WHERE ENERGY CHALLENGES MEET INNOVATION
COMPANY OVERVIEW

O&M Efficiencies and Optimization
Safe and Compliant Operations
Business Performance Outcomes

Domain
Upstream   Processing   Midstream   Storage   Downstream

Values

Solutions

Enabling Services & Technologies
What we will cover

- Introduction/Background
- Manuals/Guides
- Reporting/Analytics
- Mapping
- 3D Scanning
Introduction/Background

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Issues and Concerns

- Unorganized
- Incomplete
- Hard to update
- Difficult to use
Unorganized
✓ Now Organized and Accessible

Incomplete
✓ Always Complete
✓ Always in Compliance

Hard to Update
✓ Easy Push Updating

Difficult to Use
✓ Searchable
✓ Online/Offline Capable
✓ Easy to Transport
Typical Reporting In Field

Can Lead To Unorganized Reports in the Office

Take the Clipboard Out of the Field!
Issues and Concerns

- Incomplete
- Accuracy
- Not Legible
- Not Turned In/Lost
- What Do You Do With Them
- Storage
Electronic Forms

- Incomplete
  - ✓ Required Fields
  - ✓ Rules
- Accuracy
  - ✓ GPS Stamped
  - ✓ Time & Date Stamped
- Not Legible
  - ✓ Typed, Not Hand Written
  - ✓ Voice Recognition
Electronic Forms

☑️ Not Turned In/Lost
  ✓ Once Submitted, Received And Backed Up

☑️ What Do You Do With Them
  ✓ Analytics
  ✓ Risk Analysis
  ✓ TVC

☑️ Storage
  ✓ Digital Storage Is Cheaper Than Physical
  ✓ Takes Up Less Space
Electronic Forms
Reporting/Analytics

Count of Id by WEEK ENDING and Work Descriptions

Work Descriptions: (Blank) - Main - New - Distribution - Main - Replacement - Other - Service - Abandon...

Count of Id by City Name

- Las Vegas, NV: 405
- Bullhead City, AZ: 22

Count of Id by Work Descriptions

- Other: 126
- Service - New - Distribution: 124
- Main - Replacement - Other: 114
- Main - New - Distribution: 50
- (Blank): 8
- Service - Abandonment: 5

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3D Scanning

- Leica RTC 360
  - 2 Million Data Points a Second
  - Millimeter accuracy
  - Can collect data up to 300’ away
  - Collect using smartphone/tablet
3D Scanning

- Automatic registration and point cloud creation
- Imagery overlaid on point cloud data
3D Scanning

- 3D models/drawing generation
- +/- 1mm @10M, 3mm@50M
- Limits Safety Hazards
- Reduces field time and shutdowns
- Improves project management
- Precise, fast and complete
- Photographic visual animation
- Variation between design / execution
- Virtual site visit and preliminary design
- 3D models/drawing generation
3D Scanning

- Full As-Is 3D models of piping, structural steel, equipment and buildings
- True Representation of the environment
- Replaces 3D Cad models
3D Scanning
3D Scanning
3D Scanning
3D Scanning
Mapping

- Removing Paper Maps From Field
- Current
- Updated and Accurate
THANK YOU