

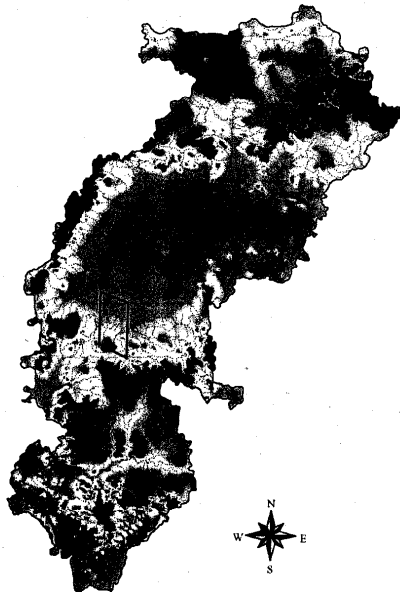
CHG-4

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A DIAMOND IS FOREVER

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**Relinquishment Report on Reconnaissance Permit
F-21/2002/M, Chhattisgarh**

**Report for the period
08/05/03 to 07/05/05**



In terms of the relevant legislation, the information reported in this document is to be kept strictly confidential by the Chhattisgarh State Government for a period of two years from the date of expiry of the license.



DE BEERS INDIA PRIVATE LIMITED

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

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1. Reconnaissance Permit (RP) Status

The initial RP of 2000 sq km was executed at Raipur on 8th May, 2003. As per rule 7(i) (a) of MCR 1960, 50% of the initial area was relinquished on 7th May 2005 to retain 937 sq km. The ground retained is shown in Map 1. This report summarizes the exploration work carried out in the RP area so far (as of 7th May'2005).

2. Geology of the license area

The lithological units exposed in the Reconnaissance Permit (RP) area are granite and granite gneisses, metavolcanics and Upper to Middle Proterozoic Chhattisgarh Supergroup sediments (Map 2). The southern part of the RP area consists of granite, gneisses, and migmatites, the central and northern part of the RP area is occupied with the Chandrapura and Raipur group rocks of Chhattisgarh Supergroup.

The granite in the license area is intruded by basic dykes trending NW-SE. Most of the granitic country is covered under thick residual soil.

The granites and gneisses are overlain by sandstones and flaggy limestones and shales of Chhattisgarh Supergroup sediments with an unconformity represented by a thin impersistent conglomerate. The conglomerate is dominant of angular to sub angular vein quartz with a ferruginous matrix. Although it is correlated with the Banganapalle conglomerate of Kurnool Supergroup, the impersistent conglomerate here is not known for diamonds and there is no literature available about any work carried out on these conglomerates.

Most of the RP area irrespective of the underlying lithological unit is covered with clays containing scattered chert pebbles. These flat and clay rich areas are covered with forests and paddy fields.

The Chhattisgarh Supergroup sediments are almost horizontal. However the local disturbance is noticed at a few locations and may be due to minor faults. No intrusive rocks into the sediments could be seen in the RP area while carrying out sampling in non-forest areas.



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3. Geomorphology of the area

The area consists of three types of terrain reflecting the rock types (Map 3). The sample density varies depending upon the geomorphology of the area.

- 1) Terrain underlain by Chhattisgarh sediments in the northern part of the area is poorly drained with gentle slopes. Sample density was increased to one in every 3 sq km to cover the area more effectively for kimberlitic indicator minerals. Poor recovery of indicator minerals is consistent with the quality of the trap sites in this area.
- 2) Terrain underlain by metavolcanics in the southern part of the area is well drained with moderate to gentle slopes. These samples are rich in heavy mineral indicators and are consistent with the quality of trap sites reported.
- 3) The granitic terrain in the southern part of the area is covered with thick residual soil and is poorly drained. Loam samples were collected at 1.5 km grid in flat terrain to cover the area more effectively for kimberlitic indicator minerals.

4. Activity during the period 08/05/2003 to 07/05/2005

4.1 Reconnaissance Sampling

Reconnaissance stream and loam sampling was completed with a total of 375 stream and 262 soil samples being collected with an average sample density of 1 sample per 3 km². All the samples have been processed, analysed and results received.

Stream samples comprise 75 litres of material screened through 10 mm mesh from a natural heavy mineral trap sites. This – 10 mm fraction material is further screened to 2 mm. Loam sample comprise 30 litres of – 10mm material and for further processing all the samples were transported to the De Beers India Treatment Plant in Peenya, Bangalore.

Sample locations are shown on the attached map (Map 4) and sample details are recorded in Table 1.

4.1.1 Reconnaissance Sampling Results

Results were received for all reconnaissance samples in the RP (Map 5 and Table 2), and 196 samples reported positive with respect to kimberlitic indicator minerals. Totals of 2648 spinels, 4 garnets, and 3 ilmenites were reported. No clinopyroxenes were recovered.

4.2 Follow up Sampling

Based on the results of reconnaissance sampling the follow up sampling was done in the anomalous areas to assess the anomalies generated by the reconnaissance sampling.



A total of 32 Stream and 14 loam samples collected in the first phase follow up stage. Stream samples comprise 75 litres of unscreened material, collected from natural heavy mineral trapsites and field screened to -2.0mm whereas loam samples comprise 30 litres of unscreened material, collected from deflation surface. These samples have been processed, analyzed and results received.

A total of 12 stream samples collected in the second phase follow up stage, samples comprise 75 litres of unscreened material, collected from natural heavy mineral trapsites and field screened to -2.0 mm.

Sample localities and information are shown in Map 7 and recorded in Table 5 and Table 7.

4.2.1 Follow Up Sampling Results

Results for all the follow up 1 sample in the RP were received (Map 8 and Table 6) and 31 samples reported positive with respect to kimberlitic indicator minerals. Only spinel grains were reported in the follow up samples. No other indicator minerals were recovered.

4.3 Mineral Chemistry

Mineral Chemistry data from the reconnaissance indicator minerals is shown in Figures 1 – 16. Spinel is the dominant mineral amongst the kimberlitic indicators. Only a few garnet grains recovered from the central part of the area. Garnet mineral chemistry is not that exciting, though it may indicate possible kimberlite sources. Ilmenite mineral chemistry is of low interest rating. Spinel chemistries indicate derivation of large number of spinel from unrelated sources with relative minor population from Kimberlite.

Unrelated spinels may be derived from conglomerate of Chandrapura clastic sequences.

4.4 Airborne Multispectral Scanner (AMS) Survey

An airborne survey utilising De Beers's proprietary hyperspectral scanner technology was conducted over the RP in April 2004. 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 diamond exploration, the system is configured to look for the presence of magnesium-rich clay minerals, derived from the weathering of Kimberlites and other ultramafic rocks.

The AMS equipment was fitted onto 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.

A false colour composite image of RP is shown in Map 9.



A total of 70 anomalies were selected as areas comprising Mg-rich clays with the potential to be kimberlites in this RP (Map 10). Follow up of the survey involved field re-visits to unresolved anomalies to recheck the causative lithological units (Table 8). Pits (~2m) were made in few occasions over the anomaly area to confirm the causative body beneath the causative surface soil. Previously collected samples from the anomaly area were analyzed in PIMA (Portable Infra-Red Mineral Analyzer) 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 field camp itself.

68 anomalies were resolved with confirmed causative bodies, 1 was abandoned and remaining 1 is still unresolved.

No Kimberlites were discovered from this survey so far from this RP area.

All the plots of AMS anomalies followed up are attached as Appendix 1.

4.2 Airborne Geophysical Survey

Based on airborne magnetic and EM survey over the RP area, 88 anomalies were identified (Map 5) for Ground Geophysical follow up. Airborne EM survey, apparent conductivity image is shown in map 12 and airborne magnetic survey, TMI image is shown in map 13. A total of 9 anomalies were identified from ground magnetic survey. A summary of Geophysical anomaly follow up status is given in Table 9 and 10. The plots of ground magnetic and ground electromagnetic data are attached as Appendix 2 and 3 respectively.

4.3 Drilling

A total of 30 boreholes were drilled on geophysical anomalies in the RP area during the reporting period using Percussion and Core drilling method (Map 6). A summary of borehole details is given in Table 4. The borehole log sheets of the anomalies drilled are attached as Appendix 4.

5. Personnel

| Name | Designation | Education |
|-------------------|-----------------------------|-------------------------|
| Basudeb Datta | Senior Geologist | M.Sc. - Applied Geology |
| K.V.Praveen Kumar | Staff Geologist | M.Tech-Remote Sensing |
| Anuradha Sarangi | Geologist | M.Sc Geology |
| Prashant Laharia | Geologist (in contract) | M.Sc Tech Geology |
| Sukhbinder Sharma | Geologist (in contract) | M.Sc Geology |
| Manish Kumar | Geophysicist | M.Sc. Tech-Geophysics |
| Rekha K.R. | Kimberlitic Mineral Analyst | M.Sc Geology |
| Shobha N. | Kimberlitic Mineral Analyst | M.Sc. Geology |
| Sanjay Deogiri | ICT Manager | B.Sc. Electronics, MCSE |



| Name | Designation | Education |
|-----------------|----------------------------|-----------|
| Rina David | SHE Officer | MBA |
| Oblesh | Field Driver | X Std. |
| J.Subramani | Field Driver | X Std. |
| Padbanabham | Field Driver | XII Std. |
| Raghu M. | Drill Operator | X Std. |
| Siddaraju | Drill Operator | XII Std. |
| Gajanana Naik | Treatment Plant Operator | XII Std. |
| K.Narayanan | Security Officer | Graduate |
| Ranchor Bhat | Mag-operator (in contract) | XII Std. |
| Vijay Singh | Mag-operator (in contract) | XII Std. |
| Jagdish Lal Jat | Mag-operator (in contract) | XII Std. |

Labour

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

6.Expenditure

Total expenditure of Rs 76,896,981 incurred for the Reconnaissance Permit to date. The expenditure was incurred as follows:

Capital expenditure: Rs 7,291,893

Revenue Expenditure: Rs 69,605,088

7.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 organization. The following is a short summary of trainings 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. All geologists received training on First Aid conducted by International SOS.

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

Geologists have also received training in basic kimberlite geology and field identification. Field orientation training to all the new geologists and geophysicists was scheduled in the first week of Feb '2005 on the southern India known kimberlite occurrences.





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Geologists and geophysicists received training on ArcGIS software during the reporting period. Training on upgraded ArcGIS training for all the geologists and geophysicists is scheduled in the second week of Feb '2005.

A program on Managerial skills is scheduled for end of March, 2005

Geologists attended a Geosoft training programme in August 2004.



Mike D Lynn
Regional Exploration Manager
De Beers India Pvt.Ltd.
(Formerly known as De Beers India Prospecting Pvt.Ltd.)



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