



# Deployment Snapshot:

## IN2ERT™ vs Alternative Cleaning Methods for Heat Exchangers Used in Extraction and Upgrading of Heavy Crude Oil

### Challenge

- High H<sub>2</sub>S and LELs content
- Heavy fouling of tube bundles due to asphaltene and coke buildup, reducing heat transfer efficiency
- High pressure drop, restricting flow paths
- Frequent bundle pulls (every 12 – 18 months), increasing maintenance cost and reducing throughput

### Project

Clean one pair of heat exchangers using the IN2ERT service and compare to alternative methods from prior turnarounds

### Execution

IN2ERT cycled through chemical injections, soak time and N<sub>2</sub> purge

### Results

Improved performance with IN2ERT:

- 90% faster cleaning time
- 30% cost savings compared with alternative methods
- Improved safety for on-site operations; lower potential for personnel exposure through LEL spikes after decontamination
- Less waste with over 95% reduction in chemical use compared with exchanger flooding and recirculation methods, leading to over 30% disposal cost savings and enhanced operator safety (reduced potential for chemical exposure)

### In the Customer's words

"The IN2ERT™ technology worked great on E-100. We pulled the other bundles right after this for comparison and they were completely covered in thick, sticky emulsion. This created a bad working environment for the crew and a lot of time was spent cleaning those bundles."

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