

Rio Tinto Exploration India Private Limited
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**Final relinquishment Report on the Gadchiroli
North Reconnaissance Permit, Maharashtra,
India**

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1. Summary

This is the final relinquishment report on the exploration for diamond and other mineral commodities carried out on the **Gadchiroli North (N)** Reconnaissance Permit (RP), executed on 01/01/2009, for the period of 01/01/2009 to 01/01/2012, in compliance with section 16 of the Mineral Concession Rules, 1961.

This report details all exploration activities completed and compiles all geological data collected and interpreted by the company within the RP area during the tenure of the permit.

A total of 3 gravel samples were collected from the streams draining the permit area, they were processed and result received. Desktop analysis of geological maps, satellite imageries and older exploration data was carried out during the period. Based on the desk top studies, the results received it is interpreted that the Gadchiroli North Project has low potential for diamondiferous kimberlites and hence RP area is proposed for relinquishment

2. Introduction

This progress report pertains to all exploration activities for diamond and other mineral commodities carried out by Rio Tinto Exploration India Limited in the **Gadchiroli North** during the period from 01/01/2011 to 01/01/2012 (Plan No NDbg0960).

RP Name	RP Number	Initial RP Area (km ²)	Date Granted	Date Executed	Recommended Area of Relinquishment (km ²)
Gadchiroli North	RP No. PLS-2701/CR168/IND-9	2187	October 2008	January 2009	1030

Table1: Summary of Reconnaissance Permit

Besides the desktop analysis of geological maps, satellite imageries and older exploration data three samples were collected from the permit area.

Gadchiroli North RP in Maharashtra is located on Survey of India's 1:250,000 scale toposheet number 64D, and covers an area of 1030 km² in the districts of Gadchiroli, Chandrapur and Gondia. About 70% area of the RP is in Gadchiroli district which is categorised as a tribal and undeveloped district and most of the land is covered with forest and hills. There is no large scale industry in the district except the paper mill at Ashti, and the paper pulp factory at Desaiganj. There are many rice mills in the district. The Tussar silk worm centre is in Armori Taluka.

The total population of district Gadchiroli is around 9, 70,294 (Census of India 2001, Data) with male/female ratio of 1000/976. There are approximately 387 inhabited villages under the RP area of which 324 villages falls in Gadchiroli district. The area has a literacy rate of about 60.10%.

Nagpur is the closest airport to the tenement area (~152 km) and Chandrapur is the nearest railway station. The RP area is also well connected by road system. State Highway is the major roads access to the tenement. Chandrapur, Nagpur, Bhandara and Gondia are the major railhead proximate to the tenement having 24hrs railway connectivity. Nagpur one of the biggest railway junction, while Chandrapur Station is on the main route of Bangalore, Chennai, and New Delhi route of Central South Railway.

About 60% of the RP area is covered by reserved forest, most of that appears as dense mixed forest. Most of the forest is mixed flora mainly characterized by bamboo, firewood,

beedi leaves and timber. This district is famous for bamboo and Tendu leaves. The main profession of the people is farming for over 80% of the population; major crops are paddy, wheat, gram, soybean, cotton, millets. Bigger market places are around Mahagaon, Kurkhead, Karohli, and Malawara. Less than 35% of the land is irrigated and has two crops in a year. Please repeat all information provided in 4th biannual

3. **Geomorphology**

The prospect area shows undulating topography with elevation ranging from 200m to 450m. The western part is dominated by sedimentary plateau regions with the general slope towards east. The eastern margin of the area is flanked by undulating hills of granite-granophyres with regional slope towards west. The central part of the region is traversed by Wainganga River which acts as the major drainage control. In general, the topography within the area varies from low, rugged hills fringed by colluvium, grading from scree to coalesced alluvial fans, and open gently sloping sheet wash plains, to broadly undulating areas of gently rolling peneplains. Local drainages have lithological and structural controls. Intense agricultural activities throughout have frequently diverted most first order and often second order streams into paddy fields such that these streams are no longer traceable on the ground. Soil type in the RP area is mainly lateritic to black soil with patches of sandy to clayey types or proximal alluvial are also a common feature.

4. **Regional Geology**

Rocks of the Archaean age include granites, gneisses, quartzites, brecciated quartzites and banded magnetite rocks with intrusives. Exposures of these gneissic rocks are sporadic due to their susceptibility to quick weathering. Phyllites occur in the extreme north of the area. They are fine grained, compact and generally non-fissile. In the east, Dongargarh granite extends to the adjoining state Chhattisgarh, while at the north, rhyolite is seen. NW-SE trending dolerites are present in Gadchiroli district

The Proterozoic platformal rocks of this area comprise sandstones, shales, limestones and conglomerates. The most persistent and well defined platformal lithologies are the sandstones, which show a wide range in colour, compaction and grain size. On account of their relative resistance to weathering they stand out as conspicuous hills and ridges. The shales are generally fine grained, thin bedded, light grey to light reddish in colour with development of a set of close vertical joints which make them fragmental. Limestones of the area are rich in lime and some in magnesia. The dip of the rocks varies from 15° to almost vertical.

Formations belonging to the Upper Carboniferous Gondwana Super Group are mapped by the Geological Survey of India as the Chikiala Beds, Kota Maleri, Kamthis, Barakars and Talchirs. The predominant rocks are the white felspathic sandstone, shales and clays along with coal seams.

Pleistocene- Recent laterite is found in the area at many places capping over the Deccan Traps and the gneisses at places.

Quaternary Alluvium and Soil is seen at the North-Eastern part of the RP. The surroundings of the Waingangā River which flows along North-South in the RP are covered by recent alluvium.

5. **Prospect Geology**

The RP area is composed of constituents of the Bastar Craton, the Gondwanas and the Proterozoic platformal sediments. The major part of the southern and northern part of the RP area exposes Archean granite gneiss, granites and granophyres. However, a small area in the western margin of the RP is composed of Gondwana lithologies. Coal seams are mainly associated with Talchir and Barakar Formations. Vindhyan platformal sediments are present in the western boundary and in the central area of the property. In the NE, quaternary alluvium is present along Wainganga River. The prospect is dominated by Dongargarh granite while in the north meta-basic rocks are seen. See Plan No 2-NDbg0881 Gadchiroli North Geology Map for Details.

6. Regional Reconnaissance of Indicator Mineral (Gravel) Sampling Program

There were 3 gravel were collected, and the processing and interpretation of the samples were accomplished. Please see the plan NDbg0880 and appendix 1 for the reference.

7. 80# Stream Sediment Geochemistry

There were 3 samples were collected for sediment geochemistry. Please see the appendix 2 for the reference.

8. Results of the Exploration

The results of three gravel samples collected show no significant affinity to kimberlite clan of rocks. Please glance through the Appendix-3 for the mineral chemistry of the grains recovered from the samples

9. Health and Safety

Rio Tinto Group policies on Health and Safety are designed to minimise the risk of injury or occupation illnesses. A minimum management requirement at all of the company-managed operations is to ensure full compliance with the Rio Tinto Standards. The goal is for zero work related injuries or occupation illnesses. Minimum prerequisites require that all work activities be based on risk assessments ensuring that effective controls and safe work procedures exist for all hazardous activities.

Further the standards require a system for ensuring that employees are trained, equipped and where applicable, certified to carry out their work according to the applicable safe work procedures, and that their competence has been tested. Personal protective equipment of international standards was issued to each of the employees relevant to their conditions of working. All drivers employed were specially trained in 4WD driving and safety by international driving consultants. All field staffs were also trained in advanced first aid by international trainers. Rio Tinto organised periodic refresher courses of such training programme to maintain the standards

10. Environment

Rio Tinto's Environmental Policy aims to prevent or otherwise minimise, mitigate and rehabilitate any effects that the group's operations have on the environment. The internal environmental systems adapted by Rio Tinto has been accredited with ISO 14001 certification. Although exploration activities in reconnaissance permits are essentially non-invasive to the environment, the same rigor and level of compliance to the standards, systems and procedures is followed.

An environment management plan was put in place for field activities. This plan was constantly updated as the program developed. The plan evaluated potential environmental impacts associated with the activities and provided procedures to prevent or minimize impacts. In case where an impact was unavoidable or accidental, appropriate rehabilitation procedures were in place. Relevant exploration personnel including those of contractors were inducted and trained in these procedures. Control systems included incident reporting and annual environmental reporting to first-line management and corporate audits.

The current period of work carried out was essentially non-invasive to the environment. However, a strict monitoring of any requirement for site rehabilitation during sampling was

completed, and wherever required the site rehabilitation was done immediately after sampling.

11. **Community Relations**

Rio Tinto has a strong commitment to maintaining good relations with the community amongst where it works and to respect the laws, customs and traditions of the society. Local people were employed in the exploration team to work as field assistants, community team, drivers and other staff positions. The exploration geologists have visited many of the villages prior to sampling to explain about the work being carried out by RTX to the local community. Simultaneously, local field assistants were coached with regard to exploration to effectively communicate our activities to the local people in the field.