

case study

HIGH H2S CRUDE TANK CLEANED SAFELY AND RECOVERED OIL SOLD

location: New Orleans, Louisiana, USA
client type: Refinery

The client was averaging four months to clean their sour crude storage tanks, ranging from 1-3' of sludge accumulation—the cleaning projects generated about 20 roll-off boxes of material for disposal. One of the most considerable HSE challenges with cleaning the tank was the elevated H2S level. Because of the crude oil properties, the vapor space in the tank commonly exceeded 50,000ppm H2S. During cleaning, as sludge was agitated, the atmosphere would become unsafe to have personnel inside the tank. The tank would have to be vented and work delayed.

Path mobilized the Path Athos® cleaning system on the tank, and an H2S scavenger was injected and circulated for 24-hours before starting de-sludging. Constant gas monitoring was in place during the cleaning, and there were no H2S alarms throughout the process. Upon completing setup and circulation, Path slurried the tank contents using Light Cycle Oil (LCO.) During this process, Path noticed the recirculated material contained a high percentage of coke fines and informed the client. Since the client had not anticipated this, the material was loaded onto a barge for sale rather than separating them.

After the LCO is added to the sludge, Path performs a water wash. However, the operators encountered unexpected oil pockets, extending the process from 2 to 5 days. Once the wash was complete, Path performed a visual inspection via an open manway and discovered the secondary seal was replaced, but the old seal was still in the tank. A crew was required to remove the old seal, and the tank was safe for entry with 0ppm H2S and 0% LEL because of Path's cleaning process.

Even with the coke fines and secondary seal delays, Path completed the project approximately 45 days faster than conventional cleaning. The sale of the product helped offset project costs and eliminated the need to send solid waste to disposal.

tank particulars

- **Service:** Heavy Sour Crude Oil
- **Design:** External Floating Roof
- **Diameter:** 177'd x 48'h
- **Capacity:** 177,000 Barrels
- **Sludge Level:** 25"

savings to client

- **45+ days cleaning time**
- **\$2,175,000 in total**
 - financial breakout below

BENEFIT	DESCRIPTION	MULTIPLIER	TOTAL SAVINGS
Duration	45 days saved vs other contractor	\$6,000/day	\$270,000
Reduced Cutter Stock	17,500 barrels	\$75/barrel	\$1,312,500
Disposal Reduction	15 roll-off boxes	\$3,500/roll-off box	\$52,500
Recovered Oil	13,500 barrels diesel	\$40/barrel	\$540,000

total savings \$2,175,000