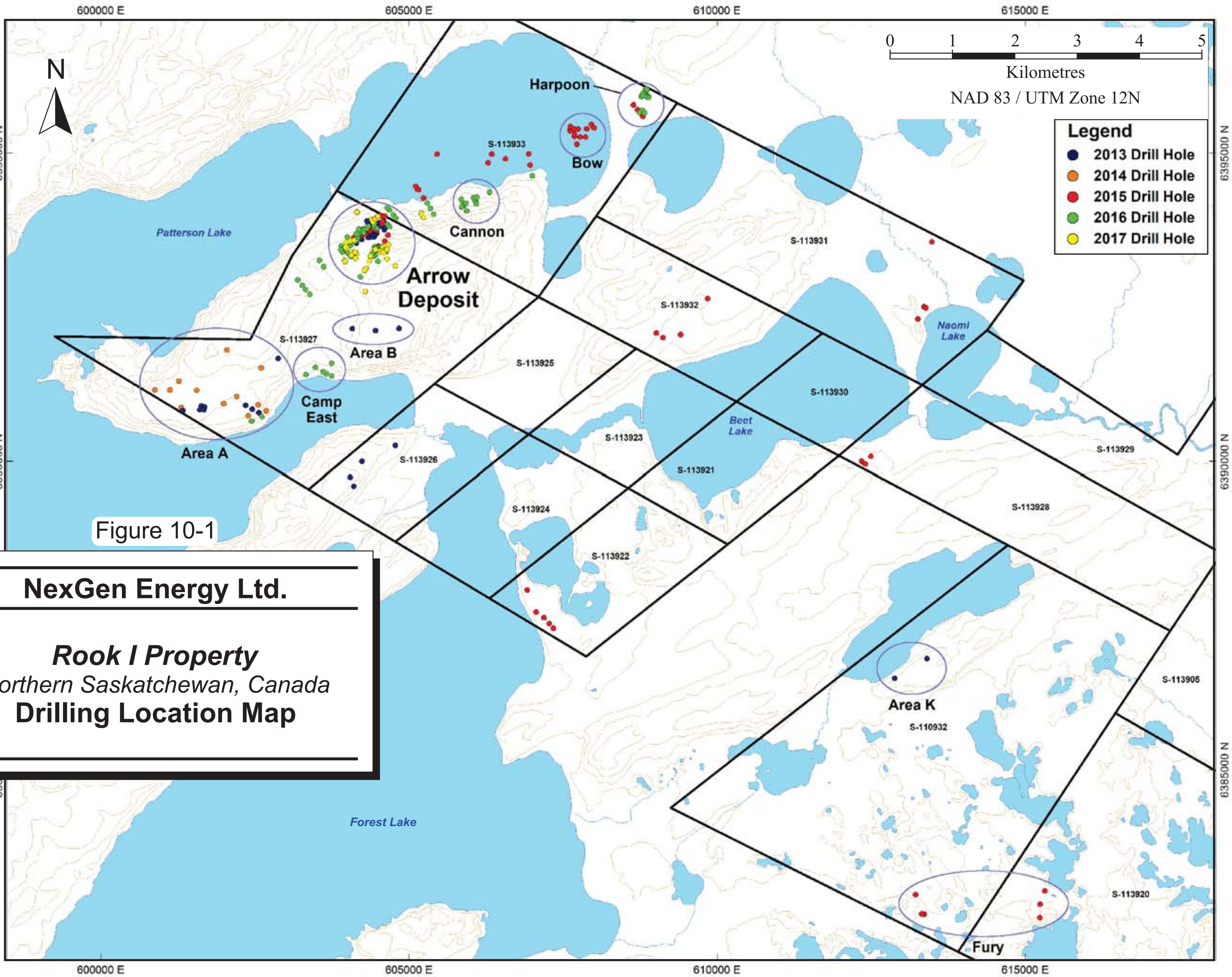


Figure 10-1

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Drilling Location Map

September 2017

Source: NexGen Energy Ltd., 2017.

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

SAMPLE PREPARATION

Three types of samples are collected for geochemical analysis: (i) point samples taken at nominal spacing of five metres and meant to be representative of the interval or of a particular rock unit; (ii) composite samples in Athabasca sandstone where one centimetre long pieces are taken at the end of each core box row over 10 m intervals (five to seven pieces normally for a sample); and (iii) 0.5 m and 1.0 m samples taken over intervals of elevated radioactivity and one or two metres beyond the radioactivity.

On site sample preparation consists of core splitting by geological technicians under the supervision of geologists. One half of the core is placed in plastic sample bags pre-marked with the sample number along with a sample number tag. The other half is returned to the core box and stored at the core storage area located near the logging facility at the project site. The bags containing the split samples are then placed in buckets with lids for transport to Saskatchewan Research Council Geoanalytical Laboratories (SRC) in Saskatoon, Saskatchewan, by NexGen personnel. SRC operates in accordance with ISO/IEC 17025:2005 (CAN-P-4E), General Requirements for the Competence of Mineral Testing and Calibration laboratories. SRC is independent of NexGen and RPA.

All other sample preparation is carried out by SRC prior to analyses. SRC crushes each sample to 60% passing -10 mesh and then riffle split to a 200 g sample with the remainder retained as coarse reject. The 200 g sample is then milled to 90% passing -140 mesh.

ANALYSES

DRILL CORE GEOCHEMICAL ANALYSES AND ASSAY

All samples are analyzed at SRC by inductively coupled plasma optical emission spectroscopy (ICP-OES) or inductively coupled plasma mass spectroscopy (ICP-MS) for 64 elements including uranium. Samples with low radioactivity are analyzed using ICP-MS. Samples with anomalous radioactivity are analyzed using ICP-OES.

Partial and total digestion runs are completed on most samples. For the partial digestion, an aliquot of each sample is digested in HNO_3/HCl for one hour at 95°C then diluted using de-ionized water. For the total digestion, an aliquot of each sample is heated in a mixture of HF/HNO_3/$HClO_4$ until completely dried down and the residue dissolved in dilute HNO_3. For uranium assays, an aliquot of sample pulp is completely digested in concentrated HCl:HNO_3 and then dissolved in dilute HNO_3 before analysis using ICP-OES. For boron, an aliquot of pulp is fused in a mixture of NaO_2/$NaCO_3$ in a muffle oven. The fused melt is dissolved in de-ionized water before analysis using ICP-OES.

Selected samples are also analyzed for gold, platinum, and palladium using traditional fire assay methods.

DRILL CORE PIMA ANALYSES

Samples are also collected for clay mineral identification using infrared spectroscopy regularly in areas of clay alteration. Samples are typically collected at five metre intervals and consist of centimetre sized pieces of core selected by a geologist. These samples are transported to Rekasa Rocks Inc. (Rekasa) of Saskatoon, Saskatchewan, by NexGen staff for analysis. Rekasa performs clay analyses using a portable infrared mineral analyzer (PIMA).

DRILL CORE BULK DENSITY ANALYSES

NexGen personnel perform bulk density measurements on full core on site using standard laboratory techniques. In mineralized zones, bulk density is measured from samples at 2.5 m intervals, where possible (i.e., approximately 20% of all mineralized samples). Pieces of core are sealed in cellophane wrap and are then weighed in air and weighed submerged in water. Bulk density is then calculated from the resulting data. In order for density to be correlated with uranium grades across the data set, each density sample directly correlates with a sample sent to SRC for assay (i.e., downhole intervals are the same for density samples and assay samples).

QUALITY ASSURANCE AND QUALITY CONTROL

NEXGEN QA/QC PROGRAM OVERVIEW

Quality assurance/quality control (QA/QC) programs validate the accuracy of analytical results and are essential for reliable estimates of Mineral Resources. NexGen's QA/QC program includes:

- Duplicate samples – Determination of precision/repeatability
- Standard reference materials (SRM) – Determination of accuracy
- Blank samples – Screen cross-contamination between samples during preparation and analyses

Results from the QA/QC samples are continually tracked by NexGen as certificates for each sample batch are received. If QA/QC samples of a sample batch pass within acceptable limits, the results of the sample batch are imported into the master database. To date, no batches have failed QA/QC testing.

PROTOCOLS

Field duplicates, pulp duplicates or crush duplicates are submitted to SRC at every 50th even numbered mineralized sample sent for analysis with the original sample on XXXX48 or XXXX98, the field duplicate on XXXX49 or XXXX99, and alternating pulp and crush lab duplicates with pulp duplicates on XXXX50 and crush duplicates on XXXX00. These samples are split into quarter cores at the Rook I core processing facility. A minimum of one field duplicate is submitted for each mineralized hole.

SRC also completes laboratory duplicate analysis on one in every 10 in-house bulk density measurements completed by NexGen before the respective samples are crushed prior to geochemical analyses. Bulk density measurements at SRC are completed on half cores of entire samples via wax methods.

SRMs are also regularly inserted into the sample stream. All SRMs were obtained from the Canadian Centre for Mineral and Energy Technology (CANMET) and include BL2-A (0.502 +/- 0.002 % U_3O_8), BL-4a (0.1472 +/- 0.008 % U_3O_8), and BL-5 (8.36 +/- 0.04 % U_3O_8). The SRM selected is based on scintillometer measurements. In zones of drill core radioactivity between 500 cps and 5,000 cps, BL4a is used. In zones of drill core radioactivity between 5,000 cps and 10,000 cps, BL-2a is used. In zones of drill core radioactivity in excess of 10,000 cps, BL-5 is used. SRMs are inserted into the sample stream every 50 mineralized samples so that they fall on XXXX20 and XXXX60. Furthermore, at least one SRM is inserted for each mineralized drill hole.

Blank samples are inserted into the sample stream for 50 mineralized samples so that they fall at XXXX40 and XXXX80. At least one blank sample is inserted into the sample stream for each mineralized drill hole. In many cases, and at the discretion of the geologist logging the hole, blanks are also inserted immediately above, randomly within, and below zones of significant mineralization. Blank material samples consist of pieces of rose quartz obtained from Deptuck's Landscaping & Supplies of Saskatoon, Saskatchewan.

QA/QC RESULTS

Results of the QA/QC program have been well documented by NexGen. RPA has relied on documentation provided by NexGen in addition to review of the QA/QC data. In summary, results indicate that the resource database is suitable to estimate Mineral Resources for the Arrow Deposit.

Figures 11-1 to 11-3 show the results of SRMs BL-2a, BL-4a, and BL-5 analyzed at SRC. SRMs fail when more than three standard deviations (3SD) from the mean of the measured values for each type of material is returned. Two samples of BL-2a, one sample from BL-4a one sample from BL-5 returned values in excess of 3SD from their respective means. Because the four samples plotted only just above the 3SD threshold, the decision was made to pass the respective batches.

Figure 11-4 shows blank sample results. Blank samples fail when results are greater than 10 times the lower detection limit. In the case of uranium assays completed at SRC, the pass/fail threshold is 0.005% U_3O_8. One sample failure occurred. Sample 25604 returned 0.036% U_3O_8. Because all other QA/QC samples from that sample batch passed, NexGen chose not to take corrective steps and the batch was passed.

Figure 11-5 shows results from field duplicate samples. Figure 11-6 shows results from bulk density duplicate samples. The results are as expected with acceptable repeatability for both data sets.

FIGURE 11-1 REFERENCE MATERIAL CONTROL CHART - BL-2A (LOW GRADE STANDARD)

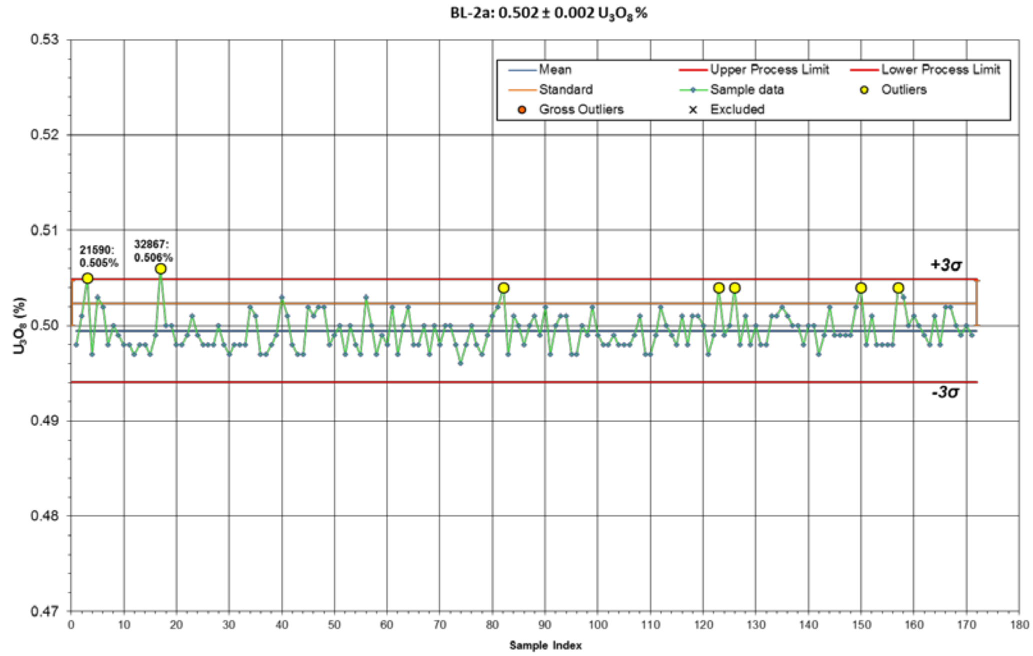


FIGURE 11-2 REFERENCE MATERIAL CONTROL CHART - BL-4A (MEDIUM GRADE STANDARD)

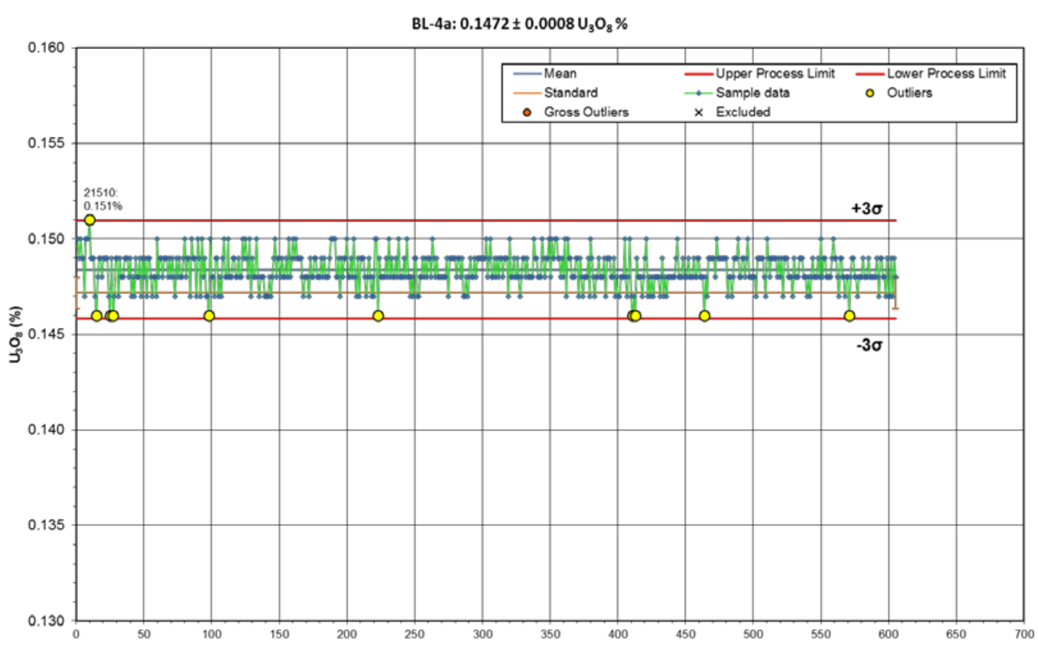


FIGURE 11-3 REFERENCE MATERIAL CONTROL CHART - BL-5 (HIGH GRADE STANDARD)

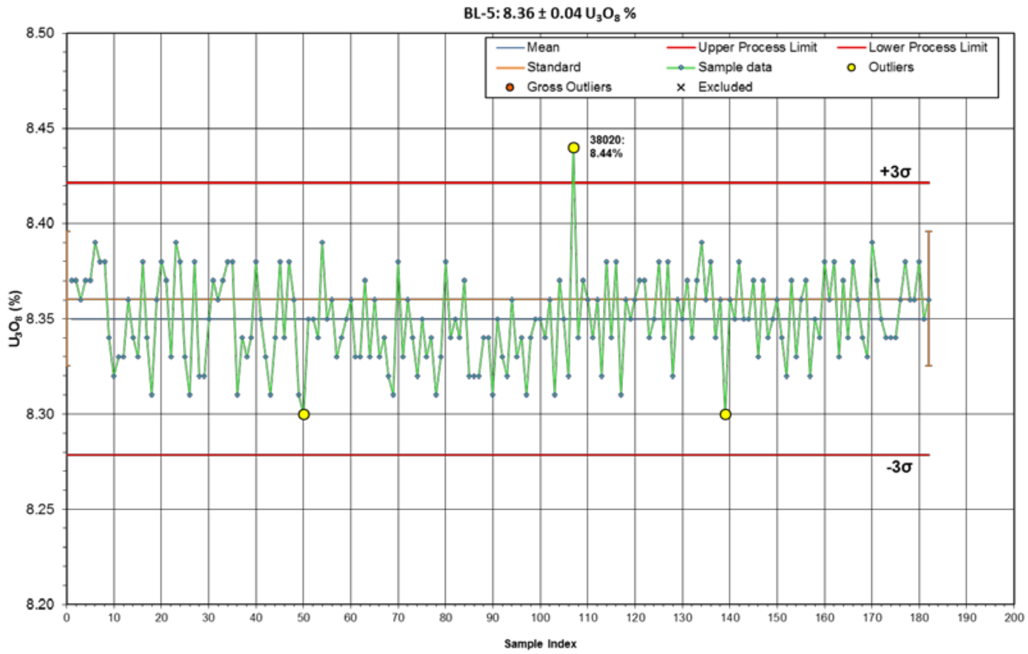


FIGURE 11-4 BLANK MATERIAL CONTROL CHART

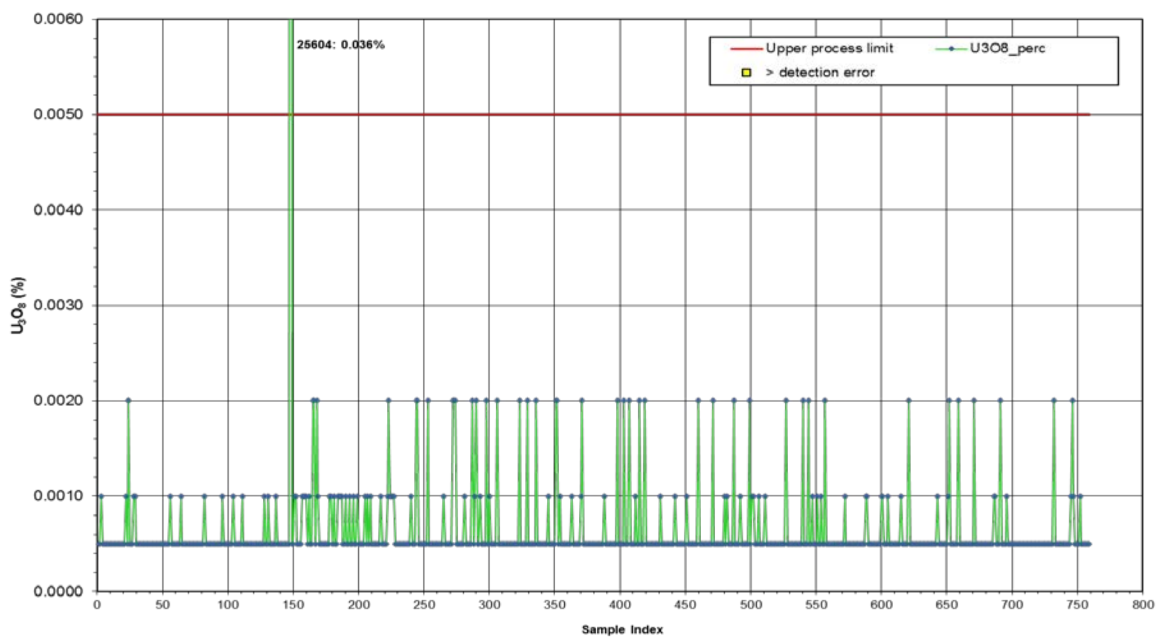


FIGURE 11-5 FIELD DUPLICATE CONTROL CHART

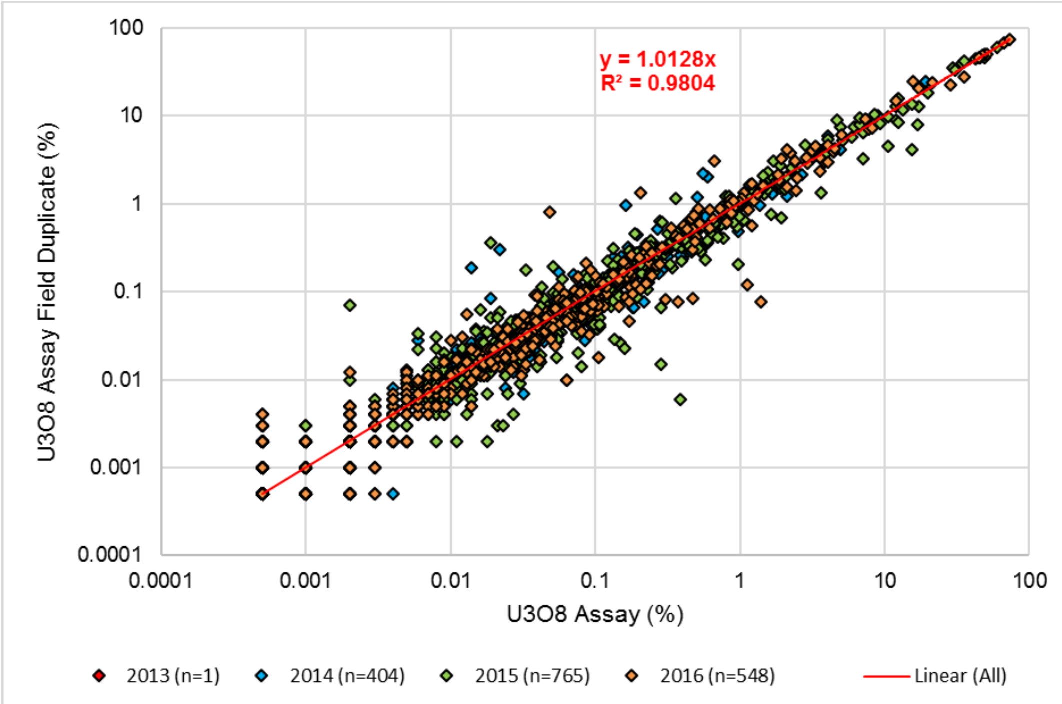
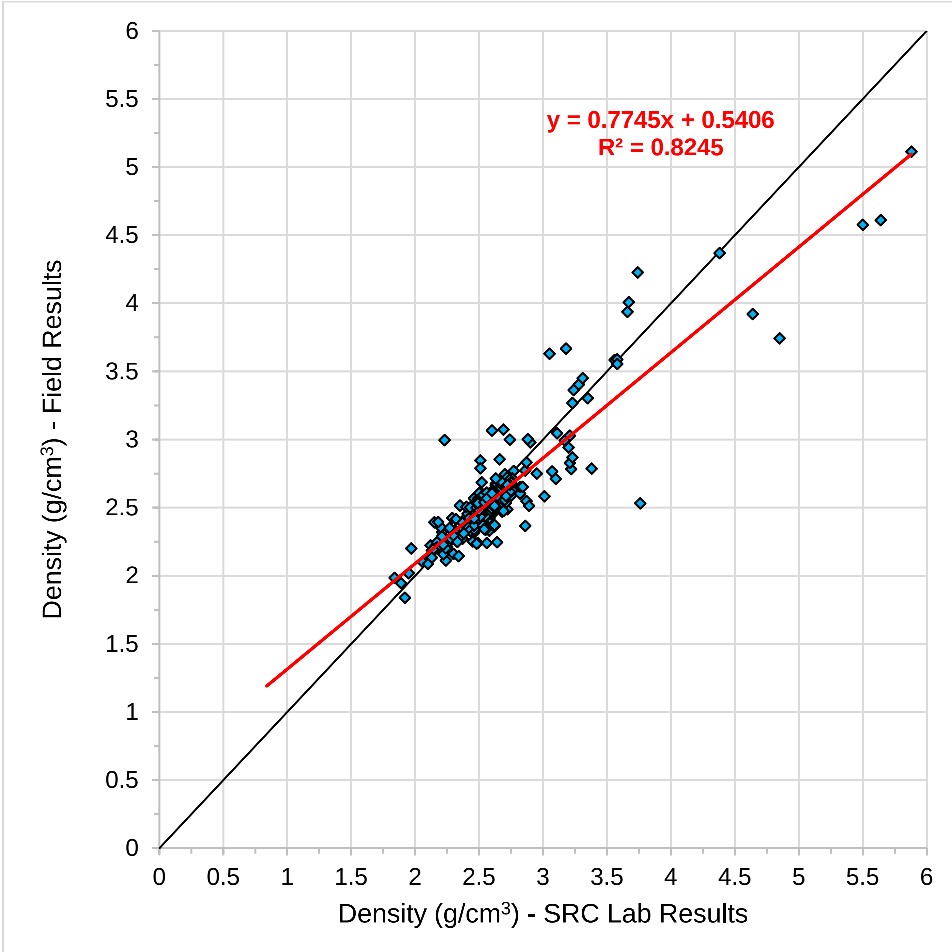


FIGURE 11-6 BULK DENSITY COMPARISON CHART



SRC INTERNAL QA/QC PROGRAM

Quality control was maintained for all analytical apparatus at SRC with certified reference material used to track analytical drift, and data accuracy and precision. Independently of NexGen's QA/QC samples, standards were inserted into sample batches at regular intervals by SRC. Standards used include BL-2a, BL-4a, BL-5, and SRCUO2 (1.59% U_3O_8), a standard produced in-house at the laboratory. In addition, samples were regularly analysed in duplicate. All quality control results must be within specified limits otherwise corrective action is taken. If there is a failure in a QA/QC analysis, the entire batch is reanalysed.

All processes performed at the laboratory are subject to a strict audit program, which is performed by approved trained professionals.

Based on the data validation and the results of the standard, blank, and duplicate analyses, RPA is of the opinion that the assay and bulk density databases are of sufficient quality for Mineral Resource estimation at the Arrow Deposit.

SECURITY

As each hole is being drilled, drilling contractor personnel place the core in wooden boxes at the drill site and seal core boxes with screwed on wooden lids. Core is then delivered to the Rook I core processing facility by the contractor twice daily. Only the contractor and NexGen geological staff are authorized to be at drill sites and in the core processing facility. After logging, sampling and shipment preparation, samples are transported directly from the Project site to SRC by NexGen staff.

SRC places a large emphasis on confidentiality and data security. Appropriate steps are taken to protect the integrity of samples at all processing stages. Access to the SRC premises is restricted by an electronic security system and patrolled by security guards 24 hours a day.

After the completion of analyses, data are sent securely via electronic transmission to NexGen. These results are provided as a series of PDFs and an Excel spreadsheet.

In RPA's opinion, the security and confidentially protocols as designed and implemented by NexGen are adequate and the assay results within the database are suitable for use in a Mineral Resource estimate.

12 DATA VERIFICATION

RPA reviewed and verified the resource database used to estimate the Mineral Resources for the Arrow Deposit. The verification included a review of the QA/QC methods and results, comparison of the database assay table against assay certificates, standard database validation tests, and a site visit including drill core review. No limitations were placed on RPA's data verification process. The review of the QA/QC program and results is presented in Section 11, Sample Preparation, Analyses and Security.

RPA considers the resource database reliable and appropriate to prepare a Mineral Resource estimate.

SITE VISIT AND CORE REVIEW

Mr. Mathisen, CPG, visited the Property on January 19 to 20, 2016 and January 22 to 25, 2017 during the winter drill programs in connection with the Arrow Mineral Resource estimate. RPA visited several active drill sites and targets. RPA reviewed core handling, logging, sample preparation and analytical protocols, density measurement system, and storage procedures. RPA examined core from drill holes AR-14-30, AR-15-57c3, AR-15-62, AR-16-98c1, AR-16-106c1, and AR-16-111c1 and compared observations with assay results and descriptive log records made by NexGen geologists. As part of the review, RPA verified the occurrences of mineralization visually and by way of a hand-held scintillometer.

As part of the data verification process, RPA also:

- Reviewed the Leapfrog model parameters and geological interpretation.
- Reviewed how drill hole collar locations are defined and inspected use of the Devico directional drilling.
- Observed data management system and obtained master database.
- Obtained SRC laboratory certificates for all 2016 drilling assays.

DATABASE VALIDATION

RPA performed the following digital queries:

- Header table: searched for incorrect or duplicate collar coordinates and duplicate hole IDs.

- Survey table: searched for duplicate entries, survey points past the specified maximum depth in the collar table, and abnormal dips and azimuths.

- Core recovery table: searched for core recoveries greater than 100% or less than 80%, overlapping intervals, missing collar data, negative lengths, and data points past the specified maximum depth in the collar table.

- Lithology: searched for duplicate entries, intervals past the specified maximum depth in the collar table, overlapping intervals, negative lengths, missing collar data, missing intervals, and incorrect logging codes.

- Geochemical and assay table: searched for duplicate entries, sample intervals past the specified maximum depth, negative lengths, overlapping intervals, sampling lengths exceeding tolerance levels, missing collar data, missing intervals, and duplicated sample IDs.

- The data was exported from a Microsoft Access database and imported into a Vulcan database.
    - The 2016 Vulcan database utilized a similar design as the Microsoft Access Resource database.
    - Quality control completed in Access, validation completed in Vulcan and Leapfrog.
    - Implemented a density hierarchy:
        1 – SRC density values (laboratory results)
        2 – NexGen density values (field results)
        3 – Calculated values (polynomial regression)

Validation files, quality control files (i.e., duplicates, blanks, standards), third party metallurgical work, and an internal check list (i.e., survey datum, equipment used, estimation parameters, etc.) are all available in the provided Vulcan workspace.

No significant issues were identified.

INDEPENDENT VERIFICATION OF ASSAY TABLE

The assay table contains 51,344 laboratory records from 209 drill holes. RPA verified approximately 9,760 records from the 2015 and 2016 drilling campaigns representing approximately 19% of the data for uranium values against the laboratory certificates. Other than some rounding differences and mistyped sample numbers, no major discrepancies were found.

Based on the data validation by NexGen 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.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

INTRODUCTION

A testwork campaign was conducted in 2016, prior to DRA's involvement in the Project. The campaign was undertaken by Saskatchewan Research Council (SRC) for Feasby Consulting (Feasby), working as a sub-consultant to Clifton, on behalf of NexGen during September 2016. A total of 131 samples were received from Feasby which were then equally split into sub-samples and composited to produce a single 55 kg sample with a measured head grade of 4.5% U_3O_8, 0.21% Mo, and 0.81 g/t Au. The sample was then split into one kilogram sub-samples required for the respective tests which formed part of the campaign. Uraninite is the primary uranium mineral.

TESTWORK

The majority of the technical inputs into the process design criteria are based on the outcomes from the 2016 testwork campaign. It should be noted that the samples tested contained an elevated uranium grade in comparison to the nominal head grade for the design, and this must be taken into account for future studies.

The scope of the campaign encompassed the following high level testwork:

- Comminution: Sample characterization, bond ball mill index tests
- Acidic leach: Diagnostic tests considering grind size, lixiviant addition rate, temperature, residence time, pH and oxidant type
- Solid-liquid separation: Settling tests including flocculant screening
- Solvent extraction: Bulk loading
- Product precipitation: Ammonium diuranate precipitation
- Mo/Cu flotation: Sulphide float

The outcomes of the campaign are discussed in the following sections.

COMMINUTION

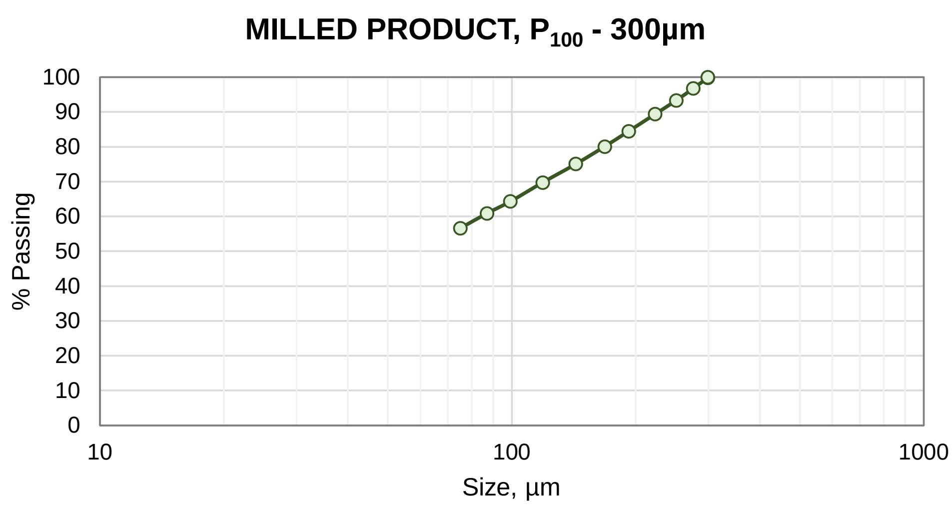
Samples were classified as material with medium hardness. A summary of the results is shown below in Table 13-1 and was used as the basis for sizing the comminution circuit with a target grind size of 300 µm.

TABLE 13-1 BOND BALL MILL WORK INDEX SUMMARY
NexGen Energy Ltd. – Rook I Property

Sample ID	W_i, kWh/t
AR-15-61C2	16.01
AR-16-63C2	16.47
AR-16-84C1	16.88

Samples were milled to produce three product particle size distributions with P_{100} values of 300 µm, 212 µm, and 106 µm which were used in the subsequent diagnostic leach tests. The sample with a P_{100} of 300 µm was used as the baseline grind size for leach tests and is shown below in Figure 13-1.

FIGURE 13-1 MILL PRODUCT PSD, P_{100}-300 µm



ACIDIC LEACH

A total of 13 leach tests were conducted using concentrated sulphuric acid as the lixiviant. During the initial scoping tests, an unconventional test procedure was used to simulate continuous uranium leaching which involved bulk addition of sulphuric acid at the beginning of the test with the oxidant added to maintain a specified oxidation-reduction potential (ORP) level. During the latter stage of the scoping tests, Feasby requested SRC to conduct leaching tests with continuous acid addition to maintain a target pH which would be more representative of a plant operation and as such provide a more accurate addition requirement for reagents. All tests were conducted at a fixed solids concentration of 50%; the subsequent impact on recoveries with varying solids concentration did not form part of the diagnostic tests.

The key outcomes from the testwork are discussed in their respective areas.

GRIND SIZE

Three grind sizes were considered, namely 300 µm, 212 µm, and 106 µm. A slight improvement in leach kinetics was observed for finer grinds, however, the results were largely comparable falling within the accuracy envelope of the analysis method used. As there is no distinct merit in considering a finer grind, the design is based on a grind size of 300 µm to reduce power requirements for upfront milling.

OXIDANT TYPE

Oxygen, hydrogen peroxide, and sodium chlorate were investigated as potential oxidants. The effect of hydrogen peroxide and sodium chlorate were comparable, however, oxygen addition at 2 atm produced a notable reduction in uranium recoveries. It was concluded that additional oxygen would be required at a higher pressure in order to improve recoveries. The addition of high pressure oxygen into leach was not tested in this campaign. It was decided to utilize hydrogen peroxide as the oxidant based on a high level economic assessment coupled with benchmarking to nearby operations.

OPERATING TEMPERATURE

Two tests were conducted at leach temperatures of 40°C and 50°C to evaluate the impact on leach kinetics. A noticeable reduction in recoveries was observed for a reduced temperature at equivalent leaching times. A potential recovery improvement could be realized for higher temperatures, however, this could also result in an increase in impurities reporting to the pregnant leach solution. On this basis, a moderate leaching temperature of 50°C was selected for the design basis.

OPERATING PH

A pH range of 1.0 to 1.5 was investigated which showed that recoveries were comparable within the operating envelope. It is generally advisable to avoid excessively low pH values in leach due to high reagent consumptions and increasing impurities reporting to the pregnant leach solution. Typically, an operating pH of approximately 1.5 would be adequate for acidic leaches, however, a decision was made by Feasby Consulting to select an operating pH of 1.1 as the basis and use the residue generated for downstream testwork. Given the limited testwork data, a decision to conform to an operating pH of 1.1 was made for the design in order to validate downstream equipment sizing.

LEACHING TIME

Kinetic samples were taken every hour during tests. Most results aligned to achieve recoveries which begin to asymptote at approximately four to six hours. A leaching time of eight hours was used as the basis creating a contingency for variable grind, pH, temperature, and reagent addition rates.

OPTIMIZATION TESTS

Following completion of scoping tests, optimization tests were conducted to enable optimal operating conditions for leach while maximizing uranium recovery. The outcomes of these tests are summarized in Table 13-2 below.

TABLE 13-2 OPTIMIZATION LEACH RESULTS
NexGen Energy Ltd. – Rook I Property

Description	Unit	Value					
Grind size	µm	300					
Temperature	°C	50					
Leach time	hrs	8					
% Solids	% m/m	50					
pH Level	**-**	**1.0**	**1.1**	**1.25**	**1.5**	**1.75**	**1.75**
U_3O_8 leached	%	98.3	**98.3**	98.6	98	98.2	98.4
98% H_2SO_4	kg/t	69.9	**63.3**	47.4	36	60	60
$NaClO_3$	kg/t	3.8		11.2	25.7	6.1	
30% H_2O_2	kg/t		**21.4**				33.6

SOLID-LIQUID SEPARATION

Free settling tests were conducted on leach residue samples based on a pH of 1.1, temperature of 50°C, and hydrogen peroxide as the oxidant. Three flocculants were tested which included Superfloc C496 (CI), Magnafloc 10 (AI), and Magnafloc 351 (NI) at a fixed dosage rate of 180 g/t and at a relatively high slurry concentration. The settling rate was monitored against time in order to evaluate the influence of flocculant on free settling. Based on the limited scope of tests, the best performing flocculant was Magnafloc 351, which was then selected for the design baseline.

SOLVENT EXTRACTION

Bulk loading tests were conducted which involved contacting fresh organic with pregnant leach solution in four contact stages at an organic to aqueous ratio of 1:1. The solvent was composed of Armeen 380, Isodecanol, and CALUMET 400-500 at 6%, 3%, and 91% respectively. A uranium extraction of 99.99% was achieved with the majority of the molybdenum present in solution loaded on the organic. The design is based on the criteria of the tests conducted as well as conventional operating conditions for an ammonium sulphate strip.

PRODUCT PRECIPITATION

The loaded strip liquor (Odourless Kerosene liquor) generated during the solvent extraction test was used to precipitate a final product. The final product was precipitated as an ammonium diuranate (ADU) using ammonium hydroxide. The precipitate was washed prior to analysis. The composition of the product revealed a product which deviated from the ConverDyn specification with respect to molybdenum content. The final recommendation from SRC was to consider a molybdenum removal step to mitigate this risk.

MOLYBDENUM AND COPPER FLOTATION

A single sulphide flotation test was conducted with the aim of investigating the effectiveness in achieving significant molybdenum and copper rejection to the concentrate. The test revealed poor results with low rejection of molybdenum and copper. It was concluded by SRC that molybdenum is not a sulphide-based mineral and is likely present as a molybdite and/or kamiokite. The design does not consider this unit operation due to the poor outcomes of the test.

RECOVERY OF BY-PRODUCTS

In addition to the recovery of molybdenum and copper, the testwork included a preliminary examination of the recovery of the following by-products:

- Rare earth elements (REE);

- Precious metals (gold and silver).

Both the precious metals and REEs showed some potential for economic recovery, although further testwork is required.

CONCLUSIONS AND RECOMMENDATIONS

The level of metallurgical testwork completed by Feasby is suitable for a PEA. Based on the testwork completed to date, 96% overall recovery of uranium is appropriate. Further, based on preliminary results, deleterious element concentrations appear to be low, and the resulting small yellowcake sample prepared during the testwork met ASTM C967-13[2] (international standard for uranium concentrate) criteria.

As the Project advances, it is recommended to conduct variability testwork and pilot tests using representative samples as per the mining schedule. The testwork campaign should encompass the following areas:

- Mineralogy
- Milling
- Leaching
- Solid-liquid separation
- Solvent extraction
- Mo removal
- Product precipitation
- Tailings characterization, including suitability for use as a cemented fill, geochemical evaluation of the tailings, and potential acid generation (PAG)
- Analysis of the composition of the waste rock, including a PAG assessment

Further, as the Project advances, a more detailed assessment of the quantities and recoverability, and marketing potential of by-products should be examined.

14 MINERAL RESOURCE ESTIMATE

Table 14-1 summarizes Mineral Resources based on a $65/lb uranium price at a cut-off grade of 0.25% U_3O_8. Indicated Mineral Resources total 1.18 million tonnes average grade of 6.88% U_3O_8 for a total of 179.5 million pounds U_3O_8. Inferred Mineral Resources total 4.25 million tonnes at an average grade of 1.30% U_3O_8 for a total of 122.1 million pounds U_3O_8. The effective date of the Mineral Resource estimate is December 20, 2016. Estimated block model grades are based on chemical assays only. The Mineral Resources were estimated by NexGen and audited by RPA. No Mineral Reserves have been estimated at the Property.

TABLE 14-1 MINERAL RESOURCE ESTIMATE – DECEMBER 20, 2016
NexGen Energy Ltd. – Rook I Property

Classification	Zone	Tonnage (Tonnes)	Grade (U_3O_8 %)	Contained Metal (U_3O_8 lb)
Indicated	A2-HG	400,000	18.84	164,900,000
	A2	790,000	0.84	14,500,000
Indicated Total		**1,180,000**	**6.88**	**179,500,000**
Inferred	A1	860,000	0.76	14,300,000
	A2-HG	30,000	12.72	8,600,000
	A2	1,100,000	0.76	18,500,000
	A3-HG	150,000	8.74	28,200,000
	A3	1,460,000	1.16	37,300,000
	A4	550,000	1.07	12,900,000
	Southwest Arrow	110,000	0.94	2,300,000
Inferred Total		**4,250,000**	**1.30**	**122,100,000**

Notes:

1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are reported at a cut-off grade of 0.25% U_3O_8 based on a long-term price of US$65 per lb U_3O_8 and estimated mining costs.
3. A minimum width of 1.0 m was used.
4. 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.

RESOURCE DATABASE

NexGen maintains a complete set of drill hole data plus other exploration data for the entire Property in a Microsoft Access database. RPA was supplied with an individual drill hole database for the Arrow Deposit on the Property by NexGen. The Arrow resource database dated December 9, 2016 includes drill hole collar locations (including dip and azimuth), assay, and lithology data from 220 drill holes totalling 132,744 m of drilling. Of the 220 holes completed, 13 drill holes were abandoned before reaching their target depth, are considered restarts, and were not used in the resource estimate. The wireframe models representing the mineralized zones are intersected in 172 of 207 drill holes. A summary of records directly related to the Arrow resource model is provided in Table 14-2.

TABLE 14-2 VULCAN DATABASE RECORD COUNT
NexGen Energy Ltd. – Rook I Property

Table Name	Number of Records
Collar	220
Survey	27,489
U_3O_8 Chemical Assays	51,345
Lithology	2,475
Density	5,344
1m Composites	10,778

GEOLOGICAL INTERPRETATION AND 3D SOLIDS

Uranium mineralization at Arrow occurs within and proximal to structural basement rocks (graphitic mylonites) that show varying degrees of clay, chlorite, and hematite alteration. Structures have been reactivated, and five main parallel structural shear panels (A1, A2, A3, A4, and A5) have been recognized, with the A2 and A3 shears hosting higher grade, thicker and more continuous mineralization than the others as defined by current drilling. Mineralization consists predominantly of uraninite/pitchblende that occurs as massive to semi-massive accumulations, foliation controlled, mineral replacements, and disseminations. A continuous zone of higher grade mineralization in the A2 and A3 shears is known as the higher grade A2 sub-zone (A2-HG) and A3 sub-zone (A3-HG).

Geological interpretations supporting the estimate were generated by NexGen personnel and then audited for completeness and accuracy by RPA. Topographical surfaces, solids and mineralized wireframes were modelled in Leapfrog Geo version 4.0 then refined in Vulcan software. Extension distance for the mineralized wireframes was half-way to the next hole, or approximately 25 m vertically and horizontally past the last drill intercept.

High grade (HG) domain models were created using a grade intercepts limit equal to or greater than one metre with a minimum grade of 5% U_3O_8, although lower grades were incorporated in places to maintain continuity and to maintain a minimum thickness of one metre. Non-high grade domain models were created using a lower grade intercept limit equal to or greater than one metre with a minimum grade-thickness product of 0.1%m, or 2 m at 0.05%. RPA considers the selection of 0.05% U_3O_8 to be appropriate for construction of mineralized wireframe outlines, as this value well reflects the lowest cut-off grade that is expected to be applied for reporting of the Mineral Resources in an underground operating scenario and is consistent with other known deposits in the Athabasca Basin. Sample intervals with assay results less than the nominated cut-off grade (internal dilution) were included within the mineralized wireframes if the core length was less than two metres or allowed for modelling of grade continuity.

In total, 102 wireframes, of which seven high grade wireframes were contained within four enveloping wireframes, were constructed within the A1, A2, A3, and A4 shear zones and were used in the resource estimate (Table 14-3). Due to a limited number of drill holes, it was not possible to fully differentiate between the A4 and A5 shears; thus mineralized intercepts in the A5 shear zone were grouped into the A4 shear for the Mineral Resource estimate presented herein.

TABLE 14-3 SUMMARY OF WIREFRAME MODELS
NexGen Energy Ltd. - Rook I Property

Shear Zone	Domain Designation	Total # Wireframes
A1	100 series	13
A2-HG	1, 2, 3, 5 and 7	5
A2	200 series	41
A3-HG	8 and 9	2
A3	300 series	21
A4	400 series	13
Southwest Arrow (SWA)	600 series	7

Figures 14-1 and 14-2 show an isometric view of the wireframe models.

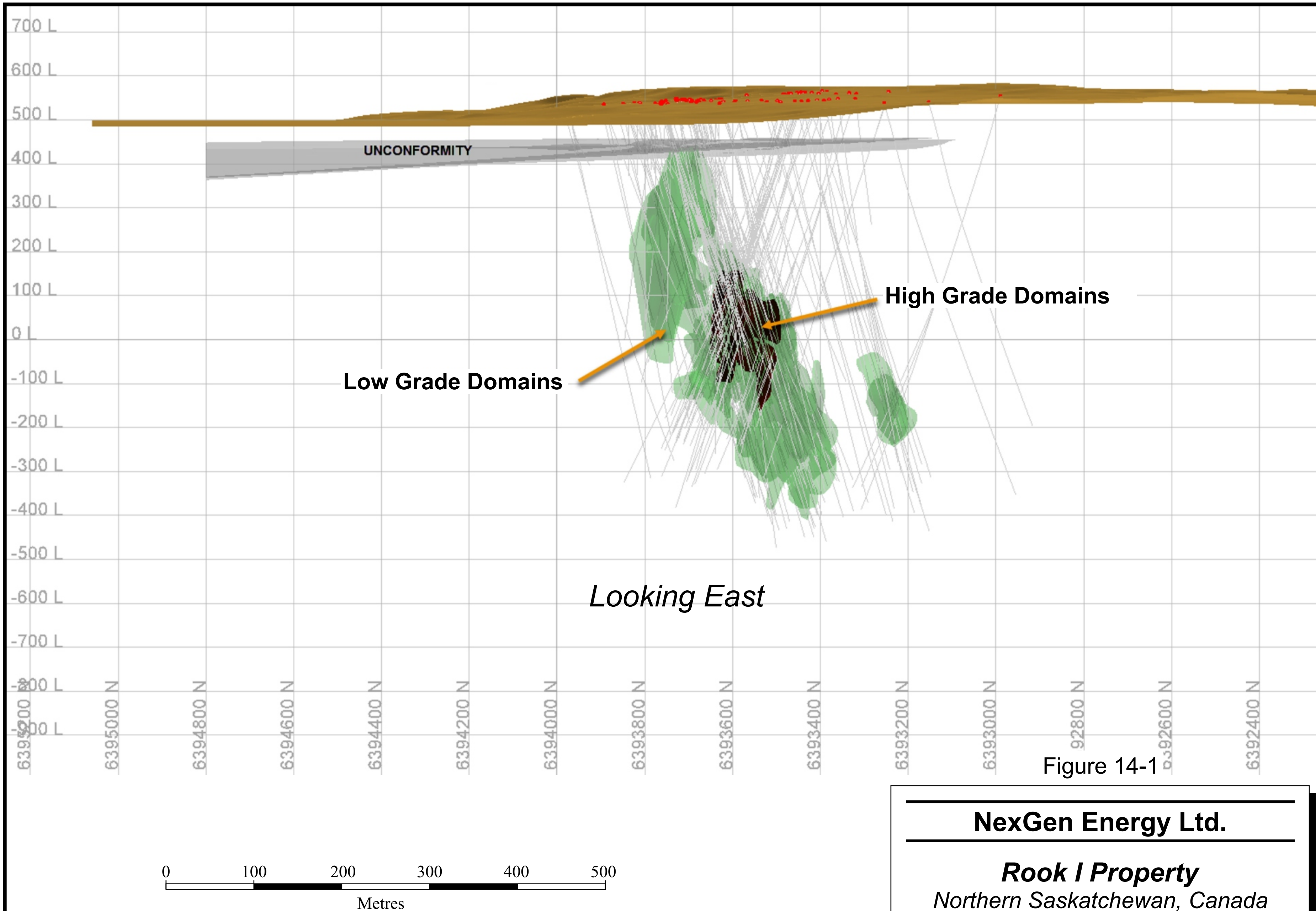


Figure 14-1

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Isometric View of Wireframe Models (Looking East)

September 2017

Source: RPA, 2017.

www.rpacan.com

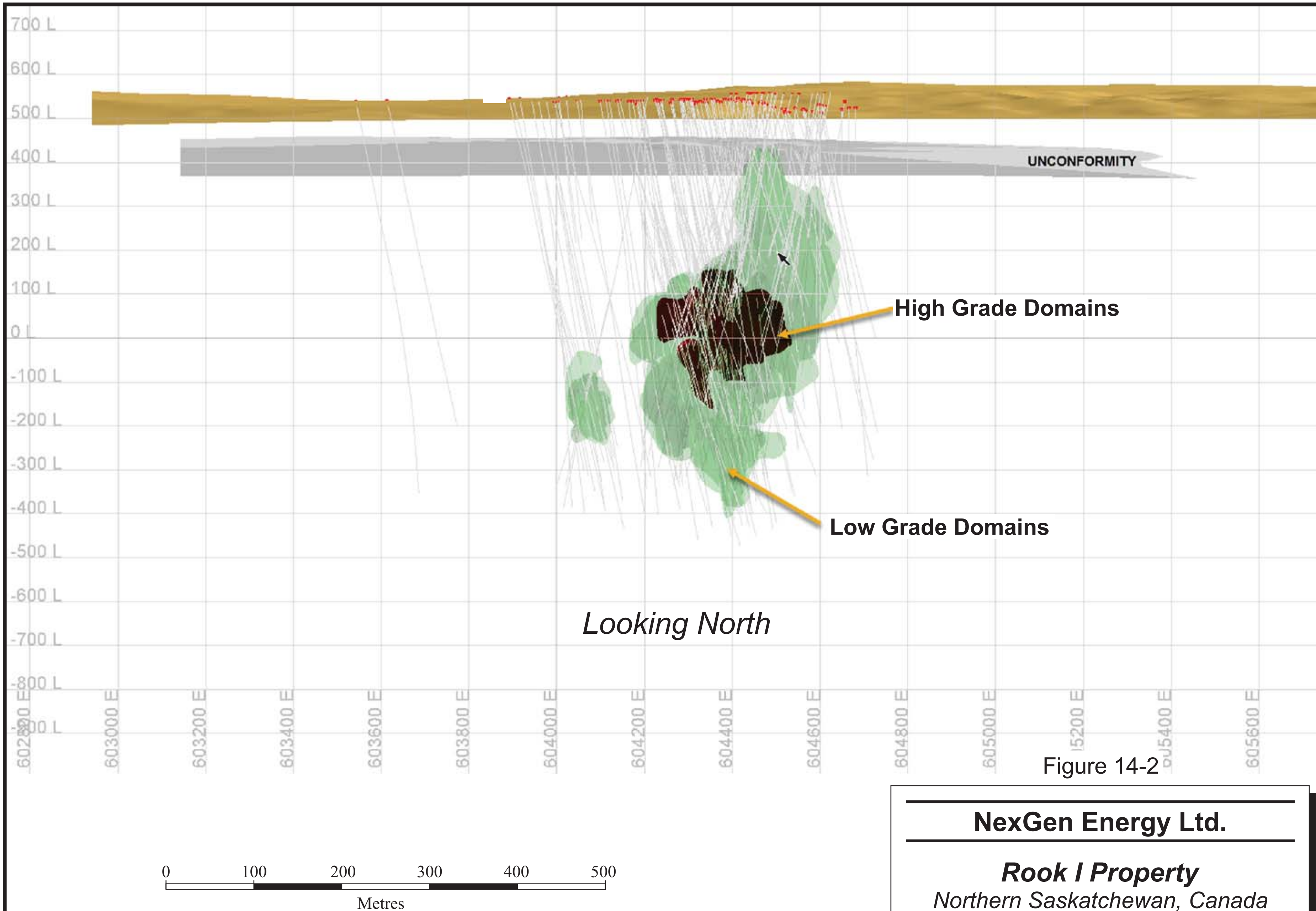


Figure 14-2

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Isometric View of Wireframe Models (Looking North)

September 2017

Source: RPA, 2017.

At its highest elevation, mineralization reaches the sub-Athabasca unconformity, 100 m below surface. The Mineral Resource estimate reported herein extends to a depth of 965 m below surface. The deposit as defined in the Mineral Resource estimate is comprised of several stacked lenses within a 290 m wide zone with an overall strike length of 885 m. The individual domains or lenses vary in thickness from 4 m to 25 m.

STATISTICAL ANALYSIS

The mineralization wireframe models were used to code the drill hole database and to identify samples within the mineralized wireframes. These samples were extracted from the database on a group-by-group basis, subjected to statistical analyses for their respective domains, and then analyzed by means of histograms and probability plots. A total of 18,681 samples were contained within the mineralized wireframes. The sample statistics are summarized by zone in Table 14-4. The coefficient of variation (CV) is a measure of variability of the data.

TABLE 14-4 SUMMARY STATISTICS OF UNCAPPED ASSAYS
NexGen Energy Ltd. - Rook I Property

Zone	Domain	Count	Min ($\%U_3O_8$)	Max ($\%U_3O_8$)	Mean ($\%U_3O_8$)	Variance	StDev ($\%U_3O_8$)	CV
A1	100 series	2,726	0.001	23.5	0.410	1.50	1.224	2.99
A2-HG	1-7	2,003	0.001	80.5	15.853	344.80	18.569	1.17
A2	200 series	8,935	0.001	44.7	0.705	3.81	1.951	2.77
A3-HG	8-9	112	0.002	43.6	9.912	109.00	10.440	1.05
A3	300 series	3,162	0.001	50.6	0.941	9.95	3.155	3.35
A4	400 series	1,071	0.001	41.5	1.091	10.55	3.249	2.98
SWA	600 series	672	0.001	50.1	0.893	17.61	4.196	4.70
Total		**18,681**	**0.001**	**80.5**	**2.410**	**64.800**	**8.050**	**3.34**

CAPPING HIGH GRADE VALUES

Where the assay distribution is skewed positively or approaches log-normal, erratic high grade assay values can have a disproportionate effect on the average grade of a deposit. One method of treating these outliers in order to reduce their influence on the average grade is to cut or cap them at a specific grade level. In the absence of production data to calibrate the capping level, inspection of the assay distribution can be used to estimate a “first pass” cutting level.

RPA is of the opinion that the influence of high grade uranium assays must be reduced or controlled, and uses a number of industry best practice methods to achieve this goal, including capping of high grade values. RPA employs a number of statistical analytical methods to determine an appropriate capping value including preparation of frequency histograms, probability plots, decile analyses, and capping curves. Using these methodologies, RPA examined the selected capping values for the mineralized domains in the Arrow Deposit.

Examples of the capping analysis are shown in Figures 14-3 through Figure 14-7, and applied to the data set for the mineralized domains. Very high grade outliers were capped at 40% U_3O_8 within the A3 HG domain and 6%, 8%, 10%, 20%, and 25% U_3O_8 in the other domains, resulting in a total of 154 capped assay values. No capping was applied to assays in the A2-HG domain. Capped assay statistics by zones are summarized in Table 14-5 and compared with uncapped assay statistics.

In RPA's opinion, the selected capping values are reasonable and have been correctly applied to the raw assay values for the Arrow Mineral Resource estimate.

TABLE 14-5 SUMMARY STATISTICS OF UNCAPPED VS. CAP ASSAYS
NexGen Energy Ltd. - Rook I Property

	A1		A2-HG		A2		A3-HG	
Descriptive Statistics	**Uncapped**	**Capped**	**Uncapped**	**Capped**	**Uncapped**	**Capped**	**Uncapped**	**Capped**
Number of Samples	2,726	2,726	2,003	2,003	8,935	8,937	112	112
Min (% U_3O_8)	0.001	0.001	0.001	0.001	0.001	0.000	0.002	0.002
Max (% U_3O_8)	23.50	10.00	80.50	80.50	44.70	20.00	43.60	40.00
Mean (% U_3O_8)	0.41	0.39	15.85	15.85	0.71	0.66	9.91	9.85
Variance	1.50	0.92	344.80	344.80	3.81	2.32	109.00	104.70
StDev (% U_3O_8)	1.22	0.96	18.57	18.57	1.95	1.52	10.44	10.23
CV	2.99	2.49	1.17	1.17	2.77	2.31	1.05	1.04
Number Capped		10		0		59		3

	A3		A4		SWA	
	Uncapped	**Capped**	**Uncapped**	**Capped**	**Uncapped**	**Capped**
Number of Samples	3,162	3,162	1,071	1,071	672	672
Min (% U_3O_8)	0.001	0.001	0.001	0.001	0.001	0.001
Max (% U_3O_8)	50.60	25.00	41.50	20.00	50.10	8.00
Mean (% U_3O_8)	0.94	0.85	1.09	0.96	0.89	0.50
Variance	9.95	6.07	10.55	6.17	17.61	2.09
StDev (% U_3O_8)	3.16	2.46	3.25	2.49	4.20	1.44
CV	3.35	2.89	2.98	2.60	4.70	2.87
Number Capped		43		22		17

FIGURE 14-3 HISTOGRAM OF RESOURCE ASSAYS IN A2-HG DOMAIN

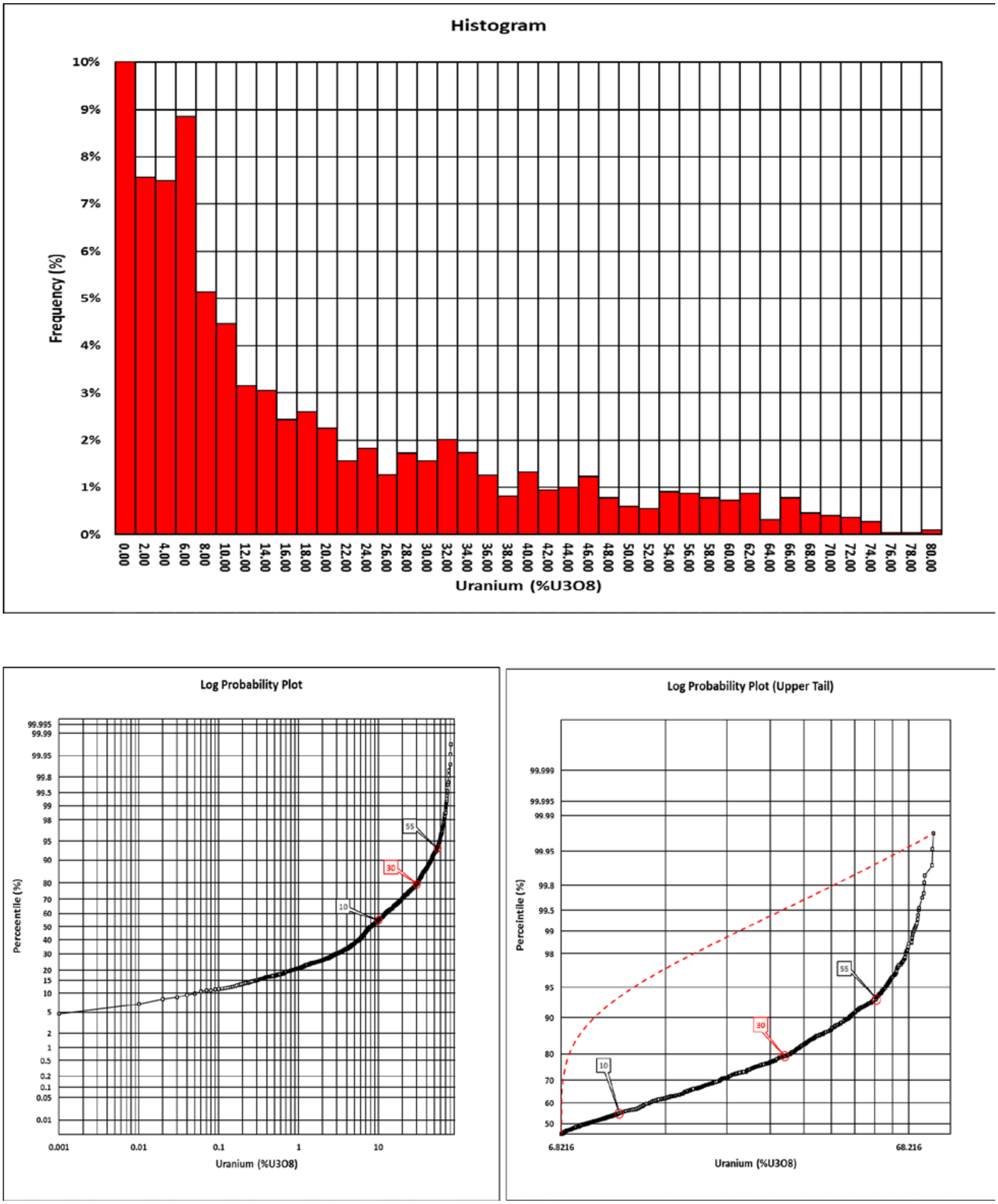


FIGURE 14-4 HISTOGRAM OF RESOURCE ASSAYS IN A3-HG DOMAIN

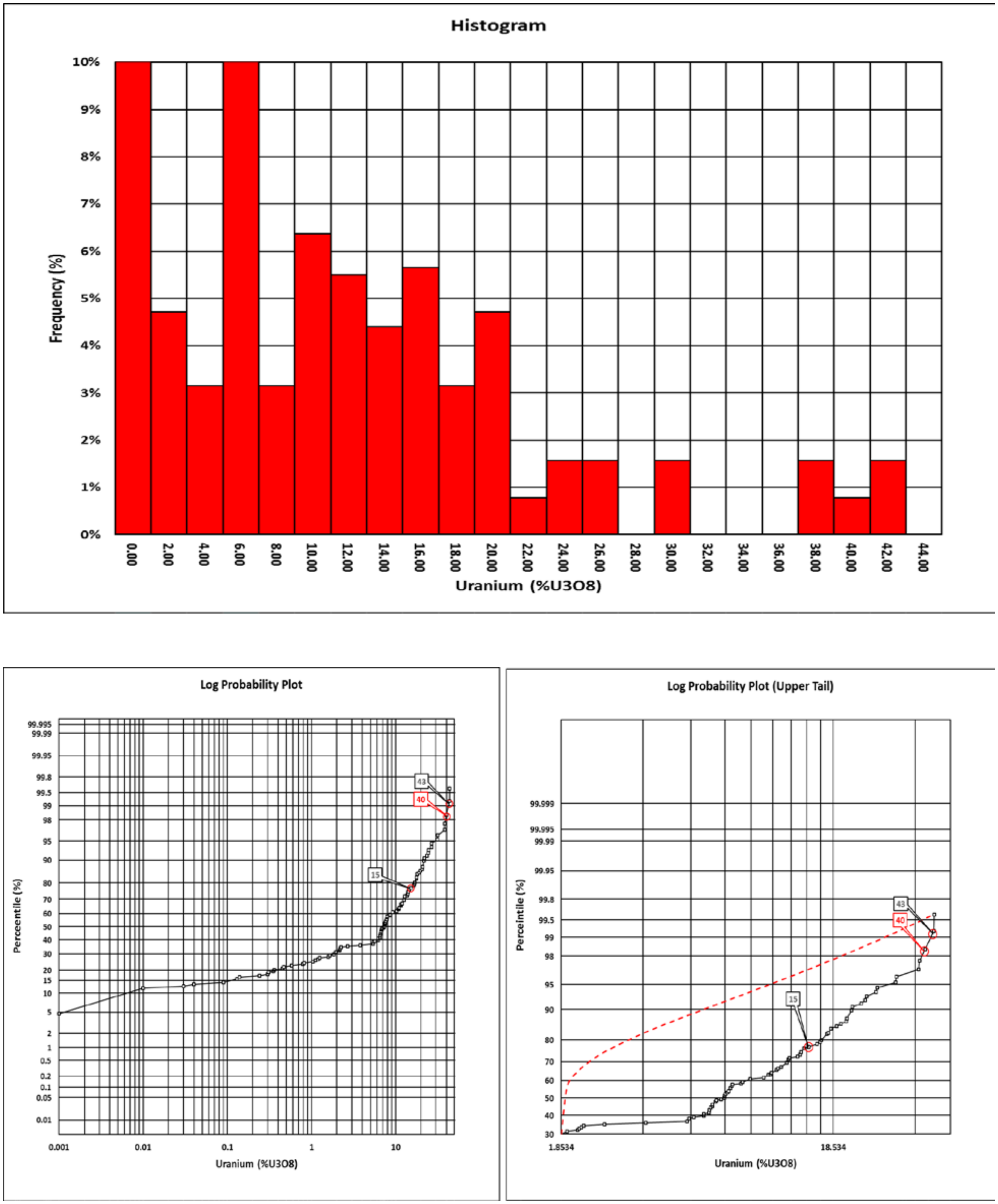


FIGURE 14-5 HISTOGRAM OF RESOURCE ASSAYS IN OTHER DOMAINS (10% CAP)

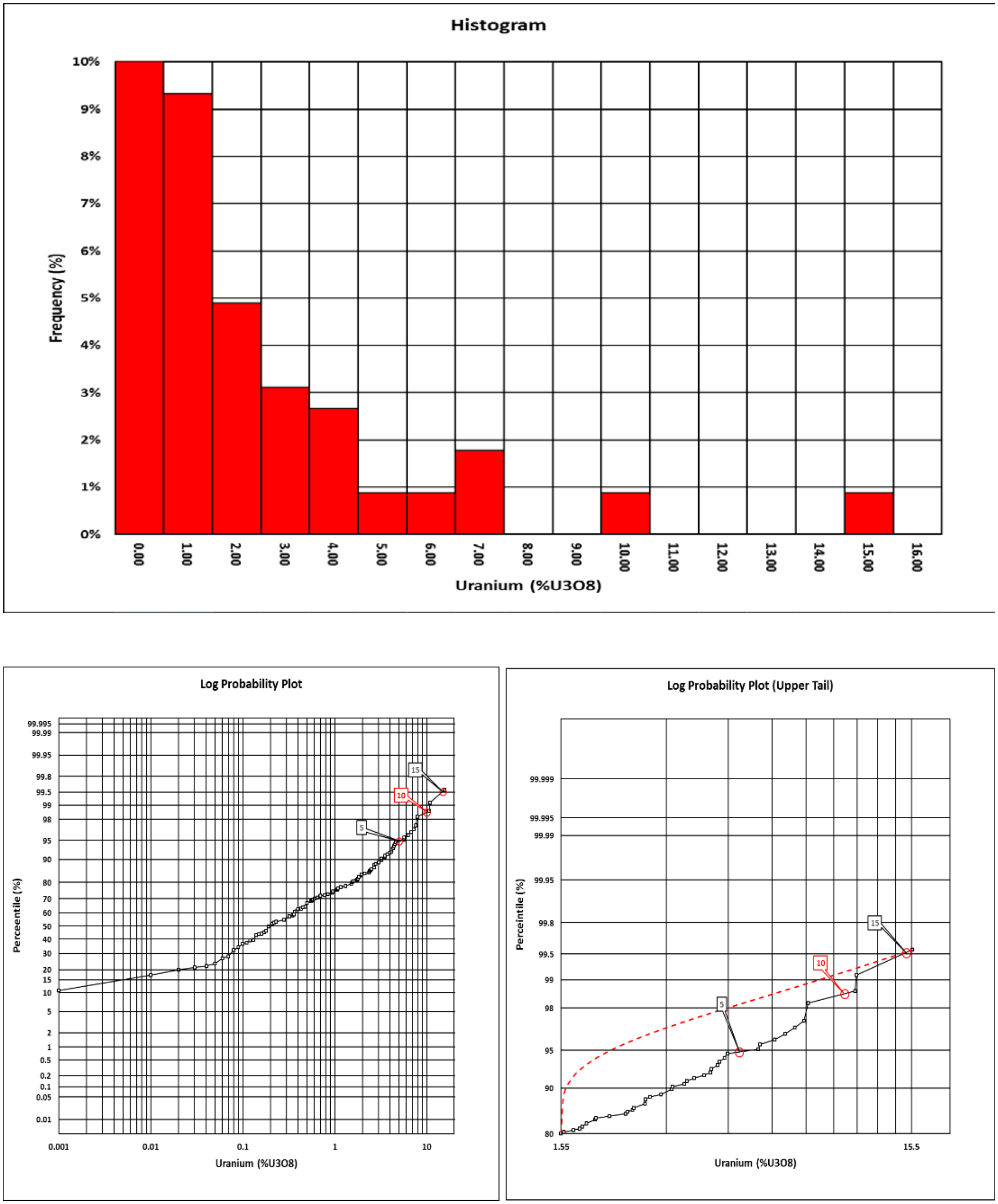
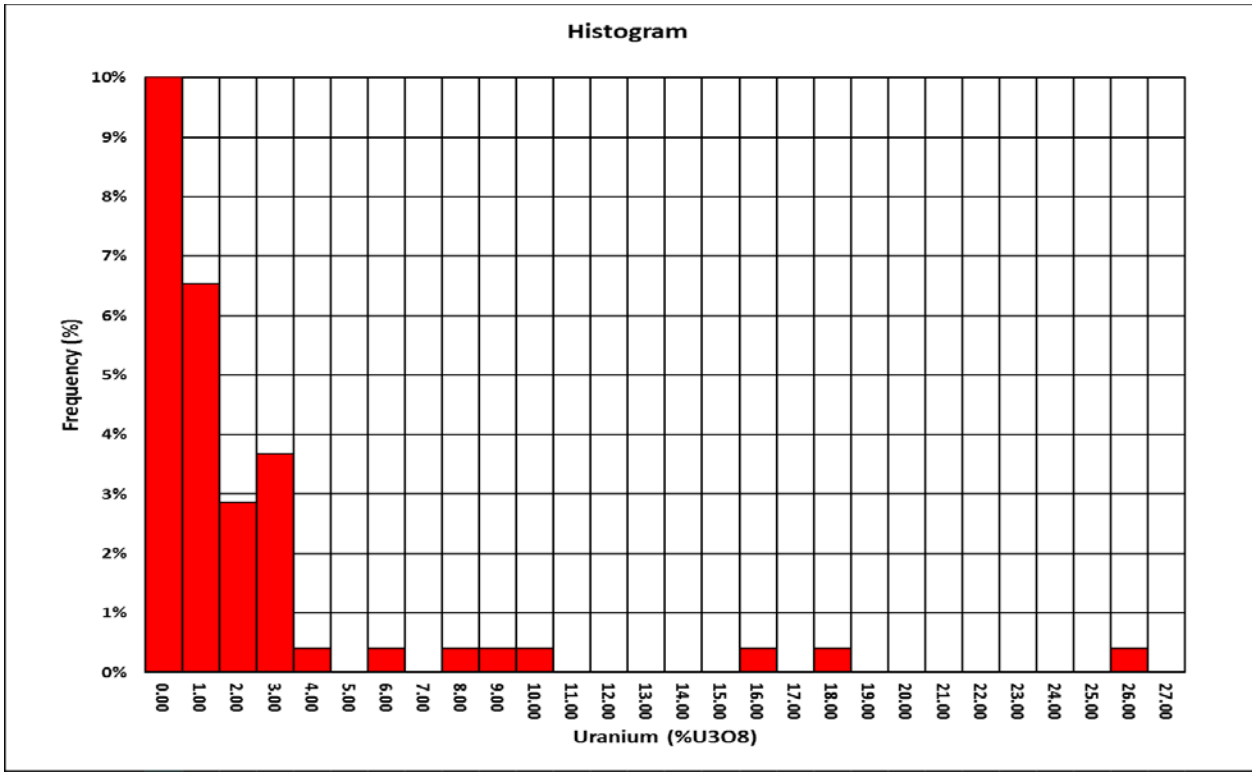
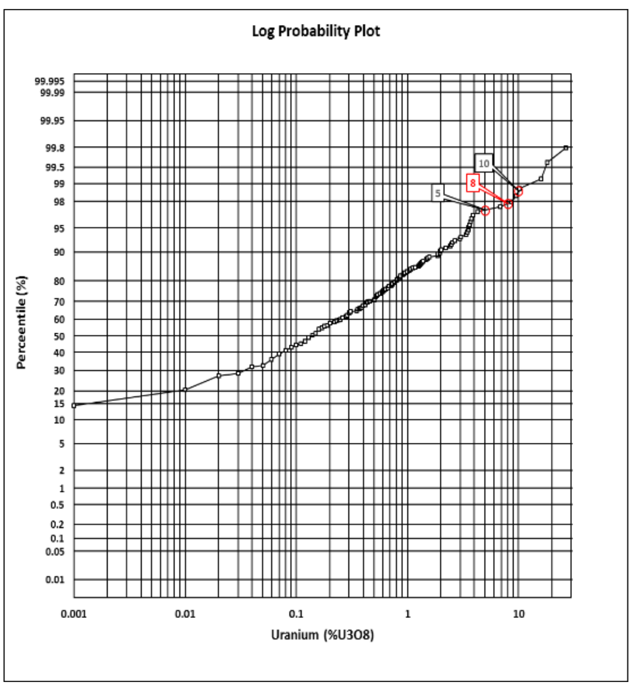


FIGURE 14-6 HISTOGRAM OF RESOURCE ASSAYS IN OTHER DOMAINS (8% CAP)





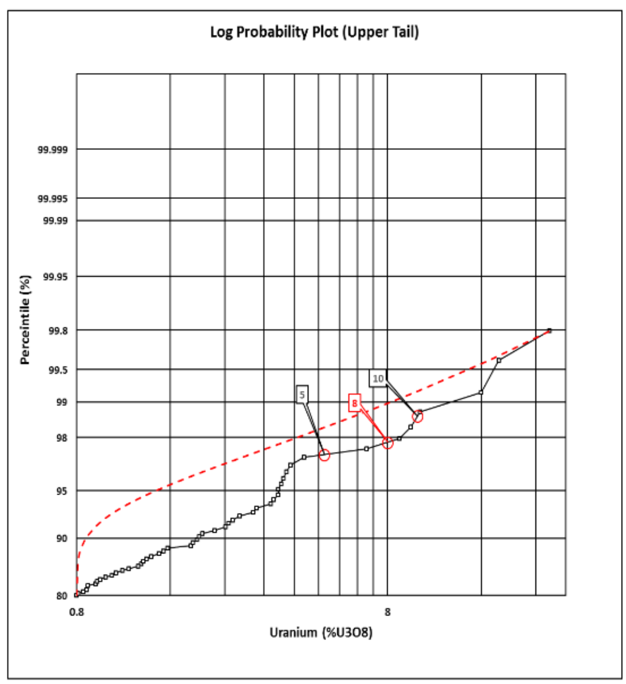
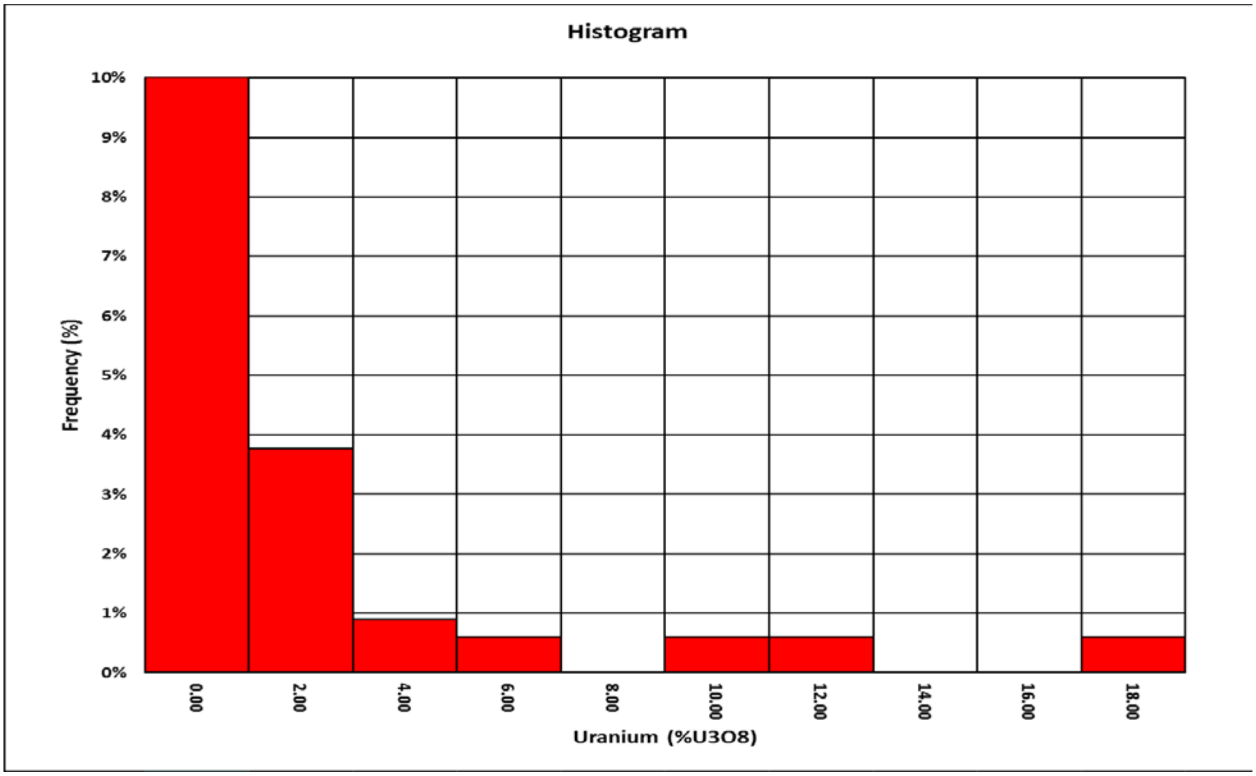
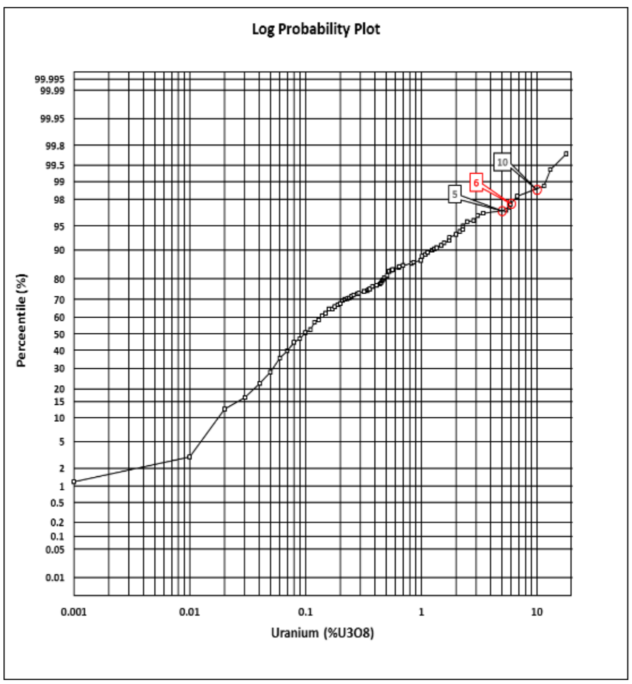
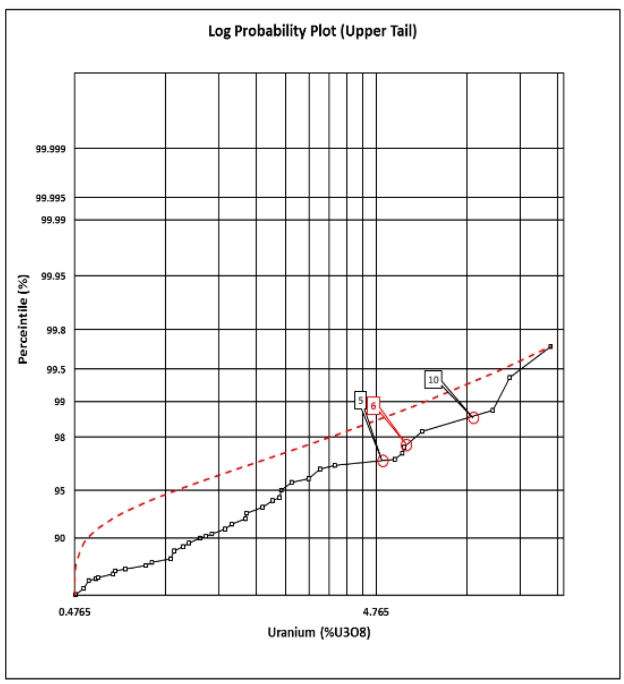


FIGURE 14-7 HISTOGRAM OF RESOURCE ASSAYS IN OTHER DOMAINS (6% CAP)







COMPOSITING

Composites were created from the capped, raw assay values using the downhole compositing function of the Vulcan modelling software package. The composite lengths used during interpolation were chosen considering the predominant sampling length, the minimum mining width, style of mineralization, and continuity of grade. The raw assay data contains samples having irregular sample lengths. Sample lengths range from 15 cm to 3.0 m within the wireframe models, with 83% of the samples taken at 0.5 m intervals (Figure 14-8). Given this distribution, and considering the width of the mineralization, NexGen chose to composite to one metre lengths, which RPA agrees is appropriate for Mineral Resource estimation.

Assays within the wireframe domains were composited starting at the first mineralized wireframe boundary from the collar and resetting at each new wireframe boundary. Assays were capped prior to compositing. Composites less than 0.5 m, located at the bottom of the mineralized intercept, were excluded from the composite database. Table 14-6 shows the composite statistics by zone.

FIGURE 14-8 HISTOGRAM OF SAMPLING LENGTH

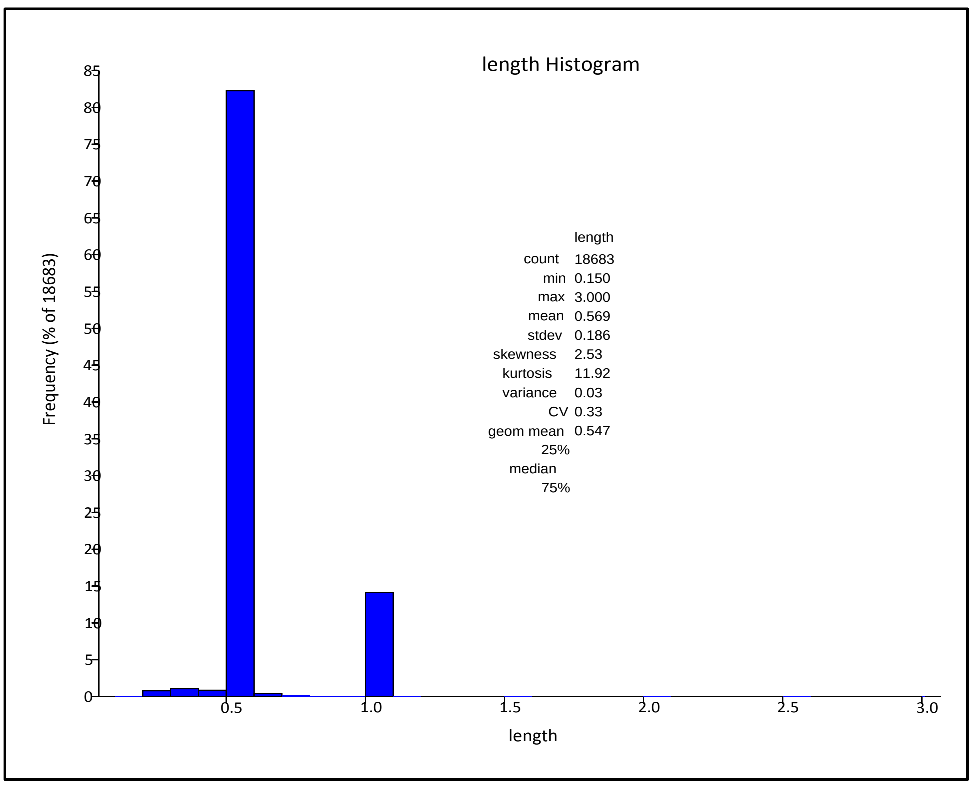


TABLE 14-6 DESCRIPTIVE STATISTICS OF COMPOSITE U_3O_8 VALUES BY DOMAIN
NexGen Energy Ltd. - Rook I Property

Zone	Domain	Count	Min ($\%U_3O_8$)	Max ($\%U_3O_8$)	Mean ($\%U_3O_8$)	Variance	StDev ($\%U_3O_8$)	CV
A1	100 series	1,561	0.001	10.00	0.412	0.920	0.961	2.33
A2-HG	1-7	1,106	0.001	75.70	16.032	300.900	17.347	1.08
A2	200 series	5,139	0.001	20.00	0.667	1.840	1.357	2.04
A3-HG	8-9	64	0.003	30.35	9.640	58.720	7.663	0.79
A3	300 series	1,811	0.001	21.45	0.791	3.980	1.996	2.52
A4	400 series	595	0.001	20.00	0.891	4.110	2.027	2.27
SWA	600 series	431	0.001	8.00	0.434	1.340	1.159	2.67
Total		**10,707**	**0.001**	**75.70**	**2.295**	**55.620**	**7.458**	**3.25**

CONTINUITY ANALYSIS

NexGen generated downhole, omni-directional, and directional correlograms using the one-metre U_3O_8 composite values located within the A2-HG mineralized domains (Figure 14-9 through Figure 14-11). The correlograms were used to support search ellipsoid anisotropy, linear trends observed in the data, and Mineral Resource classification decisions. The downhole correlogram suggests a relative nugget effect of approximately 10%. Long range directional correlograms were focused in the primary plane of mineralization, which commonly strikes northeast and dips steeply to the southeast. Most ranges were interpreted to be 20 m to 40 m. Ranges for the HG domain also varied from 15 m to 30 m.

RPA recommends additional variography and trend analyses as new drill hole data become available.

FIGURE 14-9 DOWNHOLE VARIOGRAM FOR A2-HG DOMAIN

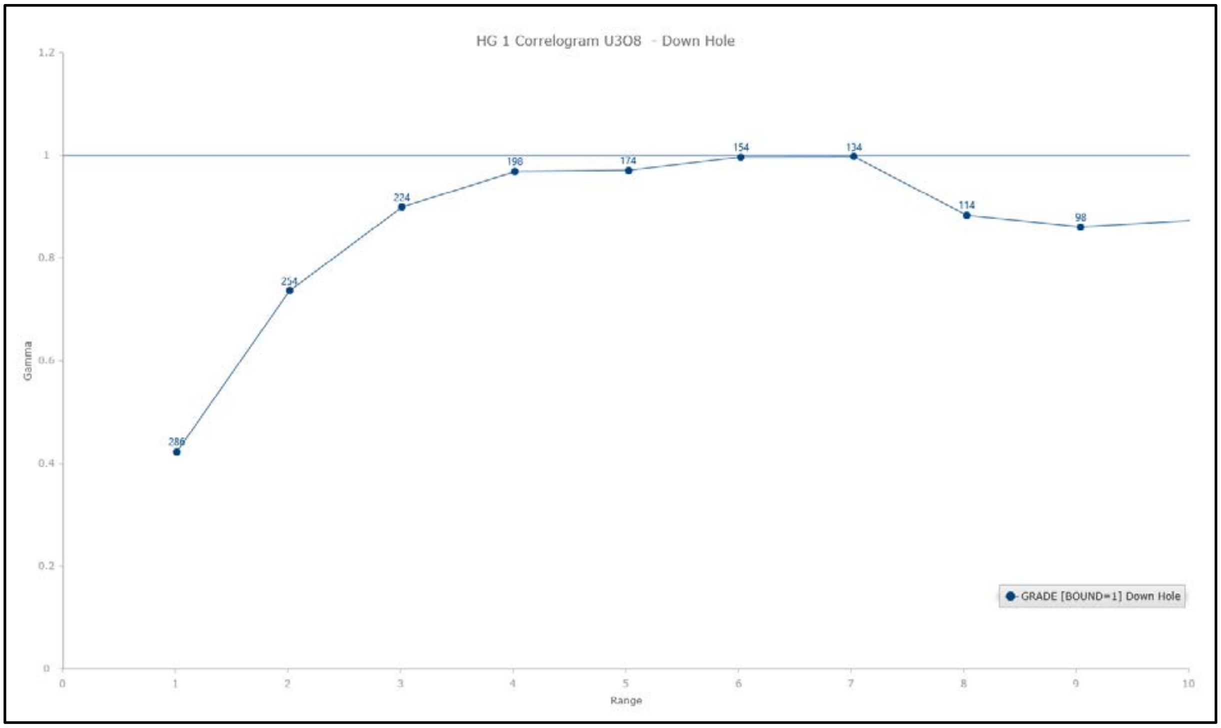


FIGURE 14-10 MAJOR DIRECTIONAL VARIOGRAMS FOR A2-HG DOMAIN

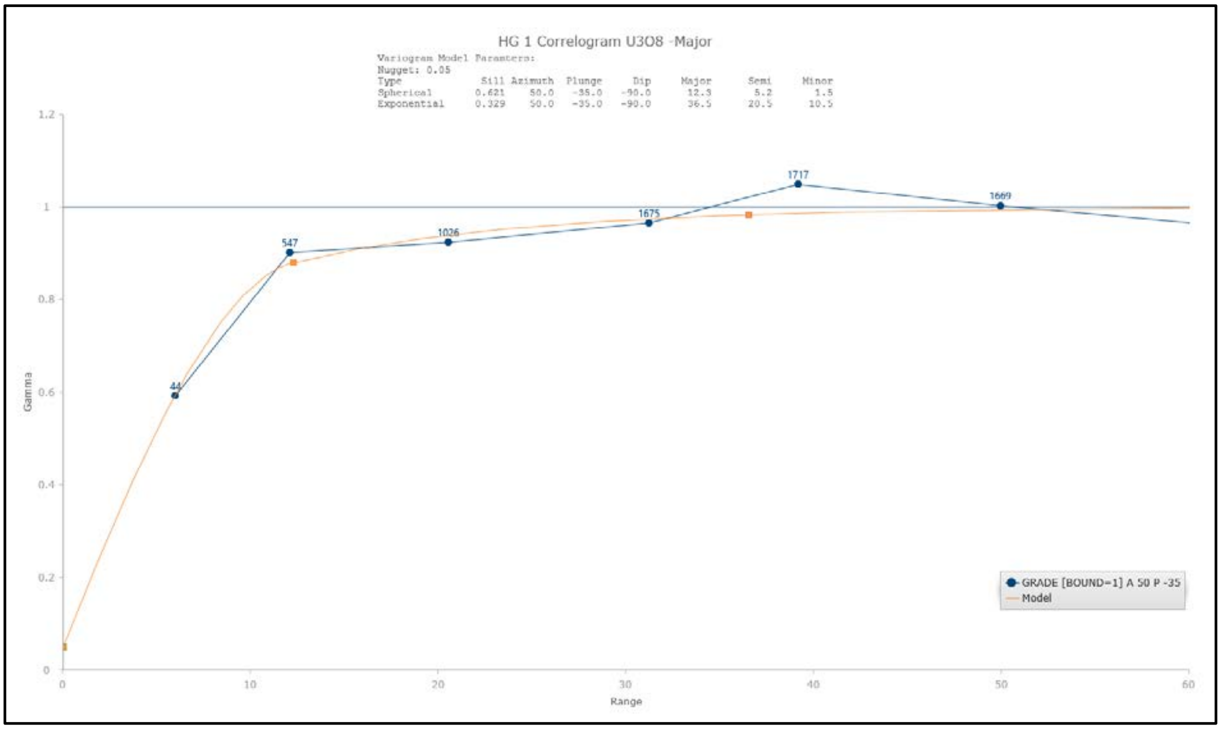
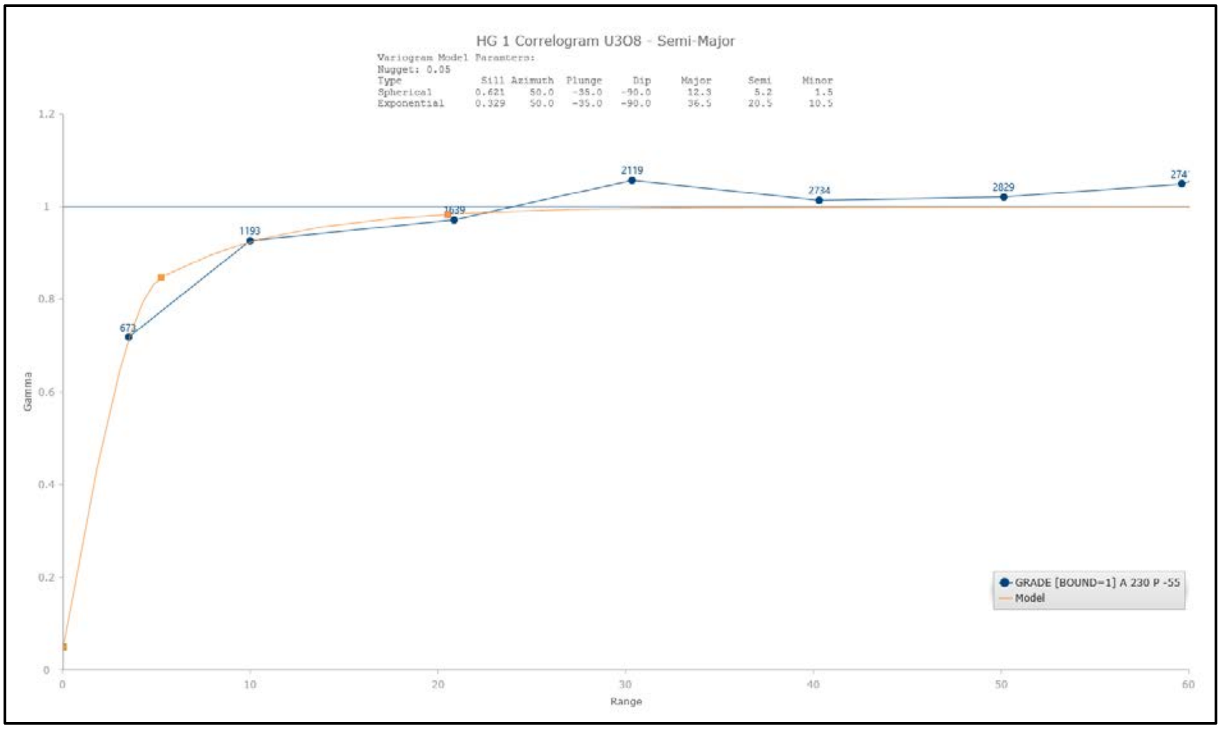


FIGURE 14-11 SEMI-MAJOR DIRECTIONAL VARIOGRAMS FOR A2-HG DOMAIN



TREND ANALYSIS

To aid in the evaluation of grade continuity, trend analysis, and classification, RPA generated a series of total grade x thickness (GT) contours for selected individual wireframe. An example of these is shown in Figure 14-12 and shows a strong correlation with the plunge direction observed in the variography analysis.

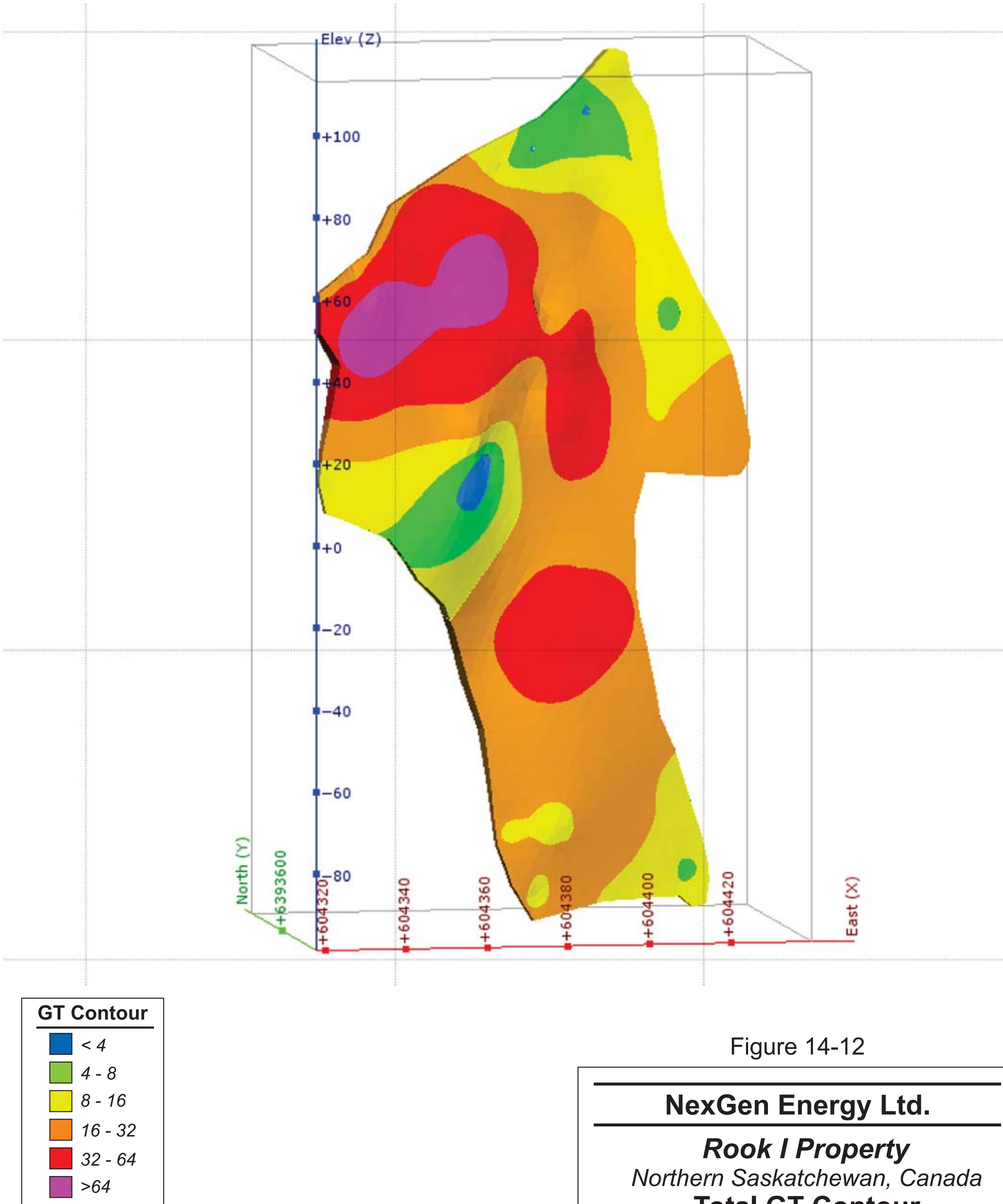


Figure 14-12

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Total GT Contour

A2-HG2 Domain

September 2017

Source: RPA, 2017.

DENSITY

Bulk density is used globally to convert volume to tonnage and, in some cases, weight block grade estimates. For example, high grade uranium deposits of the Athabasca Basin have bulk densities that commonly vary 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, which can result in low bulk density values. When modelling high grade uranium deposits, it is common to estimate bulk density values throughout the deposit and to weight grades by density, since small volumes of high grade material contain large quantities of uranium oxide.

Bulk density is determined by NexGen with specific gravity (SG) measurements on drill core using the water immersion method according to the Archimedes principle, after the core has been sealed and shrink wrapped in cellophane. SG is calculated as: weight in air/(weight in air – weight in water). Under normal atmospheric conditions, SG (a unitless ratio) is equivalent to density in t/m^3.

A total of 5,344 bulk density measurements have been collected on drill core samples from the main mineralized zones to represent local major lithologic units, mineralization styles, and alteration types. Samples were collected on full core which had been retained in the core box prior to splitting for sampling.

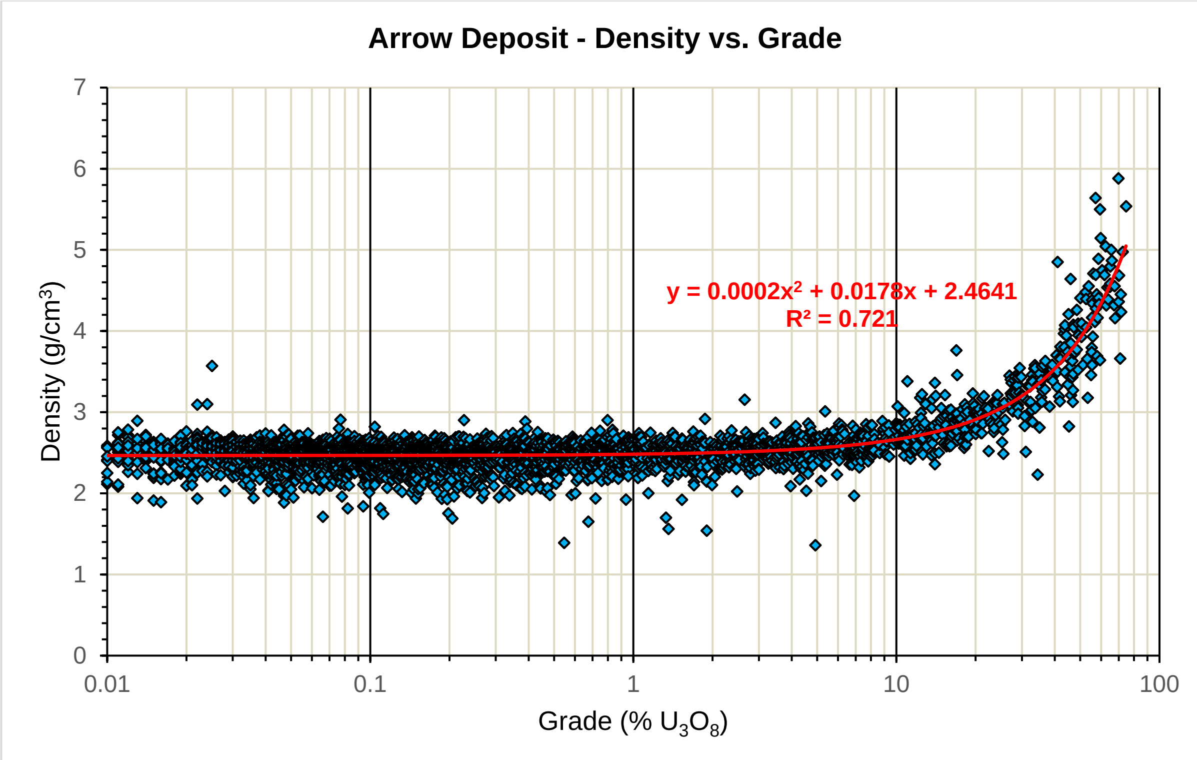
NexGen carried out correlation analyses of the bulk density values against uranium grades which indicate that a strong relationship exists between density and uranium grade (%U_3O_8) as shown in Figure 14-13. The relationship can be represented by the following polynomial formula which is based on a regression fit.

$$\mathbf{y = 0.0002x^2 + 0.0178x + 2.4641}$$

where *y* is dry bulk density (g/cm^3 which is equivalent to t/m^3) and *x* is the uranium grade in %U_3O_8.

The uranium grade was used to estimate the density of each sample with the polynomial formula above. Densities were then interpolated into the block model to convert mineralized volumes to tonnage, and were also used to weight the uranium grades interpolated into each block.

FIGURE 14-13 LOGARITHMIC PLOT OF BULK DENSITY VERSUS URANIUM GRADE



The regression curve in Figure 14-13 is relatively flat at a grade less than 10% U_3O_8, with density relatively constant at 2.464 g/cm^3. At grades greater than 10% U_3O_8, 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 mild 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.

BLOCK MODEL

Leapfrog wireframes were imported into Vulcan modelling software version 10.1 to estimate resources.

A sub-block block model was created using a parent block size of 4 m (along strike) by 4 m (across strike) by 4 m (bench height) and sub-blocks that measured 1 m (along strike) by 1 m (across strike) by 1 m (bench height) resulting in a total of 10,808,766 blocks. The model origin (lower-left corner at lowest elevation) is at UTM coordinates 604,072.0 mE, 6,393,061 mN and -500 m elevation. A whole block approach was used whereby the block was assigned to the domain where its centroid was located. The model fully encloses the modelled resource wireframes and the azimuth of the block model was appropriately rotated 57° so as to align with the overall strike of the mineralization within the given model area. A summary of the block model extents is provided in Table 14-7.

A number of attributes were created to store such information as material density, estimated uranium grades, wireframe code, Mineral Resource classification, etc., for each block model area as listed in Table 14-8.

TABLE 14-7 BLOCK MODEL DIMENSIONS
NexGen Energy Ltd. - Rook I Property

Origin		**Value**
Xmin		604,072
Ymin		6,393,061
Zmin		-500
X Extents		1,000
Y Extents		600
Z Extents		1,100
Schema		**Value**
Parent		
	DX	4
	DY	4
	DZ	4
	NX	250
	NY	150
	NZ	275
Sub-Block		
	DX	1
	DY	1
	DZ	1
	NX	1,000
	NY	600
	NZ	1,000
Number of Blocks		10,808,766
Model Rotation		**Value**
Bearing		57
Plunge		0
Dip		0
Project Units		Metres
Coordinate System		NAD83 UTM Zone 12N

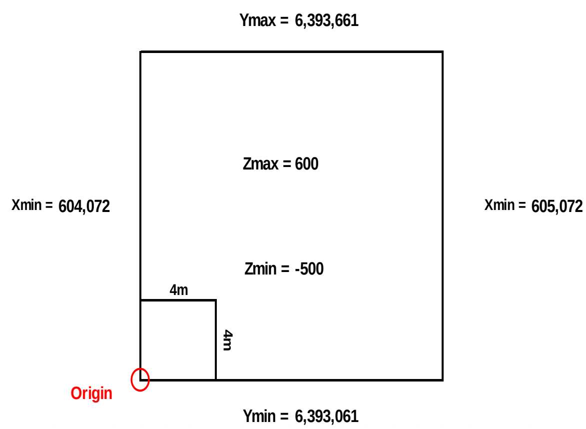


TABLE 14-8 ARROW BLOCK MODEL PARAMETERS AND VARIABLES
NexGen Energy Ltd. - Rook I Property

Variable	Data Type	Default Value	Description
den	Double (Real * 8)	-99	Density
gxd_d	Double (Real * 8)	-99	Equal to gxd / den
gxd	Double (Real * 8)	-99	Grade (raw) x density
grade_id2	Double (Real * 8)	-99	% U_3O_8 interpolated grade inverse distance squared (ID2)
grade_id3	Double (Real * 8)	-99	%U_3O_8 interpolated grade inverse distance cubed (ID3)
grade_ok	Double (Real * 8)	-99	% U_3O_8 interpolated grade ordinary kriging
nsamp	Short (Integer * 2)	-99	Number of samples per estimate
nholes	Short (Integer * 2)	-99	Number of holes per estimate
est_avg_dist	Double (Real * 8)	-99	Average cartesian distance to samples per est.
est_samp_dist	Double (Real * 8)	-99	Distance to nearest sample per est.
nn	Double (Real * 8)	-99	Nearest neighbour grade
nn_distance	Double (Real * 8)	-99	Distance to nearest neighbour
est_flag_id	Integer (Integer * 4)	-99	Estimation flag for ID
est_flag_ok	Integer (Integer * 4)	-99	Estimation flag for OK
ore	Integer (Integer * 4)	-99	Mineralized Domain Number
krig_var	Double (Real * 8)	-99	Kriging variance variable
blk_var	Double (Real * 8)	-99	Block variance variable
krig_eff	Double (Real * 8)	-99	Kriging efficiency variable
class	Double (Real * 8)	-99	Classification (1= Indicated)

INTERPOLATION PARAMETERS

The interpolation strategy involved setting up search parameters in a series of three estimation runs for each individual domain. Search ellipse dimensions were chosen following a review of drill hole spacing and interpolation efficiency. First, second, and third pass search ellipses maintained a 5:5:1 anisotropic ratio. Search ellipses were oriented with the major axis oriented at parallel to the dominant northeasterly trend of the domains. The semi-major axis was oriented horizontally, normal to the major axis (across strike), and the minor axis was oriented with a plunge range of 0° to -53° and dip ranging from -76° to -90°.

For the first pass, the variables density (D) and grade multiplied by density (GxD) were interpolated using ordinary kriging (OK) in the A2-HG domains with inverse distance squared (ID^2) on all remaining mineralized domains, with a minimum of four to a maximum of 14 composites per block estimate with a maximum of three composites per drill hole. Hard boundaries were used to limit the use of composites between domains. Block grade (GxD_D) was derived from the interpolated GxD value by dividing that value by the interpolated density (D) value for each block.

When the first search was not enough to estimate all the blocks, the search range was multiplied by two for a second pass. If any blocks were still unpopulated after the second pass (domains 101, 227, 238, 408, and 415) were then interpolated with the minimum number of samples per estimate being reduced to two, the maximum number of samples per estimate remained unchanged at 14, and the restriction on the number of samples per drill hole was removed for a third pass. All blocks in the domains were populated by pass three.

In order to reduce the influence of very high grade composites, grades greater than a designated threshold level for the A3-HG and other domains were restricted to a search ellipse dimension of 25 m by 25 m by 5 m (high yield restriction). The threshold grade levels of 15% for the A3-HG domains (8 and 9) and 5% and 10% for the other domains were chosen from the basic statistics and from visual inspection of the apparent continuity of very high grades within each domain, which indicated the need to limit their influence to approximately half the distance of the main search. Interpolation parameters are listed in Table 14-9 for the Arrow Deposit Mineral Resource domains.

TABLE 14-9 BLOCK ESTIMATE SEARCH STRATEGY BY DOMAIN
NexGen Energy Ltd. - Rook I Property

Domain	Estimation Type	Cap %U_3O_8	High Yield Restriction %U_3O_8	Bearing	Plunge	Dip	Pass 1			Pass 2			Pass 3		
							Major	Semi	Minor	Major	Semi	Minor	Major	Semi	Minor
1	OK	N/A	N/A	50	-35	-90	37	21	11	100	100	20	N/A	N/A	N/A
2	OK	N/A	N/A	235	-30	-90	58	16	10	100	100	20	N/A	N/A	N/A
3	OK	N/A	N/A	243	-10	-83	27	16	10	100	100	20	N/A	N/A	N/A
5	OK	N/A	N/A	235	-40	-86	34	24	11	100	100	20	N/A	N/A	N/A
7	OK	N/A	N/A	223	-53	76	48	22	15	100	100	20	N/A	N/A	N/A
8	ID^2	40	15	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
9	ID^2	40	15	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
100	ID^2	6	5	230	0	90	50	50	10	100	100	20	N/A	N/A	N/A
101	ID^2	6	5	238	0	90	50	50	10	100	100	20	100	100	20
102	ID^2	6	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
103	ID^2	6	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
104	ID^2	6	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
105	ID^2	6	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
106	ID^2	6	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
107	ID^2	6	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
108	ID^2	10	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
109	ID^2	10	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
110	ID^2	6	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
111	ID^2	6	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
113	ID^2	6	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
201	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
202	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
203	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
204	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
205	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
206	OK	20	10	54	-48	-90	34	27	10	100	100	20	N/A	N/A	N/A
207	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
208	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
209	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
210	ID^2	10	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
211	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A

Domain	Estimation Type	Cap %U_3O_8	High Yield Restriction %U_3O_8	Bearing	Plunge	Dip	Pass 1			Pass 2			Pass 3		
							Major	Semi	Minor	Major	Semi	Minor	Major	Semi	Minor
212	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
213	ID^2	10	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
214	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
215	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
216	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
218	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
220	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
221	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
222	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
223	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
224	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
225	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
226	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
227	ID^2	8	5	225	0	90	50	50	10	100	100	20	100	100	20
228	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
229	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
230	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
232	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
233	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
234	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
236	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
237	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
238	ID^2	8	5	238	0	90	50	50	10	100	100	20	100	100	20
242	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
243	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
244	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
245	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
246	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
248	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
249	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
301	ID^2	10	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
302	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
303	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
304	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
305	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A

Domain	Estimation Type	Cap %U_3O_8	High Yield Restriction %U_3O_8	Bearing	Plunge	Dip	Pass 1			Pass 2			Pass 3		
							Major	Semi	Minor	Major	Semi	Minor	Major	Semi	Minor
306	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
307	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
309	ID^2	25	10	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
310	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
311	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
312	ID^2	10	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
313	ID^2	25	10	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
314	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
315	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
316	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
318	ID^2	25	10	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
319	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
320	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
321	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
401	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
402	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
403	ID^2	20	10	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
405	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
407	ID^2	8	5	235	0	70	50	50	10	100	100	20	N/A	N/A	N/A
408	ID^2	8	5	238	0	90	50	50	10	100	100	20	100	100	20
409	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
410	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
411	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
412	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
413	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
415	ID^2	8	5	238	0	90	50	50	10	100	100	20	100	100	20
416	ID^2	8	5	238	0	90	50	50	10	100	100	20	N/A	N/A	N/A
601	ID^2	8	5	230	0	90	50	50	10	100	100	20	N/A	N/A	N/A
602	ID^2	8	5	230	0	90	50	50	10	100	100	20	N/A	N/A	N/A
606	ID^2	8	5	230	0	90	50	50	10	100	100	20	N/A	N/A	N/A
607	ID^2	8	5	230	0	90	50	50	10	100	100	20	N/A	N/A	N/A
608	ID^2	8	5	230	0	90	50	50	10	100	100	20	N/A	N/A	N/A
610	ID^2	8	5	230	0	90	50	50	10	100	100	20	N/A	N/A	N/A
611	ID^2	8	5	230	0	90	50	50	10	100	100	20	N/A	N/A	N/A

BLOCK MODEL VALIDATION

RPA validated the block model using the following methods:

- Swath plots of composite grades versus OK, ID^3 and NN grades in the X, Y, and Z (Figure 14-14 through Figure 14-16)
- Volumetric comparison of blocks versus wireframes
- Visual Inspection of block versus composite grades on plan, vertical and long section
- Parallel secondary estimation using inverse distance cubed (ID^3)
- Statistical comparison of block grades with assay and composite grades

RPA found grade continuity to be reasonable, and confirmed that the block grades were reasonably consistent with local drill hole composite grades.

FIGURE 14-14 EAST-WEST (X) SWATH PLOT OF ARROW DEPOSIT

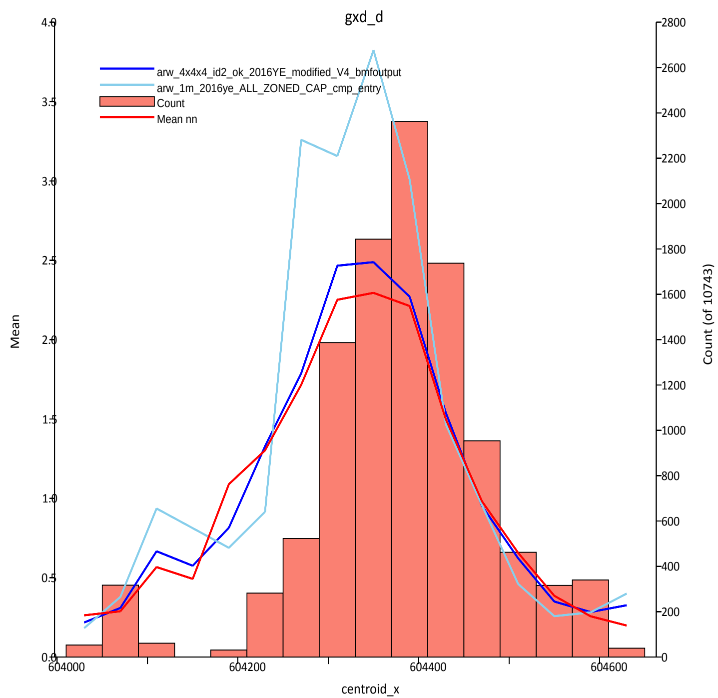


FIGURE 14-15 NORTH-SOUTH (Y) SWATH PLOT OF ARROW DEPOSIT

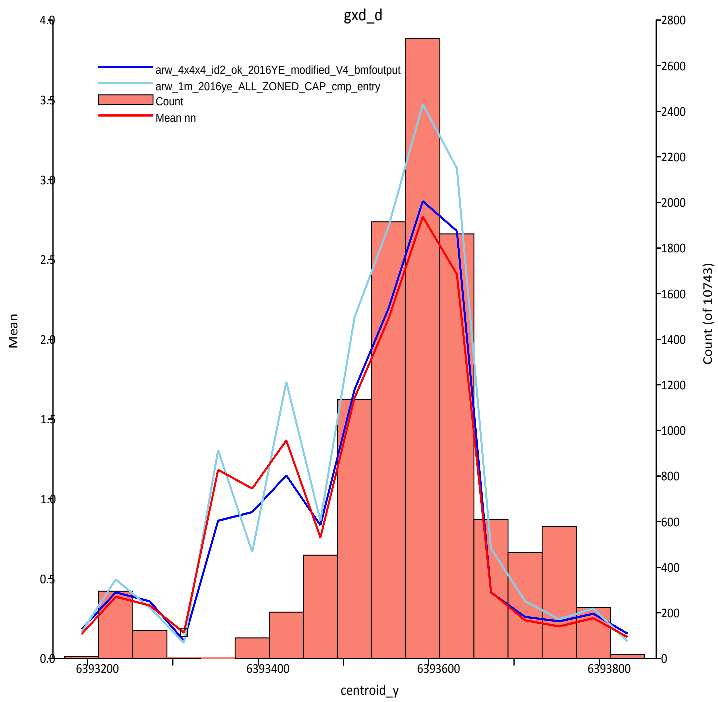
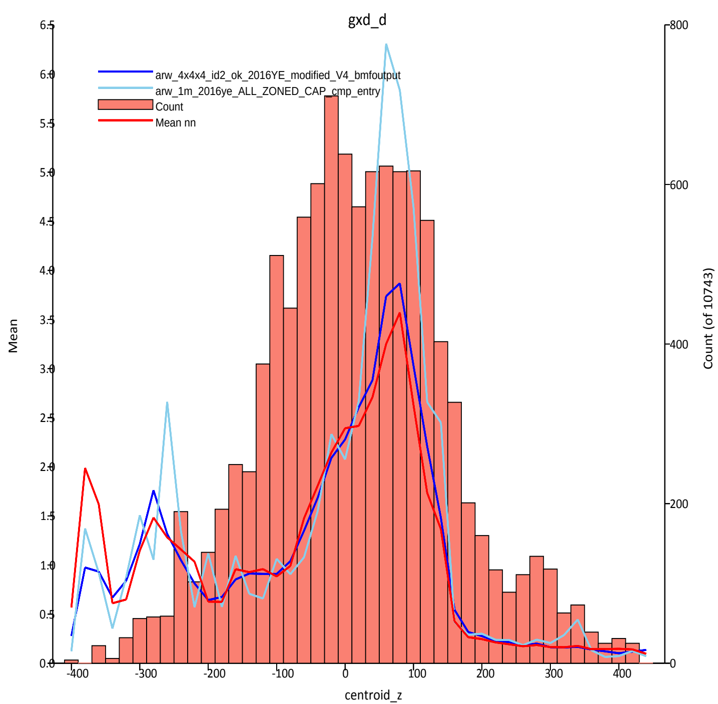


FIGURE 14-16 VERTICAL (Z) SWATH PLOT OF ARROW DEPOSIT



VOLUME COMPARISON

Wireframe volumes were compared to block volumes for each domain at the Arrow Deposit. This comparison is summarized in Table 14-10 and results show that there is good agreement between the wireframe volumes and block model volume. The difference is less than 1%, except for the 113, 216, 226, 306, 412, and 610 domains where the difference ranges from 1.1% to 5.1% due to the small volume of the wireframes combined with the whole block approach.

The estimated total volume of the wireframe models is 3,795,300 m^3, while the volume of the block model at a zero-grade cut-off is 3,794,600 m^3.

TABLE 14-10 VOLUME COMPARISON
NexGen Energy Ltd. - Rook I Property

Zone	Wireframe Volume (m^3)	Block Model Volume (m^3)	% Difference
A1	1,114,737	1,115,038	0.03%
A2-HG	149,660	150,141	0.32%
A2	1,139,041	1,138,628	-0.04%
A3-HG	55,132	55,577	0.81%
A3	867,819	866,494	-0.15%
A4	315,570	315,266	-0.10%
SWA	153,320	153,487	0.11%
Grand Total	**3,795,279**	**3,794,631**	**-0.02%**

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 Arrow Deposit. Figure 14-17 is a cross section and Figure 14-18 is a level plan showing blocks and drill hole composites colour coded by grade within the A2-HG zone.

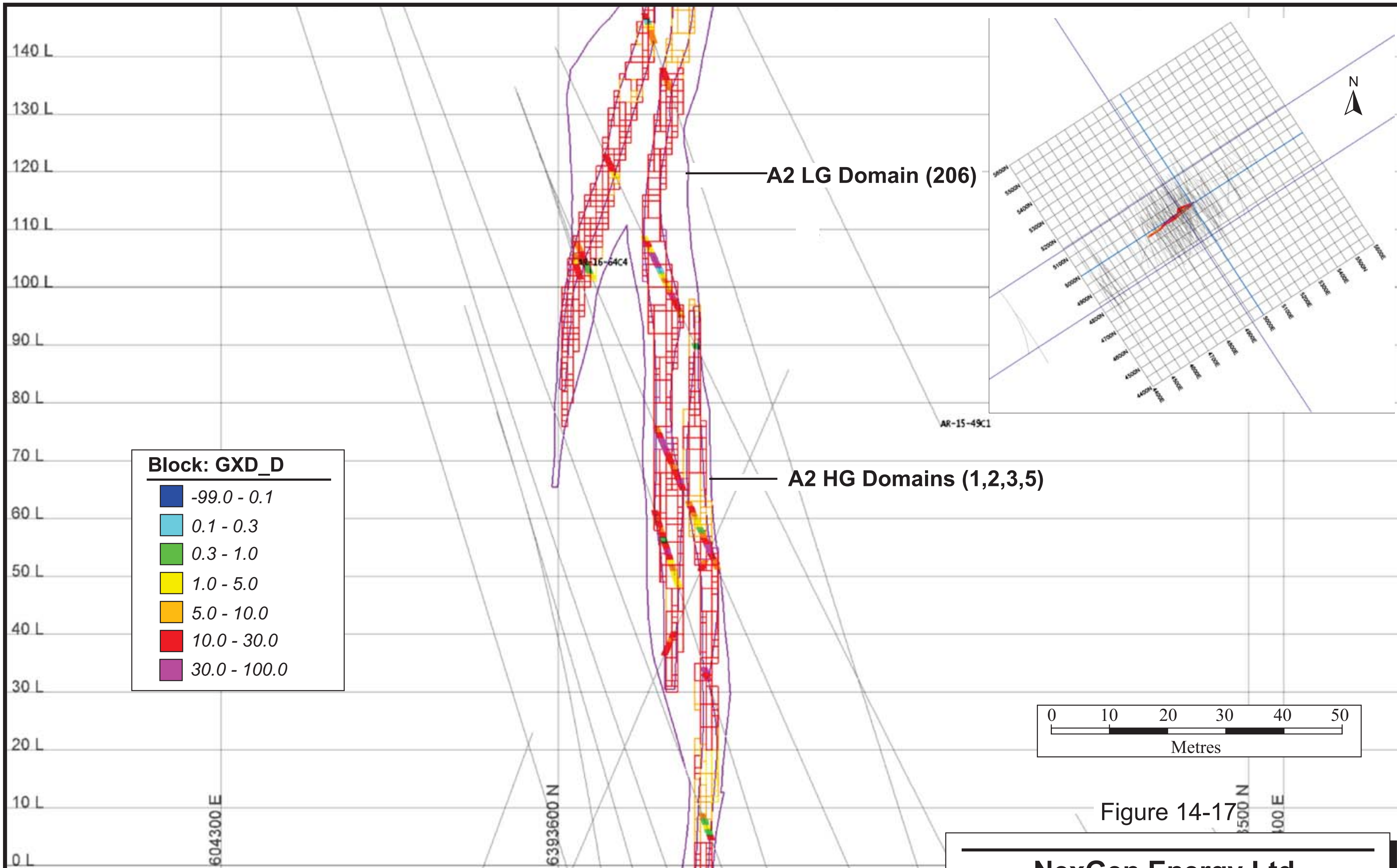


Figure 14-17

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Vertical Section 4940 E
(5 m Window) A2-HG2 Domains

September 2017

Source: RPA, 2017.

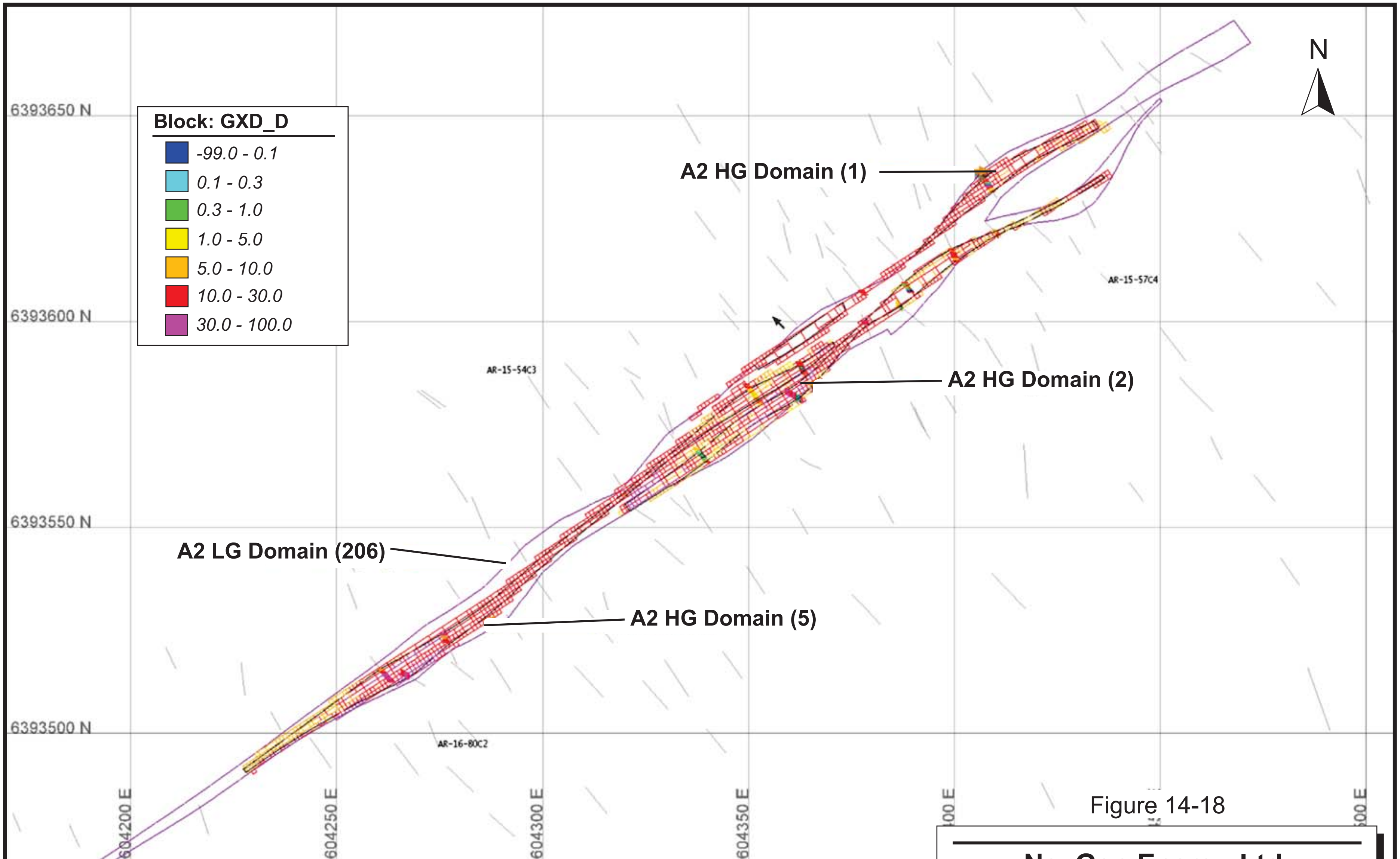


Figure 14-18

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Level Plan 30 m (20 m Window)
A2-HG2 Domains

September 2017

Source: RPA, 2017.

SECONDARY ESTIMATION COMPARISON

As a secondary parallel estimation validation, RPA and NexGen each completed ID^3 block model estimates using the March 2016 estimation parameters for interpolation of gxd_d (grade) and d (density). Both the RPA and NexGen ID^3 estimations were in strong agreement and were within less than 6% of the 2017 OK estimation of the A2-HG domains. Comparisons to the other domains ranged between 5% and 25% difference which was a function of the variability between the two sets of capping parameters and high grade restriction search parameters.

In RPA's opinion, the difference seen between the models is reasonable given the variabilities between the estimation methodologies, and the Arrow Indicated and Inferred Mineral Resource estimate is considered to be reasonable and acceptable.

STATISTICAL COMPARISON

Statistics of the block grades are compared with statistics of composite grades in Table 14-11 for all blocks and composites within the Arrow Deposit domains. Block grades are weighted by density for the composites and tonnage for the blocks. In some cases, the average block grades are higher than the average composite grades, which RPA attributes to density weighting of the block grades or distribution of the drill holes within relatively small zones.

TABLE 14-11 STATISTICS OF BLOCK GRADES VS. COMPOSITE GRADES
NexGen Energy Ltd. - Rook I Property

	A1		A2-HG		A2		A3-HG	
Descriptive Statistics	**Comp**	**Block**	**Comp**	**Block**	**Comp**	**Block**	**Comp**	**Block**
Number of Samples	1,561	65,987	1,106	16,119	5,139	109,856	64	5,239
Min (%U_3O_8)	0.001	0.000	0.001	1.014	0.001	0.001	0.003	0.001
Max (%U_3O_8)	10.00	8.72	75.70	68.05	20.00	7.71	30.35	19.01
Mean (%U_3O_8)	0.41	0.31	16.03	18.40	0.67	0.58	9.64	8.74
Variance	0.92	0.25	300.90	114.90	1.84	0.30	58.72	12.56
StDev (%U_3O_8)	0.96	0.51	17.35	10.72	1.36	0.55	7.66	3.54
CV	0.96	1.62	1.08	0.58	2.04	0.94	0.79	.41

	A3		A4		SWA	
	Comp	**Block**	**Comp**	**Block**	**Comp**	**Block**
Number of Samples	1,811	67,092	595	35,520	431	13,454
Min (%U_3O_8)	0.001	0.001	0.001	0.001	0.001	0.002
Max (%U_3O_8)	21.45	19.01	20.00	13.74	8.00	5.87
Mean (%U_3O_8)	0.79	0.83	0.89	0.79	0.43	0.39
Variance	3.98	1.89	4.11	1.29	1.34	0.42
StDev (%U_3O_8)	2.00	1.38	2.03	1.14	1.16	0.65
CV	2.52	1.65	2.27	1.43	2.67	1.65

CUT-OFF GRADE

To fulfill the NI 43-101 requirement of “reasonable prospects for eventual economic extraction”, RPA estimated a potential underground mining cut-off grade using assumptions based on historical and known operating costs for mines operating in the Athabasca Basin. Table 14-12 shows the breakeven cut-off grade estimate by RPA using a price of US$65/lb U_3O_8 and based on assumptions for process plant recovery, total operating cost, and incremental component of operating cost. The estimated cut-off grade of 0.25% U_3O_8 is in line with the cut-off grade of 0.25% at Cameco Corp.’s Eagle Point mine, which is basement hosted mineralization similar geologically to Arrow.

TABLE 14-12 ARROW DEPOSIT CUT-OFF GRADE CALCULATION
NexGen Energy Ltd. - Rook I Property

Item	Quantity
Price in US$/lb U_3O_8	US$65
Process plant recovery	95%
Mining cost per tonne	US$180
Processing cost per tonne	US$120
G&A cost per tonne	US$32
Total operating cost per tonne	US$332
Break-Even Cut-off grade	0.25%

Tables 14-13 and 14-14 and Figures 14-19 and 14-20 show the sensitivity of the Arrow block model to various cut-off grades. RPA notes that, although there is some sensitivity of average grade and tonnes to cut-off grade, the contained metal is less sensitive.

TABLE 14-13 ARROW DEPOSIT INFERRED MINERAL RESOURCE SENSITIVITY TO CUT-OFF GRADE
NexGen Energy Ltd. - Rook I Property

Cut-off (% U_3O_8)	Tonnes	Grade (% U_3O_8)	Metal (U_3O_8 lbs)
0.25	4,300,000	1.30	122,100,000
0.30	3,800,000	1.4	119,500,000
0.50	2,600,000	1.89	109,200,000
1.00	1,300,000	3.12	88,500,000
2.00	500,000	5.74	65,200,000
2.50	400,000	6.80	59,400,000
3.00	300,000	7.57	55,600,000
5.00	200,000	9.68	45,600,000
10.00	100,000	13.58	22,200,000

FIGURE 14-19 ARROW INFERRED MINERAL RESOURCE TONNES AND GRADE AT VARIOUS CUT-OFF GRADES

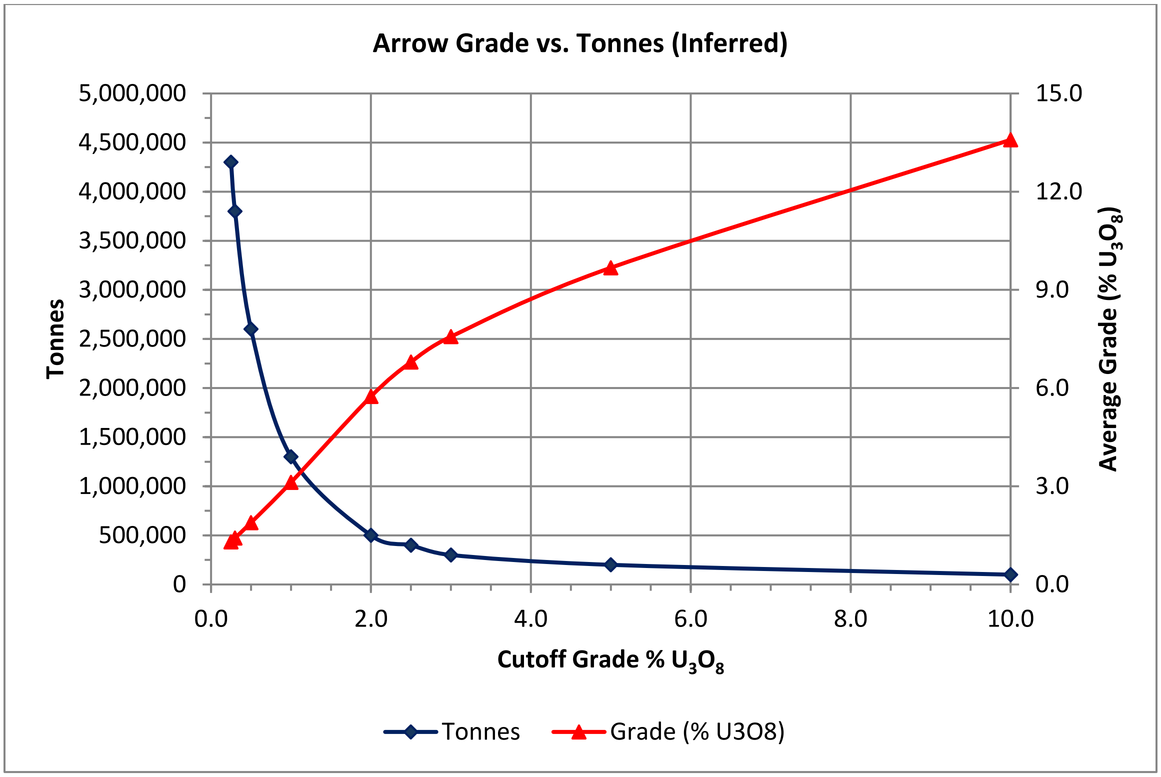
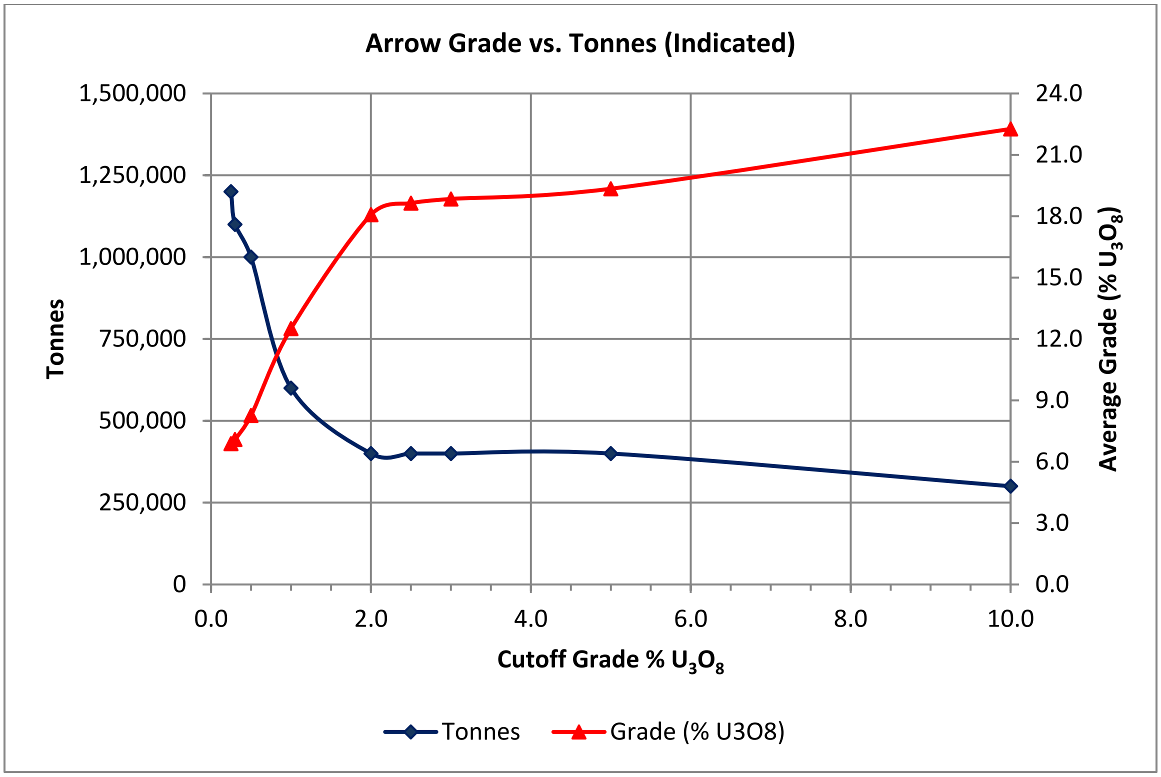


TABLE 14-14 ARROW DEPOSIT INDICATED MINERAL RESOURCE SENSITIVITY TO CUT-OFF GRADE
NexGen Energy Ltd. - Rook I Property

Cut-off (% U_3O_8)	Tonnes	Grade (% U_3O_8)	Metal (U_3O_8 lb)
0.25	1,200,000	6.88	179,500,000
0.30	1,100,000	7.085	179,200,000
0.50	1,000,000	8.26	177,700,000
1.00	600,000	12.51	172,000,000
2.00	400,000	18.07	166,000,000
2.50	400,000	18.64	165,300,000
3.00	400,000	18.84	165,000,000
5.00	400,000	19.34	163,800,000
10.00	300,000	22.27	150,800,000

FIGURE 14-20 ARROW INDICATED MINERAL RESOURCE TONNES AND GRADE AT VARIOUS CUT-OFF GRADES



CLASSIFICATION

In the CIM classification, a Mineral Resource is defined as "a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction". A Mineral Reserve is defined as the "economically mineable part of a Measured and/or Indicated Mineral Resource" demonstrated by studies at Pre-Feasibility or Feasibility level as appropriate. Mineral Reserves are classified into Proven and Probable categories.

CIM definitions were followed for Mineral Resource classification. The mineralized material for each domain was classified into the Indicated or Inferred Mineral Resource category on the basis of the search ellipse ranges obtained from the variography study, the demonstrated continuity of the mineralized structures, and the drill hole spacing. No Mineral Reserves have been estimated for the Property.

Mineral Resources for the Arrow Deposit are classified into Indicated and Inferred categories based on the following parameters:

- **Indicated Mineral Resources:** Defined by 25 m by 25 m drill spacing and a nearest neighbour distance of ≤ 30 m with strong geological continuity between drill hole intercepts.

- **Inferred Mineral Resources:** Defined by drill spacing that is greater than 25 m by 25 m and a nearest neighbour distance of ≤ 100 m with reasonable continuity assumed between holes. Due to the uncertainty that may be attached to Inferred Mineral Resources, it cannot be assumed that all or any part of an Inferred Mineral Resource will be upgraded to an Indicated or Measured Mineral Resource as a result of continued exploration. Confidence in the estimate is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability.

Figure 14-21 and Table 14-15 show the statistical distribution of the Indicated and Inferred categories based on distance to the nearest neighbour.

FIGURE 14-21 HISTOGRAM CLASSIFICATION OF ARROW DEPOSIT BASED ON NEAREST NEIGHBOUR DISTANCE

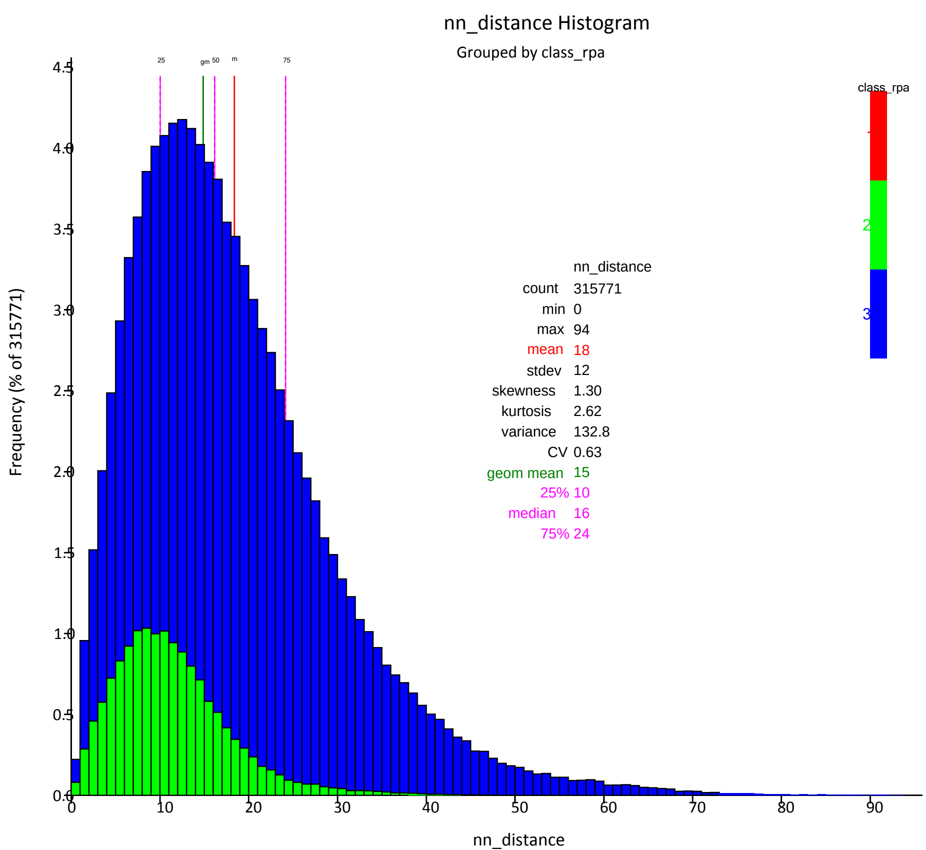


TABLE 14-15 HISTOGRAM SUMMARY STATISTICS OF NN DISTANCE VS. CLASSIFICATION
NexGen Energy Ltd. - Rook I Property

Classification	Domain	Count	Min (m)	Max (m)	Mean (m)	Variance	StDev (m)	CV
Indicated	2	46,839	0.00	56.00	11.00	43.51	7.00	0.58
Inferred	3	268,932	0.00	94.00	20.00	138.60	12.00	0.60
Total		**315,771**	**0.00**	**94.00**	**18.00**	**132.80**	**12.00**	**0.63**

MINERAL RESOURCE REPORTING

The Indicated Mineral Resources total 1.18 million tonnes average grade of 6.88% U_3O_8 for a total of 179.5 million pounds U_3O_8. Inferred Mineral Resources total 4.25 million tonnes at an average grade of 1.30% U_3O_8 for a total of 122.1 million pounds U_3O_8 (Table 14-16). The cut-off grade is 0.25% U_3O_8. The effective date of the Mineral Resource estimate is December 20, 2016. Estimated block model grades are based on chemical assays only. No Mineral Reserves have been estimated at the Property.

TABLE 14-16 MINERAL RESOURCE ESTIMATE– DECEMBER 20, 2016
NexGen Energy Ltd. - Rook I Property

Classification	Zone	Domain	Tonnage (Tonnes)	Grade (U_3O_8 %)	Contained Metal (U_3O_8 lb)
Indicated	**A2-HG**	1	110,000	22.29	52,900,000
		2	100,000	16.62	37,300,000
		3	50,000	19.60	20,500,000
		5	90,000	21.14	43,600,000
		7	50,000	10.37	10,700,000
	A2-HG Total		**400,000**	**18.84**	**164,900,000**
	A2	206	720,000	0.83	13,100,000
		213	60,000	0.98	1,400,000
	A2 Total		**790,000**	**0.84**	**14,500,000**
Indicated Total			**1,180,000**	**6.88**	**179,500,000**
Inferred	**A1**	100	120,000	0.43	1,200,000
		101	180,000	0.48	2,000,000
		102	60,000	0.65	900,000
		103	30,000	0.46	300,000
		104	140,000	0.82	2,500,000
		105	10,000	0.64	100,000
		106	10,000	0.34	100,000
		107	60,000	0.62	900,000
		108	120,000	1.14	3,000,000
		109	80,000	1.79	3,000,000
		110	30,000	0.49	300,000

Classification	Zone	Domain	Tonnage (Tonnes)	Grade (U_3O_8 %)	Contained Metal (U_3O_8 lb)
		111	10,000	0.37	100,000
		113	4,000	0.30	25,000
	A1 Total		**860,000**	**0.76**	**14,300,000**
	A2-HG	2	100	14.16	28,000
		5	3,000	20.78	1,300,000
		7	28,000	11.88	7,300,000
	A2-HG Total		**30,000**	**12.72**	**8,600,000**
	A2	201	30,000	0.95	600,000
		202	10,000	0.80	100,000
		203	30,000	0.84	500,000
		204	2,000	0.38	14,000
		205	50,000	0.66	700,000
		206	210,000	0.74	3,400,000
		207	40,000	0.59	600,000
		208	40,000	1.14	900,000
		209	10,000	0.63	200,000
		210	110,000	0.96	2,400,000
		211	30,000	0.93	600,000
		212	30,000	0.50	400,000
		213	100,000	0.85	1,900,000
		214	20,000	0.68	300,000
		215	50,000	0.72	700,000
		216	20,000	0.70	200,000
		218	700	0.28	4,000
		220	30,000	0.55	300,000
		221	20,000	0.56	300,000
		222	700	0.36	5,000
		223	10,000	0.72	200,000
		224	20,000	0.65	300,000
		225	3,000	1.68	100,000
		226	4,000	0.59	48,500
		227	10,000	1.63	200,000
		228	10,000	1.30	300,000
		229	10,000	0.30	48,000
		230	1,900	0.33	14,000
		232	10,000	0.43	100,000
		233	10,000	0.37	42,000
		234	1,000	0.31	7,000
		236	100,000	0.52	1,200,000
		237	10,000	0.39	100,000
		238	600	0.26	4,000
		242	30,000	1.31	700,000
		243	1,500	0.34	11,000
		244	10,000	1.28	400,000
		245	10,000	1.48	200,000
		246	20,000	0.34	100,000
		248	500	0.32	4,000
		249	20,000	0.82	300,000
	A2 Total		**1,100,000**	**0.76**	**18,500,000**
	A3-HG	8	70,000	7.56	11,700,000
		9	80,000	9.83	16,500,000
	A3-HG Total		**150,000**	**8.74**	**28,200,000**

Classification	Zone	Domain	Tonnage (Tonnes)	Grade (U_3O_8 %)	Contained Metal (U_3O_8 lb)
	A3	301	230,000	0.69	3,500,000
		302	100,000	0.72	1,600,000
		303	30,000	0.84	500,000
		304	20,000	0.43	100,000
		305	20,000	1.30	500,000
		306	5,000	0.80	100,000
		307	90,000	0.91	1,700,000
		309	90,000	2.87	6,000,000
		310	60,000	0.79	1,100,000
		311	60,000	0.65	900,000
		312	440,000	0.85	8,200,000
		313	100,000	2.08	4,800,000
		314	20,000	0.60	300,000
		315	20,000	0.54	300,000
		316	10,000	0.34	100,000
		318	120,000	2.53	6,800,000
		319	30,000	1.31	800,000
		320	14,000	0.41	100,000
		321	9,000	0.62	100,000
	A3 Total		**1,460,000**	**1.16**	**37,300,000**
	A4	401	10,000	0.65	100,000
		402	40,000	0.88	700,000
		403	130,000	1.68	4,800,000
		405	50,000	0.75	700,000
		407	70,000	0.82	1,300,000
		408	20,000	1.40	600,000
		409	20,000	1.50	700,000
		410	60,000	1.08	1,400,000
		411	30,000	0.61	300,000
		412	20,000	1.00	500,000
		413	30,000	0.60	300,000
		415	60,000	0.69	1,000,000
		416	20,000	0.89	300,000
	A4 Total		**550,000**	**1.07**	**12,900,000**
	180	601	20,000	0.89	400,000
		602	4,000	0.33	31,000
		606	10,000	0.49	100,000
		607	40,000	1.00	900,000
		608	30,000	1.25	800,000
		610	5,000	0.30	31,000
		611	1,000	0.29	6,000
	180 Total		**110,000**	**0.94**	**2,300,000**
Inferred Total			**4,250,000**	**1.30**	**122,100,000**

Notes:
1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are reported at a cut-off grade of 0.25% U_3O_8 based on a long-term price of US$65 per lb U_3O_8 and estimated mining costs.
3. A minimum width of 1.0 m was used.
4. Numbers may not add due to rounding.

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

COMPARISON TO PREVIOUS ESTIMATE

Using similar cut-off grades to the 2015 estimate for comparison purposes, drilling from 2016 at the Arrow Deposit has upgraded 89% of the initial (RPA, 2016) Inferred Mineral Resource pounds into the Indicated Mineral Resource category in the current Mineral Resource estimate and added more Inferred Mineral Resource. Overall, the Mineral Resource has changed from 201.9 million pounds of U_3O_8 contained in 3.48 million tonnes of Inferred Mineral Resources at 2.63% U_3O_8 to 179.5 million pounds of U_3O_8 contained in 1.18 million tonnes of Indicated Mineral Resources at 6.88% U_3O_8 plus 122.1 million pounds U_3O_8 contained in 4.25 million tonnes of Inferred Mineral Resources at 1.30% U_3O_8.

The A2-HG zone has increased to an Indicated Mineral Resource of 164.9 million pounds U_3O_8 contained in 0.40 million tonnes grading 18.8% U_3O_8 plus an Inferred Mineral Resource of 8.6 million pounds U_3O_8 contained in 0.03 million tonnes grading 12.7% U_3O_8 in the current estimate, compared to the initial Inferred Mineral Resource of 120.5 million pounds U_3O_8 contained in 0.41 million tonnes grading 13.3% U_3O_8. Figures 14-22 and 14-23 show visually the difference between the initial Mineral Resource estimate and the current Mineral Resource estimate.

FIGURE 14-22 WIREFRAME VOLUME COMPARISON – JANUARY 2016 ESTIMATE VS. DECEMBER 2016 ESTIMATE

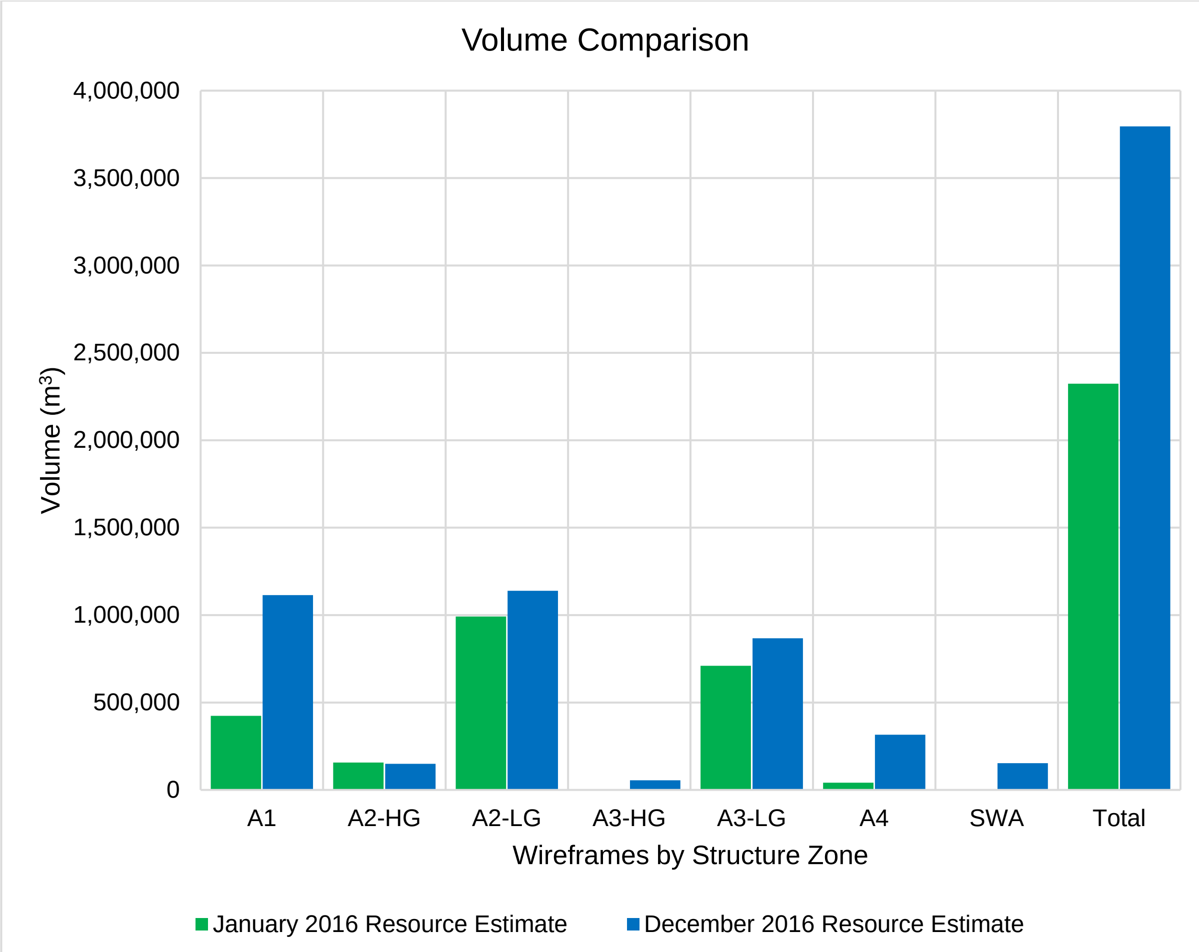
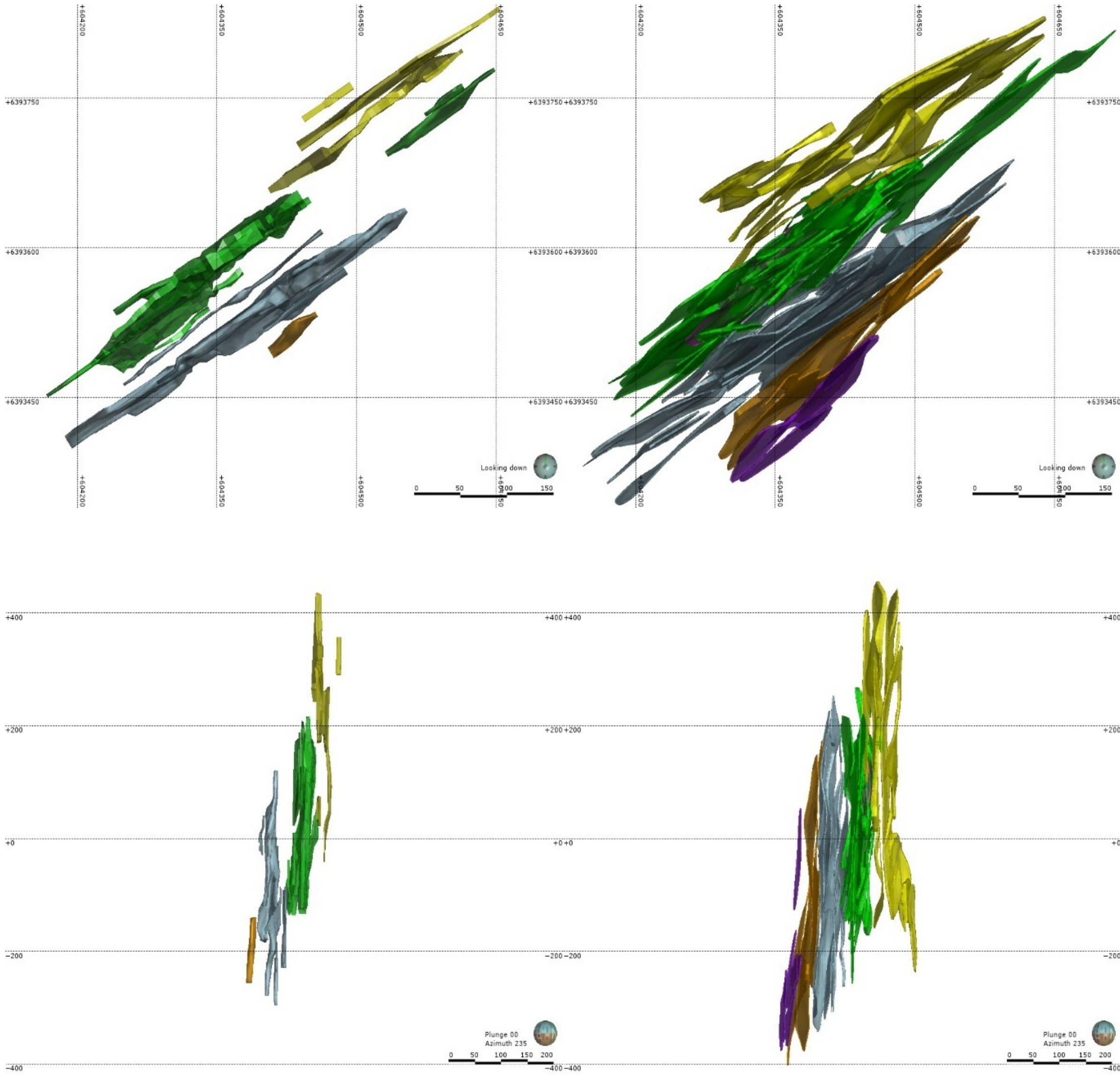


FIGURE 14-23 WIREFRAME VOLUME COMPARISON JANUARY 2016 ESTIMATE (LEFT) VS. DECEMBER 2016 ESTIMATE (RIGHT) IN PLAN (TOP) AND SECTION (BOTTOM)



(Source: NexGen 2017)

15 MINERAL RESERVE ESTIMATE

There is no current Mineral Reserve estimate on the Project.

16 MINING METHODS

The Project hosts the Arrow deposit, a structurally controlled northeast-southwest (055°-235°) trending sub-vertical high-grade uranium deposit. The deposit is overlain by approximately 100 m of glacial overburden comprised primarily of sand and including some gravels, cobbles, and boulders. All uranium mineralization discovered on the Property to date is hosted exclusively in basement lithologies below the unconformity.

The reader is cautioned that the mining methods are based on a preliminary economic assessment that is based, in part, on Inferred Resources, and is preliminary in nature. Inferred Resources are considered too geologically speculative to have mining and economic considerations applied to them to be categorized as Mineral Reserves. There is no certainty that economic forecasts contained herein will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

MINING METHODS

The mining method will be a combination of transverse and longitudinal longhole open stoping with paste backfill. Transverse mining will be used in areas where the thickness of mineralization from footwall to hanging wall exceeds geotechnical stope dimension guidance or where stopes are in high grade mineralization and developing the stope perpendicular to the vein will reduce radiation exposure.

In general, mining will target high grade horizons early in the mine life, with separate accesses for the footwall and hanging wall zones to allow for flexibility in sequencing. Production will be sequenced so that personnel are always working in fresh air, and the threat of contamination from airborne radiation (dust, progeny, or gas) is eliminated.

The ventilation system will be a push-pull system with two fresh air raises and one exhaust air raise. It is planned that air from mineralized headings will be used once before being exhausted, while air from waste headings (e.g., ramp development) can be re-used in other areas. Prior to stopes being extracted, flow-through ventilation will be established to minimize exposure of longhole mining crews. This general system of ventilation has been used extensively in uranium mines in the Athabasca Basin.

GEOTECHNICAL AND HYDROGEOLOGICAL PARAMETERS

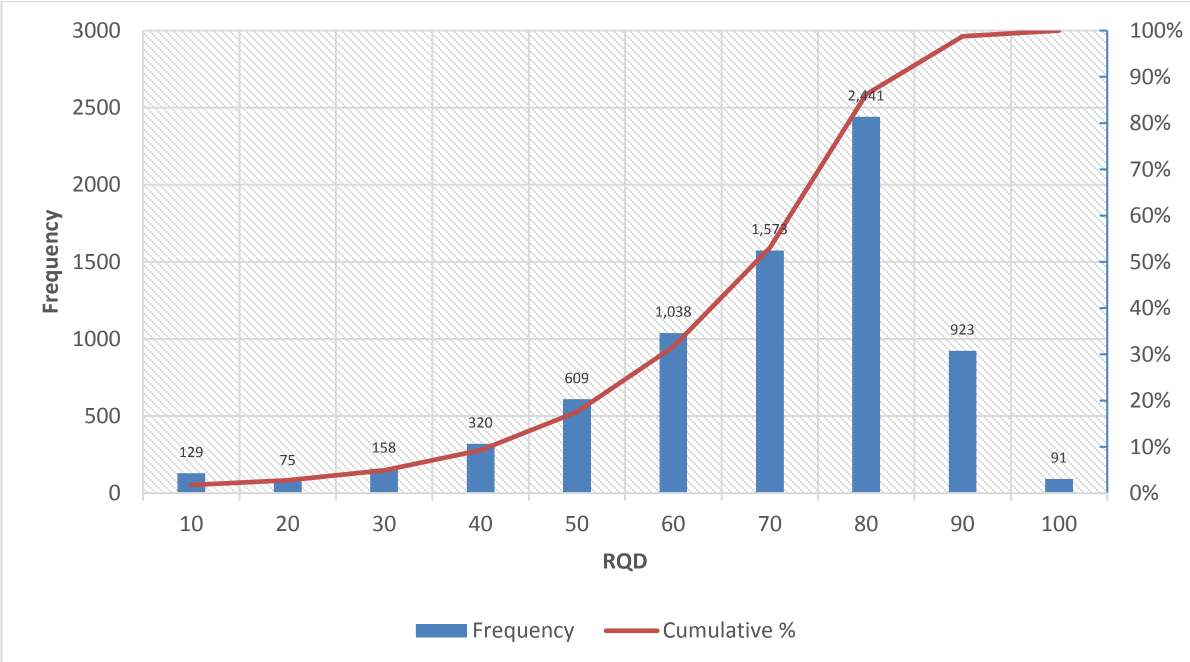
Geotechnical analysis and design was carried out by BGC. The following is a summary of BGC's report, titled "Preliminary Economic Assessment for the Arrow Deposit – Geotechnical Evaluation for Mine Design", and dated July 2017.

ROCK QUALITY DESIGNATION

Rock quality designation (RQD) is a measure of the degree of fracturing in a rock mass (Deere and Deere, 1988). RQD was measured at Arrow for each three metre core run interval. BGC reviewed NexGen's RQD measurements on photographs of drill holes and concluded that the RQD measurements are conservative. BGC noted that breaks in drill core, which are not normally considered in the RQD determination, were included, for example mechanical breaks from the drilling process.

RQD for all data is shown in Figure 16-1. Approximately 50% of the drill hole core intervals had RQD values greater than 70%. The most frequent RQD values are between 70% and 80%, with approximately 33% of the measurements in this range. Greater than half of the RQD values between 0 and 10% are from the three sedimentary units. The majority of the remaining RQD measurements in the 0 to 10% range are associated with fault or shear zones and mineralization.

FIGURE 16-1 RQD HISTOGRAM – ALL DATA



Source: BGC

INTACT ROCK STRENGTH

Intact Rock Strength (IRS) is a subjective input parameter to rock mass quality, based on a strength assessment of drill core samples generally conducted in the field using a rock hammer or a point load tester. It is best calibrated with laboratory test results of uniaxial compressive strength (UCS).

To estimate the IRS of drill core, simple index tests were used (i.e., using geological hammer and pocket knife). This parameter is difficult to evaluate from core photographs, however, a relative evaluation was completed by BGC, looking primarily for zones of extremely weak rock conditions. The IRS estimates in and proximal to mineralization are considered to be conservative.

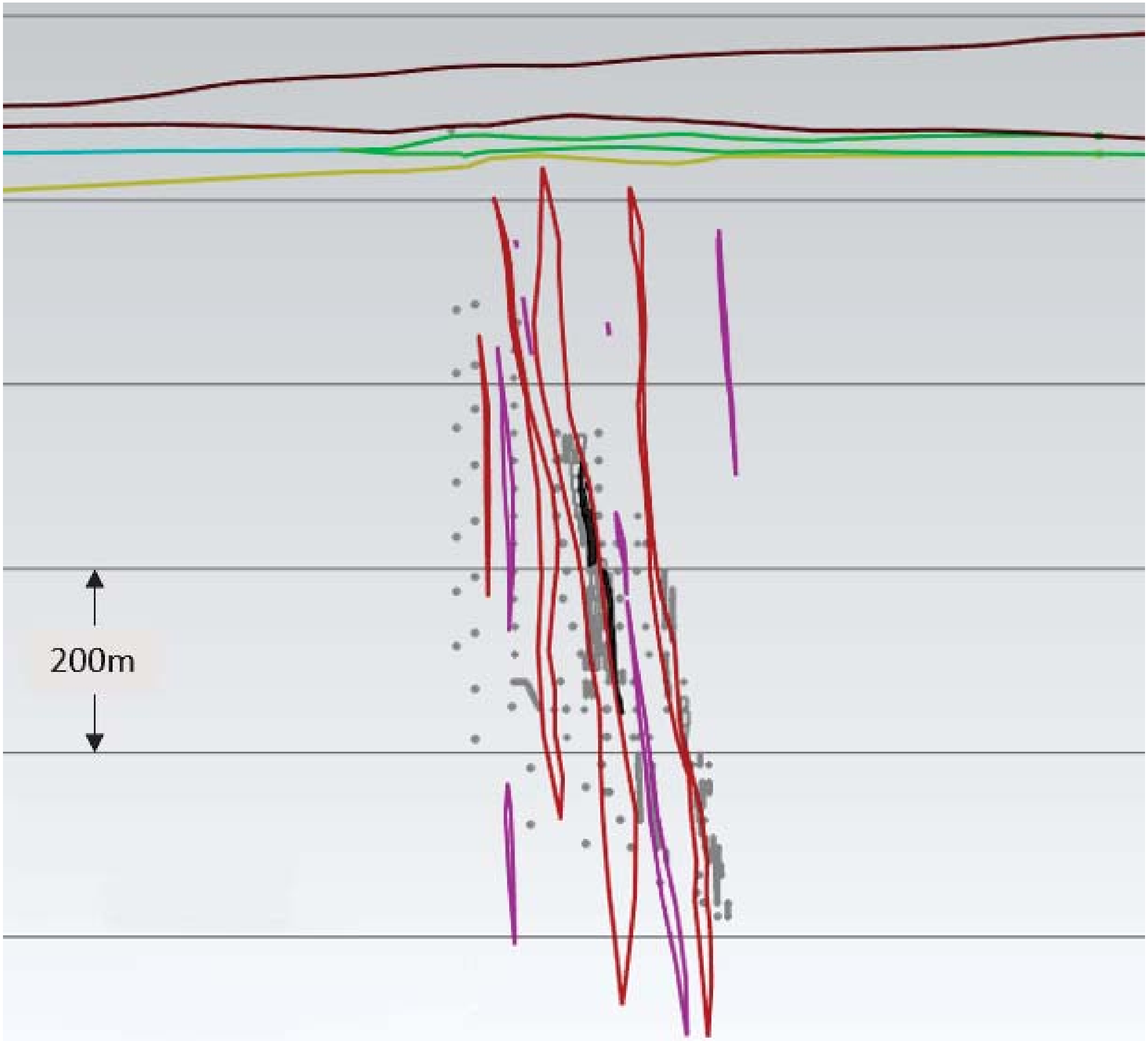
The IRS estimates indicate that the sedimentary units are much weaker than the underlying basement rocks. Weathering and hydrothermal alteration has reduced the strength of the basement rock locally, resulting in wide variations in strength, with altered/weathered basement rocks having an IRS less than approximately 10 MPa, and the fresh basement rocks having an IRS from an estimated 100 MPa to an estimated 200 MPa.

Verification of the IRS using both field and laboratory methods is required at the next level of study to properly evaluate the accuracy of NexGen's IRS estimates.

JOINT SPACING

BGC has not attempted to assess the joint spacing or condition ratings made by NexGen. As interpreted by NexGen (2015), the local structural geology is dominated by regional foliation, which dips steeply to the north-northwest and rolls (twists) over to dip steeply to the south-southeast. Regionally, faulting is steeply dipping and trends to the northeast (Figure 16-2).

Verification of the spacing and joint conditions are required at the next level of study.



Legend:

- Fault Zones
- Shear Zones
- High Grade Mineralization
- Conceptual Mine Layout

Figure 16-2

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Fault and Shear Zones Section (Along Mineralized Trend 055°)

September 2017 ***Source: NexGen Energy Ltd., 2015.***

GROUNDWATER

NexGen assumed a water parameter rating of 7 in the basement rock (i.e., “moist only, interstitial water”) and 0 above the unconformity (i.e., “severe water problems”). The zero rating above the unconformity is reasonable based on data and core photograph review. The groundwater rating of 7 in the basement rock may be accurate in some locations. BGC assumed that all bedrock units are below the elevation of the water table.

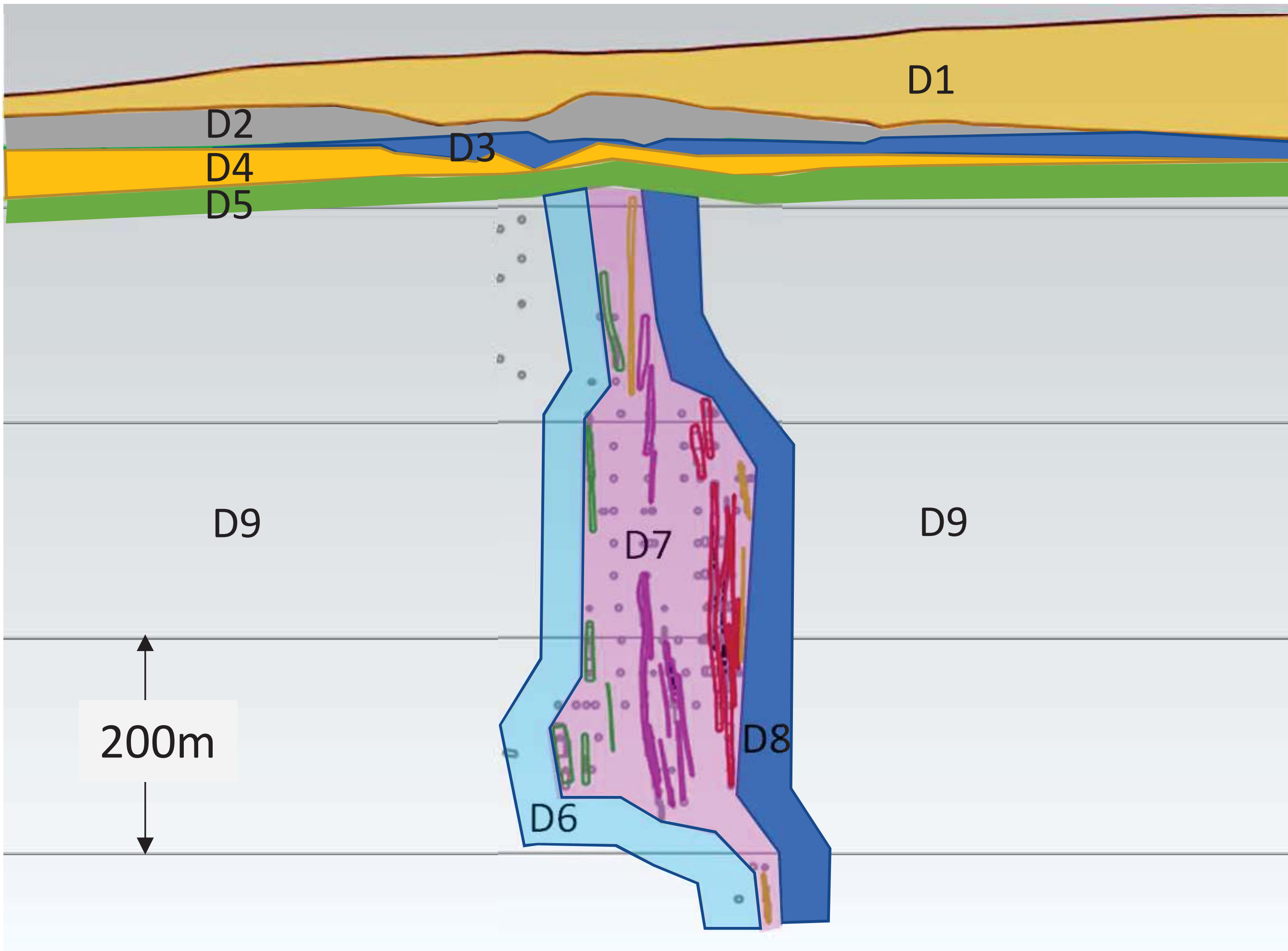
Hydrogeological evaluations at the next level of study should test the bedrock groundwater conditions to confirm the accuracy of NexGen’s RMR’ parameter application.

GEOTECHNICAL DOMAINS

Based on a review of the geotechnical and RMR’ data sets and 3D geology models provided by NexGen, BGC identified nine conceptual geotechnical domains. The domains represent geological units with distinct geotechnical conditions based on geology, degree of weathering and hydrothermal alteration, areas of faulting, and location with respect to the mineralized zone(s) and production stopes.

TABLE 16-1 SUMMARY OF GEOTECHNICAL DOMAINS
NexGen Energy Ltd. - Rook I Property

Domain	Description	Thickness (m)	Average RMR’	Average Rock Quality	UCS (MPa)
D1	Overburden: sand, cobbles, boulders	35-39	N/A	N/A	N/A
D2	Cretaceous: siltstone, mudstone, sandstone, coal seams	7-41	10	Very Poor	<25
D3	Devonian: sandstone	10-28	16	Very Poor	<25
D4	Athabasca: sandstone	5-16	28	Poor	25
D5	Paleoweathered basement: gneiss	N/A	42	Poor to Fair	N/A
D6	Footwall altered basement: gneiss	N/A	67	Good	50-100
D7	Mineralized Zone: shears, faults, alteration ‘halo’	N/A	60	Good	25-50
D8	Hanging-wall altered basement: gneiss	N/A	72	Good	50-100
D9	Unaltered basement: gneiss	N/A	>80	Very Good	>100



Legend:

- Domain 1 (D1): Overburden (sand, cobbles, boulders).
- Domain 2 (D2): Cretaceous (siltstone/mudstone/sandstone/coal seams).
- Domain 3 (D3): Devonian (sandstone).
- Domain 4 (D4): Athabasca (sandstone).
- Domain 5 (D5): Paleoweathered basement (gneiss).
- Domain 6 (D6): Footwall altered basement (gneiss).
- Domain 7 (D7): Mineralized Zone (shears, faults and alteration 'halo').
- Domain 8 (D8): Hanging wall altered basement (gneiss).
- Domain 9 (D9): Unaltered basement (gneiss).

Figure 16-3

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Approximate Geotechnical Domains Viewed along Strike

September 2017 ***Source: NexGen Energy Ltd., 2015.***

UNDERGROUND

Access to the underground will be via a Main Shaft, with a second shaft developed to approximately the same depth and used for return air. A third shaft will be excavated for the delivery of fresh air and to act as an alternate egress. Where possible, all shafts should be in areas with the least overburden cover, minimal sedimentary unit thickness, relatively flat unconformity, and away from prominent faults or shear zones, as these factors can negatively impact shaft sinking rates, decrease stability, and increase groundwater inflow risks.

Expected challenges in shaft construction include:

- Saturated and unconsolidated overburden at shaft foundation and sinking locations.
- Very poor to fair quality sedimentary rock underlying the overburden, potentially resulting in significant groundwater inflows during shaft excavation if left unmanaged.
- The unconformity contact and paleoweathered zone are comprised of poor quality rock, improving to fair/good quality rock at greater depth. Groundwater inflow rates from this domain are unknown, however, given increased fracture and proximity to the sandstone aquifer above, inflows are anticipated.

Artificial ground freezing would be implemented after the local site is levelled and prior to any excavation below the groundwater table. In BGC's assessment, the proposed method for earth support and groundwater control during shaft sinking is feasible, although this will require further confirmatory analyses at the next level of study.

Conceptual mine shaft locations selected by NexGen and RPA have been used to predict the anticipated geomechanical conditions during construction. As outlined in Table 16-1 and illustrated in Figure 16-3, initial shaft sinking will be through domains D1 through D4, which at the proposed shaft locations consist of 40 m of overburden, 60 m of sedimentary rock, and 25 m of paleoweathered basement rock with a combined thickness of 125 m. These domains consist of poor to very poor quality rock masses, however, once these have been artificially frozen they are not anticipated to be problematic.

To freeze the ground, freeze holes should be spaced approximately 1.0 m to 1.5 m, with a spacing of 1.2 m assumed for preliminary cost estimations to an approximate depth of 125 m. Approximately three instrumented ground temperature monitoring holes and a shaft centre pressure relief hole are also required. It is anticipated that the freeze time could take four to six months, based on experience with shaft sinking studies at other sites with similar ground conditions.

BGC assumed that once the freeze is in place, the shafts will be sunk with in-cycle water tight liner installation to the depth of the freeze. As a result, it is not anticipated that any additional support is required above bedrock (i.e., above Domain 2). Below this depth a monolithic concrete plug will be installed in a "bottom-up" construction sequence. Down to the bottom of the freeze in bedrock, the use of patterned rock bolts, mesh, and localized shotcrete are anticipated. Below the freeze, in presumably unaltered basement rock (RMR_{76} greater than 70), patterned rock bolts, mesh, and localized shotcrete (low percentage of shaft alignment) are anticipated. Depending on ground conditions, a concrete-lined shaft is an alternative method for gaining access to the deposit. The PEA has considered costs for concrete lined shafts for two out of the three main vertical developments, and a raisebore method for the third vertical development.

The following advance rates have been estimated based on experience with similar projects:

- Overburden and uppermost bedrock from 0 m to 40 m depth = 0.5 m/day
- Frozen bedrock from 40 m to 125 m depth = 1.0 m/day to 1.5 m/day
- Altered basement rock from 125 m to 140 m depth = 2.0 m/day
- Unaltered basement rock from 140 m to shaft bottom = 2.3 m/day.

Multiple shafts have been sunk throughout the Athabasca Basin by contractor companies, and there exists the technical and operational capacity to sink shafts in the vicinity of the Arrow Deposit.

CROWN PILLAR

The crown pillar is defined as the package of rock separating the unconformity from the uppermost mine workings. At Arrow, this distance has been estimated to be approximately 50 m, based on the mine plan and 3D models developed by RPA. However, most of the mine production will be carried out at depths greater than 200 m beneath the unconformity.

Failure of the crown pillar to the unconformity, within the paleoweathered zone, could result in a significant mine water inflow event, however, at Arrow there is considerable vertical distance between the unconformity and the uppermost production stopes so a failure of this magnitude is highly unlikely.

The crown pillar is anticipated to intersect two rock mass domains, the paleoweathered basement rocks (Domain 5) and the unaltered basement rocks (Domain 9). Based on a review of core photos from drill holes in the crown pillar area, this component of the mine appears to pose a low risk to the Project. For the level of this study, all underground production drifts in the crown have been assumed to be cable bolted, shotcreted, and backfilled upon mine closure. The crown pillar requires additional geotechnical and hydrogeological data collection during the next level of evaluation.

STOPE DIMENSIONS

Stope dimensions were analyzed using an empirical open stope design methodology known as the Stability Graph Method (Hutchinson and Diederichs, 1996). Q' values of 2 and 6 were selected for the "conservative" and "base" cases. These are consistent with RMR' values of approximately 50 to 60 respectively, and represent the range of rock mass conditions likely to be encountered during typical stope development.

Additional input parameters for the analyses are shown in Table 16-2. Values for Sigma 1 (major principal stress) and related 'A' magnitudes were estimated based on reasonable approximations of relatively low induced stress in the walls, and relatively higher induced stresses in the back (A from 0.2 to 0.7). Discontinuity sets were conservatively assumed to be present and near-parallel to all surfaces (B = 0.2). Gravitational failures were assumed for the stope backs (C = 2) and gravity fall or slabbing failure was assumed for the stope walls (C = 7), based on the most probable mode of failure for each.

TABLE 16-2 INPUT PARAMETERS FOR STABILITY GRAPH ANALYSES
NexGen Energy Ltd. - Rook I Property

Rock Mass Conditions		Backs				HW / FW / End Wall			
RMR'	Q'	A	B	C	N'	A	B	C	N'
40	0.6	0.2	0.2	2	0.05	0.7	0.2	7	0.6
45	1.1	0.2	0.2	2	0.09	0.7	0.2	7	1.1
50	2.0	0.2	0.2	2	0.2	0.7	0.2	7	1.9
55	3.4	0.2	0.2	2	0.3	0.7	0.2	7	3.3
60	5.9	0.2	0.2	2	0.5	0.7	0.2	7	5.8
65	10.3	0.2	0.2	2	0.8	0.7	0.2	7	10.1
70	18.0	0.2	0.2	2	1.4	0.7	0.2	7	17.6

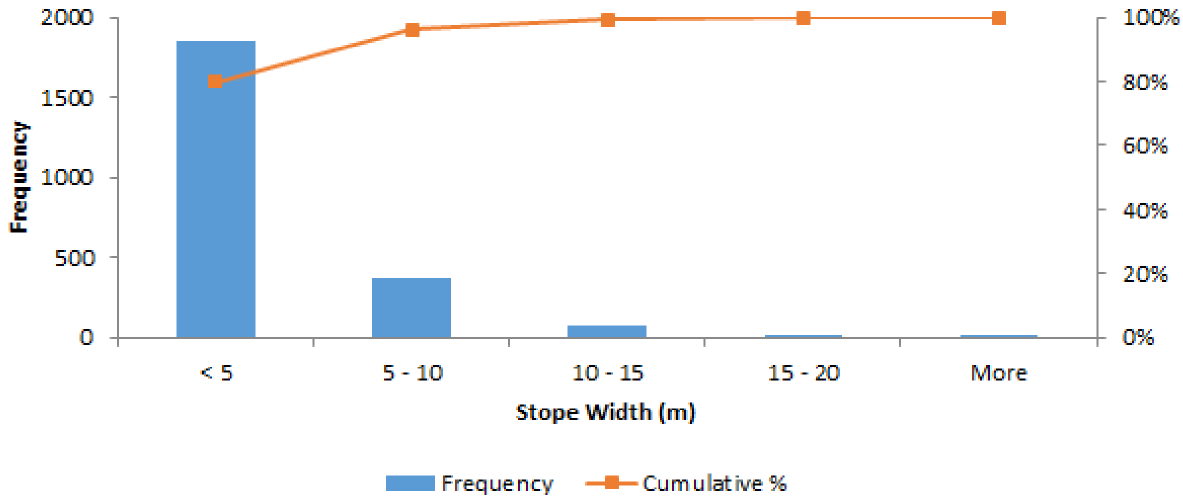
The results of the empirical analyses are summarized in Table 16-3. Three cases are presented in this table based on the approximate stope geometries in the mine plan. Analyses were conducted for the backs of the stopes and for wall stability at varying stope heights. In all cases, the hanging walls, footwalls, and end walls of the stopes have been assumed to be vertical.

TABLE 16-3 STABILITY GRAPH ANALYSIS STOPE DIMENSIONS RESULTS
NexGen Energy Ltd. - Rook I Property

Stope Dimensions (m)	Case 1	Case 2	Case 3
Stope Height	30	30	30
Stope Length	15	15	20
Vein Width	5	10	10
Backs			
Area	75	150	200
Perimeter	40	50	60
Hydraulic Radius	1.9	3.0	3.3
HW / FW			
Area	450	450	600
Perimeter	90	90	100
Hydraulic Radius	5.0	5.0	6.0
End Wall			
Area	150	300	300
Perimeter	70	80	80
Hydraulic Radius	2.1	3.8	3.8

Based on the mining blocks, stopes will be on 30 m sublevels (floor to floor), with a nominal 15 m to 20 m strike length and variable widths ranging from approximately 2 m to 20 m, with the majority of stopes less than approximately 5 m wide. The statistical distribution of stope widths in the mine plan is shown in Figure 16-4.

FIGURE 16-4 PEA MINE PLAN STOPE WIDTH STATISTICAL DISTRIBUTION



Aiming to maintain a 30 m spacing between mining levels, the proposed stope spans and strike length of the stope back (alternatively termed the “vein width” and “stope length”, in a transverse stoping configuration) are the controlling factors for stope design. Using the range of stable values for the hydraulic radii shown in Table 16-3 and assuming a 30 m vertical spacing, the results of BGC’s analyses indicate that the proposed mining dimensions used in the RPA designs are reasonable when compared to Case 1 and Case 2 in Table 16-3.

In zones of moderate vein widths, such as 3 m to 10 m, it may be possible to increase the stope length to 20 m from 15 m, thereby reducing the number of stope access drives and top cuts required on each level to achieve desired recoveries (Design Case 3).

Where vein widths exceed 15 m, the stope length should be limited to 15 m, so that the width becomes the controlling dimension. However, this is not anticipated to be a common occurrence.

In cases where mineralized zones are en echelon, it is recommended that a minimum 7.5 m to 10 m wide interstitial pillar be maintained between levels; in cases where the geometry and/or mining practicalities and efficiencies prove this to be difficult, it is recommended that the en echelon zones be mined as a single package.

Based on the rock mass information available, the maximum recommended stope dimensions are:

- Stope Height: 30 m (floor to floor)
- Stope Width (transverse) / Stope Length (longitudinal) = 15 m (conservative), 20 m (optimized)
- Mineralized Zone Width (transverse) / Stope Width (longitudinal) = ~ 2 m to 10 m, maximum to 20 m, average ~ 4 m.

All dimensions considered in the geotechnical study assume that good blasting practices will be employed to enhance stability by minimizing damage to the walls and stope backs. It is also assumed that the paste backfill will be of good quality and placed in a timely manner, and that the backs of all stopes will be supported with cable bolts, with hanging walls/footwalls supported where possible.

The underground stope designs are considered reasonable based on the limited information available. Risks to achieving the designs presented include undefined large-scale geological structures (particularly if they act as conduits for groundwater), groundwater pressures in weak zones that cannot be effectively de-pressurized, the presence of adversely oriented discontinuities which could impact stope stability, more pervasive and extensive weak ground within mineralized zones than is indicated by current data, and the ability (or lack thereof) of uranium paste tailings to develop adequate strengths.

Production excavation dimensions for alternate mining methods have not been considered. The generally favourable geotechnical conditions described suggest that a wide range of mining approaches may be possible; mining method optimization at the next level of study is recommended.

STAND-UP TIME

Stand-up time is expected to be sufficient for average stope dimensions recommended above, however, filling should be sequenced to follow immediately after mineralized material excavation. In poorer quality ground, operational adjustments may have to be made to ensure mucking and filling can take place in a timely manner. An assessment of the rock mass quality on a stope by stope basis is recommended to determine the quality of the rock mass for each stope block, and the alterations to the stope dimensions and support at the work face to mine the stope safely.

HYDROGEOLOGY

Limited information is available regarding the hydrogeology at the Project. Based on experience at other projects in the Athabasca Basin, water levels in the overburden are expected to be near-surface and generally follow topographic contours down to lake level. Lake water elevation is approximately 499 MASL.

Within the bedrock, there was visible water staining on discontinuities noted in rock core within the first few metres of the bedrock surface. The upper bedrock is expected to have a higher hydraulic conductivity than the unweathered basement rock, although the extents of this higher permeability zone are currently unknown.

Experience with uranium projects and operations in the Athabasca Basin indicates uncontrolled groundwater inflows to mine workings is a common project risk, though this is more of a concern for unconformity-style uranium deposits such as Cameco Corp.'s McArthur River and Cigar Lake operations. The conductive geological units that comprise the overburden, Cretaceous, Devonian, and Athabasca sandstones, have been known to feed inflow pathways along highly conductive geologic structures or structural zones that intersect the basement rocks. The fault and shear zones within the basement rock can also be water conductors.

The geometry of Arrow will result in much of the mining occurring well below the unconformity (i.e., >200 metres). As a result, the Project is less likely to be materially impacted by uncontrolled inflow risks because of this increased distance from the unconformity. However, shaft development will occur through the unconformity, and water management represents a challenge for that component of the Project. The apparent quality of the basement rocks suggests that the effects of any intersecting structures are likely to be localized and minimal, however, the fault and shear zones can be water conductors.

The hydrogeological properties of the rock mass and overburden and the spatial variability will require detailed investigation at the next level of study. This represents a current project uncertainty, however, there is no evidence to suggest that the hydrogeologic uncertainties are a fatal flaw to the overall project.

RADIATION PROTECTION IN MINE DESIGN

When considering the design of the mine, radiological protection of site personnel is paramount. In the context of uranium mining, radiation exposure comes from gamma rays, alpha particles, beta particles, radon gas, and the decay of radon gas into what is known as radon progeny. The primary concern from a radiation protection perspective relates to exposure from gamma radiation and radon progeny. The Canadian Nuclear Safety Commission (CNSC) sets out rigorous standards for the amount of radiation exposure that a worker can receive over a set time interval (typically five years). It is then up to the company to establish yearly, quarterly, monthly, weekly, and daily radiation exposure limits that a worker is permitted to receive.

The four tenets used to minimize radiation exposure are time, distance, shielding, and ventilation.

- Time: minimize the time that a worker needs to spend in an area of radioactivity
- Distance: maximize the distance that a worker needs to be in relation to a radioactive area
- Shielding: maximize the shielding that protects a worker from the source of radioactivity
- Ventilation: plan an effective ventilation system that consistently removes airborne contaminants such as radon progeny and gas

The approach to mine design was to evaluate both the areas of high grade and low grade mineralization. In consultation with radiological experts at Arcadis, mineralization grading 4% was set as the inflection point between high grade and low grade. Based on experience at other uranium operations, it is challenging to manage radiation exposure to personnel when continually conducting lateral development in mineralization with a grade of greater than 4% U_3O_8, although localized lateral development in these mineral grades are achievable with engineering and management controls in place. Therefore, for the areas of high grade mineralization, the transverse mining method was chosen, to minimize radiation exposure. With transverse mining, development would occur across the vein, instead of along strike, thereby minimizing the exposure that a worker would receive.

Additionally, the tenets of time, distance, shielding, and ventilation have all been considered. The ventilation system is planned in a way that utilizes “single-pass ventilation”, where fresh air brought through raises is used only once in a mineralized heading before it is discharged to the exhaust system. Ventilation from waste headings may be re-used provided that it meets accepted standards for air quality. Shielding will be incorporated into both the mine mobile equipment and ground support practices used at the mine. Similarly, minimizing the time – and maximizing the distance – a worker is in the vicinity of mineralization has been incorporated into the mine design. The concept of remote or autonomous equipment has also been considered, though this requires further study as the Project develops.

MINE DESIGN

UNDERGROUND

The mining method for the underground mining is longhole retreat, using both transverse and longitudinal mining. Transverse mining will generally be used in the west and middle areas of the deposit as shown in Figures 16-5 and 16-6. Longitudinal mining will be used in the east end of the deposit where there are multiple narrow lenses. The development sizes are listed in Table 16-4. The retreat mining will be done from the exhaust air raise towards the fresh air raise so that crews are always working in fresh air.

TABLE 16-4 UNDERGROUND DESIGN CRITERIA
NexGen Energy Ltd. - Rook I Property

Parameter	Unit	Width	Height	Arch
Ramp	(m)	5	5	1
Level Access / Haulage	(m)	5	5	1
Vent Access	(m)	5	5	1
Cross Cut (vein dev.)	(m)	5	5	1

Underground stopes are planned on 30 m sublevels. Stope lengths are 15 m in strike and variable width (hanging wall to footwall), typically from 2 m to 10 m, with a maximum width of 20 m and an average width of from 4 m to 5 m. Stopes were designed using Deswik Stope Optimizer (DSO). Table 16-5 shows the parameters used to create the stopes.

TABLE 16-5 DSO DESIGN CRITERIA
NexGen Energy Ltd. - Rook I Property

Parameter	Value
Height	30 m
Strike Length	15 m
Minimum Mining Width	2 m
Maximum Mining Width	100 m
Cut-off Grade	0.25% U_3O_8
% Dilution allowable	65%

Cut-off grades for stope design were established using preliminary cost estimates for mining, processing, and general and administration (G&A). After completing the cost estimate contained within the PEA, the underground mining cut-off grade, on a break-even basis, is approximately 0.25% U_3O_8. RPA recommends that further stope grade optimization be carried out in future studies.

The development mining cycle in mineralized headings includes the following items:

- Development drilling.
- Blasting.
- Mucking.
- Mechanical scaling.
- Shotcrete – used for immediate support and shielding.
- Bolting and screening.

The production mining cycle includes the following items:

- Cablebolting – Action takes place as soon as a drift is completed. Item is done for the entire stoping area.
- Production Drilling/Blasting – Action takes place after cablebolting. Item is done for the entire stoping area.
- Mucking.
- Backfill with cemented paste.
- Cure time.

Mucking of the next adjacent stope does not take place until backfilling is completed.

VENTILATION

Ventilation raises will be developed from surface as either two shafts and one raisebore, or one shaft and two raisebores, depending on overall Project timing. Internally, ventilation raises will be drop raises using longhole drilling, raisebore, or alimak mining systems. The ventilation system for the mine is a push-pull system with two fresh air raises and one exhaust raise, as shown in Figure 16-7. A total of 235 m^3/s (500 kcfm) will be required at peak production with all zones active. It is envisaged that both fresh air raises will contain ladderways to act as secondary escapeways. The ventilation system is designed so that fresh air can be used once in a mineralized heading, before it is exhausted. It is possible that air can be re-used from waste headings, so long as it meets air quality standards.

Figure 16-5

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Sample Underground Mine Plan

September 2015

Source: RPA, 2017.

www.rpacan.com

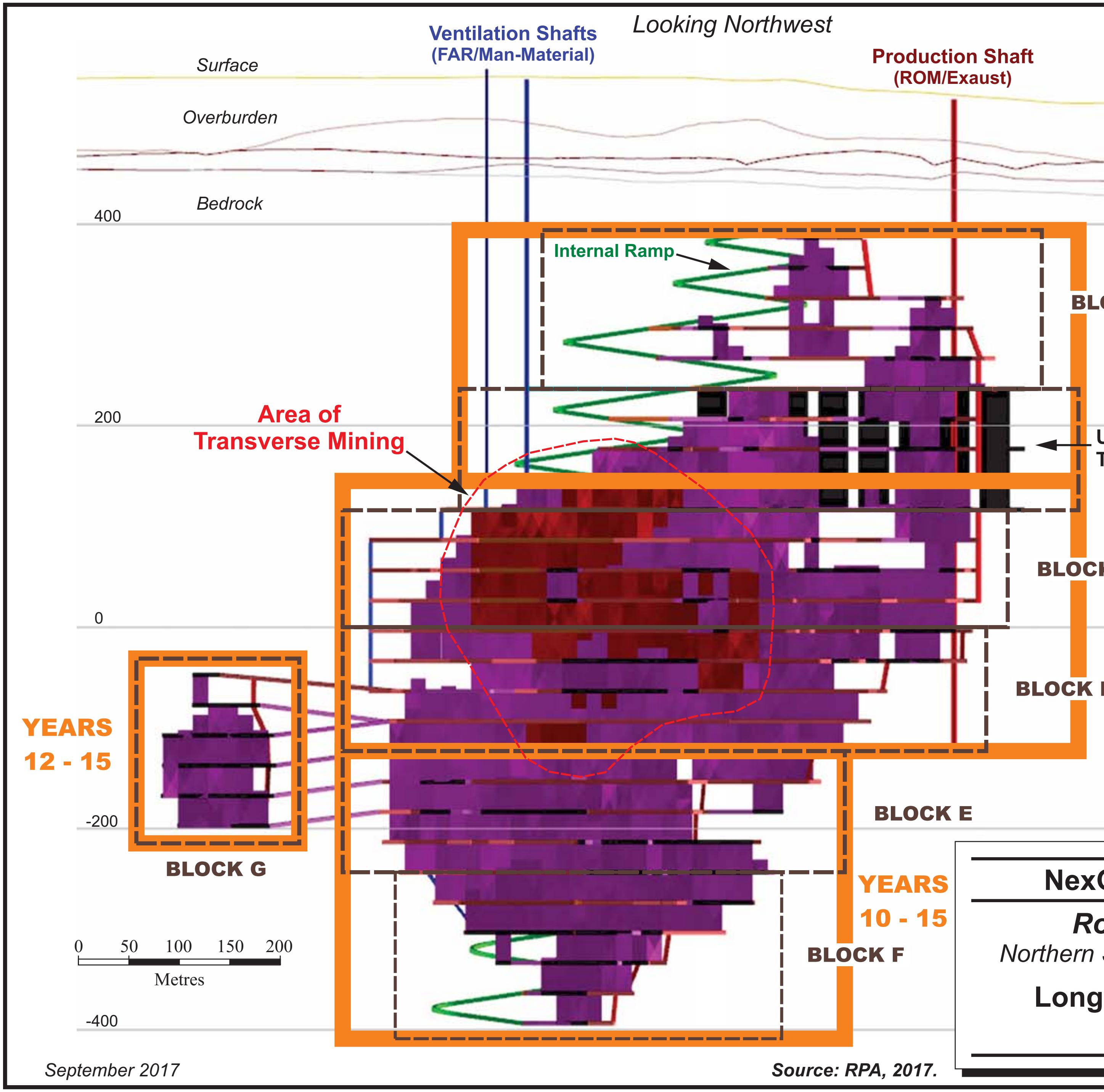


Figure 16-6

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Long Section of Mine

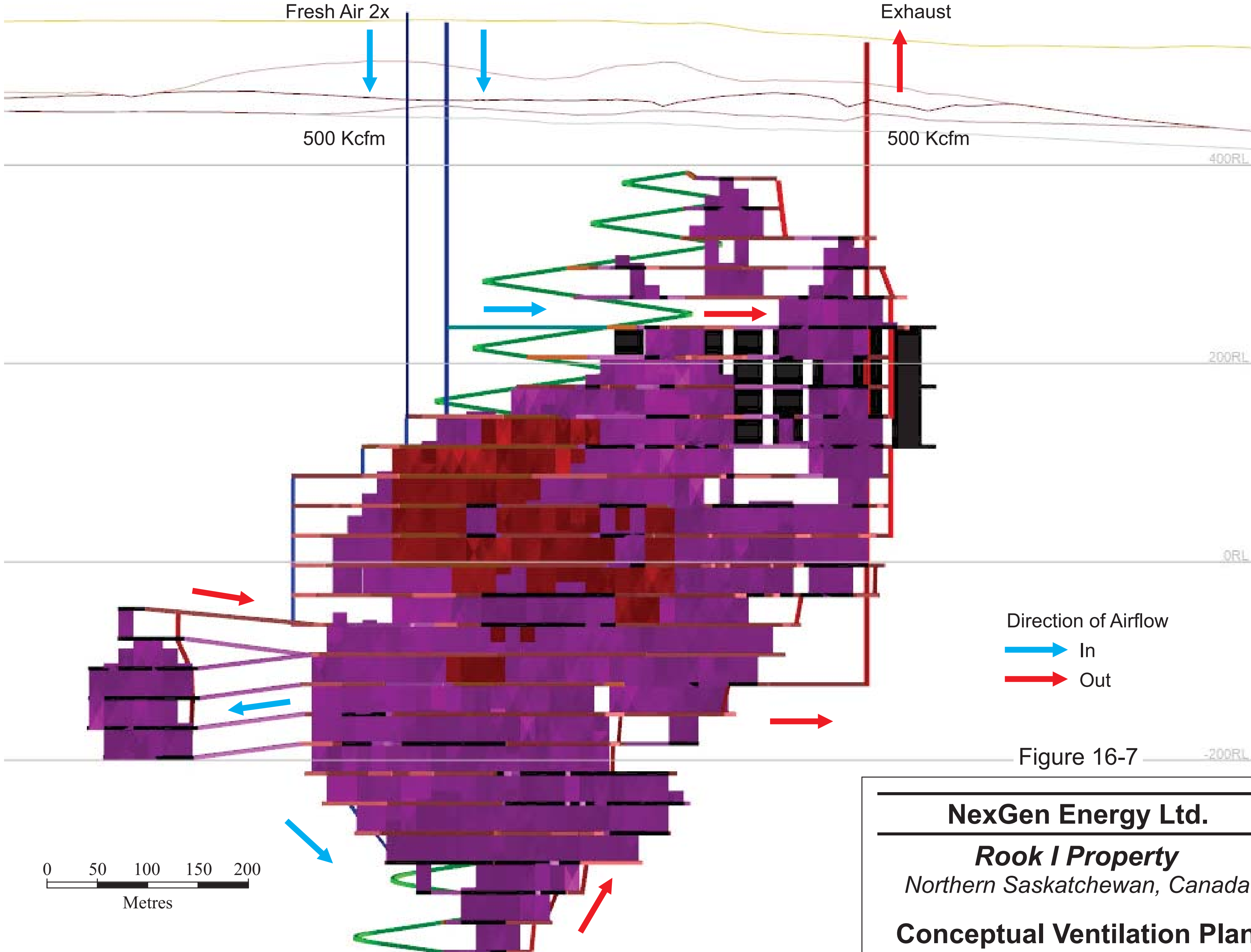


Figure 16-7

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Conceptual Ventilation Plan

September 2017

Source: RPA, 2017.

MATERIAL HANDLING

The geometry of the deposit is relatively tightly spaced and near-vertical. The material handling system is envisaged as scooptrams dumping material into a series of vertical passes that transport material to a central location, where it is crushed (in the case of mineralized material) and brought to surface through a hoist system. It is envisaged that multiple “streams” of material will be sequestered so that an optimum processing plan can be achieved. In uranium mines, the grade of mineralized material can be relatively easily determined in “live-time”, owing to the radioactive nature of the deposit. Therefore, the separation of mineralization and waste (and degree of mineralization) through material sorting or similar technology is envisaged.

Later in the operating life, when the mining areas are further away or below the central material handling area, a fleet of underground haul trucks will serve an intermediary purpose. Scooptrams will load the haul trucks, which will haul material to the hoisting area. A brief trade-off study was conducted to evaluate the suitability of a ramp connection to surface. The challenge of developing a ramp through the overburden layers ultimately led to the selection of shaft sinking. A more detailed trade-off study of material handling and deposit access is recommended in future studies.

GROUND SUPPORT

Underground mine ground support for the Project is designed both for radiological protection and traditional ground support. It is envisaged that in waste drifts, ground support will include screen and grouted rebar across the back and shoulders of the drift, and split sets installed in the lower walls. In mineralized headings, shotcrete will be installed in addition to the previously mentioned ground support requirements. Shotcrete provides a radiological shielding to underground mine personnel. The thickness of shotcrete will vary according to the mineral grade, with a minimum of 50 mm to be applied. Ground support for stope excavations will include the installation of cable bolts into the hanging wall of the stope undercut and overcut. Installing cable bolts has the added benefit of reducing dilution.

UNDERGROUND MINE EQUIPMENT

Underground mining equipment is listed in Table 16-6. It is envisaged that the owner will purchase all of the equipment.

TABLE 16-6 UNDERGROUND MINE EQUIPMENT
NexGen Energy Ltd. - Rook I Property

Description	Quantity
2 Boom Jumbo	2
3 yd LHD	2
6 yd LHD	6
30t Haul Truck*	5
Rock Bolter	3
Production Drill	3
Cable Bolt Drill	3
Lube Truck	1
ANFO Loader Truck	2
Flat Deck Truck w. Crane	1
Transmixer	2
Shotcrete Sprayer	2
Personnel Carrier	2
Scissor Lift	3
Small Vehicle (Rad. Tech., etc.)	6
Grader	1

* Haul trucks are purchased later in the mine life

UNDERGROUND MINE INFRASTRUCTURE

SHOTCRETE PLANT

All mineralized headings, as well as areas with poor ground conditions, will require shotcrete. A wet shotcrete system is planned to be installed on surface. The shotcrete will be transported to working areas where it will be applied with mechanized shotcrete sprayers.

BACKFILL

Backfill of mined-out stopes will be completed using cemented paste fill. Paste fill will be produced using uranium processing tailings in combination with cement, fly ash and water. Paste fill will be delivered to the underground via paste fill reticulation piping. It is currently envisaged that the excess paste fill that cannot be filled into stopes will be deposited in the underground tailings management facility (UGTMF), discussed further in Section 18. The concept of underground deposition of cemented paste tailings is contingent upon producing the tailings into a suitable backfill material, which will need to be evaluated in further studies.

VENTILATION

As discussed in the mine design section, ventilation will be established using a combination of fresh air raises and an exhaust air raise. Air will down-cast through the fresh air raises, and up-cast through the exhaust raise. It is envisaged that a ventilation control system, similar to what is currently commercially available and known as Ventilation-on-Demand (VOD), will be utilized to ensure that sufficient airflow is available to meet Radiation Protection standards. The ventilation control system has the added benefit of optimizing power consumed by the ventilation system, especially during shift changes and other non-productive times. It is envisaged that the VOD system would be integrated with the radiation monitoring system that will be installed in the mine, such that airflow can directed to various levels or areas as necessary.

DEWATERING

An extensive dewatering system is planned for both the underground mine and the entire site. A staged pumping system is planned to handle water inflow into the mine, through both groundwater seepage, equipment use, and other areas. All water entering the mine will be pumped to the process plant where it will be treated. It is envisaged that water will be recycled to both the mine and process plant. Any excess water will be treated and released to the environment. A recycling system will be used to supply water for any mine equipment usage, provided that it is of suitable quality.

MAINTENANCE

An underground service bay will be established for repairs and maintenance. The maintenance bay will also be outfitted with a wash bay, fuel and lube station, and small office.

POWER

An underground mine electrical station will be established that is fed from the primary power plant on surface. Branching off from the underground main station, a series of electrical substations will be established as required.

COMMUNICATIONS

A fibre-optic communications system is planned for the underground mine. The fibre-optic system has the capacity to handle data for equipment tracking, radiation monitoring, and video monitoring.

A summary of underground mine infrastructure is presented in Table 16-7.

TABLE 16-7 UNDERGROUND MINE INFRASTRUCTURE
NexGen Energy Ltd. - Rook I Property

Stationary Mine Infrastructure	Qty
Fresh Air Fans and Ducting	2
Fresh Air Heating System	2
Exhaust Air Fans and Ducting	1
Cemented Paste Plant	1
Wet Shotcrete Plant	1
Air Compressors	2
Radiation Monitoring (Lump Sum)	1
Main Dewatering pumps	8
Stope and Development Fans	40
Underground Service Bay	1
Mine Surface Stores/Facilities	1
Mine Control Center	1
Mine Office	1
Explosives Storage	1
Fuel & Lube Storage & Dispensing	1
Refuge Stations	4
Mine Rescue Supplies (Lump Sum)	1

LIFE OF MINE PLAN

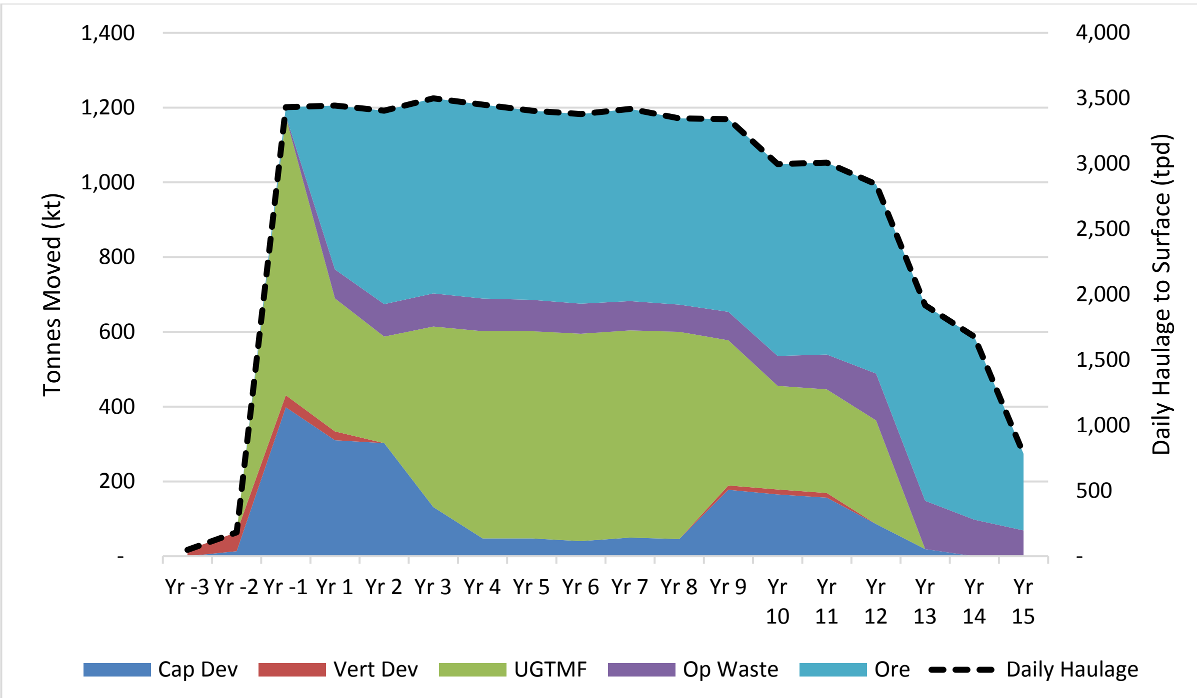
CONSTRUCTION SCHEDULE

A three-year pre-production period is envisaged for the Project. The critical path for completing construction is the sinking of the first two shafts, and the connection of development between the two. Many of the underground infrastructure systems need to be operational prior to the commencement of commercial production, including the dewatering system, UGTMF, ground support systems, material handling systems, and management systems. On surface, the process plant will commence construction in Year -2, and be ready for commercial production by the beginning of Year 1.

OPERATIONS

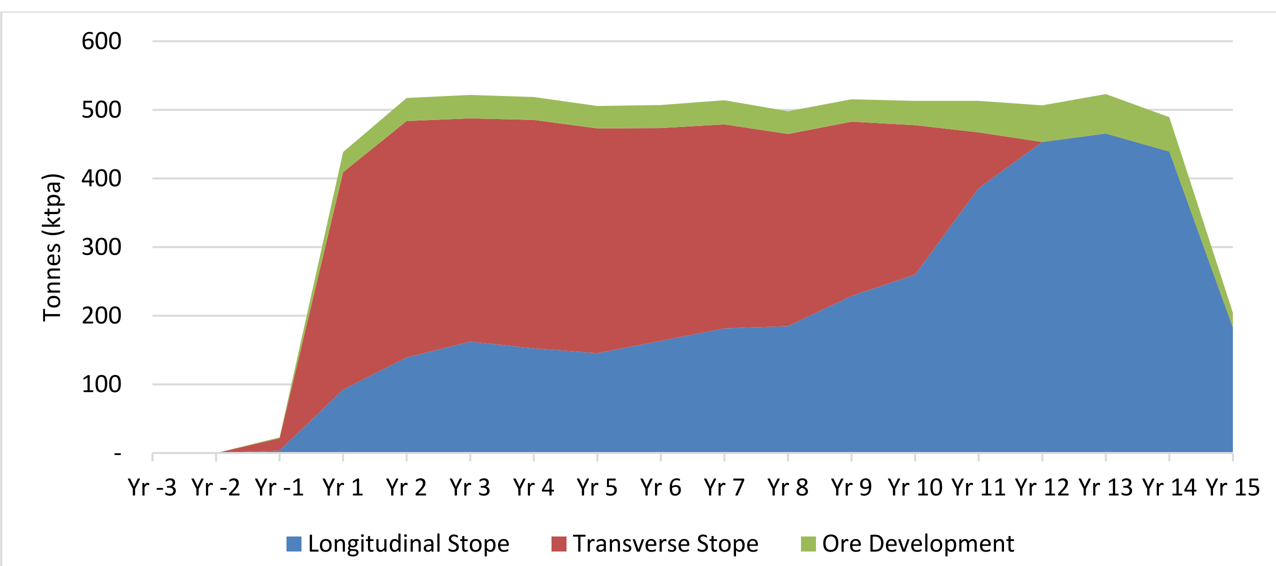
After the three-year construction schedule, the mine will operate for 15 years. To effectively schedule the mine, the deposit was divided into vertical blocks, for the purposes of targeting specific areas of the mine early in the mine life. The two shafts are currently planned to extend to the -125 RL (or -125 MASL), so that the high-grade areas of the mine can be targeted in the early years of production. A long section showing the production areas by year is shown in Figure 16-6. The planned mine schedule is shown in Figures 16-8 to 16-11.

FIGURE 16-8 OVERALL UNDERGROUND MATERIAL MOVEMENT



The mine production schedule is shown in Figure 16-9.

FIGURE 16-9 LIFE OF MINE MINERAL PRODUCTION BY MINING METHOD



It is envisaged that two separate stockpiles will be constructed at the Project, to allow for optimum process blending. The process schedule and recovered uranium schedule are shown in Figures 16-10 and 16-11, respectively.

FIGURE 16-10 LIFE OF MINE PROCESS SCHEDULE

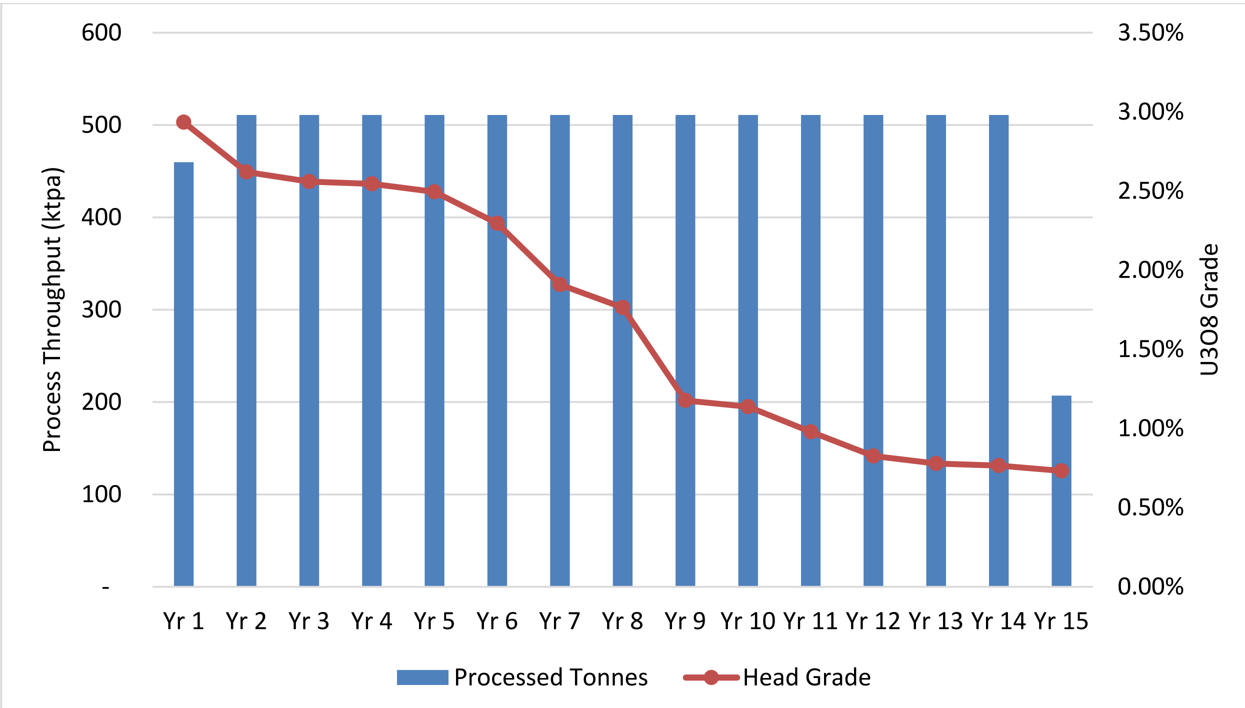
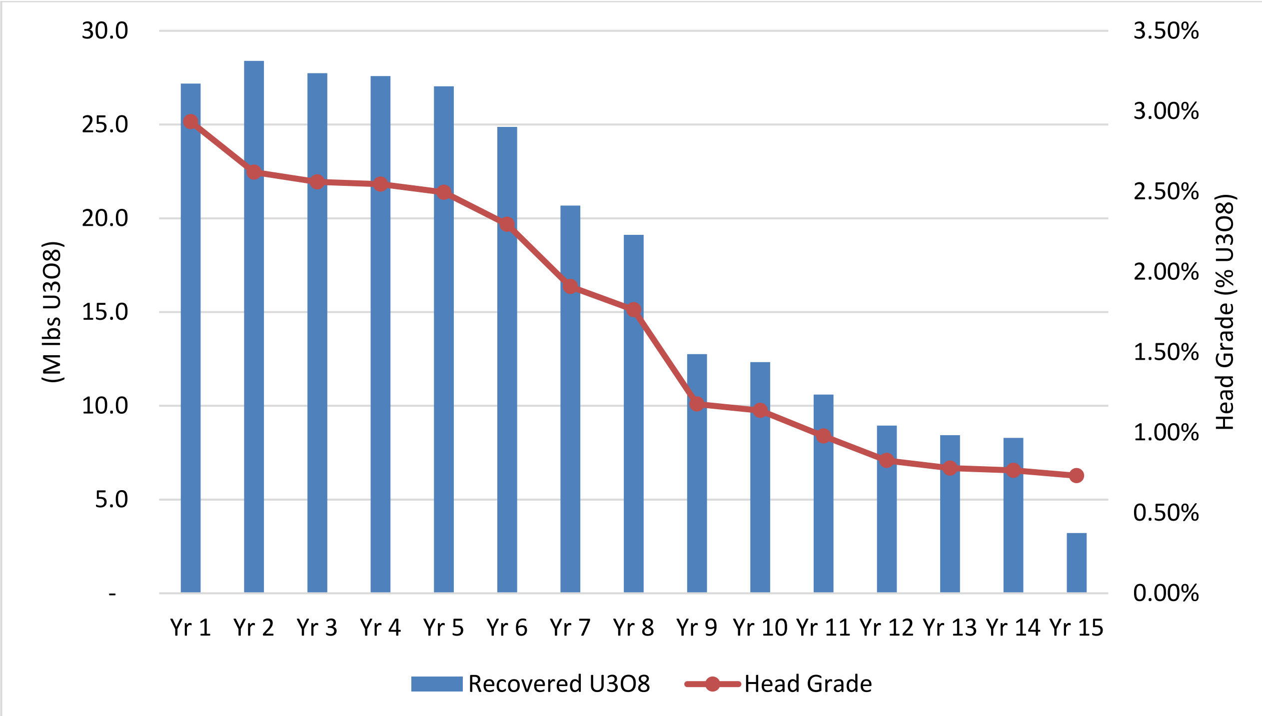


FIGURE 16-11 RECOVERED URANIUM SCHEDULE



The Life of Mine (LOM) plan is summarized in Table 16-8.

RPA

TABLE 16-8 LOM SCHEDULE
NexGen Energy Ltd. – Rook I Property

Parameter	Units	Total	Yr -3	Yr -2	Yr -1	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15
Mining																				
Tonnes Mined	ktpa	7,310	-	-	23	439	517	522	519	506	507	514	498	515	513	513	507	523	489	205
U_3O_8 Grade	%	1.73	-	-	1.90	2.98	2.61	2.53	2.53	2.51	2.30	1.90	1.77	1.17	1.14	0.97	0.82	0.78	0.76	0.73
Waste Tonnes	ktpa	9,341	17	64	1,178	767	674	703	689	686	675	682	673	653	536	540	488	148	98	69
Total Horizontal Development	km	78.8	-	0.2	9.2	9.3	9.1	6.6	3.1	3.0	2.8	3.0	2.8	5.3	5.2	5.6	5.0	3.9	2.8	1.8
Operating Development > 4.0%	m	797	-	-	3	83	82	78	77	75	70	64	52	32	35	29	38	44	27	7
Vertical Development	m	3,832	269	807	959	742	-	-	-	-	-	-	-	376	395	284	-	-	-	-
Processing																				
Tonnes Processed	ktpa	7,310	-	-	-	460	511	511	511	511	511	511	511	511	511	511	511	511	511	207
U_3O_8 Grade	%	1.73	-	-	-	2.93	2.62	2.56	2.55	2.50	2.30	1.91	1.76	1.18	1.14	0.98	0.83	0.78	0.76	0.73
Metallurgical Recovery	%	95.9	-	-	-	91.4	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2
Recovered U_3O_8	'000 lb	267.2	-	-	-	27.2	28.4	27.7	27.6	27.0	24.9	20.7	19.1	12.8	12.3	10.6	8.9	8.4	8.3	3.2

17 RECOVERY METHODS

INTRODUCTION

The process route selected for the Arrow Deposit is largely based on limited historical testwork conducted on indicative samples and benchmarked to similar operations located within the province of Saskatchewan in Canada. The unit operations employed are based on proven and established technology which have been effectively applied in uranium processing plants around the world.

The design is based on a nominal processing rate of 511 ktpa at a head grade of 2.7% U_3O_8. Overall recovery of uranium is estimated at 96.2%, and the plant was designed to have the physical capacity to produce approximately 29 Mlb U_3O_8 per annum. A high level process design criteria, block flow diagram, mass balance, mechanical equipment list, and operating cost expenditure have been generated forming part of the deliverables required for this phase.

As the Project is still in an early study phase, refining and value-added opportunities exist which could potentially reduce both capital and operating cost expenditures resulting in improved project economics. These opportunities are listed under Conclusions and Recommendations in this Section and will be considered during the next phases of the Project.

PROCESS DESCRIPTION

The process plant is envisaged as a conventional uranium processing facility. This section provides a high-level description of the processing facility and should be read in conjunction with the block flow diagrams and process design criteria discussed further in this section. The major components of the process plant are the following:

- Crushing, Milling and Classification
- Acidic Leaching
- Counter Current Decantation (CCD)
- Tailings Neutralization, Thickening, and Disposal
- Pregnant Leach Solution (PLS) Clarification
- Solvent Extraction (SX)
- Molybdenum Removal

- ADU Precipitation
- Product Drying and Packaging

CRUSHING, MILLING AND CLASSIFICATION

Mineralized material will be crushed underground in order to facilitate handling and transportation. Crushed material will be hoisted to the surface and conveyed to a stockpile local to the processing plant. The stockpile will enable a controlled feed rate into the mill and also serve as a buffer for upstream variances during operation. Primary mill feed will be withdrawn from the mill feed stockpile using two variable speed apron feeders and discharged onto a conveyor to feed the primary mill.

The milling circuit (semi-autogenous grinding (SAG) and ball mill (SAB) configuration) will be composed of a SAG mill (primary) followed by a ball mill (secondary) which is in closed circuit with a stacker screening at 350 µm. Oversize material from the stacker will be circulated back to the ball mill with undersize material discharged into a sump and pumped to a conditioning tank prior to leach. A product with a P_{80} of approximately 180 µm will be targeted in the milling circuit. The top size of the product falls within the range of 300 µm to 350 µm.

ATMOSPHERIC ACIDIC LEACH

Milled product will report to a conditioning tank prior to acidic leaching. This tank will serve as both a surge tank to cater for downstream variances and as a reagent conditioning and feed dilution tank. The leach circuit will be composed of six 180 m^3 tanks arranged in a staggered cascade configuration enabling gravity flow between the tanks. Overflow launders will be strategically located to allow bypassing of any one tank if required during operation.

Leaching of uranium will be conducted at a controlled pH of 1.1 using diluted sulphuric acid as the lixiviant. Sulphuric acid will be diluted using raffinate enabling reduced acid consumption and improved pH control. Hydrogen peroxide, which serves as an oxidant, will be added into the leach tanks at a controlled rate to ensure target ORP levels are achieved for effective dissolution. Steam will be sourced from the sulphur burning plant and added into the leach tanks using lances to elevate the operating temperature from ambient conditions to approximately 50^oC. Under these operating conditions, the leaching kinetics will be relatively rapid with the bulk of the leaching occurring within the first two tanks. Leach slurry from the last leach tank will be pumped to a CCD circuit prior to tails disposal. A uranium dissolution rate of approximately 98.3% is expected.

COUNTER-CURRENT DECANTATION

Leach slurry from the last leach tank will be pumped to the CCD circuit to enable recovery of uranium in solution by counter-current washing prior to disposal of the underflow as tails. The CCD circuit will be composed of seven 18 m diameter thickeners configured in series. Underflow from each thickener will be pumped to the subsequent thickener, with overflow fed into the previous thickener feed tank equipped with a pump mixer. Raffinate from the SX circuit will be used as wash water and added into the last CCD thickener in the train. Flocculant will be made-up and pumped to each thickener followed by in-line dilution using raffinate prior to addition into the respective thickener. A wash ratio falling within the range of 1.5 m^3/t to 2.5 m^3/t and an underflow density of 40% to 50% m/m solids will be expected based on limited testwork data. Bypass facilities are allowed on both the overflow and underflow to enable bypassing of any one thickener if required during operation.

Overflow from CCD 1 will report to a collection tank and be pumped to a clarifier prior to feeding the SX circuit. A washing efficiency of approximately 99% is expected.

TAILINGS NEUTRALIZATION AND DISPOSAL

Underflow from the last CCD thickener #7 will be pumped to the tails neutralization circuit. The objective of neutralizing tailings material is to comply with the applicable environmental legislation under enforcement in Saskatchewan. The neutralization circuit will be composed of four 55 m^3 tank in a staggered configuration. Limestone and burnt lime will be added at a controlled rate in order to increase the pH to an operational band of 7 to 8. At this operating pH, major dissolved metal ions will precipitate from solution into a stable hydroxide form prior to being fed to the filtration plant. Bypass launders will be provided to enable bypassing of any one tank if required during operation.

Neutralized tailings will then be pumped to the filtration circuit composed of a single 68 m^2 vacuum belt filter. Dewatered tails (filter cake) will discharge onto a conveyor and then onto a tails stockpile prior to feeding the paste plant. The moisture content of the filter cake will be expected to fall within the range of 15% to 20% m/m pending testwork validation.

Stockpiled tails will be fed at a controlled rate into the paste plant prior to final discharge into underground mining chambers.

SOLVENT EXTRACTION

Overflow from CCD 1 will be pumped to a clarification circuit composed of a single 5 m diameter pin bed clarifier. Clarified PLS will be pumped to the PLS pond prior to feeding the SX circuit. The PLS pond will have a total capacity of 4,800 m^3 and will be designed to allow for a 24 hour residence time to ensure stable flow into the SX plant.

The SX circuit will be composed of extraction (four stages), scrub (three stages), strip (four stages), regeneration (one stage), and crud treatment. The solvent will be a combination of Armeen 380, Isodecanol, and Calumet 400-500 at 6% v/v, 3% v/v, and 91% v/v respectively.

The organic will be loaded to 6 g/L U_3O_8 and scrubbed in three stages using water, dilute sulphuric acid, and an ammonium sulphate scrub in sequence. The scrub stages will be included to mitigate against impurity carry over to the final product. The scrubbed organic will be stripped using ammonium sulphate to achieve a tenor of approximately 10 g/L U_3O_8. The pH will be controlled in each stage of stripping using a solution of ammonium hydroxide. A bleed stream of stripped organic (approximately 10%) will be regenerated using sodium carbonate with sodium hydroxide added for pH control. A crud treatment circuit will be included to recover organic and aqueous, with solid waste stockpiled in a bunker for manual disposal. A uranium recovery of 99.5% is expected for the SX circuit.

MOLYBDENUM REMOVAL

The loaded strip liquor (Odourless Kerosene liquor) from the SX circuit will be pumped to the Mo removal circuit. Mo present in the PLS will preferentially load onto the organic and thus will need to be removed in order to comply with an acceptable final product composition as per the ConverDyn or ASTM C967 - 13[2] specification. The selected method of removal will be to use activated carbon which will remove the majority of Mo present in the liquor and partially co-load uranium. OK liquor will be pumped through the carbon columns enabling sufficient contact time to load the activated carbon with Mo and a small fraction of uranium. Loaded carbon will be selectively stripped using dilute sulphuric acid to recover the co-loaded uranium and pumped back to the leach circuit. The next stage of stripping will utilize dilute sodium hydroxide to remove Mo, with the subsequent spent solution pumped directly to tails neutralization prior to disposal.

PRODUCT PRECIPITATION AND HANDLING

OK liquor from the Mo removal circuit will be pumped to the production precipitation circuit. Ammonium hydroxide will be added as a neutralizing medium to achieve a target pH of 7 to 7.5. Uranium will precipitate as ADU which will then be pumped to a thickening and wash circuit to remove deleterious impurities present in the product prior to drying and final packaging. The overflow from the thickener will contain ammonium sulphate which is then recycled and re-used within solvent extraction as strip liquor.

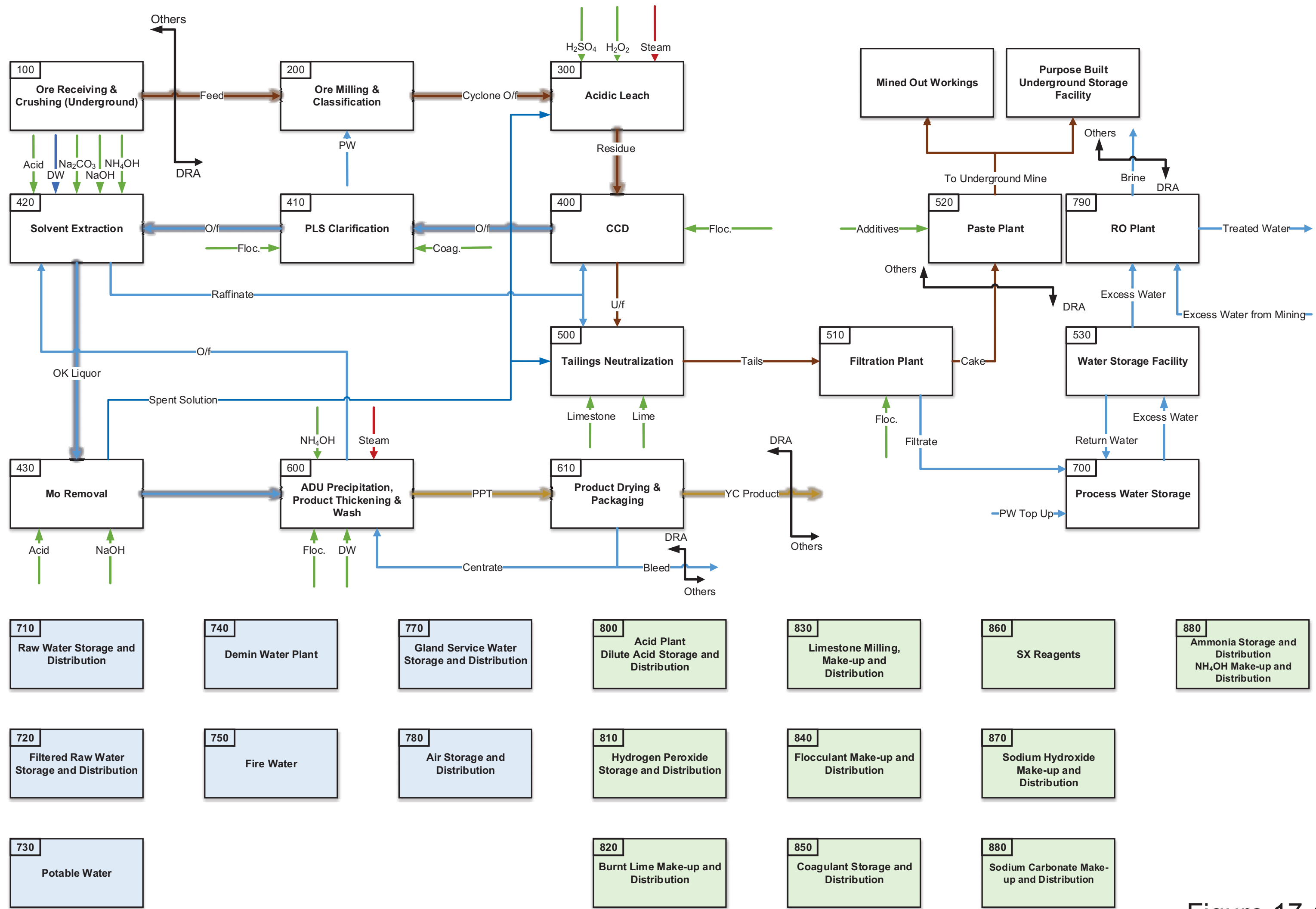
Washed ADU will be pumped to a product dewatering, drying, and packaging circuit, which is a highly integrated and automated plant. The product will be dewatered using a centrifuge to achieve a solids concentration of approximately 60% to 65% m/m solids. The centrifuge solids will then be fed into an electrically heated horizontal rotary dryer to reduce the residual moisture content to less than 1% m/m. The dryer will operate at a temperature of 700ºC to 750ºC to produce a final U_3O_8 product. The 210L drums will be filled and lidded with dried product ready for dispatch.

BLOCK FLOW DIAGRAM

The process plant block flow diagram is shown in Figure 17-1 demonstrating key unit operations. Representative work breakdown structure (WBS) codes and major battery limits are also included for ease of reference. The flow diagrams below should be considered in conjunction with the process description and process design criteria discussed in this section.

Utilities and services are highlighted in Figure 17-1 which are essential in the plant operation. It is assumed at this time that a clean water source will be provided to the plant and that the on-site power plant will be diesel fuelled.

The types of reagent plants required are highlighted in Figure 17-1. The design will be based on a sulphur burning plant to produce sulphuric acid and steam generated will be utilized within the leach circuit to satisfy thermal requirements. This approach is also aligned with similar operations in the area.



Legend:

Lines	Blocks
Slurry	*Unit Operation*
Solution	*Services*
Reagent	*Reagents*
Steam	

Figure 17-1

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Block Flow Diagram

September 2017

Source: DRA 2017

The complete list of reagents and their corresponding areas of utilization within the process plant are shown in Table 17-1.

TABLE 17-1 PROCESS PLANT REAGENT LIST
NexGen Energy Ltd. - Rook I Property

Reagent	Area
Sulphuric acid	Leach, SX and Mo removal
Hydrogen peroxide	Leach
Burnt lime	Tails neutralization
Limestone	Tails neutralization
Flocculant	CCD, PLS clarification, Tails thickening and ADU thickening
Coagulant	PLS clarification
Armeen 380	SX
Isodecanol	SX
Calumet 400-500	SX
Sodium hydroxide	SX, Mo removal
Sodium carbonate	Mo removal
Ammonium hydroxide	SX, ADU precipitation
Activated carbon	Mo removal

PROCESS DESIGN CRITERIA

The design criteria form the basis for the design of the process plant, ancillaries, and required site services. The criteria allow for the development of the mass balance to be used in the specification of process and other major equipment.

The design criteria are based on data from a variety of sources. All data is referenced to these sources, where a source code letter has been used for each criterion. The letter code designators are used as shown in Table 17-2 and the site information is listed in Table 17-3.

TABLE 17-2 PROCESS DESIGN CRITERIA SOURCE CODES
NexGen Energy Ltd. – Rook I Property

Source Code	Description
A	Operating practice, industry standards
B	Criteria based on DRA experience / DRA technology
C	Criteria provided by Owner
D	Criteria originated from equipment vendor
E	Consultant recommendation
F	Interpretation of testwork
G	Calculated, based on other inputs
H	No information yet available (assumed but on hold)
I	Internet or other source
J	Constant
X	Assumed

TABLE 17-3 PROCESS DESIGN CRITERIA SITE INFORMATION
NexGen Energy Ltd. – Rook I Property

Description	Unit	Value Min.	Value Max.	Source
Project location				
Country	-	Canada		I
Province	-	Saskatchewan		I
Region	-	Athabasca Basin		I

Tables 17-4 and 17-5 show the operating schedule and uranium recovery assumptions.

TABLE 17-4 PROCESS DESIGN CRITERIA OPERATING SCHEDULE
NexGen Energy Ltd. – Rook I Property

Description	Unit	Value Min.	Value Max.	Source
Operating hours	hrs/a	7,824		G
Overall plant utilization	%	89		G

TABLE 17-5 PROCESS DESIGN CRITERIA URANIUM RECOVERY
NexGen Energy Ltd. – Rook I Property

Description	Unit	Value Min.	Value Max.	Source
Leaching[1]	%	98.3		F
CCD	%	99.0		G
SX	%	99.5		F
Mo Removal	%	99.5		X
ADU Precipitation	%	99.9		X
Overall Plant Recovery	%	96.2		G

Notes:

1. A fixed leach recovery is assumed independent of the grade envelope. This is based on discussions held between RPA, DRA, and the Owner coupled with benchmarking to similar operations within the area. Further testwork will be required in order to validate this assumption.

Tables 17-6 to 17-13 list the process design criteria for the various areas of the process.

TABLE 17-6 PROCESS DESIGN CRITERIA CRUSHING, MILLING, CLASSIFICATION
NexGen Energy Ltd. – Rook I Property

Description	Unit	Value Min.	Value Max.	Source
Crushing				
Crushing Type	-	Underground Crushing		C
Crusher Type	-	Jaw Crusher		X
Milling				
Milling Type	-	SAG and Ball Milling		A

TABLE 17-7 PROCESS DESIGN CRITERIA ATMOSPHERIC ACIDIC LEACH
NexGen Energy Ltd. – Rook I Property

Description	Unit	Value Min.	Value Max.	Source
Operating pH	-	1.1		F
Operating Temperature	ºC	40	50	F
Residence Time Required	hrs	6	8	F
% Solids	% m/m	40	50	F
Grind (P_{100})	µm	106	300	F

TABLE 17-8 PROCESS DESIGN CRITERIA COUNTER CURRENT DECANTATION
NexGen Energy Ltd. – Rook I Property

Description	Unit	Value Min.	Value Max.	Source
Number of Stages	-	7		G
U/F Solids Concentration	% m/m	40	50	B
Flocculant Type	-	Magnafloc 351		F

TABLE 17-9 PROCESS DESIGN CRITERIA TAILINGS NEUTRALIZATION AND DISPOSAL
NexGen Energy Ltd. – Rook I Property

Description	Unit	Value Min.	Value Max.	Source
Tailings Neutralization				
Target pH	-	7	8.5	A
Filtration Plant				
Filter Cake Discharge Moisture	% m/m	15	22	X
Flocculant Type	-	Magnafloc 351		X
Cake Disposal	-	Stockpiled prior to paste plant		C

TABLE 17-10 PROCESS DESIGN CRITERIA SOLVENT EXTRACTION
NexGen Energy Ltd. – Rook I Property

Description	Unit	Value Min.	Value Max.	Source
Extraction				
Number of Stages	-	4		A
Scrubbing				
Number of Stages	-	3		A
Stripping				
Number of Stages	-	4		A
Regeneration				
Number of Stages	-	1		A
Bleed Stream	%	10		A

TABLE 17-11 PROCESS DESIGN CRITERIA MO REMOVAL
NexGen Energy Ltd. – Rook I Property

Description	Unit	Value Min.	Value Max.	Source
Uranium Strip				
Strip Liquor	-	Sulphuric Acid		X
Mo Strip				
Strip Liquor	-	Sodium Hydroxide		X

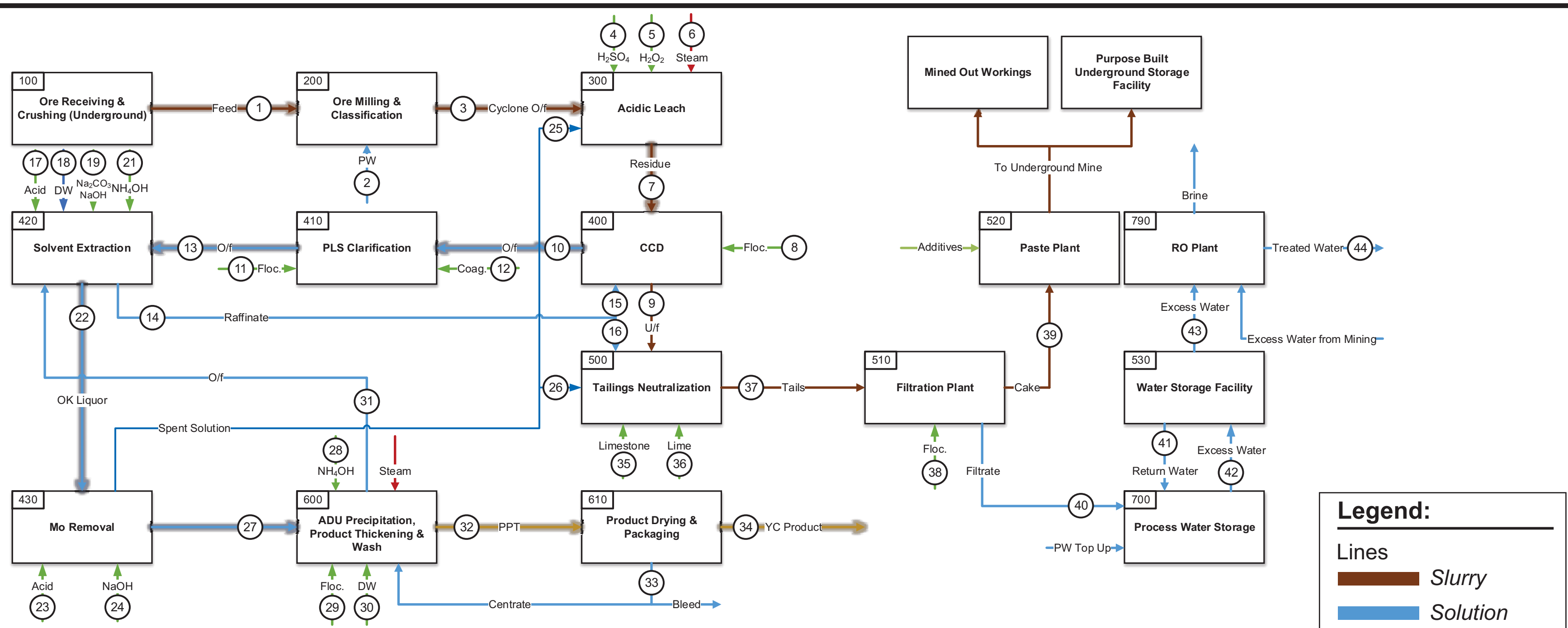
TABLE 17-12 PROCESS DESIGN CRITERIA PRODUCT PRECIPITATION AND HANDLING
NexGen Energy Ltd. – Rook I Property

Description	Unit	Value Min.	Value Max.	Source
Reagent	-	Ammonium Hydroxide		A
Target pH	-	7	7.5	A
Product Thickening and Wash				
Flocculant Type	-	Magnafloc 351		X
Product Thickener U/F	-	30		X
Product Drying and Packaging				
Final Product	-	U_3O_8		A

TABLE 17-13 PROCESS DESIGN CRITERIA SULPHURIC ACID PLANT
NexGen Energy Ltd. – Rook I Property

Description	Unit	Value Min.	Value Max.	Source
Size	tpd	150		A

A preliminary mass balance was completed for the process plant, which is shown in Figure 17-2.



ID	Description	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	-	17	18	19	21	22
			Mill Feed	PW Dilution	Undersize	H_2SO_4 Addition	H_2O_2 Addition	Steam Addition	Leach Residue	Floc. Addition	CCD U/f	CCD O/f	Floc. Addition	Coag. Addition	PLS O/f	Raffinate / Spent Solution	Raffinate to CCD	Bleed from SX	Loaded Organic	H_2SO_4 Addition	Demin Water Addition	Regen. Solution	NH_4OH Addition	OK Liquor
Mass	Solids	t/h	65.31		65.31				65.31		65.31													
	Solution	t/h	2.02	63.29	65.31	20.67	1.40	7.26	95.49	6.14	65.31	199.60	0.40	0.00	200.00	233.72	163.28	70.44	227.67	15.08	14.23	1.56	2.85	170.75
	Total	t/h	67.33	63.29	130.62	20.67	1.40	7.26	160.80	6.14	130.62	199.60	0.40	0.00	200.00	233.72	163.28	70.44	227.67	15.08	14.23	1.56	2.85	170.75
	% Solids	% m/m	97.00		50.00				40.62		50.00													
Volume	Solids	m^3/h	26.12		26.12				26.12		26.12													
	Solution	m^3/h	2.02	63.29	65.31	18.13	1.26	7.26	95.49	6.14	65.31	199.60	0.40	0.00	200.00	233.72	163.28	70.44	284.59	14.23	14.23	1.36	3.16	170.75
	Total	m^3/h	28.14	63.29	91.44	18.13	1.26	7.26	121.62	6.14	91.44	199.60	0.40	0.00	200.00	233.72	163.28	70.44	284.59	14.23	14.23	1.36	3.16	170.75
	% Solids	% v/v	92.82		28.57				21.48		28.57													
Density	Solids	t/m^3	2.50		2.50				2.50		2.50													
	Solution	t/m^3	1.00	1.00	1.00	1.14	1.11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	1.06	1.00	1.15	0.90	1.00
	Slurry	t/m^3	2.39		1.43				1.32		1.43													
U_3O_8	Solids	%	2.70		2.70				0.05		0.05													
		kg/h	1 763.42		1 763.42				29.98		29.98													
	Solution	ppm							18 152.76		265.41	8 597.77			8 580.60	36.71		145.93	6 000.00					10 000.01
		kg/h							1 733.44		17.33	1 716.11			1 716.11	8.58		10.28	1 707.53					1 707.53

ID	Description	Unit	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
			H_2SO_4 Addition	NaOH Addition	Spent Solution to Leach	Spent Solution to Tails	Stripped Solution	NH_4OH Addition	Floc. Addition	Demin Water Addition	Product Thickener O/f	Product Thickener U/f	Centrate	YC Product	Limestone Addition	Lime Addition	Neutralized Tailings	Floc. Addition	Filter Cake to Paste Plant	Filtrate	Return Water	Excess Water	Excess Water to RO Plant	Treated Water
Mass	Solids	t/h										2.38			1.91	0.61	67.83		67.83					
	Solution	t/h	0.90	2.84	0.85	2.56	170.75	1.13	0.05	9.51	177.48	5.55	3.96		7.63	2.44	148.39	1.63	16.96	133.06	0.00	0.00	0.00	0.00
	Total	t/h	0.90	2.84	0.85	2.56	170.75	1.13	0.05	9.51	177.48	7.93	3.96		9.54	3.05	216.22	1.63	84.79	133.06	0.00	0.00	0.00	0.00
	% Solids	% m/m										30.00			20.00	20.00	31.37		80.00					
Volume	Solids	m^3/h										0.48			0.73	0.27	27.13		27.13					
	Solution	m^3/h	0.85	2.56	0.85	2.56	170.75	1.26	0.05	9.51	177.48	5.55	3.96		7.63	2.44	148.39	1.63	16.96	133.06	0.00	0.00	0.00	0.00
	Total	m^3/h	0.85	2.56	0.85	2.56	170.75	1.26	0.05	9.51	177.48	6.03	3.96		8.37	2.71	175.52	1.63	44.09	133.06	0.00	0.00	0.00	0.00
	% Solids	% v/v										7.89			8.77	9.80	15.46		61.54					
Density	Solids	t/m^3										5.00			2.60	2.30	2.50		2.50					
	Solution	t/m^3	1.06	1.11	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Slurry	t/m^3										1.32			1.14	1.13	1.23		1.92					
U_3O_8	Solids	%										71.36					0.10		0.10					
		kg/h										1 697.29		1 697.29			66.13		66.13					
	Solution	ppm				3 333.34	9 950.01				9.57													
		kg/h				8.54	1 698.99				1.70													

RoM Tonnage 511 000tpa | U_3O_8 Head Grade 2.7%

Overall U_3O_8 Recovery 96% | U_3O_8 Produced 29 276 509lbs/a

Figure 17-2

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Conceptual Mass Balance

September 2017

Source: DRA 2017

PLANT LAYOUT

A preliminary plant general arrangement is shown in Figure 17-3. This layout is developed based on the inclusion of the required unit operations according to the Block Flow Diagram. The layout is accommodated within the allotted space available on the overall site plan for processing facilities. Some features of the layout include:

- Mineral feed is shown in the top right corner.
- Seven CCD thickeners are shown in the top middle.
- Product drying and packaging is shown at the top left corner.
- Power plant is shown in the bottom right corner.
- Solvent extraction area is shown in the bottom middle.
- Tailings stockpile is shown in the lower left corner.

As the Project becomes better defined, some modifications, revisions, and optimizations to the process plant layout are possible.

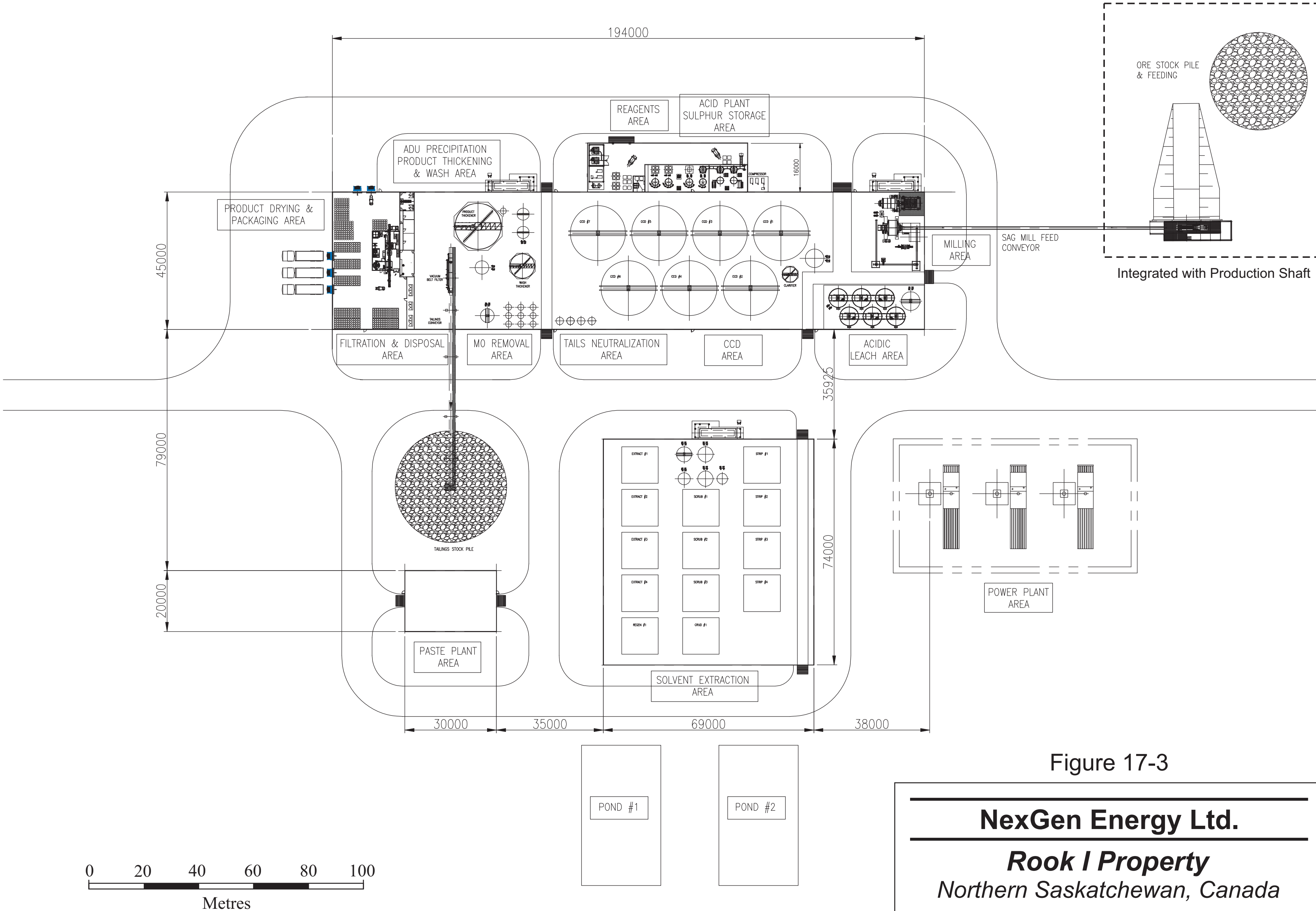


Figure 17-3

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Conceptual Processing Facilities General Arrangement

September 2017

Source: DRA 2017

CONCLUSIONS AND RECOMMENDATIONS

The Arrow process plant is envisaged as a conventional uranium processing facility. The process plant follows a typical layout for uranium recovery.

The recommended areas of focus for the next project phase, as pertains to the processing facilities, are as follows:

- Investigate the option to recover gold or other by-products as a secondary product and its potential economic implication on the Project.
- Implement the results of further testwork into the process design for ongoing optimization purposes, and to validate the assumptions used in the PEA study.
- Conduct sufficient leach and other necessary laboratory scale test work on varying sample grades to establish a recovery correlation to be used for life of mine.
- Conduct an options study which considers alternative power sources, and recommends the optimum solution. Diesel, LNG, and high-voltage transmission line options should be considered.
- Perform further optimization of the process plant layout based on better definition of process and utilities design.

18 PROJECT INFRASTRUCTURE

SITE LOCATION

The Project is located adjacent to Patterson Lake, northern Saskatchewan. The site is situated approximately 155 km north of the community of La Loche, Saskatchewan, and is accessed via provincial Highway 955, a gravel road with year-round access. The site is generally devoid of other infrastructure requirements. The site layout is shown in Figures 18-1 and 18-2.

ACCESS ROAD AND SITE LAYOUT

The site is road-accessible from Highway 955, and NexGen has built an access road that connects the highway to the site. This access road is approximately 15 km in length, and there is one span over the tributary where Patterson Lake drains into Forrest Lake and onto Beet Lake. It is envisaged that the current site access road can be utilized for both construction and operation of the mine, with minimal improvements. In addition to the site access road, a series of roads will be constructed to connect the various aspects of the operation together. As is typical of northern Saskatchewan mine operations, these roads will be constructed with a mix of sand and gravel, and will remain uncapped.

POWER SUPPLY

There are currently no power lines near the mine site. The closest power line is approximately 70 km away at the turn-off for Descharme Lake, and the capacity of this power line is insufficient for large scale industrial use such as what is proposed in the PEA. In discussions with SaskPower, the provincial utility company, the closest high-voltage power line that could potentially service the Project is located approximately 200 km east, near Cameco's Key Lake Mill. A high-level trade-off study that examined various options for providing power to the site has been carried out, and at this time, an on-site diesel fuelled power plant is the preferred option. A 14 MW diesel power generating station is planned for the Project. The power plant is designed for an "n+2" configuration. A power grid will be established on site to distribute the power to the underground mine, process plant, camp, and ancillary buildings.

RPA recommends that further analysis be conducted to determine the optimal power supply arrangement for the Project.

PROPANE

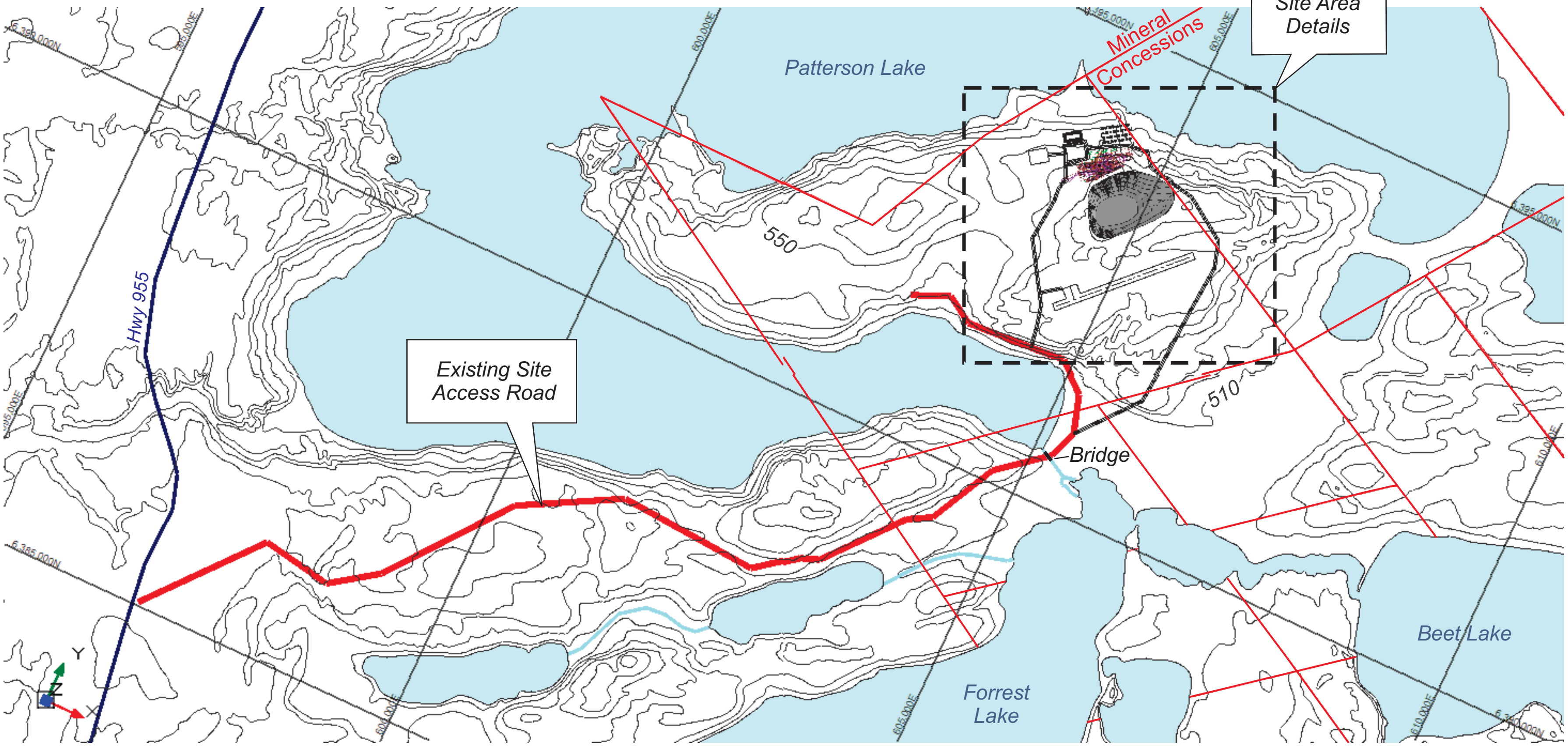
LPG will be used in some areas of the Project, namely the process plant. It is envisaged that during winter months, fresh air entering the mine can be tempered (heated) using a heat recovery system from either certain components of the process plant, or the power plant. It is currently not envisaged that LPG will be needed to heat fresh air entering the mine. LPG will be delivered to the site via specialized trucks, which is consistent with existing uranium mines in northern Saskatchewan. The concept of heat recovery and an energy balance should be carried out further in subsequent studies.

FUEL STORAGE

In addition to LPG, the site will require diesel for several applications, as well as small amounts of gasoline for light-duty vehicles on surface. Areas needing diesel include the central power plant, surface support equipment, and underground mine equipment.

EXPLOSIVES

An explosives storage area is planned for the Project, and will be located in an area that is a suitable distance away from other buildings and offices. The explosives storage facility will consist of two buildings – one for Ammonium Nitrate Fuel Oil (ANFO) and primers, and the other for blasting caps. A secondary explosive storage area will be located in the mine.



Legend:

- Mineral Concessions
- Access Road
- Highway
- 510 Contours every 10m

0 0.5 1 1.5 2 2.5
Kilometres

Figure 18-1

NexGen Energy Ltd.

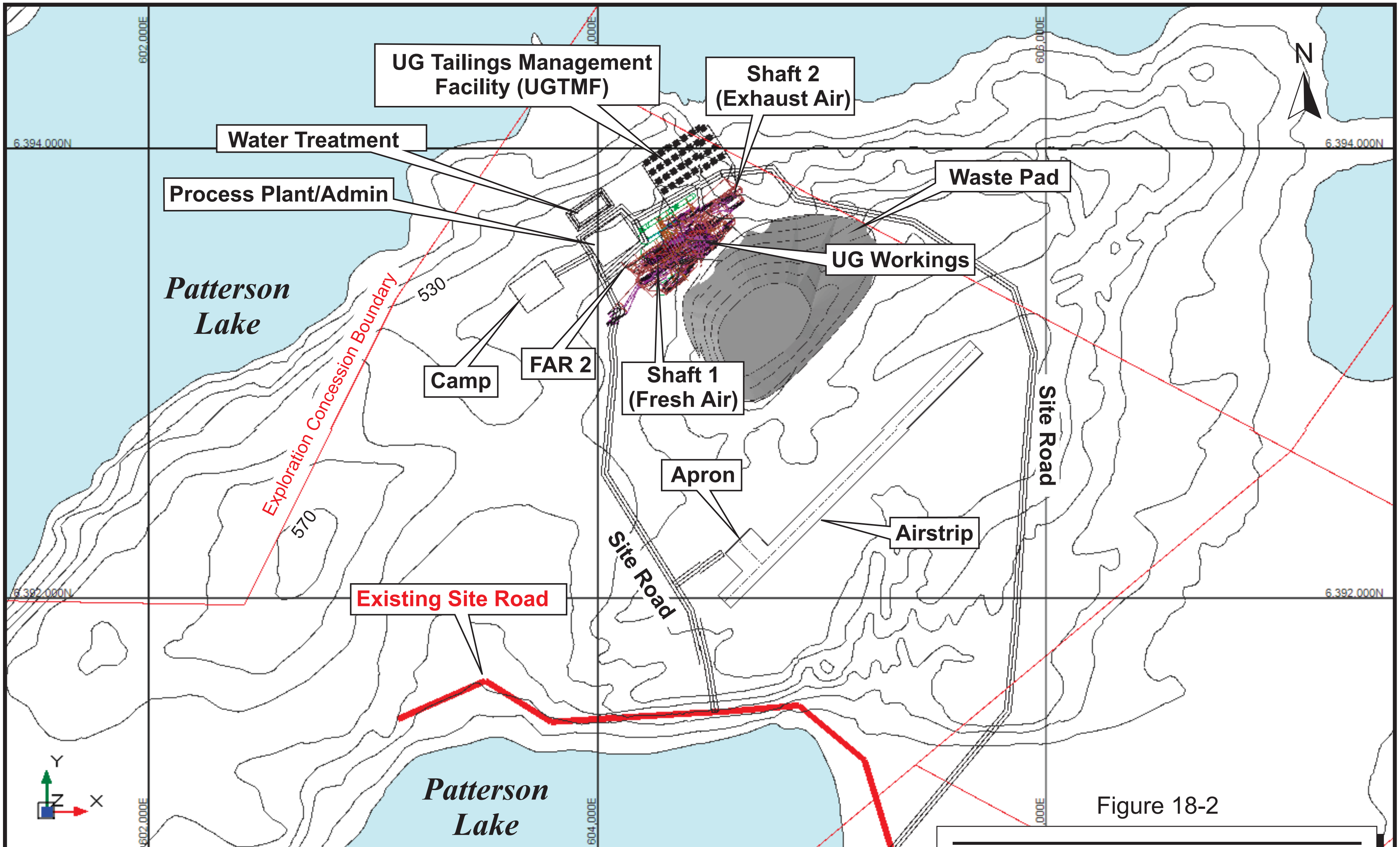
Rook I Property

Northern Saskatchewan, Canada

Overall Site Layout

September 2017

Source: RPA, 2017.



NOTE: Contours at 10 metre intervals.

0 0.5 1.0 1.5 2.0
Kilometres

Figure 18-2

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Detailed Site Plan

September 2017

Source: RPA, 2017.

www.rpacan.com

SURFACE BUILDINGS

Multiple surface buildings will be constructed for the Project, including a maintenance shop, permanent camp, process building, dry facility, warehousing, administration building, and water treatment and service buildings.

MAINTENANCE SHOP

The maintenance shop on surface will primarily be utilized for the surface support equipment at the site. The maintenance shop will be outfitted with an overhead crane, as well as associated equipment needed to support maintenance activities. In addition, there will be a separate bay dedicated to light-duty vehicles, and a wash bay. A separate maintenance shop will be located in the underground mine that will service the mobile equipment.

PERMANENT CAMP

The permanent camp is sized to house a maximum of 290 people, and will include a catering facility and dining hall, entertainment room, and sports and recreation complex.

PROCESS BUILDING

The process building will house the grinding, leaching, CCD, SX, and drying and packaging areas. The process building will have a control room, product load out facility, allowances for discharge water treatment, deionized water preparation, storage of reagents and consumables, and a warehouse for storage of all site consumables. The process plant is discussed in further detail in Section 17.

DRY FACILITY AND ADMINISTRATION BUILDING

A dry facility and administration building will be built as an integrated facility with the process plant. The facility will house an area for showering and locker rooms, as well as an office area for site administrative and technical personnel. It is envisaged that a single dry facility will be utilized for both the process plant and mine personnel.

AIRSTRIP

An airstrip will be constructed at the Project, and will function as the primary mechanism for moving personnel to and from the work site. The airstrip will be sized to match regional commuter propeller planes, and will also include a small airport terminal, fuel station, light system, and navigation equipment. Similar to other northern Saskatchewan mine operations and communities, the airstrip will be constructed with sand and gravel, and will be uncapped.

WATER SYSTEMS, TREATMENT AND HANDLING

Water use at the Project is an important consideration, and every effort has been taken to reduce the amount of water drawn from the environment, minimize the impact of groundwater flow in the area of the mine, and recycle, to the extent possible, water on the site. Some examples of ways in which the Project has been designed to minimize water use include the following:

- An integrated site design minimizes the surface footprint, so that the required catchment areas of water are reduced.
- The placement of surface facilities has been done in a way that minimizes the amount of drainage basins affected.
- The underground tailings management facility (UGTMF) has been placed in the solid bedrock of the underground mine, to reduce the surface footprint, and have a centralized water treatment system for the underground mine.
- Water used in both the mining and processing operations will be sourced from water recycling facilities.
- Prior to being placed in the UGTMF, the tailings will be filtered of water so the moisture content is reduced. This water is part of the recycled water that is re-used in the mine and process plant.

The Project will have several water service systems, including a potable water plant, fire water system, fresh water system, catchment and pumping systems, a central water storage system, and an effluent discharge treatment system. Currently, the effluent treatment system is envisaged as a Reverse Osmosis (RO) plant. RPA recommends that a trade-off study be conducted to determine the optimal effluent treatment system.

A high-level site water balance was completed for the Project, which is shown in Figure 18-3. RPA recommends that a more-detailed site water balance should be undertaken at the next level of study.

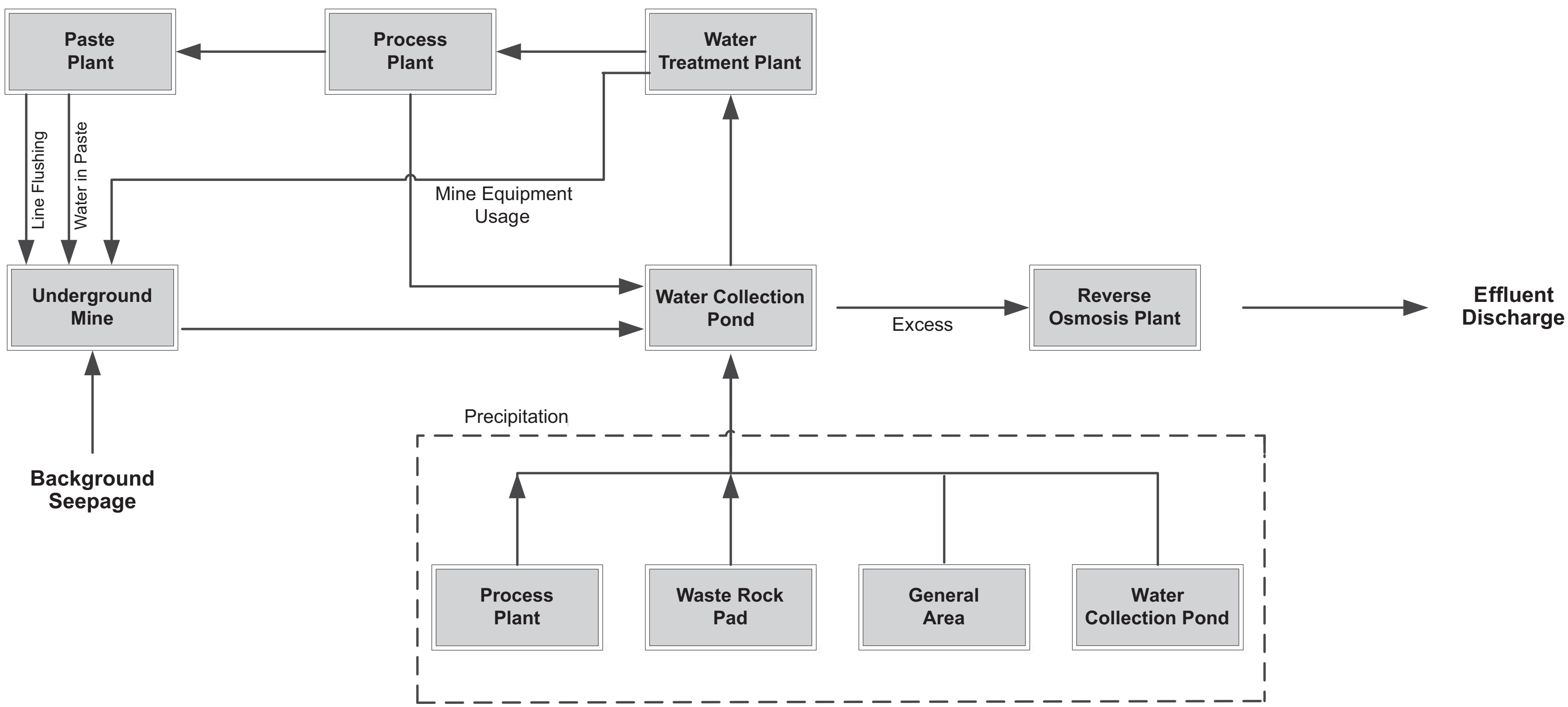


Figure 18-3

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Conceptual Water Balance

September 2017

Source: RPA, 2017.

MISCELLANEOUS SERVICES

Allowances were made for miscellaneous services such as a cellular (or equivalent) data tower that connects to the regional communications network, site-wide communications system, domestic waste disposal system, security systems, and other ancillary services required for the operation of an isolated industrial facility. It is currently envisaged that a high-efficiency incinerator will be installed to dispose of domestic waste. Waste that cannot be disposed of in an incinerator will be stored in a land-fill facility, or shipped off-site.

UNDERGROUND TAILINGS MANAGEMENT FACILITY

The tailings management facility will be located underground, and is known under the acronym UGTMF. The concept behind the design of the UGTMF is that it is superior to place the tailings back into the solid, competent bedrock in which it was first extracted. All of the tailings generated from the process plant will be filtered in preparation for use as cemented paste. The first priority of the cemented paste is to fill the stopes (or voids) created by mining. Due to the swell factor of broken rock compared to in-situ rock, not all tailings can be returned to the same voids in which they originally came from. For this reason, purpose-built excavation chambers are planned to store the excess cemented paste generated from tailings. Depending on the design and the outcome of future studies, the quantity or presence of cement could be varied, or eliminated. For the PEA, it was assumed that the cement content of the paste is 5%.

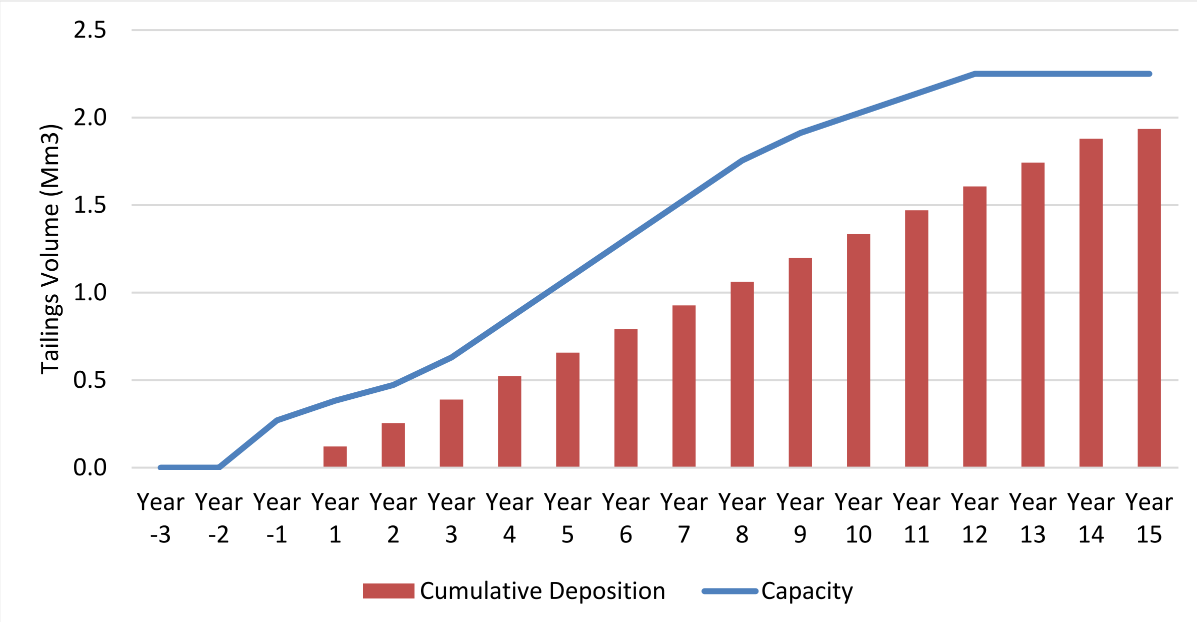
The UGTMF is designed as a series of open excavations, with pillars left between each excavation. The UGTMF concept requires a detailed geochemical assessment of the waste rock to determine the ARD. The dimensions of each excavation are as follows:

- 60 m height (two mining levels)
- 25 m strike
- 25 m width
- 10 m pillar between excavations

Each excavation has a volume of 37,500 m^3. Over the LOM, it is planned that approximately 1.9 Mm^3 of tailings will be deposited into the UGTMF, or approximately 135,000 m^3 per year. The facility is nominally planned to have 60 excavation chambers, for a capacity of 2.25 Mm^3. The facility can be expanded or contracted relatively easily, with the addition or elimination of individual excavation chambers.

The tailings deposition schedule, and planned capacity is shown in Figure 18-4.

FIGURE 18-4 TAILINGS DEPOSITION SCHEDULE AND CAPACITY



It is envisaged that the tailings excavation chambers will be excavated at a rate of approximately four per year, or one every three months. The timing of excavations of the UGTMF would be scheduled with the following considerations:

- Smoothing of the overall horizontal development schedule
- Smoothing of the daily (or monthly) hoisting schedule, which includes the additional waste generated from the underground excavations
- Minimizing the amount of "open-excavation time", or the time that the excavation will remain open between mucking of blasted rock, and filling with cemented paste. The time from first mucking out the excavation to completing the paste deposition is estimated to be in the range of three to four months.
- Based on current geotechnical understanding, preliminary geotechnical analysis, and the excavation schedule, the stand-up time for the unsupported excavation walls is not anticipated to be problematic. It is recommended that further geotechnical analysis of the tailings storage concept be undertaken as part of future studies.
- Coordination with the process plant operating and maintenance schedule

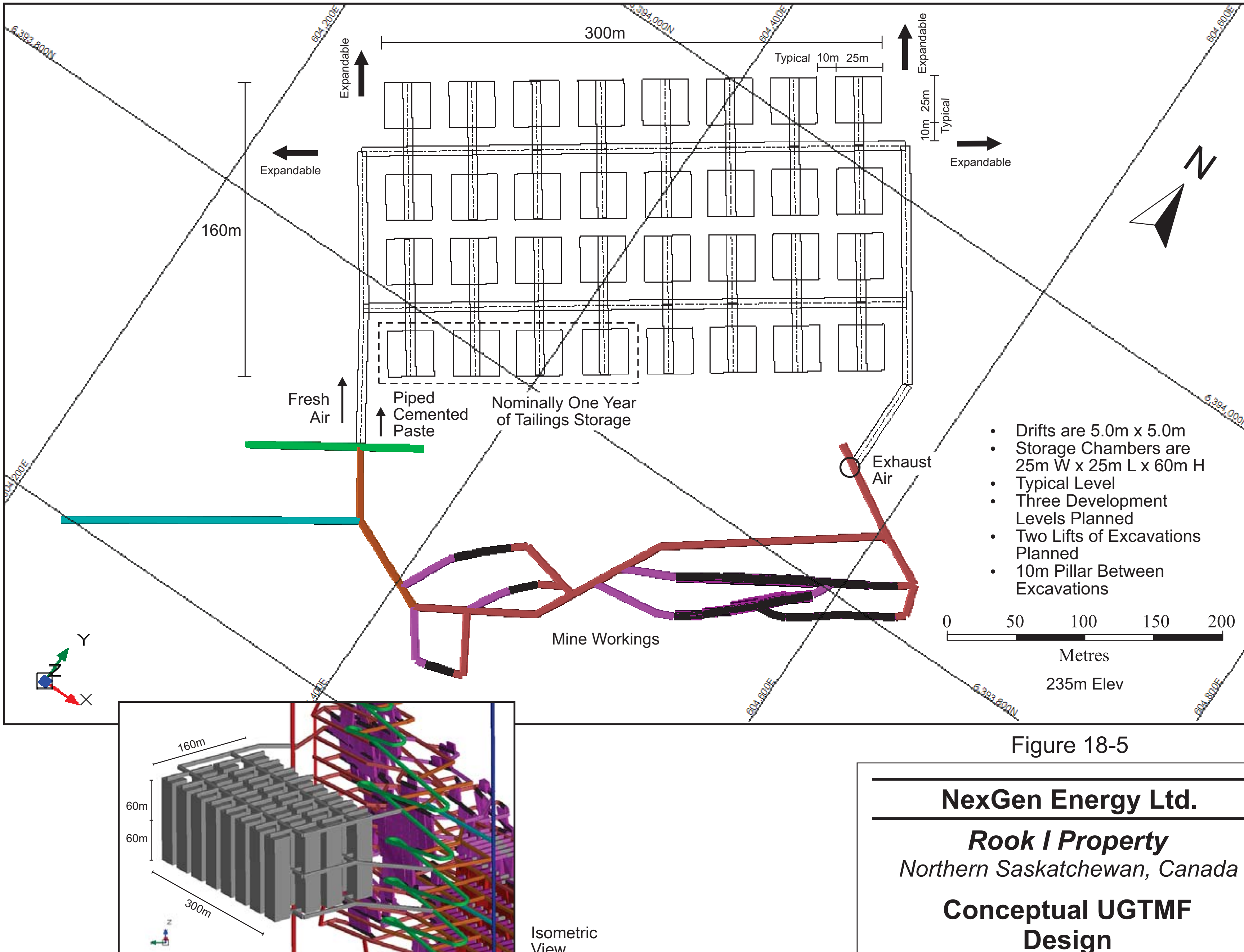
The primary advantages of the UGTMF are that the tailings are returned to the competent basement rock in which they originally came from, and the surface footprint of the Project site is minimized. The primary disadvantage of the UGTMF is the additional waste rock that must be excavated and brought to surface, and the increase in operational complexity with scheduling the creation of tailings excavation chambers in a timely manner. A schematic of the UGTMF concept is shown in Figure 18-5.

WASTE ROCK, OVERBURDEN, AND PRODUCTION STOCKPILES

A waste rock pad will be constructed in the vicinity of the production shaft. It is expected that a minimal amount of topsoil will be encountered during Project construction activities, and every effort will be made to isolate this material into a separate storage area for use in eventual reclamation. The waste storage facility will be constructed with a heavy-duty impermeable liner, with a water catchment and pumping system installed. Further work is required to characterize the waste rock, including its geochemical and geotechnical properties. The stockpile and waste storage facility were positioned to take advantage of the terrain and will require minimal earthworks to achieve a natural slope for drainage of contact water to the lined water collection pond.

Over the course of the LOM, it is expected that a total of 5.1 Mm^3 of waste will be generated. This figure includes the waste developed from the UGTMF, all waste development, shaft sinking, and other mine infrastructure. Little information is known regarding the acid-generating potential of the waste rock, and RPA recommends that this be investigated further in future studies.

It is envisaged that the production shaft from the mine will be integrated with the process plant grinding circuit. There will be two stockpile systems installed within this circuit, with the purpose of targeting a specific process plant head grade. Currently, all material less than 0.25% U_3O_8 is considered waste. An analysis of low-grade or “special-waste” material that could be incrementally processed to generate positive cash flow has not been considered. RPA recommends that a detailed analysis be undertaken to determine cut-off grade strategies throughout the LOM.



- Drifts are 5.0m x 5.0m
- Storage Chambers are 25m W x 25m L x 60m H
- Typical Level
- Three Development Levels Planned
- Two Lifts of Excavations Planned
- 10m Pillar Between Excavations

Figure 18-5

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Conceptual UGTMF Design

September 2017

Source: RPA, 2017.

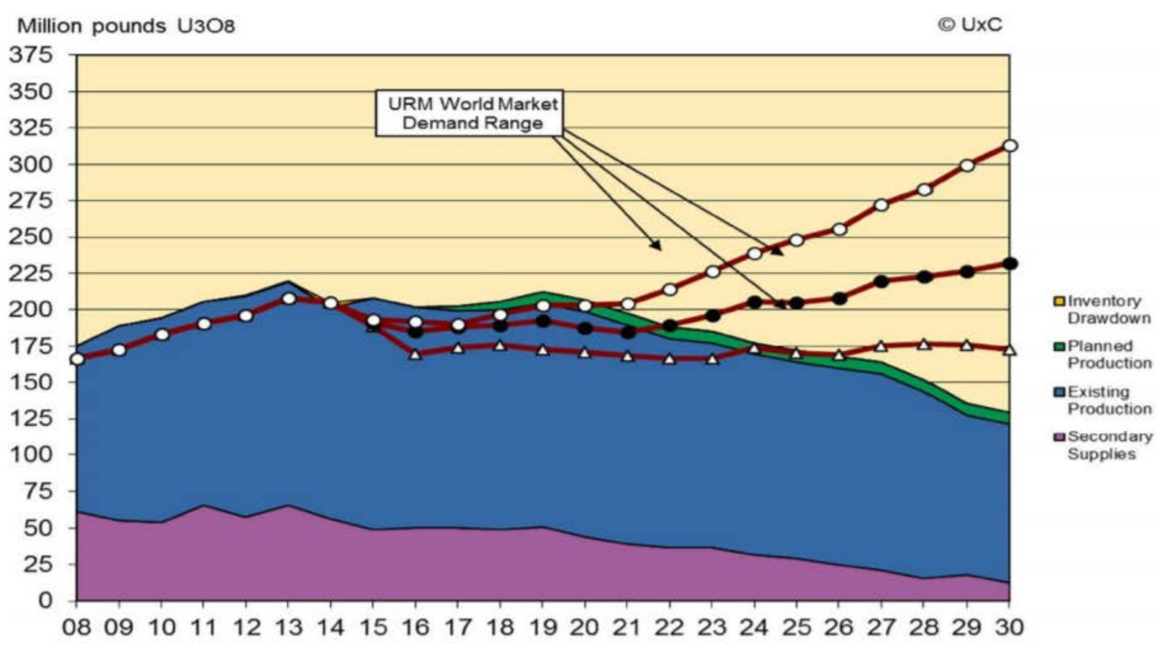
www.rpacan.com

19 MARKET STUDIES AND CONTRACTS

MARKET OVERVIEW

The principal commodity of NexGen's Arrow Project is U_3O_8, commonly known as yellowcake. The primary end use of yellowcake is in the manufacturing of fuel bundles which are used in nuclear power plants that produce electricity. Typically, yellowcake is sold between producers and end-users on either a spot basis or a long-term contract. Long-term contracts can often last for five or more years in duration. Market demand is driven primarily by the level of current or planned nuclear reactors operating globally, while market supply is driven by the output of uranium mines, as well as secondary sources of yellowcake. Figure 19-1 shows the future demand and supply forecast of yellowcake, as of the fourth quarter of 2016, based on Ux Consulting.

FIGURE 19-1 ANNUAL YELLOWCAKE SUPPLY AND DEMAND

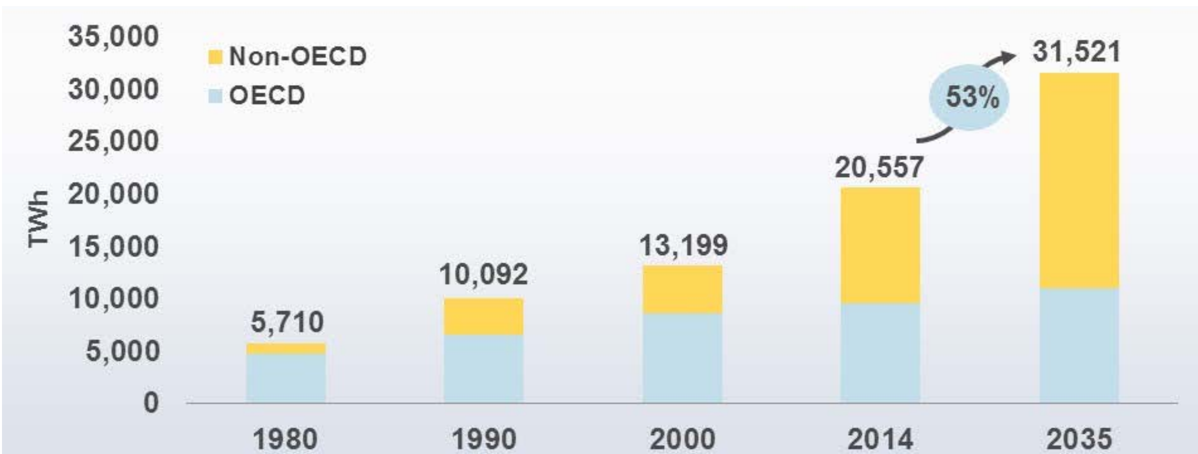


Source: Ux Consulting Uranium Market Outlook, Q4 2016

MARKET DEMAND

As mentioned, the primary driver of market demand is the number of nuclear reactors either operating, under construction, or planned around the globe. The number of nuclear reactors operating or planned around the globe is impacted by future energy forecasts. The International Energy Agency (IEA) forecasts that global demand for electricity is expected to increase by over 50% between 2014 and 2035. The forecast splits the demand between Organization for Economic Co-operation and Development (OECD) and non-OECD countries. The majority of the energy demand increase is forecasted to occur in non-OECD countries, as shown in Figure 19-2.

FIGURE 19-2 GLOBAL ELECTRICITY DEMAND



Source: World Energy Outlook 2016, International Energy Agency

According to a leading nuclear energy company, there are over 57 nuclear reactors currently under construction today, with many more planned. Further, China is on track to build out its nuclear energy capacity by increasing installed capacity from its current 35 GWe capacity to 58 GWe capacity by 2020. The company also reports that Japan has slowly been restarting its fleet of nuclear power plants after the earthquake and tsunami that struck the Fukushima Daiichi nuclear power facility in March 2011. Out of 54 reactors operating prior to the earthquake, five have restarted, with a further 21 advancing through the restart process (Cameco Investor Handout, 2nd Quarter, 2017).

MARKET SUPPLY

As mentioned previously, the yellowcake market is supplied by either primary source (mine operations), or secondary supplies. An example of secondary supply of yellowcake came from the Russian Highly Enriched Uranium (HEU) agreement. In this agreement, Russian nuclear warheads were dismantled and the uranium was recovered into material suitable to be used as fuel in nuclear power plants. However, this agreement expired in 2013, effectively removing 24 million pounds per year of yellowcake from the market. Another example of secondary supply is energy companies selling excess fuel inventories back into the market.

Depending on the jurisdiction, it can take many years to bring a new uranium mine into production, and therefore the supply of yellowcake is fairly inelastic. Further, it is common that a handful of uranium mines produce a substantial portion of global demand. In 2016, Cameco's McArthur River and Cigar Lake mines combined for approximately one-fifth of primary yellowcake production, as shown in Table 19-1.

TABLE 19-1 2016 PRIMARY URANIUM PRODUCTION BY MINE
NexGen Energy Ltd. – Rook I Property

Position	Project	Location	Mining Method	2016 Production (M lbs U_3O_8)	Percent of Total
1	McArthur River	Canada	UG	18.0	11%
2	Cigar Lake	Canada	UG	17.3	11%
3	Katco	Kazakhstan	ISR	10.4	7%
4	Olympic Dam	Australia	UG	9.6	6%
5	Central Mining District	Uzbekistan	ISR	6.2	4%
6	Inkai	Kazakhstan	ISR	5.7	4%
7	Somair	Niger	OP	5.6	4%
8	Karatau	Kazakhstan	ISR	5.4	3%
9	Ranger	Australia	OP	5.2	3%
10	South Inkai	Kazakhstan	ISR	5.1	3%
-	Remaining	-	-	69.2	44%
	Total			**157.8**	**100%**

Notes:

1. Data sourced from SNL Metals and Mining.
2. UG refers to underground mining, OP refers to open pit mining, and ISR refers to In-Situ Recovery (solution mining).
3. Olympic Dam's primary commodity is copper, and U_3O_8 is produced as a by-product.

The source of primary uranium demand is dominated by three countries: Kazakhstan, Canada, and Australia. Combined, the three countries produce 73% of global primary uranium, as shown in Table 19-2.

TABLE 19-2 2016 PRIMARY URANIUM PRODUCTION BY COUNTRY
NexGen Energy Ltd. – Rook I Property

Position	Country	2016 Production (Mlb U_3O_8)	Percent of Total
1	Kazakhstan	61.0	38.7%
2	Canada	36.4	23.1%
3	Australia	17.6	11.2%
4	Niger	9.0	5.7%
5	Namibia	8.8	5.6%
6	Russia	7.8	4.9%
7	Uzbekistan	6.2	3.9%
8	China	4.4	2.8%
9	USA	2.8	1.7%
10	Ukraine	2.6	1.7%
11	Brazil	0.6	0.4%
12	Czech Republic	0.4	0.3%
13	South Africa	0.1	0.0%
	Total	**157.8**	**100.0%**

Source: SNL Metals and Mining

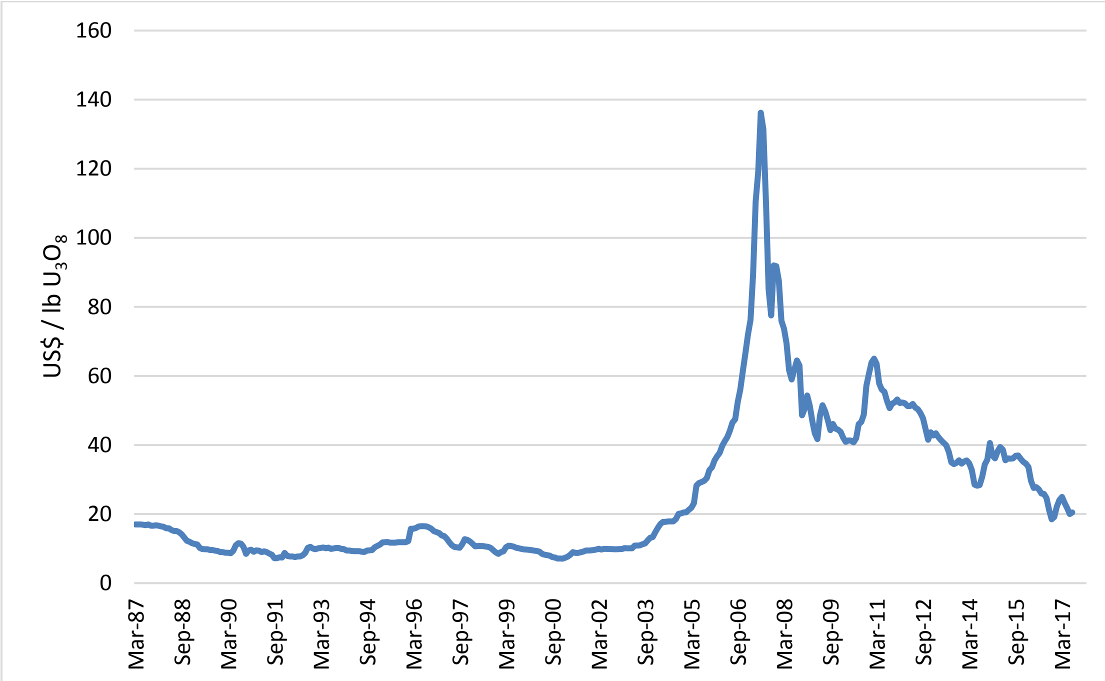
The mines of Kazakhstan are dominated by In-Situ Recovery (ISR) operations, while Canada's production comes mainly from high grade, underground mines. Australia's uranium mines are a mix of open pit, by-product, and ISR operations.

URANIUM PRICE

HISTORICAL MARKET PRICES

The spot price for U_3O_8 has fluctuated significantly over the last thirty years, and has been impacted by global events such as the Chernobyl nuclear disaster (1986), the rise of China as an economic power (2000s), the financial market crash (2007), and the Fukushima nuclear disaster (2011). As mentioned previously, sale prices of yellowcake are negotiated between buyer and seller, and can be based on spot prices or long-term prices. The graphs presented in Figure 19-3 and 19-4 are based on spot prices.

FIGURE 19-3 U_3O_8 SPOT PRICES FROM 1987 TO 2017



Source: NYMEX

FIGURE 19-4 U_3O_8 SPOT PRICES FROM 2012 TO 2017

Source: NYMEX

PRICE FORECAST

RPA based the price forecast used in the PEA on a number of factors. Primarily, an analysis of consensus long-term forecasts by banks and other institutions formed the basis of the price assumed in the PEA. It is estimated that Arrow is at least five years away from commercial production. The long term consensus price of uranium, based on Energy and Metals Consensus Forecasts, April 2017, is US$48.32 per pound of U_3O_8. Based on this, RPA used a rounded value of US$50 per pound U_3O_8 as the input to the PEA.

As of the effective date of this report, there are no contracts material to NexGen that are required for property development, including mining, concentrating, smelting and refining, transportation, handling, sales, and hedging and forward sales contracts or arrangements.

20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

SUMMARY

Clifton has conducted a review of NexGen's licensing, permitting, and environmental aspects for a conceptual development of the Arrow Deposit at the PEA level. The review was completed from an environmental, social, and governance (ESG) perspective through a document and internet search, examination of the applicable Acts and Regulations, a review of the conceptual project as presented in the PEA, discussions with NexGen staff, and a site visit. The Project is in compliance with applicable regulations governing exploration, drilling, and land use in northern Saskatchewan. NexGen staff and contractors are aware of their duties with respect to safety, environmental protection and radiation protection, and have appropriate programs or procedures in place.

Overall, the Project area was neat and orderly with the level of clearing and disturbance appearing somewhat less when compared to similar projects in northern Saskatchewan. The Project is visited frequently by Saskatchewan Conservation officers to ensure compliance. While the information at this stage of review is somewhat limited and based upon the Project as proposed in the PEA, the following environmental, social, and governance items should be considered by NexGen moving forward.

1. The use of underground tailings disposal will help create a relatively small surface footprint and will make decommissioning and abandonment relatively straightforward, thereby minimizing long term environmental liabilities.

2. Patterson Lake is likely to receive treated effluent from a future project. Given the downstream sensitivities along the Clearwater and Athabasca river drainages, NexGen should design the mine to maximize water re-use, minimize the need for freshwater, and discharge treated water of high quality.

3. NexGen is planning to start most of the social, physical, and bio-physical baseline programs required to support feasibility level studies, the environmental impact assessment, engineering, and licensing imminently. The rate limiting step to production is the Canadian Nuclear Safety Commission's licensing processes in order to gain a Licence to Operate. NexGen continues to review its strategy and schedule to inform the start of this work.

4. NexGen's local community engagement with La Loche, Buffalo Narrows, the Clearwater River Dene Nation, the Meadow Lake Tribal Council, and other west side impact communities appears adequate for an advanced exploration project. Additional

work will be required on the more formal consultation as required by the governments to support the Environmental Impact Assessment (EIA) and licensing processes.

5. The main physical danger to the operation is forest fire and NexGen has maintained close relationships with the local Wildfire Management base in Buffalo Narrows. This was particularly important in 2016 when a fire was only a few kilometres from the camp. NexGen should continue to maintain its fire readiness per their Emergency Response Plan.

6. NexGen has a radiation protection program in place with proper core and cuttings handling, zone control and monitoring. Radiation exposure levels are low and commensurate with the types of site activities. NexGen should continue its effective radiation protection program.

7. As NexGen proceeds through the regulatory approvals process, additional safety, environmental, and social governance is required by the Board and operations to support regulatory requirements for management systems.

8. NexGen has demonstrated a commitment to occupational health and safety, and environmental protection with effective programs at site. NexGen is encouraged to continue to review and maintain these programs.

The level of review was commensurate with a PEA and was not an exhaustive examination of documentation or a compliance audit. The interpretation relies on the authors more than 35 years of experience with Saskatchewan uranium projects, and the federal and provincial requirements that accrue to such projects. The Project is at a stage whereby with proper planning, all of the above items can be addressed in a timely fashion within an orderly project approvals process. Some of the items, particularly baseline and consultation, need to be started soon in order not to materially affect Project timing. Discussion is required with the Canadian Nuclear Safety Commission and the Saskatchewan Government to determine the level of Indigenous and stakeholder consultation expected by NexGen through delegation.

INTRODUCTION

The Arrow Deposit potentially represents the start of a new uranium mining camp in Saskatchewan, and as such will garner additional scrutiny as the first new project on the west side of the province since Cluff Lake, which is now in post-decommissioning monitoring. The potential impacts from a uranium project in the modern era in northern Saskatchewan are reasonably well known and with regulatory oversight from both the federal and provincial governments, actual environmental performance of modern uranium mines has been very good. It is expected that the environmental performance of a mine at the Arrow Deposit would be similar, if not better, utilizing lessons learned from the experience in Saskatchewan and elsewhere.

For this report, Clifton conducted a review of NexGen's licensing, permitting, and environmental aspects for a conceptual development of the Arrow Deposit at the PEA level. The review was carried out from an ESG perspective through an examination of available literature and reports either available on-line or supplied by NexGen, examination of the applicable Acts and Regulations, a review of the conceptual project as presented in the PEA, discussions with NexGen staff, others participating in the PEA development, and a site visit. The review has also relied on a desktop study completed by Clifton of existing site information.

While documentation was reviewed, it was not an audit or an exhaustive assessment of compliance. The focus was on ESG items that might be material to the PEA and with potential to impact the progress of the Project moving towards production. While this section is written in the spirit of NI 43-101 Item 20, it also attempts to integrate the current thinking on using ESG elements. The Arrow Project appears to be in compliance with applicable regulations governing exploration, drilling, and land use in northern Saskatchewan.

The Saskatchewan Ministry of the Economy (SKMOEcon) produced a *Uranium Mining Supply Chain Requirement Guide* in 2014 that estimated the cost to licence a new uranium project at approximately \$18 million to \$20 million through to facility commissioning and a Licence to Operate. This did not include engineering support to the approvals process, and in the author's view, is light on costs for consultation and engagement, and for baseline geotechnical engineering. SKMOEcon's estimate of seven years from Technical Proposal to a Licence to Operate is consistent with current schedule estimates.

LICENSING, PERMITTING, AND ENVIRONMENTAL

GENERAL

NexGen personnel indicated that they have been diligent in applying for and receiving the appropriate permits for activities on the land, including, but not limited to land use and clearing, the access trail and bridge, quarrying for road material, camp facilities and their operation, water use, and exploration permits. NexGen has an industrial surface lease covering its main facilities (e.g., camp, core sheds and storage, contractors shop and lay down, etc.), which also allows the company to put a gate on the access trail near the camp to limit direct site access, although the trail up to that point can be used by anyone for recreational or harvesting purposes. At the time of the site visit, it was indicated that there were no current unresolved issues with the regulators. The site is visited frequently by Conservation Officers and NexGen indicated that it has a good working relationship with them. NexGen stated that it is very cognizant of its permitting responsibilities and need to remain compliant.

During the site visit, the QP had the opportunity to view most of the disturbed areas from a vehicle, on foot, or from a helicopter. For the most part, the disturbance of the land for the exploration project appeared less than other projects in northern Saskatchewan due to the use of drill pads for multiple holes and the company's desire to minimize the number of travel routes and disturbances. In some areas, NexGen has been actively working to prevent erosion as demonstrated by the presence of erosion fencing along the trail where it crosses the boggy area at the end of the lake and at various locations around the camp where erosion had been noted.

There is no active water or waste discharges from the site. Sewage and grey water produced at site is treated in a rotating biological contacting-type treatment plant and then pumped to a lagoon well away from the lake. The Project uses raw lake water for drilling, and treated lake water for camp use.

NexGen directs the drilling company onsite (Aggressive Drilling) to utilize a sump/natural depression system for fluid disposal for holes where water return is not lost. Each run of core and cuttings are monitored and recorded on daily log sheets to ensure proper monitoring of radioactivity at each drill. Cold rock cuttings (<500 cps) are disposed of in the local sump/natural depression system near the drill rig. Once a drill hole intersects mineralized core (>500 cps), the drillers use the onsite centrifuge system. Rock cuttings and water are cycled through the centrifuge where the rock cuttings are captured and the water deposited into a sump system where any muds would then settle. Once the centrifuge is started, it is then used until the end of hole regardless of radioactivity. All rock cuttings after the intersection of uranium mineralization are bagged, then sealed and the bags are then deposited into metal drums (205 L), sealed for storage on site, and stored for ultimate disposal.

The location of the deposit and the local landscape are advantageous to minimizing Project impacts as the Project can largely be restricted to dry land with at least a 100 m buffer between the operations and the lake, with minor exceptions where direct access to Patterson Lake is required.

TAILINGS STORAGE CAPACITY AND MANAGEMENT

Several tailings options have been proposed for the Project, which is appropriate for this stage of planning. Any tailings management facility will require a design that is robust and prevents migration of contaminants of concern (COCs) into the local environment and to receptors. The Canadian Nuclear Safety Commission will look for reasonable assurances through pathways and geotechnical modelling that there will be environmental protection provided at least 10,000 years out. With a till dominated surface and a relatively shallow and pervasive groundwater regime, protection of the groundwater will be an important design consideration.

Currently, the preferred option outlined in the PEA is the development of underground storage within the competent crystalline basement rock utilizing both old workings and purpose built caverns. This design has certain advantages environmentally due to the enclosure of these areas in solid rock, and the lack of a tailings facility to decommission. The use of underground tailings would minimize the overall footprint of the Project and greatly facilitate decommissioning.

The design and justification for the final tailings management option will be required in the EIA, and additional baseline geological, hydrogeological and geotechnical work will be required to support the preferred option in the EIA and licensing. This will include acid rock drainage work on the waste rock to ensure it does not require special handling on surface. A tailing management plan will be required for licensing and operation.

BASELINE INFORMATION AND MONITORING

Modern environmental assessments require significant environmental and social baseline data in order to develop predictions of potential impacts and to design the appropriate mitigations. Only limited baseline work has been done to date on the Property as NexGen has focused on delineating the full extent of the deposit. Essentially, NexGen requires a full environmental baseline program to support the large data requirements for the environmental risk assessment and the pathways modelling. Both the province and the federal government detail their information requirements for an EIA, and most of this work has yet to be completed, although there are plans in place to start this work when appropriate.

The Rook I Property is located in the northernmost reaches of the Boreal Plain region of Saskatchewan a few kilometres from the boundary between three ecoregions: Mid Boreal Uplands to the southwest, the Athabasca Plain to the north, and the Churchill River Upland to the southeast (Ecological Stratification Working Group, 1995, and HABISask map service). The site area is broadly similar to the Athabasca Basin and is characterized by "undulating to strongly rolling" topography scoured by ice composed primarily of glacial deposits with rare bedrock exposures. Outcrop, when found, consists principally of sandstones and conglomerates, while the drift consists mainly of sandy till or glacial outwash. Distinct glacial features of positive relief include eskers and drumlins (largely drumlinoid structures) locally modified by the strong adiabatic winds that followed the retreating glaciers. The region has a subhumid mid-boreal ecoclimate characterized by cool, moist summers and long cold winters.

Most of the Rook I Property and the areas to the north and southeast consists of stands of jack pine and some black spruce, with shrubs and lichen as ground cover. White spruce, trembling aspen, and balsam fir are also found; while notable paper birch and white birch occur to the north and southeast respectively. Poorly drained depressions within the Churchill River Upland to the southeast are noted as having stunted growth of black spruce, and the ground cover is predominantly sphagnum moss.

Currently, it is unknown whether the site will have any concerns over rare and endangered species as those studies have yet to be completed. If the Project maintains a relatively small footprint on the high ground, and discharges good quality treated water during operations, local impacts should be limited. Patterson Lake contains lake trout, walleye, whitefish and northern pike, among others, and has been recreationally and commercially fished. Effluent discharge will have to be of high quality in order to protect current species and their ability to be harvested as well as protecting the downstream water users.

Woodland caribou are a species of concern in Canada and they have been listed as threatened under the federal Species at Risk Act (SARA). In response, Saskatchewan is currently developing a caribou management strategy for caribou in the Boreal Plain (SK2 zone) and the Boreal Shield (SK1 zone). Woodland caribou do occur in the Project area, and the site is within the SK2 western subzone (E01), very close to the northwestern boundary with the SK1 zone. Pressures on caribou habitat associated with SK2 are not found in the area surrounding the site due to the lack of forestry, farming, and other development. As such, for caribou management purposes, the site could be deemed to be in a situation similar to the SK1 zone.

Regardless, NexGen will be required to develop a Caribou Management Plan for the site that will detail its monitoring and mitigation plans. As habitat and wildlife work have yet to be done, it remains unclear whether the Project will affect any prime caribou habitat.

While not a regulatory requirement, in 2016, NexGen retained PGL Environmental Consultants (PGL) to assess the operation's performance against the Saskatchewan Mineral Exploration Guidelines: Best Management Practices (2012) and applicable permits. The report found the site to be in good condition, but made some recommendations based on the guidelines. From the recent site visit, it appears that NexGen has diligently worked to address the PGL recommendations with examples including putting secondary containment around fueling facilities despite the use of double walled tanks, removal of fuel drums from site, development of an emergency response plan, and a proper screening of the drilling water pump intake per Fisheries and Oceans Canada (DFO) requirements to prevent harm to fish. One of the recommendations was to start reclaiming disturbed areas no longer needed, and NexGen has indicated that it plans to start reclamation work in late summer 2017.

An impacted site Heritage Resource study has been carried out and nothing of importance was found. A more formal local and regional archaeological study will be required in support of the Project's environmental baseline. Some local Indigenous information from a variety of sources has been collected but has not been collated into a report.

Currently, little baseline work has been done either locally or on a regional basis other than the work done using available data (e.g., hydrology). The exception is the installation of a weather station to provide local climate data. This data, when combined with the data from regional weather stations, will be invaluable for the modelling of Project emissions. In order to support the EIA, NexGen will require completion of a full physical and bio-physical environmental baseline program.

ENVIRONMENTAL ASSESSMENT, LICENSING AND PERMITTING

In Saskatchewan, uranium mines are regulated by both levels of government. Much of the regulatory oversight is duplicative, especially related to environmental protection, however, there are some areas where each government has special oversight: the federal government with respect to radiation protection through the *Nuclear Safety and Control Act*; and the provincial government with respect to mining and occupational health and safety. There exists an agreement between the CNSC and Saskatchewan that coordinates their dual oversight: the CNSC-Saskatchewan Administrative Agreement for the Regulation of Health, Safety and the Environment at Saskatchewan Uranium Mines (2003), which superseded the 2000 Memorandum of Understanding (MOU).

Both levels of government require the completion of an EIA process prior to rendering licensing decisions, and traditionally this has been done through the MOU. While the current one has expired, it is hoped that both parties will continue to live up to the spirit of the process so the proponent only has to do one EIA to satisfy both governments.

If the Clearwater River system is used for treated effluent discharge, it is not clear if the Government of Alberta will want to become involved in the EIA process more formally, even though it is unlikely that the Project will be detectable at that distance downstream. That possibility would likely be explored at the Technical Proposal stage, possibly with input from the Mackenzie River Basin Board.

PROVINCIAL ENVIRONMENTAL ASSESSMENT AND PERMITTING PROCESS

Mineral tenure is issued by Saskatchewan Ministry of the Economy (MOEcon), which grants mineral rights, subject to certain conditions, such as the completion of the levels and types of assessment activities. As the Project occurs on Crown Land, surface access is controlled through permits from the Saskatchewan Ministry of Environment (SKMOE) during mineral exploration. Should the Project meet all the requirements for permitting construction and operations, a surface lease would be granted to allow these activities to occur. Surface leases are coordinated through the Ministry of Government Relations, Northern Engagement Branch and the Fish, Wildlife and Lands Branch SKMOE, and includes input from other government agencies as appropriate. While negotiations can start early, a precondition of the issuance of a mining surface lease is the successful outcome of the provincial environmental assessment process as defined by *The Environmental Assessment Act*.

In Saskatchewan, the EIA and the licensing process are separate, however, the EIA process must be completed successfully to allow licensing. The first step in the approvals process is to submit a Technical Proposal (formerly the project proposal) to Environmental Assessment and Stewardship (EAS) for Environmental Assessment Screening to determine whether the project is a Development and requires a full environmental assessment, or it can proceed directly to licensing. There is little doubt that the Arrow Project will require an EIA due to general public concern over mining projects and uranium mining projects in particular. The Technical Proposal, prepared per guidance from the EAS, is largely derived from prefeasibility level information combined with publicly available information on the mining area and any results from fieldwork. To the best of the proponent's ability, the document outlines the full scope of the project from construction through decommissioning along with a discussion of potential impacts and mitigations. The SKMOE EAS *Technical Proposal Guidelines* indicate that a Technical Proposal should include, at a minimum, the following information:

- Executive Summary
- Project Description
- Description of the Environment
- Potential Impacts and Mitigations
- Monitoring
- Decommissioning and Reclamation
- Stakeholder Engagement
- First Nations and Métis, Duty to Consult

The EIA process in Saskatchewan is an inter-ministry program assigned to SKMOE and led by the EAS. The *Environmental Assessment Act* requires that Technical Proposals be circulated for review by other branches within SKMOE, other Saskatchewan ministries and agencies as necessary, and this is done through the Saskatchewan Environmental Assessment Review Panel (SEARP). This also includes, as a courtesy, forwarding the Technical Proposal to the Canadian Environmental Assessment Agency if the proponent has not already done so.

EAS then compiles comments received from the SEARP with its own review and renders a decision as to whether the project requires an EIA or can proceed to licensing. In order to require an EIA, a project must be deemed to be a Development by the Commissioner EA utilizing the criteria in section 2(d) of the EA Act. All uranium mining projects, at a minimum, meet the criteria of public interest and are therefore deemed Developments. Once a project is deemed a Development, the proponent will receive a formal Ministerial Determination that the project is a Development and an EIA is required. In addition to a letter to the proponent, there is also a public notice about the proposed project.

The proponent is then required to produce a draft Terms of Reference (ToR) for the project (formerly the project specific guidelines) that includes all of the items in the EAS *Guidelines for the Preparation of the Terms of Reference* and any project specific items. EAS, and sometimes the SEARP, provide input to the ToR in order to ensure their ministry's or agency's interests are being met and that all the normal requirements of an EIA are included. The ToR is then posted to the Ministry's website.

It is then the proponent's responsibility to prepare the EIA and undertake all consultations and studies required to produce the document. In general, the EIA is derived by comparing the consultation and environmental baseline information with a feasibility level description of the proposed project. Once the document is submitted, the EAS reviews the draft EIA for completeness. If complete, the EIA will be reviewed by the EAS and the SEARP. If during the review there are any significant information gaps, the document will be returned to the proponent to address them. This will continue until such time as there are no significant data gaps.

Once EAS and the SEARP are finished their reviews, EAS compiles the comments and produces the Technical Review Comments Document. This document and the final EIA package are put to public review for a minimum of 30 days. Once all of the comments are in, EAS will produce an EIA decision document for the Minister. While there are three outcomes possible, the likely outcome for a project that reaches this stage is approval of the EIA with conditions, unless there is significant public concern. With approval of the EIA, the surface lease can be completed and signed.

Once the EIA is approved and the surface lease is in place, subject to conditions, the proponent can proceed with licensing through the SKMOE Environmental Protection Branch, which largely provides one window approvals on behalf of other branches and Ministries. The work to provide the level of engineering required to support licensing, and to develop a surface lease, is usually done concurrent with the EIA process to minimize licensing delays.

It should be noted that the Minister has the right to initiate a public hearing into the project at any time should there be grounds for doing so. Such grounds could include significant public concern or the inability to fully mitigate the project, thereby putting human health or the environment at potential risk. The best method for avoiding a public hearing is to conduct complete and fulsome public consultations with all stakeholders, First Nations and Métis, and to fully address all potential impacts with the appropriate mitigations in the EIS.

Mines in Saskatchewan require a Preliminary Decommissioning Plan and cost with some form of financial assurance in place to cover decommissioning costs in the unlikely event the proponent is unable to do so. The amount of the decommissioning security, in whatever form, must cover a decommission tomorrow scenario. The security cannot be based upon the actual mining infrastructure or equipment as there is no demonstrated market value for them. For uranium mines, SKMOE holds the security on behalf of both the province and the federal government. The decommissioning plan and surety would be required at licensing.

FEDERAL ENVIRONMENTAL ASSESSMENT PROCESS

Under the Canadian Environmental Assessment Act (CEAA, 2012), the CNSC is the Responsible Authority and charged with leading the EIA of a proposed uranium mine as it would entail (per S.31 of the CEAA Regulations Designating Physical Activities) "*the construction, operation and decommissioning of a new uranium mine or uranium mill on a site that is not within the licensed boundaries of an existing uranium mine or uranium mill*". Under CEAA, there is no opportunity to delegate the EIA for a CNSC regulated project to the provincial process (e.g., "Substitution" or "Delegation"), however, there is the option of coordinating the EIA process such that only one EIA document is produced that meets the needs of both levels of government. In the past, the province has led the 'harmonized' EIA process with significant liaison and input from their federal counterparts. Using the harmonized process allows for some efficiencies and the development of a single EIA document. While there are some differences in requirements at both levels of government, these are easily handled by the harmonized process. While only one EIA is produced, it is used by each level of government within their respective EIA processes.

As with the provincial process, there are mechanisms within CEAA that can trigger a panel, and this can be done up to 60 days after the initial EIA decision. The triggers for a Panel generally rest on significant public concern or the potential for a significant environmental impact despite proposed mitigations. A Panel would add a minimum of one year to the overall EIA approvals process.

In order to initiate the EIA and licensing processes, the CNSC recommends a pre-application consultation in order to understand the project and to provide guidance on their EIA and licensing processes, and consultation. This early consultation with the CNSC allows them to initiate their planning for consultation with First Nation, Métis, and other stakeholders about the project and its licensing. The CNSC provides guidance on Aboriginal consultation (*Codification of Practice: CNSC Commitment to Aboriginal Consultation*) and the need for early engagement (*Early Aboriginal Engagement: A Guide for Proponents of Major Resource Projects*) as well as required public information programs (*G-217, Licensee Public Information Programs*).

While the option of sequentially doing the EIA and the licensing is available to the proponent, the CNSC recommends initiating these two distinct processes concurrently to save time. Effectively, the CNSC runs both the EIA and the licensing in parallel, with the approval of the EIA required before the Commission Tribunal can approve the licensing. As in Saskatchewan, a successful EIA decision is required prior to making a decision on the licensing packages.

When making the initial application for a licence, the proponent must provide the information required by the CNSC in the following regulations:

- Cost Recovery Fees Regulations (2003)
- General Nuclear Safety and Control Regulations
- Radiation Protection Regulations
- Packaging and Transport of Nuclear Substances Regulations
- Nuclear Substances and Radiation Devices Regulations

The application must be accompanied by the required initial fee per the Cost Recovery Regulations ($25,000 for a facility) and a Project Description prepared according to the Major Projects Management Office (MPMO) guidance (*Guide to Preparing a Project Description for a Major Resource Project*). Cost recovery fees will be applied for the level of work required by the CNSC for a project and can be expected to exceed one million dollars per year during the EIA and licensing approvals process due to the large effort required by the CNSC to review material and hold Commission hearings.

The MPMO, as project manager for the federal EIA process, may provide federal oversight of the EIA process to ensure that it remains on schedule, and if it does so, a Project Agreement would be put in place with the CNSC and the other federal regulatory authorities identified in order to define responsibilities, timelines and deliverables.

In licensing a project, the CNSC generally grants licences for the four distinct stages of a project in sequence. Those licensing stages are: site preparation and construction; operation; decommissioning; and abandonment. There is some flexibility as to how a proponent works with these levels of approval based upon project plans and available supporting information.

For each licensing stage, proponents will be required to develop management systems appropriate to the level of activity complete with policies, systems/programs, procedures and monitoring (e.g., a plan, do, check, act system) to support the licence application(s). In order to protect human health and the environment, the CNSC focusses on 14 key safety control areas in their assessment of projects:

- Management
    - Management systems
    - Human performance management
    - Operational performance
- Facility and Equipment
    - Safety analysis
    - Physical design
    - Fitness for service
- Core Controls and Processes
    - Radiation Protection
    - Human health and safety
    - Environmental Protection
    - Emergency management and fire protection
    - Waste management
    - Security
    - Safeguards and Non-proliferation
    - Packaging and Transport

These need to be addressed in the licence application process. For instance, for radiation protection, a radiation protection program that includes all aspects of managing the radiation hazard on site including policies, ALARA program, responsibilities, training, equipment, monitoring, reporting, corrective action, etc., in a management system format. The CNSC will require competent, qualified persons to be involved in each of the safety control areas.

Recently, the CNSC released REGDOC-3.5.1, *Licensing Process for Class I Nuclear Facilities and Uranium Mines and Mills, version 2* (May 2017), which outlines the licensing process for a new uranium mining and milling project. If licensing is done in parallel to the EIA process, it appears that from submission of the project proposal, it will take approximately 6.5 to 7.0 years to obtain the Licence to Operate from the CNSC. The CNSC operating licence is issued when full construction and commissioning of the facility has been completed and the proponent has addressed all of the safety requirements in order to demonstrate a readiness to fully operate. Once the Licence to Operate has been received, the Project can proceed to full production.

OTHER PERMITS AND PERMISSIONS

Other agencies that will require licenses and permits, including, but are not limited to:

- Saskatchewan Labour (occupational health and safety, mining safety/Mining Act)
- Saskatchewan Health (camp, hygiene, water and sewage treatment)
- Saskatchewan Water Security Agency (water supplies, treated water discharge, sewage)
- Government Relations (surface lease, monitoring, social impact requirements)
- Ministry of Economy (mineral tenure, royalties)

Most Ministries will indicate their interest and the need for any permits in the EIA review stage through the SEARP and those comments will come forward in the technical review comments produced by the EAS.

Similarly, the federal permits will tend to follow the completion of the CNSC/CEAA EIA process. Examples include the need for permissions under the Navigable Waters Act, the Fisheries Act, as well as compliance with the Species at Risk Act, Migratory Birds Convention Act, Metal Mining Effluent Regulations, etc.

For the majority of the federal and provincial permits, aside from the major operating licences, they are not generally material to the overall project schedule and costs when properly planned and executed in a timely manner.

RADIATION PROTECTION

OVERVIEW

The potential impacts from a uranium project in northern Saskatchewan are reasonably well known and with regulatory oversight from both the federal and provincial governments, actual performance of modern uranium mines has been very good.

This section is based upon an examination of available literature and reports either available on-line or supplied by NexGen, discussions with NexGen concerning the proposed approach to mining and tailings management, and discussions with other members of the NexGen team who prepared other sections of this report. While some documentation was reviewed, the current assessment was not an audit or an exhaustive assessment of future compliance. The focus was on items that might be material to the PEA or with potential to impact the progress of the Project towards production.

Based on observations of team members and documentation provided by NexGen, NexGen has a thorough radiation protection program in place at its exploration camp and demonstrates proper core and cuttings handling, zone control, and radiation protection monitoring. Radiation levels are low and commensurate with the types of current site activities. NexGen should continue its effective radiation protection program.

The high-grade core at the Project will be mined with transverse stopes and other areas mined with longitudinal retreat (on-vein development.) At the moment, mine access via a shaft from surface is anticipated, however the mine access has not yet been finalized. From previous experience, either approach to mine access – ramp or shaft – is satisfactory from a radiation protection perspective. Underground levels will be connected via internal decline. Ventilation in mineralized headings will be single-pass with mine workers always in fresh air. Within the context of the Radiation Protection and Ventilation programs, it may be possible that ventilation from waste headings can be re-used in other areas, provided that it meets radiological contaminant limits within the approved Radiation Protection Program. It is envisaged that the Project will be operated as a fly-in, fly-out site on a two week rotation, using two 12 hour shifts per day. These elements of mine development and production are broadly consistent with practices elsewhere in northern Saskatchewan.

Based on experience at other mine sites in northern Saskatchewan with similar mineral grades, radiation protection issues can be safely and effectively managed. It should be noted that a detailed evaluation of potential radiation exposures and opportunities for mitigation opportunities will be required for all phases of the Project. Moreover, it should be emphasized that all facilities will be designed with radiation protection as a core element and supported by careful development of operating practices designed to protect against inadvertent radiation exposure.

One area of note is the proposal for underground tailings management. This is an innovative approach to tailings management and is expected to minimize potential environmental effects of tailings on the surface environment. However, this approach may introduce some new considerations for radiation protection of miners placing the tailings. Careful attention to management of spills and associated radiation protection will be an important consideration in detailed design. The successful experience of other mines in northern Saskatchewan with underground crushing and grinding and slurry to surface provides assurance that management of radiation rich slurries underground can be performed safely.

POTENTIAL RADIOLOGICAL HAZARDS

Occupational radiation exposure is the exposure of workers incurred in the course of their work whether full time or part-time, company employee or contract worker. For the Project, these include occupational radiation exposures associated with exploration, the development and operation of an underground mine, operation of the processing facility (mill) and waste management activities, notably, underground management of tailings.

The main radioactivity issues in uranium mining include:

- Exposure to external gamma radiation arising from radionuclides in the uranium-238 decay chain which are present at varying concentrations in both mineralized and waste rock. The intensity of the gamma radiation exposure depends on the radioactive content of the mineralization or waste, the size of the source, the distance from the source, and the amount of shielding between the source and receptor location.

- Inhalation of radon gas – Radon-222 (radon) which is a radionuclide in the uranium-238 decay chain is an inert gas that is released in the mine by three methods, including, dry emanation from undisturbed surfaces, releases from mine water, and releases from broken rock and cuttings. The amount of radon emitted can vary greatly by mine location, mineral grade, the type of source (e.g., mine water, breaking or broken mineralized material), and the type of mining activity taking place.

- Inhalation of Radon Progeny (RnP) concentrations – Radon which has a half-life of 3.8 days decays into a series of short-lived progeny. RnP concentration depends on the amount of radon entering in the air, the relative ratio of radon to RnP (equilibrium factor), the age of the air (as the air ages the equilibrium factor increases), and the particles size of RnP. This source of exposure is especially important underground. It should be noted that on the basis of recent recommendations of the International Commission on Radiological Protection, and the QP's understanding that the CNSC will adopt the ICRP's recommendations for a more restrictive limit on exposure to radon and RNP, ventilation and other measures to control this source of exposure will be a very important aspect of mine design.

- Inhalation of long-lived radioactive dust (LLRD) associated with dust generating activities in mining and processing. Potential exposure to uranium concentrate is especially important in the drying and packaging areas of the processing plant.

MONITORING

The monitoring of workplace environments and of individual miners exposures is needed to support the assessment of doses to workers. This is important not only to support demonstration that workers doses are not only well within regulatory limits but also to maintain miners exposures as low as reasonably achievable (ALARA) and evaluate the effectiveness of engineering and administrative approaches to controlling dose. In addition, the individual dose data is important to support any future epidemiological studies.

Monitoring practice and the dose calculation procedures and assumptions used to estimate worker doses vary; however, in broad terms:

- Gamma radiation monitoring is typically performed with the use of thermoluminescent dosimeters (TLD) as the primary monitoring approach, although this is often supplemented by area measurements in selected workplaces combined with estimates of time spent in the same workplaces.

- LLRD exposures are determined through combinations of personal dust sampling and area dust sampling. In both cases, the collected filters are generally analyzed using gross alpha counting. (Dust samplers are size selective and the dust measurements assumed to reflect inhalable dust.)

- With respect to Radon Progeny (RnP), the preferred approach, especially for underground mining, is to measure individual miner's exposures sources to RnP. This is typically supplemented by area measurements of Radon Gas (RnG) and RnP working levels (WL). In northern Saskatchewan, the use of personal alpha dosimeters to measure LLRD and RnP is common practice and is recommended for the Project.

An appropriately trained Radiation Safety Officer and supporting radiation technicians will be available to ensure that the appropriate radiation protection practices are developed, implemented, and maintained within a Radiation Management Program. The Radiation Safety Officer will also be responsible for maintaining exposure records and reporting exposures to the appropriate regulators and employees.

As previously indicated, a detailed evaluation of potential radiation exposures and mitigation opportunities will be required for all phases of the Project. Moreover, all facilities will be designed with radiation protection as a core element and supported by careful development of operating practices designed to protect against inadvertent radiation exposure. A waste management plan will be required for the surface contaminated materials that accrue during a mining operation, and this could be a special landfill or with the underground tailings disposal.

HYDROLOGY

The main Project area is located on a peninsula that divides the two arms of Patterson Lake, which receives input from Gedak and Broach Lakes, the headwater lakes for the Clearwater River drainage sub-basin. Water flows south from Patterson into Naomi Lake and into the Clearwater River. Water from Forrest Lake, the large lake immediately south of Patterson Lake also flows into Naomi Lake.

Portions of the Clearwater River are protected within Clearwater River Provincial Park, and the river is also designated as a Heritage River. From the Project, the Clearwater River flows south and westward into Alberta where it joins the Athabasca River at Fort McMurray. The Athabasca River flows north into the Athabasca Delta and the Slave River, and eventually north to the Arctic Ocean via the Mackenzie River.

Patterson Lake itself is composed of three sub-basins. The northern half of Patterson Lake has a smaller eastern basin that accepts the flow from Broach Lake and has a maximum depth of about 24 m, which is separated from the western half by a shallow sand bar. The larger western half has a maximum depth of about 45 m. At the western end of the peninsula that separates the two arms of the lake, there is a shallow area separating the two arms that has depths ranging from one to three metres, with a smaller deep area of 11 m. The large southern arm of the lake has a maximum depth of approximately 50 m.

Flow out of Patterson Lake into Forrest Lake is from the southeastern corner of the southern basin where through a riffled stream it joins with the waters of Forrest Lake and drains through Beet Lake and Naomi Lake. In terms of size and volume, the Clearwater system appears to be the obvious choice to receive treated mine water discharge. Some preliminary work on hydrology was completed by Northwest Hydraulic Consultants using existing data to examine potential discharge locations for treated mine effluent. For comparison, they used an estimated average of 8 m^3/min as the base discharge rate and a peak of 80 m^3/min to see which watersheds were capable of handling such flows. As the Project area is located on the southern boundary of a large relatively flat drainage area, there were several headwater locations to choose from, including the Williams River, Davidson River, Rozell Lake, and Vermeerch Lake. Except for Patterson Lake, the discharge options ranged from 7 km to 26 km distant from the Project. All of the options would have required a road and pipeline, and in some cases permissions from another jurisdiction. Effluent discharge to Patterson Lake remains the preferred option.

The main areas of hydrologic risk relate to the potential quantity and quality of water discharged to Patterson Lake. The EIA process will examine this and the potential effects on biota in the system. Additional hydrologic baseline information will be required for the EIA.

Groundwater is also a concern and the Saskatchewan Mineral Industry Environmental Protection regulations require holes with uranium mineralization to be cemented to prevent the flow of contaminated water between formations or to the surface. The other practical application of cementing is that during underground operations cemented holes prevent water problems due to short circuiting water. NexGen has been cementing exploration holes per the regulations.

ENVIRONMENTAL GOVERNANCE

NexGen's Board of Directors has responsibility for environmental protection as detailed in the general board mandate and the Code of Ethics. Currently, there is not a specific policy or committee to look after environmental matters. This is satisfactory at this stage of the Project, but as it progresses, the board will be required to undertake more responsibility in terms of environmental policy and performance review as part of the required management systems.

As all of the action is on the Rook 1 property it is fitting that there is an environmental policy for the site, which is adequate for the current stage of operations.

CONSULTATION AND COMMUNITY RELATIONS

The closest communities recorded as urban municipalities are Descharme Lake and La Loche which are located approximately 48 km and 115 km south-southwest of the Rook I Property, respectively, and accessible via Highway 955, as shown in Figure 20-1.

Saskatchewan Indian Reserves (IR) within similar distances are:

- Clearwater River Dene Band IR (#222) at the north and south ends of Lac La Loche
- Turnor Lake IR (#193B) immediately east of Turnor Lake (115 km south-southeast)
- Cree Lake IR (#192G) approximately 77 km east
- English River First Nation Cable Bay Cree Lake IR (#192N) approximately 74 km east (former weather station)

The northernmost portion of Clearwater River Provincial Park is approximately 41 km south of the southern margin of the outlet from Patterson Lake. In addition, Representative Areas Network data from the SKMOE (2013) indicates that Preston Lake approximately 18 km southwest of the area is legally designated as a Wildlife Refuge under The Wildlife Act's *Wildlife Management Zones and Special Area Boundary Regulations*.

Aside from mineral exploration, the most common forms of land use across the region are recreation, trapping, hunting and fishing (Ecological Stratification Working Group, 1995). The area to the southwest also includes some pulpwood harvesting and a local saw log forestry and water-oriented recreation.

The site itself is located within Treaty 8 lands with most of the likely impact communities from La Loche to Beauval sitting within Treaty 10. The Clearwater River Dene Nation (CRDN), a Treaty 8 signatory and the First Nation with the most direct access to the site, has reserves in and around La Loche within the Treaty 10 boundaries. NexGen has maintained contact with the Chief and council, as well as the communities on the west side.

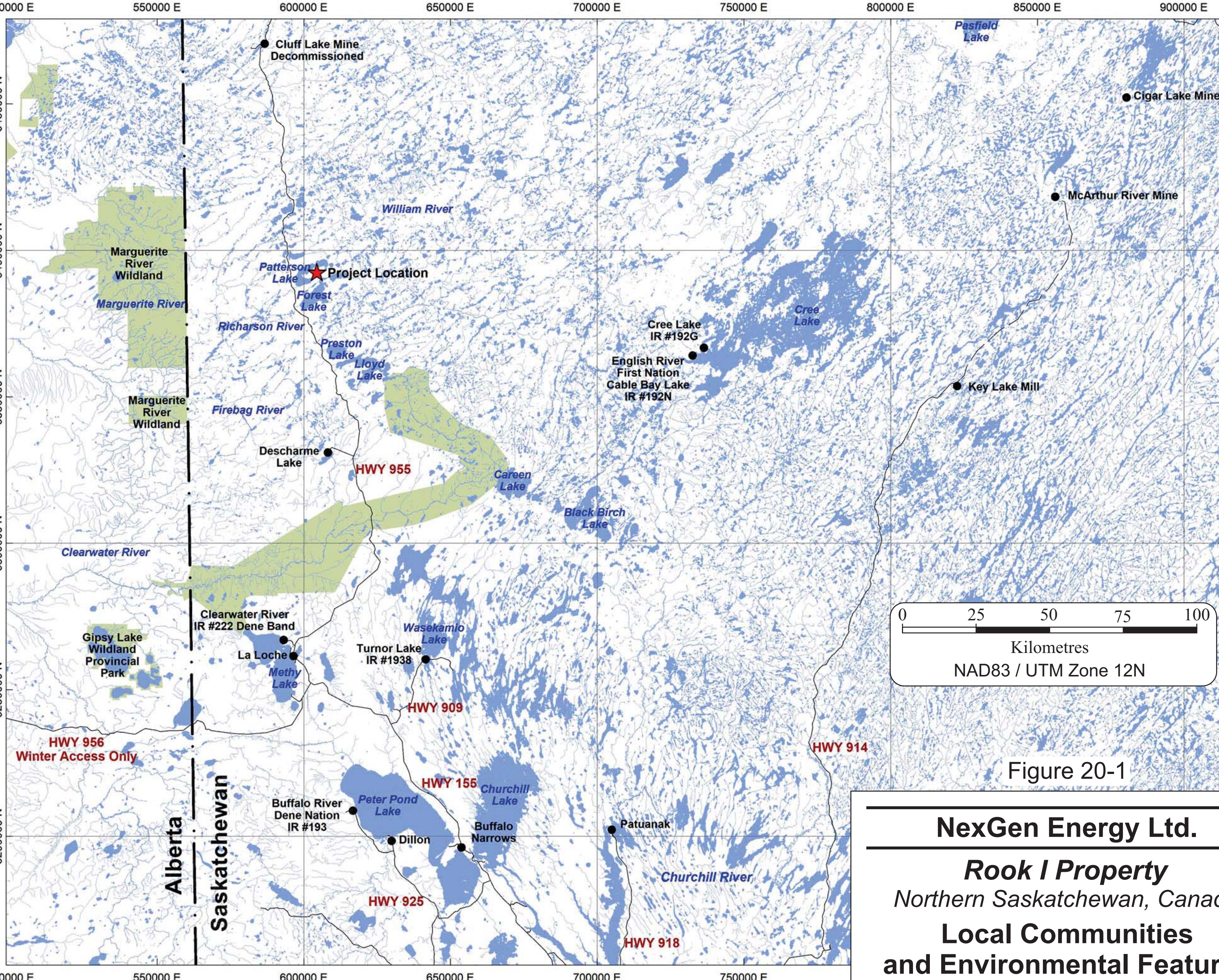


Figure 20-1

NexGen Energy Ltd.

Rook I Property

Northern Saskatchewan, Canada

Local Communities and Environmental Features

September 2017

Source: RPA, 2017.

www.rpacan.com

Over the last few years, NexGen has undertaken a number of community liaisons including information meetings (and the offer of information meetings), communications with community leaders, site tours, participation in local Breakfast Clubs at La Loche schools, hiring locally where possible and a summer student hiring program, rehabilitation of stray dogs from La Loche, and purchasing locally where possible. On its website, NexGen indicates that it is proud of its work with the communities surrounding its projects. NexGen further indicates that the company believes it is critical to not only financially support local initiatives, but also to have the local communities take ownership of the projects by developing training programs, infrastructure, and employment opportunities. From a review of NexGen's engagement records, the company is doing substantial engagement in the local communities and in developing relationships. NexGen will continue this practice and continue recording all community engagements and consultation efforts.

To date, the level of consultation and engagement appears appropriate for an advanced exploration project. Moving forward, more direct consultation with local Indigenous groups (i.e., First Nations and Metis) will be required to support the EIA, and ultimately to gain project approvals. Further, ongoing communication on the Project will be very important to make sure local expectations align with project development.

There has been some past local tension regarding Cenovus's Axe Lake Project, over perceived impacts to traditional hunting and trapping activities by the community of Descharme Lake and this led to the establishment of a blockade in November 2014 of Highway 955. The grievances focused on perceived impacts to trapping and resource harvesting related to the increase in exploration work along the Highway 955 corridor, and the Ministry of Environment's fire policies. While the blockade ended due to an injunction obtained by Cenovus, the news reports from that period indicate that most of the local concern was with the oil companies (large area SAGD exploration), not the uranium exploration companies. Regardless, this is an issue that NexGen is sensitive to and will work closely with the local trapper(s).

The Project resides in Fur Zone N-19, the La Loche Fur Conservation Block. Fur harvesting is important locally, with about $28,500 worth of furs harvested in 2014/15 (SK Fur Value Report), which is down from the $63,800 worth of fur harvested in 2013/2014. The lower value appears to reflect overall poorer fur prices as more animals were captured in the 2014/15 period. Of the 769 animals trapped during 2014/2015, marten was the most valuable catch with lynx, fisher, and muskrat taking the next three value positions, respectively. Typically, projects in northern Saskatchewan enter into a compensation agreement with the local trapper(s) of record for the area they are disturbing and compensate for future lost production, if any, based upon historic records.

Big Bear Lodge/Contracting approximately 17 km northwest of the site off Highway 955 at Grygar Lake is the largest business locally, and provides hunting and fishing services as well as accommodation, security services, equipment rentals, contracting, and freight forwarding.

Forest Lake Lodge has a main camp on Beet Lake (east of Patterson Lake) and an outpost camp on Forrest Lake (immediately downstream of Patterson Lake). This is a non-guided drive-in seasonal fishing camp.

FOREST FIRES

Forest fires in northern Saskatchewan provide one of the more significant risks to an exploration or mining operation, and the Patterson Lake area is no exception.

Fire is a common element in the dry, sandy, pine-dominated terrains associates with the Athabasca Plain and surrounding areas, and, on average, any given area can expect to have a forest fire once every 40 years or so. The wildfire response hierarchy in Saskatchewan is protecting people, communities, infrastructure and businesses, in that order and this requires companies operating in the north to have an effective fire prevention program based on the provincial Fire Smart principles.

NexGen has a comprehensive emergency response manual that includes fire preparedness and response. There is a cache of firefighting equipment as well as pumps and sprinkler systems installed around the camp and core storage areas. The site maintains close contact with the ministry firebase at Buffalo Narrows and reports any local fire activity to the hotline.

CONCLUSIONS AND RECOMMENDATIONS

The NexGen Arrow deposit has the potential to be a productive mining operation in a new mining area. With experience from uranium mines in the eastern Athabasca Basin, effective impact mitigations and a strong connection to local communities, it can be properly positioned to succeed. It is early in the regulatory process for NexGen, which has some community work and minor amounts of baseline completed. There is still a considerable amount of baseline required to complete the EIA, engineering and licensing phases. NexGen will need to consider this in light of their scheduling considerations, and while much can be parallel processed, the rate limiting step is the acquisition of a CNSC Licence to Operate.

While the information at this stage of review is limited, based upon the Project as proposed in the PEA, the following environmental, social, and governance items should be considered moving forward.

1. The use of underground tailings disposal will help create a relatively small surface footprint and will make decommissioning and abandonment relatively straightforward, thereby minimizing long term environmental liabilities.

2. Patterson Lake is likely to receive treated effluent from a future project. Given the downstream sensitivities along the Clearwater and Athabasca river drainages NexGen should design the mine to maximize water re-use, minimize the need for freshwater, and discharge treated water of high quality.

3. NexGen is planning to start most of the social, physical, and bio-physical baseline programs required to support feasibility level studies, the environmental impact assessment, engineering, and licensing imminently. The rate limiting step to production is the Canadian Nuclear Safety Commission's licensing processes in order to gain Licence to Operate. NexGen continues to review its strategy and schedule to inform the start of this work.

4. NexGen's local community engagement with La Loche, Buffalo Narrows, the Clearwater River Dene Nation, the Meadow Lake Tribal Council, and other west side impact communities appears adequate for an advanced exploration project. Additional work will be required on the more formal consultation as required by the governments to support the EIA and licensing processes.

5. The main physical danger to the operation is forest fire and NexGen has maintained close relationships with the local Wildfire Management base in Buffalo Narrows. This was particularly important in 2016 when a fire was only a few kilometres from the camp. NexGen should continue to maintain its fire readiness per their Emergency Response Plan.

6. NexGen has a radiation protection program in place with proper core and cuttings handling, zone control and monitoring. Radiation levels are low and commensurate with the types of site activities. NexGen should continue its effective radiation protection program.

7. As NexGen proceeds through the regulatory approvals process, additional safety, environmental, and social governance is required by the Board and operations to support regulatory requirements for management systems.

8. NexGen has demonstrated a commitment to occupational health and safety and environmental protection with effective programs at site. NexGen is encouraged to continue to review and maintain these programs.

21 CAPITAL AND OPERATING COSTS

CAPITAL COSTS

Capital costs have been estimated for the Project based on comparable projects, first-principles, subscription-based cost services, budgetary quotes from vendors and contractors, and information within RPA's and DRA's respective project databases. DRA is responsible for capital costs related to the process plant and certain infrastructure, while RPA is responsible for capital costs related to mining, other infrastructure, and the overall compilation of costs. Arcadis, Clifton, and BGC have provided input, where appropriate, to develop the capital cost estimate. Broadly, pre-production capital costs are divided among the areas of underground mining, processing, general infrastructure, indirect expenses, and contingency. Sustaining capital costs are related to underground mine equipment and development, process plant maintenance, tailings facility construction, and mine closure. Table 21-1 is a summary of Project capital costs.

TABLE 21-1 SUMMARY OF CAPITAL COSTS
NexGen Energy Ltd. – Rook I Property

Description	Units	Cost
Underground Mining	C$ millions	324.1
Processing	C$ millions	243.9
Infrastructure	C$ millions	143.1
Subtotal Pre-Production Direct Costs	**C$ millions**	**711.1**
Pre-Production Indirect Costs	C$ millions	241.0
Subtotal Direct and Indirect	**C$ millions**	**952.1**
Contingency	C$ millions	237.1
Initial Capital Cost	**C$ millions**	**1,189.2**
Sustaining	C$ millions	403.6
Closure	C$ millions	64.0
Total	**C$ millions**	**1,656.8**

UNDERGROUND MINING

Within underground mining, the significant areas of spending include horizontal and vertical underground mine development, and mobile and stationary equipment (Table 21-2).

The pre-production mining equipment fleet purchase schedule is summarized in Table 21-3. Due to the long operation life, a replacement fleet is purchased after 6-7 years of operation. Further, five mine haul trucks are scheduled for purchase over years 9 and 10 to accommodate hauls from mining below shaft bottom and in areas further afield from the core deposit.

TABLE 21-2 UNDERGROUND MINING CAPITAL COSTS
NexGen Energy Ltd. – Rook I Property

Description	Units	Total
Horizontal Development	C$ millions	41.2
Vertical Development	C$ millions	168.6
Mobile Equipment	C$ millions	32.1
Stationary Equipment	C$ millions	55.4
Capitalized Pre-Production Operating Costs	C$ millions	26.9
Total Open-Pit Mining Capital Costs	**C$ millions**	**324.1**

TABLE 21-3 MOBILE MINING EQUIPMENT PURCHASES
NexGen Energy Ltd. – Rook I Property

Description	Quantity	Unit Price (C$ '000)	Pre-production Capital (C$ millions)
Surface Support Equipment	LS		6.7
2 Boom Jumbo	2	1,098.7	2.2
3 yd LHD	2	740.0	1.5
6 yd LHD	6	910.0	5.5
30t Haul Truck	-	1,121.2	-
Rock Bolter	3	828.6	2.5
Production Drill	3	1,196.7	3.6
Cable Bolt Drill	3	1,196.7	3.6
Lube Truck	1	339.9	0.3
ANFO Loader Truck	2	442.9	0.9
Flat Deck Truck w. Crane	1	334.8	0.3
Transmixer	2	406.3	0.8
Shotcrete Sprayer	2	585.5	1.2
Personnel Carrier	2	298.7	0.6
Scissor Lift	3	350.2	1.1
Small Vehicle (Rad. Tech., etc.)	6	70.0	0.4
Grader	1	984.1	1.0
Total Mine Mobile Equipment			**32.1**

PROCESS

Capital costs developed for the process plant are consistent with the process methodology described in Sections 13 and 17, and have a predicted accuracy level of +/- 30%. Process plant costs, as shown in Table 21-4, were divided between direct process plant, process plant construction, and general infrastructure related to the process plant.

TABLE 21-4 PROCESS CAPITAL COSTS
NexGen Energy Ltd. – Rook I Property

Description	Units	Total
Direct Process Plant	C$ millions	119.3
Process Plant Construction	C$ millions	113.8
General Process Infrastructure	C$ millions	10.9
Total Process Capital Costs	**C$ millions**	**243.9**

A detailed look at each of the three process capital cost components from the table above are provided in Tables 21-5 through 21-7 below.

TABLE 21-5 DIRECT PROCESS PLANT CAPITAL COSTS
NexGen Energy Ltd. – Rook I Property

Description	Units	Total
Stockpile & Feeding	C$ millions	3.5
Milling	C$ millions	12.9
Acid Leach	C$ millions	5.3
CCD	C$ millions	21.3
PLS Clarification	C$ millions	1.9
Solvent Extraction	C$ millions	4.0
Mo Removal	C$ millions	2.1
Tails Neutralization	C$ millions	2.5
Tailings Thickener & Disposal	C$ millions	3.4
Paste Thickener	C$ millions	0.8
Tailings Storage Facility	C$ millions	0.4
ADU Precipitation, Product Thickening and Wash	C$ millions	7.6
Product Drying and Packaging	C$ millions	22.7
Process Water Storage	C$ millions	0.3
Raw Water Storage and Distribution	C$ millions	0.3
Filtered Raw Water Storage and Distribution	C$ millions	0.6
Potable Water Plant	C$ millions	0.8
Demin Water Plant	C$ millions	1.0
Fire Water Plant	C$ millions	0.5
Gland Service Water	C$ millions	0.5
RO Plant	C$ millions	1.9
Air Storage and Distribution	C$ millions	0.8
Acid Plant	C$ millions	19.2

Description	Units	Total
Reagents	C$ millions	4.9
Total Direct Process Plant Capital Costs	**C$ millions**	**119.3**

TABLE 21-6 PROCESS PLANT CONSTRUCTION COSTS
NexGen Energy Ltd. – Rook I Property

Description	Units	Total
Earthworks and Civil	C$ millions	3.6
Concrete	C$ millions	17.9
Structural Steel	C$ millions	21.5
Buildings Architectural	C$ millions	13.9
Building Services	C$ millions	6.9
Electrical	C$ millions	19.1
Instrumentation	C$ millions	11.5
Piping within Process Plant	C$ millions	17.7
Insulation and Protection	C$ millions	1.8
Total Process Plant Construction Costs	**C$ millions**	**113.8**

TABLE 21-7 GENERAL PROCESS INFRASTRUCTURE COSTS
NexGen Energy Ltd. – Rook I Property

Description	Units	Total
Site Development, Clearing	C$ millions	0.5
Main Substation	C$ millions	4.0
Yard Distribution	C$ millions	0.3
Emergency Power	C$ millions	1.1
Tailings Dam Piping	C$ millions	0.0
Plant Mobile Equipment	C$ millions	4.2
Communication Systems	C$ millions	0.8
Total Process Infrastructure Costs	**C$ millions**	**10.9**

INFRASTRUCTURE

The Project is located in a region of northern Saskatchewan with road access, but devoid of other infrastructure requirements. There is a power line 70 km south of the Property; however, the capacity of this line is insufficient for a mine operation of the Project's scope. At this time, it is assumed that power will be provided by an on-site diesel-fuelled power plant. Power supply options should be investigated further in the next level of study.

In addition to the power plant, other major infrastructure spending includes the development of the UGTMF, site preparation, permanent camp, maintenance shop, fuel storage, administration and dry facility, water treatment systems, airstrip, and site roads. Infrastructure capital spending is shown in Table 21-8.

TABLE 21-8 INFRASTRUCTURE CAPITAL COSTS
NexGen Energy Ltd. – Rook I Property

Description	Units	Total
Propane Storage Facility	C$ millions	1.0
Diesel Fuel Storage Facility	C$ millions	1.0
Gasoline Fuel Storage Facility	C$ millions	0.5
Site Preparation - Stripping and Grubbing	C$ millions	3.6
Site Preparation - HDPE Liners for Pads	C$ millions	17.0
Site Roads	C$ millions	7.5
UGTMF (Pre-production period only)	C$ millions	29.5
Permanent Camp	C$ millions	15.0
Maintenance Shop	C$ millions	10.0
Administration and Dry Facility	C$ millions	8.5
Warehouse	C$ millions	1.0
Water Treatment Facility	C$ millions	12.0
Site Power Grid - Surface	C$ millions	4.0
Power Plant	C$ millions	24.5
Airstrip incl. Apron, Hangar	C$ millions	8.0
Total Infrastructure Capital Costs	**C$ millions**	**143.1**

INDIRECT CAPITAL COSTS

Indirect capital costs were applied to each of the respective areas of capital spending based on factors such as engineering, procurement, and construction management (EPCM) requirements, the component of capital spending that is materials and consumables, and the amount of people required to complete each component of the overall project. Significant components of indirect expenditure include EPCM, temporary facilities, construction power, temporary camp and buildings, owner's costs, freight, first fills, spare parts, and commissioning. Indirect costs are shown in Table 21-9.

TABLE 21-9 INDIRECT CAPITAL COSTS
NexGen Energy Ltd. – Rook I Property

Description	Direct Cost (C$ millions)	Indirect (%)	Indirect Cost (C$ millions)
Infrastructure	143.1	36	51.5
Capital Mine Development	209.8	34	71.5
Underground Mining Mobile and Fixed Equipment	87.4	25	22.2
Capitalized Pre-Production Operating Costs	26.9	NA	NA
Processing	243.9	39	95.7
Total Indirect Capital Costs	**711.1**	**34**	**241.0**

Similar to indirect costs, contingencies were applied to each of the respective areas of the cost estimate. Contingency costs are summarized in Table 21-10.

TABLE 21-10 CONTINGENCY CAPITAL COSTS
NexGen Energy Ltd. – Rook I Property

Description	Direct and Indirect Costs (C$ millions)	Contingency (%)	Contingency (C$ millions)
Infrastructure	194.6	26	49.9
Capital Mine Development	281.3	27	74.9
Underground Mining Mobile and Fixed Equipment	109.7	25	27.4
Capitalized Pre-Production Operating Costs	26.9	NA	NA
Processing	339.6	25	84.9
Total Contingency Capital Costs	**952.1**	**25**	**237.1**

SUSTAINING CAPITAL COSTS

Capital costs that were incurred after Year -3 to Year -1 were considered as sustaining capital. This includes capital spending related to underground mine development and tailings construction over the remaining life of the operation. Other areas of spending include replacement underground mobile equipment purchase in years 6 and 7 and underground mine haul trucks purchased in year 9 and 10, and capitalized annual process plant maintenance costs for liners and the acid plant over the life of the mine. Sustaining capital costs as well as reclamation and closure costs are summarized in Table 21-11.

TABLE 21-11 SUSTAINING CAPITAL COSTS
NexGen Energy Ltd. – Rook I Property

Description	Units	Total
UG Mining Equipment	C$ millions	34.3
UG Mine Development	C$ millions	170.8
Process Plant	C$ millions	23.7
Infrastructure (UGTMF)	C$ millions	174.8
Total Sustaining Capital Costs	**C$ millions**	**403.6**
Reclamation and Closure	C$ millions	64.0
Total Sustaining and Reclamation	**C$ millions**	**467.6**

EXCLUSIONS TO CAPITAL COSTS

The capital cost estimate excludes several factors, including:

- Ongoing exploration drilling and all associated services
- Environmental and social impact studies
- Geotechnical and hydrological studies
- Permitting and fees
- Detailed metallurgical testwork and marketing studies
- Cost to conduct future pre-feasibility and feasibility studies
- Project financing, interest charges, and escalation
- Schedule recovery or acceleration
- Costs associated with unforeseeable schedule delays such as: significant scope change, extraordinary climatic events, force majeure, and labour disputes
- Property taxes, corporate and mining taxes, HST, and customs duties
- Fluctuations in foreign exchange rates
- Working capital requirements

OPERATING COSTS

Operating costs were estimated for the Project and allocated to one of mining, processing, or general and administration (G&A). A diesel cost of C$1.00 per litre delivered to site was used across all aspects of the cost estimate. LOM operating costs are summarized in Table 21-12.

TABLE 21-12 LIFE OF MINE OPERATING COSTS
NexGen Energy Ltd. – Rook I Property

Description	LOM Cost (C$ millions)	Average Annual (C$ millions)	Unit Cost (C$/t processed)	Unit Cost (C$/lb U_3O_8)
Mining	963.9	66.7	132	3.61
Processing	810.8	56.3	111	3.03
General and Administration	462.0	32.0	63	1.73
Total	**2,236.7**	**154.9**	**306**	**8.37**

UNDERGROUND MINING

Underground mining takes place during Year -2 to Year 15 (note that in Years -2 and -1 underground mining costs are capitalized). Underground mining begins with capital development in Year -2, and runs until Year 13. Underground mine operating costs are summarized in Table 21-13.

TABLE 21-13 UNDERGROUND MINE OPERATING COSTS
NexGen Energy Ltd. – Rook I Property

Description	LOM Cost (C$ millions)	Unit Cost (C$/t processed)	Unit Cost (C$/lb U3O8)
Labour	560.7	77	2.10
Equipment Maintenance & Fuel	83.6	11	0.31
Power	136.7	19	0.51
Consumables	163.4	22	0.61
Miscellaneous	19.5	3	0.07
Total Underground Mining Operating Costs	**963.9**	**132**	**3.61**

PROCESSING

Process labour costs are primarily composed of labour, power consumption, and consumables. Consumables consist of reagents, grinding media, mill liners, and liquefied propane gas. An allowance was made for annual maintenance. Process costs are summarized in Table 21-14.

TABLE 21-14 PROCESS OPERATING COSTS
NexGen Energy Ltd. – Rook I Property

Description	LOM Cost (C$ millions)	Unit Cost (C$/t processed)	Unit Cost (C$/lb U3O8)
Labour	166.3	23	0.62
Power	135.3	19	0.51
Water	38.2	5	0.14
Reagents	353.1	48	1.32
Maintenance Allowance	116.1	16	0.43
Laboratory	1.8	0	0.01
Total Process Operating Costs	**810.8**	**111**	**3.03**

GENERAL AND ADMINISTRATION

General and administration (G&A) costs include allowances for flights to and from the work site, camp and catering costs, insurance premiums, marketing and accounting functions, and general maintenance of camp and other surface buildings. Additionally, allowances were made for departments of personnel that are atypical of a mine setting, but are necessary for uranium mining in Canada. Allowances were made for reimbursable fees paid to the CNSC. G&A costs are summarized in Table 21-15.

TABLE 21-15 GENERAL AND ADMINISTRATIVE OPERATING COSTS
NexGen Energy Ltd. – Rook I Property

Description	LOM Cost (C$ millions)	Unit Cost (C$/t processed)	Unit Cost (C$/lb U3O8)
Labour	156.2	21	0.58
Camp Costs	137.9	19	0.52
Flights and Logistics	64.9	9	0.24
Miscellaneous	78.4	11	0.29
Equipment Maintenance & Fuel	9.8	1	0.04
Portion of Power	14.8	2	0.06
Total G&A Operating Costs	**462.0**	**63**	**1.73**

POWER COSTS

The price to supply power to the Project was calculated as C$0.29 per kWh. This was calculated by summing the power demand across the entire site, adding in an allowance for maintenance of the diesel generators, and including a portion of labour to operate and maintain the plant.

22 ECONOMIC ANALYSIS

The economic analysis contained in this Technical Report is based, in part, on Inferred Mineral Resources, and is preliminary in nature. Inferred Resources are considered too geologically speculative to have mining and economic considerations applied to them that would enable them to be categorized as Mineral Reserves. There is no certainty that the economic forecasts contained herein will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

A Cash Flow Projection has been generated from the Life of Mine production schedule and capital and operating cost estimates, and is summarized in Table 22-1. A summary of the key criteria is provided below.

OVERVIEW OF CASH FLOW MODEL PARAMETERS

The economic analysis was prepared using the following assumptions:

- No allowance has been made for cost inflation or escalation.
- No allowance has been made for corporate costs.
- Capital and operating costs are consistent with those described in Section 21.
- The capital structure is assumed to be 100% equity, with no debt or interest payments.
- The model is assessed in constant Canadian Dollars.
- No allowance for working capital has been made in the financial analysis.
- The Project has no terminal value.

ECONOMIC CRITERIA

Economic criteria that were used in the cash flow model include:

- Long-term price of uranium of US$50 per pound U_3O_8, based on long-term forecasts.
- 100% of uranium sold at the long-term price of US$50/lb.
- The recovery and sale of by-products excluded from the cash flow model.
- Exchange rate of C$1.00 = US$0.80.

- Life of mine processing of 7,310 kt grading 1.73% U_3O_8.
- Nominal 511 kt of processed material per year during steady state operations.
- Mine life of 15 years.
- Overall recovery of 96%, including a ramp-up in recovery for Year 1.
- Total recovered yellowcake of 267.2 million pounds.
- Transportation costs of C$740 per tonne yellowcake, with presumed destination of Port Hope, Ontario.
- Royalties calculated in accordance with *"Guideline: Uranium Royalty System, Government of Saskatchewan, June 2014".*
- Unit operating costs of C$306 per tonne of processed material, or C$8.37 per pound of U_3O_8.
- Pre-production capital costs of C$1,189 million, spread over three years.
- Sustaining capital costs (including reclamation) of C$468 million, spread over the mine life.

TABLE 22-1 CASH FLOW SUMMARY
NexGen Energy Ltd. - Rook I Property

	INPUTS	UNITS	TOTAL	Yr -3	Yr -2	Yr -1	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15
MINING																					
Underground																					
Operating Days	350	days	339	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	145
Ore Tonnes mined per day		tpd	1,442	-	-	65	1,253	1,478	1,491	1,482	1,445	1,449	1,469	1,423	1,473	1,466	1,466	1,447	1,494	1,398	1,411
Total Tonnes moved per day		tpd	1,442	-	-	65	1,253	1,478	1,491	1,482	1,445	1,449	1,469	1,423	1,473	1,466	1,466	1,447	1,494	1,398	1,411
Ore Tonnes mined per year		ktpa	7,310	-	-	23	439	517	522	519	506	507	514	498	515	513	513	507	523	489	205
U3O8 Grade		%	1.73%	0.00%	0.00%	1.90%	2.98%	2.61%	2.53%	2.53%	2.51%	2.30%	1.90%	1.77%	1.17%	1.14%	0.97%	0.82%	0.78%	0.76%	0.73%
Contained U3O8		'000 lbs U3O8	279,242	-	-	958	28,857	29,723	29,101	28,933	27,978	25,754	21,586	19,457	13,343	12,859	11,018	9,167	8,964	8,247	3,298
Total Moved		**kt**	**7,310**	**-**	**-**	**23**	**439**	**517**	**522**	**519**	**506**	**507**	**514**	**498**	**515**	**513**	**513**	**507**	**523**	**489**	**205**
PROCESSING																					
Mill Feed																					
Tonnes Processed		kt	7,310	-	-	-	460	511	511	511	511	511	511	511	511	511	511	511	511	511	207
Head Grade		%	1.73%	0.00%	0.00%	0.00%	2.93%	2.62%	2.56%	2.55%	2.50%	2.30%	1.91%	1.76%	1.18%	1.14%	0.98%	0.83%	0.78%	0.76%	0.73%
Contained U3O8		'000 lbs U3O8	279,245	-	-	-	29,749	29,520	28,838	28,678	28,108	25,858	21,501	19,871	13,260	12,814	11,020	9,302	8,770	8,617	3,339
Process Recovery																					
Recovery	96.0%	%	95.9%	0.0%	0.0%	0.0%	91.4%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%
Recovered U_3O_8		'000 lbs U3O8	267,203	-	-	-	27,187	28,398	27,742	27,588	27,040	24,875	20,684	19,116	12,756	12,327	10,602	8,949	8,437	8,290	3,212
REVENUE																					
Metal Prices		**Input Units**																			
Long-Term U3O8 Price	$ 50	US$ / lb U3O8	$ 50				$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50	$ 50
Exchange Rate	$ 0.80	US$ / C$	$ 0.80				$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80	$ 0.80
Realized Price		C$ / lb U3O8	$ 63				$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63
Total Gross Revenue		**C$ '000**	**$ 16,700,172**				**1,699,211**	**1,774,863**	**1,733,883**	**1,724,266**	**1,689,975**	**1,554,705**	**1,292,748**	**1,194,771**	**797,256**	**770,423**	**662,606**	**559,290**	**527,312**	**518,111**	**200,752**
Charges																					
Transportation	$740.00 C$/t product	C$ '000	$ 89,690				9,126	9,532	9,312	9,260	9,076	8,350	6,943	6,417	4,282	4,138	3,559	3,004	2,832	2,783	1,078
Total Charges		**C$ '000**	**$ 89,690**				**9,126**	**9,532**	**9,312**	**9,260**	**9,076**	**8,350**	**6,943**	**6,417**	**4,282**	**4,138**	**3,559**	**3,004**	**2,832**	**2,783**	**1,078**
Net Smelter Return		**C$ '000**	**$ 16,610,482**				**$ 1,690,085**	**$ 1,765,331**	**$ 1,724,571**	**$ 1,715,006**	**$ 1,680,899**	**$ 1,546,355**	**$ 1,285,806**	**$ 1,188,355**	**$ 792,974**	**$ 766,285**	**$ 659,048**	**$ 556,286**	**$ 524,480**	**$ 515,329**	**$ 199,674**
Royalties																					
Gov't SK Gross Revenue Royalty		C$ '000	$ 1,204,260	-	-	-	122,531	127,987	125,031	124,338	121,865	112,111	93,221	86,156	57,491	55,556	47,781	40,331	38,025	37,361	14,476
Total Royalties		**C$ '000**	**$ 1,204,260**				**$ 122,531**	**$ 127,987**	**$ 125,031**	**$ 124,338**	**$ 121,865**	**$ 112,111**	**$ 93,221**	**$ 86,156**	**$ 57,491**	**$ 55,556**	**$ 47,781**	**$ 40,331**	**$ 38,025**	**$ 37,361**	**$ 14,476**
Net Revenue		**C$ '000**	**$ 15,406,222**				**$ 1,567,554**	**$ 1,637,345**	**$ 1,599,539**	**$ 1,590,668**	**$ 1,559,034**	**$ 1,434,245**	**$ 1,192,585**	**$ 1,102,199**	**$ 735,484**	**$ 710,729**	**$ 611,267**	**$ 515,955**	**$ 486,456**	**$ 477,967**	**$ 185,198**
Unit NSR - Tonnes Processed		C$ / t proc	$ 2,108				$ 3,408	$ 3,204	$ 3,130	$ 3,113	$ 3,051	$ 2,807	$ 2,334	$ 2,157	$ 1,439	$ 1,391	$ 1,196	$ 1,010	$ 952	$ 935	$ 895
Unit NSR - Pounds Produced		C$ / lb U3O8	$ 58				$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 58	$ 55
		US$ / t proc	1,686																		
		US$ / lb U3O8	46																		
OPERATING COSTS																					
Underground Mining		C$ '000	963,925	-	-	-	63,487	65,440	65,364	64,882	64,558	64,487	64,879	64,296	64,688	65,580	70,457	72,362	73,289	69,442	30,713
Processing		C$ '000	810,793	-	-	-	48,945	54,502	57,540	59,475	59,442	58,984	58,007	57,704	56,249	56,328	56,086	55,840	55,848	52,565	23,277
Surface & GA		C$ '000	461,994	-	-	-	31,833	31,830	31,831	31,832	31,832	31,832	31,831	31,831	31,831	31,954	32,445	32,445	32,445	32,445	13,776
Total Operating Cost		**C$ '000**	**2,236,711**	**-**	**-**	**-**	**144,266**	**151,773**	**154,735**	**156,189**	**155,833**	**155,303**	**154,718**	**153,832**	**152,767**	**153,861**	**158,987**	**160,647**	**161,582**	**154,452**	**67,767**
UNIT OPERATING COSTS																					
Underground Mining		C$ / t proc	132				138	128	128	127	126	126	127	126	127	128	138	142	143	136	148
Processing		C$ / t proc	111				106	107	113	116	116	115	114	113	110	110	110	109	109	103	112
Surface & GA		C$ / t proc	63				69	62	62	62	62	62	62	62	62	63	63	63	63	63	67
Total Operating Cost		**C$ / t proc**	**306**				**314**	**297**	**303**	**306**	**305**	**304**	**303**	**301**	**299**	**301**	**311**	**314**	**316**	**302**	**327**
Total Operating Cost		US$ / t proc	245																		
Underground Mining		C$ / lb U3O8	3.61				2.34	2.30	2.36	2.35	2.39	2.59	3.14	3.36	5.07	5.32	6.65	8.09	8.69	8.38	9.56
Processing		C$ / lb U3O8	3.03				1.80	1.92	2.07	2.16	2.20	2.37	2.80	3.02	4.41	4.57	5.29	6.24	6.62	6.34	7.25
Surface & GA		C$ / lb U3O8	1.73				1.17	1.12	1.15	1.15	1.18	1.28	1.54	1.67	2.50	2.59	3.06	3.63	3.85	3.91	4.29
Unit Operating Cost		**C$ / lb U3O8**	**8.37**				**5.31**	**5.34**	**5.58**	**5.66**	**5.76**	**6.24**	**7.48**	**8.05**	**11.98**	**12.48**	**15.00**	**17.95**	**19.15**	**18.63**	**21.10**
Operating Cash Flow		C$ '000	**$ 13,169,511**	**-**	**-**	**-**	**1,423,288**	**1,485,572**	**1,444,804**	**1,434,478**	**1,403,201**	**1,278,941**	**1,037,867**	**948,367**	**582,717**	**556,868**	**452,279**	**355,308**	**324,874**	**323,515**	**117,431**
		C$ / t proc	$ 1,802																		
CAPITAL COST																					
Pre-Production Direct Cost																					
Mining		C$ '000	$ 324,132	$ 33,628	$ 182,999	$ 107,505	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Processing		C$ '000	$ 243,888	$ -	$ 155,044	$ 88,844	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Infrastructure		C$ '000	$ 143,099	$ 19,250	$ 23,500	$ 100,349	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Direct Cost		**C$ '000**	**$ 711,120**	**$ 52,878**	**$ 361,543**	**$ 296,698**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Indirect Costs																					
EPCM / Owners / Indirect Cost		C$ '000	$ 240,967	$ 18,397	$ 125,693	$ 96,877	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Subtotal Costs		**C$ '000**	**$ 952,087**	**$ 71,276**	**$ 487,236**	**$ 393,575**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Contingency		C$ '000	$ 237,075	$ 18,714	$ 124,225	$ 94,135	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Initial Capital Cost		**C$ '000**	**$ 1,189,162**	**$ 89,990**	**$ 611,461**	**$ 487,710**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

	INPUTS	UNITS	TOTAL	Yr -3	Yr -2	Yr -1	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15
Sustaining Capital																					
UG Mining Equipment		C$ '000	$ 34,261	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 22,033	$ 6,033	$ -	$ -	$ 1,239	$ 4,956	$ -	$ -	$ -	$ -	$ -
UG Mine Development		C$ '000	$ 170,789	$ -	$ -	$ -	$ 35,480	$ 30,959	$ 13,488	$ 4,891	$ 4,891	$ 4,161	$ 5,088	$ 4,709	$ 20,075	$ 18,875	$ 17,449	$ 8,791	$ 1,932	$ -	$ -
Process		C$ '000	$ 23,743				$ 1,601	$ 1,609	$ 1,609	$ 1,609	$ 1,609	$ 1,609	$ 1,609	$ 1,609	$ 1,609	$ 1,609	$ 1,609	$ 1,609	$ 1,609	$ 1,549	$ 1,283
Infrastructure		C$ '000	$ 174,847	$ -	$ -	$ -	$ 17,811	$ 14,249	$ 23,036	$ 16,632	$ 16,632	$ 16,632	$ 16,632	$ 16,632	$ 11,642	$ 8,316	$ 8,316	$ 8,316	$ -	$ -	$ -
Total Sustaining Capital		**C$ '000**	**$ 403,639**	**$ -**	**$ -**	**$ -**	**$ 54,893**	**$ 46,817**	**$ 38,134**	**$ 23,132**	**$ 45,165**	**$ 28,435**	**$ 23,329**	**$ 22,950**	**$ 34,565**	**$ 33,756**	**$ 27,374**	**$ 18,716**	**$ 3,541**	**$ 1,549**	**$ 1,283**
Reclamation and Closure		C$ '000	$ 64,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 64,000
Total Capital Cost		**C$ '000**	**$ 1,656,800**	**$ 89,990**	**$ 611,461**	**$ 487,710**	**$ 54,893**	**$ 46,817**	**$ 38,134**	**$ 23,132**	**$ 45,165**	**$ 28,435**	**$ 23,329**	**$ 22,950**	**$ 34,565**	**$ 33,756**	**$ 27,374**	**$ 18,716**	**$ 3,541**	**$ 1,549**	**$ 65,283**
CASH FLOW																					
Pre-Tax Cashflow		C$ '000	$ 11,512,710	$ (89,990)	$ (611,461)	$ (487,710)	$ 1,368,395	$ 1,438,755	$ 1,406,671	$ 1,411,347	$ 1,358,036	$ 1,250,506	$ 1,014,538	$ 925,418	$ 548,151	$ 523,113	$ 424,905	$ 336,592	$ 321,333	$ 321,965	$ 52,147
Cumulative Pre-Tax Cashflow		C$ '000		$ (89,990)	$ (701,451)	$ (1,189,162)	$ 179,233	$ 1,617,989	$ 3,024,660	$ 4,436,006	$ 5,794,043	$ 7,044,549	$ 8,059,087	$ 8,984,504	$ 9,532,656	$ 10,055,768	$ 10,480,674	$ 10,817,265	$ 11,138,598	$ 11,460,563	$ 11,512,710
Taxes																					
Less SK Profit Royalties		C$ '000	$ 1,774,224	$ -	$ -	$ -	$ 31,699	$ 220,842	$ 215,913	$ 216,587	$ 208,494	$ 191,981	$ 155,843	$ 142,198	$ 84,482	$ 80,650	$ 65,613	$ 52,073	$ 49,694	$ 49,763	$ 8,391
EBITDA		C$ '000	$ 11,395,287	$ -	$ -	$ -	$ 1,391,588	$ 1,264,730	$ 1,228,891	$ 1,217,891	$ 1,194,707	$ 1,086,960	$ 882,023	$ 806,169	$ 498,235	$ 476,219	$ 386,666	$ 303,235	$ 275,180	$ 273,752	$ 109,040
Less Deductions		C$ '000	$ 1,872,690	$ 37,049	$ 78,068	$ 108,628	$ 481,873	$ 232,287	$ 180,042	$ 139,360	$ 111,479	$ 91,576	$ 74,516	$ 61,078	$ 55,305	$ 50,079	$ 45,099	$ 38,123	$ 29,909	$ 22,304	$ 35,916
Taxable Earnings		C$ '000	$ 9,522,596	$ (37,049)	$ (78,068)	$ (108,628)	$ 909,716	$ 1,032,443	$ 1,048,849	$ 1,078,531	$ 1,083,229	$ 995,384	$ 807,507	$ 745,091	$ 442,930	$ 426,139	$ 341,568	$ 265,112	$ 245,272	$ 251,448	$ 73,124
Federal Corporate Income Tax	15.0%	C$ '000	$ 1,461,951	$ -	$ -	$ -	$ 136,457	$ 154,867	$ 157,327	$ 161,780	$ 162,484	$ 149,308	$ 121,126	$ 111,764	$ 66,439	$ 63,921	$ 51,235	$ 39,767	$ 36,791	$ 37,717	$ 10,969
Provincial Corporate Income Tax	12.0%	C$ '000	$ 1,169,561	$ -	$ -	$ -	$ 109,166	$ 123,893	$ 125,862	$ 129,424	$ 129,987	$ 119,446	$ 96,901	$ 89,411	$ 53,152	$ 51,137	$ 40,988	$ 31,813	$ 29,433	$ 30,174	$ 8,775
Net Profit		C$ '000	$ 6,891,084	$ (37,049)	$ (78,068)	$ (108,628)	$ 664,092	$ 753,684	$ 765,660	$ 787,327	$ 790,757	$ 726,630	$ 589,480	$ 543,916	$ 323,339	$ 311,082	$ 249,344	$ 193,531	$ 179,048	$ 183,557	$ 53,380
After-Tax Cash Flow		C$ '000	$ 7,106,974	$ (89,990)	$ (611,461)	$ (487,710)	$ 1,091,072	$ 939,153	$ 907,568	$ 903,556	$ 857,071	$ 789,771	$ 640,667	$ 582,045	$ 344,079	$ 327,405	$ 267,069	$ 212,938	$ 205,415	$ 204,311	$ 24,013
Cumulative After-Tax Cash Flow		C$ '000		$ (89,990)	$ (701,451)	$ (1,189,162)	$ (98,089)	$ 841,064	$ 1,748,633	$ 2,652,189	$ 3,509,259	$ 4,299,031	$ 4,939,698	$ 5,521,743	$ 5,865,822	$ 6,193,227	$ 6,460,296	$ 6,673,234	$ 6,878,650	$ 7,082,961	$ 7,106,974
PROJECT ECONOMICS																					
Pre-Tax Payback Period		yrs	0.9	0	0	0	0.87	-	-	-	-	-	-	-							
Pre-Tax IRR		%	74.9%																		
Pre-tax NPV @ 8%	8%	C$ '000	$5,780,989																		
Pre-tax NPV @ 10%	10%	C$ '000	$4,933,721																		
Pre-tax NPV @ 12%	12%	C$ '000	$4,229,400																		
Post-Tax Payback Period		yrs	1.1	0	0	0	1.00	0.10	-	-	-	-	-	-							
Post-Tax IRR		%	56.7%																		
Post-Tax NPV @ 8%	8%	C$ '000	$3,486,346																		
Post-Tax NPV @ 10%	10%	C$ '000	$2,951,749																		
Post-Tax NPV @ 12%	12%	C$ '000	$2,507,723																		

CASH FLOW ANALYSIS

Based on the economic criteria discussed previously, a summary of the cash flow over the LOM is shown in Table 22-2.

TABLE 22-2 SUMMARY OF LOM CASH FLOW
NexGen Energy Ltd. – Rook I Property

Description	Units	Value
Gross Revenue	C$ millions	16,700.2
Less: Transportation	C$ millions	(89.7)
Net Smelter Return	C$ millions	16,610.5
Less: Provincial Revenue Royalties	C$ millions	(1,204.3)
Net Revenue	C$ millions	15,406.2
Less: Total Operating Costs	C$ millions	(2,236.7)
Operating Cash Flow	C$ millions	13,169.5
Less: Capital Costs	C$ millions	(1,656.8)
Pre-Tax Cash Flow	C$ millions	11,512.7
Less: Provincial Profit Royalties	C$ millions	(1,774.2)
Less: Taxes	C$ millions	(2,631.5)
Post-Tax Cash Flow	**C$ millions**	**7,107.0**

ECONOMIC ANALYSIS

Based on the input parameters, a summary of the Project economics is shown in Table 22-3.

TABLE 22-3 SUMMARY OF ECONOMIC RESULTS
NexGen Energy Ltd. – Rook I Property

Description	Units	Value
Pre-Tax		
Net Present Value at 8%	C$ millions	5,781.0
Net Present Value at 10%	C$ millions	4,933.7
Net Present Value at 12%	C$ millions	4,229.4
Internal Rate of Return	%	74.9%
Payback Period	years	0.9
After-Tax		
Net Present Value at 8%	C$ millions	3,486.3
Net Present Value at 10%	C$ millions	2,951.7
Net Present Value at 12%	C$ millions	2,507.7
Internal Rate of Return	%	56.7
Payback Period	years	1.1

SENSITIVITY ANALYSIS

The cash flow model was tested for sensitivity to variances in head grade, process recovery, input price of yellowcake, overall operating costs, overall capital costs, and Canadian to United States dollar exchange rate. The resulting post-tax $NPV_{10\%}$ sensitivity is shown in Figure 22-1, and Table 22-4.

FIGURE 22-1 SENSITIVITY ANALYSIS

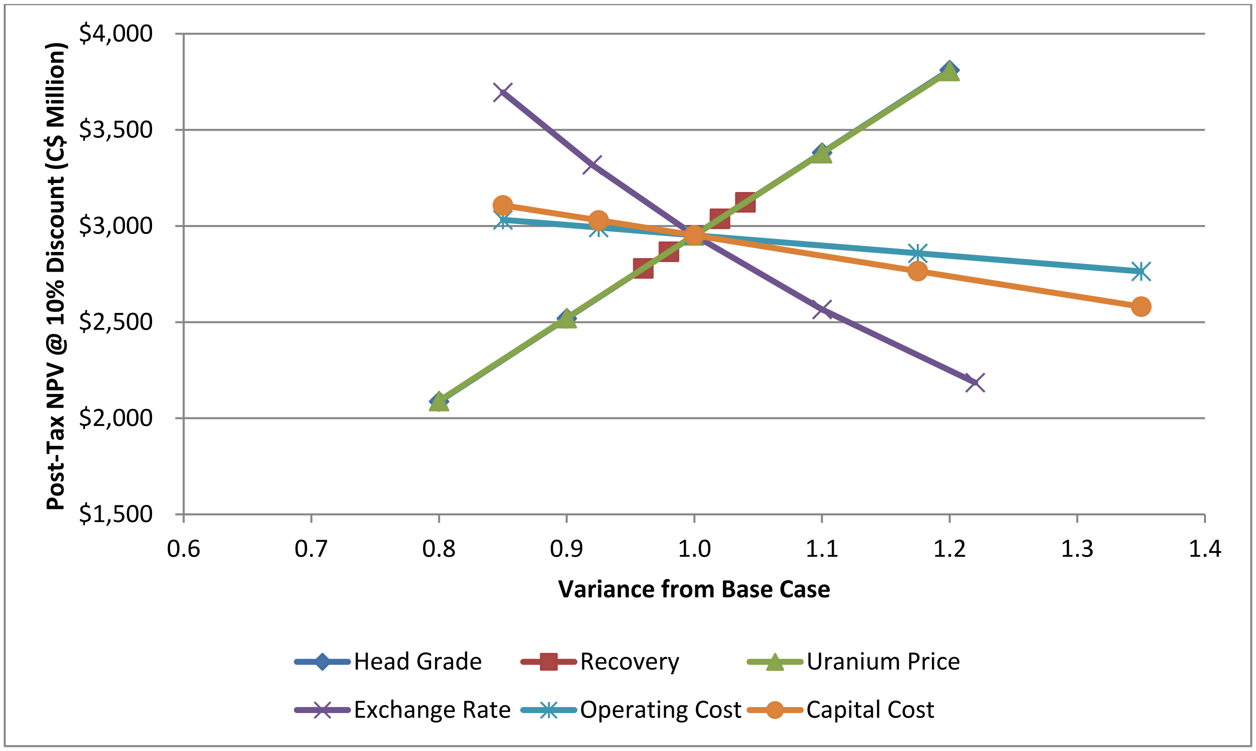


TABLE 22-4 SUMMARY OF SENSITIVITY ANALYSIS
NexGen Energy Ltd. – Rook I Property

Description	Units	Low Case	Mid-Low Case	Base Case	Mid-High Case	High Case
Head Grade	%	1.39%	1.56%	1.73%	1.91%	2.08%
Overall Recovery	%	92.1%	94.0%	95.9%	97.8%	99.7%
Uranium Price	C$ / lb U_3O_8	$50	$56	$63	$69	$75
Exchange Rate	US$/C$	0.68	0.74	0.80	0.88	0.98
Operating Cost	C$/lb	7.1	7.7	8.4	9.8	11.3
Capital Cost	C$ millions	1,408	1,533	1,657	1,947	2,237
Adjustment Factor						
Head Grade	%	-20.0%	-10.0%	NA	10.0%	20.0%
Overall Recovery	%	-4.0%	-2.0%	NA	2.0%	4.0%
Uranium Price	%	-20.0%	-10.0%	NA	10.0%	20.0%
Exchange Rate	%	-15.0%	-8.0%	NA	10.0%	22.0%
Operating Costs	%	-15.0%	-7.5%	NA	17.5%	35.0%
Capital Cost	%	-15.0%	-7.5%	NA	17.5%	35.0%
Post-Tax NPV @ 10% Discount						
Head Grade	C$ millions	2,087.1	2,519.5	2,951.7	3,381.2	3,810.7
Overall Recovery	C$ millions	2,779.3	2,865.9	2,951.7	3,037.6	3,123.5
Uranium Price	C$ millions	2,089.9	2,520.9	2,951.7	3,379.1	3,806.5
Exchange Rate	C$ millions	3,695.2	3,318.1	2,951.7	2,565.8	2,185.4
Operating Costs	C$ millions	3,032.2	2,992.0	2,951.7	2,857.9	2,763.6
Capital Cost	C$ millions	3,107.5	3,029.6	2,951.7	2,765.3	2,580.5

As shown in Figure 22-1, Project cash flow is most sensitive to the price of uranium, head grade, and process recovery. Yellowcake is primarily traded in United States dollars, whereas capital and operating costs for Rook I are generally priced in Canadian dollars. Therefore, the Canadian and United States exchange rate also exerts significant influence over Project economics. In addition to the sensitivity analysis shown in Figure 22-1, an extended sensitivity analysis was undertaken solely on uranium price. This extended sensitivity is displayed in Figure 22-2, and Table 22-5.

FIGURE 22-2 EXTENDED SENSITIVITY ANALYSIS TO METAL PRICE

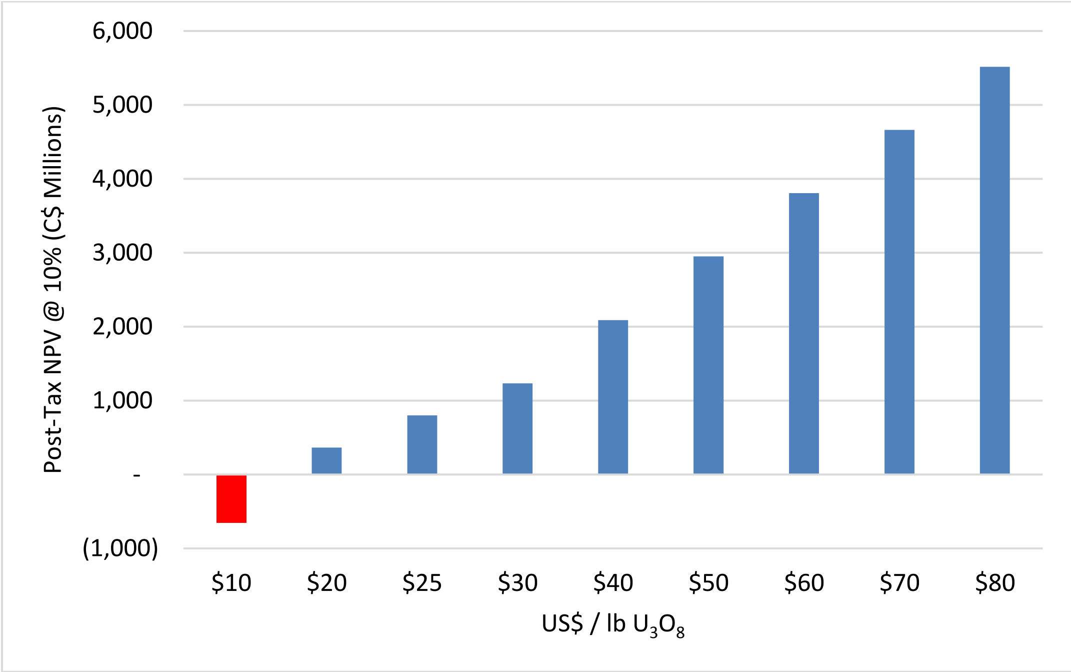


TABLE 22-5 EXTENDED SENSITIVITY ANALYSIS
NexGen Energy Ltd. – Rook I Property

Uranium Price (US$/lb U_3O_8)	Uranium Price (C$/lb U_3O_8)	Post-Tax NPV @ 10% (C$ Millions)
10	12.5	-654
20	25.0	364
25	31.3	799
30	37.5	1,232
40	50.0	2,090
50	**62.5**	**2,952**
60	75.0	3,807
70	87.5	4,661
80	100.0	5,516

TAXES, ROYALTIES, AND DEPRECIATION

Taxes and depreciation for the Project were modelled based on input from NexGen, as well as a review of documents including:

- *"Guideline: Uranium Royalty System, Government of Saskatchewan, June 2014"*
- *"A Guide to Canadian Mining Taxation, Third Edition, KPMG Canada, February 2016"*

To develop the tax and depreciation model, all capital costs were assigned to either of:

- Canadian Development Expense (CDE); or
- Capital Cost Allowance (CCA).

In addition, NexGen has opening balances of Canadian Exploration Expense (CEE) and operating losses that were applied in the tax model. Under current Canadian tax codes, pre-production mine development costs are counted towards CEE, however, this is being phased out. Consequently, all pre-production capital was allocated to either CDE or CCA. Up to 30% of the CDE balance can be applied in any given year. All mining equipment and structures that are considered depreciable fall under Class 41 of Canadian tax codes, which can be depreciated at 25% annually.

In Saskatchewan, multiple government royalties exist for uranium projects. Royalties generally fall into two categories: revenue royalties and profit royalties. An explanation of the various royalties is provided below:

- Resource Surcharge of 3% of net revenue (where net revenue is defined as gross revenue less transportation costs directly related to the transporting of uranium to the first point of sale).

- Basic Royalty of 5% of net revenue (as defined above), less a Saskatchewan Resource Credit of 0.75% of net revenue, for an effective royalty rate of 4.25%.

- Tiered profit royalty, with a 10% royalty rate on the first C$22.00 profit per kilogram of yellowcake, followed by 15% royalty on profits exceeding C$22.00 per kilogram.

In the tiered profit royalty, the basic royalty and resource surcharge are not deductible for calculating profit royalties. Profits for the purposes of royalties are calculated by taking the net revenue, subtracting the full value of operating costs, capital costs, and exploration expenditures. Revenue royalties were included in the "pre-tax" cash flow results, while profit royalties are considered a tax, and are included in "post-tax" results.

The royalties and carried interest discussed in Section 4 that are applicable on certain mineral concessions have not been applied, as the Arrow Deposit is not situated within those concessions.

Federal and provincial taxes were applied at a rate of 15% and 12%, respectively. Table 22-6 provides a summary of the taxes and royalties paid to the provincial and federal government.

TABLE 22-6 SUMMARY OF TAXES AND ROYALTIES OVER LOM
NexGen Energy Ltd. – Rook I Property

Description	Units	Value
Provincial Payments		
Saskatchewan Resource Surcharge	C$ millions	498.3
Basic Revenue Royalty	C$ millions	705.9
Profit Royalty < 22.00 C$ / kg	C$ millions	266.6
Profit Royalty > 22.00 C$ / kg	C$ millions	1,507.6
Provincial Taxes	C$ millions	1,169.6
Total Provincial Payments	**C$ millions**	**4,148.0**
Federal Taxes	**C$ millions**	**1,462.0**
Total Government Royalties and Taxes	**C$ millions**	**5,610.0**

23 ADJACENT PROPERTIES

This section is not relevant to the Technical Report.

24 OTHER RELEVANT DATA AND INFORMATION

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

25 INTERPRETATION AND CONCLUSIONS

In RPA's opinion, the PEA indicates that positive economic results can be achieved for the Project. Using a long-term price of US$50 per lb U_3O_8, the economic analysis shows a post-tax IRR of 56.7%, and a post-tax NPV discounted at 10% of C$2,952 million. The NPV discounted at 8% is C$3,486 million, while the NPV discounted at 12% is C$2,508 million. RPA offers the following conclusions by area:

GEOLOGY AND MINERAL RESOURCES

A Mineral Resource was estimated for the Project, based on 220 diamond drill holes totalling 132,744 m, and based on a $65/lb uranium price at a cut-off grade of 0.25% U_3O_8. The Indicated Mineral Resource estimate totals 1.18 million tonnes at an average grade of 6.88% U_3O_8 for a total of 179.5 million pounds U_3O_8. The Inferred Mineral Resource estimate totals 4.25 million tonnes at an average grade of 1.30% U_3O_8 for a total of 122.1 million pounds U_3O_8. The Mineral Resource estimate relates only to the Arrow Deposit and does not include drilling elsewhere on the Rook I Property. The effective date of the Mineral Resource estimate is December 20, 2016. Estimated block model grades are based on chemical assays only. The deposit is open in many directions.

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.

MINING METHODS AND GEOTECHNICAL CONSIDERATIONS

The Arrow Deposit is a structurally controlled northeast-southwest trending sub-vertical high-grade uranium deposit. The deposit is overlain by approximately 100 m of glacial overburden, with the mineralization hosted exclusively in basement lithologies below the unconformity. Although the bedrock is generally competent, rock strengths in the sedimentary rocks and mineralization have been degraded by alteration. A key technical challenge to developing the operation will be shaft construction in saturated and unconsolidated overburden, very poor to fair quality sedimentary rock with potentially significant groundwater inflows if left unmanaged and the poor quality rock at the unconformity contact.

To mitigate this risk, the PEA assumes artificial ground freezing after the local site is levelled and prior to any excavation below the groundwater table. This method is considered feasible for both ground support and groundwater control during shaft-sinking, and has commonly been used at other uranium operations in the Athabasca Basin of northern Saskatchewan. Based on conceptual mine shaft locations, a combined thickness of 125 m of overburden, sedimentary and poor-quality rock will require freezing. To freeze the ground, freeze holes spaced at 1.2 m, as well as instrumentation and pressure relief holes to an approximate depth of 125 m, have been assumed for preliminary cost estimation.

Underground mining will be carried out, using mechanized longhole retreat methods in both transverse and longitudinal orientations. Mining is planned at nominally 1,450 tpd, and mined material will be transported to surface through a shaft.

MINERAL PROCESSING

Metallurgical test work completed to date indicates that a recovery of 96% is appropriate to use in the PEA.

The process route developed by DRA for the Project is based on unit processes commonly used in uranium process plants across the world, including northern Saskatchewan. As the Project becomes better defined, some modifications, revisions, and optimizations to the process plant layout are possible.

ENVIRONMENTAL, PERMITTING, AND SOCIAL CONSIDERATIONS

Key areas of consideration arising from the review of environmental and sociological aspects include:

- Consultation: To date, the level of consultation and engagement appears appropriate for an advanced exploration project. Moving forward, more direct consultation with local Indigenous groups (i.e., First Nations and Metis) will be required to support the EIA, and ultimately to gain Project approvals.

- Lake Impact: Minimizing impacts to the lake will be very important. The PEA has considered and included maximizing water re-use, which minimizes the need for freshwater. Further, the PEA has included that discharge water will be treated to a high quality.

- Baseline Studies: NexGen plans to start most of the social, physical, and bio-physical programs required to support feasibility level studies, the environmental impact assessment, engineering, and licensing in the near term.

- Risk: The main physical danger to the operation is forest fire and NexGen has maintained close relationships with the local Wildfire Management based in Buffalo Narrows.

- Radiation Management during Exploration: NexGen has a radiation protection program in place with proper core and cuttings handling, zone control and monitoring. Radiation exposure levels are low and commensurate with the types of site activities. NexGen should continue its effective radiation protection program.

RISKS AND UNCERTAINTIES

RPA has assessed critical areas of the Project and identified key risks associated with the technical and cost assumptions used. In all cases, the level of risk refers to a subjective assessment as to how the identified risk could affect the achievement of the Project objectives. The risks identified are in addition to the general risks associated with mining projects, including, but not limited to:

- general business, social, economic, political, regulatory and competitive uncertainties;
- changes in project parameters as development plans are refined;
- changes in labour costs or other costs of production;
- adverse fluctuations in commodity prices;
- failure to comply with laws and regulations or other regulatory requirements;
- the inability to retain key management employees and shortages of skilled personnel and contractors.

A summary of key Project related risks is shown in Table 25-1. The following definitions have been employed by RPA in assigning risk factors to the various aspects and components of the Project:

- **Low Risk** - Risks that could or may have a relatively insignificant impact on the character or nature of the deposit and/or its economics. Generally, these risks can be mitigated by normal management processes combined with minor cost adjustments or schedule allowances.

- **Moderate Risk** - Risks that are considered to be average or typical for a deposit of this nature. These risks are generally recognizable and, through good planning and technical practices, can be minimized so that the impact on the deposit or its economics is manageable.

- **High Risks** - Risks that are largely uncontrollable, unpredictable, unusual, or are considered not to be typical for a deposit of a particular type. Good technical practices and quality planning are no guarantee of successful exploitation. These risks can have a major impact on the economics of a deposit of this nature including significant disruption of schedule, significant cost increases, and degradation of physical performance.

TABLE 25-1 RISKS AND UNCERTAINTIES
NexGen Energy Ltd. – Rook I Property

Project Element	Issue	Risk Level	Mitigation
Geology	Resource tonnes and grade estimates	Low	Infill drilling is required in areas classified as Inferred. There is upside potential to increase resources in all directions.
Mining	Adverse shaft sinking conditions	Low	Conduct geotechnical and hydrogeological assessment in the area of planned shaft locations.
	Ground conditions within the altered rock	Low	Geotechnical drilling and analysis will further refine ground support requirements.
Process and Tailings	Uranium recovery	Low	Test work supports recovery assumption. Additional test work will allow optimization of flowsheet.
	Underground Tailings Management Facility	Moderate	The conceptual tailings facility must be studied in further detail.
Environment and Permitting	Permitting	Moderate	Begin EIA process and wider consultation.
	Management of exposure to radiation	Moderate	Issues need further analysis and modeling, and calibration to other northern Saskatchewan operations.
Construction Schedule	Artificial ground freezing and shaft construction	Moderate	Requires detailed planning and control. Further information on geotechnical conditions will refine schedule estimates.
Pre-production Capital Cost Estimate	Shaft sinking and construction	Moderate	Geotechnical data collection and analysis will result in refined design and cost estimates.
Operating Cost Estimate	Cost of key materials and supplies	Low	Close management of purchasing and logistics.

26 RECOMMENDATIONS

The Project should be advanced to the pre-feasibility (PFS) stage. Recommendations by area are as follows:

GEOLOGY AND MINERAL RESOURCES

- The Rook I Property hosts a significant uranium deposit and merits considerable exploration and development work. The primary objectives are to advance engineering work, expand the existing Arrow resource estimate, and explore elsewhere on the Property. Work will include:
  - Step-out and infill drilling at the Arrow deposit; and
  - Further exploration drilling at Harpoon, Bow, Cannon, Camp East Area A, and South Arrow occurrences
- The following changes should be made in future resource estimation updates:
  - Increase the minimum number of samples per estimate from four to five to help constrain the high grade values.
  - Increase the minimum number of samples used per drill hole from three to four.
  - Use classification integer value to flag Inferred resource, i.e., “3” to distinguish from surrounding waste rock and change Indicated to the value “2”.
  - Ensure that the high grade wireframes maintain at least a one-metre thickness and do not pinch-out within the surrounding low grade wireframes after performing Boolean operations in Vulcan software.

MINING METHODS AND GEOTECHNICAL CONSIDERATIONS

- Complete a detailed geotechnical and hydrogeological investigation of the rock mass and overburden to verify rock mass rating (RMR) input parameters, including field and laboratory testing for intact rock strength (IRS) to properly evaluate the accuracy, joint spacing conditions and to test the bedrock groundwater conditions, spatial variability and support crown pillar dimensions analyses.
- Complete confirmatory analyses to ensure that artificial freezing for earth support and groundwater control during shaft sinking is feasible, including duration of freeze time and freeze hole frequency and dimensions.
- Carry out optimization of mining method and remote or autonomous equipment selection for resource recovery, production rate, radiation exposure, etc.
- Assess rock mass quality on a stope by stope basis to determine alterations to the stope dimensions and support at the work face to mine each stope safely.

MINERAL PROCESSING

- Conduct further test work to prove the performance and efficiency of the processing steps post leach. This test work should include:
  - Mineralogy
  - Milling

  - Leaching
  - Solid-liquid separation
  - Solvent extraction
  - Mo removal
  - Product precipitation
  - Tailings characterization, including suitability for use as a cemented fill
  - Analysis of the composition of the waste rock, including an assessment of acid rock drainage (ARD) potential

- Implement the results of further test work into the process design for ongoing optimization purposes, and to validate the assumptions used in the PEA study.

- As the Project advances, carry out a more detailed assessment of the quantities and recoverability, and marketing potential of by-products.

- Perform further optimization of process plant layout based on better definition of process and utilities design.

PROJECT INFRASTRUCTURE

- Conduct an options study that considers alternative power sources to determine the optimal energy supply arrangement. Diesel, LNG, and high-voltage transmission line options should be considered.

- Complete assessment of heat recovery and an energy balance.

- Conduct a trade-off study to determine the optimal effluent treatment system.

- Conduct a trade-off study to determine the optimal tailings management system.

ENVIRONMENTAL, PERMITTING, AND SOCIAL CONSIDERATIONS

- Conduct social, physical, and bio-physical baseline programs required to support feasibility level studies, the EIA, engineering, and licensing.

- Complete design and justification for the final tailings management plan which will be required for the EIA, licensing and operation, and additional baseline geological, hydrogeological, and geotechnical work will be required to support the preferred option in the EIA and licensing.

- Complete acid rock drainage work on the waste rock to ensure the latter does not require special handling on surface.

- Complete a full physical and bio-physical environmental baseline program to support the large data requirements for the environmental risk assessment and the pathways modelling. Most of this work has yet to be completed, although there are plans in place to start this work when appropriate.

BUDGET

Drilling is planned in two phases with a Phase I budget of $141.5 million (Table 26-1). Phase II totalling $64.0 million is contingent on results from Phase I. RPA has reviewed the scope of work and is in agreement with the proposed budget.

TABLE 26-1 PROPOSED BUDGET
NexGen Energy Ltd. – Rook I Property

Phase and Item	C$M
Phase I	
Infill and expansion drilling (575 holes for 315,000 m)	125.0
Drilling on the Patterson Corridor (75 holes for 38,000 m)	15.0
Site Characterization and Geotechnical Study	1.0
PEA and related support studies including mineralogy and metallurgical studies	0.5
Total Phase I	**141.5**
Phase II	
Permitting and Engineering Studies	8.0
Geotechnical Investigation and Analysis	2.0
Metallurgical Testwork	0.8
Environmental Data Collection	1.2
Pre-Feasibility Study (PFS)	2.0
Additional exploration drilling	50.0
Total Phase II	**64.0**

27 REFERENCES

Canadian Institute of Mining, Metallurgy and Petroleum (CIM), 2014: CIM Definition Standards for Mineral Resources and Mineral Reserves, adopted by CIM Council on May 10, 2014.

Card et al., 2007: Basement rocks to the Athabasca Basin, Saskatchewan and Alberta, in Jefferson, C W (ed.), Delaney, G (ed.), EXTECH IV: Geology and Uranium Exploration Technology of the Proterozoic Athabasca Basin, Saskatchewan and Alberta, Geological Survey of Canada, Bulletin no. 588, 2007; p. 69-87

Charlton, L., 2015: EIC Radon-In-Water Survey Report, NexGen Energy Ltd., Rook I Project, unpublished NexGen report.

Cox, J.J., Ross, D.A., et al., Technical Report on the Preliminary Economic Assessment of the Patterson Lake South Property, Northern Saskatchewan, Canada, RPA NI 43-101 Report prepared for Fission Uranium Corp., (September 14, 2015), available at www.sedar.com

Creamer, J., and Gilman, T., 2013a: 2012 Assessment Report of Ground Gravity on Dispositions S-110931 & S-108095 on the Rook Property.

Creamer, J., and Gilman, T., 2013b: 2012 Assessment Report of Prospecting and Organic Soil Geochemistry on Disposition S-110931on the Rook Property.

Feasby, G., 2016: Summary Report – Arrow Resource Metallurgical Test Results and Interpretations, unpublished NexGen memorandum.

Grover et al., 1997: Tectonometamorphic Evolution of the Southern Talston Magmatic Zone and Associated Shear Zones, Northeastern Alberta, The Canadian Mineralogist, v. 35, pp. 1051-1067.

Jefferson et al., 2007: Unconformity-Associated Deposits of the Athabasca Basin, Saskatchewan and Alberta, in Goodfellow, W.D. (ed.), Mineral Deposits of Canada: A Synthesis of Major Deposit Types, District Metallogeny, the Evolution of Geological Provinces and Exploration Methods, Geological Association of Canada, special publication 5, pp. 273-305.

Goldak Airborne Surveys, 2013: Technical Report on a Fixed Wing Magnetic, VLF-EM and Radiometric Survey of the Southwest Athabasca Area, Saskatchewan, for NexGen energy Ltd., unpublished NexGen report.

Koch, R.S., 2015: Technical Report, 2015 Gravity Surveys, Rook I Project, unpublished NexGen report.

Koch, R.S., 2013a: NexGen Geophysics Update, unpublished NexGen report.

Ledingham, G.B., and Luther, G., 2015: Review of Saskatchewan Crown Mineral Dispositions NexGen Energy Ltd, McDougall Gauley LLP, private letter report.

MacDonald, C., 1980: Mineralogy and Geochemistry of a Precambrian Regolith in the Athabasca Basin; M.Sc. Thesis, University of Saskatchewan, 151 p.

RPA, 2016: Technical Report on the Rook I Property, Saskatchewan, Canada, NI 43-101 Report prepared by Mathisen, M.B., and Ross, D.A., for NexGen Energy Ltd. (April 13, 2016), available at www.sedar.com

RPA, 2017: Technical Report on the Rook I Property, Saskatchewan, Canada, NI 43-101 Report prepared by Mathisen, M.B., and Ross, D.A., for NexGen Energy Ltd. (March 31, 2017), available at www.sedar.com

McNutt, A.M., 2015: Technical Report on the Rook I Property, Saskatchewan, Canada, NI 43-101 Technical Report, available at www.sedar.com.

Mineral Administration Registry System (MARS); https://mars.isc.ca/MARSWeb/publicmap/FeatureAvailabilitySearch.aspx

NexGen Energy Ltd., 2015: Winter Diamond Drilling Reports, Rook 1 Property, Northern Saskatchewan, Canada, February 2016, 97p.

Pendrigh, N., and Witherly, K., 2015: Interpretation of VTEM Airborne EM Data, Rook I Property, Saskatchewan, unpublished NexGen report.

Pendrigh, N., and Witherly, K., 2017: Compilation and Interpretation of Airborne and Ground Geophysical Data, Rook I Property, Saskatchewan, unpublished NexGen report.

Pickering, S., 2015: Heritage Resources Impact Assessment NexGen Rook 1 Project, Post Impact Assessment of the 2013, 2014, and 2015 Exploration Program Areas, Unpublished NexGen report.

Rudd, J., and Lepitzki, M., 2016: NexGen Energy Ltd., Logistical Report, Rook 1 Project, Arrow Deposit, Saskatchewan, Canada – 3D DC Resistivity and Induced Polarization Survey, Work Period: October 1 to November 3, 2016, prepared by Dias Geophysical Ltd. for NexGen Energy Ltd.

Saskatchewan Geological Atlas, 2013: Saskatchewan Geological Survey publication http://www.infomaps.gov.sk.ca/website/SIR_Geological_Atlas/viewer.htm

Saskatchewan Mineral Deposit Index (SMDI), 1993: Saskatchewan Geological Survey publication http://economy.gov.sk.ca/SMDI

Zhao, B., 2016: Arrow Uranium Ore Metallurgical Testing Report and Appendices prepared for Clifton Associates Ltd., Saskatoon Research Council Publication No. 14013-4C16

28 DATE AND SIGNATURE PAGE

This report titled “Technical Report on the Preliminary Economic Assessment of the Arrow Deposit, Rook I Property, Saskatchewan, Canada” with an effective date of July 31, 2017, was prepared and signed by the following authors:

(Signed and Sealed) “*Jason J. Cox*”

Dated at Toronto, ON
September 14, 2017

Jason J. Cox, P.Eng.
Principal Mining Engineer

(Signed and Sealed) “*David M. Robson*”

Dated at Toronto, ON
September 14, 2017

David M. Robson, P.Eng., M.B.A.
Senior Mining Engineer

(Signed and Sealed) “*Mark B. Mathisen*”

Dated at Lakewood, CO
September 14, 2017

Mark B. Mathisen, C.P.G.
Principal Geologist

(Signed and Sealed) “*David A. Ross*”

Dated at Toronto, ON
September 14, 2017

David A. Ross, M.Sc., P.Geo.
Principal Geologist

(Signed and Sealed) “*Val Coetzee*”

Dated at Sunninghill, Gauteng
September 14, 2017

Val Coetzee, M.Eng., Pr.Eng., (ECSA)
Process Manager
DRA Projects SA (Pty) Ltd

(Signed and Sealed) “*Mark Wittrup*”

Dated at Calgary, Alberta
September 14, 2017

Mark Wittrup, P.Eng., P.Geo.
Vice President Environmental and Regulatory Affairs, Clifton Associates Ltd.

29 CERTIFICATE OF QUALIFIED PERSON

JASON J. COX

I, Jason J. Cox, P.Eng., as an author of this report entitled "Technical Report on the Preliminary Economic Assessment of the Arrow Deposit, Rook I Property, Saskatchewan, Canada", prepared for NexGen Energy Ltd. with an effective date of July 31, 2017, do hereby certify that:

1. I am a Principal Mining Engineer and Executive Vice President, Mine Engineering, with Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON, M5J 2H7.

2. I am a graduate of the Queen's University, Kingston, Ontario, Canada, in 1996 with a Bachelor of Science degree in Mining Engineering.

3. I am registered as a Professional Engineer in the Province of Ontario (Reg. #90487158). I have worked as a Mining Engineer for a total of 18 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Review and report as a consultant on many mining operations and projects around the world for due diligence and regulatory requirements
   - Feasibility Study project work on several mining projects, including five North American mines
   - Operational experience as Planning Engineer and Senior Mine Engineer at three North American mines
   - Contract Co-ordinator for underground construction at an American mine

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 Rook I Property on May 18, 2017.

6. I am responsible for overall preparation of the Technical Report and share responsibility with Mr. Robson for Sections 15, 16, 18, 19, and 24. I share responsibility with my co-authors for Sections 1, 3, 22, 25, 26, and 27 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 had no prior involvement with the property that is the subject of the Technical Report.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 14th day of September, 2017

(Signed and Sealed) "*Jason J. Cox*"

Jason J. Cox, P.Eng.

DAVID M. ROBSON

I, David M. Robson, P.Eng., as an author of this report entitled "Technical Report on the Preliminary Economic Assessment of the Arrow Deposit, Rook I Property, Saskatchewan, Canada", prepared for NexGen Energy Ltd. with an effective date of July 31, 2017, do hereby certify that:

1. I am Mining Engineer with Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON, M5J 2H7.

2. I am a graduate of Queen's University in 2005 with a B.Sc.(Honours) in Mining Engineering and Schulich School of Business, York University, in 2014 with an MBA degree.

3. I am registered as a Professional Engineer in the Province of Saskatchewan (Reg. #13601). I have worked as a mining engineer for a total of 12 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Mine design and scheduling at uranium, industrial minerals, and base metals operations in Canada and Europe.
   - Financial analysis, cost estimation, and budgeting.
   - Experienced user of Vulcan, VentSim, AutoCAD, and Deswik.

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 Rook I Property on May 18, 2017.

6. I share responsibility with Mr. Cox for Sections 15, 16, 18, 19, and 24 and share responsibility with my co-authors for Sections 1, 3, 22, 25, 26, and 27 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 had no prior involvement with the property that is the subject of the Technical Report.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 14th day of September, 2017

(Signed and Sealed) "*David M. Robson*"

David M. Robson, P.Eng., M.B.A.

MARK B. MATHISEN

I, Mark B. Mathisen, CPG, as an author of this report entitled “Technical Report on the Preliminary Economic Assessment of the Arrow Deposit, Rook I Property, Saskatchewan, Canada”, prepared for NexGen Energy Ltd. with an effective date of July 31, 2017, do hereby certify that:

1. I am Principal Geologist with RPA (USA) Ltd. of Suite 505, 143 Union Boulevard, Lakewood, Co., USA 80228.

2. I am a graduate of Colorado School of Mines in 1984 with a B.Sc. degree in Geophysical Engineering.

3. I am a Registered Professional Geologist in the State of Wyoming (No. PG-2821) and a Certified Professional Geologist with the American Institute of Professional Geologists (No. CPG-11648). I have worked as a geologist for a total of 20 years since my graduation. My relevant experience for the purpose of the Technical Report is:

   - Mineral Resource estimation and preparation of NI 43-101 Technical Reports.
   - Director, Project Resources, with Denison Mines Corp., responsible for resource evaluation and reporting for uranium projects in the USA, Canada, Africa, and Mongolia.
   - Project Geologist with Energy Fuels Nuclear, Inc., responsible for planning and direction of field activities and project development for an in situ leach uranium project in the USA.
   - Design and direction of geophysical programs for US and international base metal and gold exploration joint venture programs.

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 am a "qualified person" for the purposes of NI 43-101.

5. I visited the Rook I Property on January 19 to 20, 2016 and January 22 to 25, 2017.

6. I share responsibility with David Ross for preparation of Sections 4 through 12, 14, and 23, and share responsibility with his co-authors for Sections 1, 3, 25, 26, and 27 of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.

8. I have prepared previous Technical Reports, dated April 13, 2016 and March 31, 2017, on the property that is the subject of the Technical Report.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 14th day of September, 2017

(Signed and Sealed) "*Mark B. Mathisen*"

Mark B. Mathisen, CPG

DAVID A. ROSS

I, David A. Ross, M.Sc., P.Geo., as an author of this report entitled "Technical Report on the Preliminary Economic Assessment of the Arrow Deposit, Rook I Property, Saskatchewan, Canada", prepared for NexGen Energy Ltd. with an effective date of July 31, 2017, do hereby certify that:

1. I am a Principal Geologist and Director, Resource Estimation, with Roscoe Postle Associates Inc. of Suite 501, 55 University Ave., Toronto, ON, M5J 2H7.

2. I am a graduate of Carleton University, Ottawa, Canada, in 1993 with a Bachelor of Science degree in Geology and Queen's University, Kingston, Ontario, Canada, in 1999 with a Master of Science degree in Mineral Exploration.

3. I am registered as a Professional Geologist in the Province of Ontario (Reg. #1192) and the Province of Saskatchewan (Reg. #31868). I have worked as a geologist for a total of 21 years since my graduation. My relevant experience for the purpose of the Technical Report is:
    - Review and report as a consultant on numerous mining and exploration projects around the world for due diligence and regulatory requirements
    - Exploration geologist on a variety of gold and base metal projects in Canada, Indonesia, Chile, and Mongolia.

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 am a "qualified person" for the purposes of NI 43-101.

5. I did not visit the Property.

6. I share responsibility with Mark Mathisen for preparation of Sections 4 through 12, 14, and 23, and share responsibility with his co-authors for Sections 1, 3, 25, 26, and 27 of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.

8. I have prepared previous Technical Reports, dated April 13, 2016 and March 31, 2017, on the property that is the subject of the Technical Report.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 14th day of September, 2017

(Signed and Sealed) "*David A. Ross*"

David A. Ross, M.Sc., P.Geo.

VAL COETZEE

I, Val Coetzee, Pr.Eng., as an author of this report entitled "Technical Report on the Preliminary Economic Assessment of the Arrow Deposit, Rook I Property, Saskatchewan, Canada", prepared for NexGen Energy Ltd. with an effective date of July 31, 2017, do hereby certify that:

1. I am Process Manager with DRA Projects SA (Pty) Ltd at 3 Inyanga Close, Sunninghill, Gauteng, South Africa, 2157.

2. I am a graduate of Stellenbosch University in South Africa with a B. Eng. in Chemical Engineering, and of University of the Witwatersrand in South Africa with an M.Eng. in Mineral Economics.

3. I am registered as a Professional Engineer by the Engineering Council of South Africa (ECSA) (Reg. #20070076). I have practiced my profession continuously since 2001, have operational and project experience in the mineral processing, with project development experience in a number Uranium projects since 2010. As a result of my qualifications and experience, I am a Qualified Person as defined in National Instrument 43-101.

4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

5. I have not visited the site of this project.

6. I am responsible for preparation of Sections 13 and 17, and share responsibility with my co-authors for Sections 1, 3, 21, 25, 26, and 27 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 had no prior involvement with the property that is the subject of the Technical Report.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the sections for which I am responsible in the Technical Report contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 14th day of September, 2017

(Signed and Sealed) "*Val Coetzee*"

Val Coetzee

MARK WITTRUP

I, Mark Wittrup, P.Eng, and P.Geo as an author of this report entitled "Technical Report on the Preliminary Economic Assessment of the Arrow Deposit, Rook I Property, Saskatchewan, Canada", prepared for NexGen Energy Ltd. with an effective date of July 31, 2017, do hereby certify that:

1. I am Vice-President Environmental and Regulatory Affairs with Clifton Associates Ltd. at 2222 – 30th Avenue NE, Calgary, Alberta, T2E 7K9

2. I am a graduate of the University of Saskatchewan in 1988 with a Master of Science, Geology, and Lakehead University in 1979 with an Honours Bachelor of Science, Geology

3. I am registered as a Professional Engineer and a Professional Geologist in the Province of Saskatchewan (Reg. #05325). I have worked as an engineer and a geologist for a total of 38 years since my undergraduate graduation. My relevant experience for the purpose of the Technical Report is:

   - 31 years with a major uranium mining company with 5 years in uranium exploration, and >25 years environmental and regulatory experience specifically related to uranium mines and nuclear facilities globally;
   - An active participant in the current federal EIA review process, and advising on non-uranium mining projects;
   - Project manager for the successful permitting of a high-grade Canadian uranium mine including Federal and Provincial approvals and permitting processes, and main author of the EIS;
   - Four years Assistant Deputy Minister, Environmental Protection and Audit, Saskatchewan Ministry of Environment, including the duties of Environmental Assessment Commissioner;
   - Participated in the implementation of the IAEA Additional Protocols with a major uranium mining company and have participated in work on the IAEA NORM Guidelines; and
   - Have worked on environmental/regulatory projects directly related to twelve uranium mines and properties in Canada, United States, Australia, Kazakhstan and Greenland.

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 Rook 1 property on May 18, 2017. It was my third visit to the property.

6. I am responsible for overall preparation of Chapter 20 and partially responsible for Chapters 1, 25, 26 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 had prior involvement with the property that is the subject of the Technical Report providing advice on regulatory and permitting options consistent with the current PEA.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report sections (Chapter 20, Environmental, and partially Chapters 1, 25 and 26) for which I am responsible in the Technical Report contains/contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 14th day of September, 2017

(Signed and Sealed) "*Mark Wittrup*"

Mark Wittrup, P.Eng. P.Geo. CMC