

## CASE STUDY

# Tank Inspections & Integrity Management With Visual Plan

## Saving Time & Creating Project Certainty Through 360 Visualization & Digital Twins

By incorporating Visual Plan's 360 photogrammetry and Digital Twins into the tank inspection process, inspection companies **save time, create project certainty, increase efficiency of repairs and ensure worker safety to prevent shutdowns, failures and ecological disasters.**

**reduced site visits**  
for clients  
& contractors

**improved project**  
collaboration  
& communication

**reduced downtime**  
saves \$37k per day  
per tank, on average

## High Tech Tank Inspection Program: Incorporating 360 Scanning Into The Process

Experienced inspectors and technicians, equipped with **360 cameras**, **capture comprehensive interior and exterior visual data** during the integrity inspection process, and again during the post-repair inspection, to produce a virtual walk-through of the tank site. The captured visual data is geo-tagged using latitude/longitude bearings to expedite future locating of the specified tank within the terminal; and remote oversight through 360 visualization and in-environment annotations ensure consistency and quality of the inspection and repair process.



The visual data can be shared widely and easily across teams to facilitate understanding, communication, comprehension and decision-making. Conducting remote inspections, documenting progress and worker collaboration has never been easier for the oil and gas industry.



### 360 CAPTURE SPECS

**camera** Ricoh Theta Z1

**capture method** HDR tripod inside tanks, walking helmet cam and pole on exteriors

**capture size** 150ft diameter, 50ft tall each tank

**capture time** < 90min

**field upload time** 20min

**data processing time** 30min

**data available** project collaboration started same day, while on-site

- ✓ **VISUAL PROJECT CERTAINTY**
- ✓ **FASTER DECISION MAKING**
- ✓ **REDUCED DOWNTIME**

"The 360 photos give us the ability to **perform virtual walk-throughs**, providing tremendous value in developing the scope of work after the pre-inspection is complete. **This effectively eliminates errors, confusion and the need for multiple site visits, translating to realized cost savings.**"

- O&G Customer

## See Immediate And Long-Term Value With 360 Visualization For Tank Inspections

“Our customers can hand off our comprehensive and intelligent annotated 360 scan report to efficiently inform contractors about required repairs rather than having 20 different contractors arrive on-site to walk the tank again.

The customer can send a link to the tank walk-through, so the repair contractor can send them the quote.”

– Petrochemical Tank Inspector

360 VISUALIZATION BENEFITS	VALUE	SAVINGS
Remote access to tank via virtual walk-through	Minimizes job-site travel - no need for project leaders, management or contractors to travel to site to see issues or provide quotes.	\$\$\$\$
Provides clearer details of internal and external tank features	Expedites decision making and provides visual project certainty.	\$\$\$\$
Establishes spatial relationships of assets and components	Reduces need for additional data collection of still photographs; provides clear and measurable environmental data for contractor and repair pre-planning.	\$\$\$
In-environment, spatially placed dynamic annotations	Provides more data for development of assumed scope of work for estimating and planning for out of service repair projects.	\$\$\$
Visual comparison of before and after repair conditions	Better traceability of repairs, easier verification for tank integrity audits, and comprehensive as-built walk-throughs.	\$\$\$
Comprehensive, single visual source of data	Saves communication time for project leaders, designers, engineers, contractors and management by decreasing the number of needed clarifications.	\$\$

## Creating More Accurate, Safer Workflows

Intelligent inspections with Visual Plan build a Digital Twin of oil, gas and petrochemical storage tanks, so the entire team – from management and project leaders to engineers and contractors – can have a comprehensive and entirely remote visual from which to make decisions. Incorporating 360 visualization into the integrity management process improves performance and safety across all tank life-cycle phases and operating conditions, from first construction to decommissioning.



**With this level of comprehensive, detailed access to the site available on-demand, using Visual Plan has created safer workflows with fewer people on site:**

- Walk-throughs and planning can be performed without travel
- Remote visibility means faster on-boarding of new team members
- Fewer people driving to remote sites means reduced windshield time
- Less required regulatory and safety training needed for site access