Overview and Recent Exploration Success at the McArthur River Uranium Deposit, Athabasca Basin, Saskatchewan, Canada

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McArthur River Project

Presentation Outline

• Project location
• Discovery history
• Geological setting
• Recent discoveries
• Summary

*Main headframe at McArthur River Mine*
McArthur River Project

Location

*Photo taken near Bermuda Lake, Northern Saskatchewan*
McArthur River Project

History

*Photo taken looking southwest at McArthur River Mine*
Keefe – Henday Joint Venture

- Included a huge land package that would later become 3 projects
  - Dawn Lake
  - Waterbury Lake
  - McArthur River
- Asamera was the operator and wanted to focus in the Dawn Lake area
- Seru Nuclaire operates Waterbury Lake
- SMDC a predecessor company to Cameco chose McArthur River to operate as the southern portion was <200 m depth
Property Targets and Trends

McArthur River Project

- P2 North (McArthur River Mine)
- P2 Main
- BJ Zone
- P1 Trend
- Harrigan Zone

Key locations:
- Cigar Lake
- Cree Lake
- Millennium

Scale: 0 10 20km
Harrigan Zone

- 1980 – Vollhoffer Lake

  Winter; two holes intersected U mineralization in the basement; best intercept was 4.5 m of 0.24% at 245 m

  Summer; best 0.52% / 5.3 m

The Harrigan Zone had been discovered

Basement hosted U in altered pelitic gneisses

1.86% U₃O₈ over 5.0 m in altered pelitic gneiss – 266.0 – 271.0 m
1.86% U$_3$O$_8$ over 5.0 m in altered pelitic gneiss – 266.0 – 271.0 m
BJ Zone

- 1984-85 – BJ Lake
  - Basement dominated by quartzite with no EM conductors
  - Tracing radioactive boulders in the till up ice to source
    - Drilling at BJ intersected sporadic U over wide intervals of the sandstone
    - MAC-121 encountered 1.2% eU$_3$O$_8$ / 6 m
BJ Zone

Druzy quartz rimmed by dravite

MAC-162  427.2 m

Dravite, kaolinite and ± illite

MAC-162  427.9 m
P2 Main Zone

- 1985 – Bermuda Lake
  - Summer drilling intersects significant U mineralization on the P2 grid
  - Hole MAC-137 intersected the P2 structure in the basement
  - Hole MAC-143A yielded 1.4% U$_3$O$_8$ / 7.3m
1988 – Perseverance Pays Off …

- MAC-195, drilled along strike 5 km to the north of P2 Main, designed to test the footwall of the P2 structure
  - intersected the hanging wall
  - Strong kaolinite and chlorite in the sandstone
  - Lower 300 m of sandstone averaged 5 ppm U
  - Entire sandstone enriched in B (max 7500 ppm)
  - Ranked by project team as the most strongly anomalous non-mineralized hole on the property
- Follow-up drilling would result in the discovery of the P2 North zone which would become the McArthur River deposit.
- Best surface hole to date: MAC-236 at 43.4% $\text{U}_3\text{O}_8$ / 25.5 m = GT of 1107 m% $\text{U}_3\text{O}_8$
Summary of Important Events

• Government’s mandatory participation
• SMDC takes over operatorship of McArthur
• Decision to undertake DEEPEM where no significant INPUT anomalies existed
• SMDC’s desire to maintain exploration despite partners wanting to reduce the budget and drop land
• Recognition by the project team of a “near miss” hole, MAC-195
McArthur River today …

• Partner interests:
  • Cameco (69.8%)
  • AREVA (30.2%)

• Historical Companies Involved:
  • AGIP
  • Asamera
  • Bradley
  • Crest
  • Douglas
  • E&B
  • Kelvin
  • Lyall
  • Morgens
  • Phillips
  • Reserve
  • Saarberg
  • SERU
  • SMDC
  • Texaco
  • UEM
  • Vaquero Petro
  • Vaquero Energy

*Aerial view of McArthur River Mine*
McArthur River today …

- Full potential not realized until after first phase of underground exploration
- Mine construction commenced in 1997
- Full production achieved in November 2000
- Surface exploration resumed in 2004

*Aerial view of McArthur River Mine*
McArthur River today….

- 6 zones identified to date (Zones 1, 2, 3, 4, A and B)
- Reserves: Proven and Probable (Dec 31, 2008)
  - 729,200 t @ 20.69% U$_3$O$_8$ = 332 million lbs
    - value per tonne = US $19,000 or 21 opt Au equivalent
      (U = $46/lbs, Au = $912/oz)
- Mine production to Dec. 31, 2008
  - 476,300 tonnes @ 14.70% U$_3$O$_8$ 154,236,000 pounds
- Current production of 18.7 M lbs
- Additional Resources: Measured and Indicated
  - 248,800 tonnes @ 9.07% 49,731,000 pounds
- Additional Resources: Inferred
  - 642,600 tonnes @ 9.81% 139,013,000 pounds

World’s largest high-grade U deposit
McArthur River Project

Geology

*Photo taken of small lake on McArthur River property*
Schematic Cross Section - McArthur

- Zones 1, 3, 4 and A, B
- Mineralization
- Chlorite Alteration
- Quartzite
- Cordierite-bearing Pelites
- Pelites +/- Graphite
- P2 Fault

0 50 metres
McArthur River Uranium Geochemistry

Sandstone Geochemistry - Section 79+00N (Zone 4)

Legend
- Uranium (partial digest) > 1 ppm
- Uranium (partial digest) > 3 ppm
- Uranium (partial digest) > 10 ppm

Unconformity
Basement

Mfd
Mfc
Mfb
Mfa

100 m
Key McArthur Features and Targets

• P2 trend at best 40% explored.
  - 18 km strike length
  - Excellent potential for additional zones
• Two new inferred zones since 2004
  - Zone A (2004) – 255,600 tonnes @ 8.19% for 46.2 M lbs
  - Zone B (2005) – 151,300 tonnes @ 14.90% for 49.7 M lbs.
• Promising regional targets
  - Harrigan Zone – follow-up required. Open at depth, basement potential
  - P2 Main – follow-up required. Major structures not tested

*Photo taken of swamp on McArthur River property*
Zone A - Section 8750N

LEGEND

LITHOLOGY

ATHABASCA GROUP
- Manitou Falls D Member (MFD)
- Manitou Falls C Member (MFC)
- Manitou Falls B Member (MFB)
- Manitou Falls A Member (MFA)

WOLLASTON GROUP
- Pegmatite (PEGM)
- Calc-silicate (CALC)
- Pelitic Gneiss (PELT)
- Smpelitic Gneiss (SMPL)
- Graphitic Semipelite (GFPE)
- Graphitic Pelite (GFPL)
- Arkose (ARSK)
- Quartzite (QZIT)
- Unclassified Metasediment (MTSD)
- Metawacke (MTWK)

ARCHEAN
- Granitic Gneiss (GRGN)

SYMBOLS
- Bedding
- Foliation
- Brecciation
- Geological Contacts
- Unconformity
- Fault Zone, Fault
Zone A - Section 8750N

MC-269-3  548.2 – 552.3m

17.74% U$_3$O$_8$ / 4.1m  GT of 72.7m%
Zone A Summary

- Nose Ore
- Sandstone-hosted
- Inferred Resource of 255,600 tonnes @ 8.19% for 46,146,000 lbs
- Based on 11 drill holes
Recent Exploration
McArthur River Project
2005-2006
Zone B

*Photo taken of high grade mineralization from MC-274*
Massive mineralization (MC-274)
Zone B Summary

• Nose Ore
• Sandstone-hosted
• Inferred Resource of **151,300 tonnes @ 14.90%** for **49,690,000 lbs**
• Based on 7 drill holes
• Contains one of the highest grade intercepts ever reported from surface
Why so high-grade?

Quartzite Ridge

P2
Why so high-grade?

Quartzite Ridge

P2
Summary

• Project initially operated by Asamera as part of the large Keefe-Henday Joint Venture
• SMDC becomes operator in 1978
• McArthur River deposit discovered in 1988
• Production to date of 476,300 tonnes @ 14.70% U₃O₈
  154,236,000 pounds
• Current reserves of 729,200 tonnes @ 20.69% U₃O₈
  332,631,000 pounds
• Discovery of 2 new high-grade zones
• The association of the quartzite, P2 structure and graphitic metasediments is believed significant in contributing to the high grade of this deposit
• 60% of P2 trend is still under-explored
• Regional targets remain prospective
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Questions?

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