THE HANFORD SITE

Laser Scanning: An innovative approach to mitigate risk in tank farms - 23023

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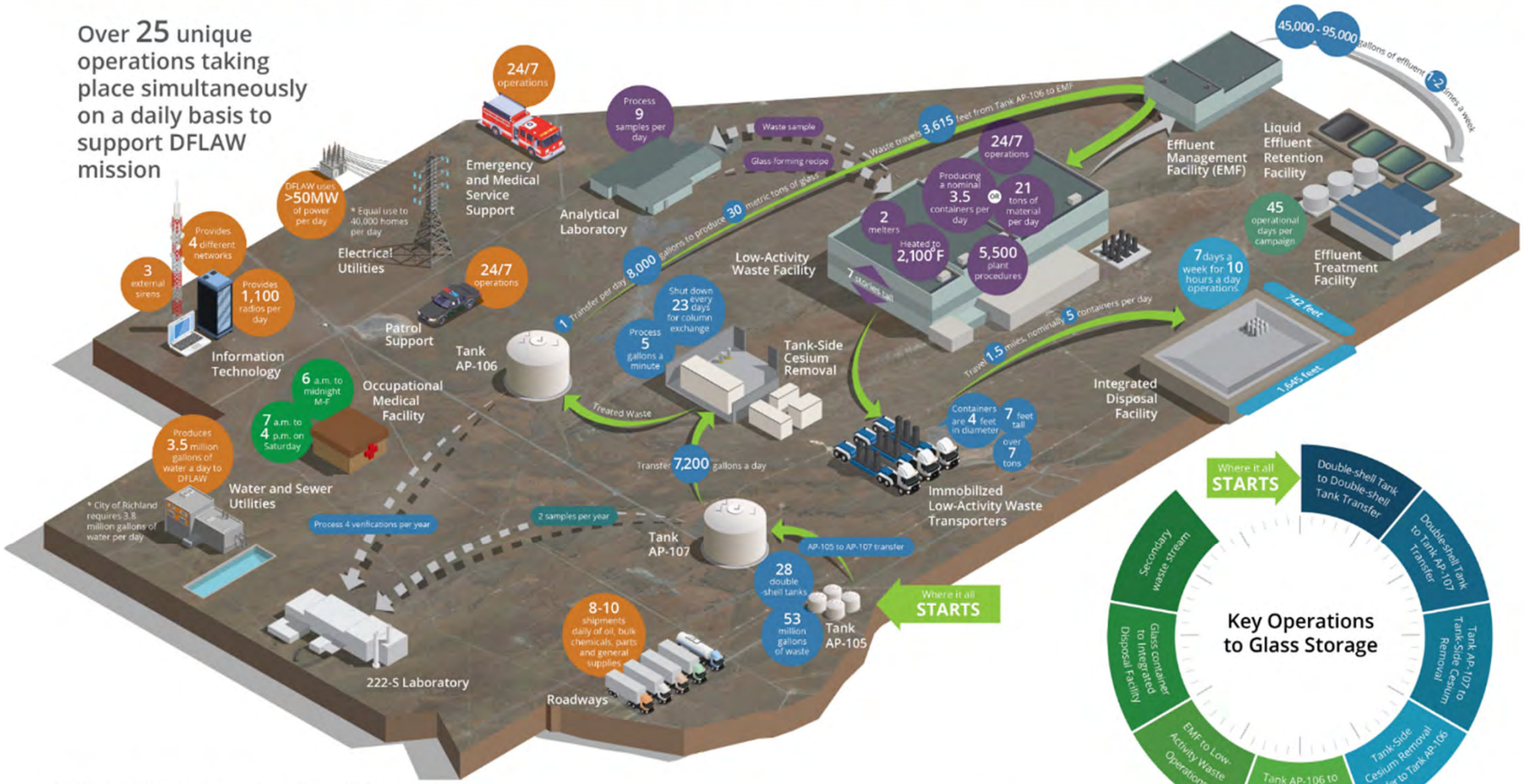
Day in the Life of Direct-Feed Low-Activity Waste (DFLAW)

ONE HANFORD

Over 25 unique operations taking place simultaneously on a daily basis to support DFLAW mission



NOTE: Nominal values are depicted and will fluctuate throughout operations

Tank Farms | 222-S Laboratory | Waste Treatment and Immobilization Plant | Effluent Treatment Facility | Disposal Operations | Infrastructure Services | Occupational Medicine

HNF-67171 Rev 1

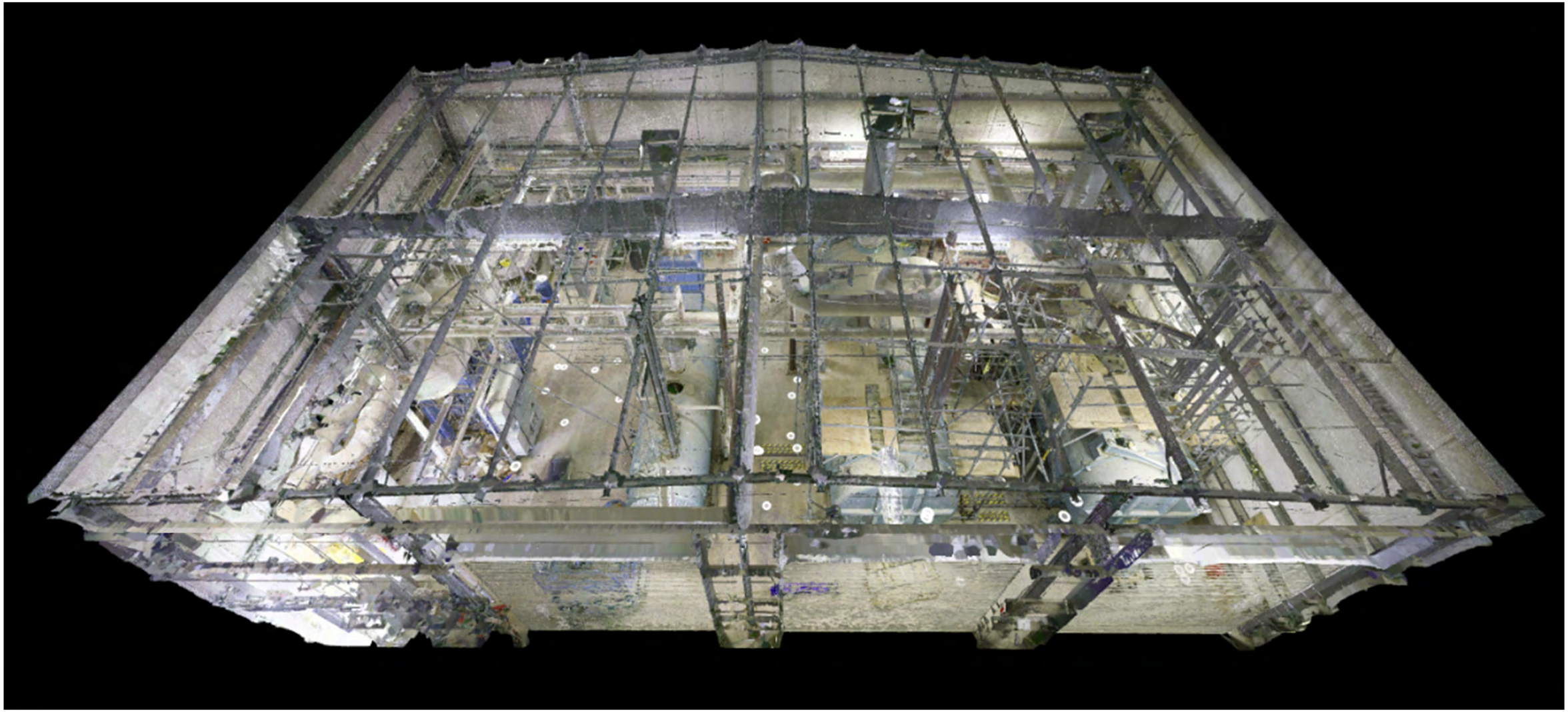
Agenda

- Introduction
- Process description
- Features
- Benefits
- Conclusion

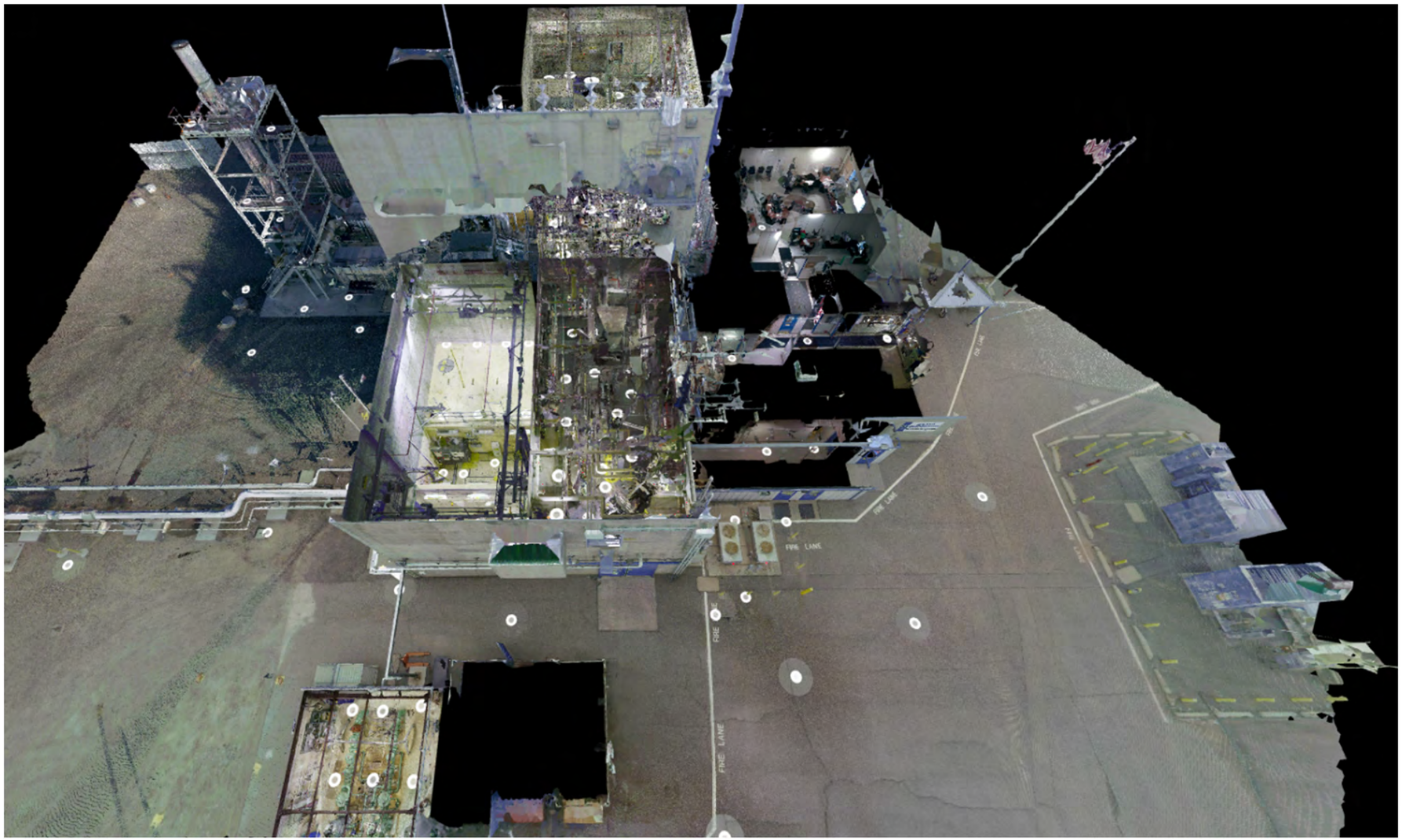
Introduction

- Washington River Protection Solutions (WRPS) uses laser scanning as a tool to perform work and create 3D models
  - 22 unique models exist at time paper was published
- Laser scanning has created work efficiency; employees are able to view facilities without ever leaving their office
- Embraces ALARA approach by minimizing time in potentially radiological areas
- The reduction of entries into tank farms or facilities that require qualifications due to potential radiological exposure is mitigated
- 3D models assist with pre-job briefings and work-planning efforts

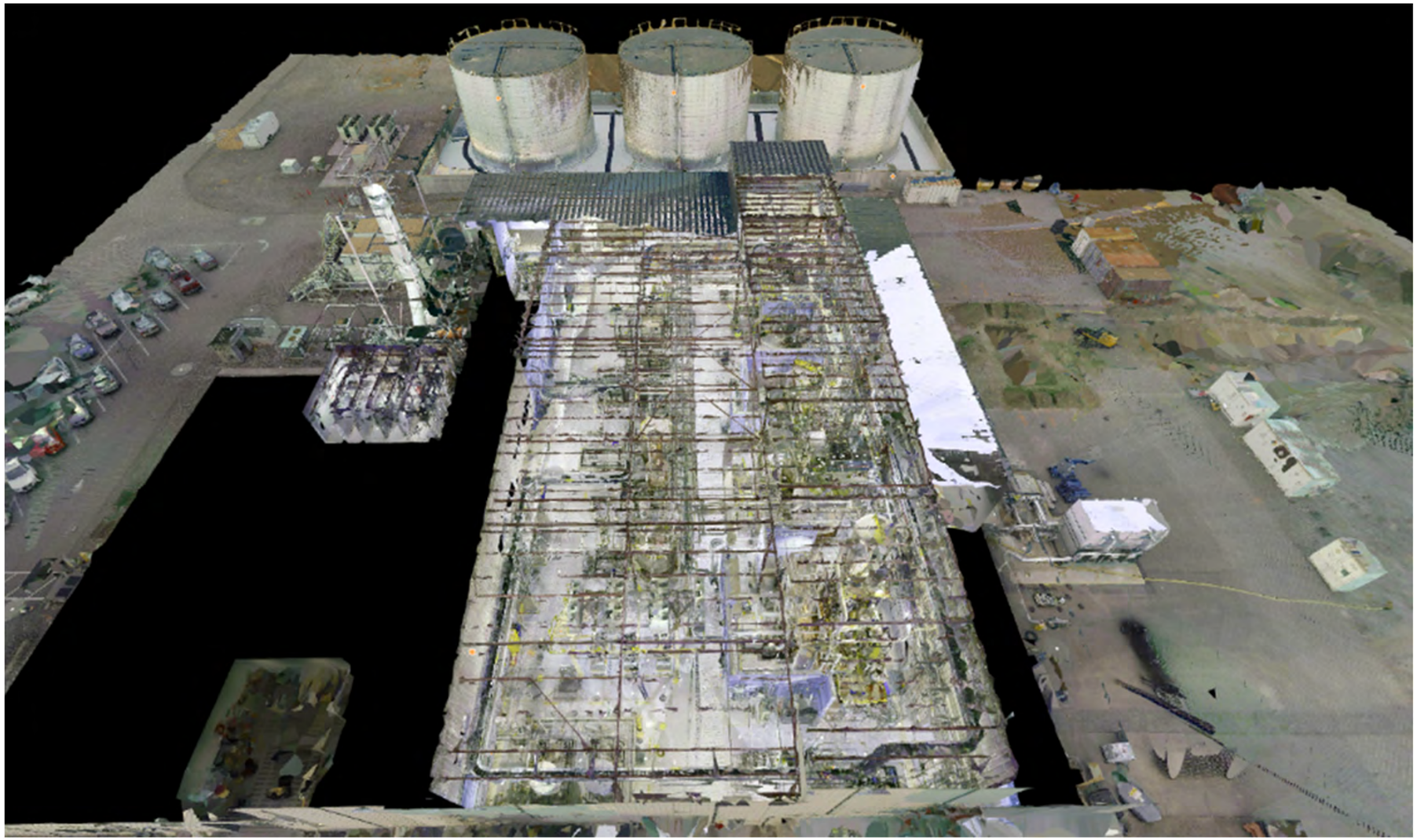
3D Model Example – 242A Boiler Annex



3D Model Example – 242A Evaporator



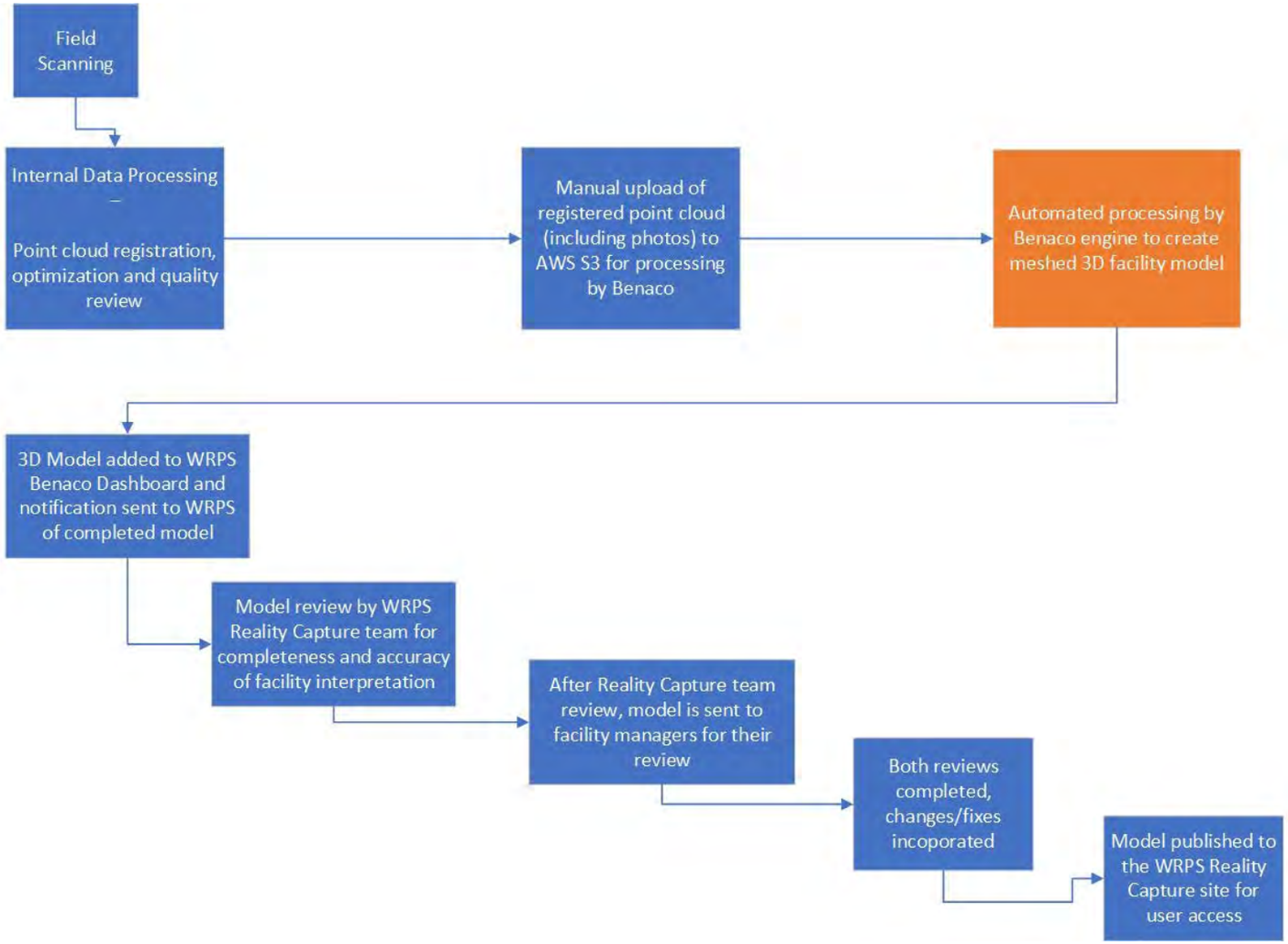
3D Model Example - ETF



Process Description

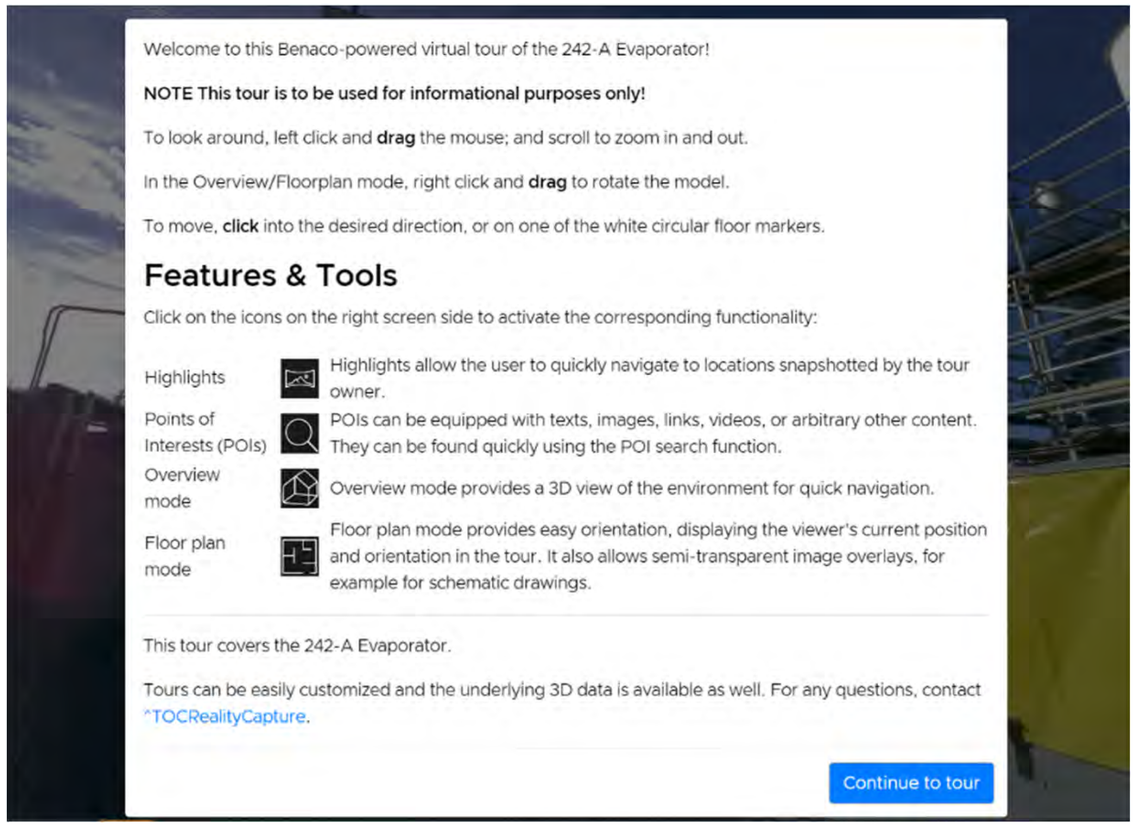
- Request for 3D model
  - Perform laser scan in field
  - Register data
  - Integrate 360° photos into model to create a more dense product
  - Upload data to third party to finalize model and host
  - Notify requestor of availability of model

Process Description cont.

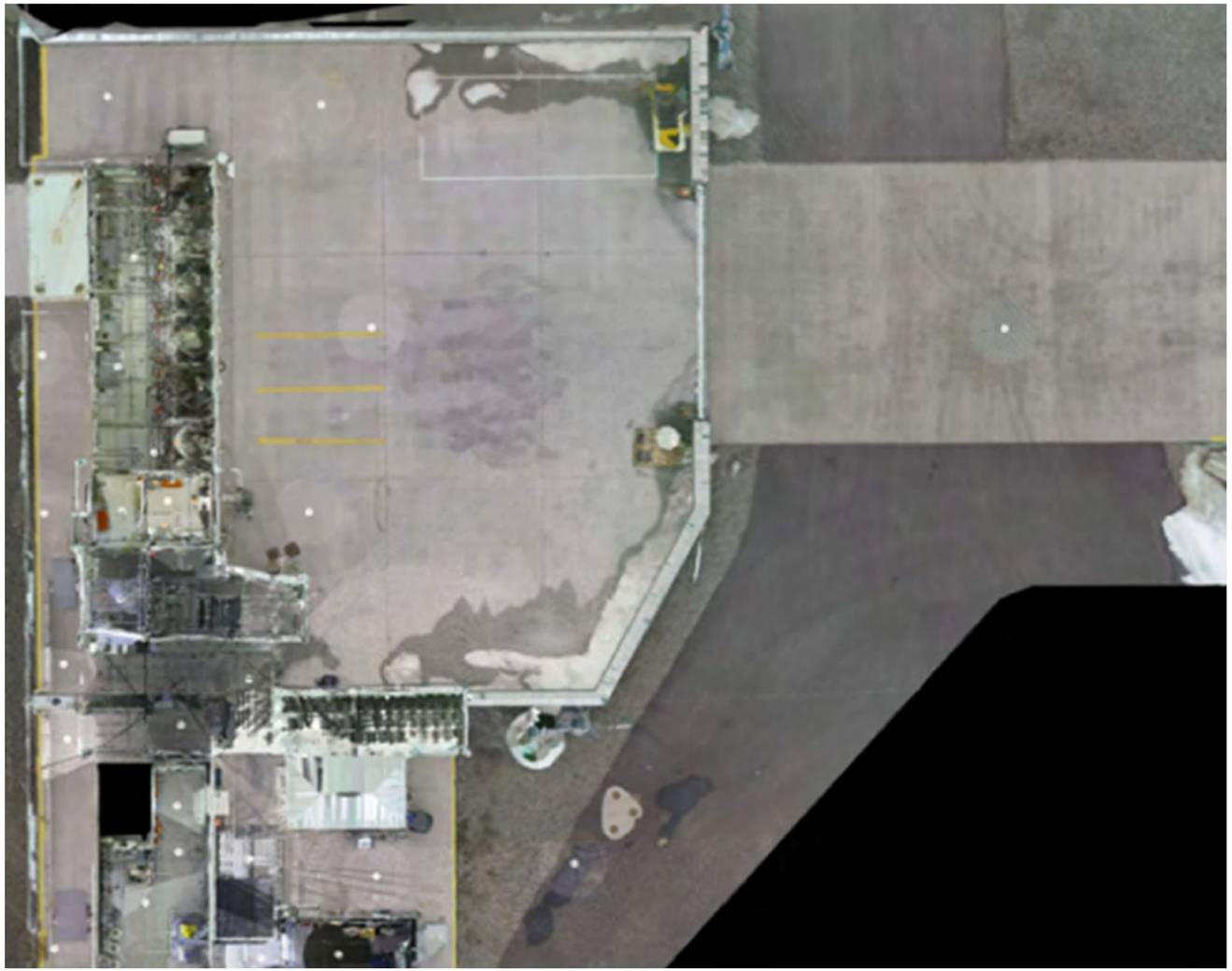


3D Model Features

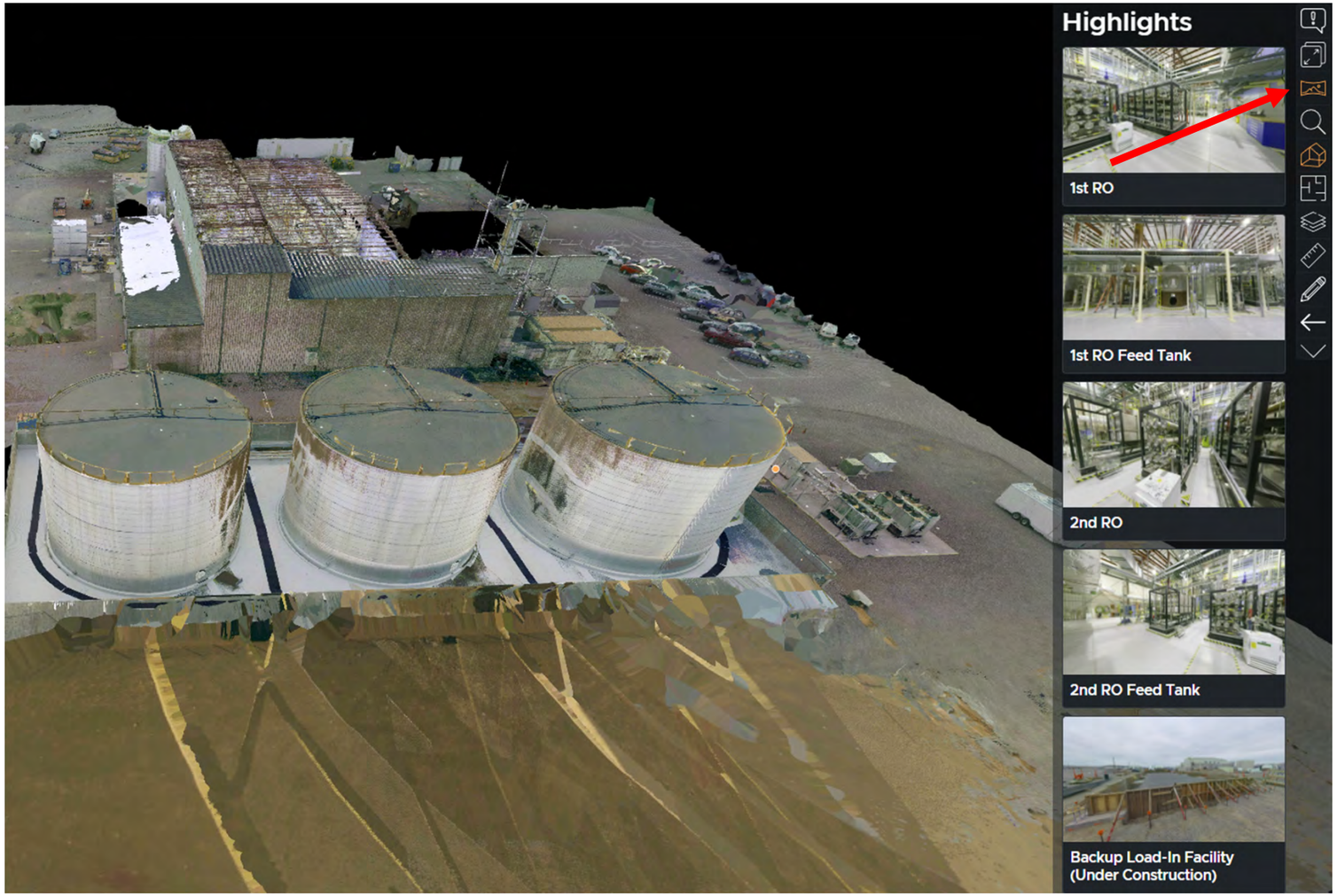
- Model clones
- Guided tours
- Highlights of precise locations
- Levels
- Points of Interest (POI)
- Measurement tool



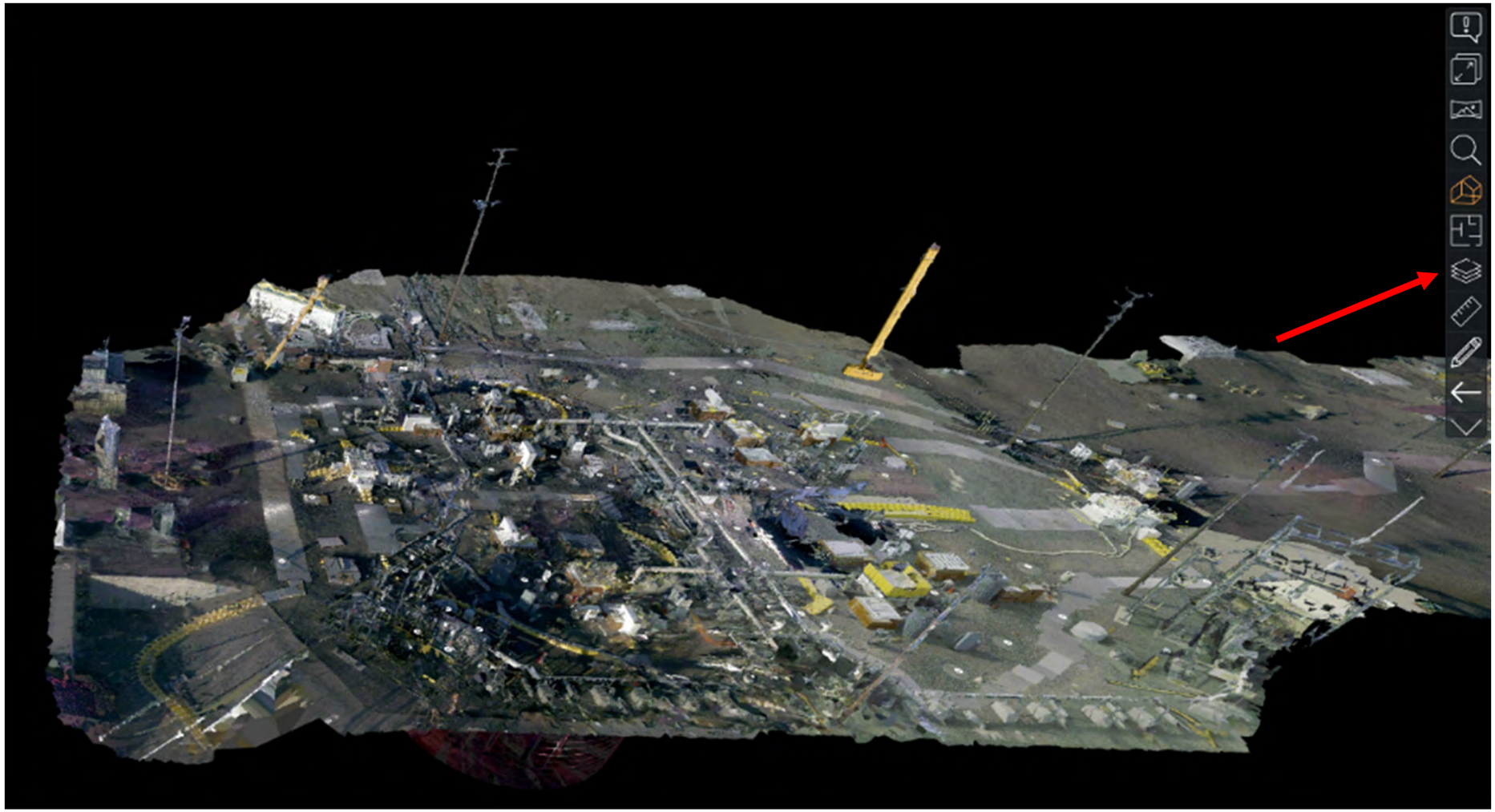
Guided Tours



3D Model Feature - Highlights



3D Model Feature - Level



3D Model Feature – Level cont.

3D Model Feature – Points of Interest (POI)

3D Model Feature – Measurement Tool

Benefits

- Follows ALARA principles
- Cost savings
- Time reduction
- Higher internal value
- Creates synergy

Conclusion

- Laser scanning facilities to create 3D models is an innovative approach and valuable tool
- Plans to create a 3D model of every tank farm, as well as perform updates to existing models as they become outdated
- Average ~800 views per month of our 3D models
- Three models approved for public release:
  - A Farm – https://benaco.com/view/eef98bf0-1d2f-4303-9776-22250dc80f20
  - AX Farm – https://benaco.com/view/077ef77e-4087-42b0-8dd8-45cc41ae3609
  - Tank-Side Cesium Removal (TSCR) Facility – https://benaco.com/view/a854ca2d-3378-4f3e-a412-4fdbb4de3c71
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