

# Target Exploration

Energy Geosciences Research & Development

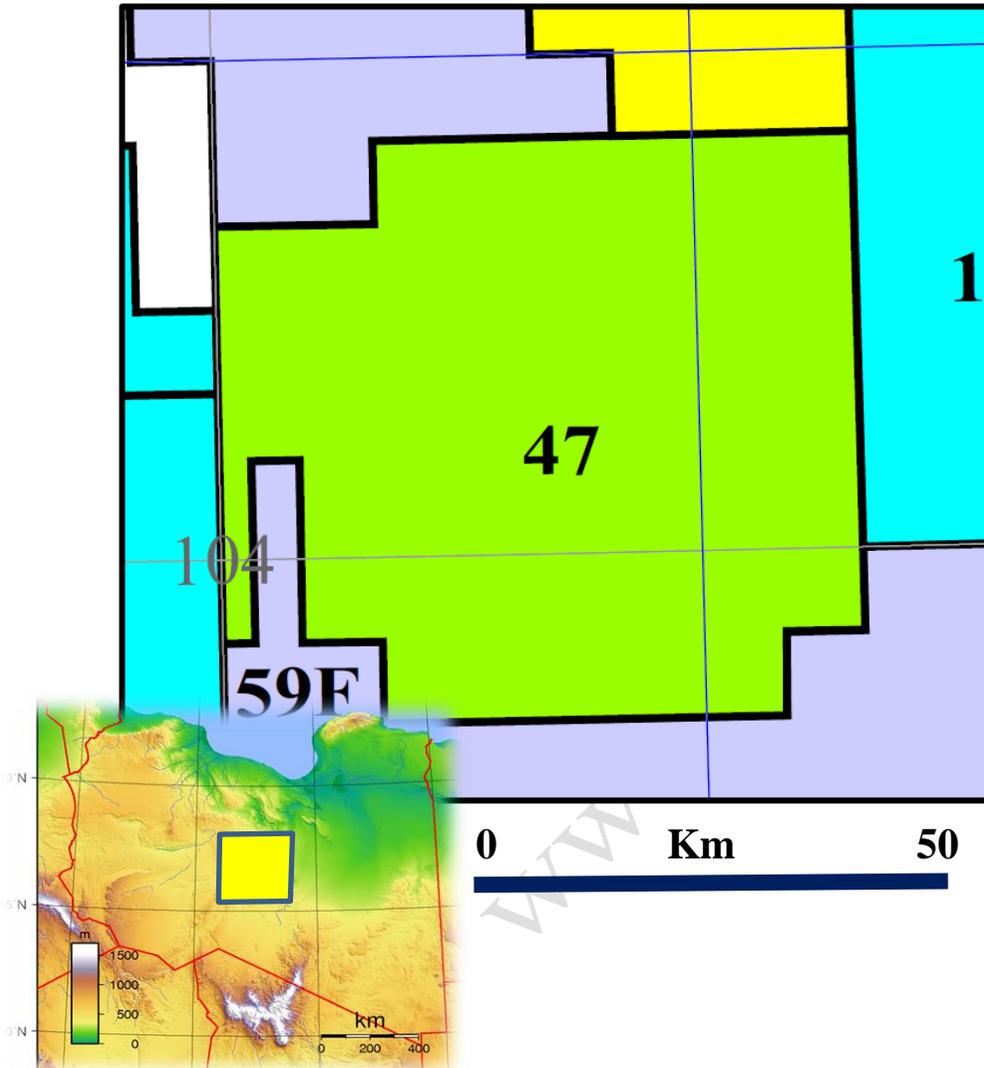


Geology, Undeveloped Oilfields  
and Remaining Potential of the

**Kotla Graben,  
Sirte Basin,**

**Libya**

*Target Exploration Report Tar39*



## The Report

This is prospects generation report and detailed E&P evaluation of remaining potential of a 3,500 Km<sup>2</sup> area covering [Block 47 and surrounding Blocks](#) in onshore Libya covering the Kotla Graben and adjacent highs and parts of several adjacent sub-basins within the prolific Sirte Basin.

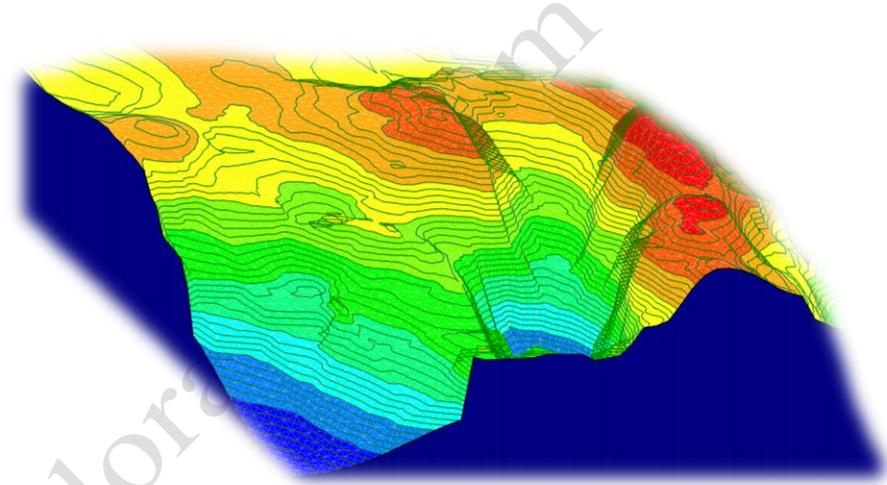
The report is in 35 pages of text and 130 maps, cross-sections, tables and figures. More than 25 areas-of-interest and 15 undeveloped discoveries were identified in this study (including a 100 MMSTBO recoverable reserves discovery). The identified opportunities are well illustrated by structural maps, Isopach maps, lithological logs, cross-sections, cross-plots, geochemical and optical source rock data and figures. As well as STOIP reserves estimates and production figures.

## Exploration History

The studied area is typical of nationalised MENA concessions, where few discoveries are developed, and many remained as undeveloped opportunities in the forms of single well discoveries and delineated but unproduced dormant oilfield.

## Stratigraphy and Tectonics

The report simplifies the stratigraphic column and the tectonic history of the Kotla Graben, and correlates the stratigraphy and tectonic events with those in surrounding sub-basins, across the adjacent highs within the Sirte Basin.



## Petroleum Systems

5.1. Source Rocks Distribution and HC Generation and Migration.

5.2. Reservoir and Seal Rocks Thickness and Distribution.

5.3. Structural Evolution.

5.4. The Critical Factor.

5.4.1. Petroleum Subsystem 1.

5.4.2. Petroleum Subsystem 2.

5.4.3. Petroleum Subsystem 3.

6. FIELDS AND DISCOVERIES:

6.1. PRODUCED FIELDS

6.2. DEVELOPED FIELDS

6.3. UNDEVELOPED DISCOVERIES

6.4. PROBABLE "UNDISCOVERIES"

## Conclusions and Recommendations

More than 25 areas-of-interest and 15 undeveloped discoveries were identified in this study (including a 100 MMSTBO recoverable reserves discovery).

## References

A concise list of references is included.

## Figures

Figure 1. Location map.

Figure 2. Fields and discoveries overlaid on the topographic contour map.

Figure 3. Well-location map.

Figure 4. Typical stratigraphic section of Sirte Basin.

Figure 5. Structural contour map of Pre-Upper Cretaceous Hercynian Unconformity, illustrating the tectonic elements of the study areas.

Figure 6. Average KB elevation of exploration and production wells, (in Feet ASL).

Figure 7. Average drilling depths of exploration and production wells, (in Feet BSL).

Figure 8. Number of Exploration wells per year.

Figure 9. Number of discoveries per year.

Figure 10. Discovered Reserves per year.

Figure 11. Number of development wells per field or discovery.

Figure 12. Structure of top of the Ordovician Gargaf (Hofra) Quartzite Formation.

Figure 13. Isopach Map of Gargaf-Maragh Formations.

Figure 14. Structure of top of the basal Upper Cretaceous Maragh Sandstone Formation.

Figure 15. Isopach map of Maragh sandstone.

Figure 16. Structure of top of Upper Cretaceous Lidam Carbonate Formation.

Figure 17. Isopach map of Lidam Dolomite Formation.

Figure 18. Isopachs of Etel Evaporite Formation.

Figure 19. Isopachs of the Santonian-Campanian Sirte Shale Formation, illustrating the thickness of the main source rocks, and the paleo-structural configurations of Etel-Lidam Fms at early Maastrichtian time.

Figure 20. Structure of top of the basal Paleocene-Maastrichtian (Cheriat-Kalash Carbonate Formation).

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Figure 29. Isopachs of the Harash Formation, reflecting the paleostructural configuration of the Zelten carbonate Formation during the earliest Eocene stage.

Figure 30. Structural contours of top of lower Early Eocene Kheir Formation.

Figure 31. Isopachs of Kheir carbonates.

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Figure 33. Isopachs of Facha dolomites.

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Figure 36. Total structural activities of the studied area.

Figure 37. Vertical stack of structural closures of fields and anomalies, reflecting significant undeveloped discoveries, and probable un-discovery wells in the study area.

Figure 38. Time-stratigraphic correlation chart across the study area.

Figure 39. Comparison of the stratigraphic sequences of three fields across the 3 tectonic elements in the southern part of study area.

Figure 40. Comparison of the stratigraphic sequences of three fields across the 3 tectonic elements in the northern part of study area.

Figure 41. Reservoir parameters and cumulative productions of the main fields.

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Figure. 43. Prospectivity map, showing locations of fields, discoveries, and anomalies over the API contours of the discovered oil in the area.

Figure 44. Summary of developed and undeveloped reserves and net pay map of the main reservoirs of the largest undeveloped field in the study area.

## Appendices

Appendix 1. Coordinates, GLs, KBs and Formation tops of 159 wells used in the study.

Appendix 2. Geohistory and TTI models of source rocks maturation in 4 representative wells across the main tectonic elements of the area.

Appendix 3. Chronology of structural closures in the area.

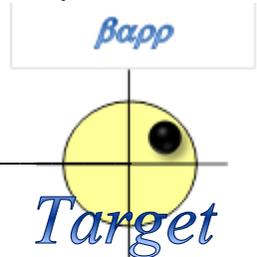
Appendix 4. Five structural cross-sections.

Appendix 5. Structural contour maps of 30 produced fields, developed but un-produced field, discoveries, and drilled anomalies worth reviewing.

Appendix 6. 60 Representative litho-logs of E&P wells used in this study, (Scale 1/12.000).

## Enclosure

One CD containing 35 pages of MSW text file, and 130 PDF files of all of the above listed maps, logs, section, figures, plots, tables, and appendices.



This report is available for immediate dispatch from *Target Exploration*.

[Click here to purchase your copy](#)

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