



IndianOil

JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO SUPA INDANE GRAMIN V

Objective of the JRM Report

This JRM report is designed to ensure compliance with the Central Motor Vehicle Rules, 1989 (CMVR), AIS 140 standards, and the Road Transport Safety Policy (RTSP). It provides a comprehensive risk assessment for the transportation of hazardous materials along specified routes. By integrating these legal frameworks, the report offers a broad strategy for identifying and mitigating route-specific risks.

Regulatory Compliance

The report complies with the Central Motor Vehicles (Eleventh Amendment) Rules, 2022, mandating safe transportation practices for N2 and N3 category vehicles carrying hazardous materials. These rules require detailed route assessments, especially regarding road conditions, speed limits, and risk areas, to ensure safety compliance.

Risk Management Strategy

This report categorizes transportation routes into high-risk and medium-risk areas, with a focus on factors such as sharp turns, accident-prone regions, and elevation changes. The goal is to provide actionable

recommendations to minimize these risks, including speed regulations, driver warnings for hazardous zones, and the option of alternate routes.

Compliance with the Road Transport Safety Policy (RTSP)

The report integrates RTSP provisions, including mandatory driving hours, rest periods, and nighttime driving restrictions. It ensures that drivers follow official guidelines, such as taking prescribed rest breaks and avoiding dangerous road conditions like poor visibility, heavy crowds, or high-traffic areas during peak hours.

Emergency Preparedness and Response

The report highlights the significance of predetermined emergency stops for refueling, rest, and overnight stays. It includes protocols for safe responses to road hazards, alternative routes, and rerouting processes if roads are closed or severe weather arises. This aligns with the RTSP emphasis on driver safety and rapid emergency response.

Environmental Considerations

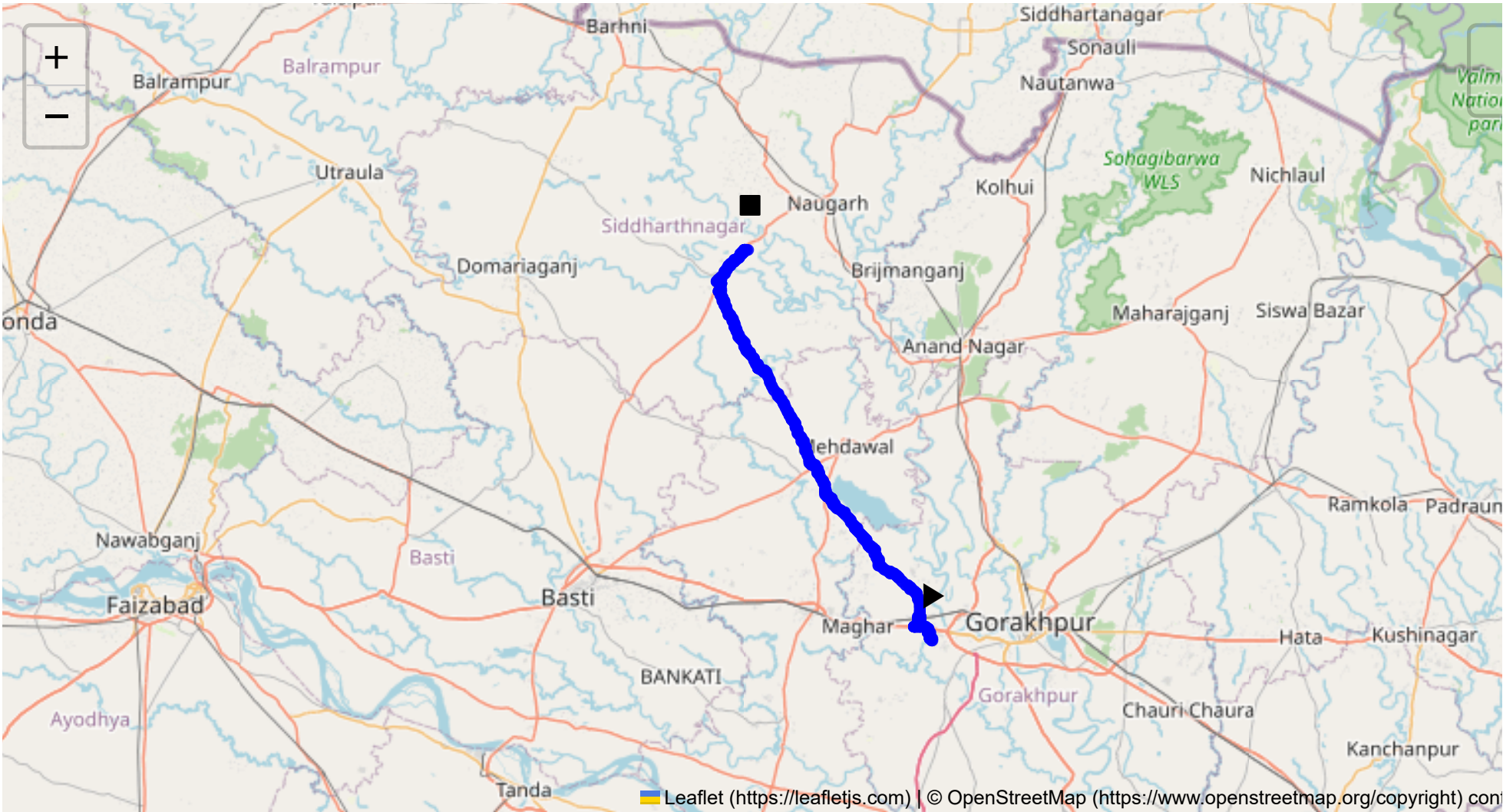
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental impacts during transport.

Journey Risk Mitigation

The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety norms.

Compliance with Government Directives

This report fully adheres to governmental directives regarding hazardous material transportation, implementing mandatory speed limits, nighttime driving restrictions, and comprehensive driver briefings and real-time alerts about route-related risks.



Route Summary:
Total Distance: 70.11 km
Estimated Duration: 1.9 hours
Adjusted Duration (Heavy Vehicle): 2.4 hours
Start: (26.735959, 83.229398)
End: (27.2212, 82.97291)

Welcome to the Journey Risk Management Study

1. Overview of the Route Map

The route spans approximately 70.11 kilometers, beginning at P6PH+9Q GIDA Industrial Area Phase 1 in Sahjanwa, Uttar Pradesh, and ending at 6XCF+F5 Supabaxi, Uttar Pradesh. It passes through significant waypoints, including 00, Sahjanwa, X329+Q54 in Nandaur, and 5WHM+FW5 in Bansi. This route covers both rural and semi-urban areas with varying traffic conditions and road types.

2. Typical Weather Conditions and Potential Weather-related Hazards

- **Monsoon Season (June to September):** Heavy rains can cause waterlogging and road damage. Muddy and slippery surfaces can pose risks.
- **Winter (December to February):** Fog can reduce visibility, impacting driving safety, especially during early morning and late evening hours.
- **Summer (March to June):** High temperatures can lead to road surface softening and heat-related vehicle malfunctions.

3. Analysis of Traffic Patterns

- **Peak Hours:** Traffic is usually heavier in the morning between 8-10 AM and in the evening from 5-7 PM, especially near Sahjanwa and Bansi areas.
- **Congestion-prone Areas:** Entry and exit points of towns like Sahjanwa and Bansi may experience slow traffic. Market areas within these towns can also be challenging.

4. Assessment of Road Quality and Infrastructure

- **Rural Sections:** Some sections may have poorly maintained roads with potholes and uneven surfaces.
- **Urban Sections:** Better quality roads but can experience more congestion.
- **Signage:** Sometimes inadequate, particularly in rural sections. Drivers should depend on GPS navigation for clarity.

5. Suggestions for Alternative Routes for Emergencies

- **Route Diverting through NH 27:** If major blockages occur, National Highway 27 offers a more reliable but longer alternative.
- **Local Bypasses:** Utilize smaller district roads to bypass town centers during heavy congestion or road closures.

6. Summary of Local Regulations Affecting Hazardous Material Transport

- Transport of hazardous materials is subject to strict regulations, including permits and allowable travel times.
- Nighttime travel restrictions may apply, with mandatory rest periods.

7. Overview of Historical Incidents

- **Recorded Incidents:** There have been minor incidents involving heavy vehicles during monsoon due to skidding. No major hazardous material accidents have been officially reported recently on this exact route.

- **Police Records:** Local authorities are cautious and increased surveillance in accident-prone zones has been noted.

8. Environmental Considerations and Sensitive Areas

- **Nearby Water Bodies:** Exercise caution near lakes and rivers, particularly during monsoons, to prevent contamination.
- **Agricultural Land:** Ensure no leakage of hazardous materials as the route passes through agricultural zones.

9. Analysis of Communication Coverage

- **Potential Dead Zones:** Sparse mobile coverage noted in forest patches or remote areas between Nandaur and Bansi.
- **Communication Equipment:** Carry satellite phones or radios for emergencies, especially when traversing known dead zones.

10. Estimated Emergency Response Times

- **Urban Area Response:** Approximately 20-30 minutes, with emergency services being closer in Sahjanwa and Bansi.
- **Rural Area Response:** May take up to 45 minutes to 1 hour, especially between Nandaur and other less accessible segments.

11. Overall Summary of Risk Assessment

The route presents moderate risk levels due to varying road conditions, weather unpredictability, and congestion in denser areas. The risk associated with hazardous materials mandates adherence to regulations and preparedness for adverse weather. It is crucial to plan for potential delays and ensure robust communication backups are in place. Emergency response times could improve, and maintaining updated contact information for local assistance is recommended.

Risk Assessment - Turns

| | Risk Type | Risk Level | Coordinates | Speed Limit | Distance from Start |
|---|------------|------------|--------------------|-------------|---------------------|
| 0 | Turn | High | 26.73746, 83.22938 | 15 KM/Hr | 0.15 km |
| 1 | Blind Spot | Blind Spot | 26.73791, 83.22625 | 10 KM/Hr | 0.47 km |
| 2 | Turn | High | 26.74524, 83.22746 | 15 KM/Hr | 1.16 km |
| 3 | Turn | High | 26.74654, 83.22390 | 15 KM/Hr | 1.65 km |
| 4 | Blind Spot | Blind Spot | 26.75126, 83.22476 | 10 KM/Hr | 2.16 km |

| | Risk Type | Risk Level | Coordinates | Speed Limit | Distance from Start |
|----|------------|------------|--------------------|-------------|---------------------|
| 5 | Blind Spot | Blind Spot | 26.75353, 83.20457 | 10 KM/Hr | 4.22 km |
| 6 | Turn | High | 26.75377, 83.20465 | 15 KM/Hr | 4.27 km |
| 7 | Turn | Medium | 26.75378, 83.21338 | 30 KM/Hr | 5.13 km |
| 8 | Turn | High | 26.75386, 83.21352 | 15 KM/Hr | 5.16 km |
| 9 | Turn | Medium | 26.75640, 83.21275 | 30 KM/Hr | 5.43 km |
| 10 | Turn | High | 26.76132, 83.21435 | 15 KM/Hr | 5.94 km |
| 11 | Turn | Medium | 26.76119, 83.21159 | 30 KM/Hr | 6.30 km |
| 12 | Turn | High | 26.76131, 83.21143 | 15 KM/Hr | 6.33 km |
| 13 | Turn | Medium | 26.76403, 83.21129 | 30 KM/Hr | 6.63 km |
| 14 | Turn | Medium | 26.76569, 83.21402 | 30 KM/Hr | 6.96 km |
| 15 | Turn | Medium | 26.83008, 83.15664 | 30 KM/Hr | 16.72 km |
| 16 | Turn | High | 26.91597, 83.08449 | 15 KM/Hr | 29.04 km |
| 17 | Blind Spot | Blind Spot | 26.91433, 83.08351 | 10 KM/Hr | 29.22 km |
| 18 | Turn | Medium | 26.91843, 83.08101 | 30 KM/Hr | 29.63 km |
| 19 | Turn | Medium | 26.92258, 83.08191 | 30 KM/Hr | 30.22 km |
| 20 | Turn | Medium | 26.94829, 83.07156 | 30 KM/Hr | 33.26 km |
| 21 | Turn | Medium | 26.98317, 83.05063 | 30 KM/Hr | 37.82 km |
| 22 | Turn | Medium | 27.07125, 82.99577 | 30 KM/Hr | 49.09 km |
| 23 | Turn | Medium | 27.07137, 82.99515 | 30 KM/Hr | 49.23 km |
| 24 | Turn | High | 27.07059, 82.99365 | 15 KM/Hr | 49.40 km |
| 25 | Turn | High | 27.16975, 82.93429 | 15 KM/Hr | 62.14 km |
| 26 | Turn | High | 27.17966, 82.93498 | 15 KM/Hr | 63.24 km |
| 27 | Turn | Medium | 27.17992, 82.93461 | 30 KM/Hr | 63.30 km |
| 28 | Turn | High | 27.18005, 82.93461 | 15 KM/Hr | 63.32 km |
| 29 | Turn | High | 27.18194, 82.93124 | 15 KM/Hr | 63.70 km |
| 30 | Turn | Medium | 27.18212, 82.93129 | 30 KM/Hr | 63.74 km |
| 31 | Turn | Medium | 27.18395, 82.93294 | 30 KM/Hr | 63.96 km |
| 32 | Turn | High | 27.22134, 82.96970 | 15 KM/Hr | 69.67 km |

Route Photos of Risky Spots



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 2.16 km
Coordinates: 26.75126, 83.22476



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 4.22 km
Coordinates: 26.75353, 83.20457



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 4.27 km

Coordinates: 26.75377, 83.20465



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 5.13 km

Coordinates: 26.75378, 83.21338



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 5.16 km

Coordinates: 26.75386, 83.21352



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 5.43 km

Coordinates: 26.75640, 83.21275



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 5.94 km

Coordinates: 26.76132, 83.21435



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 6.30 km

Coordinates: 26.76119, 83.21159



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 6.33 km

Coordinates: 26.76131, 83.21143



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 6.63 km

Coordinates: 26.76403, 83.21129



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 6.96 km
Coordinates: 26.76569, 83.21402



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 16.72 km
Coordinates: 26.83008, 83.15664



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 29.04 km

Coordinates: 26.91597, 83.08449



Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 29.22 km

Coordinates: 26.91433, 83.08351



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 29.63 km
Coordinates: 26.91843, 83.08101



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 30.22 km
Coordinates: 26.92258, 83.08191



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 33.26 km
Coordinates: 26.94829, 83.07156



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 37.82 km
Coordinates: 26.98317, 83.05063



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 49.09 km
Coordinates: 27.07125, 82.99577



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 49.23 km
Coordinates: 27.07137, 82.99515



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 49.40 km
Coordinates: 27.07059, 82.99365



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 62.14 km
Coordinates: 27.16975, 82.93429



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 63.24 km

Coordinates: 27.17966, 82.93498



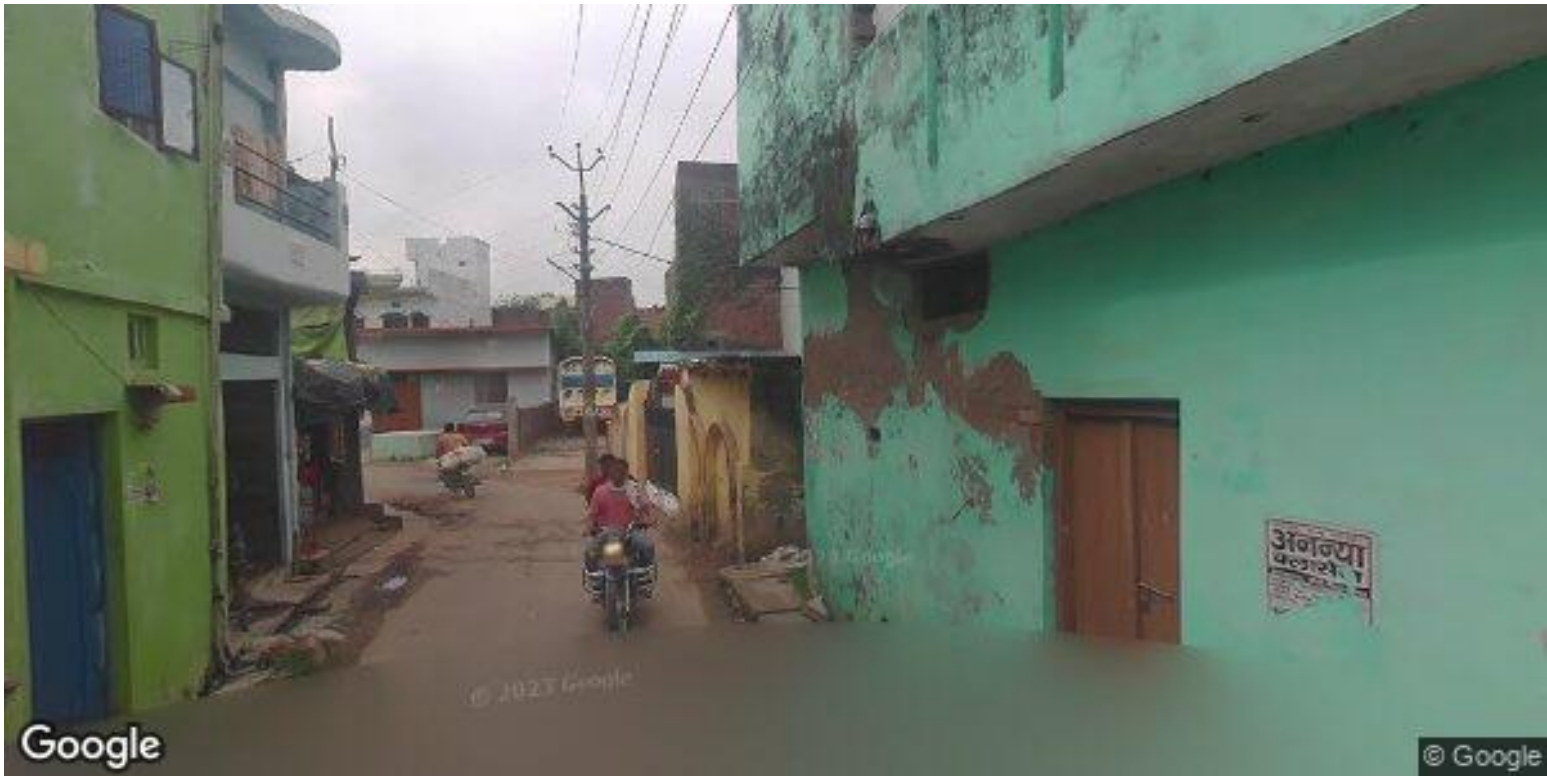
Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 63.30 km

Coordinates: 27.17992, 82.93461



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 63.32 km

Coordinates: 27.18005, 82.93461



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 63.70 km

Coordinates: 27.18194, 82.93124



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 63.96 km
Coordinates: 27.18395, 82.93294



Risk Type: Turn
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 69.67 km
Coordinates: 27.22134, 82.96970

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