**TORO** ENERGY LIMITED

SIGNIFICANT MINERALISATION EXTENSIONS FROM 2008 DRILLING OF NAPPERBY (NT) URANIUM PROJECT

Drilling at the Napperby Uranium Project, 150kms northwest of Alice Springs in the Northern Territory, continues to confirm and extend the known mineralised area around the existing JORC compliant resource.

A major 2008 drilling program being undertaken by Toro Energy Limited ("Toro") is using both sonic and aircore drilling. The program commenced in May and as at late last week about 7,500m of drilling had been completed, including 202 sonic holes (1800m) and 473 aircore holes (5700m) with all holes being radiometrically logged. This compares with 305 holes totalling (3200 metres) for the 2007 drilling program, which resulted in a doubling of the previous Inferred resource. A total of 2,800 samples have been sent off-site for assaying.

Disequilibrium analysis is providing encouraging results and enabling Toro's Napperby exploration team to apply corrections to aircore 'equivalent' gamma data  $(eU_3O_8)$  to facilitate and target ongoing planning of sonic core holes. The gamma equivalent grade x thickness in the 2008 drilling to date is showing very good continuity along the palaeochannel (Refer Figure 1).

Toro holds an option to acquire 100% of the project from Deep Yellow Limited ("DYL") on specific commercial terms (see ASX Release dated 15/02/07 for details).

A further round of metallurgical leach and column tests is now underway to test the suitability of the Napperby ore to beneficiation, leach processes and potential heap leach mining.

Baseline environmental and radiometric studies are in progress and community consultation and baseline surveys are ongoing.

These will feed into a planned Scoping Study for the project during the second half of this year.

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# 2008 Napperby Drilling Program Update

Toro completed an initial 2007 drilling program on the Napperby project and last week announced an increased Inferred Resource compliant with the JORC code of 4.6 million tonnes @ 305ppm (0.031%)  $U_3O_8$  for 1,420 tonnes (3.13 million pounds) of contained uranium oxide (using a 200ppm  $U_3O_8$  cut off, see ASX Release 25 July 2008).

A more extensive resource drilling program was initiated in May 2008 with 7,500m of drilling completed so far. As of late last week, 202 sonic holes (1800m) and 473 aircore holes (5700m) had been completed and radiometrically logged. A total of 2,800 samples have been sent off-site for assaying. An additional 800 holes are currently planned for this campaign. This larger drill program compares with 305 total holes for 3200 metres during the 2007 drill campaign (Refer Figure 2)

Air core drilling with calibrated gamma logging is guiding the sonic core rig, with sonic holes assayed and gamma logged. Corrections of gamma data are made for casing type, probe crystal K factor and ground water level. This produces equivalent grades (' $eU_3O_8$ ').



Figure 1: Completed 2008 drilling grade x thickness (GT) grid using corrected eU<sub>3</sub>O<sub>8</sub> equivalent grades

Notes on the analysis in Figure 1:

- Grade x thickness (GT) the product of grade (U<sub>3</sub>O<sub>8</sub>ppm) and ore thickness (metres) is used as an indicator of potential mineability.
- 2) eU<sub>3</sub>O<sub>8</sub> grades shown here are for indicative mineralisation purposes only, and samples from the sonic drilling have been gathered under QAQC procedures and dispatched for assay. Initial results are pending. Gamma eU<sub>3</sub>O<sub>8</sub> grades are currently not used by Toro for resource calculation purposes, but this will depend if ongoing disequilibrium work provides the basis for increased confidence in grade estimation from gamma data.
- 3) Data were generated by applying a cutoff of 140 ppm eU<sub>3</sub>O<sub>8</sub> to the gamma derived grades. GTs were then calculated and a grid applied. The lowermost GT increment in this figure for example, 100ppm.m, translates to a grade of 140 ppm with a thickness of 0.7m.

As part of the evaluation and exploration of the Napperby Project, an analysis of the chemical and gamma uranium grades from a variety of drill holes has been completed. This analysis was instigated to determine the most reliable and cost effective methods for resource definition and further exploration.

Through disequilibrium studies (refer Appendix 2) it has been found that gamma derived  $eU_3O_8$  values can be adjusted by a calculated disequilibrium factor to provide grades and thicknesses that are comparable to those derived from chemical assays of sonic drill core. Further disequilibrium studies and assay comparisons will be ongoing to provide the confidence that the gamma derived  $U_3O_8$  values are sufficiently reliable for future resource calculations.

The 2008 gamma equivalent ( $eU_3O_8$ ) grades are indicating good continuity in the mineralised zone to the SW of the previous resource (Figure 2). Assay results from this drilling will be incorporated into a further resource update planned for the fourth quarter 2008. The deposit is still exhibiting a dominance of carnotite mineralisation within samples.



Figure 2: Plan of 2008 drilling to date compared to current resource area

# **Metallurgical Testing and Scoping Study**

An initial mineralogy study and bench scale metallurgical testing has been undertaken to determine the optimum processing circuit. Initial acid leach tests released the uranium into solution very readily but acid consumption was very high. Alkaline leach tests resulted in a steady initial extraction rate and indicated additional investigation into optimum conditions for leaching was required.

A second round of metallurgical testing has been commissioned at an independent testing facility, Amdel Ltd, to build on the first set of results to determine:

- how suitable the mineralisation is to beneficiation;
- the optimum conditions for alkaline leaching; and
- the applicability of heap leaching by completing column testing.

Similarly, more detailed mineralogy and petrology studies have been initiated to complement the metallurgical testing.

To help launch Toro's scoping study at Napperby, baseline environmental and radiometric studies are in progress. Community consultation is ongoing, with a baseline community survey initiated.

The planned Scoping Study will include initial mine designs to confirm the selective mining potential of the shallow Napperby deposit (all mineralisation <8m depth) and should provide a guide to future mining grades, which are expected to be higher than the Inferred resource grade. The shallow deposit is also amenable to mine optimisation designs that allow for the mining of higher grade portions of the deposit early in the mine schedule.

A significant exploration and resource evaluation team has been mobilised by Toro for the 2008 drilling program, metallurgical tests, environmental and baseline work. Much of this will feed into the Scoping Study which is planned for completion by November 2008.

Yours faithfully

## **Greg Hall** Managing Director

- 1) The information in this report that relates to Mineral Resources is based on information compiled by SRK Consulting by Mr Daniel Guibal who is a Fellow (CP) of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Guibal is a fulltime employee of SRK Consulting and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Persons as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Guibal consents to the inclusion in this release of the matters based on his information in the form and context in which it appears.
- 2) Information in this report relating to Exploration Results from the Napperby Project is based on information compiled by Dr David Rawlings who is a Member of the Australasian Institute of Mining and Metallurgy. Dr Rawlings is a full-time employee of Toro and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr Rawlings consents to the inclusion in this release of the matters based on his information in the form and context in which it appears.
- 3) Information in this report relating to Disequilibrium Results from the Napperby Project is based on information compiled by Mr David Wilson BSc MSc who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Wilson is a full-time employee of 3D Exploration Ltd, a consultant to Toro and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Wilson consents to the inclusion in this release of the matters based on his information in the form and context in which it appears.

# Appendix I - Napperby Project, NT - Background

The Napperby Project is an historic mineralised zone discovered and explored by CRA Exploration and Uranerz in the late 70's early 80's. The project comprises an extensive, consistent mineralised zone within 3 to 7 m depth from surface in semi-consolidated and unconsolidated sediments. The project is close to infrastructure, being 150km NW of Alice Springs along the sealed section of the Tanami Highway (Figure 3), within 20km the Alice Springs to Darwin gas pipeline and with access to the main N-S railway through Alice Springs.

Toro Energy has an Option Agreement with Deep Yellow Ltd over the Napperby Project which allows 100% purchase of the project at a capped price per resource pound (lb) basis at any stage over a 3 year period.



Figure 3: Napperby Project Location Plan showing regional infrastructure

## Appendix 2 – Disequilibrium at Napperby

As part of the evaluation and exploration of Toro's Napperby Project, an analysis of the chemical and gamma uranium grades from a variety of drill holes has been completed. This analysis was done to determine the most reliable and cost effective methods for resource definition and further exploration.

The data from a total of 81 recent sonic drill holes were statistically analysed. The Sonic drill holes were expected to provide the most accurate chemical assay samples for comparison with the gamma derived grades.

The fairest comparison of chemical and gamma data is to compare the whole of hole grade x thickness. This removes any slight mismatch in depth between the data sets. However, the data was also compared based upon the chemical assay sample interval down each drill hole.

The sonic and gamma grade x thickness comparisons,

Figure 4, show a wider scatter than is usual for this type of deposit. This scatter is attributed to a combination of a nugget effect and disequilibrium. The gamma grades should be less affected by the nugget effect because the gamma tool measures a considerably larger volume than the sonic core. Disequilibrium will only affect the gamma grades.

The chemical grades are generally higher than the gamma grades. The difference is interpreted to be due to disequilibrium between uranium and its daughter isotopes.

Figure 5 shows the results of 54 disequilibrium measurements on samples taken from 13 different and scattered sonic drill holes. These results are almost identical to those obtained from the chemical assay versus gamma grade x thickness comparison in

Figure 4. These results confirm that the difference between chemical assays and gamma grades is primarily due to disequilibrium.

This close agreement provides confidence that a disequilibrium adjustment (1.39) of the gamma derived  $U_3O_8$  values will provide values that reflect the true grades and thicknesses. The sample volume for the gamma derived  $U_3O_8$  values is considerably larger than that from the Sonic drill core and should therefore be a more reliable estimate of the grade distribution near the drill holes. Further work is being done to see how disequilibrium varies vertically and horizontally in other areas as they are drilled.



Figure 4: Gamma and Chemical Assay GT Comparison



Figure 5: Disequilibrium plot for Napperby samples

# Conclusions

Gamma derived  $U_3O_8$  values can be adjusted by the disequilibrium factor to provide grades and thicknesses that are as accurate as those derived from chemical assays of sonic drill core. Further disequilibrium studies and assay comparisons will be ongoing to continue to provide the confidence that the gamma derived  $U_3O_8$  values are sufficiently reliable for resource calculations.

## **Qualifying Statement**

All holes were logged with an Auslog A75 total count gamma tool. This tool contains a 1.75 inch x 0.5 inch diameter Nal measuring crystal. The gamma tool was calibrated in Adelaide at the Department of Water, Land and Biodiversity Conservation in calibration pits constructed under the supervision of the CSIRO. These calibration pits have been shown to provide calibration standards for drill hole logging tools that are comparable to those at the DOE facility in Grand Junction, Colorado USA.

The gamma tool measures the total gamma ray flux in the drill hole. Readings are averaged over 2 centimetre intervals and the reading and depth recorded on a portable computer. The gamma ray readings are then converted to equivalent  $U_3O_8$  readings by using the calibration factors derived in the Adelaide calibration pits. These factors also take into account differences in hole size and water content. The grade and calibration was calculated by David Wilson BSc MSc MAusIMM from 3D Exploration Ltd based in Western Australia.

The gamma radiation used to calculate the equivalent  $U_3O_8$  is predominately from the daughter products in the uranium decay chain. When a deposit is in equilibrium, the measurement of the gamma radiation from the daughter products is representative of the uranium present. It takes approximately 2.4M years for the uranium decay series to reach equilibrium. Thus, it is possible that these daughter products, such as radium, may have moved away from the uranium or not yet have achieved equilibrium if the deposit is younger than 2.4M years. In these cases the measured gamma radiation will over or under estimate the amount of uranium present. The gamma radiation from the uranium daughter products measured at Napperby may not be in equilibrium due to one of the above factors. Toro has already established that there is disequilibrium at Napperby. Toro will be conducting further studies to determine the distribution of the disequilibrium within the deposits at Napperby.