
UNVEILING THE MAGIC OF MIDSTREAM INNOVATION
2025
GPA MIDSTREAM CONVENTION
Welcome!

MOP/MAOP Reconfirmation & Material Verification Program

Implementation & Management

Biographies

Nick Schafer

- Project Manager, Integrity & Compliance – 12 Years
- BS Mech. Engineering, Northern Arizona
- Specialize in Assisting Industry Partners Accomplish MAOP/MOP Confirmation & Material Verification Goals
- Historic & New Construction Records

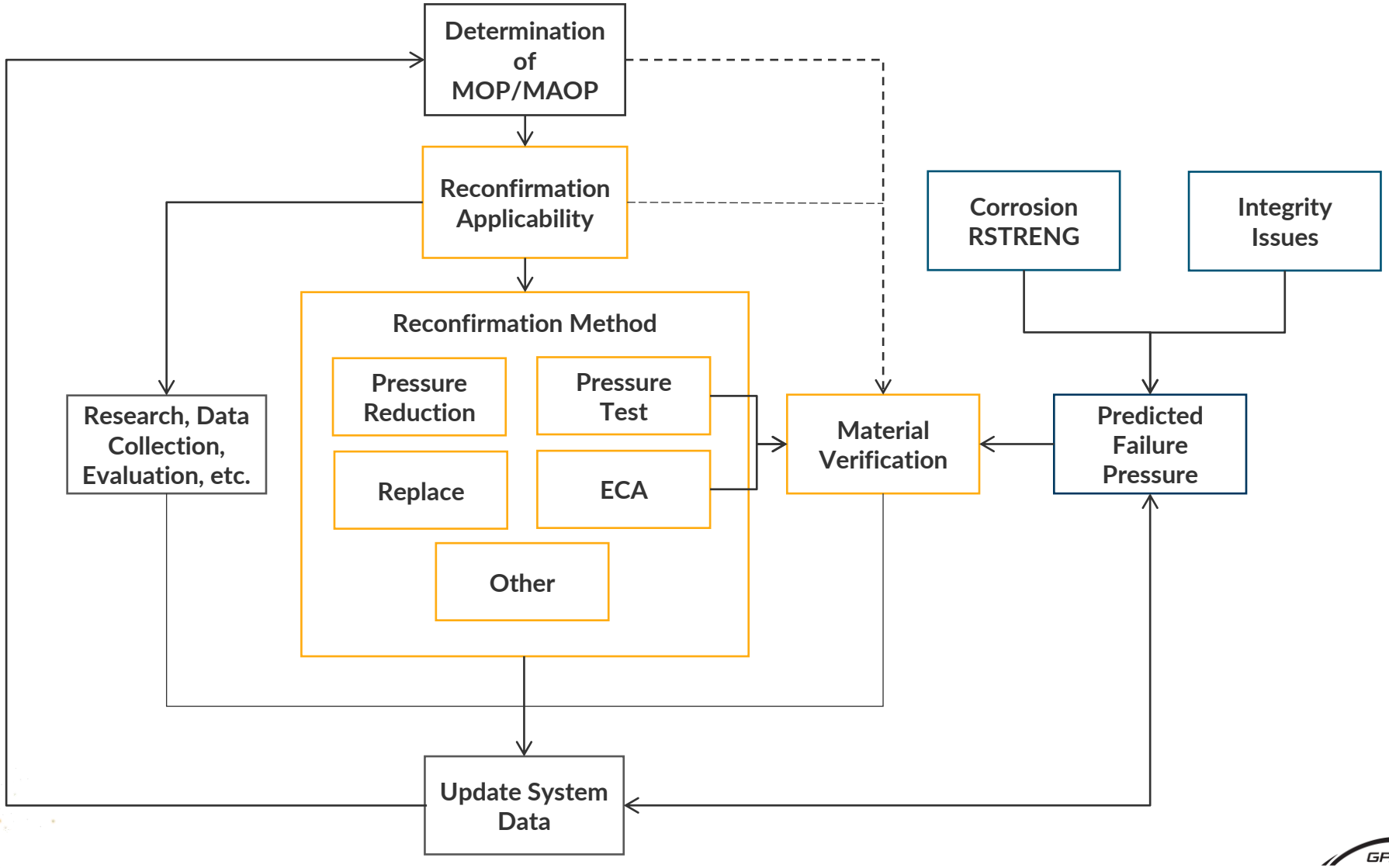
Meghan Schleicher

- Project Manager, Metallurgy – 13 Years
- BS Materials Science & Engineering, Metallurgy, UIUC
- Metallurgical Support Projects Span Pipeline Life Cycle
- Thousands of MTRs Reviewed
- Focused on Material Verification in accordance with regulatory requirements

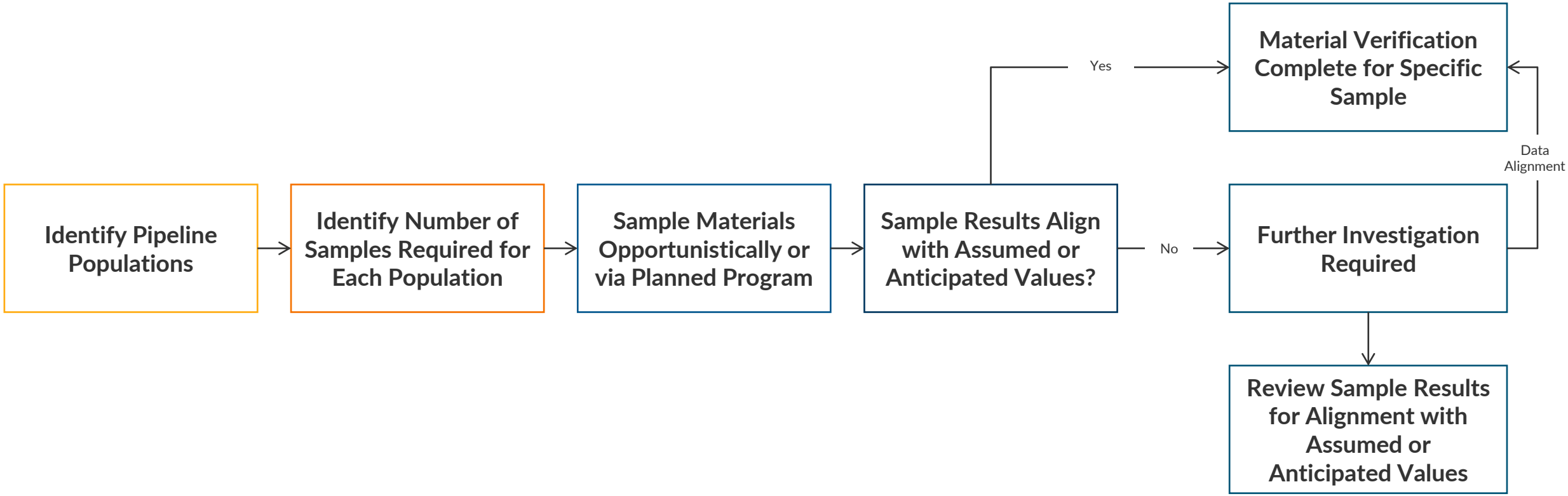
Overall Goals

- Best Practice Techniques for:
  - Program Implementation
  - Program Management
- Common Challenges and Potential Solutions
- Case Study Notes & Examples
- To “Keep In Mind”
  - Safety, Reliability, and Compliance

Program Overview



Material Verification Process



Program Considerations

- Start-Up
  - Data Analysis (e.g., pressure testing, material properties)
  - Data Collection (e.g., pipeline attributes, historical records)
  - Program Record Keeping
- Collaboration
  - Stakeholder Engagement
  - Internal Subject Matter Experts (SMEs)
  - Field Personnel
  - External
- Implementation Plan
  - Objectives
  - Scope of Work
  - Methodology and Approach
  - Industry Experts

Start-Up

- Data Analysis (e.g., pressure testing, material properties)
  - Quality of Available Records
    - Traceable, Verifiable, and Complete (TVC)
  - Identify and Resolve Gaps

- Data Collection (e.g., pipeline attributes, historical records)
  - Current Data & Records Status
  - Improvements or Changes

- Program Record Keeping
  - Processes & Procedure Documentation
    - O&M, Forms, Technical Guidance, etc.
  - Tracking
    - Keep everything! If it can be tracked… track it!

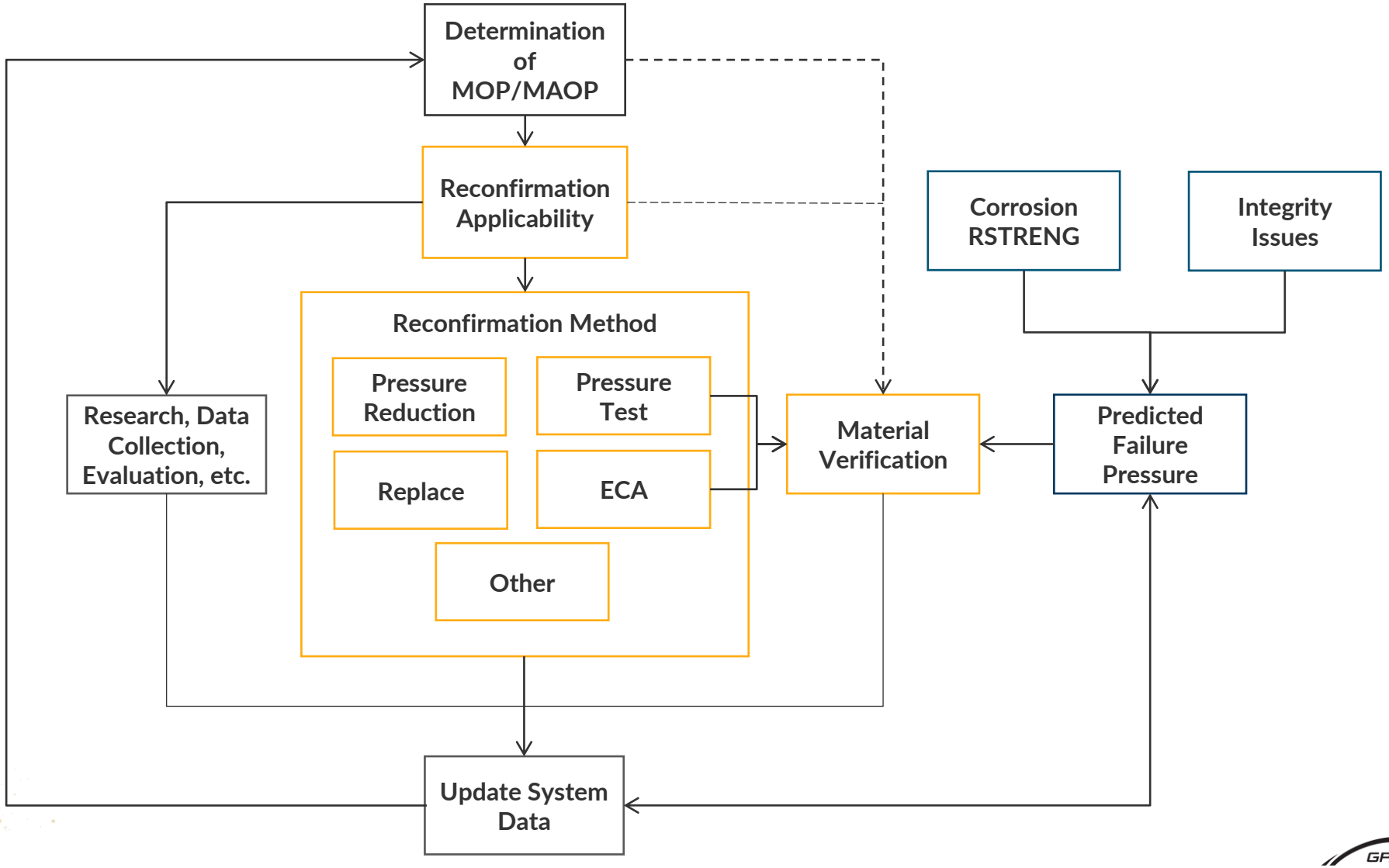
Collaboration

- Stakeholder Engagement
  - Cross-functional Support
- Internal Subject Matter Experts (SMEs)
  - Tenured Employees
- Field Personnel
  - What might they know that you do not?
  - Planning Involvement
- External Industry Experts
  - Testing Support (destructive & non-destructive)
  - Industry Peers
  - Contractors

Implementation Plan

- Objectives
  - Internal
  - Compliance
  - Planning
    - Yearly Projections
    - Desired Rate of ‘Progress’
- Scope of Work
  - Determine MOP/MAOP Reconfirmation Applicability
  - Determine Material Verification Requirements
  - Strictly Required vs. Best Fit
- Methodology and Approach
  - Opportunistic or Planned
  - Separate Program or Merge with Existing

Program Overview



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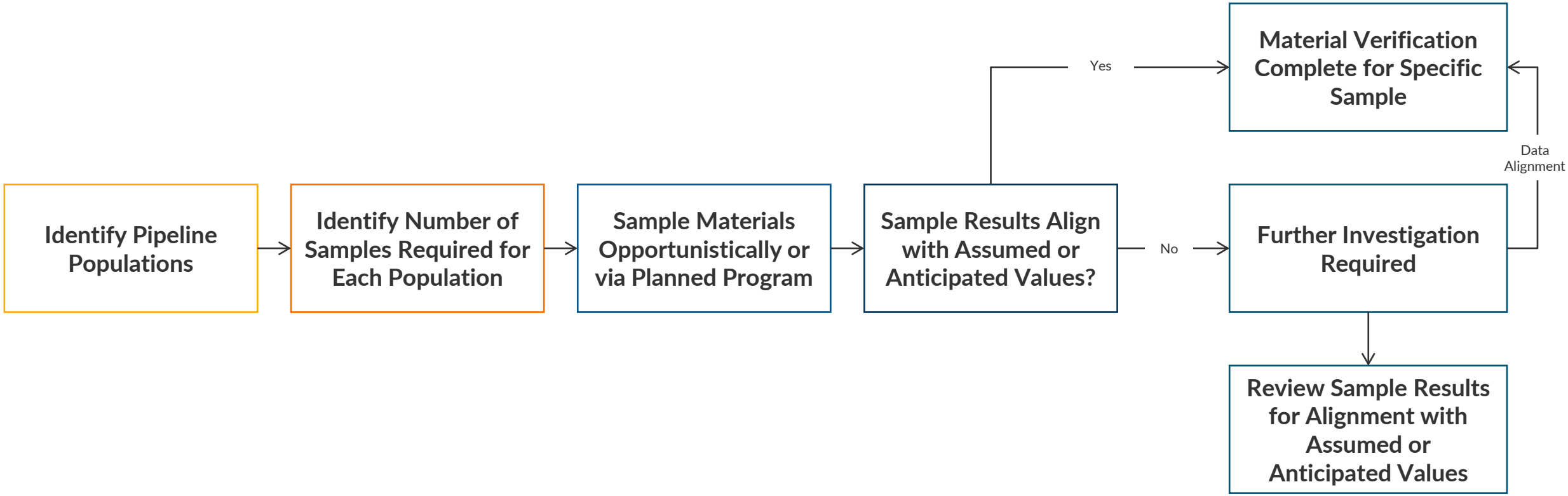


Case Study Notes – Common Challenges

- Applicable segments across multiple operating regions
- Lack of quality records
- Establishing Material Verification populations/samples
- Sample results not aligning with anticipated values
- Nondestructive testing validation
- Coordination with internal & third-party stakeholders
- Tracking of program progress

Solutions – Records & Applicability

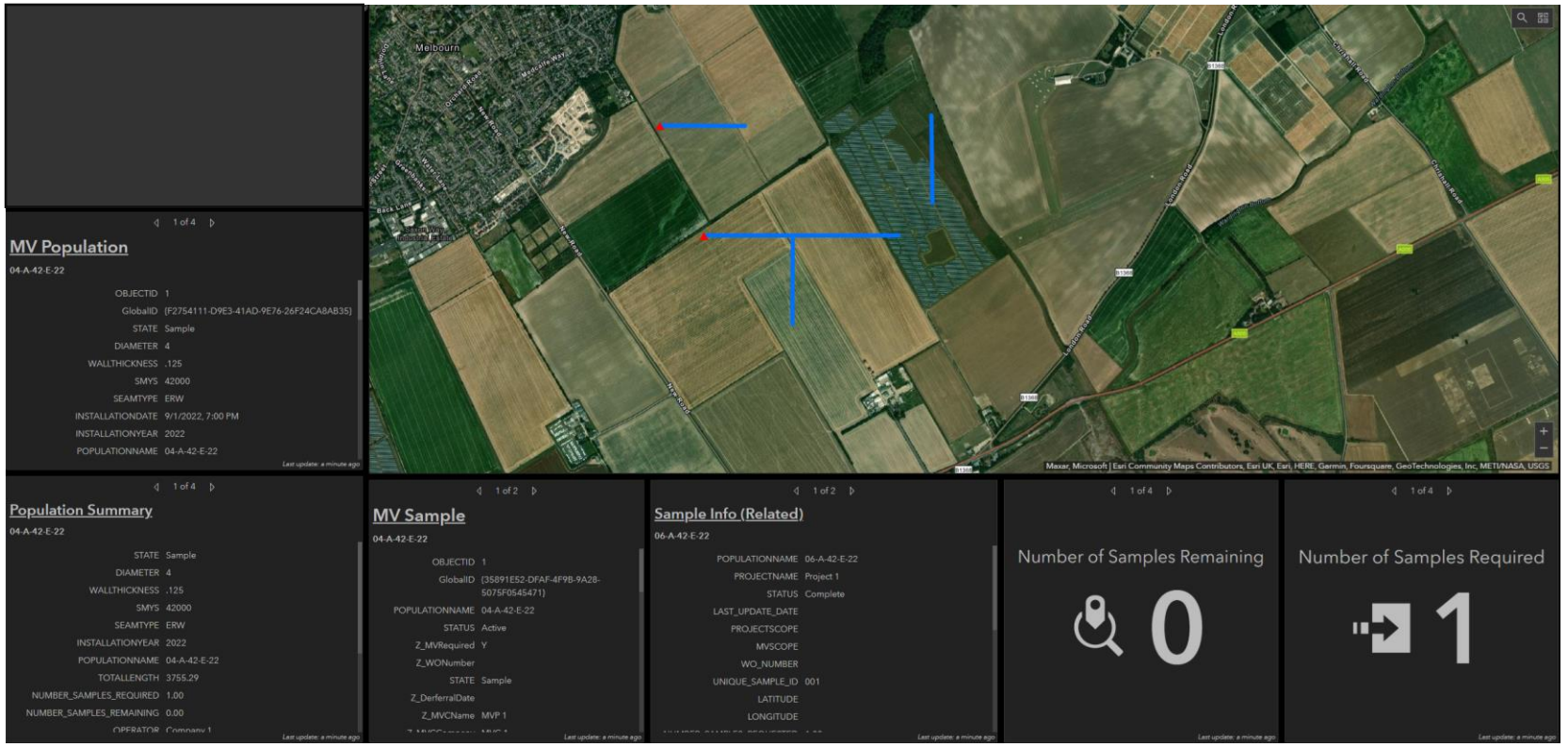
- Record Review Process
  - Development
  - Refinement
- Indicate need for MOP/MAOP Reconfirmation and/or Material Verification
- Population Development
- Flexible Approaches
  - Spreadsheet Review
  - GIS Integration

Feature Type	Nominial Diameter	Nominial Diameter 2	Wall Thickness	Wall Thickness 2	Material GRADE	SMYS	Longitudinal Seam	Pressure Rating
FeatureType	NominialDiameter	NominialDiameter2	WallThickness	WallThickness2	MaterialGRADE	SMYS	LongitudinalSeam	PressureRating
Indicates the feature type	Record the inlet nominal diameter of the asset (e.g. 8 inch)	Record the outlet/branching nominal diameter of the asset (e.g. 8 inch)	Record the inlet Wall thickness of the asset (e.g. 0.322 inch)	Record the outlet/branching Wall thickness of the asset (e.g. 0.322 inch)	Record the material grade of the asset (e.g. X42)	Record the SMYS of the asset (e.g. 42,000)	Record the longitudginal seam of the asset (e.g. Seamless)	Record the manufacture pressure rating of the asset (e.g. ...)
Pipe	10	NULL	0.188	NULL	X42	42000	Seamless	NULL
Pipe	10	NULL	0.188	NULL	X42	42000	Seamless	NULL
Pipe	12	NULL	0.188	NULL	X42	42000	Seamless	NULL
Pipe	16	NULL	0.235	NULL	B	35000	Seamless	NULL
Pipe	6	NULL	0.125	NULL	X42	42000	Seamless	NULL
			NULL					ANSI 300
			NULL					ANSI 300

Test Pressure	Pressure Test Type	Test Pressure Validity	Complete Records	MAOP Reconfirmation Required	Material Verification
TestPressure	PressureTestType	TestPressureValidity	CompleteRecords	PReconfirmationRe	MaterialVerification
Record the actual test pressure at the minimum elevation.	Record the type of Test Pressure performed. (e.g. Spike Test, 192.624, 196.111, etc.)	Record if the pressure test or uprate is valid based on the current MAOP	Records if the records are complete for the asset	Indicates if the asset requires MAOP Reconfirmation or needs to be reviewed to confirm the feature doesn't required Reconfirmation 192.624(a)(1) MAOP is established by 192.619(a)(2) and	Indicates if the asset should be considered in segment population.
900	NULL	Yes	Yes	Review	No
900	NULL	Yes	Yes	Review	No
400	NULL	Yes	No	Yes	Yes
400	NULL	Yes	No	Yes	Yes
400	NULL	Yes	Yes	No	No
400	NULL	Yes	Yes	No	No
400	NULL	Yes	Yes	No	No

Solutions – Tracking Populations & Samples

- Sample Completion Reports
  - Per Sample
- Population Completion Report
  - All Samples Completed
- Sample Tracking in GIS



Works Best For: Anyone with a built-out GIS system

Solutions – Tracking Populations & Samples

- Sample Tracking via Spreadsheet

			Expected Attributes from GIS					Test Results						
Sample ID	Sample Date	Initial Population	OD (in)	WT (in)	Grade	Seam Type	Year of Install/ Manufacture	OD (in)	WT (in)	Yield	Tensile	Max Grade	Seam Type	Conflicts
A	5/16/2024	12345	12.750	0.250	Grade B	Seamless	1955	12.820	0.271	62,400	76,700	X60	ERW	Yes
B	8/9-10/2021	12345	12.750	0.250	Grade B	Seamless	1955	12.750	0.250	58,900	75,500	X56	Seamless	No
C	5/21/2021	67890	6.625	0.250	24000	Lap Weld	1956	6.625	0.188	49,800	62,500	X42	ERW	Yes - Seam
D	9/25/2024	45678	6.625	0.188	24000	Electric Weld	1982	6.625	0.192	60,500	74,700	X56	ERW	No

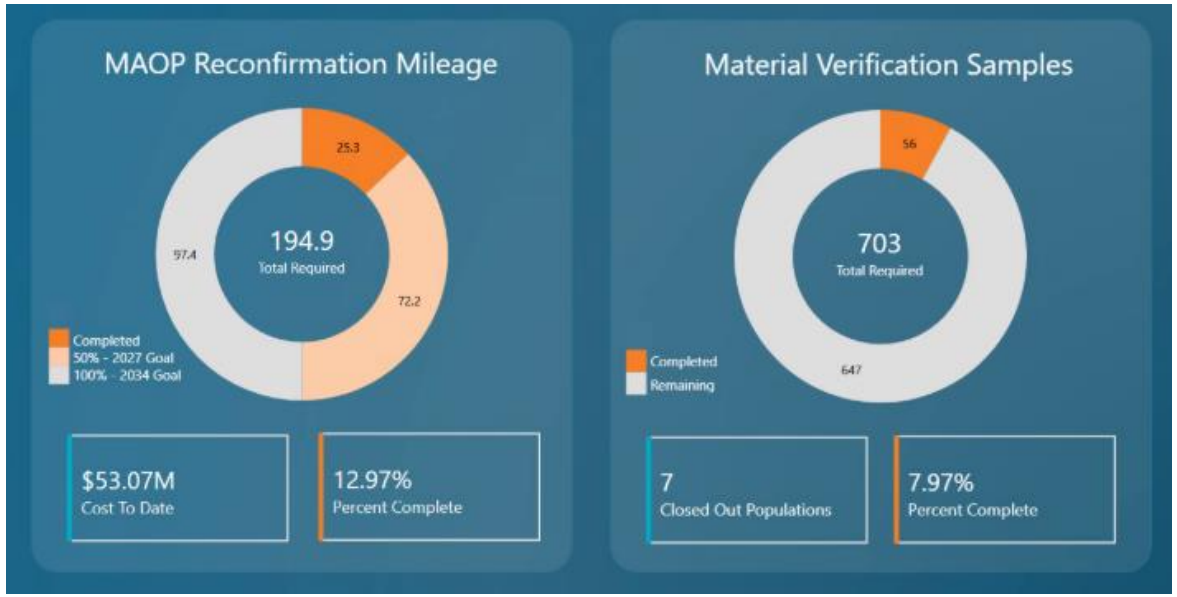
- Population Tracking via Spreadsheet

Population ID	Diameter	Wall Thickness	SMYS	Longitudinal Seam	Installation Year	Feature Type	Population ID Length (ft)	Total Population Mileage	Total Population Samples Required	Samples Taken	MV Samples Remaining
08-156-35-A-66	8.625	0.156	35000	ERW	1966	Pipe	85904.07741	16.26971163	17	16	1
08-156-35-UN-66	8.625	0.156	35000	Unknown	1966	Pipe	3714.161567	0.703439691	1	4	-3
08-156-42-A-66	8.625	0.156	42000	ERW	1966	Pipe	791.2523	0.14985839	1	0	1
08-188-24-A-UN	8.625	0.188	24000	ERW	Unknown	Pipe	1522.6708	0.288384621	1	0	1
08-188-24-B-56	8.625	0.188	24000	Forged Fitting	1956	Elbow	8.400666667	0.001591035	1	0	1
08-188-24-C-98	8.625	0.188	24000	Seamless	1998	Cap	0.666	0.000126136	1	0	1
08-188-24-UN-17	8.625	0.188	24000	Unknown	2017	Pipe	4	0.000757576	1	0	1
08-188-24-UN-56	8.625	0.188	24000	Unknown	1956	Pipe	1386.611994	0.262615908	1	0	1
08-188-24-UN-92	8.625	0.188	24000	Unknown	1992	Pipe	311.3	0.058958333	1	0	1
08-188-24-UN-UN	8.625	0.188	24000	Unknown	Unknown	Pipe	10.80666667	0.002046717	1	0	1
08-188-35-A-66	8.625	0.188	35000	ERW	1966	Pipe	12837.3741	2.431320852	3	0	3
08-188-35-A-68	8.625	0.188	35000	ERW	1968	Pipe	2126.871	0.402816477	1	1	0

Works Best For: Smaller systems, or as a starting point

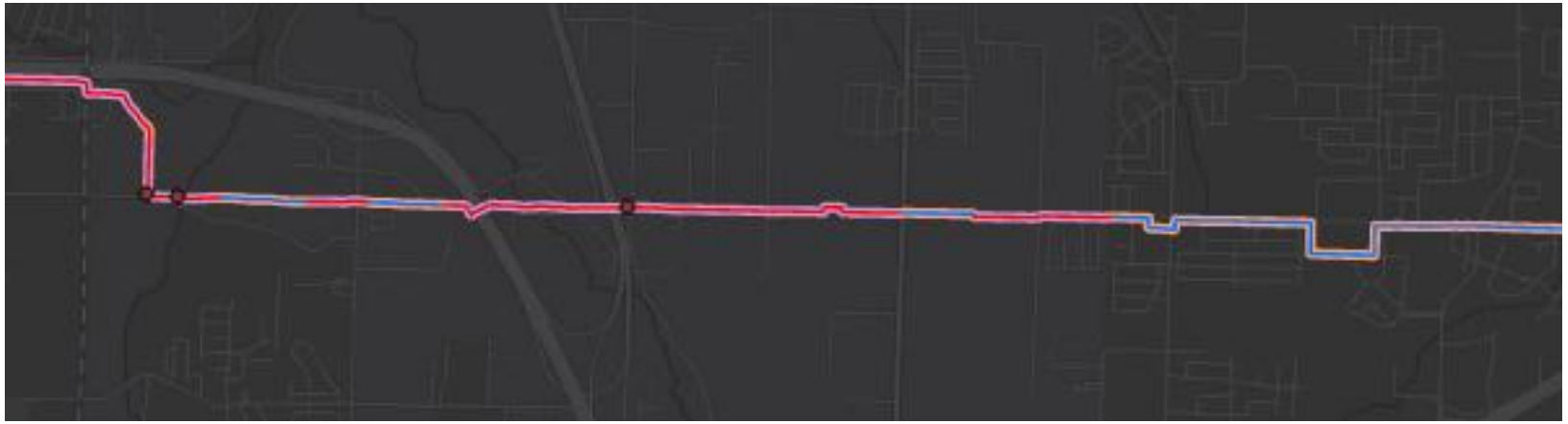
Solutions – Program Tracking

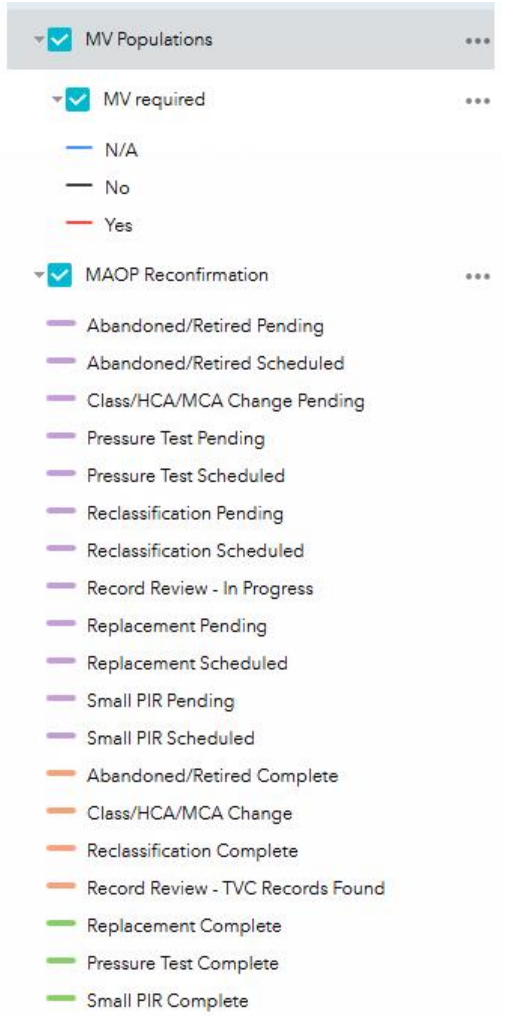
- Spreadsheet
- Dashboards (PowerBI)
- Yearly Changes



Solutions – Program Tracking

- Program Tracking in GIS





Works Best For: Anyone with a built-out GIS system

Solutions – Continued

- O&M and Procedure Document Development
- Statistical Validation of NDT method and method transfer
- Development of investigation process for ‘unexpected’ results
- Facilitate Stakeholder Engagement

Recordkeeping

Reconfirmation and Material Verification Programs exist due to poor record keeping practices!

Thank you!

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Questions?

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