

APR 18

DE BEERS
A DIAMOND IS FOREVER

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To,

1. The Director Mines and Geology
Government of Andhra Pradesh,
8F B.R.K.R. Govt. offices Complex,
Secretariat Road, Hyderabad - 500 063

A.P.
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Applied for
Sample PL
Area - 5070 sq km

2. The Controller General, Attn.: Superintending Mineral Economist (Statistics)

Indian Bureau of Mines,
Indira Bhawan, Civil Lines
NAGPUR - 440 001

3. The Controller of Mines (South)

Indian Bureau of Mines,
29 Industrial Suburb
II nd stage, Tumkur Road
Yeshwantpuram
Bangalore- 560022

4. The Regional Controller of Mines

Indian Bureau of Mines,
Kendriya Sadan
Ist Floor, Sultan Bazar
Koti, Hyderabad

**Sub: CLOSING REPORT OF RECONNAISSANCE OPERATIONS CARRIED OUT
DURING MARCH 23 2001 TO MARCH 22 2004**

(Under Rule 7 (1) (vii) of MCR, 1960)

Ref: **Reconnaissance permits for an area of 538 sq km in Kurnool district of Andhra Pradesh.**

G.O. Ms. No. 17&127

Dear Sir,

Please find enclosed herewith the Closing Report of Reconnaissance Operations during the period 23/3/2001 to 22/3/2004 over the above Reconnaissance Permits required under Rule 7(1) (VII) of the Mineral Concession Rules, 1960. We are also enclosing form BB, with this report as per the Rule 3E of MCDR 1988.

SXA (M)
STA (P)

As you are aware that prospecting agencies are working in a competitive environment, we request that the contents of the report be kept **confidential under Rule 7(1) (viii), MCR, 1960.**

18/4/04

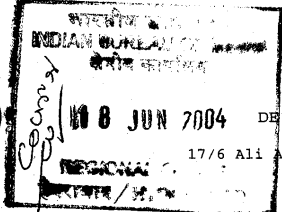
Yours faithfully,

Signature :

Place: Bangalore
Date: 24 April 2004

Name in full: M. D. Lynn
Designation : Regional Exploration Manager

17.11.04



Signature of M. D. Lynn



DE BEERS INDIA PROSPECTING PRIVATE LIMITED

17/6 Ali Askar Cross Road, Bangalore 560 052, Karnataka, India

17/11/04

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21124
"Ecological Mapping Co"

**Closing Report for Reconnaissance Permit
G. O. Ms. No. 17 and 127, Andhra Pradesh**

Report for the period
23/03/01 to 22/03/04

1.Reconnaissance Permit (RP) Status

The RP was originally 538 km² in extent and was executed at Kurnool on 23rd March 2001. It was reduced by 50% on 22nd March 2003 and the balance of the area (269 km²) was relinquished on 23rd March 2004. As per the conditions of RP, the tenure of the permit expired on the 23rd March of 2004 (Map 1).

As per Government Of India Rules and Regulation MCR 1960 Rule 7(1) (i) (b), A single prospecting license of 50.70 Sq.Km was applied (Map 2), on 23rd March 2004

2.Geology & Geomorphology

The RP area is geologically simple (Map 3). But geomorphologically complex (Map 4). The area lies on the east Dharwar Craton and is underlain by Archaean basement of the Peninsular Gneiss Complex. Structural lineaments are evident from satellite (Thematic Mapper) imagery that trend in a NW-SE direction. Some of these lineaments are clearly faults with a relatively recent active vertical displacement, which has created hills in the centre of the RP.

The RP lies in the Tungabhadra River basin, and drainage is to the northwest and east. A watershed within the Tungabhadra basin bisects the area along a NW-SE direction. The watershed appears to be migrating westwards and eroding a vertisol (black cotton soil) cover that extends across the area west of the watershed. A small area of vertisols is also preserved east of the watershed. The vertisols are thought to be the weathered remnants of Deccan basalts, which may have previously extended into the major river valleys in these areas. Because they are clay-rich and poorly drained, these types of soils provide difficult heavy mineral sampling environments.

3. Activity during the reporting period (23/03/2001 to 22/03/2004)

Based on the initial geological analysis of the terrain it was decided that regional stream sampling would be the most appropriate exploration technique to screen the reconnaissance permit area for diamondiferous kimberlites. Reconnaissance stream samples were collected from suitable trap sites. In addition, as Airborne Multispectral scanner survey (AMS) was flown over the RP area and the anomalies identified were followed up. Helicop-



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ter-borne geophysical magnetic and Frequency Domain EM survey has been carried out over of the RP and ground follow up surveys were also carried out to locate drill targets.

3.1 Reconnaissance Sampling

A total of 138 reconnaissance samples were collected in the RP area. Stream samples comprise 150 litres of unscreened material, collected from natural heavy mineral trapsites and field screened to -2.0mm.

Loam samples comprise 75 litres of material collected from surface in interfluves. Sample localities collected and information are shown in Map 5 and Table 1.

The samples were processed at De Beers heavy mineral treatment plant in Bangalore, and the concentrates were consigned to De Beers laboratory facilities in Australia for further processing and sorting. Kimberlitic indicator minerals recovered (garnet, spinel, clinopyroxene and ilmenite) were microprobed at the University of Melbourne.

3.2 Reconnaissance Sampling Results

Results were received for all reconnaissance samples in the RP (Map 7 and Table 2), and 46 samples reported positive with respect to kimberlitic indicator minerals. Totals of 560 spinels, 13 garnets, 20 ilmenites and a single diamond (Table 5) were reported. No clinopyroxenes were recovered from the samples collected.

3.3 Follow up sampling

Follow up loam sampling was carried out to assess, spinel anomalies generated by the reconnaissance sampling. A total of 214 samples were collected. Loam samples comprise 30 litres of material collected from surface in interfluves.

Sample localities and information are shown in Map 6, and Table 3.

3.3 Follow up sampling results

Results were received for samples (Map 8 and Table 4), and 45 samples reported positive with respect to kimberlitic indicator minerals. A total of 106 spinels were reported. No clinopyroxenes garnets or ilmenites were recovered from the samples collected.

3.5 Mineral Chemistry

Mineral Chemistry data from the reconnaissance and follow up samples indicator minerals is shown in Figures 1 – 8. Chemistries of the garnets and spinels recovered are consistent with derivation from kimberlite sources.



3.6 Airborne Multispectral Scanner (AMS) Survey

An airborne survey utilising De Beers proprietary hyperspectral scanner technology was completed during April 2002. The system works by measuring reflectance of narrow wavelength bands of sunlight reflected from the Earth's surface. Different minerals (as well as other materials) absorb different wavelengths of light to varying degrees. The AMS system is sensitive enough to actually distinguish some specific types of minerals by the absorption of certain wavelengths of light detected. In the search for kimberlites, the system is configured to look for the presence of magnesium-rich clay minerals, derived from the weathering of ultramafic rocks.

The AMS equipment was fitted into a P68C (registration VT-TAH) aircraft chartered from Taneja Aerospace and Aviation Limited, 1010, 10th Floor, Prestige Meridian - 1, 29 M.G Road, Bangalore 560 001. The surveying was conducted from an altitude of 9,500 ft (2,896 m) along flight lines 2 km apart (Map 9).

A total of 32 anomalies were selected as areas comprising Mg-rich clays with the potential to be kimberlites (Map 11). Follow up of the survey involved field visits to anomalies and identification of the causative lithological units (Table 6). Small samples were collected for PIMA (Portable Infra-Red Mineral Analyser) analysis to confirm that the lithology identified on the ground corresponded to the anomalous Mg-rich absorption feature identified by the aerial survey. PIMA analysis was carried out in Bangalore. No kimberlites were discovered from this survey.

A false colour composite image of the RP is shown in Map 10.

Detail summaries of AMS anomalies followed up are attached as Appendix 1.

3.7 Airborne Geophysical Survey

Part of the RP area was covered with a helicopter borne magnetic and Frequency Domain EM survey (Map 12). The results have been processed and interpreted. Based on the response, anomalies were identified (Map 13, & 14) and they were followed up with ground Geophysical surveys.

3.8 Ground Geophysical survey

3.8.1 Ground Magnetic survey

29 magnetic anomalies were followed up with ground magnetic surveys using Geometrics G856 Proton precision magnetometer (Table 7 and Maps 14) with line spacing 100m and station spacing 12.5m. A total of 164.8 line kilometers of ground magnetics were done.



Detail sheets of GM anomalies followed up are attached as Appendix 2.

3.9 Drilling

22 short bore holes were drilled to test airborne and ground geophysical anomalies (Map 15, Table 8). A total of 1001 meters were drilled with 22 drill holes. No kimberlite was encountered in the drilling.

Detail borehole log sheets are attached as Appendix 3.

4. Personnel

The following personal are employed by DeBeers India Prospecting Pvt.Ltd.

| Name | Designation | Education |
|----------------------|------------------------------|-----------------------------|
| K.V.Suryanarayan Rao | Project Manager | M.Sc. Tech-Applied Geology |
| Basudeb Datta | Staff Geologist | M.Sc.-Applied Geology |
| K.V.Praveen Kumar | Staff Geologist | M.Tech-Remote Sensing |
| Gargi Mishra | Geologist | M.Sc. Tech-Applied Geology |
| Suyash Kumar Jha | Geologist(in contract) | M.Sc.Geology |
| Biswajit Patel | Geologist(in contract) | M.Sc.Geology |
| Anand Kishor | Geologist(in contract) | M.Sc.Geology |
| Anand Kumar | Geophysist(in contract) | M.Sc. Tech-Geophysics |
| Rekha K.R. | Kimberlitic Mineral Analyst | M.Sc Geology |
| Rakshita Richard | Kimberlitic Mineral Analyst | M.Sc. Environmental Science |
| Shobha N. | Kimberlitic Mineral Analyst | M.Sc. Geology |
| Sanjay Deogiri | ICT Manager | B.Sc. Electronics,MCSE |
| N.Gangadhar Gowda | Account Assistant | B.Com. |
| Rina David | Office Administrator | MBA |
| R.Shrinivaslu | Field Driver | X Std. |
| J.Subramani | Field Driver | X Std. |
| Nagraj | Field Driver | XII Std. |
| D.C.Shekar | Field Driver (in contract) | XII Std. |
| Raghu M. | Treatment Plant Operator | X Std. |
| Gajanana Naik | Treatment Plant Operator | XII Std. |

Labour

Labourers were employed on a daily basis from local towns and villages to help with the field work.



5. Training

De Beers maintains high operating standards including safety and environmental awareness. To this end, training is an integral part of career development with the organisation. The following is a short summary of training completed to date.

All staff including geologists and field drivers received first aid and safety training, including fire fighting. All staff also receives ongoing education in HIV/AIDS awareness and other wellness issues.

Geologists received training in field navigation, sample site selection, sample collection, labeling and recording of sample data. They have also received training in undertaking of ground magnetic surveys. Quality control and further on the job training is ongoing.

Geologists received training in basic kimberlite geology and field identification during the period 11th-12th June 2001.

Geologists received training on Arcview GIS software during the period 25th to 27th July 2001.

Geologists received further training on Arcview GIS software during the period 3rd to 4th December 2001.

Mr K.V. Suryanara Rao and Mr Bassudeb Datta were sent to South Africa for a two-week period in June 2003 to visit De Beers mines and exploration facilities.

All skilled staff attended a management training programme run by Deloitte's Haskins and Sells in Bangalore.

All geologists attended a Geosoft training programme in August 2003.

All Geologists have attended training in Geosoft for the geophysical data interpretation in August 2003.

All geologists attended a Microsoft access training programme in January 2004

6. Expenditure

Total expenditure of Rs 8,124, 037.83 has been incurred for the Reconnaissance Permit to date. The expenditure was incurred as follows:

Capital expenditure: Rs 1,593, 051.06

Revenue expenditure: Rs 6,530, 9861.77



7. References

Ramam, P.K. and Murty, V.N. (1997). Geology of Andhra Pradesh. Geological Society of India, Bangalore.



M.D. Lynn
Regional Exploration Manager
De Beers India Prospecting Private Ltd

