

Capability Demonstration for a Major Oil & Gas Operator

CASE STUDY

Date: April 2025

Location: Kazakhstan

Product Focus: FP OilStop®



1. Overview

As part of FullSulate's continued industry engagement, a capability demonstration was conducted with a major oil and gas operator in Kazakhstan. The session aimed to evaluate the performance of FP OilStop® products across a variety of oil spill remediation scenarios in a harsh, environmentally sensitive operating environment.

Location & setup: The demonstration took place at the operator's production facility in north-western Kazakhstan. The site provided a well-structured environment for controlled testing on both water bodies and hard surfaces.

Attendees included representatives from several key departments, including Operational Environmental, Emergency Response, Environmental Control and Data Assurance and Chemical Laboratory Specialists.

FP OilStop® products were tested using Export Crude Oil and Diesel Fuel Oil to reflect realistic contamination conditions.

2. Objectives

The demonstration was designed to:

Showcase the capabilities of FP OilStop® products (Float, Sinking, and Surface) under realistic field conditions

Evaluate product performance across multiple oil contamination scenarios

Assess operational compatibility in extreme temperature ranges (both above and below freezing)

Validate effectiveness across both land-based and water-based spill response situations

3. Demonstration Process

A range of FP OilStop® solutions were evaluated against different spill scenarios:

- **Float** – Designed for oil contamination on water surfaces
- **Sinking** – Developed for subsurface or deeper water contamination
- **Surface** – Engineered for hydrocarbon spills on hard surfaces

Each product was applied in conditions closely replicating real-world spill events to assess practical usability and effectiveness.

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4. Testing Methodology & Observations

FP OilStop® Float and Sinking products were tested in controlled containers using a 1:1 application ratio.

Visual inspections indicated that:

- **FP OilStop® Float** effectively removed oil from the water surface, leaving no visible oil film after recovery.
- **FP OilStop® Sinking** successfully encapsulated oil, with the treated material settling at the base of the container.
- Upon draining, all encapsulated oil-product material remained contained, demonstrating effective separation.

For **FP OilStop® Surface**, a dedicated test area was created using a concrete container to simulate a tank bund. A thin layer of diesel fuel was applied before introducing the product incrementally:

- Immediate reduction in **volatile organic compounds (VOCs)** was observed upon application.
- After a short dwell time, the product was easily removed by brushing.
- The surface was left free of liquid contamination, with only minor residue in a crack, which could also be treated effectively with additional application.

5. Results

All three FP OilStop® products performed successfully under test conditions. Each solution effectively encapsulated or separated oil according to its intended application.

Laboratory analysis confirmed high adsorption rates and a measurable reduction in pH levels in contaminated water. The products demonstrated strong applicability across a wide range of spill response scenarios

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6. Limitations & Development Opportunities

No significant performance limitations were identified, even under extreme temperature conditions. However, **several opportunities for further development** were highlighted:

- Additional testing under ice conditions to evaluate performance in frozen water bodies.
- Refinement of sampling methods to reduce the presence of oil-saturated particles in laboratory analysis.

7. Stakeholder Feedback

The operator expressed particular interest in: **FP OilStop® Float** & **FP OilStop® Surface**. The evaluation team identified multiple operational scenarios where these products could significantly enhance existing spill response capabilities. Proposed next steps include:

Conducting **extended trials** and **validation programs**

Exploring options **for local supply** and availability

Developing deployment strategies for spill response **in ice-covered environments**

8. Conclusion

The FP OilStop® capability demonstration successfully validated the effectiveness, versatility, and operational value of the product range in demanding environmental conditions. The results confirmed that the solutions can deliver rapid, reliable, and environmentally responsible oil spill remediation across both land and water applications.

Importantly, the strong interest from the operator and the identification of multiple real-world use cases highlight the potential for FP OilStop® to become an integral component of modern spill response strategies. With further testing — particularly in ice conditions — and continued collaboration, the products are well positioned for broader deployment across challenging oil and gas environments.