



CASE STUDY

Oil refinery tracks 2,000,000 materials with Octave Loop Material Readiness



Key facts:

Company: Fluor, TCO

Website:
fluor.com,
tengizchevroil.com

Industry: Oil & Gas

Country: Kazakhstan

Octave products used:
Loop Material Readiness (*Jovix*),
Upstream fab shop and mod yard tagging, RFID tags, Barcodes, Rugged tablets, Gate readers

Significant Numbers:

- Project began with 500,000 RFID tags
- Tracked 2 million materials
- \$36.8B project

Introduction

Fluor and Octave entered a five-year contract on deployment to a large grassroots refinery in Kazakhstan. The Future Growth and Wellhead Pressure Management Project (FGP-WPMP) increased crude oil production at the Tengiz Oil Field by about 260,000 barrels per day. FGP-WPMP had an initial estimated price tag of \$36.8 billion, including \$27.1 billion for facilities, \$3.5 billion for wells and \$6.2 billion for contingency and escalation. The project raised TCO's (TengizChevroil) total production to approximately 1 million barrels of oil equivalent per day. WPMP maximized the value of existing TCO facilities by extending the production plateau and keeping existing plants producing at full capacity. FGP used state-of-the-art sour gas injection technology, successfully developed and proven during TCO's prior expansion in 2008 that enhanced oil recovery.

Loop Material Readiness Scope

Combined with Fluor's materials management system, MatMan, Loop Material Readiness enhanced the site's materials management processes by increasing visibility into the supply chain through RFID, barcoding and rugged tablets. The Loop Material Readiness deployment began in May 2017 with 500,000 RFID tags.

Over the course of the five-year development, Loop Material Readiness and Fluor's MatMan were used to track an estimated 2 million materials. RFID tags and barcodes were deployed at the DSME Shipyard in South Korea, the project's fabrication and modularization site.

Project future

TCO - jointly owned by Chevron (50%), Exxon Mobil (25%), KazMunay Gas (20%) and LukAgro (5%) - is the operator of the Tengiz oil field. The project increased the well pressures and the production capacity of the existing Tengiz site.



Deployment



Tablets

Built to withstand harsh environments, rugged tablets extend track and trace functionality into the field.



RFID Tags

Active RFID tags automate material identification and tracking throughout the material's lifecycle.



Gate Reader

Gate readers automate data collection through shipping, receiving and intra-site transfers.



Vehicle-Mounted Reader (VMR)

VMRs provide automatic material location updates as they sweep the laydown yard.



Barcode Labels

Barcodes are an inexpensive method of tracking that are printed in the field with mobile printers.

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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