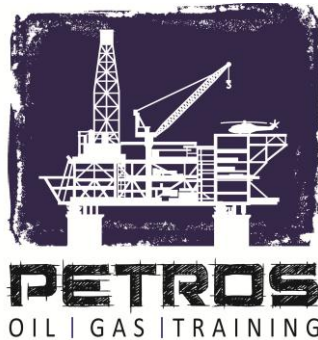


Certificate No : PTR-OFS-TR-WSC-05
Date : December 20th , 2025



CERTIFICATE OF ACCOMPLISHMENT

This certificate is granted to

ABDUL GHANI HARAHAHAP
ID NUMBER : OFS-WSC-05

For successfully completing
& finished the Final Project of our Training

SACS TRAINING - TRANSPORTATION ANALYSIS

Held at **Wasco Engineering Indonesia** – Batam, Indonesia,
29 & 30 November 2025, covering the subjects as listed on the back page



Certificate Validation

A handwritten signature in black ink, appearing to read "Heru Prasadja".

Heru Prasadja, ST
Director

SACS TRAINING - TRANSPORTATION ANALYSIS

SUBJECTS

- Introduction
- Objective Of The Analysis
- Design Premises
 - Project Specification & Design Criteria
 - Codes and Standards
 - API RP2A-WSD. 21st Edition,
 - AISC13th Edition/ASD,
- Weight Provisions
- Weight Contingencies
- Loading
 - Gravity Load
 - Barge Motion
 - Roll, Pitch & Heave Coefficient
 - Deck Position On the Barge
 - Force Inertia due to Roll & Pitch
 - Forces Due To Roll, Pitch and Heave Motions
 - Wind Load
- Loading Combinations
 - Static Case
 - Dynamic Cases :
 - Roll + Heave
 - Pitch + Heave
- Transportation Analysis computer modeling
 - Deck Position on the Transportation Barge Assumption
 - Structural Model
 - Boundary Conditions
 - Sacs Run Stream
- Land Transportation Analysis for FPSO Module
- Sea Transportation Analysis for FPSO Module
- Transportation Analysis Report Preparation

FINAL PROJECT : TRANSPORTATION ANALYSIS OF 103 TONS DECK PLATFORM