OIL AND GAS EXPLORATION

INTERMAP

CASE STUDY

CUSTOMER PROFILE: MARATHON OIL CORPORATION

Marathon Oil Corporation, headquartered in Houston, Texas, and the fourth-largest U.S.-based integrated oil and gas company, includes Indonesia as part of its primary deepwater exploration program. In 2006, Marathon was awarded a 1.2 million-acre block off the island of Sulawesi, Indonesia.

> *"Using the data was a massive leap for our Indonesian exploration project."*
>
> Stephen Calver, Geologist, Marathon Oil Corporation

THE CHALLENGE

Companies with interests in Indonesia, the only member of the Organization of the Petroleum Exporting Countries (OPEC) in Southeast Asia, face numerous challenges to their exploration and production efforts.

Marathon needed the most up-to-date topographical information to study the onshore portion of its block.

"We committed to conduct a field geological survey program onshore," said Geologist Stephen Calvert, Marathon International Petroleum Indonesia Limited, a subsidiary of Marathon. "This was the biggest exploration project conducted on the island in more than 10 years."

Calvert is no stranger to the topography of Indonesia. In the 1990s, he studied the area in and around Marathon's block extensively with elementary tools – a global positioning systems (GPS) device, notebook, pen, compass, and bags to collect geological samples.

"After that experience, I asked colleagues in Jakarta and the United States to help me locate hard copy remote sensing imagery," he said. "I ended up using synthetic aperture radar imagery, drafted this into a drawing package and built hard copy geological maps, which was fit-for-purpose at the time.

Calvert joined Marathon a decade later and decided "we needed better imagery and searched to find a solution."

SUMMARY

CHALLENGE

Marathon Oil Corporation needed high-quality 3D topographical data for its onshore oil and gas exploration project in part of a 1.2 million-acre block off the island of Sulawesi, Indonesia.

SOLUTION

The company now uses NEXTMap® products, including digital surface models (DSMs) and orthorectified radar images (ORIs), for its exploration project.

RESULTS

Marathon was able to interpret information in the field and reduce project delays by six months because of Intermap's data.

THE SOLUTION

Marathon promptly purchased digital elevation models (DEMs) from Intermap Technologies®, created by the company's proprietary Interferometric Synthetic Aperture Radar (IFSAR) technology. Marathon now uses NEXTMap products, including digital surface models (DSMs) and orthorectified radar images (ORIs), for the company's exploration project.

The Intermap datasets give Marathon modern and precise elevation models and geographic images that can also help the company's field professionals determine where to drill, route a pipeline, or build related facilities before breaking new ground.

"They had exactly what we needed," Calvert said. "I knew we could first use the data to help us make better decisions and guide us to outcrops that we wouldn't have found if we'd wandered around using traditional hard-copy maps and GPS devices."

IMPLEMENTING THE SOLUTION

Calvert and his team used their laptops and GPS devices to maneuver in the field. "Intermap's GIS products helped us stay safe while we were out there," he said. "When we entered remote areas by truck, horse or on foot, we always knew where we were and used Intermap's imagery to enhance our surveying efforts."

THE RESULTS

"Using the data was a massive leap for our Indonesian exploration project," Calvert said. "We were able to interpret remotely sensed geological information in the field and reduce interpretation delays because we had Intermap's data."

THE INTERMAP ADVANTAGE

ACCURACY

"We always knew where we were and used Intermap's imagery to enhance our surveying efforts."

AFFORDABILITY

Marathon's lead geologist in Indonesia described Intermap's data as having a cost that "was right for the area."

AVAILABILITY

"They had exactly what we needed."

USABILITY

"We were able to interpret remotely sensed geological information in the field and reduce interpretation delays because we had Intermap's data."

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