



Astro Diamond Mines NL
ACN 007 090 904

EXPLORATION LICENCE 23390

BARROW CREEK PROJECT

ANNUAL EXPLORATION REPORT

FOR THE PERIOD

22 APRIL 2007 TO 21 APRIL 2008

BY

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Department of Primary Industry, Fisheries and Mines, Darwin
Astro Diamond Mines NL, Melbourne



TENEMENT REPORT INDEX

OPERATOR:	Astro Diamond Mines NL
PROJECT:	Barrow Creek
TENEMENTS:	Exploration License 23390
JOINT REPORT PERIOD:	22 April 2007 to 21 April 2008
DUE DATE:	21 May 2008
AUTHOR:	G. McGoldrick
STATE:	Northern Territory
LATITUDE:	S22° 05' – S22° 25'
LONGITUDE:	E134° 52' – E135° 23'
MGA (easting):	7520400 - 7557600
MGA (northing):	488000 - 538200
1:250,000 SHEET:	SF53-10 Alcoota, SF53-11 Huckitta
1:100,000 SHEET:	5853 Utopia, 5953 McDonald Downs
MINERAL FIELD:	
COMMODITY:	Diamonds, Uranium
KEYWORDS:	Diamonds, Uranium, target areas, programmes



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1:250 000, A3, Landscape



1 SUMMARY OF EXPLORATION ACTIVITIES

Exploration carried out over the EL23390 during the reporting period included further data reviews and compilation of openfile data. In addition a mine management plan was drafted and approved (Authorisation No. 0376-01). The plan covers drilling of 87 RC drill holes and traverses.

2 TENEMENT STATUS

Astro Mining NL applied for EL23390 on 2nd of October 2001, the tenement was granted on 22nd of April 2003.

TENEMENT	DATE OF GRANT	STATUS	AREA (km ²)
EL23390	22/4/03	Live	1048

3 LOCATION AND ACCESS

Exploration Licence 23390 covers the Alcoota and Huckitta 1:250,000 map sheets. Access to the area is via the Sandover Highway, which turns off the Stuart Highway 80 km north of Alice Springs, and runs to the north of EL23390. ([figure 2](#))

4 GEOLOGY

The oldest units in the area are comprised of metamorphic and igneous rocks of the Arunta Inlier of Early-Middle Proterozoic age. Late Proterozoic sediments are essentially flat-lying except near faults where they may be upturned.

The southwestern extremities of the Late Proterozoic to Paleozoic Georgina Basin are exposed in the eastern portion of the Barrow Creek 1: 250,000 geological map. The basin is one of several sedimentary basins that developed over older Proterozoic basement in central Australia. ([figure 3](#))

Block faulting along major northwest trending faults in the basement controlled the deposition of the basin in this area. Paleocurrent directions in the basal units indicate consistent flow from the west and northwest.

Deposition of the Dulcie Sandstone followed in the Devonian. The fault influence has persisted with northwest trending contacts and axes of shallow folds. The youngest



sediments are restricted to silcretes, ferricretes, and colluvium of Cainozoic age.

4.1 LOCAL GEOLOGY

The tenement covers Paleozoic basin sediments overlapping and in fault contact with Late Proterozoic granites and sediments in the south. The Paleozoic sediments represented are the Cambrian Tomahawk beds followed by the Devonian Dulcie sandstone. (figure 3)

The Tomahawk beds consist of medium to coarse grained, cross-bedded quartzarenite with thin interbeds of micaceous siltstone, shale and minor quartz-rich dolostone in the north. There is increasing dolostone and limestone in the south of the Dulcie Range. These outcrops consist of medium to thick beds of limestone or dolostone, commonly with poorly sorted quartz sand, accessory glauconite and traces of tourmaline.

The Dulcie Sandstone consists of prominently cross-bedded, medium to very thick-bedded quartz arenite, with rare beds of orthoconglomerate and calcareous silty quartz sandstone.

The Proterozoic units to the south consist of shales, siltstones and sandstones of the Mopunga Group which overlie Mount Swan Granite.

5 EXPLORATION

5.1 SUMMARY

There was no field work conducted during this reporting period. Work was focused on review of both data and observations collected in previous years. In conjunction with this a further review of historical Open File Data, regional geology and geophysics was conducted to inform and design targeted exploration for the future.

5.2 PREVIOUS WORK

During 2005-2007 open file exploration data were obtained from the NT Geological Survey. Topographic and geological maps at a scale of 1:250,000 were acquired in raster format as a base for plotting the data. Stacked magnetic profiles of the first vertical derivative of the residual magnetics were processed from the located data and imported into Mapinfo. Images of total magnetic intensity and vertical derivatives were supplied by the NTGS. The images have assisted in structural interpretation and assessment for gold or base metal mineralisation.



A helicopter supported field visit was conducted. The purpose of the visit was firstly to become acquainted with the terrain, and secondly to visit areas with radiometric anomalies. Portions of the Tomahawk beds display high responses on the uranium and potassium channels of radiometrics. The granite to the south also displays high responses. One of these anomalies was visited and samples of loose rocks were collected for assay.

The geochemical results were uniformly low except for BCRK 019 which consistently showed elevated values in most elements. This sample also contained relative high remobilised iron oxides which presumably had a scavenging effect.

The base metal contents were all low. The uranium results are background values for sedimentary rocks however the sample BCRK 019 returned 14ppm uranium which is above background. The sandstones were probably feldspathic originally, and are now typically very bleached and porous due to weathering (alteration?). This could lead to leaching and re-deposition at lower levels. The fact that BCRK 019 is elevated in uranium suggests that remobilisation has occurred.

5.3 GEOLOGICAL AND GEOPHYSICAL DATA REVIEW

Multi-client airborne magnetic data was acquired and analysed. This data was used in conjunction with a full review of Open File Exploration Research to assist in generating an appropriate exploration strategy. In particular a synthesis of the open file geochemistry with the geophysical data has occurred in order to best delineate targets.

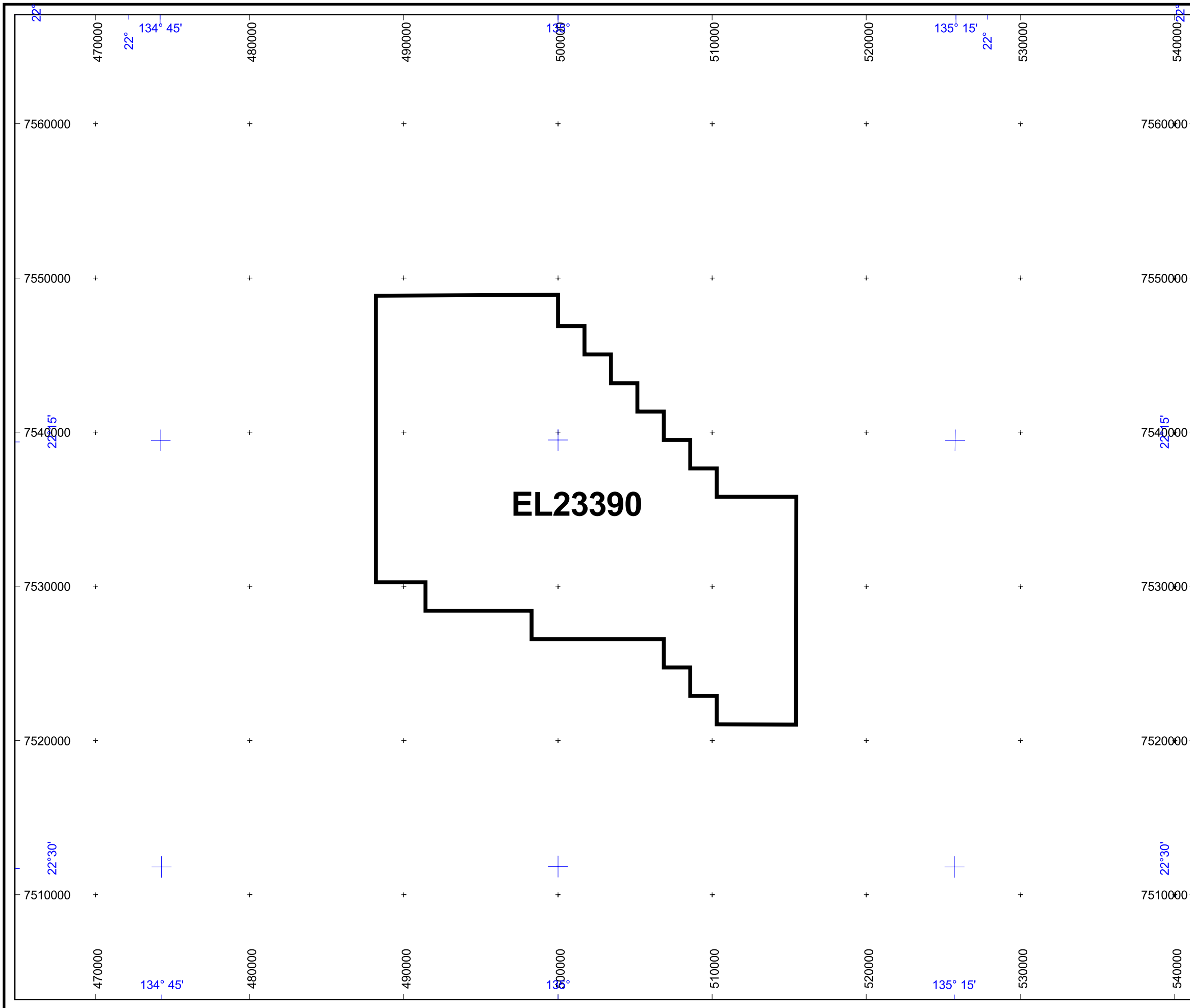
5.4 CONCLUSIONS

Exploration in this tenement is being developed as part of the larger Barrow Creeek project. The review of previous work, Open File data and regional geology and geophysics will be used to delineate potential targets. It is our aim to follow up these with a program of soil sampling and RC drilling traverses.




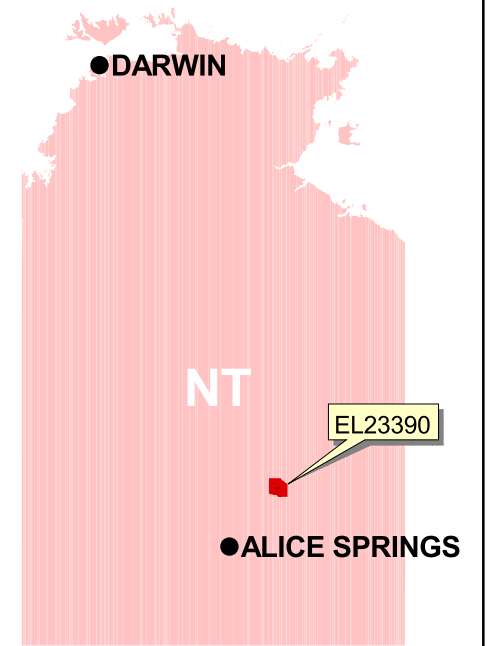
6 BIBLIOGRAPHY

Wright J.H., 2000: Kimberlite Diamond Prospectivity in Australia based on Compilations and Interpretation. ASTRO MINING N.L. Unpublished report March 2000.



LEGEND

 Tenement Boundary



Scale 1:250000



Kilometers

Astro Diamond Mines NL

BARROW CREEK

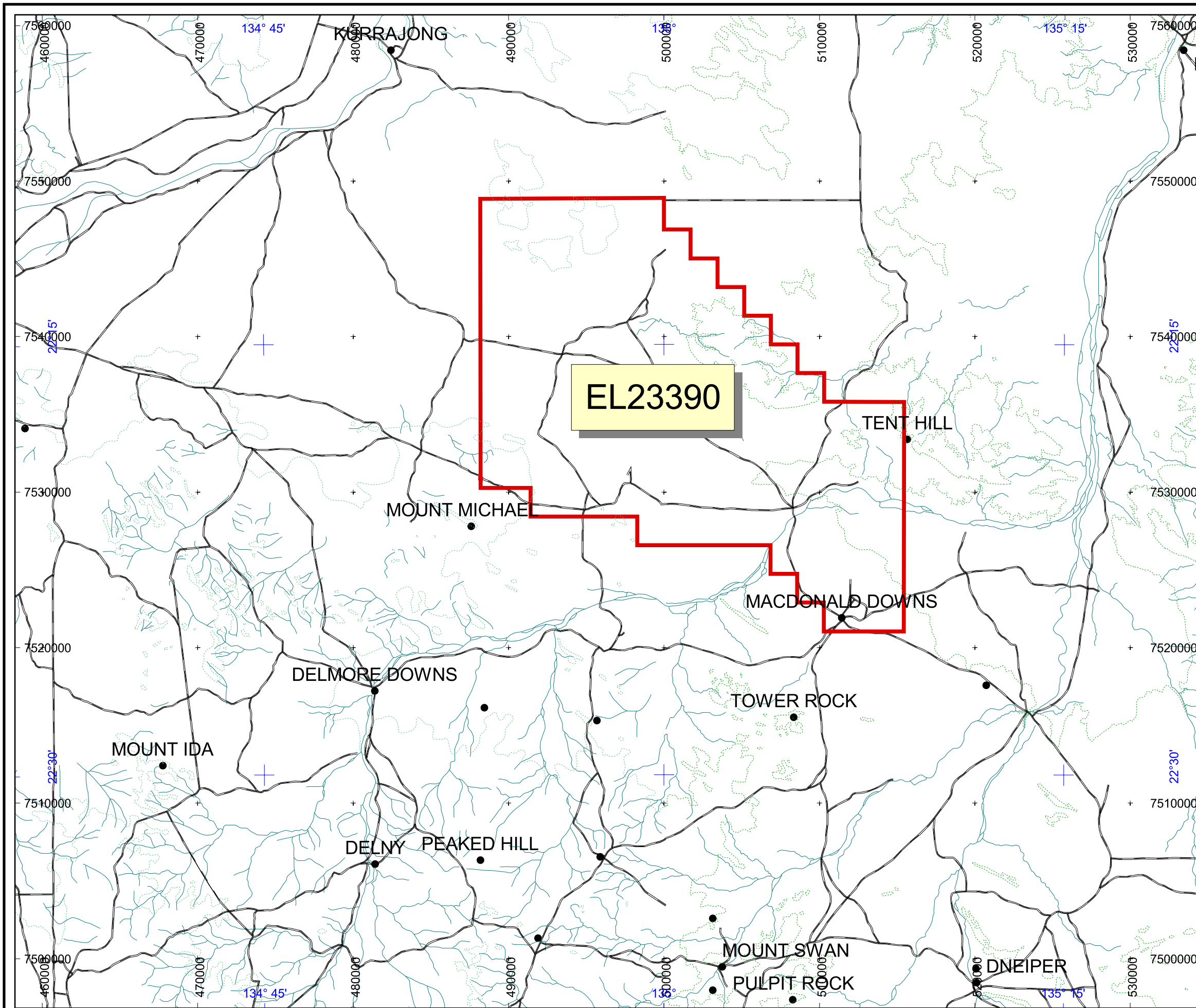
Exploration Index

EL23390


Comp. **Astro Diamond Mines NL** Date : **22/05/08**

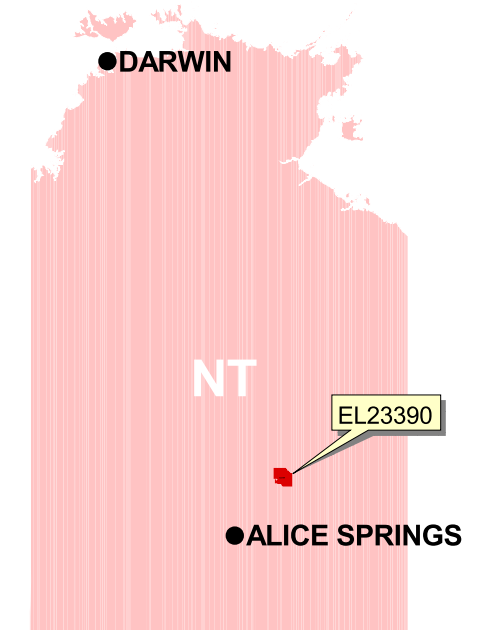
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Plot : Figure : **1**



LEGEND

-  Tenement Boundary
-  Drainage
-  Roads/Tracks
-  Topographic Contours - 50m intervals



Scale 1:250000



Kilometers

Astro Diamond Mines NL

BARROW CREEK

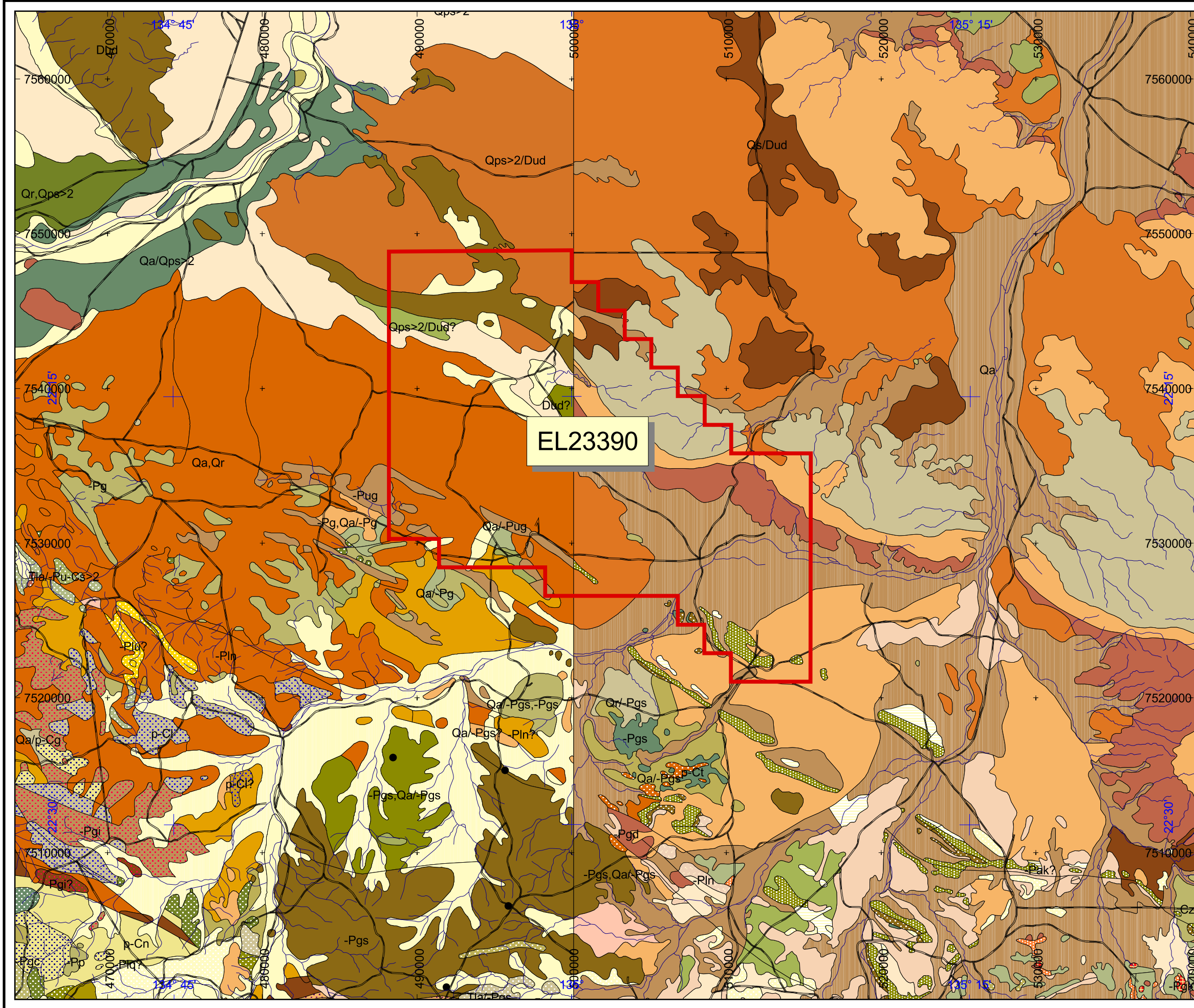
Topography

EL23390

Comp. Astro Diamond Mines NL Date : 22/05/08

APR : barrow_creek_08gm Loc. : Melbourne

Plot : Plotname Figure : 2



LEGEND

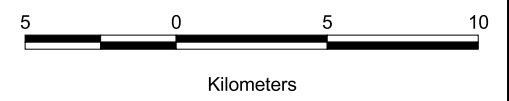
- Drainage
- Roads/Tracks
- Tenement Boundary

Geology

	-COt		Qa/Qs
	-Pag		Qa/Tla
	-Pgg		Qr
	-Pgr		Qr/-Pgs
	-Pgs		Qs
	-Pln		Qs, Qa
	Czs		Qs/-COt
	Dud>1		Qs/Dud
	Qa		Tw
	Qa, Qa/Tla		Tw, Qa/Tw
	Qa, Qs		p-Ct
	Qa/-COt		



Scale 1:250000



Astro Diamond Mines NL

BARROW CREEK

Geology

EL23390

Comp. **Astro Diamond Mines NL** Date : **22/05/08**
 APR : **barrow_creek_08gm** Loc. : **Melbourne**
 Plot : Figure : **3**