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Timothy Lawton · Katherine Giles ·
Mark Rowan



La Popa Basin, Nuevo León and Coahuila, Mexico

Halokinetic Sequences and Diapiric
Structural Kinematics in the Field

 Springer

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Kinematics in the Field

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Chapter 1

General Information



1.1 Opening Statement

Excellent exposures of salt diapirs and flanking strata in La Popa basin, northeastern Mexico, contain world-class examples of salt-sediment interaction that provided the basis for the concept of halokinetic sequences. The basin also contains one of the first secondary salt welds described in outcrop. Two one-day excursions described in this monograph provide an easily accessible overview of salt-sediment relations within a short distance of Monterrey, Nuevo León, Mexico. Excursion 1 constitutes an introduction to basin stratigraphy, an introduction to halokinetic sequences at El Papalote diapir, and a visit to a salt-cored detachment fold near the community of Hidalgo, Nuevo León. Excursion 2 is a visit to La Popa salt weld, where stops at several parts of the weld permit comparison of different structural styles developed along the weld. Each excursion begins and ends at the Marriott Courtyard Aeropuerto Hotel, near the Monterrey International Airport.

1.2 General Access and Logistics

Each of the two excursions described here is accessed from the Monterrey International Airport on the north side of Monterrey, Nuevo León, Mexico, which is an hour and a half flight from Houston, Texas. The starting point for the road logs is the Marriott Courtyard Aeropuerto Hotel (km 7, Miguel Alemán 23, La Victoria, Provienda Guadalupe, 66600 Apodaca, Nuevo León, Mexico. Phone: + 52 81 8196 7900). Each excursion follows Highway 1610, a toll road or *periferico*, west toward Saltillo, exits at Mexico Highway 53 to Monclova, and then proceeds north to kilometer post 50 on Mexico Highway 53, 26.8 km north of the community of Hidalgo, Nuevo León. Distances between decision points are detailed in each excursion.

1.3 Safety Instructions

The excursions involve driving on two-lane Mexican highways, stops along dirt roads, and walking on rough terrain in desert country. Driving on Mexican Highway 53 is perhaps the most hazardous part of the trip. While most drivers are extremely courteous, speed limits are observed in a rather haphazard manner, and it is not uncommon to suddenly have a vehicle filling your rear-view mirror that was not evident seconds before. It is a common expectation that you will move to the road shoulder to permit a vehicle to pass and it is not uncommon to suddenly encounter an oncoming vehicle in your lane. You are expected to move right, but keep in mind that road shoulders are typically absent, whereas pedestrians are abundant. A blinking left-turn signal on the highway means different things: It can indicate that it is safe to pass the vehicle in question on the open road (a right blinker similarly indicates “don’t pass”), but gypsum haul trucks also signal a left when they intend to leave the highway. Interpret the blinker with caution, and be aware how a driver behind you interprets your left turn signal if you are making a left off the highway. Sometimes, if you have unknown vehicles following closely, it is best to continue along the highway to find a place where you can pull off on the right and turn around. Be sure to obey the speed limits in Hidalgo and Mina, especially when children are present in school zones. Heavy truck traffic is now common on the dirt road to El Papalote diapiir. Pull off the road at stops, and use caution in exiting your vehicle. Army checkpoints on the highway are not uncommon; they just want to know where you’re going and may also ask where you started.

Flat tires are inevitable occurrences on the dirt roads. Always carry a spare tire and functional equipment to change the tire. Check the jack at the rental agency and before departing in the morning. There are numerous places to have tires fixed (“Vulcanizadores, Vulka”) along the excursion routes, including Mina and the road junction to San Jose de La Popa (Excursion 2).

1.3.1 Driving at Night in Mexico is not Advisable

The outcrops you will visit are in the eastern Chihuahuan Desert, where it can be hot and dry. The base elevation is about 650 m. El Papalote diapiir has an upper elevation of 980 m, and the high point of the weld traverse is 1100 m. Sun exposure is extreme and the air is dry; both factors lead, sometimes imperceptibly, to rapid dehydration. Wear long clothing and sunscreen as sun protection; carry and drink adequate water, even if it doesn’t seem hot.

Irregular terrain, loose rocks, and spiny plants constitute the most common hazards of the walking traverses. A long-sleeved shirt and stout trousers are the best protection from plants and tumbles against rocks, and sturdy boots are required for the walks—you do not want to fall because if you do, you will put your hand (or more) down on painful cactus. Rattlesnakes are present but uncommon during the

day, and are usually only out and about in the spring and fall, particularly after rain. Always check the underside of a rock for scorpions or spiders when you pick it up.

1.4 Emergency Contacts

1. Hospital San José Tec de Monterrey. Emergency Phone: **(81) 8347-1011**. Avenida Morones Prieto #3000 Pte, Col. Los Doctores. CP 64710.
2. Red Cross Ambulance: **8375-1212**
3. Private Ambulance: **8317-1211** (English Spoken)
4. Federal Highway Police: **8343-2576**