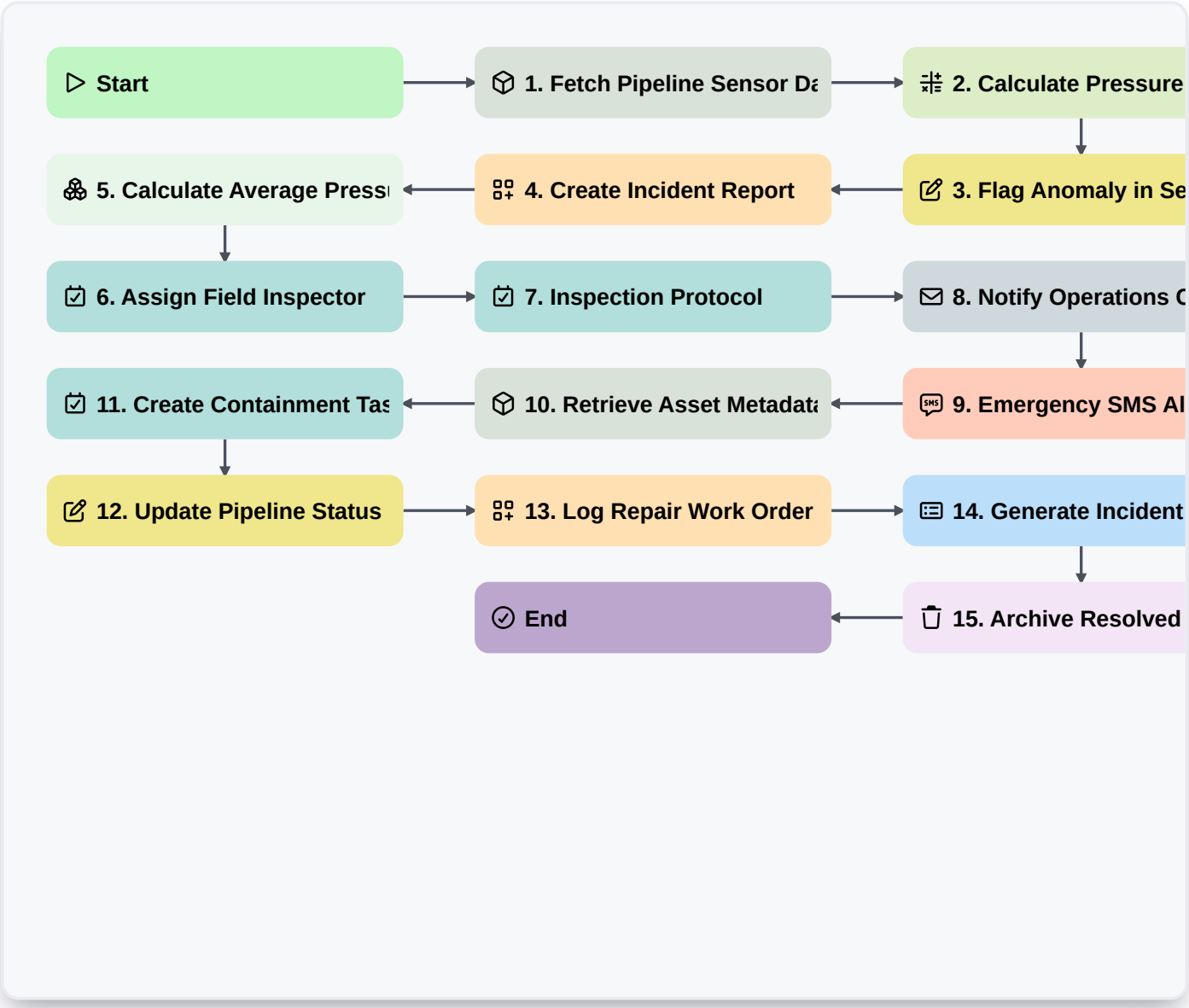
ChecklistGuro

Oil Pipeline Leak Detection Workflow



Start
Start of the Workflow/Process.

1. Fetch Pipeline Sensor Data
Retrieve the latest pressure and flow rate readings from the Pipeline Monitoring data model.

2. Calculate Pressure Deviation
Compare current pressure readings against baseline operating pressure to identify anomalies.

3. Flag Anomaly in Sensor Log
Update the specific sensor entry status to 'Anomaly Detected' when thresholds are breached.

4. Create Incident Report
Generate a new entry in the Incident Data Model containing the detected leak parameters.

5. Calculate Average Pressure Drop
Aggregate pressure readings over the last 30 minutes to confirm if the drop is sustained.

6. Assign Field Inspector
Create a task for the Maintenance Team to perform a physical inspection of the flagged pipeline segment.

7. Inspection Protocol
Sub-steps for the task: 1. Visual inspection, 2. Pressure test, 3. Ultrasonic thickness measurement.

8. Notify Operations Center
Send an urgent email alert to the Operations Manager with the incident details.

9. Emergency SMS Alert
Send an automated SMS to the On-Call Engineer for immediate response.

10. Retrieve Asset Metadata
Get details of the specific pipeline segment (material, age, diameter) from the Asset Data Model.

11. Create Containment Task
Create a high-priority task for the Emergency Response Team to initiate valve shut-off.

12. Update Pipeline Status
Change the status of the Pipeline Segment entry to 'Maintenance/Leaking'.

13. Log Repair Work Order
Create a new Work Order entry in the Maintenance Data Model to track the repair process.

14. Generate Incident Summary Report
Generate a final report summarizing the leak duration, volume lost, and response time for regulatory compliance.

15. Archive Resolved Anomaly
Remove the temporary anomaly alert entry from the active monitoring view once the incident is closed.

End
End of the Workflow/Process.