

Shri Shiavji Science College, Amravati

Department of **Geology** and Geoinformatics

Report of **Geological and Geoinformatics** Field Excursion to Pachmari, M.P.

Dated: 14/02/2025 to 17/02/2025.

Department of Geology and Geoinformatics had organized Geological and Geoinformatics Field Excursion to Pachmari, M.P., for B.Sc. Geology I, II and III year and M.Sc. I, II students as a part of fulfilment of B.Sc. Geology I, II and III syllabus. 24 students from B.Sc. Geology I and III along with M.Sc. Geoinformatics I, II attended the Field Excursion and they were guided by 4 staff members Mr. S.K. Paunikar, Mr. K.P. Tiwari, Mr. G.V. Kadu, Ms.A.S.Uke.

Journey for above said field was completed using train and Gypsy. Contact Number for Gypsy was (Mr. Hemraj 9425686876)

Journey was Executed as follows

Sr.No	Date	Time	Schedule
1.	14 th Feb, 2025 (Friday)	4:00 Pm	Reporting at Amravati Railway Station
		4:45 Pm	Departure from Amravati Railway Station to Pipariya by Train No:- 12159 AMI JBP S.F Exp.
2.	15 th Feb, 2025 (Saturday)	4:00 Am	Arrival in Pipariya Railway Station
		8:00 Am	Arrival in Pachmarhi, Hotel arrangement, Getting fresh and breakfast
		10:00 Am	Geological Field at Jatashankar Caves
		11:50 Am	Geological Field at Pandav Caves
		12:45 Am	Lunch
		3:06 Pm	Geological Field at V-Shaped Valley
		3:57 Pm	Geological Field at Gupt Mahadev
		4:27 Pm	Geological Field at Bada Mahadev
		5:20 Pm	Geological Field at Rajendra Giri
		8:05 Pm	Dinner
3.	16 th Feb, 2025 (Sunday)	10:20 Am	Geological Field at Forest Museum
		11:50 Am	Geological Field at Bee Fall
		2:25 Pm	Lunch
		3:10 Pm	Geological Field at Sink Hole
		6:00 Pm	Departure From Pachmarhi to Pipariya
		8:00 pm	Dinner at Pipariya railway station
		Departure from Pipariya Railway Station to Amravati	
4.	17 th Feb, 2025 (Monday)	10:30 Am	Arrival at Amravati Railway Station
JOURNEY END			

The field details are as follows:

DAY 1

Location no.1

Spot 1 : ROCK BEDDING IN SANDSTONE

❖ **Coordinates:**

- **Latitude:-** N-20° 28' 48.00''
- **Longitude:-**E-78° 26'20.67''
- **Elevation:-** 1042 m

Mr.S.K. Paunikar explained the Rock bedding and Sandstone formation process.



Rock Bedding in SST at Pachmarhi



Mr. K.P. Tiwari standing as reference point for explaining about bedding plane

Spot 2: STALACTITES AND STALAGMITES IN CAVES (JATASHANKAR)

❖ Coordinates:

- **Latitude :-** N 22° 28'48.88"
- **Longitude:-**E 78° 26'24.46"
- **Elevation:-** 1017 m

Jata Shankar Cave is located around 8 km from the Pachmarhi town center, nestled within the dense forests of the Satpura Hills. Mr.K.P.Tiwari explained about the cave and it's famous natural stalactites and stalagmites formations. Mr.S. K. Paunikar helped M.Sc. geoinformatics students to understand and take mapping points for Geomorphology map.



Stalactite

Stalactites s

Spot 3: RIPPLE MARKS

Latitude :-N 22° 28' 36.40"

- **Longitude:-E 78°26'16.07"**
- **Elevation:-1059 m**

Ripple marks are sedimentary structures characterized by wave-like undulations that form on sandy surfaces due to the action of water or wind currents explained to students by Mr. S. K. Paunikar and Mr. G.K. Kadu and Mr. G.K. Kadu assisted M.Sc. Geoinformatics students to take GPS and Geomorphology mapping points.



Ripple Marks Observed In Pachmarhi

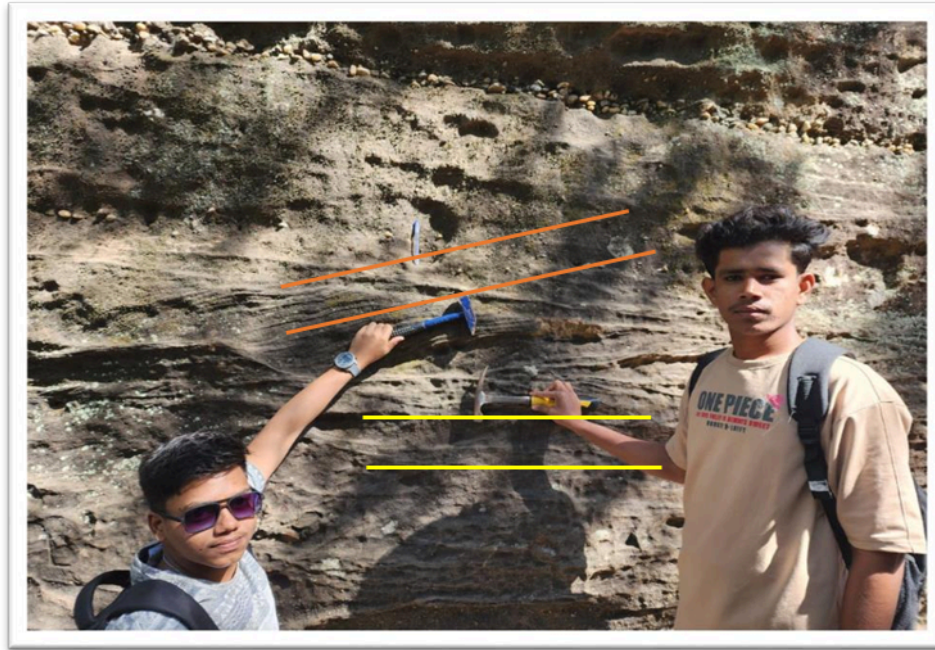
Spot 5: CROSS BEDDING IN SANDSTONE

📍 Coordinates :

- Latitude :-N 22° 29' 07.16"
- Longitude:-E 78° 26' 09.30"
- Elevation:-2733 m

Mr. K.P. Tiwari explained Cross-bedding is a distinctive sedimentary structure characterized by inclined layers (or forests) within horizontal rock strata, formed due to the movement of sand and sediments under water or wind currents. It is commonly observed in fluvial (river), aeolian (wind-driven), and shallow marine environments.

In Pachmarhi, cross-bedding is prominently found in the Pachmarhi Sandstone, a part of the Gondwana Supergroup that dates back to the Permian period (250–290 million years ago). The formation of cross-bedded sandstones in this region suggests that Pachmarhi was once influenced by ancient river systems, shifting sand dunes, and fluctuating water currents. The presence of cross-bedding not only provides clues about the direction and strength of ancient water or wind flow but also helps in understanding the climatic variations and depositional history of the region.



Cross bedding in sandstone

LOCATION NO.2

Spot 1 : LITHOLOGY OF SANDSTONE

📍 Coordinates :

- Latitude :- N 22° 27' 32.78"
- Longitude:-E 78° 25' 55.07"
- Elevation:-1075 m

Ms. A.S. Uke explained geomorphological significance of Pandav Caves in Pachmarhi, and how to do geospatial mapping and what is temporal mapping, what are various techniques used for it.

LOCATION NO.3

Spot 1: V SHAPED VALLEY OF HANDI KHOH

🚗 Coordinates :

- Latitude :- N 22° 26' 25.42"
- Longitude:-E 78° 25' 29"
- Elevation:- 1087 m

V-shaped valley in Pachmarhi at Handi Khoh and the rule of V was explained by Mr.S.K. Paunikar and importance of Geobotanical indicator and its mapping.



LOCATION NO.4

Spot 1: GUPT MAHADEV

🚗 Coordinates :

- Latitude :-N 22° 27' 30.60"
- Longitude:-E 78° 25'57.00"
- Elevation:- 110 5 m

Gupt Mahadev Cave formation and work of groundwater was shown by Mr. S.K. Paunikar and Mr. K.P. Tiwari



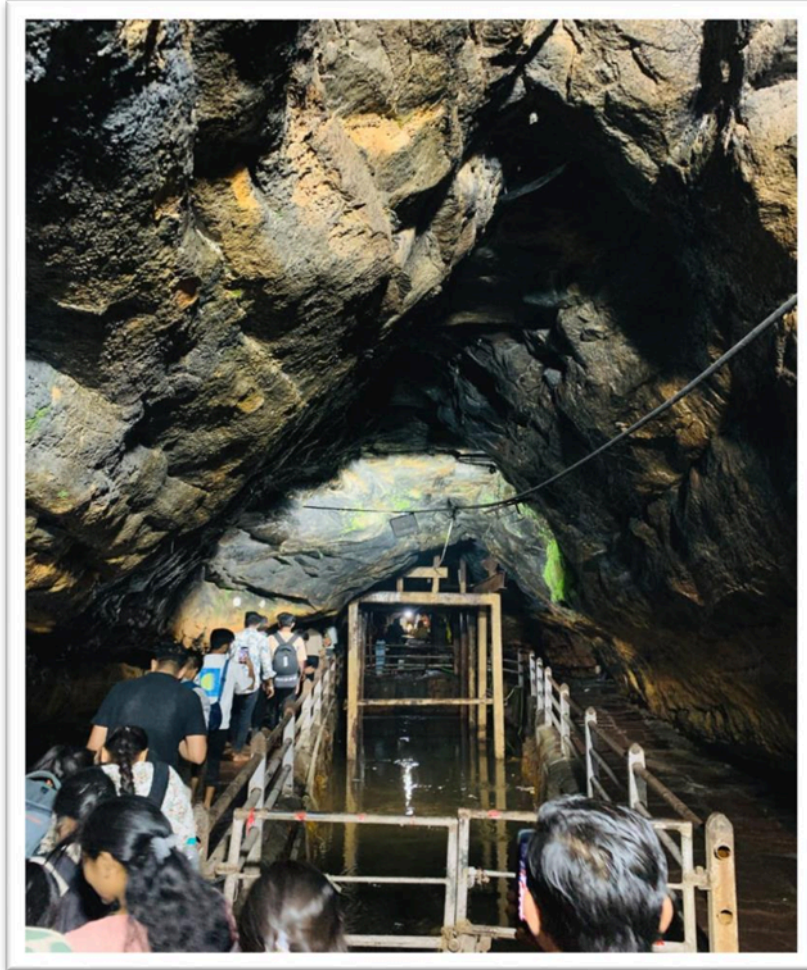
Gupt Mahadev Cave in Pachmarhi

SPOT 2: BADA MAHADEV

🚗 Coordinates :

- Latitude :-N 22° 27' 31.82"
- Longitude:-E 78° 25' 56.91"
- Elevation:- 1073 m

Mr.K.P.Tiwari, Mr.G.K. Kadu explained SST as Aquifer and its properties.



Bada Mahadev Temple in Pachmarhi

DAY 2

LOCATION NO.1

SPOT 1 :- FOREST MUSEUM

- 📍 Coordinates :
- 📍 Latitude :-N 22° 27' 30.06"
- 📍 Longitude:-E 78° 25' 55"
- 📍 Elevation:- 1106 m

We visited the Forest Museum (Bison Lodge) in Pachmarhi, and Mr.A.S.Uke explained various rocks found in MP.

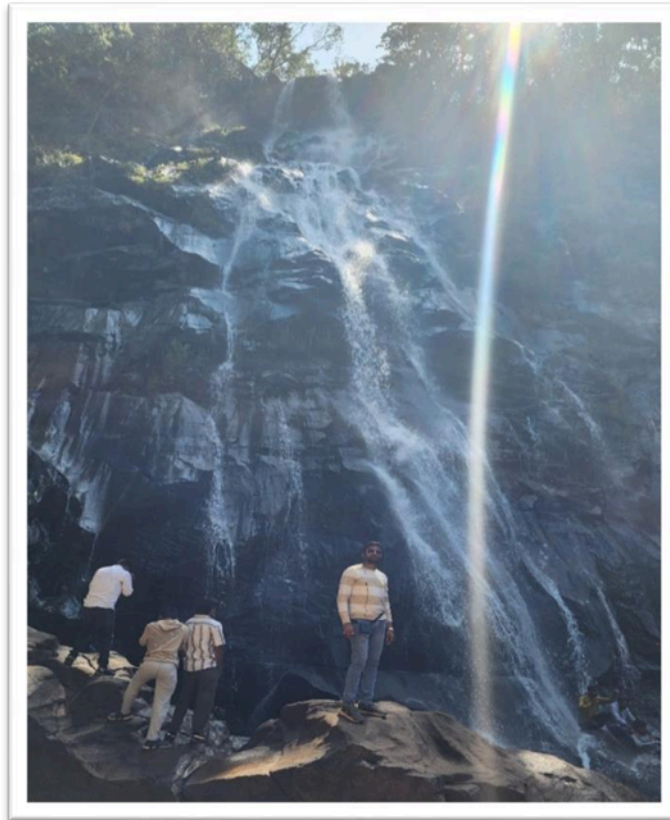


Samples In the Forest Museum

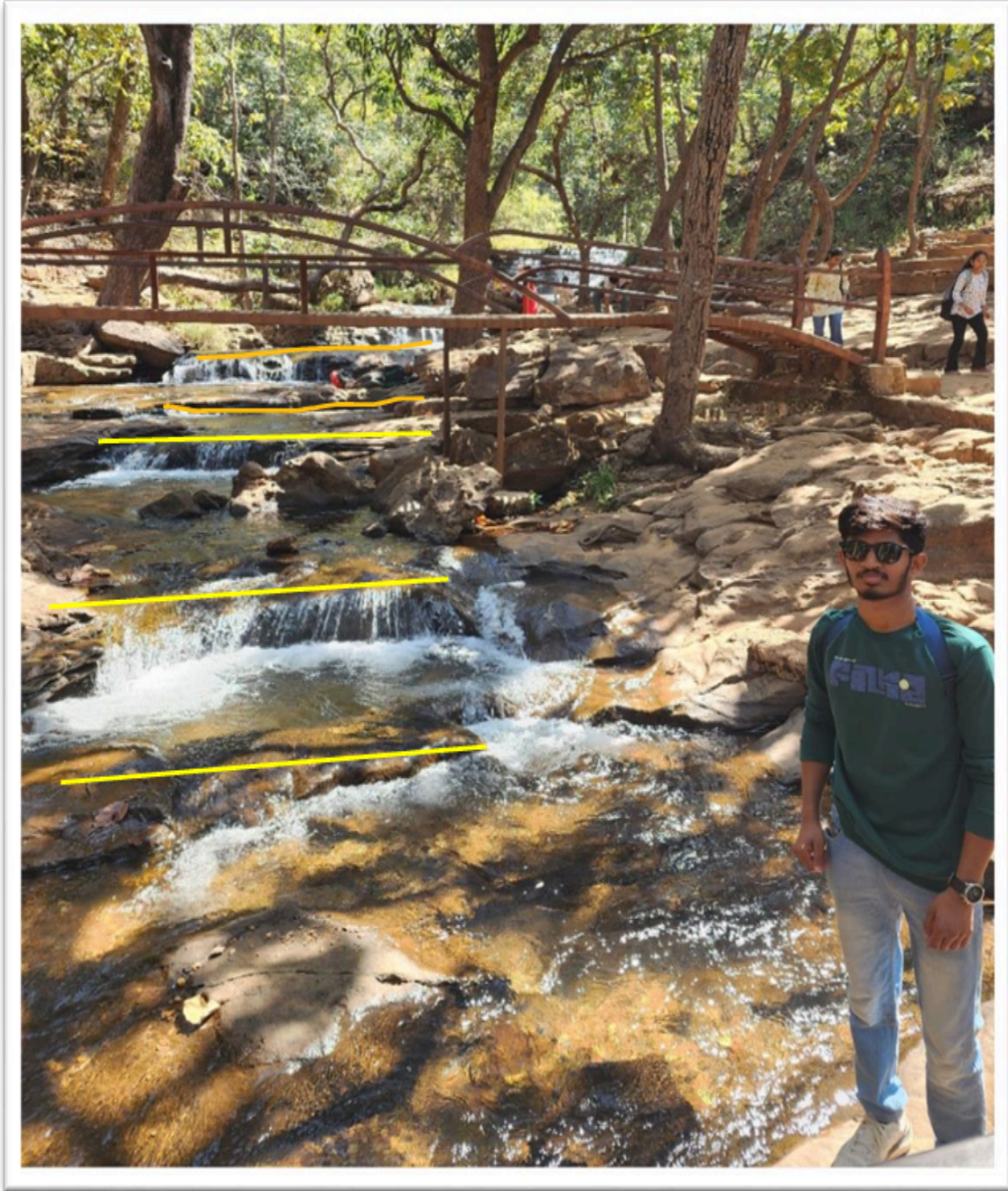
LOCATION NO.2 SPOT 1 :- BEE FALL

- 📍 Coordinates :
- 📍 Latitude :- N 22° 28' 27.37"
- 📍 Longitude:-E 78° 24' 27.86"
- 📍 Elevation:- 989 m

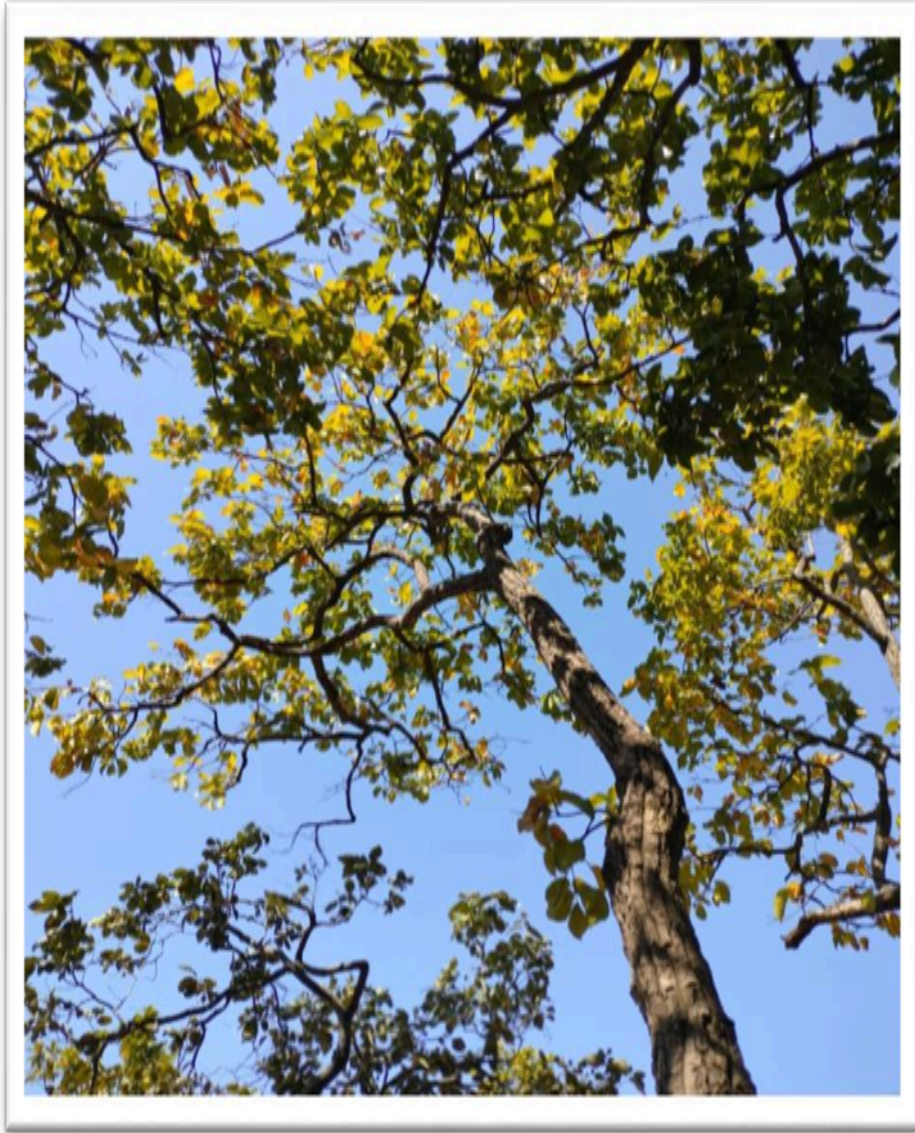
Mr.K.P. Tiwari and Mr.S.K. Paunikar explained and showed rapids, Geobotionical indicators and process of formation of water fall.



Mr. K.P.Tiwari Sir explaining Bee Fall formation.



Rapids seen on the way to Bee Fall



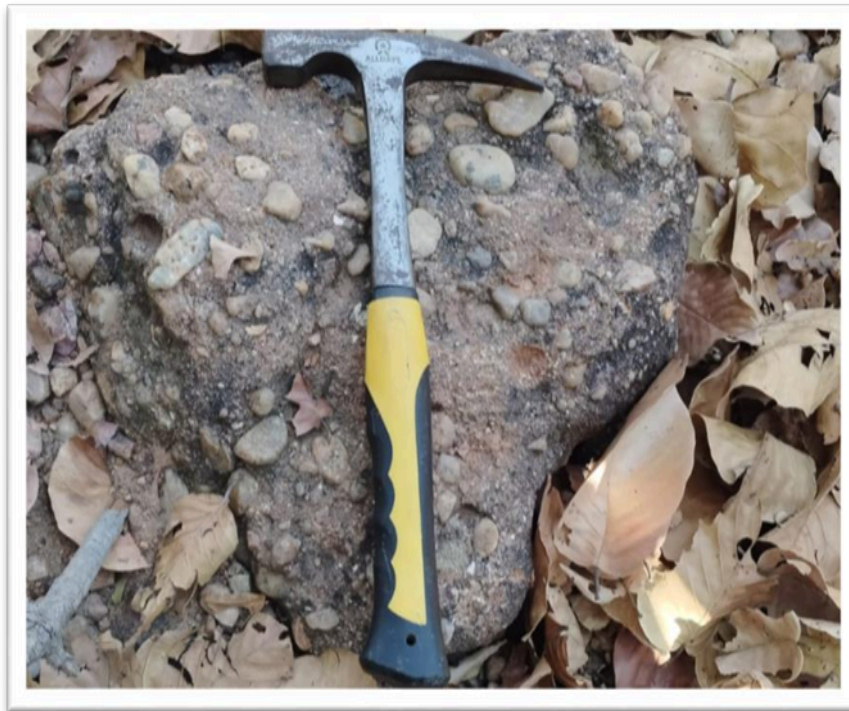
Sal Tree seen at Pachmarhi as a bioindicator of good groundwater condations

LOCATION NO.

SPOT 1 :- CONGLOMERATE

- ☞ Coordinates :
- ☞ Latitude :-N 22° 29' 37.48"
- ☞ Longitude:- E 22° 28' 28.52"
- ☞ Elevation:- 1001 m

Formation and relation of Conglomerate was explained by Mr.S.K.Paunikar and Geomorphological mapping with geological marker mapping started by M.Sc. Geoinformatics students which was guided.



Conglomerate seen on the way to Sink Hole

SPOT 2 :- ARCOSE

- ☞ Coordinates :
- ☞ Latitude :- N 22° 29' 40.96"
- ☞ Longitude:- E 78° 28' 27.21"
- ☞ Elevation:- 932 m

Mr.K.P.Tiwari explained the formation and Geological relevance of arkosic in composition and location.

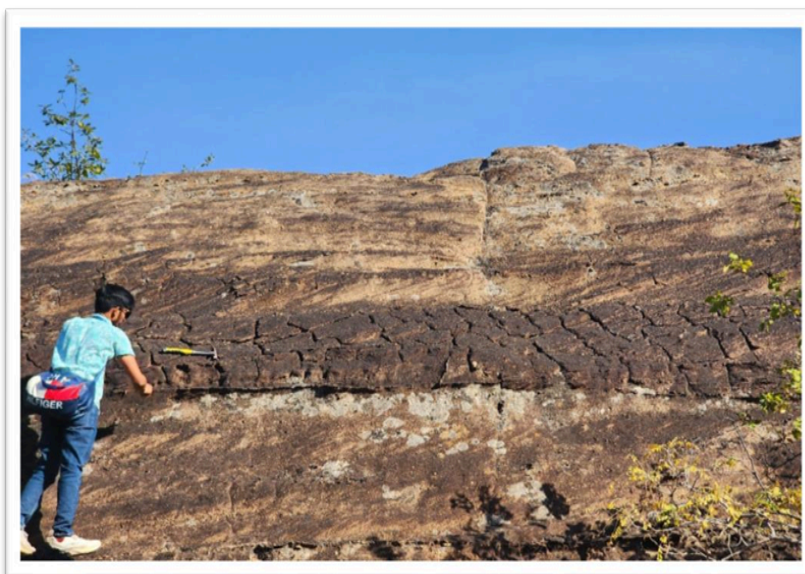


Arcose seen on the way to Sink Hole

SPOT 3:- MUD CRACKS :

- 📍 Coordinates :
- 📍 Latitude :- N 22° 29' 37.48"
- 📍 Longitude:-E 78° 28' 30.01"
- 📍 Elevation:- 1049 m

Mr.S.K.Paunikar explained the formation of sedimentary rock layers within the Pachmarhi mud cracks, providing valuable clues about the ancient environmental conditions during their formation.



Mud Cracks seen on the way to Sink Hole

SPOT 4 : CROSS BEDDING

- 📍 Coordinates :-
- 📍 Latitude :-N 22° 29' 43.49"
- 📍 Longitude:-E 78° 28' 28.52"
- 📍 Elevation:- 1001 m

Within the sandstone layers of the Pachmarhi Formation in Mr.S.K. Paunikar explained and made students observe a sedimentary structure called cross-bedding.



Cross Bredding in Sandstone

SPOT 5:- SINK HOLE

- 📍 Coordinates :
- 📍 Latitude :-N 22° 29'20.99"
- 📍 Longitude:-E 78° 28'24.38"
- 📍 Elevation:- 1155 m

Formation of Sinkhole and Shaft explained here by Mr.K.P. Tiwari and Mr.S.K. Paunikar assisted taking geospatial points and explained Clay formation



Group Photo taken at Sink Hole

Date: 22/02/2025

Place: Amravati

Head

Department of Geology and Geoinformatics

Shri Shivaji Science College, Amravati