



EOR

LABORATORY ITB

PORTFOLIO

2026








IN COLLABORATION WITH



 eor@itb.ac.id

 www.ogrindoitb.com

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Who We Are



EOR Laboratory ITB

EOR Laboratory ITB is a specialized laboratory dedicated to the development, evaluation, and implementation of Enhanced Oil Recovery (EOR) technologies for the oil and gas industry. Through years of collaboration with industry partners, the laboratory has supported a wide range of projects, from laboratory studies and chemical screening to pilot preparation, field implementation, and post-injection monitoring.

The laboratory provides integrated technical support covering laboratory testing, reservoir evaluation, chemical EOR formulation development, simulation studies, conceptual

design, economic assessment, field implementation, and performance evaluation. Its expertise spans waterflood optimization, chemical EOR, CO₂-EOR, CCUS-related studies, and production problem mitigation.

The selected projects and success stories presented in this portfolio demonstrate EOR Laboratory ITB's experience in supporting industry needs through practical, science-based solutions and field-proven applications.



**Prof. Dr. Ir. Taufan
Marhaendrajana, M.Sc**
Head of Laboratory

Who We Are



Part of OGRINDO ITB

EOR Laboratory ITB is part of OGRINDO ITB (Oil and Gas Recovery for Indonesia), a research consortium established by the Petroleum Engineering Study Program, Faculty of Mining and Petroleum Engineering, Institut Teknologi Bandung (ITB).

OGRINDO ITB serves as a collaborative platform connecting academia, industry, and research partners to advance knowledge and technology in the energy sector. The consortium focuses on strategic research areas, including Reservoir Characterization and Production Optimization, Enhanced Oil Recovery, and Energy Transition.

Through this collaboration, EOR Laboratory ITB contributes to OGRINDO ITB's mission of supporting Indonesia's energy needs while developing innovative and sustainable solutions for the future of the oil and gas industry.



Industrial Focus • Practical Solutions • Field Proven



Laboratory Testing

Core analysis, fluid characterization, chemical screening, and EOR evaluation



Reservoir Studies & Field Support

Reservoir evaluation, simulation support, pilot preparation, and field implementation



Monitoring & Optimization

Performance monitoring, data analysis, and recovery optimization

PART OF



GRINDO

RESEARCH CONSORTIUM



Industry & Academic
Collaboration



Research & Technology
Development



Innovative Solutions for
Oil & Gas Recovery

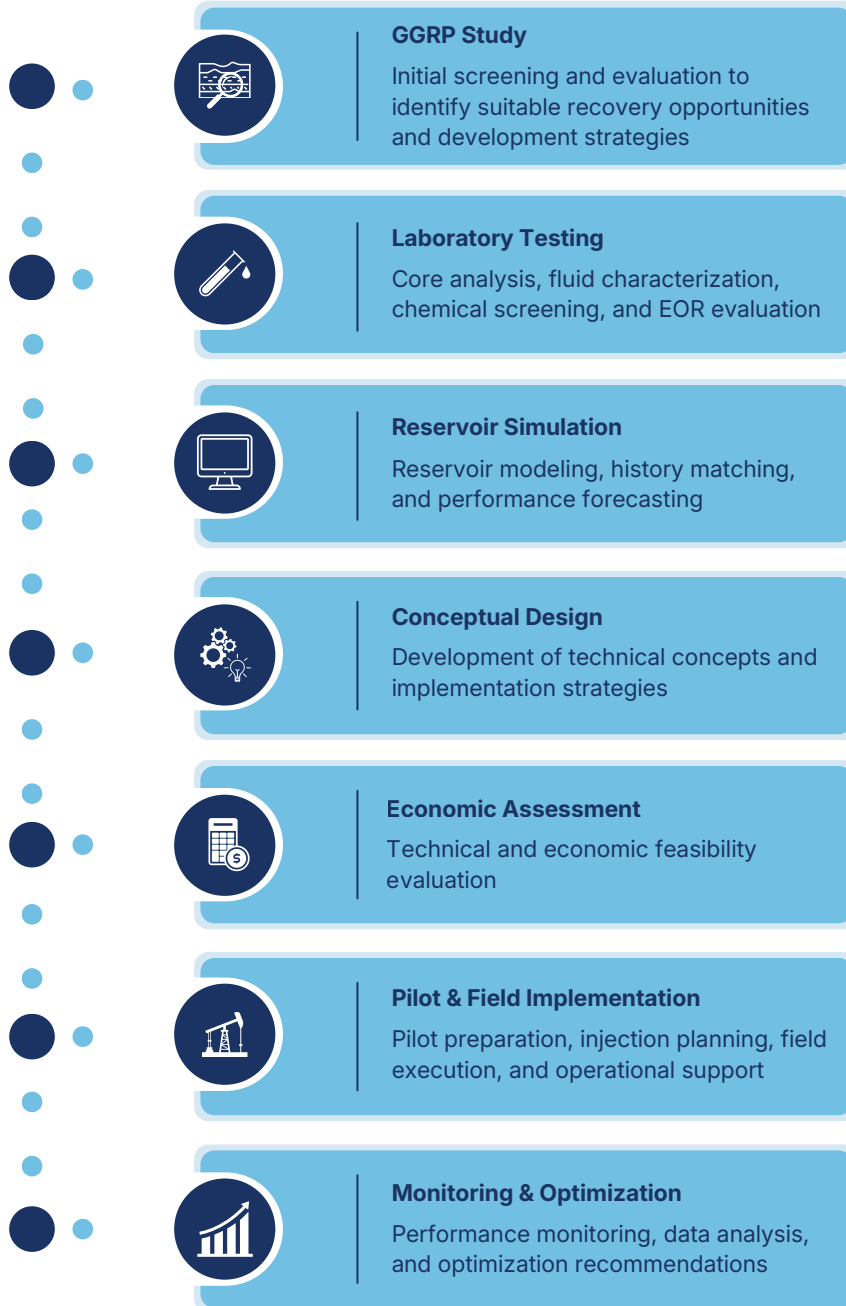


Energy Transition &
Sustainability



Integrated Project Workflow

• From Laboratory Evaluation to Field Implementation •



Experience at a Glance

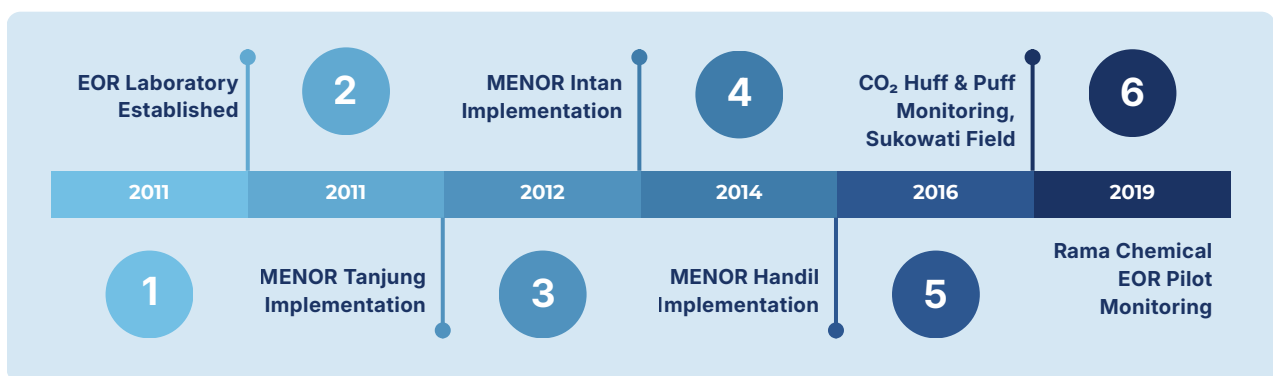
Since its establishment in 2011, EOR Laboratory ITB has supported laboratory studies, pilot preparation, field implementation, and monitoring programs for Indonesia's oil and gas industry. Supported by OGRINDO ITB, established in 2004, the laboratory combines scientific research with practical industry applications to deliver integrated EOR solutions.



**Years of EOR
Laboratory ITB**



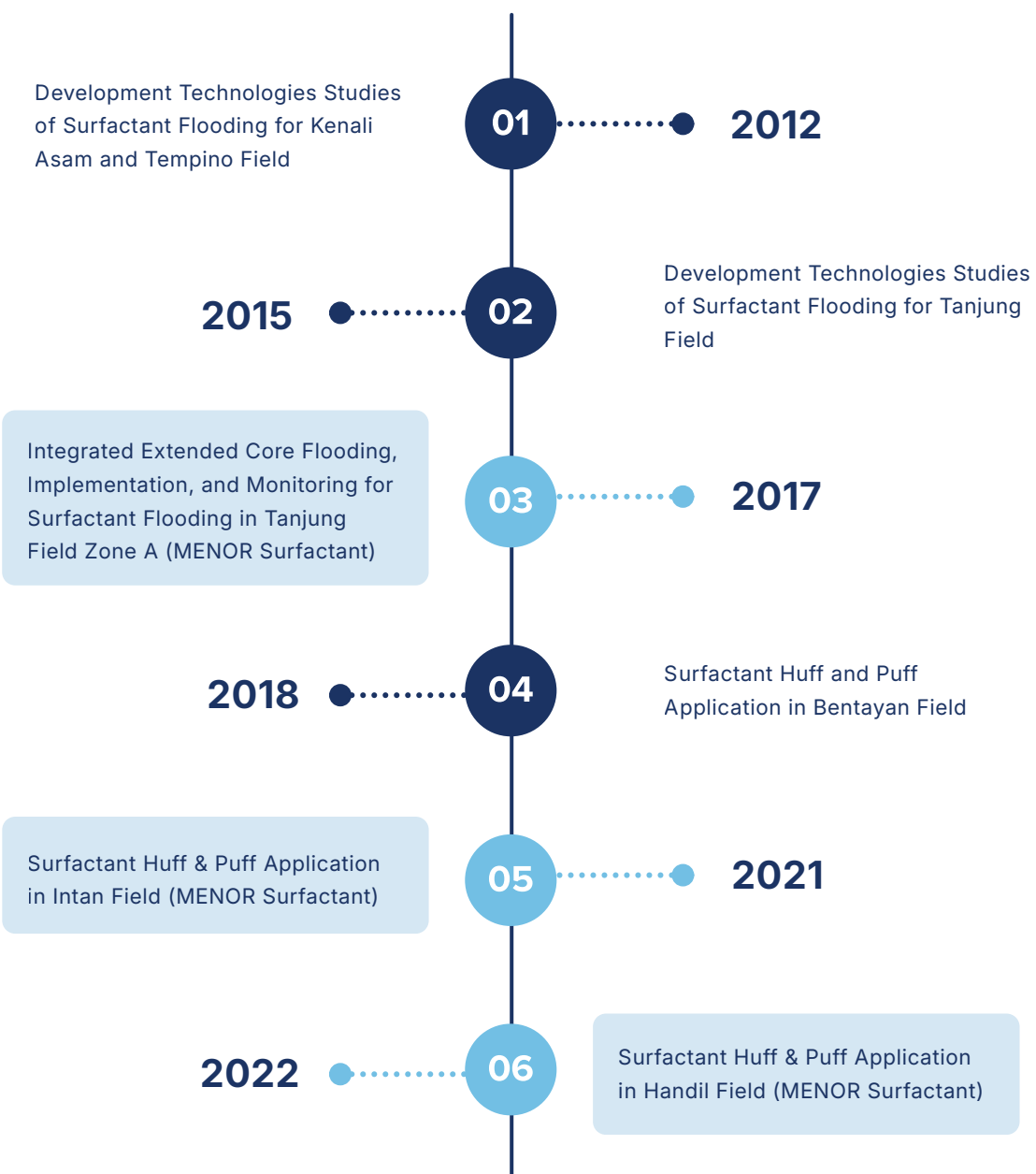
**Years of
OGRINDO ITB**



Selected Commercial & Industrial Projects



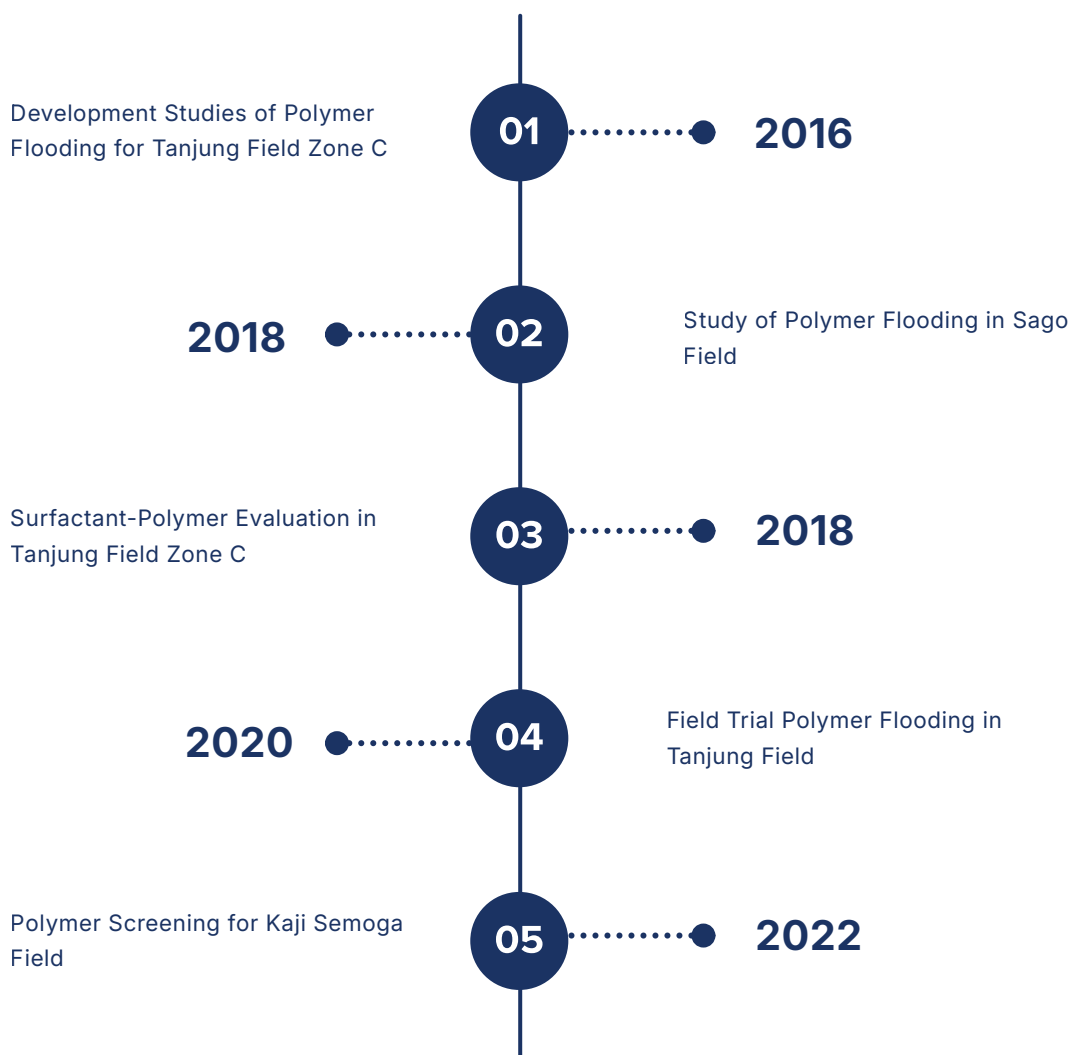
Surfactant Development and Field Implementation



Selected Commercial & Industrial Projects

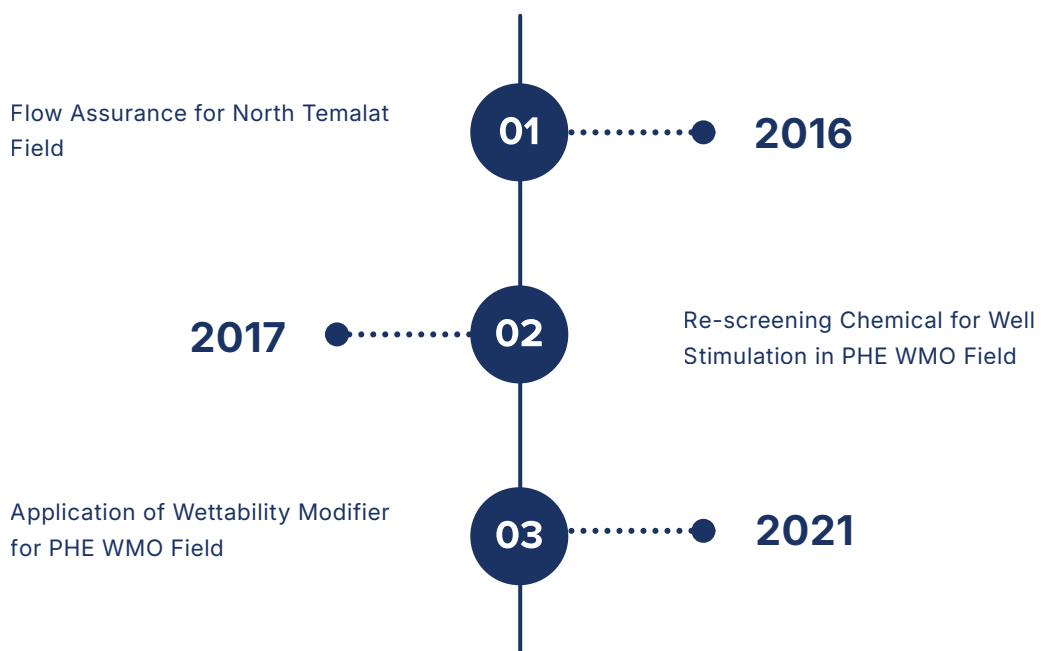


Polymer Screening and Field Implementation



Selected Commercial & Industrial Projects

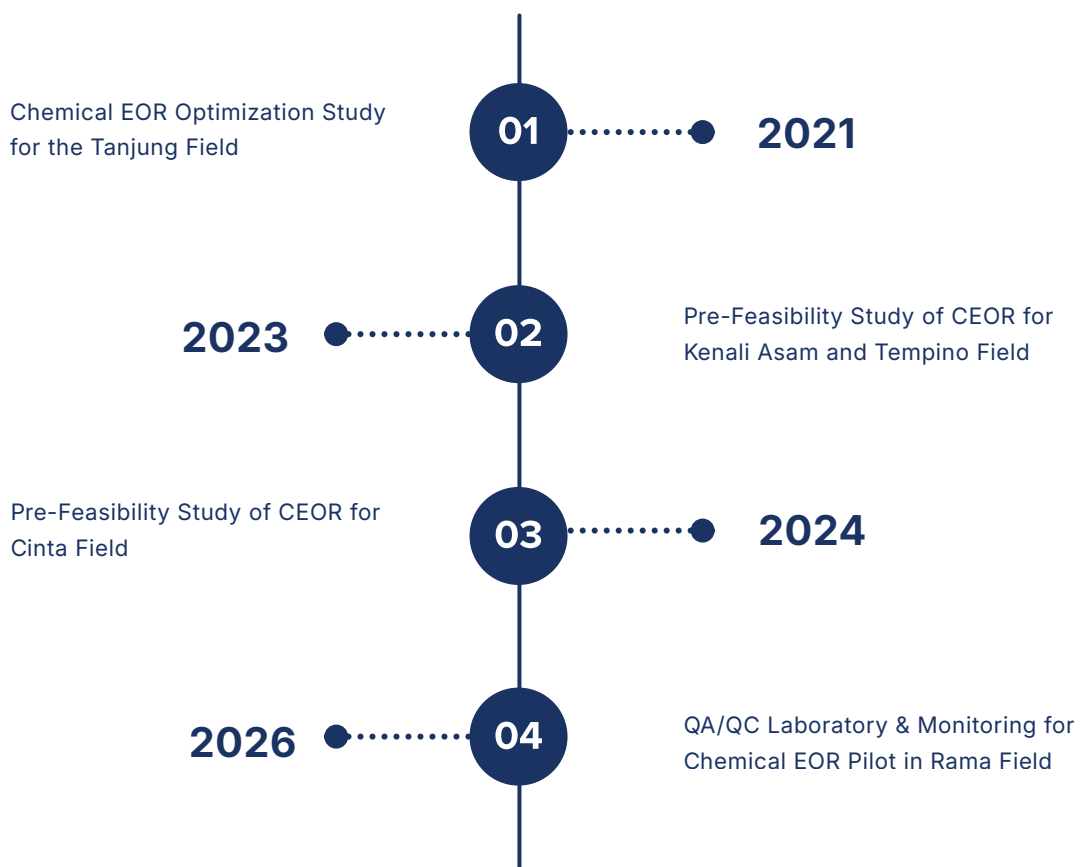
2 Production & Flow Assurance



Selected Commercial & Industrial Projects



CEOR & Pilot Preparation



CO₂-EOR & Energy Transition



Proven Field Implementations



What is MENOR?

MENOR (Mobilizer to Enhanced Oil Recovery) is a palm oil-derived surfactant technology developed through research conducted by EOR Laboratory ITB in collaboration with industry partners under Institut Teknologi Bandung (ITB).

Designed to reduce oil-water interfacial tension and improve oil mobilization, MENOR has been evaluated across a wide range of reservoir conditions, from laboratory testing to field implementation. Its successful application in multiple Indonesian oil fields demonstrates the capability of locally developed EOR technology to support production

enhancement and improved oil recovery performance.



Proven MENOR Field Implementations

The successful implementation of MENOR surfactant in multiple Indonesian oil fields demonstrates EOR Laboratory ITB's capability to bridge laboratory innovation and field application.

Across reservoirs with varying crude oil properties, water-cut conditions, and operating environments, MENOR surfactant technology has shown its effectiveness in supporting production enhancement and improving oil recovery performance.

Proven Field Implementations



Tanjung Field (2017) - MENOR Surfactant



Integrated Extended Core Flooding, Implementation, and Monitoring for Surfactant Flooding in Tanjung Field Zone A

Water Cut Reduction

Up to 50% reduction



Oil Production Increase


Up to 200% increase relative to baseline production



Reservoir Characteristics

Medium Waxy Crude Oil

Status

 100% successfully implemented



Proven Field Implementations



Intan Field (2021) - MENOR Surfactant



Surfactant Huff & Puff Application in Intan Field. Intan Field has high water cut (99.3%), reservoir temperature 80°C, high permeability 1.7 – 2.2 D.

Water Cut Reduction

Reduced from 99.3% to 99.0%



Oil Production Increase

Up to 150% increase relative to baseline production



Reservoir Characteristics

Medium Crude Oil with High Water Cut

Status

100% successfully implemented



Proven Field Implementations



Handil Field (2022) - MENOR Surfactant



Surfactant Huff & Puff Application in Handil Field

Performance Highlight

MENOR surfactant demonstrated effectiveness across a wide range of brine salinities in laboratory evaluation

Oil Production Increase

Up to 200% increase relative to baseline production



Reservoir Characteristics

Light Crude Oil in High-Temperature Reservoir

Status

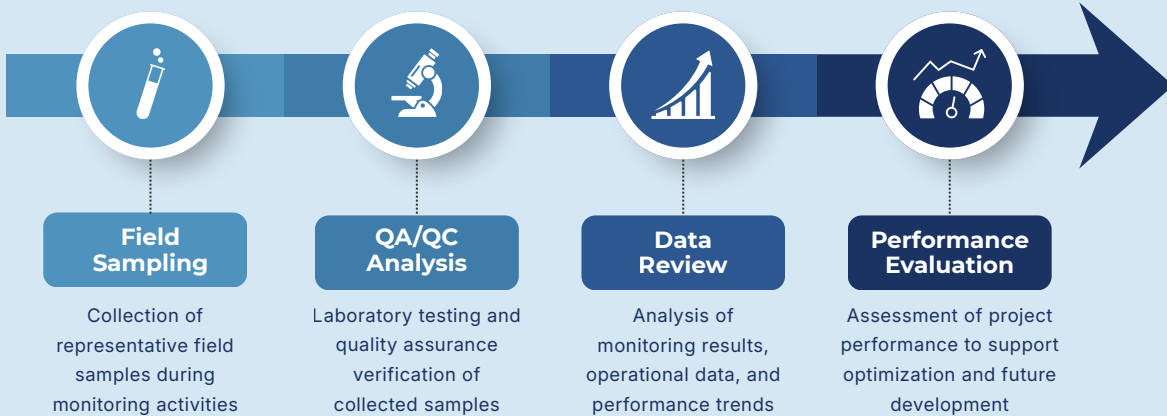
100% successfully implemented



Monitoring Beyond Injection

EOR Laboratory ITB actively supports post-injection monitoring and performance evaluation to assess pilot performance, verify data quality, and provide technical insights for future field development and optimization decisions.

Monitoring Journey



Surfactant Injection Monitoring



Monitoring activities supporting chemical EOR pilot performance evaluation

Polymer Injection Monitoring



Laboratory QA/QC and monitoring support for polymer flooding implementation

CO₂ Injection Monitoring



Monitoring and analytical support for CO₂ field trial evaluation

Our Services



Integrated EOR & Reservoir Services

EOR Laboratory ITB provides integrated technical services supporting Enhanced Oil Recovery (EOR), reservoir evaluation, field implementation, monitoring, and technology development for the oil and gas industry.



● **Laboratory Testing** >

Core analysis, fluid characterization, EOR screening, and displacement testing



● **Pre-Feasibility & Reservoir Studies** >

Screening studies, reservoir simulation, conceptual design, and economic assessment



● **Field Implementation & Monitoring** >

Pilot preparation, injection support, field implementation, monitoring, and performance evaluation



● **Chemical Supply & Technical Support** >

Chemical selection, formulation development, supply, and implementation support



● **Training & Knowledge Transfer** >

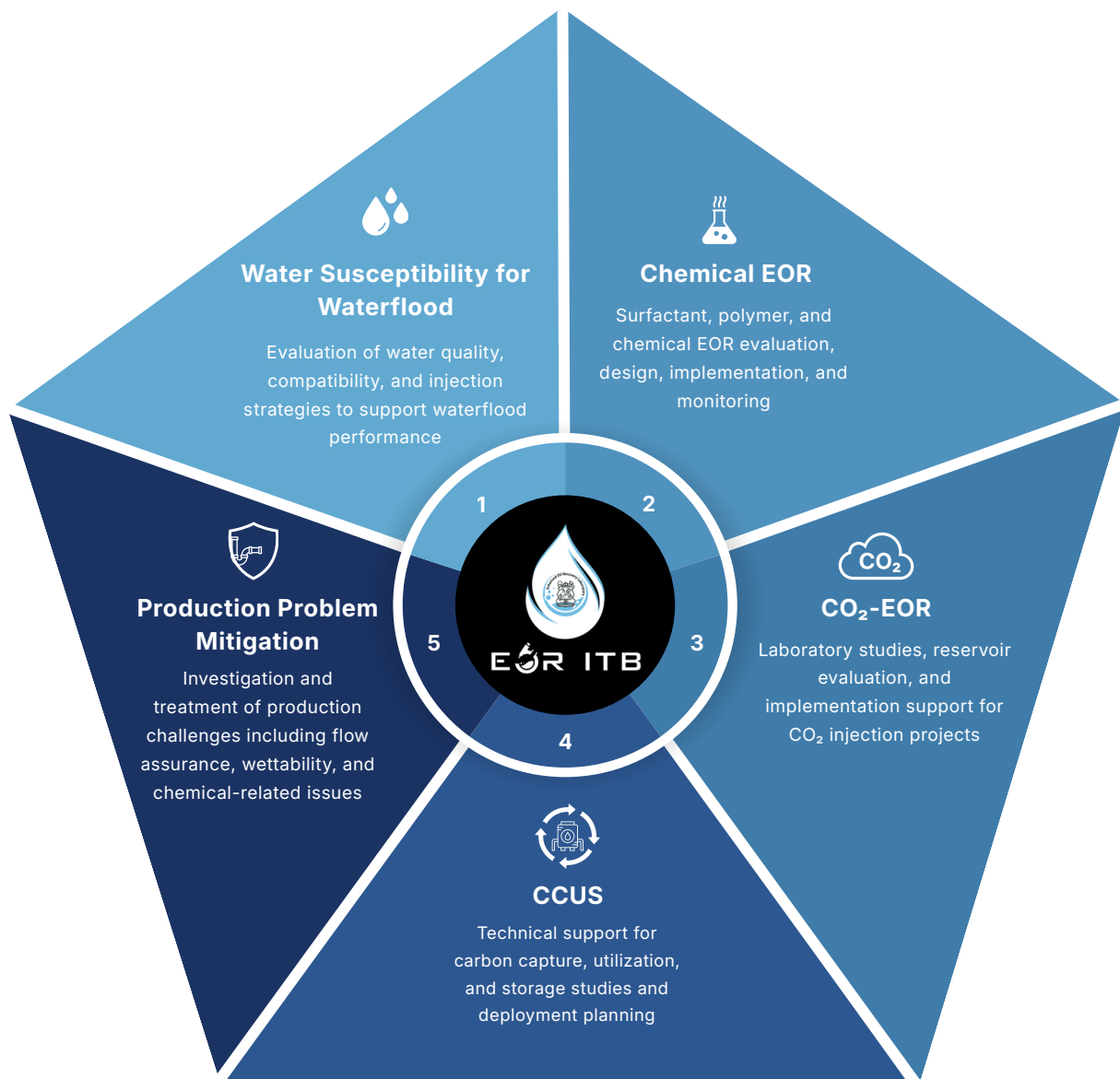
Technical workshops, customized training programs, and industry-academic collaboration

Application Areas



Supporting Oil Recovery, Production Optimization, and Energy Transition Initiatives

EOR Laboratory ITB supports a broad range of technical applications across the oil and gas value chain, from reservoir management and production enhancement to carbon management and energy transition initiatives



Laboratory Equipment



Fluid & Chemical Characterization

Biolin Scientific - Theta Flex - Optical Tensiometer



Contact Angle & Surface Tension

CNG USA CO - TX 500 D - Spinning Drop Tensiometer



Interfacial Tension (IFT)

Kruss - Spinning Drop Tensiometer



Interfacial Tension (IFT)

Anton Paar - DMA 4100 M - Density Meter



Density

Brookfield - DV3T LV - Rheometer



Rheology

Brookfield - DV1 LV - Rheometer



Rheology

Agilent - HPLC-RID System



Water & Chemical Analysis

Laboratory Equipment



Core Flooding & EOR Evaluation

Core flooding systems are used to evaluate oil recovery performance under representative reservoir conditions and support the design of waterflood, chemical EOR, and CO₂-EOR applications.

Capabilities

Waterflood Evaluation

Surfactant Flooding Evaluation

Polymer Flooding Evaluation

CO₂ Flooding Evaluation

Oil Recovery Assessment

Imbibition Testing

EOR Lab ITB - Coreflood Apparatus



EOR Lab ITB - Mini Coreflood Apparatus



Da Vinci - Gas Flood-Core Flood System



Supporting Equipment

LongerPump - LSP01-1BH - Syringe Pump

Eldex - 2LMP - Pump

Teledyne ISCO - 1000D DR-175 - Pump



Reservoir Condition Testing

Reservoir condition testing systems enable laboratory evaluation under high-pressure and reservoir-representative conditions to support EOR and production optimization studies.

Laboratory Equipment

Capabilities

High-Pressure Testing

Reservoir Fluid Evaluation

Pressure-Volume-Temperature (PVT) Studies

Reservoir Condition Simulation

Core Laboratories - PVT Cell (300 mL, 700 bar)



Supporting Equipment

SWAN - DR-175 - Oil-less Air Compressors



Sample Preparation & Supporting Systems

Supporting laboratory systems are used for sample preparation, conditioning, temperature control, and routine laboratory operations required for EOR studies and testing programs.

Sample Conditioning

Temperature Control

Fluid Preparation

Laboratory Support Operations

Lab 2000 - Glove Box



Mettler Toledo - SDD23 - pH/Conductivity Meter



Binder - ED115 - Oven



VELP Scientifica - AM4 - Heating Magnetic Stirrer



Kulim Hi-Tech - 850 - Waterbath



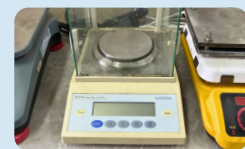
Yamata - YAB220-4 - Analytical Balance



OHAUS - RC21P1502 - Analytical Balance



Sartorius - BS 3235 - Analytical Balance



Laboratory Activities



Achievement & Recognition

EOR Laboratory ITB was awarded First Winner of EOR Laboratory Innovation at Festival EOR 2022 organized by LEMIGAS.

This award recognizes innovation and contributions to Enhanced Oil Recovery technology development in Indonesia.

First Winner Festival EOR 2022



Kementerian Energi Dan Sumber Daya Mineral
Direktorat Jenderal Minyak Dan Gas Bumi
Balai Besar Pengujian Minyak Dan Gas Bumi LEMIGAS

Piagam

diberikan kepada
LABORATORIUM EOR ITB:
Prof. Ir. Taufan Marhaendrajana, M.Sc., Ph.D., Dr. Boni Swadesi, S.T., M.T.,
Mahruri Sanmurjana, S.T., M.Sc., Dr. Miftah Hidayat, S.T., M.Sc., Iqbal Fauzi, S.Si., M.Si., M.T.,
Hilman Dzulkhairi, S.Si., Bayu Dedi, S.T., M.T., Dara Ayuda Maharsi, ST., MT
sebagai Pemenang Kategori

**1st PLACE WINNER
EOR LABORATORY INNOVATION**
dalam acara
FESTIVAL EOR 2022
yang diselenggarakan pada 15 - 17 November 2022
di Balai Besar Pengujian Minyak dan Gas Bumi LEMIGAS

Jakarta, Desember 2022
Direktur Jenderal
Minyak dan Gas Bumi


Tutuka Ariadji



Key Personnel



Leadership Team



Head of Laboratory



**Prof. Dr. Ir. Taufan
Marhaendrajana, M.Sc**



Project Manager



**Dr. Ir. Boni Swadesi,
S.T., M.T., IPU**



Technical Project Coordinator



Ir. Mahruri, S.T., M.Sc.

Key Personnel



Technical Team



**Ir. Miftah Hidayat,
S.T., M.Sc., Ph.D**
Senior Research Fellow



**Yohanes Silaen,
S.Si., M.T.**
Senior Research Fellow



**Zeta Nur
Muhammad Yahya,
S.Si., M.T.**
Research Fellow



Ismail Halim, S.T.
Research Fellow



**Pramesty
Mahacakri, S.T.**
Research Fellow



**Asti Damayanti,
S.T.**
Research Fellow



**Rachmatan Naufal
Adhi, S.T.**
Research Fellow



**Fatahillah Mahfuzh
Ridha, S.Tr.T.**
Research Fellow



**Anggraeni Silvi
Puspita Sari, S.T.**
Research Fellow



**Rizki Ardi Prakosa,
S.T.**
Research Fellow

Key Personnel



Administrative Team



**Kartika Octaviani, Ak.,
M.Ak.**



**Annisa Rachmi
Trahwiwit Widijana,
S.T., M.Sc.**

Why Partner With Us

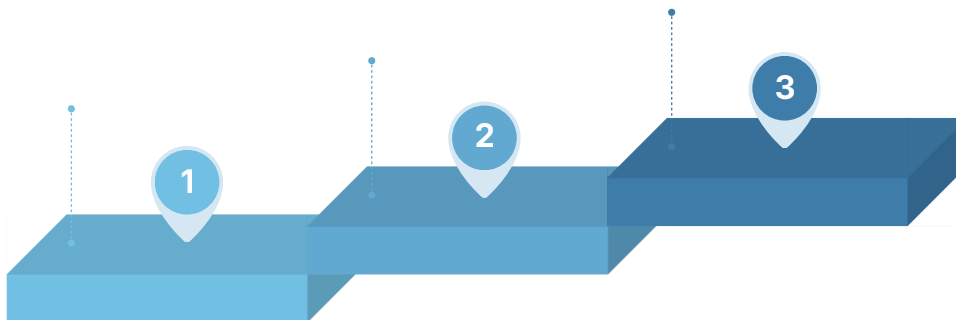


Experience & Capability

15 Years of EOR
Laboratory
Experience

22 Years of
OGRINDO
Experience

Integrated
Laboratory-to-
Field Expertise



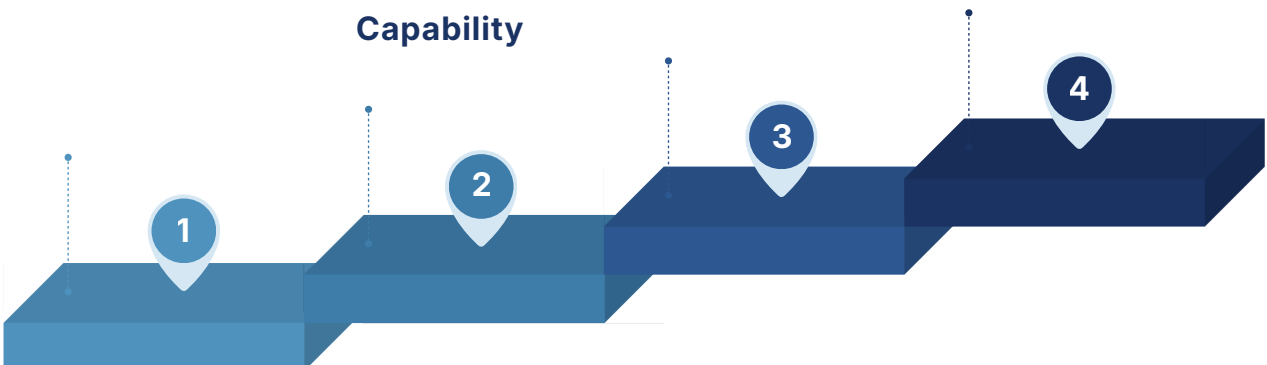
Proven Industrial Track Record

Successful
MENOR
Implementations

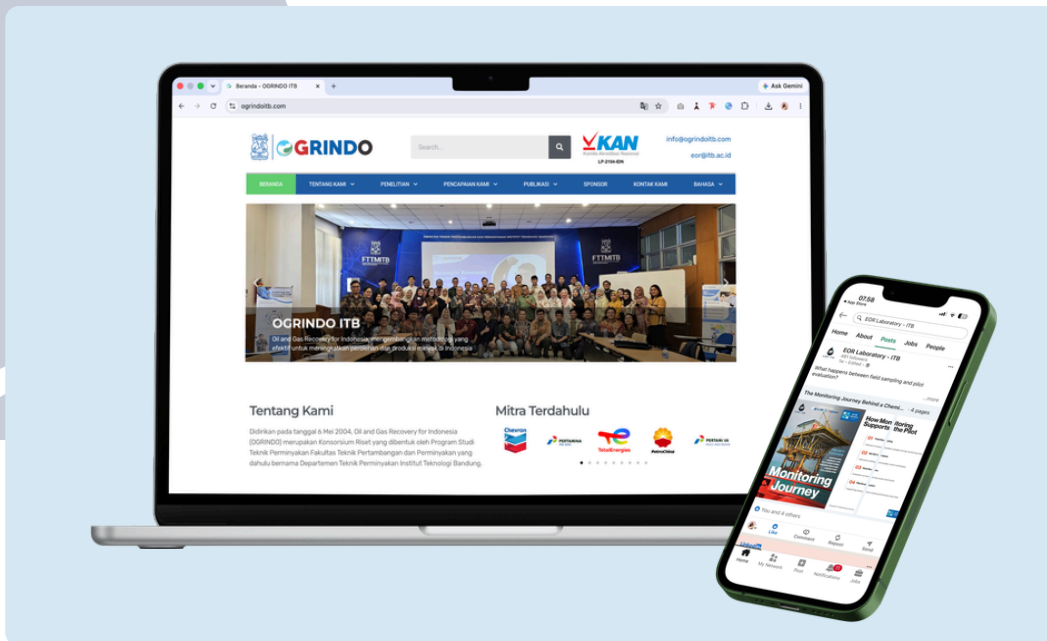
Reservoir
Simulation &
Economic
Evaluation
Capability

Monitoring &
Optimization
Support

Academic
Excellence with
Industrial Impact



Contact Information



Website

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Social Media

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linkedin.com/company/ogrindo-itb



Our Location

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Bandung 40132

Thank You



EOR ITB



LP-2104-IDN



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