



Rio Tinto Exploration Pty. Limited

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A member of the Rio Tinto Group

First Annual Report
for the Period Ending 24 May 2003,
EL 9962 Buchanan,
Victoria Diamond Programme,
Limbunya SE52-07,
Northern Territory,
Australia

Exploration Report No. 26159

Tenement Holder:	Rio Tinto Exploration Pty Limited
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Author:	S R Bishop
Submitted:	G M Rheinberger
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SUMMARY OF ACTIVITIES

EL 9962 Buchanan is located on the Limbunya SE 52-07 1:250,000 map sheet, 400 km south west of Katherine, western Northern Territory. EL 9962 was granted to Ashton Exploration Australia Pty Ltd on 25 May 2002. Ashton and the EL application were acquired by Rio Tinto Ltd in late 2000. The EL is one of a group of 21 contiguous granted EL's and EL applications held by Rio Tinto Exploration Pty Ltd (RTE) in the region and referred to as the Victoria Diamonds Project.

Ashton Mining had previously collected gravel and loam samples from 167 sample sites exploring for diamonds within the area now covered by EL 9962. Five gravel and three loam samples in the north of the EL contained microdiamonds but no other indicator minerals. One gravel sample in the south contained chromite. The eight-microdiamond occurrences all cluster either side of a prominent NW-SE trending ridge traversing the EL. Four of these microdiamond occurrences are from the fault-controlled G.B. Creek.

EL 9962 is located over the poorly drained "Limbunya lateritised plateau" that is interpreted to have been associated with the Cretaceous Dunmarra Basin and probably also served as a palaeodrainage valley during the Cretaceous-early Tertiary. Microdiamonds and other indicator minerals have been found in existing creeks draining the plateau and on the plateau surface. The distribution of the indicator minerals on the plateau strongly suggests multiple sources, however, the sources remain enigmatic.

The lateritised plateau largely obscures the underlying Proterozoic-Cambrian geology. EL 9962 is located over the unconformity contact between the Birrindudu Basin, represented by the Limbunya Group, and the younger Victoria Basin, represented by Wattie Group. The Limbunya Fault passes through the southwest corner of the EL. Several major lineaments/faults in the region parallel the Limbunya Fault and have indicator mineral occurrences associated.

During the current reporting period RTE assessed available geomorphological, geological, geophysical and historical sampling datasets for EL 9962. No field-based exploration was carried out. RTE identified a range of potential target areas for microdiamond occurrences within the EL and developed various models that might explain the source(s) of the indicator mineral occurrences. As no advanced targets were identified it was decided that EL 9962 should be divested along with neighbouring tenement of the Victoria Diamond Project. During the reporting year exploration data was packaged and presented to interested parties. At the time of writing this report the divestment was being finalised with one of these parties.

VERIFICATION LISTING

Exploration Work Type	File Name	Format
Office Studies		
Literature search		
Database compilation		
Computer modelling		
Reprocessing of data		
General research		
Report preparation	26159 Buchanan.pdf	.pdf
Other (specify)	WAp45667 (Tenement Location Plan)	.pdf
Airborne Exploration Surveys		
Aeromagnetics		
Radiometrics		
Electromagnetics		
Gravity		
Digital terrain modelling		
Other (specify)		
Remote Sensing		
Aerial photography		
LANDSAT		
SPOT		
MSS		
Radar		
Other (specify)		
Ground Exploration Surveys		
Geological Mapping		
Regional		
Reconnaissance		
Prospect		
Underground		
Costean		
Ground Geophysics		
Radiometrics		
Magnetics		
Gravity		
Digital terrain modelling		
Electromagnetics		
SP/AP/EP		
IP		
AMT		
Resistivity		
Complex resistivity		
Seismic reflection		
Seismic refraction		
Well logging		
Geophysical interpretation		
Other (specify)		
Geochemical Surveying		
Drill sample		
Stream sediment		
Soil		
Rock chip		
Regolith		
Water		
Biogeochemistry		
Isotope		
Whole rock		
Mineral analysis		
Other (specify)		
Drilling		
Aircore		
Auger		
Diamond		
Reverse circulation		
Rotary air blast		
Rotary percussion		
Tungsten carbide bit (coring)		
Groundwater drilling		
All drilling		
File Verification Listing (this table)	26159 Buchanan V.pdf	.pdf