

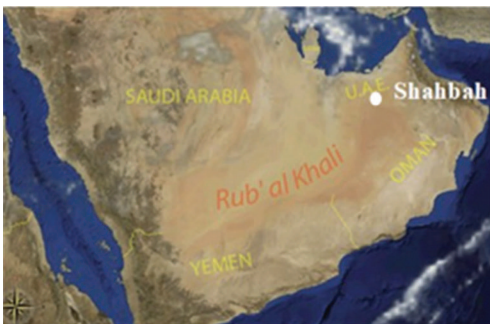
Shaybah Technical Tour February 9, 2023

BY CAROL A. DAHL

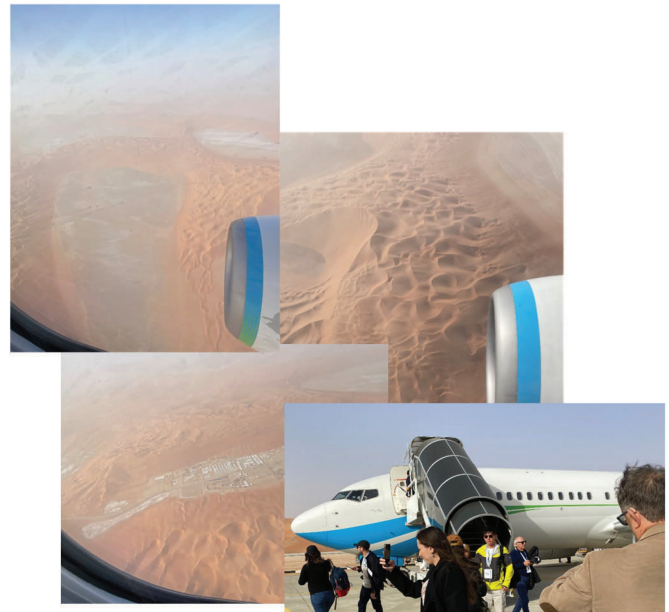
The International Association for Energy Economics' annual conference took place for the first time in the Middle East in Riyadh, Saudi Arabia in February, 2023. With over 1700 attendees representing 98 nationalities, much information and comradery were shared. We were also treated to Arab hospitality and culture especially at the gala cultural dinner including an Arab men's dance and lamb roasted over an open fire. With the conference over, Saudi Aramco sponsored a special technical tour to Shaybah oil field. The field was discovered in 1968 but not developed for decades until technological advances made it possible to unlock the black gold that had been hidden under the sands for millions of years. This super giant field was estimated to have more than 14 billion barrels (2.2 billion cubic meters) of extra light sweet crude (42° API) and 25 trillion cubic feet (710 billion cubic meters) of natural gas. The first production commenced in 1998 with production reaching a million barrels a day by 2016. The field is connected to Abqaiq with a 400 mile (640 kilometer) crude oil pipeline, from where the oil can be transported to Saudi refineries and export terminals. A 2.4 billion cubic feet/day (68 million cubic meters/day) natural gas processing plant has been extracting natural gas liquids from natural gas production for the petrochemical industry since 2015 and is currently being expanded. This separation leaves the methane for reinjection or use to generate electricity for the operations and supports Saudi goals of reducing natural gas flaring and replacing the use of liquid fuel for power generation with lower CO2 emitting natural gas.

We boarded the plane provided from a private airport in Riyadh. On take-off, we were given the usual cautions about seat belts and oxygen masks with no mention of life vests in case of a water landing. That is because the Shaybah field is in the Rub' al Khali desert, whose name means empty quarter in Arabic. Just south of Abu Dhabi, UAE, it is justly named. With less than 2 inches (5 centimeters) of rain a year and temperatures ranging from 32 ° - 124 ° F (0 -50 °C), it is rather empty but with no shortage of sand.

We flew over miles and miles of orange red sand dunes deriving their color from feldspar. The dunes up to 820 feet (250 meters high) are broken with gravel and gypsum plains and occasional salt flats with green circles signifying irrigated crops.



Source Underlying Map: NASA posted at media.org/wiki/File:Empty_quarter_Arabia.PNG.



We landed at the Shaybah airport right by the camp. A large tank wagon labeled jet fuel stood nearby as we deplaned and boarded nearby waiting buses. We passed by the camp, and some large storage tanks on our way to the Shaybah Wildlife Sanctuary sponsored by Saudi Aramco. As the road wound and twisted upward, we were able to see up close the impressive dunes and look down on gravel plains below.

At the sanctuary visitor's center, we were greeted with traditional tokens of desert hospitality: Arabic coffee and dried dates. We were given a short briefing and tour of the exhibits. The 246 square mile (637 square kilometer) fenced sanctuary was developed to





reintroduce and protect native species of plants and animal to the Rub' al-Khali. A top priority was given to three species of animal: the Arabian sand gazelle, the Arabian oryx, and the ostrich. Food, watering holes, shaded areas, and veterinary care are provided across the sanctuary to ensure their survival.

In our continuing tour, we were able to see the results of their efforts and view all three of these special species and even have a group picture with oryx and huge sand dunes in the background.

No trip to so much sand would be complete without the opportunity to play on the dunes. The culmination

of the sanctuary tour allowed us this opportunity. We watched the sun set over the Rub' al-Khali from the dunes before we headed back to Riyadh.

The attendees extend their thanks to Saudi Aramco for the rare opportunity to experience this unique ecosystem. Alas, there was not much technical in our technical tour as a reported sand storm prevented our visit to any of the oil or gas operations.

References

<https://www.aramco.com/en/who-we-are/mega-projects/shaybah>

https://en.wikipedia.org/wiki/Shaybah_oil_field

<https://www.eia.gov/international/analysis/country/SAU/background>

<https://storymaps.arcgis.com/stories/bcd93a5164434f6f900d0d-5b56a20325>

https://en.wikipedia.org/wiki/Rub%27_al_Khali

<https://www.aramco.com/en/sustainability/minimizing-environmental-impact/biodiversity-and-land-use/promoting-biodiversity/shaybah-wildlife-sanctuary>

https://www.wildfrontierstravel.com/en_US/blog/the-empty-quarter-desert-rub-al-khali

