

No Minuralisation bounted



Anglo American Exploration (India) Pvt. Ltd. Tej Kunj, Ambavgarh UDAIPUR, Rajasthan PIN-313 004

2nd August 2004

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

- 2. The Controller of Mines (North) Indian Bureau of Mines, Type-IV, Block - 9; IBM Colony Adarsh Nagar, Balupura Road AJMER - 305 002
- 4. The Director Mines and Geology Government of Rajasthan Khaniz Bhawan, Shastri Circle **UDAIPUR - 313 001**
- 3. The Regional Controller of Mines, Indian Bureau of Mines, Makhupura Industrial Area Nasirabad Road AJMER - 305 002
- The Mining Engineer, Bhilwara Dept. of Mines and Geology Government of Rajasthan Khaniz Bhawan, Azad Nagar, Near MLV Textile Institute **BHILWARA**

Sub:

Final Report of Reconnaissance Work Done

(Under rule 3E of MCDR, 1988)

Bhilwara - Asind RP-5/2001 (460.75 sq km)

Mineral(s):

Copper, Lead, Zinc, Silver, Gold, Precious metals and Associated minerals

5.

Dear Sir,

Ref:

Please find enclosed herewith the Final Report of Reconnaissance Work Done over the above Reconnaissance Permit as required under rule 3E of MCDR, 1988).

We request you that the contents of the report are kept confidential under Rule 7(viii) of MCR, 1960.

Yours faithfully,

Signature: कार्यालय / Office of the

Place: UDAIPUR Date: 2nd August 2004 महानिबंत्रक भारतीय खान व्यूरो 7. Designation:

Kamalendra S Jhala Project Leader

Anglo American Exploration (India) Private Limited

Plaza-1,389, Masjid Moth, South Extension, PT-II, NEW DELHI -110 049 (011) 2625 8172, 2625 1711 Fax: (011) 2625 0551

pladical Manging Call



Anglo American Exploration (India) Pvt. Ltd.
Tej Kunj, Ambavgarh
UDAIPUR, Rajasthan
PIN- 313 004
2th Aug 2004

FORM-BB

(See rule 3E of MCDR, 1988)

Progress report of reconnaissance survey in respect of <u>Copper, lead, zinc, silver, gold, precious metals and associated minerals</u> [the name of the mineral(s)] for the <u>year ending July 2004</u> (<u>Abandonment of reconnaissance permit</u>).

IMPORTANT

This Form fully filled-in must reach the Concerned authorities within thirty days after expiration of one year from the date of execution of reconnaissance permit or the expiry of reconnaissance permit or abandonment of reconnaissance permit, whichever is earlier.

To,			
1.	The Controller General,		
	Indian Bureau of Mines,		
	Indira Bhawan, Civil Lines		
	NAGPUR - 440 001		
2.	The Controller of Mines (North)	3.	The Regional Controller of Mines,
	Indian Bureau of Mines,		Indian Bureau of Mines,
	Type-IV, Block – 9; IBM Colony		Makhupura Industrial Area
	Adarsh Nagar, Balupura Road		Nasirabad Road
	AJMER - 305 002		AJMER - 305 002
4.	The Director Mines and Geology	5.	The Mining Engineer, Bhilwara
	Government of Rajasthan		Dept. of Mines and Geology
	Khaniz Bhawan,		Government of Rajasthan
	Shastri Circle		Khaniz Bhawan, Azad Nagar,
	UDAIPUR - 313 001		Near MLV Textile Institute
			BHILWARA

RP No: Asind RP - 5/2001 of BHILWARA (460.75 sq km)

1.	Name of the permit holder	Anglo American Exploration (India) Pvt. Ltd.		
2.	Nature of the firm	A private limited company registered under Companies Act, 1956 Anglo American Exploration (India) Pvt. Ltd.		
3.	Address of the firm			
		214, South Ex Plaza – 1		
L	1	389, Masjid Moth, South Ext Pt II		

	<u>. 1</u>		New Delhi - 110 049		
4.	Area under permit		460.75 sq km		
5.	Location	•			
	(i)	Topo sheet No. (s)	45K/2, 45K/3, 45K/6 and 45K/7		
	(ii)	Co-ordinates of corner points	Given in Figure 1 in the attached report		
	(iii)	District (s)	Bhilwara		
	(iv)	State	Rajasthan		
6.	Date of g	rant of permit	8 th July 2002		
7.	Period of	permit	3 years, from 08.07.2002 to 07.07.2005		
8.	Reconnai	ssance survey work done	Please refer to report attached for the details.		
	along with	description of the work involved th particulars of the machines and that used would be given against each lowing items)			
	(i)	Regional Survey	Please refer to report attached for the details.		
	(ii)	Aerial / Photogeological work	None		
	(iii)	Geological mapping including area covered and scale	Please see attached report under heading: Reconnaissance survey work done - Geological		
	(iv)	Geophysical	Please see attached report under heading: Reconnaissance survey work done – Geophysical		
,	(v)	Geochemical	Please see attached report under heading: Reconnaissance survey work done — Geochemical		
	(vi)	Test drilling: Number, area of influence meterage and sampling.	No drilling work was undertaken		
•	Nature and	d structure of the ore body	No mineralisation located		
0.	Analysis of the ores or minerals		Not applicable		

7

If abandonment 5th July 2004 Date of abandonment (ii) Reasons for abandonment Exploration activities completed Signature: KAMALENDRA SINGH JHALA (Full name of the Signatory) Designation: PROJECT LEADER and Address: Anglo American Exploration (India) Pvt. Ltd. Tej Kunj, Ambavgarh UDAIPUR, Rajasthan PIN- 313 004 Date of despatch: 2th August 2004

Report by Anglo American Exploration (India) Private Limited

Progress Report of Reconnaissance Survey

(See Rule 3E of MCDR, 1988)

(Progress Report – Final report)

A. INTRODUCTION -

In July 2002, Anglo American Exploration (India) Private Limited (AAEIPL) executed Reconnaissance Permit (RP) over an area of 460.75 sq km (Asind RP) in Bhilwara district of Rajasthan. The area has been licensed for reconnaissance of Copper, Lead, Zinc, Silver, Gold, Precious metals and Associated minerals.

This report describes the reconnaissance work accomplished till end of July 2004 and is in continuation of the following report submitted by us:

- 1. First Six monthly Report submitted in April 2003.
- 2. First Yearly Report submitted in August 2003.
- 3. Second Six monthly Report submitted in September 2003.
- 4. Third Six monthly Report submitted in March 2004.

B. AREA OF RECONNAISSANCE -

The RP (see Figure 1) constitute an area of 460.75 sq km in Rajasthan, falling within Bhilwara district in the state of Rajasthan.

Location, area and date of execution of the RP are tabulated below and depicted in Figure- 1.

RP Block	Falls in District	Date of execution	Original Area (sq km)	Area Relinquished (sq km)	Present Area (sq km)
RP- 5/2001	Bhilwara	08/07/200 2	460.75	460.75	0.00

C. GEOLOGY OF THE AREA -

Regional Geology:

Regionally, the rocks of the area as considered by GSI form part of Sandmata group of rocks of Proterozoic age. The important rocks in the area are migmatites, composite gneisses, calc-gneiss, biotite gneiss, biotite – chlorite schist, dolomitic marble, amphibolite and pyroxene granulites. Sandmata complex rocks have been separated from the Mangalwar complex on the basis of higher grade of metamorphism (granulite facies) and preponderance of varied suits of igneous rocks.

During regional traverses it was noticed that the rock package of the permit area is quite similar to what is observed in Agucha area with main rock types being garnet-biotite-sillimanite quartz feldspar gneisses, granite gneisses, carbonates, amphibolites etc. Metamorphic grade of the two areas is quite comparable. Structurally the area is quite deformed and complex.

The area has been mapped by GSI in general but geological information is restricted as most of the area lies under cover with very few outcrops mainly at W & NW of the permit area. AAEIPL took few regional traverses and compiled all the available datasets to come up with interpreted geological map for the entire area, which is shown in Figure 2.

D. RECONNAISSANCE WORK DONE -

GENERAL:

The area has been covered by airborne geophysical surveys previously. Therefore, no aerial survey was planned in the RP area. Instead detailed ground magnetic survey was carried out to get better resolution data for geological interpretation.

The area has seen exploration by other companies (BHP Minerals & Hindustan Zinc Limited) but their main exploration tool was airborne geophysics. AAEIPL has taken a different approach in exploration by taking up big regional soil survey to screen the permit area for possible Zn-Pb mineralisation. This is the first time any company has carried such a big geochemical survey in the entire permit area.

1. Geology:

Regional geological traverses were taken to understand the litho package and structure of the area. Most of the area in NW part of the permit area is outcropping while major portion of the eastern and central part of the block is under thin residual cover. Where the exposures are limited the geological information was collected from well spoils for geological interpretation. Mostly granite gneiss, amphibolites and carbonates are exposed being more resistive to weathering compared to psammopelites which occur as recessive units mainly seen in well spoils.

John McIntyre (Consultant geologist for Anglo from Australia) compiled available datasets like ground magnetics, landsat, geological observation taken from field stops, previous work through literature search and came up with interpreted geological map of the tenement area at 1:100,000 scale (map shown in figure 2).

2. Geophysics:

Ground magnetic survey was conducted to use different approach in exploration compared with what other companies have done in the past.

2300 line km of ground mag was planned to cover this tenement area. This survey was done by using GSM-19 (V6.0) overhauser magnetometers which is having inbuilt GPS. Another magnetometer was used as a base magnetometer to correct the diurnal variations during the survey period. The specifications of the survey is mentioned below:

Total No. of Line km: 2300 (approx)

Line spacing

: 200m

Line Direction

: N130 deg

Station Spacing

: 0.5m (approx.)

Data interpretation highlighted 8 anomalous area for field checking. Figure 3 shows the location of 8 anomalies picked by ground magnetic survey in the block. All the anomalies were field checked and handheld Magnetic susceptility meter was used in the field to check the magnetic properties of the rocks in the anomalous areas. All 8 anomalies were explained due to magnetite seen in the well spoils or sub crops in the area. Rock samples were also taken from the anomaly areas and were analyzed for 53 elements using ICP-MS. Rock results were also not encouraging indicating no Pb Zn mineralisation associated with the magnetic anomalies.

3. Geochemistry:

Details of the geochemical activities undertaken in the area are listed below:

a. Soil Sampling:

Regional soil sampling was carried over entire RP area. Samples were collected at $1000 \times 200 m$ grid over N130E lines (Figure 4). The proposed site of sampling was reached with the help of a handheld GPS and the topsoil was scraped. Soil samples, approximately 160gms from $-250 \mu m$ fractions, were collected from a depth of 20-30cm.

Geochemical samples were analyzed for a large number of major and trace elements using ultra-trace analytical methods and ICP-MS / ICP-AES at ACME Laboratories, Vancouver (Canada).

Regional soil survey with 1km line spacing and 200mts sample spacing identified 3 anomalies in whole of the block. The highest Zn value in the survey area is 236ppm and highest Pb value is 50ppm. Two anomalies AS01 and AS02 are big, broad lying on two lines while the third anomaly AS03 is a single point Pb Zn anomaly in the NW part of the survey area. Figure 5 shows the location of three soil anomalies picked in the regional soil survey.

Field checking and mapping indicates no sign of mineralisation in any of the three soil anomalies and therefore have downgraded the potential of Pb Zn

mineralisation in the anomalies. The anomaly area has enough wells and sub crops to collect rock samples for geochemical analysis. The results of the rock samples are not encouraging to carry out any further work.

b. Regolith Mapping:

Regolith mapping was done over the entire permit area using Landsat image and field observation. Major part of the area lies within erosional and residual environment while one big river namely Kothari flows through the Southern part of the permit area affecting considerable amount of area close to the river channel making it difficult for regional soil geochemistry. The geochem signature gets masked due to transported nature of soil close to active river channel and over paleochannels and care was taken while interpreting the results of regional soils.

c. Rock Sampling:

Besides systematic soil sampling, several rock chip samples were collected from well-spoils and outcrops during the process of mapping and sampling. Samples were analyzed for 53 elements.

During the course of follow up of magnetic and soil anomalies picked by regional soil surveys number of rock samples were taken for geochemical analyses. Figure 6 shows location of rock samples taken for geochemical analysis in the entire Asind tenement.

E. Area Relinguished -

As nothing stands promising the entire tenement was relinquished on 5th July 2004.

F. PERSONS ENGAGED FOR THE WORK -

Geological mapping and geochemical sampling programmes was carried out by a number of geologists working for the company as well as consultants from abroad were used for mapping and data interpretation. Field assistants were hired locally to assist the field teams.

The company geophysicist undertook most of the ground geophysical surveys. Several field assistants, as per requirement, were hired locally to carry out the surveys.

All the exploration data has been submitted in compact discs (CD) to IBM, DMG and GSI separately.



No Minhabitation tecked.

Anglo American Exploration (India) Pvt. Ltd. Tej Kunj, Ambavgarh UDAIPUR, Rajasthan PIN-313 004

8th August 2005

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

- The Director General Geological Survey of India, 27, Jawaharlal Nehru Road KOLKATA - 700 016
- 3 The Director Mines and Geology Government of Rajasthan Khaniz Bhawan, Shastri Circle UDAIPUR - 313 001

Sub: Final Report of Reconnaissance Work Done (Under rule 7 (iii) & 7 (vii) of MCR, 1960)

Ref: Bhilwara - Agucha RP-7/2001 (453 sq km)

Copper, Lead, Zinc, Silver, Gold, Precious metals and Associated minerals

Mineral(s): Dear Sir.

Please find enclosed herewith the Final Report of Reconnaissance Work Done over the above Reconnaissance Permit as required under rule under rule 7 (iii) & 7 (vii) of MCR, 1960. All data and information acquired during the reconnaissance operations are attached.

We request you that the contents of the report are kept confidential under Rule 7(viii) of MCR, 1960.

Yours faithfully,

Signature:

Place: UDAIPUR Date: 8th August 2005 Name in full: Designation:

Kamalendra S Jhala Manager, India Projects

Enclosure 1: Reconnaissance Report

Enclosure 2: Data in Compact Disc

Anglo American Exploration (India) Private Limited Regd Office: 214, South Ex Plaza-1, 389, Masjid Moth, South Extension, PT-II, NEW DELHI -110 049 Tel: (011) 2625 8172, 2625 1711 Fax: (011) 2625 0551

Symall amamman

mitticle / Office of the troller General Indian Bureitu er Mines