



FROM R. V. Brodine AT Houston
TO Dr. M. D. Beltrandi AT London

IN REPLY REFER TO 4424EL89
DATE July 18, 1978

PROGRESS REPORT NO. 1
REFLECTION SEISMOGRAPH INTERPRETATION
SOUTHEAST SICILY PROJECT
LEASE BLOCK GR-15-FG
BY: E. D. FLEMING

I. Summary

This progress report presents an interpretation in time of the top Villagonia formation at a scale of 1:100,000 across lease block GR-15-FG in offshore Sicily.

The study shows a positive structural trend across the central part of the lease block. The Lucata-1X dry hole is mapped in a downthrown fault block with higher fault blocks shown in the northern portion of the lease block and northward in the nearshore and onshore areas. The north closure is postulated in the onshore area of no data control. The highest point along the structure is slightly lower than the structure at the recent Mila-1 gas condensate discovery to the northwest.

The Lucata well did not condemn the structure as it did not reach the Taormina dolomite target which probably would have been encountered within the next 300m (1000 ft.). The structural closure at the well and along the higher portions of the structure to the northeast are still attractive especially since the Mila discovery nearby.

II. Contents

Two sets of the following map and seismic profiles are included with this report:

1. One seismic map
Lease block GR-15-FG, Scale 1:100,000
Top Villagonia
2. Two seismic profiles
Lines ZC-313 and C-529



III. Introduction

This study is a reinterpretation and reevaluation of seismic data in Gulf's Southeast Sicily offshore lease block GR-15-FG for the purpose of recommending future drilling considerations in this block, as well as in the adjoining lease blocks to the southwest where no interest is held by Gulf. Proposals by the leaseholders of these blocks have been made to Gulf and an evaluation is to be extended across this area which is scheduled for inclusion in the next report.

One map at the top Villagonia level is being presented at this time which covers Gulf's lease block and extends northwest across the gas condensate Mila-1 discovery well, which is about 8 kms from the northwest corner of Gulf's lease block.

Two profiles are included to show the ties between the Mila-1 and Lucata-1X wells and are indicated in green on the map.

IV. Interpretation of Geophysical Data

Initiation of this study is a result of lease commitments to the Italian government and for future considerations in view of the recent Taormina gas condensate discovery in the Montedison lease block to the northwest. This well, the Mila-1, reported a gross pay of 150m (492 ft.) in fractured, dolomitic limestone of Jurassic-Triassic age encountered at a depth near 3475m (11,400 ft.) which is most probably in the Taormina formation.

Gulf's Lucata-1X well drilled to a depth of 4410m (14,469 ft.) and was abandoned due to mechanical reasons and lack of funds. The well failed to reach the primary objective, the Taormina dolomite, which is the producing reservoir of the onshore Ragusa field and the assumed reservoir for the Mila-1 discovery. Ties between the Mila-1 and the Lucata-1X outlined on the two enclosed profiles indicate the dolomite section might have been reached at a time of 2.550 sec. in the Lucata-1X well and velocities applied from the well survey will give a depth of 4585m (15,045 ft.). This means that the Taormina possibly would have been reached 175m (575 ft.) below the abandoned depth. Other previous studies indicated the Taormina might occur as low as 5334m (17,500 ft.), but studies applying the ratio of the Streppenosa dwarfed fauna and Estheria zones found in onshore wells to the Lucata-1X suggest a possible top of Taormina at approximately 5029m (16,500 ft.).

The map being submitted with this report is on the top of the Villagonia formation event and is used for setting up the fault configuration and the general structural attitude, which will be reflected in the deeper structure. A map believed to represent the deeper Taormina dolomite as outlined on the two accompanying profiles will be submitted at a later date.

The present interpretation has completely revamped the faulting from previous mapping prior to the mid 1973 drilling of the Lucata-1X well. This study has realigned many of the faults and shows reversals in throw on some of the faults, which is significant in that it now places the well in a downthrown fault block rather than in an upthrown fault block relative to the structural trend toward the north. By applying well survey velocities, the Villagonia mapping (refer to profile ZC-313) shows the nearshore fault block at the northern boundary of the Gulf lease to be 548m (1800 ft.) higher than at the Lucata well. The Taormina level, as illustrated on the profile, will be 1219m (4000 ft.) higher or at a depth of 3658m (12,000 ft.).

Placing the area around the Lucata well in a downthrown fault block does not condemn this fault block as dip reversal, and trapping by fault mechanism may produce suitable closure. The highest fault blocks in the northern part of the lease block and northward near the shore and onshore may appear as a more attractive area for drilling, however, trapping here will depend on dip reversals which have been postulated or fault trapping mechanisms beyond the area of data control. The structure here is in a similar position along regional trend, although slightly deeper than the Mila-1 well, further suggesting that this may be a more attractive area for future drilling considerations.

There is a need for nearshore and onshore seismic control to adequately map this structure and this may be very hard to obtain. The existing data can be improved by reprocessing. Several lines have been reprocessed some time ago by HTSC with noted improvement due to better velocity determination. We believe the data can be further improved by applying near surface static correction due to irregular weathering near the subcrop of the Tellaro shale with the water bottom or the section immediately overlying this shale. Profile ZC-313 displays this subcrop and resulting weathering irregularities in the vicinity of the Lucata-1X well.

The northern limit of this subcrop zone, occurring just north of the Lucata-1X well, previously has been interpreted as the upside of a fault which has not been accepted by this study, but has been replaced

July 18, 1978

by a down-to-the-south fault which does not reach the surface (see profile ZC-313). This zone can be seen on several north-south profiles and the present fault interpretation along this subcrop trend results in the major difference from that of previous interpretations.

V. Conclusions

The present study, which is only about half complete, suggests that this lease block has excellent hydrocarbon potential and warrants consideration for future drilling commitments.

VI. Recommendations

Recommendations are reserved until after a deeper map is made and the present study is completed.

VII. Additional Comments

Completion of the Villagonia mapping and the mapping of a deeper level is expected to be completed near the end of August, at which time a final report of the study will be submitted.

R. V. Brodine

By: J. G. Smith

EDF/shm

Enclosures 6 (2 sets)

cc: Mr. R. S. Petty. Attn: Mr. G. Pardo (w/enc)

bcc: JGS (wo/enc)
LC (w/enc)
EDF (wo/enc)
~~_____~~