



**USER  
MANUAL**



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## 1. GETTING STARTED WITH AIMS

The Asset Integrity Management System (AIMS) is divided into four sections including dashboard, assets, master data and administrator. The navigation tabs on the left-hand side of the homepage can be used to access each of the parts individually.

The screenshot shows the AIMS Executive Summary dashboard. On the left, there is a sidebar with navigation links:

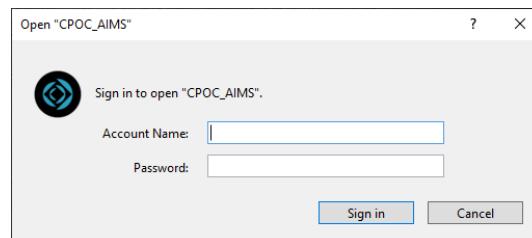
- DASHBOARD** (highlighted with a red box):
  - EXECUTIVE SUMMARY
  - INSPECTION PLAN
  - ANOMALY
  - HIGHLIGHT ACTIVITIES
- ASSETS** (highlighted with a blue box):
  - PIPING
  - PRESSURE VESSEL
  - FLOWLINE
  - Pipeline
  - TOPSIDE RISER
  - SUBSEA RISER
  - STRUCTURE
- MASTER DATA** (highlighted with a green box):
  - PLATFORM
  - WELLHEAD
  - CORROSION LOOP
- ADMINISTRATOR** (highlighted with an orange box):
  - ACCOUNT
  - ROLES

Below the sidebar, the main content area is titled "EXECUTIVE SUMMARY". It features several sections:

- DASHBOARD**: Shows a table with columns: MODULE, INSPECTION PLAN, ANOMALY MANAGEMENT, and NOTE. It lists items like Pressure Vessel, Flowline, Pipeline, etc., with status indicators (yellow or green).
- ASSETS**: Shows a table with columns: MODULE, INSPECTION PLAN, and ANOMALY MANAGEMENT. It lists items like Pressure Vessel, Flowline, Pipeline, etc., with status indicators (yellow or green).
- MASTER DATA**: Shows a pie chart titled "Management of High Risk Equipment & High Risk Anomaly" with segments: Not due (green), On due (yellow), and Overdue (red).
- ADMINISTRATOR**: Shows a pie chart with segments: Not due (green), On due (yellow), and Overdue (red).

### 1.1 Login

Users can be entering credentials used to access the Asset Integrity Management System (AIMS) for program usage.



- 1) Double click the AIMS program icon.
- 2) Enter username and password in text boxes, then click **Sign in** button to open AIMS program.

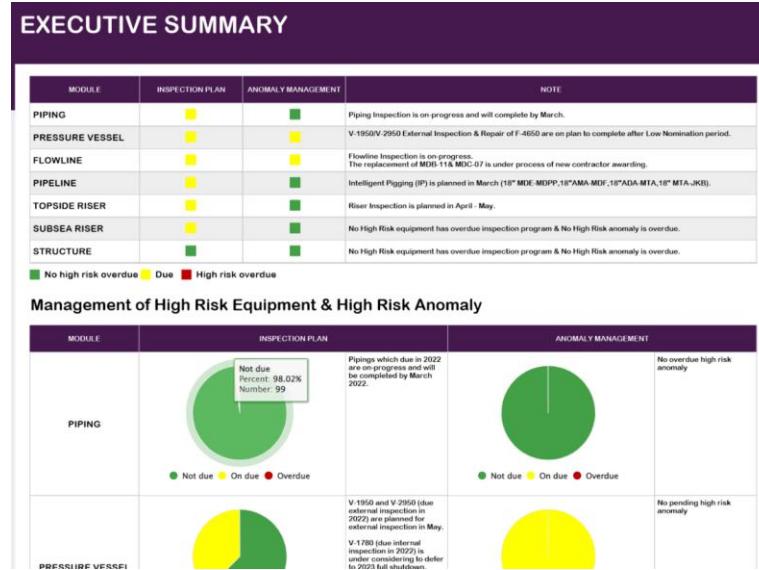


## 1.2 Dashboard

Dashboard display an overview of inspection plan and anomaly management. There is also a highlight activities section for recording relevant information.

- **Executive Summary**

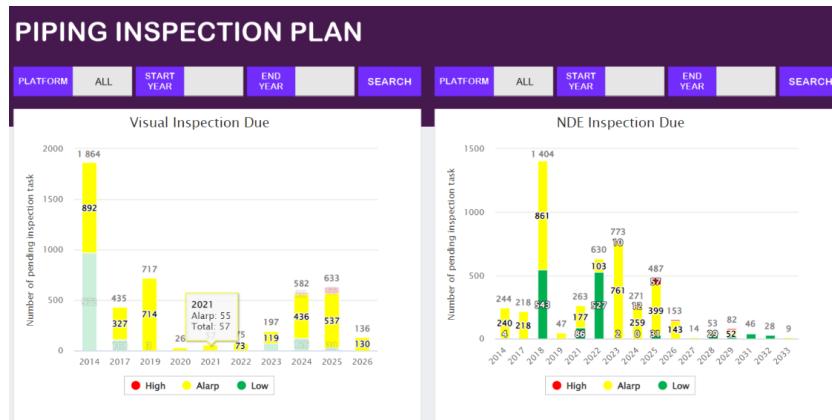
Presents the summary status of the inspection plan and anomaly management in each module.



- 1) Hover the mouse over the pie chart to show the information.
- 2) Hover the mouse over the legend key (Not due, On due or Overdue) to focus on that status.
- 3) Click at the legend key (Not due, On due or Overdue) to display or hide that status on pie chart.

- **Inspection Plan**

This section shows the number of pending inspection tasks on each module in the form of chart.

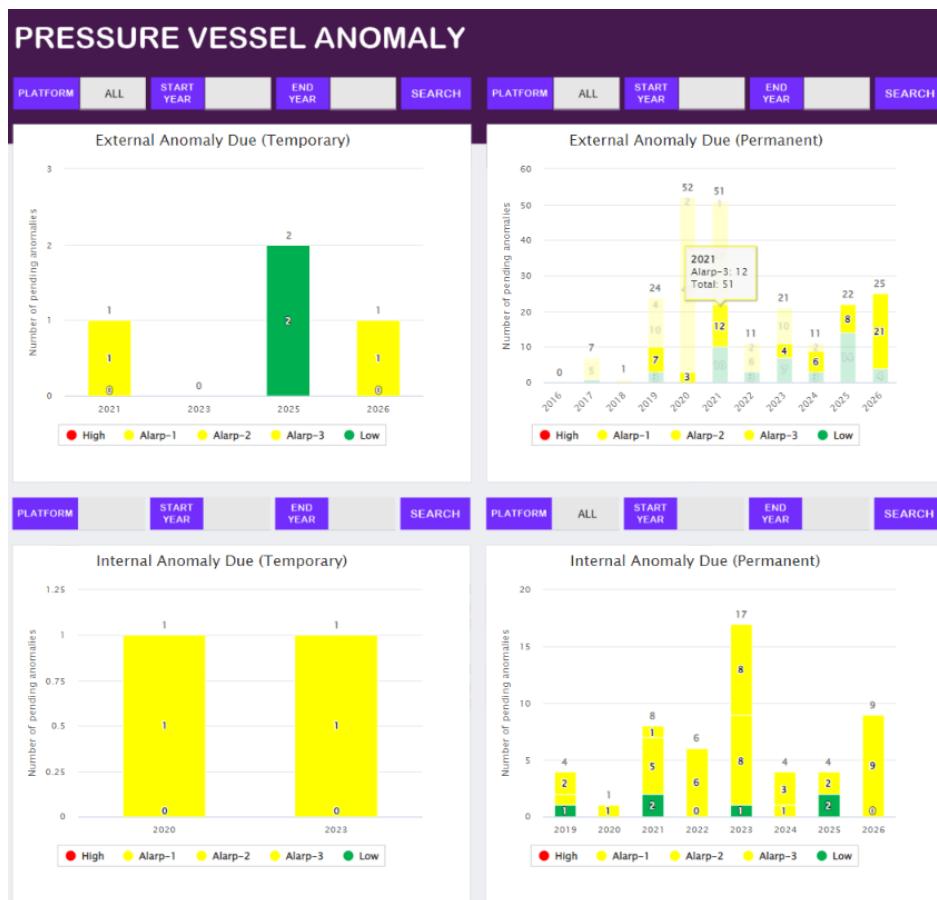




- 1) Select **PLATFORM**, **START YEAR** and **END YEAR**, then click at **SEARCH** button to display the results.
- 2) Hover the mouse over the bar chart to show the information.
- 3) Hover the mouse over the legend key (High, Alarp or Low) to focus on that status.
- 4) Click at the legend key (High, Alarp or Low) to display or hide that status on bar chart.

- **Anomaly**

Presents the number of pending anomalies on each module in the form of chart.



- 1) Select **PLATFORM**, **START YEAR** and **END YEAR**, then click at **SEARCH** button to display the results.
- 2) Hover the mouse over the bar chart to show the information.
- 3) Hover the mouse over the legend key (High, Alarp-1, Alarp-2, Alarp-3 or Low) to focus on that status.
- 4) Click at the legend key (High, Alarp-1, Alarp-2, Alarp-3 or Low) to display or hide that status on bar chart.



- **Highlight Activities**

Highlight activities are records about management of change, inspection campaign and rectification campaign.

## HIGHLIGHT ACTIVITIES

Management of Change										
ITEM	MOC NUMBER	TITLE	NATURE OF CHANGE	WORKSITE	RESIDUAL RISK LEVEL	EXPIRY DATE	STATUS	ACTION	REMARK	ATTACHMENT
1	MOC OFF_18-013	To Continue Running The Overdue Internal Inspection For Static Equipment V-1310 Contractor To Perform Internal Inspection MDE-17 ST2 To Change The Required Minimum Thickness Of Flowline Due To Unlabeled Specified Thickness On Previous Work			LOW	31 Dec 2022	■		Approved: Work To Be Performed During Next Major SD Tentatively in 2022	
2	MOC OFF_21-017	To Change The Required Minimum Thickness Of Flowline Due To Unlabeled Specified Thickness On Previous Work			MEDIUM	1 Mar 2022	■			
3	MOC OFF_21-010	ADB Int'l Well HIC ADB-01 & ADB-07 For Perforation			LOW	1 Dec 2021	■		Pending Close Out	
4	MOC OFF_21-005	To Continue MUQA Operation Perfume And Installation Of EPRIB Onboard IMDA Is Required To Comply With New Safety Utilization Of High POB Exceeding MDLQ			MEDIUM	15 Oct 2021	■		EPRIB Installed On All Life Boats On 18.07.2021	
5	MOC OFF_21-002	Lifeline Campaign During September 2020			LOW	25 Aug 2021	■		MOC Form Sent To Arhar On 16th Sept 2021 For Close.	
6	MOC OFF_20-030	MDC-13 To Change The Required Minimum Thickness Of Flowline To 10.5mm Furnished Maximum Operational Pressure			MEDIUM	22 Aug 2021	■		Approved: 13 Nov 2021 OS Update: Thiptions To Update And Issue	
7	MOC OFF_20-001	JKA - To Continue Production And Manned Deck Platform With 1 Escape-Way From Main Deck Via North Stairway.			LOW	23 Jul 2021	■		Completed By CES Team.	

Inspection Campaign										
ITEM	INSPECTION PROGRAM	START DATE	END DATE	PIC	COMMENTS			STATUS	ATTACHMENT	
1	Cylinder Inspection	17 Jan 2022	18 Feb 2022	Chanat				■		
2	Process Piping Inspection (Jan 2022)	17 Jan 2022	19 Feb 2022	Chanat				■		
3	Equipment Inspection (Feb 2022)	23 Feb 2022	23 Mar 2022	Chanat	Complete Detail Inspection Of Sea Water Filter (F-4650,4655,4660)			■		
4	Flowline Inspection (Feb 2022)	23 Feb 2022	23 Mar 2022	Chanat				■		
5	Intelligent Pigging (IP)	17 Mar 2022	7 Apr 2022	Syahriman	Completed 18"AMA-MDF & 18"MTA-JKB.			■		
6	Lifting Recertification Campaign	25 Mar 2022	23 Apr 2022	Syahriman				■		
7	Inspection For Low Nom Activities	23 Mar 2022	7 Apr 2022	Chanat	Support Pressure Vessel Internal Inspection (MDB/MDC), SC Exhaust Repair, V-1620/2620 Repair.			■		

Rectification Campaign											
ITEM	RECTIFICATION CAMPAIGN	PIC	CONTRACTOR	TARGET COMPLETION	WORK PACKAGE	MANPOWER	EQUIPMENT	POB	EXECUTION	COMMENTS	ATTACHMENT
1	Painting TG Piping With New Coating Spec	CTI/Ch Nat	CES	14 Feb 2022	■	■	■	■	■	COMPLETED (9 FEB 2022) - The New Coating Spec Can Resist High Temperature & Cycling Service.  <Missing: RE	

- 1) Click **+ ADD** and enter information or attach file for adding a record in the system.
- 2) Enter word or full name of MOC number, and then click **SEARCH** or press "ENTER" on keyboard for searching.
- 3) Click **SEARCH** to preview file attachment with default program.
- 4) Click **EDIT** on a row of each record, then click **EDIT** to edit the information.
- 5) Click **DELETE** to delete the data row.

### 1.3 Assets

All assets recorded in the system consist of **Piping**, **Pressure Vessel**, **Flowline**, **Pipeline**, **Structure** and **Lifting**. Each part of CPOC equipment is contained within a sub-module, which is detailed in other chapters.



PIPING



PRESSURE  
VESSEL



FLOWLINE



Pipeline



STRUCTURE



LIFTING

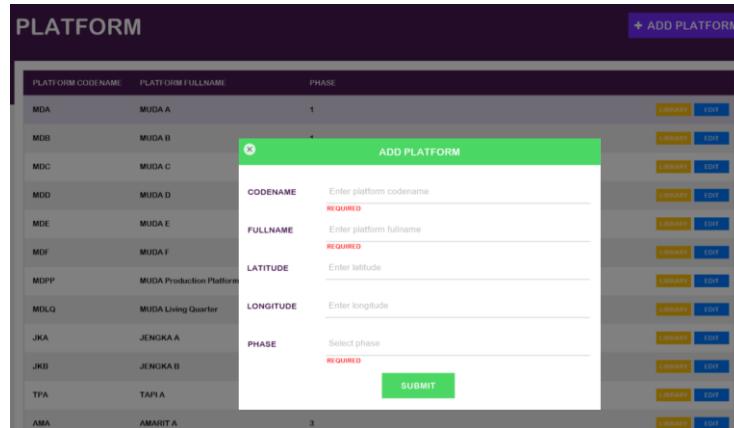


## 1.4 Master Data

Central of master data that can be managed effectively. It also controls the accuracy of the data set from a single point.

- **Platform**

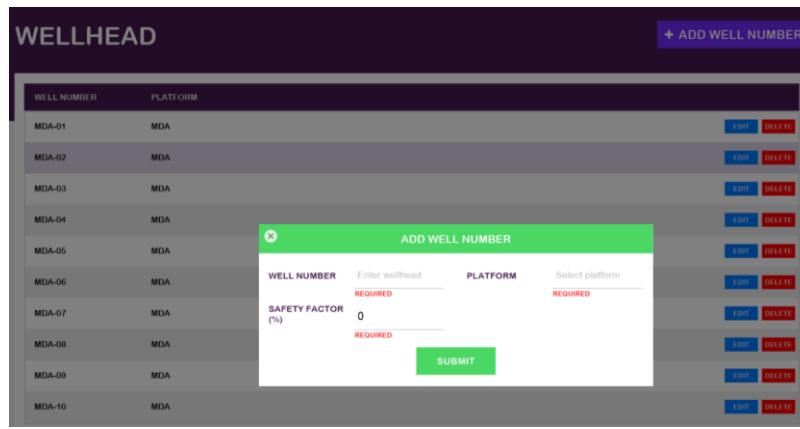
It consists of a data management section and a document collection section of each platform.



PLATFORM CODENAME	PLATFORM FULLNAME	PHASE
MDA	MUDA A	1
MDB	MUDA B	
MDC	MUDA C	
MDD	MUDA D	
MDE	MUDA E	
MDF	MUDA F	
MDPP	MUDA Production Platform	
MLOQ	MUDA Living Quarter	
JKA	JENGKA A	
JKB	JENGKA B	
TPA	TAPI A	
AMA	AMARIT A	3

- 1) Click **+ ADD PLATFORM** and enter information in the fields for each platform.
- 2) Click **SUBMIT** to add a new info record.
- 3) Click **EDIT** to edit the data of platform.
- 4) Click **LIBRARY** in each platform and attach files to the system.

- **Wellhead**



WELL NUMBER	PLATFORM
MDA-01	MDA
MDA-02	MDA
MDA-03	MDA
MDA-04	MDA
MDA-05	MDA
MDA-06	MDA
MDA-07	MDA
MDA-08	MDA
MDA-09	MDA
MDA-10	MDA

- 1) Define the data to each wellhead by clicking on **+ ADD WELL NUMBER** and entering the data.
- 2) Click **SUBMIT** to add a new info record.
- 3) Click **EDIT** to edit the data of wellhead.
- 4) Click **DELETE** to delete a record.



- **Corrosion Loop**

CORROSION LOOP					+ ADD CORROSION LOOP			
PLATFORM	ALL	SR NO.	CORROSION LOOP NO.	PLATFORM	DESCRIPTION	CORROSION LOOP DESC	EDIT	DELETE
1	CL-01001-A-I	MDA					EDIT	DELETE
2	CL-01001-C	MDA					EDIT	DELETE
3	CL-01001-C-I	MDA					EDIT	DELETE
4	CL-01001-D-I	MDA					EDIT	DELETE
5	CL-01002-A	MDA					EDIT	DELETE
6	CL-01002-C	MDA					EDIT	DELETE
7	CL-01003-A	MDA					EDIT	DELETE
8	CL-01004-A	MDA					EDIT	DELETE
9	CL-01004-C	MDA					EDIT	DELETE
10	CL-01005-A	MDA					EDIT	DELETE

+ ADD CORROSION LOOP

ADD CORROSION LOOP

SR NO. Enter SR no REQUIRED PLATFORM Select platform REQUIRED

CORROSION LOOP NO. Auto generate CODE + CATEGORY

CODE Enter code REQUIRED CATEGORY Select platform REQUIRED

DESCRIPTION Enter desc REQUIRED

CORROSION LOOP DESC Enter corrosion loop desc REQUIRED

SUBMIT

- 1) Click + ADD CORROSION LOOP and enter information in the fields for each corrosion loop.
- 2) Click SUBMIT to add a new info record.
- 3) Click EDIT to edit the data of corrosion loop.
- 4) Click DELETE to delete a record.

## 1.5 Administrator

It is a section for setting and managing the system concerning accounts and permissions of users. This feature is reserved for administrators to access and change settings.



## 2. FLOWLINE

### 2.1 Flowline Dashboard

#### 2.1.1 Choke Valve

At the top right of flowline dashboard page, click **CHOKE VALVE** to access choke valve management.

CHOKE VALVE							
WELLHEAD	TAG NUMBER	BRAND	MODEL	LAST INSP DATE	DEVIATION (%)	STATUS	STATUS CRITERIA
AMA-01	AMA01-CHV-100101	MasterFlo	E34G6D-4G6M2-001	Sep 10, 2021	25.00	MEDIUM	10% < Deviation ≤ 25%
AMA-02	AMA02-CHV-100201	MasterFlo	E34G6D-4G6M2-001				
AMA-03	AMA03-CHV-100301	MasterFlo	B74J8D-4J8DM2-001				
AMA-04	AMA04-CHV-100401	MasterFlo	B74J8D-4J8				
AMA-05	AMA05-CHV-100501	MasterFlo	E34G6D-4G6M2-001				
AMA-06	AMA06-CHV-100601	MasterFlo	E34G6D-4G6M2-001				
AMA-09	AMA09-CHV-100901	MasterFlo	E34G6D-4G6M2-001				
AMA-10	AMA10-CHV-101001	MasterFlo	E34G6D-4G6M2-001				
AMA-11	AMA11-CHV-101101	MasterFlo	B74J8D-4J8				
AMA-12	AMA12-CHV-101201	MasterFlo	B74J8D-4J8				
JKP-04	JKP04-CHV-060104	Cameron	CC300ES				

- 1) Click **+ ADD CHOKE VALVE** to add record of choke valve.
- 2) Click **EDIT** to edit the data.
- 3) Click **DELETE** to delete data in each row.
- 4) Click **DETAIL** to access inspection details of choke valve.

CHOKE VALVE DETAIL							
Tag No.	AMA01-CHV-100101			Upload overview	Upload nameplate		
Wellhead	AMA-01			<input type="button" value="+ ADD IN INSPECTION"/>			
Brand	MasterFlo						
Model	E34G6D-4G6M2-001						
Inspection Date	Deviation %	Status	Status Criteria	Recommendation	Internal Part Inspection	Findings	
Sep 10, 2021	25	MEDIUM	10% < Deviation ≤ 25%	Enter message...	Attach file	Enter message...	^
Select date	Enter value			Enter message...	Attach file	Enter message...	^

- 5) On choke valve detail window, click **+ ADD INSPECTION** to create a new record.
- 6) Select inspection date, enter deviation, enter inspection result or recommendation and upload attach file.
- 7) Upload overview and nameplate picture for each choke valve by right click on upload box, then select **Insert Picture...** to upload picture.



- 8) In the case that there is a large amount of choke valve data to input in the AIMS, either adding new choke valve or adding inspection results. Users can use the import function to help import data at once.

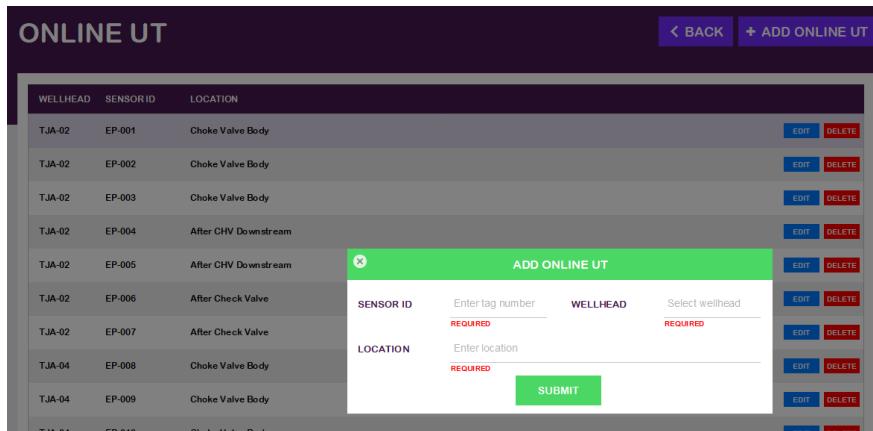


WELLHEAD	TAG NUMBER	BRAND	MODEL	LAST INSPI DATE	DEVIATION (%)	STATUS	STATUS CRITERIA	RECOMMENDATION
ADB-05	CHV-13051	Cameron	HLC70	9 Mar 2022	0.00	<span style="background-color: green; color: white;">LOW DEVIATION</span>	Deviation < 10%	
ADB-06	CHV-13061	Cameron	HLC70	9 Mar 2022	0.00	<span style="background-color: green; color: white;">LOW DEVIATION</span>	Deviation < 10%	
ADB-08	CHV-13084	Cameron	HLC70	8 Mar 2022	0.00	<span style="background-color: green; color: white;">LOW DEVIATION</span>	Deviation < 10%	

- 9) Click **DOWNLOAD TEMPLATE** to download excel template to desktop.  
 10) Fill in the data to excel template and click **IMPORT** to upload import file.

### 2.1.2 Online UT

At the top right of flowline dashboard page, click **ONLINE UT** to access online UT management.



WELLHEAD	SENSOR ID	LOCATION
TJA-02	EP-001	Choke Valve Body
TJA-02	EP-002	Choke Valve Body
TJA-02	EP-003	Choke Valve Body
TJA-02	EP-004	After CHV Downstream
TJA-02	EP-005	After CHV Downstream
TJA-02	EP-006	After Check Valve
TJA-02	EP-007	After Check Valve
TJA-04	EP-008	Choke Valve Body
TJA-04	EP-009	Choke Valve Body
TJA-04	EP-010	Choke Valve Body

- 1) Click **+ ADD ONLINE UT** to add record of online UT.
- 2) Click **EDIT** to edit the data.
- 3) Click **DELETE** to delete data in each row.



### 2.1.3 Flowline Filter Data

Flowline number of all platforms are displayed on flowline dashboard page. Additionally, each line number can be filtered for monitoring with multiple conditions in real time.

**FLOWLINE**

**Filters**

LINE NO	Sam	Q	PLATFORM	ALL	STATUS	ALL	P1 RL<0.25	6 0.25<RL<0.5	P2 0.5<RL<1	11 1<RL<3	P3 3<RL<5	15 5<RL<10	P4 10<RL<15	78 15<RL<25	P5 25<RL<50	105 50<RL<100	P6 100<RL<200	337 200<RL<500	NO INSPECT RL>5	TOTAL 577
Total record: 577																				
PLATFORM	WELL NUMBER	LINE NUMBER	CORROSION LOOP			INTEGRITY STATUS	ROUTINE INSPECTION		DUE VISUAL ANOMALY		DUE THICKNESS ANOMALY				C					
			NUMBER	DESCRIPTION			LAST	NEXT	STATUS	TEMPORARY	PERMANENT	TEMPORARY	PERMANENT							
MDA	MDA-18	4-GC-H11N-0100801	CL-01001-C-I	Gas & Condensate	P3	2021	2022	Not due												
MDA	MDA-18	4-GC-H11N-0100802	CL-01001-C-I	Gas & Condensate	P6	2021	2022	Not due												
MDA	MDA-18	4-GC-H11N-0100803	CL-01001-C-I	Gas & Condensate	P6	2021	2022	Not due												
MDA	MDA-20	4-GC-H11N-0100901	CL-01001-C-I	Gas & Condensate	P6	2021	2022	Not due												
MDA	MDA-20	4-GC-H11N-0100902	CL-01001-C-I	Gas & Condensate	P6	2021	2022	Not due												
MDA	MDA-20	4-GC-H11N-0100903	CL-01001-C-I	Gas & Condensate	P6	2021	2022	Not due												
MDA	MDA-03	4-GC-H11N-0101001	CL-01001-C-I	Gas & Condensate	P2	2021	2022	Not due												
MDA	MDA-03	4-GC-H11N-0101001-SAMPLE	CL-01001-C-I	Gas & Condensate	P1	2020	2021	On due	2021	2024	On due	2021	2024							
MDA	MDA-03	4-GC-H11N-0101002	CL-01001-C-I	Gas & Condensate	P4	2021	2022	Not due												

**Line List Table**

P1 RL<0.25	6 0.25<RL<0.5	P2 0.5<RL<1	11 1<RL<3	P3 3<RL<5	15 5<RL<10	P4 10<RL<15	78 15<RL<25	P5 25<RL<50	105 50<RL<100	P6 100<RL<200	337 200<RL<500	NO INSPECT RL>5	TOTAL 577
---------------	------------------	----------------	--------------	--------------	---------------	----------------	----------------	----------------	------------------	------------------	-------------------	--------------------	--------------

1) Click the status button to display the filtered data for each status.

STATUS    ALL    PLATFORM    ALL

- 2) Select dropdown of **STATUS** and **PLATFORM** to filtering.
- 3) Click **EXPORT EXCEL** to export excel file to the desktop. This file contains the data of each line number that was filtered by filter tool.
- 4) Click **EXPORT SAP** to generate SAP template to the desktop (if any).

- 5) Enter word or full name of line number, and then click or press "ENTER" on keyboard for searching.
- 6) Click to reset filter as a default.

LINE NO Sam Q PLATFORM ALL STATUS ALL

LINE NO	Sam	Q	PLATFORM	ALL	STATUS	ALL	P1 RL<0.25	6 0.25<RL<0.5	P2 0.5<RL<1	11 1<RL<3	P3 3<RL<5	15 5<RL<10	P4 10<RL<15	78 15<RL<25	P5 25<RL<50	105 50<RL<100	P6 100<RL<200	337 200<RL<500	NO INSPECT RL>5	TOTAL 577
Total record: 3																				
PLATFORM	WELL NUMBER	LINE NUMBER	CORROSION LOOP			INTEGRITY STATUS	ROUTINE INSPECTION		DUE VISUAL ANOMALY		DUE THICKNESS ANOMALY				C					
			NUMBER	DESCRIPTION			LAST	NEXT	STATUS	TEMPORARY	PERMANENT	TEMPORARY	PERMANENT							
MDA	MDA-03	4-GC-H11N-0101001-SAMPLE	CL-01001-C-I	Gas & Condensate	P1	2020	2021	On due	2021	2024	On due	2021	2024							
MDE	MDE-06	4-GC-H4N-07601-SAMPLE	CL-07001-C-I	Gas & Condensate	P1	2021	2022	Not due	2021	2024	Not due	2021	2024							
JKB	JKB-03	3-GC-H4N-060301-SAMPLE	CL-06001-C-I	Gas & Condensate	P5	2020	2021	On due												

7) Click to access the line number on flowline module.

### 2.1.4 Approval Pending

At the top of flowline dashboard page, click **APPROVAL PENDING** to access **APPROVAL PENDING** section. Approval pending contains a list of reports that are pending approval from authorized persons.



### FLOWLINE APPROVAL PENDING

[BACK](#)

VISUAL		THICKNESS					
LINE NO	Search line no	<input type="button" value="SEARCH"/>	START DATE	<input type="button" value="END DATE"/>	<input type="button" value="SEARCH"/>		
<b>Total record:</b>							
LINE NUMBER	INSPECTION DATE	INSPECTION TYPE	APPROVAL BY GENERAL INSPECTOR	APPROVAL BY INSPECTION ENGINEER	ANOMALY STATUS	APPROVAL STATUS	
4-GC-H11N-0102103	24 Mar 2021	Routine	Name	Date	Name	Date	Y Waiting for approval by Inspection Engineer <input type="button" value="SEARCH"/> <input type="button" value="^"/>

- 1) The table of approval pending is divided into two parts, visual and thickness.

LINE NO	Search line no	<input type="button" value="SEARCH"/>
---------	----------------	---------------------------------------

- 2) Enter word or full name of tag number, and then click  or press "ENTER" on keyboard for searching.

START DATE	<input type="button" value="CALENDAR"/>	END DATE	<input type="button" value="CALENDAR"/>	<input type="button" value="SEARCH"/>
------------	---	----------	---	---------------------------------------

- 3) Select start date and end date, then click **SEARCH** button for filtering
- 4) Click  to access flowline module for approval tasks.

## 2.2 Flowline Management System

Flowline module contains the data of design, operating, inspection and RBI, moreover, there are library that collect uploaded files. General information of each line is on the left side and menu tabs are on the top of page.

### FLOWLINE

Tag number: OPOC-MDA-4-GC-H11N-0101001-SAMPLE

Line number: 4-GC-H11N-0101001-SAMPLE

From: SSV-010102 To: HV-010101

Platform: MDA Well number: MUDA A

MDA-03

P&ID number: MDA-D-B-10103-1-0-Rev00-2011

Drawing number: GC-0101001 Rev.00

In-service date: Sep 5, 2009 Service life (yrs): 12.04

Service: GC Gas & Condensate

Pipe size: 4.00 Pipe spec: H11N

Piping code: Material type: API 570/ASME B31.3 Duplex SS

Material: ASTM A-790 UNS S31603

Stress (psi): 28,900 Joint efficiency (E): 1

Deadline: Deck NO Main Deck

CA: Design life (yrs): 0.00 25.00

Design Pressure barg: 267.00 psi: 3,871.50

Operating Pressure barg: 21.00 psi: 304.50

Design Temperature:

Menu Tabs: DASHBOARD INFO THICKNESS VISUAL RBI LIBRARY MANAGE

#### INSPECTION HISTORY

+ ADD INSPECTION RECORD

INSPECTION INFORMATION	THICKNESS REPORT	THICKNESS APPROVAL	VISUAL REPORT	VISUAL APPROVAL	
Inspection date: Mar 14, 2020	ULTRASONIC THICKNESS <input checked="" type="checkbox"/>	Waiting for approval by Site Supervisor	VISUAL CHECKLIST <input checked="" type="checkbox"/> VISUAL PICTURE LOG <input checked="" type="checkbox"/>	Waiting for approval by Inspection Engineer	<input type="button" value="FINAL REPORT"/>
Inspection type: Routine	CML MARKED-UP ISO <input checked="" type="checkbox"/>		VISUAL MARKED-UP ISO <input checked="" type="checkbox"/>	APPROVED <input type="button" value="REJECT"/>	
Report number:	THICKNESS ANOMALY <input checked="" type="checkbox"/>	<input type="button" value="APPROVE"/> <input type="button" value="REJECT"/>	VISUAL REPORT		
W/O number:	THICKNESS REPORT				
Inspection date: Nov 2, 2019	ULTRASONIC THICKNESS <input checked="" type="checkbox"/>	Approved	VISUAL CHECKLIST <input checked="" type="checkbox"/> VISUAL PICTURE LOG <input checked="" type="checkbox"/>	No Report	<input type="button" value="FINAL REPORT"/>
Inspection type: Routine	CML MARKED-UP ISO <input checked="" type="checkbox"/>		VISUAL MARKED-UP ISO <input checked="" type="checkbox"/>	<input type="button" value="APPROVE"/> <input type="button" value="REJECT"/>	
Report number:	THICKNESS ANOMALY <input checked="" type="checkbox"/>	<input type="button" value="APPROVE"/> <input type="button" value="REJECT"/>	VISUAL REPORT		
W/O number:	THICKNESS REPORT				
Inspection date: Mar 24, 2013	ULTRASONIC THICKNESS <input checked="" type="checkbox"/>	Waiting for approval by Site Supervisor	VISUAL CHECKLIST <input checked="" type="checkbox"/> VISUAL PICTURE LOG <input checked="" type="checkbox"/>	No Report	<input type="button" value="FINAL REPORT"/>
Inspection type: Routine	CML MARKED-UP ISO <input checked="" type="checkbox"/>		VISUAL MARKED-UP ISO <input checked="" type="checkbox"/>	<input type="button" value="APPROVE"/> <input type="button" value="REJECT"/>	
Report number:	THICKNESS ANOMALY <input checked="" type="checkbox"/>	<input type="button" value="APPROVE"/> <input type="button" value="REJECT"/>	VISUAL REPORT		
W/O number:	THICKNESS REPORT				

NOT AVAILABLE DUE TO NEW SKETCH DRAWING

ISO | PPLDD-0101101 REV00

ISO | PPLDD-0101101 REV00



## 2.2.1 Inspection History

On **INFO** tab, Click **+ ADD INSPECTION RECORD** and input data in the fields, then click **SUBMIT** to generate a new inspection campaign record.

**INSPECTION HISTORY**

INSPECTION INFORMATION		THICKNESS REPORT	THICKNESS APPROVAL	VISUAL REPORT	VISUAL APPROVAL	
Inspection date:	Mar 14, 2020	ULTRASONIC THICKNESS ✓	Approved	VISUAL CHECKLIST ✓	Waiting for approval by Inspection Engineer	<b>+ ADD INSPECTION RECORD</b>
Inspection type:	Routine	CML MARKED-UP ISO ✓		VISUAL PICTURE LOG ✓		<input checked="" type="checkbox"/> FINAL REPORT
Report number:		THICKNESS ANOMALY ✓	<b>APPROVE</b> <b>REJECT</b>	VISUAL MARKED-UP ISO ✓	<b>APPROVE</b> <b>REJECT</b>	
WO number:		THICKNESS REPORT		VISUAL REPORT		
Inspection date:	Nov 2, 2019	ULTRASONIC THICKNESS ✓	Approved	VISUAL CHECKLIST ✓	No Report	<input checked="" type="checkbox"/> FINAL REPORT
Inspection type:	Routine	CML MARKED-UP ISO ✓			<b>NOV</b> <b>REJECT</b>	
Report number:		THICKNESS ANOMALY ✓	<b>APPROVE</b>		<b>NOV</b> <b>REJECT</b>	
WO number:		THICKNESS REPORT				
Inspection date:	Mar 24, 2013	ULTRASONIC THICKNESS ✓	Waiting for approval by Site Supervisor	Inspection Date: 05-11-2021	Inspection Type: Routine	<b>NOV</b> <b>REJECT</b>
Inspection type:	Routine	CML MARKED-UP ISO ✓	<b>REQUIRED</b>	<b>REQUIRED</b>	Report Number: T-123456	<b>NOV</b> <b>REJECT</b>
Report number:		THICKNESS ANOMALY ✓	<b>APPROVE</b>			
WO number:		THICKNESS REPORT				

**SUBMIT**

**INSPECTION INFORMATION**

INSPECTION INFORMATION		THICKNESS REPORT	THICKNESS APPROVAL	VISUAL REPORT	VISUAL APPROVAL	
Inspection date:	Nov 5, 2021	ULTRASONIC THICKNESS ✓	No Report	VISUAL CHECKLIST ✓	No Report	<b>+ ADD INSPECTION RECORD</b>
Inspection type:	Routine	CML MARKED-UP ISO ✓		VISUAL PICTURE LOG ✓		<input checked="" type="checkbox"/> FINAL REPORT
Report number:	Test-125789	THICKNESS ANOMALY ✓	<b>APPROVE</b> <b>REJECT</b>	VISUAL MARKED-UP ISO ✓	<b>APPROVE</b> <b>REJECT</b>	
WO number:	T-123456	THICKNESS REPORT		VISUAL REPORT		

## 2.2.2 Visual Checklist

On **VISUAL > CHECKLIST** tab, create a visual checklist and input the data into the form of checklist.

**CHECKLIST**

INSPECTION DATE		FLOWLINE INFORMATION			CcF = 3	P2	ALAR-1																					
Nov 5, 2021	<input checked="" type="checkbox"/> <b>+ Add</b>	Tag number:	CPOC-MDA-4-GC-H11N-0101001-SAMPLE	Service:	GC	Gas & Condensate																						
Mar 14, 2020	<input checked="" type="checkbox"/> <b>+ Add</b>	Corrosion loop No.:	CL-01001-C1	Material spec:	ASTM A-790 UNS S31803	Duplex SS																						
Nov 2, 2019	<input checked="" type="checkbox"/> <b>+ Add</b>	P&ID number:	MDA-D-B-10103-1-0-Rev00-2011	Design data:	3871.80	psi	-20/140 °C																					
Mar 24, 2013	<input checked="" type="checkbox"/> <b>+ Add</b>	ISO DNV number:	GC-0101001 Rev00	Operating data:	304.50	psi	67.00 °C																					
DAMAGE MECHANISM CHECKLIST																												
1 Crack	N/A	N/A	Note:																									
2 Leakage or Seepage	Not found	P6	Note:																									
3 General corrosion	Insignificant	P5	Note:																									
4 Pitting or Pinhole	Minor	P4	Note:																									
5 Corrosion under insulation (CUI)	Moderate	P3	Note:																									
6 Corrosion under support (CUS)	Major	P2	Note:																									
7 Vibration	Insignificant	P5	Note:																									
8 Misalignment	N/A	N/A	Note:																									
9 Others <input type="text" value="Enter value"/>	Not found	P6	Note:																									
FLOWLINE COMPONENT CHECKLIST																												
1 Pipe spool	Insignificant	P5	Note:																									
2 Small bore / Dead leg	Minor	P4	Note:																									
3 Pipe support (Shoes, Members, Hanger, Clamp, U-Bolt)	Moderate	P3	Note:																									
4 Spring support	Major	P2	Note:																									
5 Flange connection (Flange, Bolt, Nut, Gasket)	N/A	N/A	Note:																									
6 Fittings (Elbow, Tee, Reducers, Cap)	N/A	N/A	Note:																									
7 Threaded and Socket-welded Fittings (Coupling, Union, Cap, Tee)	Not found	P6	Note:																									
8 Insulation (Jacket, Banding, Seal, Clamp)	Insignificant	P5	Note:																									
9 Valves (PRO, Choke, Control, On-off, Check, Ball, Butterfly)	Minor	P4	Note:																									
10 Others <input type="text" value="Enter value"/>	Moderate	P3	Note:																									
FLOWLINE VISUAL INSPECTION FINDINGS																												
<p>There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable.</p> <table border="1"> <tr> <td>N/A</td> <td>Temporary repair: (Due date) Oct 1, 2021</td> <td>Pending</td> </tr> <tr> <td>Not found</td> <td>Compound injected clamp</td> <td></td> </tr> <tr> <td>Insignificant</td> <td>Description:</td> <td>Loren ipsum is simply dummy text of the printing and typesetting industry.</td> </tr> <tr> <td>Minor</td> <td>Permanent repair: (Due date) Jan 1, 2024</td> <td>Pending</td> </tr> <tr> <td>Moderate</td> <td>Replace flange</td> <td></td> </tr> <tr> <td>Major</td> <td>Description:</td> <td>Loren ipsum is simply dummy text of the printing and typesetting industry.</td> </tr> <tr> <td>Severe</td> <td>Monitoring: (Due date) Select due date</td> <td></td> </tr> </table>								N/A	Temporary repair: (Due date) Oct 1, 2021	Pending	Not found	Compound injected clamp		Insignificant	Description:	Loren ipsum is simply dummy text of the printing and typesetting industry.	Minor	Permanent repair: (Due date) Jan 1, 2024	Pending	Moderate	Replace flange		Major	Description:	Loren ipsum is simply dummy text of the printing and typesetting industry.	Severe	Monitoring: (Due date) Select due date	
N/A	Temporary repair: (Due date) Oct 1, 2021	Pending																										
Not found	Compound injected clamp																											
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Minor	Permanent repair: (Due date) Jan 1, 2024	Pending																										
Moderate	Replace flange																											
Major	Description:	Loren ipsum is simply dummy text of the printing and typesetting industry.																										
Severe	Monitoring: (Due date) Select due date																											
FLOWLINE RECOMMENDATION																												
<p>There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable.</p> <table border="1"> <tr> <td>Monitoring: (Due date) Select due date</td> <td>Description:</td> </tr> <tr> <td>Notes:</td> <td></td> </tr> </table>								Monitoring: (Due date) Select due date	Description:	Notes:																		
Monitoring: (Due date) Select due date	Description:																											
Notes:																												



- 1) Click  in each inspection date to display the checklist record of each visual inspection campaign.
- 2) Click  to create a new checklist to be part of visual inspection report.
- 3) **Status of VISUAL CHECKLIST report** at the inspection history change to active (On INFO tab).
- 4) Select status and take note for severity of damage mechanism or other finding that was inspected.
- 5) The highest severity status (P1-P6) will represent the status of visual checklist on the top right.
- 6) **Anomaly Corrective Maintenance** of visual inspection can specify the repair type, comment, due date for action and status update of maintenance.
- 7) If the repair status is **Completed**, the visual checklist status will be displayed as **P6**.

### 2.2.3 Visual Picture Log

On **VISUAL > PICTURE LOG** tab, create a visual picture log for picture uploading and input the data into the form.

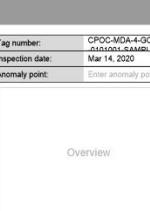
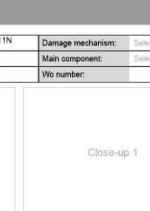
**PICTURE LOG**

INSPECTION DATE	Tag number:	Damage mechanism:	Wo number:	Severity:
Nov 5, 2021	CPOC-MDA-4-GC-H1N CIRCUIT BREAKER	Select damage mechanism		
Mar 14, 2020	Mar 14, 2020	Main component:	Select main component	
Nov 2, 2019	Enter anomaly point	Wo number:		Severity:
Mar 24, 2015				

Overview

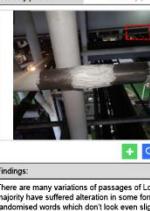
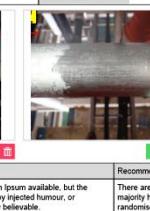
Close-up 1

Close-up 2

Findings:	Recommendation:
Enter message...	Enter message...

INSPECTION DATE	Tag number:	Damage mechanism:	Wo number:	Severity:
Mar 14, 2020	CPOC-MDA-4-GC-H1N CIRCUIT BREAKER	Ext-General corrosion		
Mar 14, 2020	Main component:	Pipe		
Enter anomaly point	Wo number:			P6

Close-up 2

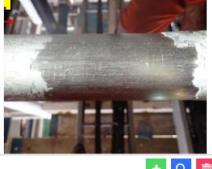
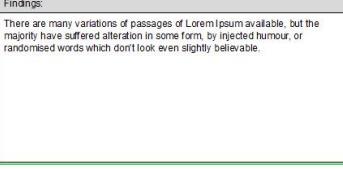
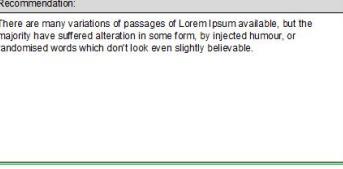
Close-up 3

Findings:	Recommendation:
There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable.	There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable.

- 1) Click  in each inspection date at the top left to display the picture log record of each visual inspection campaign.



- 2) Click  to create a new form to be part of visual inspection report.
- 3) **Status of VISUAL PICTURE LOG report** at the inspection history change to active (On INFO tab).
- 4) Enter anomaly point, select the component part about flowline and damage mechanism that occur on its.

Tag number:	CPOC-MDA-4-GC-H11N-01010	Damage mechanism:	Ext-General corrosion	
Inspection date:	Mar 14, 2020	Main component:	Pipe	
Anomaly point:	Enter anomaly point:	Wo number:	Severity:	P5
 				P1 P2 P3 P4 <b>P5</b> P6 Close
				
     				

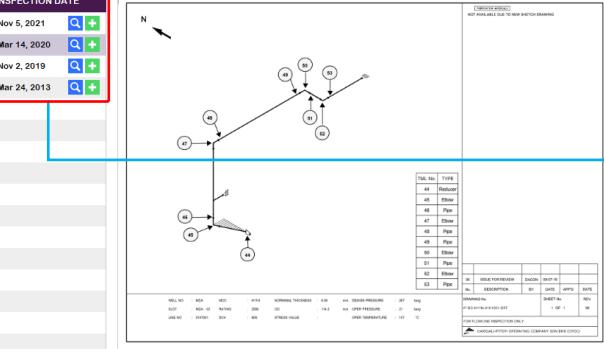
- 5) Click  to upload picture of overview or close-up view from inspection findings.
- 6) Click  to preview file with default image viewer program.
- 7) Click  to delete a picture.
- 8) Enter findings and recommendation of inspection in text box.
- 9) Select severity status for the point of anomaly.

#### 2.2.4 Visual Marked-Up ISO

On **VISUAL > MARKED-UP ISO** tab, upload the visual marked-up file to this section to add these marked up in the final visual report.

**VISUAL MARKED-UP ISO**

INSPECTION DATE	
Nov 5, 2021	 
Mar 14, 2020	 
Nov 2, 2019	 
Mar 24, 2013	 



MATERIAL:	SS316L	WALL THICKNESS:	10 mm	DESIRED PRESSURE:	30 kg
PIPE NO.:	PLDD-0101101 REV00	PIPE ID:	100	PIPE LENGTH:	1000
LINE NO.:	PLDD-0101101 REV00	PIPE DIA.:	100	PIPE SIZING:	1000
PIPE SIZE:	100	PIPE SIZING:	1000	PIPE SIZING:	1000
PIPE SIZING:	1000	PIPE SIZING:	1000	PIPE SIZING:	1000



Enter file name



- 1) Click in each inspection date at the top left to display mark-up ISO of each visual inspection campaign.
- 2) Click to create a new container for upload drawing.
- 3) **Status of VISUAL MARKED-UP ISO report** at the inspection history change to active (On INFO tab).
- 4) At the container, click to upload drawing.
- 5) Click to preview file with default image viewer program.
- 6) Click to delete a file.

## 2.2.5 Ultrasonic Thickness

On **THICKNESS > THICKNESS** tab, it is divided into three sections as follow.

- **Actual Thickness Record:** Record the actual thickness from inspection
- **CML Test Point Data Table:** The table shows the data of each CML test point
- **Probe data:** Record info of UT equipment and probe

THICKNESS												
CML No.	CML Desc.	Access	Test Date	UTS (mm)	CML		TP		UTM			
					TP Desc.	TP Date	TP UTS (mm)	TP Acc.	Inspection Date	Initial (mm)	UL (mm)	Integrity Status
1	Recess	M	0.98	7.07	I-1	8	9.0	A	Mar 14, 2020	8.0	8.10	#
2	Glow	M	0.98	7.07	I-2	9	9.0	A	Mar 14, 2020	8.0	8.10	#
3	Pipe	M	0.98	7.07	I-3	10	9.0	A	Mar 14, 2020	8.0	8.10	#
4	Glow	M	0.98	7.07	I-4	11	9.0	A	Mar 14, 2020	8.0	8.10	#
5	Pipe	M	0.98	7.07	I-5	12	9.0	A	Mar 14, 2020	8.0	8.10	#
6	Glow	M	0.98	7.07	I-6	13	9.0	A	Mar 14, 2020	8.0	8.10	#
7	Pipe	M	0.98	7.07	I-7	14	9.0	A	Mar 14, 2020	8.0	8.10	#
8	Pipe	M	0.98	7.07	I-8	15	9.0	A	Mar 14, 2020	8.0	8.10	#
9	Glow	M	0.98	7.07	I-9	16	9.0	A	Mar 14, 2020	8.0	8.10	#
10	Pipe	M	0.98	7.07	I-10	17	9.0	A	Mar 14, 2020	8.0	8.10	#

Actual Thickness Record

CML TEST POINT DATA TABLE												
CML No.	CML Desc.	TP Desc.	TP Date	UTS (mm)	CML		TP		UTM			
					TP Desc.	TP Date	TP UTS (mm)	TP Acc.	Inspection Date	Initial (mm)	UL (mm)	Integrity Status
1-1	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-2	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-3	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-4	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-5	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-6	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-7	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-8	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-9	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-10	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-11	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-12	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-13	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-14	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-15	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-16	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-17	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-18	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-19	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-20	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-21	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-22	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-23	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-24	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-25	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-26	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-27	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-28	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-29	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-30	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-31	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-32	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-33	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-34	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-35	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-36	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-37	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-38	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-39	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-40	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-41	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-42	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-43	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-44	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-45	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-46	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-47	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-48	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-49	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-50	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-51	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-52	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-53	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-54	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-55	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-56	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-57	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-58	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-59	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-60	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-61	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-62	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-63	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-64	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 14, 2020	8.0	#
1-65	Recess	0	0.98	4	Sep 8, 2018	0.98	7.27	Mar 24, 2018	10.81	Mar 1		



## 1) Actual Thickness Record

CML				TP				UTM						
CML No	CML Desc	Access	tnom (mm)	tact (mm)	CML-TP	TP Desc	CML Desc	TP Desc	Inspection Date	tactual (mm)	RL (yrs)	Integrity Status	Status Criteria	
1	Reducer		8.56	7.27	1-1	0			Mar 14, 2020	9.03	8.30	P6	RL > 5	
2	Elbow		8.56	7.27	1-2	90			Nov 2, 2019	9.08	8.37	P6	RL > 5	
3	Pipe		8.56	7.27	1-3	180			Mar 24, 2013	10.51	20.00	P6	RL > 5	
4	Elbow	H	8.56	7.27	1-4	270								
5	Pipe	H	8.56	7.27										
6	Pipe	H	8.56	7.27										
7	Elbow	H	8.56	7.27										
8	Pipe	H	8.56	7.27										
9	Elbow	H	8.56	7.27										
10	Pipe	H	8.56	7.27										

- Click **DOWNLOAD INSPECT FORM** to generate form for carrying to take notes thickness value by inspector.

- Click **+** and fill in data to create a new CML.

No	CML-TP	CML Desc	Type	TP Desc	In-service Date	tnom (mm)	tact (mm)	Thickness tolerance	Last inspection	Next inspection	UT_Calibration	UT_Calibration Date	RL	Integrity Status	Comments		
1	1-1	Reducer	0	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.14	0.21	0.38	M-1 P6
2	1-2	Reducer	0	A	HTHn	805	Sept 1, 2008	8.97	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.21	0.38	M-1 P6
3	1-3	Reducer	0	A	HTHn	805	Sept 1, 2008	8.97	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.21	0.38	M-1 P6
4	1-4	Reducer	270	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.19	1.28	M-1 P6
5	2-1	Elbow	0	A	HTHn	805	Sept 1, 2008	8.97	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.21	0.38	M-1 P6
6	2-2	Elbow	0	A	HTHn	805	Sept 1, 2008	8.97	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.21	0.38	M-1 P6
7	2-3	Elbow	180	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.23	0.36	M-1 P6
8	2-4	Elbow	270	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.21	0.38	M-1 P6
9	3-1	Pipe	0	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.21	0.38	M-1 P6
10	3-2	Pipe	90	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.19	1.28	M-1 P6
11	3-3	Pipe	90	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.19	1.28	M-1 P6
12	3-4	Pipe	270	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.21	0.38	M-1 P6
13	4-1	Elbow	0	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.21	0.38	M-1 P6
14	4-2	Elbow	90	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.21	0.38	M-1 P6
15	4-3	Elbow	180	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.21	0.38	M-1 P6
16	4-4	Elbow	270	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.21	0.38	M-1 P6
17	5-1	Pipe	90	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.19	1.28	M-1 P6
18	5-2	Pipe	90	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.19	1.28	M-1 P6
19	5-3	Pipe	180	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.19	1.28	M-1 P6
20	5-4	Pipe	270	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.21	0.38	M-1 P6
21	6-1	Elbow	0	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.21	0.38	M-1 P6
22	6-2	Elbow	90	A	HTHn	805	Sept 1, 2008	8.98	7.27	Nov 2, 2019	9.08	Mar 14, 2020	9.03	0.15	0.21	0.38	M-1 P6

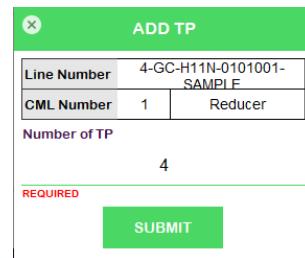
- Click **EDIT** on CML part, then click **EDIT** to edit CML data.

EDIT CML		
CML Number	CML Desc	Access
1	Reducer	Select access
<b>REQUIRED</b>		<b>REQUIRED</b>
Pipe Spec	NPS (inch)	tnom (mm)
H4N	4.000	13.49
<b>REQUIRED</b>		<b>REQUIRED</b>
Schedule	In-service Date (if edit)	Replacement Date
160	Select date	Select date
<b>REQUIRED</b>		<b>REQUIRED</b>
<b>SUBMIT</b>		

- In case of replacing the flowline, user must select a replacement date in **EDIT CML**.

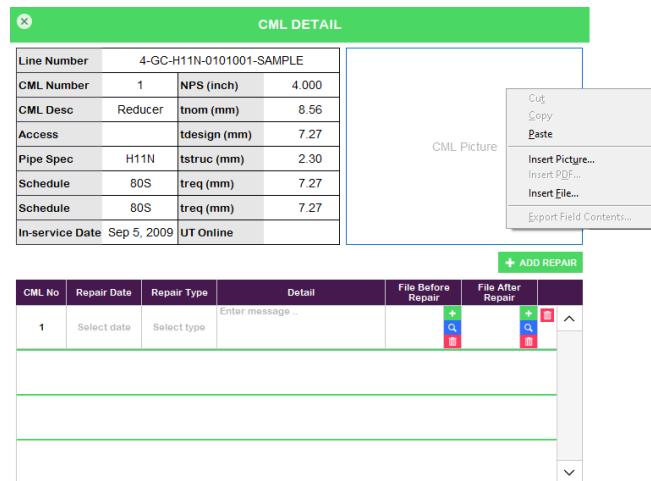


- **Importance!**: After selecting replacement date and clicking **SUBMIT**, test point data will be cleared all over.
- Click **DELETE** to delete a CML data.
- Click **ADD TP**, then specify the number of test points to create.



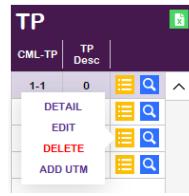
Line Number	4-GC-H11N-0101001-SAMPLE	
CML Number	1	Reducer
Number of TP		
4		
<b>REQUIRED</b>		
<b>SUBMIT</b>		

- At the **DETAIL** of CML part, user can record repairing information.



CML DETAIL					
Line Number	4-GC-H11N-0101001-SAMPLE				
CML Number	1	NPS (inch)	4.000		
CML Desc	Reducer	t <sub>nom</sub> (mm)	8.56		
Access		t <sub>design</sub> (mm)	7.27		
Pipe Spec	H11N	t <sub>struc</sub> (mm)	2.30		
Schedule	80S	t <sub>req</sub> (mm)	7.27		
Schedule	80S	t <sub>req</sub> (mm)	7.27		
In-service Date	Sep 5, 2009	UT Online			
<b>+ ADD REPAIR</b>					
CML No	Repair Date	Repair Type	Detail	File Before Repair	File After Repair
1	Select date	Select type	Enter message ..		

- Right click on CML picture, then select **Insert Picture...** to upload picture that represent the latest repairing.
- Click **+ ADD REPAIR** to create a new repair record.
- Fill in data and attach files of before-repair and after-repair.
- Click to insert files.
- Click to preview file with default viewer program.
- Click to delete a file.



- Click on TP part, then click **EDIT** to edit test point data.
- Click **DELETE** to delete a test point data.
- Click **ADD UTM**, then specify UTM data to record.
- **Status of ULTRASONIC THICKNESS report** at the latest inspection history change to active (On INFO tab).
- Click **DETAIL** to show thickness trend of each test point.



- Click on UTM part, then click **EDIT** to edit UTM data.

CML-TP	CML Desc	TP Desc	Inspection Date	tactual (mm)	RL (yrs)	Integrity Status	Status Criteria	
1-1	Reducer	0	Mar 14, 2020	9.03	8.30	P6	RL > 5	
1-1	Reducer	0	Nov 2, 2019	9.08	8.37	P6	RL > 5	
1-1	Reducer	0	Mar 24, 2013	10.51	20.00	P6	RL > 5	

- Click **DELETE** to delete a UTM data.

THICKNESS							
CML				TP		UTM	
CML No	CML Desc	Access	tnom (mm)	treq (mm)	CML-TP	TP Desc	Import TP
1	Reducer		8.56	7.27		1-1 0	
2	Elbow		8.56	7.27		1-2 90	

- In the case that there is a large amount of data to input in the AIMS, either CML, TP or UTM data. Users can use the import function to help import data at once.
- Click **DOWNLOAD FORM** to download excel template to desktop.
- Fill in the data to excel template and click **IMPORT FORM** to upload import file.



## 2) CML Test Point Data Table

The table displayed a summary of thickness data in each CML test point.

CML Test Point Data Table																
CML-TP	CML Desc	TP Desc	Sch	NPS (inch)	In-service Date	tnom (mm)	treq (mm)	First Date   Thk (mm)	Prev Date   Thk (mm)	Last Date   Thk (mm)	ST. CR (mm/yr)	LT. CR (mm/yr)	RL (yrs)	Integrity Status	Status Criteria	Thk Trend
1-1	Reducer	0	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 10.51	Nov 2, 2019 9.08	Mar 14, 2020 9.03	0.14	0.21	8.30	P6	RL > 5	
1-2	Reducer	90	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 10.10	Nov 2, 2019 9.02	Mar 14, 2020 9.02	0.00	0.15	11.31	P6	RL > 5	
1-3	Reducer	180	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 9.50	Nov 2, 2019 9.14	Mar 14, 2020 9.07	0.19	0.06	9.37	P6	RL > 5	
1-4	Reducer	270	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 10.48	Nov 2, 2019 9.72	Mar 14, 2020 9.17	1.51	0.19	1.26	P4	1 < RL ≤ 3	
2-1	Elbow	0	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 10.33	Nov 2, 2019 8.91	Mar 14, 2020 8.72	0.52	0.23	2.78	P4	1 < RL ≤ 3	
2-2	Elbow	90	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 11.04	Nov 2, 2019 8.92	Mar 14, 2020 8.92	0.00	0.30	5.43	P6	RL > 5	
2-3	Elbow	180	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 9.73	Nov 2, 2019 8.13	Mar 14, 2020 8.14	-0.03	0.23	3.82	P6	3 < RL ≤ 5	
2-4	Elbow	270	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 9.08	Nov 2, 2019 9.11	Mar 14, 2020 8.84	0.74	0.03	2.12	P4	1 < RL ≤ 3	
3-1	Pipe	0	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 8.54	Nov 2, 2019 7.94	Mar 14, 2020 8.05	-0.30	0.07	11.11	P6	RL > 5	
3-2	Pipe	90	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 9.27	Nov 2, 2019 8.92	Mar 14, 2020 8.23	1.89	0.15	0.51	P3	0.5 < RL ≤ 1	
3-3	Pipe	180	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 9.11	Nov 2, 2019 8.24	Mar 14, 2020 8.24	0.00	0.12	7.78	P6	RL > 5	
3-4	Pipe	270	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 8.45	Nov 2, 2019 9.06	Mar 14, 2020 8.75	0.85	-0.04	1.74	P4	1 < RL ≤ 3	
4-1	Elbow	0	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 9.09	Nov 2, 2019 8.99	Mar 14, 2020 8.98	0.03	0.02	62.31	P6	RL > 5	
4-2	Elbow	90	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 8.94	Nov 2, 2019 9.31	Mar 14, 2020 9.66	-0.96	-0.10	20.00	P6	RL > 5	
4-3	Elbow	180	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 11.35	Nov 2, 2019 10.92	Mar 14, 2020 10.41	1.40	0.13	2.24	P4	1 < RL ≤ 3	
4-4	Elbow	270	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 10.14	Nov 2, 2019 10.66	Mar 14, 2020 10.23	1.18	-0.01	2.51	P4	1 < RL ≤ 3	
5-1	Pipe	0	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 8.71	Nov 2, 2019 8.21	Mar 14, 2020 8.51	-0.02	0.03	43.26	P6	RL > 5	
5-2	Pipe	90	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 8.91	Nov 2, 2019 8.38	Mar 14, 2020 8.43	-0.14	0.07	16.86	P6	RL > 5	
5-3	Pipe	180	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 9.16	Nov 2, 2019 8.28	Mar 14, 2020 8.19	0.25	0.14	3.72	P6	3 < RL ≤ 5	
5-4	Pipe	270	80S	4	Sep 5, 2009	8.56	7.27	Mar 24, 2013 8.75	Nov 2, 2019 8.71	Mar 14, 2020 8.71	0.00	0.01	251.21	P6	RL > 5	

- Click All to select integrity status to show in the table.
- Click in column Thk Trend to show thickness trend of each CML test point.

## 3) Probe Data

At the bottom of thickness page, probe data and UT equipment data can record to each inspection campaign.

INSPECTION DATE	UT EQUIPMENT DATA	PROBE DATA
Jan 1, 2021	UT equipment: OLYMPUS EPOCH LTC UT equipment S/N: QBA4-7400-2839-30B5	Probe type: TR
Jan 1, 2018	Couplant: WALLPAPER PASTE	Probe angle: 0
Jan 1, 2015	Calibration block: STEP WEDGE Calibration block S/N: 161011-1 Equipment calib record no: NDT 02030SP/2015	Brand: Probe S/N: Size (mm): 7.9 Frequency (MHz): 5 Surface condition: SATISFACTORY Calibration range (mm): 0-50 Test temperature: AMBIENT Signal range: 0-50

- Click in each inspection date to show information record of inspection tools.
- Click to add a new record in each inspection campaign.



## 2.2.6 CML Marked-Up ISO

On **THICKNESS > CML MARKED-UP ISO** tab, upload the CML marked-up file to this section to add these CML marked up in the final thickness report.

The screenshot shows a software interface titled 'CML MARKED-UP ISO'. On the left, there is a 'INSPECTION DATE' section with four entries: Nov 5, 2021, Mar 14, 2020, Nov 2, 2019, and Mar 24, 2013. Each entry has a blue magnifying glass icon and a green plus sign icon. A large blue arrow points from the bottom right of this section towards the center of the screen. The center contains a technical drawing of a pipe system with various dimensions and inspection points labeled. To the right of the drawing are two 'ISO' containers, each labeled 'PPLD-0101101 REV00'. Each container has its own set of icons: a green plus sign, a blue magnifying glass, a red minus sign, and a green checkmark. At the bottom right of the interface is a text input field labeled 'Enter file name'.

- 1) Click in each inspection date at the top left to display CML mark-up of each thickness inspection campaign.
- 2) Click to create a new container for upload drawing.
- 3) **Status of CML MARKED-UP ISO report** at the inspection history change to active (On INFO tab).
- 4) At the container, click to upload drawing.
- 5) Click to preview file with default image viewer program.
- 6) Click to delete a file.

## 2.2.7 Thickness Anomaly

On **THICKNESS > ANOMALY** tab, create anomaly report of CML test point to take action for corrective maintenance.

The screenshot shows a software interface titled 'ANOMALY'. On the left, there is an 'INSPECTION DATE' section with three entries: Jan 1, 2021, Jan 1, 2018, and Jan 1, 2015. Each entry has a blue magnifying glass icon and a green plus sign icon. A red box highlights the 'ADD ANOMALY' button next to the Jan 1, 2015 entry. Below this is a 'THICKNESS SUMMARY' table with columns for CML-TP, Pipe ID, Pipe OD, Wall Thick, Min. Thk, Max. Thk, Average Thk, and Standard Deviation. The table includes several rows of data. To the right of the table is a 'TEMPORARY REPAIR' section with fields for Due Date (Sep 30, 2021), Status (Pending), Compound injected clamp, and Description. Below this is a 'RECOMMENDATION BY GENERAL INSPECTOR (API INSPECTOR)' section with a long text block. Further down is a 'RECOMMENDATION BY INSPECTION ENGINEER' section with another long text block. A red box highlights the 'ADD BLANK FORM' button next to the Jan 1, 2015 entry.

- 1) Click in each inspection date at the top left to display anomaly thickness of each inspection campaign.



- 2) Click  to add anomaly form.
- 3) Select **ADD AUTO** to generate anomaly point with status P1-P5.
- 4) Select **ADD BLANK FORM** to generate a blank form for manual key CML-TP.
- 5) **Status of THICKNESS ANOMALY report** at the inspection history change to active (On INFO tab).

### ANOMALY

INSPECTION DATE		THICKNESS SUMMARY	
Jan 1, 2021		CML-TP:	 1.4
Jan 1, 2018		CML description:	Reducer
Jan 1, 2015		TP description:	270
		Pipe size (inch):	4
		Original thk (mm):	13.49
		Remaining thk (mm):	10.31
		Wall loss thk (mm):	3.18
		Min. req. thk (mm):	10.45
		Selected CR (mm/yr):	0.20
		Remaining life (yrs):	-0.70
		Status:	 P1
INSPECTION SUMMARY			
Enter message ...			

- 6) Enter CML-TP with the same format of text as CML-TP test point data table in thickness page. Other data will automatically appear in the thickness summary table.
- 7) **Anomaly Corrective Maintenance** of thickness measurement can specify the repair type, comment, due date for action and status update of maintenance.
- 8) If the repair status is **Completed**, status of thickness will be **P6**.  
Note: In case of pipe replacement, the user should be updated a new thickness value of this part.



## 2.2.8 RBI

RBI tab contains probability of failure (POF) and consequence of failure (CoF) record. User can select the level of failure for damage mechanism and consequence to show on risk matrix.

**RBI**

RBI ASSESSMENT DATE		
Nov 5, 2012		
<b>DAMAGE MECHANISM</b>		
POF   PROBABILITY OF FAILURE		
Damage Mechanism	Probability of Failure Level	Comment
Select damage mechanism	Certainly (10)   Happens several times per year at a particular location (0-0.5 Years)	Note:
Select damage mechanism	Select probability of failure	Note:
Select damage mechanism	Select probability of failure	Note:
Select damage mechanism	Select probability of failure	Note:
Select damage mechanism	Select probability of failure	Note:
<b>COF   CONSEQUENCE OF FAILURE</b>		
Consequence	Consequence of Failure Level	Comment
People	Minor (2)   LTI	Note:
Assets / Production Loss	Minor (2)   Production loss <1 day, Damage < 100KUS	Note:
Environment	Moderate (3)   Tier 1, localized effect	Note:
Reputation	Minor (2)   Local written media	Note:

- 1) Click to create a record for RBI assessment.
- 2) Click to view flowline RBI report.
- 3) Click to delete RBI record.
- 4) Click to view RBI record.

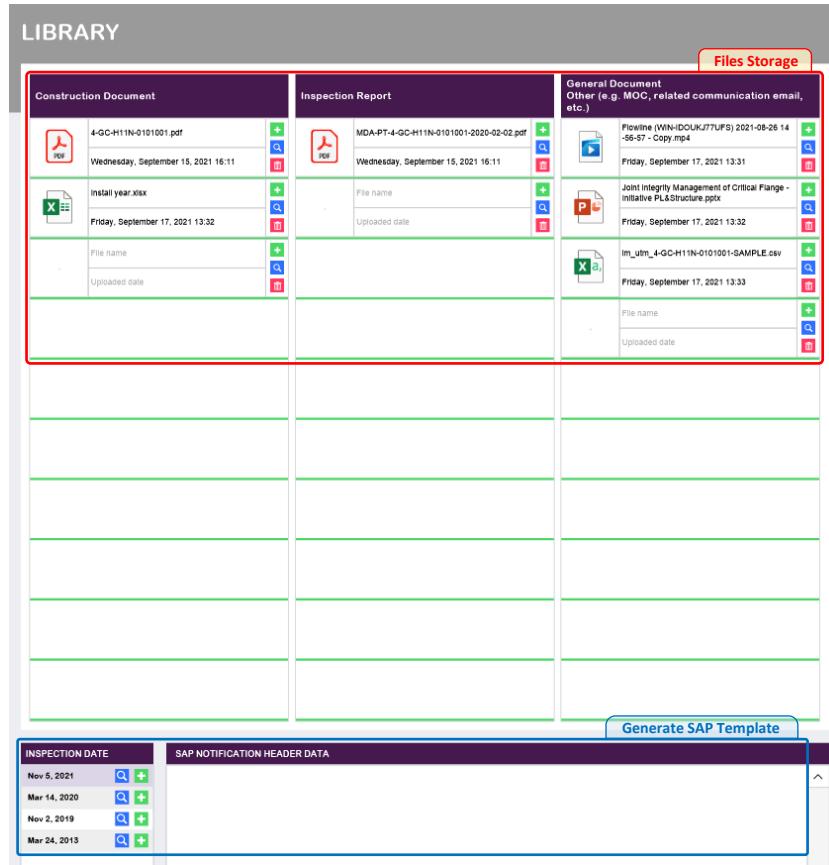
CPOC RISK MATRIX								
CoF					PoF			
Severity	People	Assets / Production Loss	Environment	Reputation	Rare (1)	Unlikely (2)	Credible (5)	Likely (8)
					Rarely or never happened in E&P industry R.L (> 20+ years)	Occurred several time in E&P industry (10-20 years)	Incident has occurred in CPOC (4-10 Years)	Happens several times per year in CPOC (0.5-4 years)
Insignificant (1)	First Aid, RWD, MTC	Slight Damage or loss	Slight impact of limited duration	Local media interest				
Minor (2)	LTI	Production loss <1 day, Damage < 100KUS	Tier 1, Minor effect	Local written media				
Moderate (3)	Multiple LTIs, One PD	Production loss <1 wk, Damage between 100-500KUS	Tier 1, Localized effect	Local TV, national papers				10-3
Major (4)	One Fatality Multiple PD's	Production loss >1 Month, Damage between 500k - 1000KUS	Tier 2, Regional assistance required	National TV, international papers				
Critical (5)	More than One Fatality	Production loss >1 Month, Damage > 1000KUS	Tier 3, International assistance required	International TV, extended coverage				

- 5) Risk matrix displays PoF-CoF levels, selecting the maximum value for each failure to show in the table.



## 2.2.9 Library

Library tab is a repository of all related files such as construction document, inspection report, MOC., etc. It can also generate the template excel files for integration with SAP.

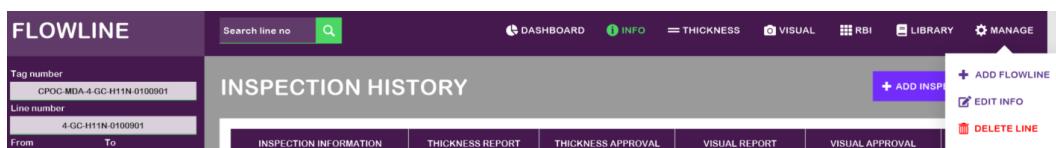


The screenshot shows the AIMS Library interface. It has three main sections: Construction Document, Inspection Report, and General Document. The General Document section is highlighted with a red border. At the bottom, there are tabs for INSPECTION DATE and SAP NOTIFICATION HEADER DATA, with the SAP NOTIFICATION HEADER DATA tab being highlighted with a blue border.

- 1) At files storage, click  to upload a file.
- 2) Click  to preview file with default viewer program.
- 3) Click  to delete a file.
- 4) At the bottom page, click  in each inspection date to display SAP notification header data.
- 5) Click  to create SAP notification header data for each inspection date.

## 2.2.10 Manage

This tab allows to add a new flowline, edit info data, or even delete tags from the system.



The screenshot shows the AIMS Manage interface. It has two main tabs: FLOWLINE and INSPECTION HISTORY. The INSPECTION HISTORY tab is active. It displays inspection history details and includes buttons for ADD INSPECTION, EDIT INFO, and DELETE LINE.



## 2.2.11 Report Approval

The generated report shows the status for approval by authorized person. Thickness report and visual report can be clicked to preview before rejection or approval. For every report approved, it is automatically signed at the bottom of the report.

INSPECTION HISTORY						<a href="#">+ ADD INSPECTION RECORD</a>
INSPECTION INFORMATION		THICKNESS REPORT	THICKNESS APPROVAL	VISUAL REPORT	VISUAL APPROVAL	
Inspection date:	Mar 14, 2020	ULTRASONIC THICKNESS	Approved	VISUAL CHECKLIST VISUAL PICTURE LOG	Waiting for approval by Inspection Engineer	<a href="#">FINAL REPORT</a>
Inspection type:	Routine	CML MARKED-UP ISO		VISUAL MARKED-UP ISO	APPROVE  REJECT	
Report number:		THICKNESS ANOMALY		VISUAL REPORT		
WO number:		THICKNESS REPORT	APPROVED  REJECT			
Inspection date:	Nov 2, 2019	ULTRASONIC THICKNESS	Approved	VISUAL CHECKLIST VISUAL PICTURE LOG	No Report	<a href="#">FINAL REPORT</a>
Inspection type:	Routine	CML MARKED-UP ISO		VISUAL MARKED-UP ISO	APPROVE  REJECT	
Report number:		THICKNESS ANOMALY		VISUAL REPORT		
WO number:		THICKNESS REPORT	APPROVE  REJECT	VISUAL REPORT	APPROVE  REJECT	<a href="#">FINAL REPORT</a>
Inspection date:	Mar 24, 2013	ULTRASONIC THICKNESS	Waiting for approval by Site Supervisor	VISUAL CHECKLIST VISUAL PICTURE LOG	No Report	<a href="#">FINAL REPORT</a>
Inspection type:	Routine	CML MARKED-UP ISO		VISUAL MARKED-UP ISO	APPROVE  REJECT	
Report number:		THICKNESS ANOMALY		VISUAL REPORT		
WO number:		THICKNESS REPORT	APPROVE  REJECT			

### 1) Report status

- ⇒ No report.
- ⇒ The report has not been approved.
- ⇒ The report has been approved.

### 2) Previewing report

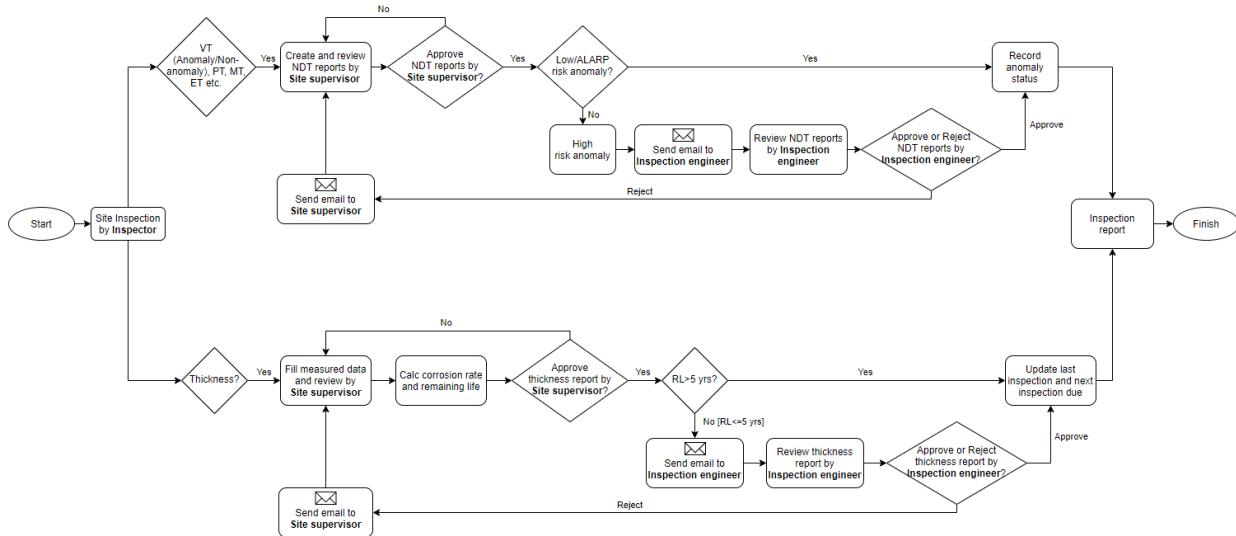
User can click [THICKNESS REPORT](#) / [VISUAL REPORT](#) or [FINAL REPORT](#) to preview the report before approval.

### 3) Approval status

- [APPROVE](#) ⇒ Waiting for approval by authorized person.
- [REJECT](#) ⇒ Return the report for review again.
- [APPROVED](#) ⇒ Approval is complete.

### 4) Approval step

Authorized person can click on approval status to sign the report. The system will automatically send an email to the person involved to take action. The flowchart below shows the process from report creation to completed approval.



### Summary of approval authority

- Ultrasonic Thickness Report: General Inspector
- CML Marked-Up ISO Report: General Inspector
- Thickness Anomaly Report: General Inspector ⇒ Inspection Engineer
- Visual Checklist Report: General Inspector ⇒ Inspection Engineer
- Visual Picture Log Report: General Inspector
- Visual Marked-Up ISO Report: General Inspector
- Visual Anomaly Report: General Inspector ⇒ Inspection Engineer

### 5) Sample of email from the system

[FLOWLINE] Reviewed, Visual inspection report of 4-GC-H11N-0101001-SAMPLE is waiting for your review.

 aims@dacon-inspection.com  
 To: Settapon Santatiwongchai  
 Fri 05-Nov-21 10:32 AM

Dear Inspection Engineer,

The flowline visual inspection report of 4-GC-H11N-0101001-SAMPLE Inspection date: 3/14/2020 has been reviewed by General Inspector with found anomaly (P1)..

Comment from General Inspector:  
 There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable.  
 There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable.

Please review in AIMS

Thank you very much.

Flowline line number : 4-GC-H11N-0101001-SAMPLE

**Click to access this line**

Best Regards,  
 Mr. Dacon Inspection Technologies  
 Site Supervisor

**AIMS**  
ASSET INTEGRITY MANAGEMENT SYSTEM



### 3. PIPING

#### 3.1 Piping Dashboard

##### 3.1.1 Piping Filter Data

Piping number of all platforms are displayed on piping dashboard page. Additionally, each line number can be filtered for monitoring with multiple conditions in real time.

PIPING												Filters								
LINE NO	Search line no	PLATFORM	ALL	RISK RANKING	ALL	STATUS	ALL	P1 RL≤0.25	4 0.25≤RL≤0.5	P2 0.5≤RL≤1	11 1≤RL≤3	P3 3≤RL≤5	119 5≤RL≤5	P4 3≤RL≤5	318 3≤RL≤5	P5 3≤RL≤5	257 RL>5	P6 RL>5	1005 NO INSPECT	TOTAL 3459
Total record: 5173																				
PLATFORM	LINE NUMBER	CORROSION LOOP		RISK RANKING	INTEGRITY STATUS	VISUAL INSPECTION			NDE INSPECTION			DUE VISUAL ANOMALY		DUE THICKNESS ANOMALY		C				
MDPP	2-CS-BS1-4049	CL-009-A	Cooling Water Supply	ALARP	P6	2020	2024	Not due	2020	2032	Not due	2019	Overdue							
MDPP	2-CS-BS1-4123	CL-009-A	Cooling Water Supply	LOW	P6	2020	2024	Not due	2020	2032	Not due									
MDPP	2-CS-BS1-4280	CL-009-A	Cooling Water Supply	LOW	NO INSPECT		2014	Overtime		2022	Not due									
MDPP	2-CS-BS1-4500	CL-009-A	Cooling Water Supply	LOW	P3	2020	2024	Not due	2020	2032	Not due	2022	Not due							
MDPP	2-CS-C5-4403	CL-009-A	Cooling Water Supply	LOW	P4	2020	2024	Not due	2020	2032	Not due	2024	Not due							
MDPP	2-DF-B2-6076	CL-029-A	Treated Diesel	ALARP	P4	2020	2024	Not due	2020	2028	Not due	2023	Not due							
MDPP	2-DF-B2-6077	CL-029-C	Treated Diesel	ALARP	P6	2020	2025	Not due	2017	2025	Not due	2021	Ongoing							

P1 RL≤0.25	4 0.25≤RL≤0.5	P2 0.5≤RL≤1	11 1≤RL≤3	P3 3≤RL≤5	119 5≤RL≤5	P4 3≤RL≤5	318 3≤RL≤5	P5 3≤RL≤5	257 RL>5	P6 RL>5	1005 NO INSPECT	TOTAL 3459	TOTAL 5173
---------------	------------------	----------------	--------------	--------------	---------------	--------------	---------------	--------------	-------------	------------	--------------------	---------------	---------------

- 1) Click the status button to display the filtered data for each status.

PLATFORM	ALL	RISK RANKING	ALL	STATUS	ALL
----------	-----	--------------	-----	--------	-----

- 2) Select dropdown of **STATUS**, **RISK RANKING** and **PLATFORM** to filtering.
- 3) Click **EXPORT EXCEL** to export excel file to the desktop. This file contains the data of each line number that was filtered by filter tool.
- 4) Click **EXPORT SAP** to generate SAP template to the desktop (if any).

- 5) Enter word or full name of line number, and then click or press "ENTER" on keyboard for searching.
- 6) Click to reset filter as a default.

LINE NO	sam	Q	PLATFORM	ALL	RISK RANKING	ALL	STATUS	P2	P1 RL≤0.25	4 0.25≤RL≤0.5	P2 0.5≤RL≤1	11 1≤RL≤3	P3 3≤RL≤5	119 5≤RL≤5	P4 3≤RL≤5	318 3≤RL≤5	P5 3≤RL≤5	257 RL>5	P6 RL>5	1005 NO INSPECT	TOTAL 3459
Total record: 4																					
PLATFORM	LINE NUMBER	CORROSION LOOP		RISK RANKING	INTEGRITY STATUS	VISUAL INSPECTION			NDE INSPECTION			DUE VISUAL ANOMALY		DUE THICKNESS ANOMALY		C					
MOLQ	2-DF-B2-6077-SAMPLE	CL-029-C	Treated Diesel	HIGH	P1	2021	2025	Not due	2021	2025	Not due	2022	Not due	2021	2024	On due	Not due				
MOLQ	2-DF-B2-6077-SAMPLE	CL-029-C	Treated Diesel		NO INSPECT		2025	Not due		2025	Not due										
MOLQ	2-GC-C2N-1130-SAMPLE	CL-004-C	Condensate	ALARP	P1	2020	2024	Not due	2020	2024	Not due	2022	Not due	2020	2022	Completed	Not due				
MOLQ	4-CR-BS1-4210-SAMPLE	CL-032-A	Cooling Water Return		P2	2019	2023	Not due	2019	2023	Not due										

- 7) Click to access the line number on piping module.



### 3.1.2 Approval Pending

At the top of flowline dashboard page, click **APPROVAL PENDING** to access **APPROVAL PENDING** section. Approval pending contains a list of reports that are pending approval from authorized persons.

PIPING APPROVAL PENDING								<a href="#">BACK</a>		
VISUAL		THICKNESS								
LINE NO	Search line no	START DATE	END DATE	SEARCH						
<b>Total record:</b>										
LINE NUMBER	INSPECTION DATE	INSPECTION TYPE	APPROVAL BY GENERAL INSPECTOR	APPROVAL BY INSPECTION ENGINEER	ANOMALY STATUS	APPROVAL STATUS				
14-RV-B351-3089	18 Feb 2022	Routine			N	Waiting for approval by General Inspector				
14-RV-B351-3216	18 Feb 2022	Routine			N	Waiting for approval by General Inspector				
14-RV-CS1-3277	18 Feb 2022	Routine			N	Waiting for approval by General Inspector				
14-RV-CS1-3299	18 Feb 2022	Routine			N	Waiting for approval by General Inspector				
24-RV-C2N-7015	18 Feb 2022	Routine			N	Waiting for approval by General Inspector				
3-PIP-JSR1-3054	17 Feb 2022	Routine			N	Waiting for approval by General Inspector				

- 1) The table of approval pending is divided into two parts, visual and thickness.

LINE NO	Search line no	
---------	----------------	--

- 2) Enter word or full name of tag number, and then click or press "ENTER" on keyboard for searching.

START DATE		END DATE		<b>SEARCH</b>
------------	--	----------	--	---------------

- 3) Select start date and end date, then click **SEARCH** button for filtering
- 4) Click to access piping module for approval tasks.



## 3.2 Piping Management System

Piping module contains the data of design, operating, inspection and RBI, moreover, there are library that collect uploaded files. General information of each line is on the left side and menu tabs are on the top of page.

**PIPING**

Tag number		CPOC-MDQ-2-DF-B2-6077-SAMPLE
Line number		2-DF-B2-6077-SAMPLE
From	To	3-DF-B2-6058 A-6100 (TP35)
Platform		MOLQ MUDA Living Quarter
P&ID number		B17-1-PP-PR-06 0402-Rev 0
Drawing number		PPUDD-DF-6077.01
In-service date		Jan 1, 2010
Service		DF Diesel Fuel
Pipe size	Pipe spec	2.00 B2
Piping code		Material type API 570/ASME B31.3 Austenitic Stainless Steel
Material		ASTM A790 UNS S31803
Stress (psi)	Joint efficiency (%)	16,700 1
Deadleg	Deck	No Mezz
CA	Design life (yrs)	0.00 25.00
Design Pressure		bar g psi
10.00		145.00
Operating Pressure		bar psi
3.00		43.51

**INSPECTION HISTORY**

INSPECTION INFORMATION	THICKNESS REPORT	THICKNESS APPROVAL	VISUAL REPORT	VISUAL APPROVAL	
Inspection date: Sep 21, 2021	ULTRASONIC THICKNESS ✓	No Report	VISUAL CHECKLIST ✓ VISUAL PICTURE LOG ✓	Waiting for approval by Site Supervisor	<b>FINAL REPORT</b>
Inspection type: CUI	CML MARKED-UP ISO ✓	APPROVE REJECT	VISUAL MARKED-UP ISO ✓ VISUAL REPORT	APPROVE REJECT	
Report number:	THICKNESS ANOMALY ✓				
WO number:	THICKNESS REPORT				
Inspection date: Jan 1, 2021	ULTRASONIC THICKNESS ✓	Waiting for approval by Inspection Engineer	VISUAL CHECKLIST ✓ VISUAL PICTURE LOG ✓	Approved	<b>FINAL REPORT</b>
Inspection type: Routine	CML MARKED-UP ISO ✓	APPROVE REJECT	VISUAL MARKED-UP ISO ✓ VISUAL REPORT	APPROVED REJECT	
Report number:	THICKNESS ANOMALY ✓				
WO number:	THICKNESS REPORT				
Inspection date: Jan 1, 2017	ULTRASONIC THICKNESS ✓	Waiting for approval by Site Supervisor	VISUAL CHECKLIST ✓ VISUAL PICTURE LOG ✓	Waiting for approval by Site Supervisor	<b>FINAL REPORT</b>
Inspection type: Routine	CML MARKED-UP ISO ✓	APPROVE REJECT	VISUAL MARKED-UP ISO ✓ VISUAL REPORT	APPROVE REJECT	
Report number:	THICKNESS ANOMALY ✓				
WO number:	THICKNESS REPORT				
Inspection date: Jan 1, 2013	ULTRASONIC THICKNESS ✓	Waiting for approval by Site Supervisor	VISUAL CHECKLIST ✓ VISUAL PICTURE LOG ✓	Waiting for approval by Site Supervisor	<b>FINAL REPORT</b>
Inspection type: Routine	CML MARKED-UP ISO ✓	APPROVE REJECT	VISUAL MARKED-UP ISO ✓ VISUAL REPORT	APPROVE REJECT	
Report number:	THICKNESS ANOMALY ✓				
WO number:	THICKNESS REPORT				

### 3.2.1 Inspection History

On **INFO** tab, Click **+ ADD INSPECTION RECORD** and input data in the fields, then click **SUBMIT** to generate a new inspection campaign record.

**INSPECTION HISTORY**

INSPECTION INFORMATION	THICKNESS REPORT	THICKNESS APPROVAL	VISUAL REPORT	VISUAL APPROVAL	
Inspection date: Mar 14, 2020	ULTRASONIC THICKNESS ✓	Approved	VISUAL CHECKLIST ✓ VISUAL PICTURE LOG ✓	Waiting for approval by Inspection Engineer	<b>FINAL REPORT</b>
Inspection type: Routine	CML MARKED-UP ISO ✓	APPROVED REJECT	VISUAL MARKED-UP ISO ✓ VISUAL REPORT	APPROVE REJECT	
Report number:	THICKNESS ANOMALY ✓				
WO number:	THICKNESS REPORT				
Inspection date: Nov 2, 2019	ULTRASONIC THICKNESS ✓	Approved	VISUAL CHECKLIST ✓	No Report	<b>FINAL REPORT</b>
Inspection type: Routine	CML MARKED-UP ISO ✓	APPROVED REJECT	VISUAL MARKED-UP ISO ✓ VISUAL REPORT	APPROVE REJECT	
Report number:	THICKNESS ANOMALY ✓				
WO number:	THICKNESS REPORT				
Inspection date: Mar 24, 2013	ULTRASONIC THICKNESS ✓	Waiting for Site Supervisor	VISUAL CHECKLIST ✓ VISUAL PICTURE LOG ✓	No Report	<b>FINAL REPORT</b>
Inspection type: Routine	CML MARKED-UP ISO ✓	APPROVED REJECT	VISUAL MARKED-UP ISO ✓ VISUAL REPORT	APPROVE REJECT	
Report number:	THICKNESS ANOMALY ✓				
WO number:	THICKNESS REPORT				

**+ ADD INSPECTION RECORD**

Inspection Date:  Inspection Type:

Report Number:  WO Number:

**SUBMIT**

INSPECTION INFORMATION	THICKNESS REPORT	THICKNESS APPROVAL	VISUAL REPORT	VISUAL APPROVAL	
Inspection date: Nov 5, 2021	ULTRASONIC THICKNESS ✓	No Report	VISUAL CHECKLIST ✓ VISUAL PICTURE LOG ✓	No Report	<b>FINAL REPORT</b>
Inspection type: Routine	CML MARKED-UP ISO ✓	APPROVE REJECT	VISUAL MARKED-UP ISO ✓ VISUAL REPORT	APPROVE REJECT	
Report number: Test-125789	THICKNESS ANOMALY ✓				
WO number: T-123456	THICKNESS REPORT				



### 3.2.2 Visual Checklist

On **VISUAL > CHECKLIST** tab, create a visual checklist and input the data into the form of checklist.

CHECKLIST					
<b>INSPECTION DATE</b>		<b>PIPING INFORMATION</b>			
Sep 21, 2021		CPOC-MDLO-2-DF-B2-8077-SAMPLE	Service:	DF	Diesel Fuel
Jan 1, 2021		CL-029-C	Material spec:	ASTM A790 UNS S31803 Austenitic Stainless Steel	
Jan 1, 2017		B17.1-PP-PR-06-0402-Rev 0	Design data:	145.00	psi /-80 °C
Jan 1, 2013		PPUDD-DF-8077.01	Operating data:	43.51	psi /30.00 °C
<b>DAMAGE MECHANISM CHECKLIST</b>					
1 Crack		Not found	P6	Note:	
2 Leakage or Seepage		Insignificant	P5	Note:	
3 General corrosion		Minor	P4	Note:	
4 Pitting or Pinhole		Minor	P4	Note:	
5 Corrosion under insulation (CUI)		Moderate	P3	Moderate corrosion was found on piping surface.	
6 Corrosion under support (CUS)		N/A	N/A	Note:	
7 Vibration		Moderate	P3	Note:	
8 Misalignment		Not found	P6	Note:	
9 Others <input type="text" value="Enter value"/>		N/A	N/A	Note:	
<b>PIPING COMPONENT CHECKLIST</b>					
1 Pipe spool		N/A	N/A	Note:	
2 Small bore / Dead leg		Insignificant	P5	Note:	
3 Pipe support (Shoes, Members, Hanger, Clamp, U-Bolt)		Not found	P6	Note:	
4 Spring support		Insignificant	P5	Note:	
5 Flange connection (Flange, Bolt, Nut, Gasket)		Not found	P6	Note:	
6 Fittings (Elbow, Tee, Reducers, Cap)		N/A	N/A	Note:	
7 Threaded and Socket-welded Fittings (Coupling, Union, Cap, Tee)		Minor	P4	Note:	
8 Insulation (Jacket, Banding, Seal, Clamp)		Insignificant	P5	Note:	
9 Valves (PRD, Choke, Control, On-off, Check, Ball, Butterfly)		N/A	N/A	Note:	
10 Others <input type="text" value="Enter value"/>		Minor	P4	Note:	
<b>PIPING VISUAL INSPECTION FINDINGS</b>		N/A	<b>ANOMALY CORRECTIVE MAINTENANCE</b>		
Moderate corrosion was found on piping surface.		Not found	Temporary repair: (Due date) <input type="text" value="Select due date"/> Select status		
		Insignificant	Selected temporary repair		
		Minor	Description: <input type="text" value="Note"/>		
		Moderate	Permanent repair: (Due date) <input type="text" value="Oct 1, 2021"/> Pending		
		Major	Replace studbolt/nut/gasket		
		Severe	Description: <input type="text" value="Replace in the future and Maintenance painting required (hot surface)"/>		
<b>PIPING RECOMMENDATION</b>		Monitoring: (Due date) <input type="text" value="Select due date"/> Description: <input type="text" value="Note"/>			
Maintenance painting required (hot surface)					

- 1) Click in each inspection date to display the checklist record of each visual inspection campaign.
- 2) Click to create a new checklist to be part of visual inspection report.
- 3) **Status of VISUAL CHECKLIST report** at the latest inspection history change to active (On INFO tab).
- 4) Select status and take note for severity of damage mechanism or other finding that was inspected.
- 5) The highest severity status (P1-P6) will represent the status of visual checklist on the top right.
- 6) **Anomaly Corrective Maintenance** of visual inspection can specify the repair type, comment, due date for action and status update of maintenance.



- 7) If the repair status is **Completed**, the visual checklist status will be displayed as **P6**.

### 3.2.3 Visual Picture Log

On **VISUAL > PICTURE LOG** tab, create a visual picture log for picture uploading and input the data into the form.

- 1) Click  in each inspection date at the top left to display the picture log record of each visual inspection campaign.
  - 2) Click  to create a new form to be part of visual inspection report.
  - 3) **Status of VISUAL PICTURE LOG report** at the inspection history change to active (On INFO tab).



Tag number:	CPOC-MDLO-2-GC-C2N-1130- C2N01C	Damage mechanism:	Ext-General corrosion	<span style="color: red;">X</span>	
Inspection date:	Jan 1, 2020	Main component:	Pipe		
Anomaly point:	P030	Wo number:		Severity: <span style="background-color: #ADD8E6; color: blue; padding: 2px 5px;">P6</span>	
		<span style="border: 1px solid red; padding: 2px;">P1</span> <span style="border: 1px solid red; padding: 2px;">P2</span> <span style="border: 1px solid red; padding: 2px;">P3</span> <span style="border: 1px solid red; padding: 2px;">P4</span> <span style="border: 1px solid red; padding: 2px;">P5</span> <span style="background-color: #ADD8E6; color: blue; border: 1px solid black; padding: 2px;">P6</span>		Close-	
<span style="border: 1px solid green; padding: 2px;">+</span> <span style="border: 1px solid blue; padding: 2px;">🔍</span> <span style="border: 1px solid red; padding: 2px;">trash</span>		<span style="border: 1px solid green; padding: 2px;">+</span> <span style="border: 1px solid blue; padding: 2px;">🔍</span> <span style="border: 1px solid red; padding: 2px;">trash</span>		<span style="border: 1px solid green; padding: 2px;">+</span> <span style="border: 1px solid blue; padding: 2px;">🔍</span> <span style="border: 1px solid red; padding: 2px;">trash</span>	
Findings:		Recommendation:			
<p>There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable.</p>		<p>There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable.</p>			

- 4) Enter anomaly point, select the component part about piping and damage mechanism that occur on its.
- 5) Click + to upload picture of overview or close-up view from inspection findings.
- 6) Click 🔍 to preview file with default image viewer program.
- 7) Click trash to delete a picture.
- 8) Enter findings and recommendation of inspection in text box.
- 9) Select severity status for the point of anomaly.

### 3.2.4 Visual Marked-Up ISO

On **VISUAL > MARKED-UP ISO** tab, upload the visual marked-up file to this section to add these marked up in the final visual report.

**VISUAL MARKED-UP ISO**

**INSPECTION DATE**

Jan 1, 2020	<span style="border: 1px solid blue; padding: 2px;">🔍</span>	<span style="border: 1px solid green; padding: 2px;">+</span>
Jan 1, 2017	<span style="border: 1px solid blue; padding: 2px;">🔍</span>	<span style="border: 1px solid green; padding: 2px;">+</span>
Jan 1, 2014	<span style="border: 1px solid blue; padding: 2px;">🔍</span>	<span style="border: 1px solid green; padding: 2px;">+</span>

**Isometric Drawing**

Attachment 1

EW

+ 🔍 trash

**ISO** PPLDD-GC-1130.01 Rev00

**Drawing**

Enter file name

- 1) Click 🔍 in each inspection date at the top left to display mark-up ISO of each visual inspection campaign.
- 2) Click + to create a new container for upload drawing.



- 3) Status of **VISUAL MARKED-UP ISO report** at the inspection history change to active (On INFO tab).
- 4) At the container, click to upload drawing.
- 5) Click to preview file with default image viewer program.
- 6) Click to delete a file.

### 3.2.5 Ultrasonic Thickness

On **THICKNESS > THICKNESS** tab, it is divided into three sections as follow.

- **Actual Thickness Record:** Record the actual thickness from inspection
- **CML Test Point Data Table:** The table shows the data of each CML test point
- **Probe data:** Record info of UT equipment and probe

THICKNESS														
CML			TP			UTM								
CML No	CML Desc	Asset	Start Date	End Date	TP Desc	CML-TP	TP Desc	TP Date	Inspection Date	Normal Value	% Var	Integrity	Status	Comments
1-1	Elbow		2.91	1.8		1-1	8							
2	Elbow		2.91	1.8		1-2	99							
3	Tee		2.91	1.8		1-2	180							
						1-4	270							

Actual Thickness Record

CML Test Point Data Table																			
CML-TP	CML Desc	TP Desc	Date	Normal	Min	Max	Inspection	First Date	Thick (mm)	Prev Date	Thick (mm)	Last Date	This (mm)	ST_CR	LT_CR	%	Integrity	Status	Comments
1-1	Elbow	0	495	2	Jan 1, 2016	2.91	1.80	Jan 1, 2014	2.78	Jan 1, 2017	2.08	Jan 1, 2020	2.01	0.02	0.13	0.42	PR	BL	8
1-2	Elbow	99	495	2	Jan 1, 2016	2.91	1.80	Jan 1, 2014	2.68	Jan 1, 2017	2.31	Jan 1, 2020	2.09	0.04	0.28	1.48	PR	1+BL	2
1-2	Elbow	180	495	2	Jan 1, 2016	2.91	1.80	Jan 1, 2014	2.72	Jan 1, 2017	2.48	Jan 1, 2020	2.32	0.04	0.23	2.23	PR	1+BL	2
1-4	Elbow	270	495	2	Jan 1, 2016	2.91	1.80	Jan 1, 2014	2.77	Jan 1, 2017	2.07	Jan 1, 2020	2.61	0.06	0.16	0.32	PR	BL	8
2-1	Elbow	0	495	2	Jan 1, 2016	2.91	1.80	Jan 1, 2014	2.81	Jan 1, 2017	2.11	Jan 1, 2020	2.99	0.03	0.14	1.71	PR	BL	8
2-2	Elbow	99	495	2	Jan 1, 2016	2.91	1.80	Jan 1, 2014	2.98	Jan 1, 2017	2.99	Jan 1, 2020	2.98	0.03	0.18	4.15	PR	1+BL	5
2-3	Elbow	180	495	2	Jan 1, 2016	2.91	1.80	Jan 1, 2014	2.87	Jan 1, 2017	2.67	Jan 1, 2020	2.03	0.01	0.27	0.84	PR	0.8+BL	1
2-4	Elbow	270	495	2	Jan 1, 2016	2.91	1.80	Jan 1, 2014	2.78	Jan 1, 2017	2.08	Jan 1, 2020	2.95	0.07	0.20	1.74	PR	1+BL	5
3-1	Tee	0	495	2	Jan 1, 2016	2.91	1.80	Jan 1, 2014	2.69	Jan 1, 2017	2.89	Jan 1, 2020	1.98	0.01	0.32	0.19	PR	BL	0.28
3-2	Tee	99	495	2	Jan 1, 2016	2.91	1.80	Jan 1, 2014	2.61	Jan 1, 2017	2.19	Jan 1, 2020	1.93	0.04	0.10	12.73	PR	BL	9
3-3	Tee	180	495	2	Jan 1, 2016	2.91	1.80	Jan 1, 2014	2.78	Jan 1, 2017	2.02	Jan 1, 2020	2.89	0.07	0.16	0.32	PR	BL	9
3-4	Tee	270	495	2	Jan 1, 2016	2.91	1.80	Jan 1, 2014	2.98	Jan 1, 2017	2.28	Jan 1, 2020	1.93	0.11	0.27	0.48	PR	0.28+BL	0.8

CML Test Point Data Table

Probe Data									
INSPECTION DATE	UT EQUIPMENT DATA				PROBE DATA				
Jan 1, 2020					UT equipment: OLYMPUS EPIC 10C	Probe type: TR			
Jan 1, 2017					UT equipment S/N: OBAA-7482-20B-3038	Probe angle: 0			
Jan 1, 2014					Gauge: WALL/PIPE PASTE	Brand:			
					Calibration block: STEP WEDGE	Probe S/N: 1309427			
					Calibration block S/N: 161011-1	Size (mm): 7.9			
					Equipment calib record no.: NDT 020308P2018	Frequency (MHz): 5			
					Barrel condition: SATISFACTORY	Calibration range (mm):			
					Ban temperature: AMBIENT	Signal range: 0-65			

Probe Data



## 1) Actual Thickness Record

CML				TP				UTM							
CML No	CML Desc	Access	tnom (mm)	tpno (mm)	TP Desc	TP Spec	Inspection Date	tactual (mm)	RL (yr)	Integrity Status	Status Criteria				
1	Elbow		3.91	1.8	0		Jan 1, 2020	2.20	1.45	P4	1 < RL ≤ 3				
2	Elbow		3.91	1.8	90		Jan 1, 2017	2.31	0.99	P3	0.5 < RL ≤ 1				
3	Tee		3.91	1.8	180		Jan 1, 2014	3.86	164.91	P6	RL > 5				
4					270										

DOWNLOAD INSPECT FORM

- Click **DOWNLOAD INSPECT FORM** to generate form for carrying to take notes thickness value by inspector.

No	CML/TP	CML Desc	TP	NPS (inch)	Spec	Inspection date	tactual (mm)	Min tactual (mm)	Max tactual (mm)	Previous date	Last thickness (mm)	Thickness (mm)	RL (yr)	Integrity status	Note
1	1-1	Elbow	0	C2N	400	Jan 1, 2010	3.91	1.80	Jan 1, 2017	3.08	3.01	0.13	0.43	RL > 5	PE
2	1-2	Elbow	90	C2N	400	Jan 1, 2010	3.91	1.80	Jan 1, 2017	2.31	2.20	0.04	1.48	1 < RL ≤ 3	PE
3	1-3	Elbow	90	C2N	400	Jan 1, 2010	3.91	1.80	Jan 1, 2017	2.31	2.20	0.04	1.48	1 < RL ≤ 3	PE
4	1-4	Elbow	270	C2N	400	Jan 1, 2010	3.91	1.80	Jan 1, 2017	2.37	2.01	0.06	6.02	PE	PE
5	2-1	Elbow	9	C2N	400	Jan 1, 2010	3.91	1.80	Jan 1, 2017	3.11	2.03	0.06	6.02	PE	PE
6	2-2	Elbow	90	C2N	400	Jan 1, 2010	3.91	1.80	Jan 1, 2017	2.98	2.98	0.14	0.71	RL > 5	PE
7	2-3	Elbow	160	C2N	400	Jan 1, 2010	3.91	1.80	Jan 1, 2017	2.67	2.50	0.07	0.84	0.84 < RL ≤ 1	PE
8	2-4	Elbow	270	C2N	400	Jan 1, 2010	3.91	1.80	Jan 1, 2017	2.78	2.07	0.07	0.84	0.84 < RL ≤ 1	PE
9	3-1	Elbow	90	C2N	400	Jan 1, 2010	3.91	1.80	Jan 1, 2017	2.62	2.50	0.06	0.18	0.18 < RL ≤ 1	PE
10	3-2	Tee	90	C2N	400	Jan 1, 2010	3.91	1.80	Jan 1, 2017	3.18	2.03	0.04	12.73	PE	PE
11	3-3	Tee	160	C2N	400	Jan 1, 2010	3.91	1.80	Jan 1, 2017	3.02	2.80	0.07	0.18	0.18 < RL ≤ 1	PE

- Click **+** and fill in data to create a new CML.

CML No	CML Desc	Access
1	Elbow	
2	Elbow	
3	Tee	
		3.91      1.8

- Click **EDIT** on CML part, then click **EDIT** to edit CML data.

**EDIT CML**

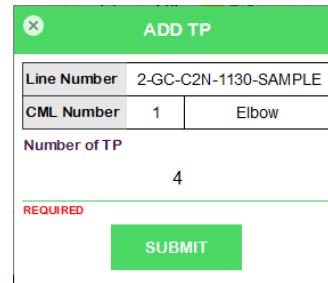
CML Number	CML Desc	Access
1	Elbow	Select access
REQUIRED	REQUIRED	
Pipe Spec	NPS (inch)	tnom (mm)
C2N	2.000	3.91
REQUIRED	REQUIRED	REQUIRED
Schedule	In-service Date (if edit)	Replacement Date
40S	Select date	Select date
REQUIRED		

**SUBMIT**

- In case of replacing the piping, user must select a replacement date in **EDIT CML**.

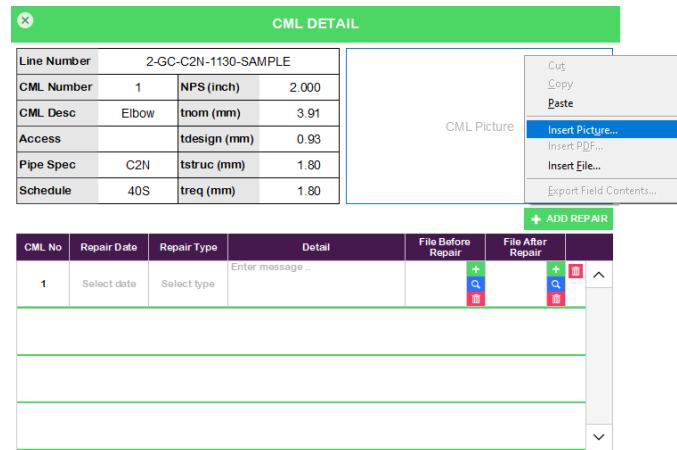


- **Importance!**: After selecting replacement date and clicking **SUBMIT**, test point data will be cleared all over.
- Click **DELETE** to delete a CML data.
- Click **ADD TP**, then specify the number of test points to create.



Line Number	2-GC-C2N-1130-SAMPLE	
CML Number	1	Elbow
Number of TP		
4		
<b>REQUIRED</b>		
<b>SUBMIT</b>		

- At the **DETAIL** of CML part, user can record repairing information.



Line Number	2-GC-C2N-1130-SAMPLE		
CML Number	1	NPS (inch)	2.000
CML Desc	Elbow	tnom (mm)	3.91
Access	t <sub>design</sub> (mm)	0.93	
Pipe Spec	C2N	t <sub>struc</sub> (mm)	1.80
Schedule	40S	t <sub>req</sub> (mm)	1.80

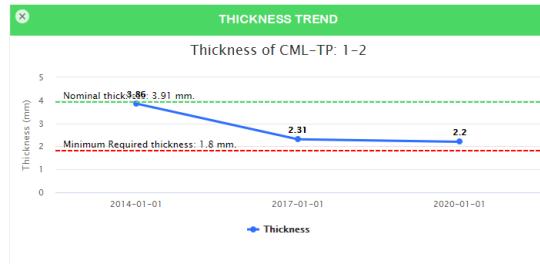
CML No	Repair Date	Repair Type	Detail	File Before Repair	File After Repair
1	Select date	Select type	Enter message...		
<b>+ ADD REPAIR</b>					

- Right click on CML picture, then select **Insert Picture...** to upload picture that represent the latest repairing.
- Click **+ ADD REPAIR** to create a new repair record.
- Fill in data and attach files of before-repair and after-repair.
- Click to insert files.
- Click to preview file with default viewer program.
- Click to delete a file.



TP	
CML-TP	TP Desc
1-1	0

- Click on TP part, then click **EDIT** to edit test point data.
- Click **DELETE** to delete a test point data.
- Click **ADD UTM**, then specify UTM data to record.
- **Status of ULTRASONIC THICKNESS report** at the latest inspection history change to active (On INFO tab).
- Click **DETAIL** to show thickness trend of each test point.



- Click on UTM part, then click **EDIT** to edit UTM data.

UTM									
CML-TP	CML Desc	TP Desc	Inspection Date	tactual (mm)	RL (yrs)	Integrity Status	Status Criteria		
1-2	Elbow	90	Jan 1, 2020	2.20	1.45	P4	1 < RL ≤ 3		
1-2	Elbow	90	Jan 1, 2017	2.31	0.99	P3	0.5 < RL ≤ 1		
1-2	Elbow	90	Jan 1, 2014	3.86	164.91	P6	0.5 < RL ≤ 1		

- Click **DELETE** to delete a UTM data.

THICKNESS									
CML					TP				
CML No	CML Desc	Access	tnom (mm)	tnom (mm)	TP Desc	TP Desc	CML Desc	TP Desc	Inspection Date
1	Elbow		3.91	1.8			Elbow	90	Jan 1, 2020
2	Elbow		3.91	1.8			Elbow	90	Jan 1, 2017

UTM									
CML-TP	CML Desc	TP Desc	Inspection Date	tactual (mm)	RL (yrs)	Integrity Status	Status Criteria		
1-2	Elbow	90	Jan 1, 2020	2.20	1.45	P4	1 < RL ≤ 3		
1-2	Elbow	90	Jan 1, 2017	2.31	0.99	P3	0.5 < RL ≤ 1		
1-2	Elbow	90	Jan 1, 2014	3.86	164.91	P6	0.5 < RL ≤ 1		

- In the case that there is a large amount of data to input in the AIMS, either CML, TP or UTM data. Users can use the import function to help import data at once.
- Click **DOWNLOAD FORM** to download excel template to desktop.
- Fill in the data to excel template and click **IMPORT FORM** to upload import file.



## 2) CML Test Point Data Table

The table displayed a summary of thickness data in each CML test point.

CML-TP	CML Desc	TP Desc	Sch	NPS (inch)	In-service Date	tnom (mm)	treq (mm)	First Date   Thk (mm)	Prev Date   Thk (mm)	Last Date   Thk (mm)	ST_CR (mm/yr)	LT_CR (mm/yr)	RL (yrs)	Integrity Status	Status Criteria	Thk Trend	
																Status	All
1-1	Elbow	0	40S	2	Jan 1, 2010	3.91	1.80	Jan 1, 2014   3.78	Jan 1, 2017   3.08	Jan 1, 2020   3.01	0.02	0.13	9.43	P6	RL > 5		
1-2	Elbow	90	40S	2	Jan 1, 2010	3.91	1.80	Jan 1, 2014   3.86	Jan 1, 2017   2.31	Jan 1, 2020   2.20	0.04	0.28	1.45	P4	1 < RL ≤ 3		
1-3	Elbow	180	40S	2	Jan 1, 2010	3.91	1.80	Jan 1, 2014   3.72	Jan 1, 2017   2.45	Jan 1, 2020   2.32	0.04	0.23	2.23	P4	1 < RL ≤ 3		
1-4	Elbow	270	40S	2	Jan 1, 2010	3.91	1.80	Jan 1, 2014   3.77	Jan 1, 2017   3.07	Jan 1, 2020   2.81	0.09	0.16	6.32	P6	RL > 5		
2-1	Elbow	0	40S	2	Jan 1, 2010	3.91	1.80	Jan 1, 2014   3.81	Jan 1, 2017   3.11	Jan 1, 2020   2.99	0.04	0.14	8.71	P6	RL > 5		
2-2	Elbow	90	40S	2	Jan 1, 2010	3.91	1.80	Jan 1, 2014   3.66	Jan 1, 2017   2.96	Jan 1, 2020   2.56	0.13	0.18	4.15	P5	3 < RL ≤ 5		
2-3	Elbow	180	40S	2	Jan 1, 2010	3.91	1.80	Jan 1, 2014   3.67	Jan 1, 2017   2.67	Jan 1, 2020   2.03	0.21	0.27	0.84	P3	0.5 < RL ≤ 1		
2-4	Elbow	270	40S	2	Jan 1, 2010	3.91	1.80	Jan 1, 2014   3.78	Jan 1, 2017   2.78	Jan 1, 2020   2.56	0.07	0.20	3.74	P5	3 < RL ≤ 5		
3-1	Tee	0	40S	2	Jan 1, 2010	3.91	1.80	Jan 1, 2014   3.80	Jan 1, 2017   2.80	Jan 1, 2020   1.86	0.31	0.32	0.19	P1	RL ≤ 0.25		
3-2	Tee	90	40S	2	Jan 1, 2010	3.91	1.80	Jan 1, 2014   3.61	Jan 1, 2017   3.16	Jan 1, 2020   3.03	0.04	0.10	12.73	P6	RL > 5		
3-3	Tee	180	40S	2	Jan 1, 2010	3.91	1.80	Jan 1, 2014   3.75	Jan 1, 2017   3.02	Jan 1, 2020   2.80	0.07	0.16	6.32	P6	RL > 5		
3-4	Tee	270	40S	2	Jan 1, 2010	3.91	1.80	Jan 1, 2014   3.56	Jan 1, 2017   2.26	Jan 1, 2020   1.93	0.11	0.27	0.48	P2	0.25 < RL ≤ 0.5		

- Click All to select integrity status to show in the table.
- Click in column **Thk Trend** to show thickness trend of each CML test point.

## 3) Probe Data

At the bottom of thickness page, probe data and UT equipment data can record to each inspection campaign.

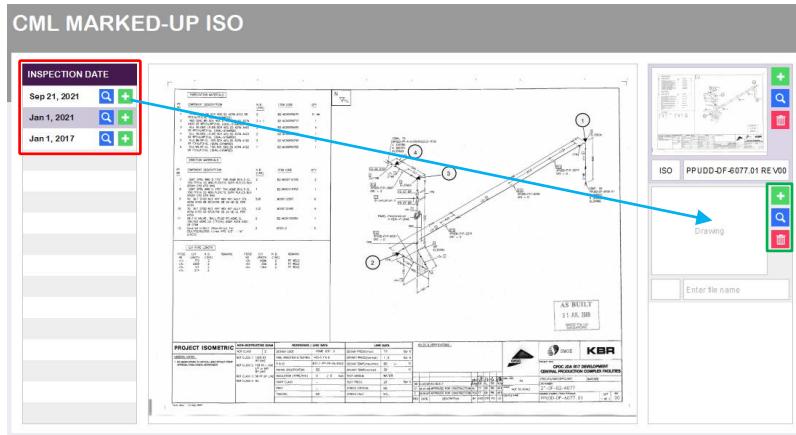
INSPECTION DATE	UT EQUIPMENT DATA	PROBE DATA
Jan 1, 2021	UT equipment: OLYMPUS EPOCH LTC UT equipment S/N: OBA4-740D-2639-3D65	Probe type: TR Probe angle: 0
Jan 1, 2018	Couplant: WALLPAPER PASTE	Brand:
Jan 1, 2015	Calibration block: STEP WEDGE Calibration block S/N: 161011-1 Equipment calib record no: NDT 02030SP/2015 Surface condition: SATISFACTORY Test temperature: AMBIENT	Probe S/N: Size (mm): 7.9 Frequency (MHz): 5 Calibration range (mm): 0-50 Signal range: 0-50

- 1) Click in each inspection date to show information record of inspection tools.
- 2) Click to add a new record in each inspection campaign.



### 3.2.6 CML Marked-Up ISO

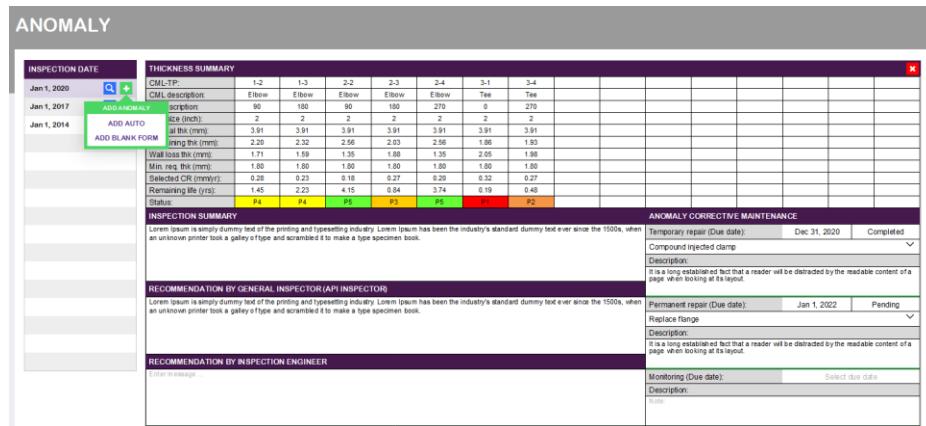
On **THICKNESS > CML MARKED-UP ISO** tab, upload the CML marked-up file to this section to add these CML marked up in the final thickness report.



- 1) Click in each inspection date at the top left to display CML mark-up of each thickness inspection campaign.
- 2) Click to create a new container for upload drawing.
- 3) **Status of CML MARKED-UP ISO report** at the inspection history change to active (On INFO tab).
- 4) At the container, click to upload drawing.
- 5) Click to preview file with default image viewer program.
- 6) Click to delete a file.

### 3.2.7 Thickness Anomaly

On **THICKNESS > ANOMALY** tab, create anomaly report of CML test point to take action for corrective maintenance.



- 1) Click in each inspection date at the top left to display anomaly thickness of each inspection campaign.
- 2) Click to add anomaly form.



- 3) Select **ADD AUTO** to generate anomaly point with status P1-P5.
- 4) Select **ADD BLANK FORM** to generate a blank form for manual key CML-TP
- 5) **Status of THICKNESS ANOMALY report** at the inspection history change to active (On INFO tab).

ANOMALY																																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #cccccc; text-align: left;">INSPECTION DATE</th> <th colspan="2"></th> </tr> </thead> <tbody> <tr> <td>Jan 1, 2020</td> <td></td> <td></td> </tr> <tr> <td>Jan 1, 2017</td> <td></td> <td></td> </tr> <tr> <td>Jan 1, 2014</td> <td></td> <td></td> </tr> </tbody> </table>	INSPECTION DATE			Jan 1, 2020			Jan 1, 2017			Jan 1, 2014			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="background-color: #cccccc; text-align: left;">THICKNESS SUMMARY</th> </tr> </thead> <tbody> <tr> <td>CML-TP:</td> <td style="background-color: #ffcc00;">3-4</td> </tr> <tr> <td>CML description:</td> <td>Tee</td> </tr> <tr> <td>TP description:</td> <td>270</td> </tr> <tr> <td>Pipe size (inch):</td> <td>2</td> </tr> <tr> <td>Original thk (mm):</td> <td>3.91</td> </tr> <tr> <td>Remaining thk (mm):</td> <td>1.93</td> </tr> <tr> <td>Wall loss thk (mm):</td> <td>1.98</td> </tr> <tr> <td>Min. req. thk (mm):</td> <td>1.80</td> </tr> <tr> <td>Selected CR (mm/yr):</td> <td>0.27</td> </tr> <tr> <td>Remaining life (yrs):</td> <td>0.48</td> </tr> <tr> <td>Status:</td> <td style="background-color: #ffcc00;">P2</td> </tr> </tbody> </table>	THICKNESS SUMMARY		CML-TP:	3-4	CML description:	Tee	TP description:	270	Pipe size (inch):	2	Original thk (mm):	3.91	Remaining thk (mm):	1.93	Wall loss thk (mm):	1.98	Min. req. thk (mm):	1.80	Selected CR (mm/yr):	0.27	Remaining life (yrs):	0.48	Status:	P2
INSPECTION DATE																																					
Jan 1, 2020																																					
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Selected CR (mm/yr):	0.27																																				
Remaining life (yrs):	0.48																																				
Status:	P2																																				
<b>INSPECTION SUMMARY</b> <small>Enter message ...</small>																																					

- 6) Enter CML-TP with the same format of text as CML-TP test point data table in thickness page. Other data will automatically appear in the thickness summary table.
- 7) **Anomaly Corrective Maintenance** of thickness measurement can specify the repair type, comment, due date for action and status update of maintenance.
- 8) If the repair status is **Completed**, status of thickness will be **P6**.  
Note: In case of pipe replacement, the user should be updated a new thickness of this part.



### 3.2.8 RBI

RBI tab contains probability of failure (POF) and consequence of failure (COF) record. User can select the level of failure for damage mechanism and consequence to show on risk matrix.

**RBI**

RBI ASSESSMENT DATE		
Jan 1, 2010		
DAMAGE MECHANISM		
POF   PROBABILITY OF FAILURE		
Damage Mechanism	Probability of Failure Level	Comment
Chloride Stress Corrosion Cracking (CSCC)	Certainly (10)   Happens several times per year at a particular location (0-0.5 Years)	There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable.
Atmospheric Corrosion	Likely (8)   Happens several times per year in CPOC (0.5- 4 Years)	Note:
Select damage mechanism	Select probability of failure	Note:
Select damage mechanism	Select probability of failure	Note:
Select damage mechanism	Select probability of failure	Note:
COF   CONSEQUENCE OF FAILURE		
Consequence	Consequence of Failure Level	Comment
People	Insignificant (1)   First Aid, RWD, MTC	Note:
Assets / Production Loss	Minor (2)   Production loss < 1 day, Damage < 100kUS	Note:
Environment	Insignificant (1)   Slight impact of limited duration	Note:
Reputation	Minor (2)   Local written media	Note:

- 1) Click to create a record for RBI assessment.
- 2) Click to view flowline RBI report.
- 3) Click to delete RBI record.
- 4) Click to view RBI record.

RISK MATRIX						PoF				
CoF					Rare (1)	Unlikely (2)	Credible (5)	Likely (8)	Certainly (10)	
Severity	People	Assets / Production Loss	Environment	Reputation						
Insignificant (1)	First Aid, RWD, MTC	Slight Damage or loss	Slight impact of limited duration	Local media interest	Rarely or never heard of in E&P industry R.L (> 20 Years)	Occured Several time in E&P Industry (10-20 Years)	Incident has occurred in CPOC (4-10 Years)	Happens several times per year in CPOC (0.5- 4 Years)	Happens several times per year at a particular location (0-0.5 Years)	
Minor (2)	LTI	Production loss < 1 day, Damage < 100kUS	Tier 1, Minor effect	Local written media						10-2
Moderate (3)	Multiple LTI's, One PD	Production loss <1 wk, Damage between 100-500kUS	Tier 1, Localized effect	Local TV, national papers						
Major (4)	One Fatality Multiple PD's	Production loss <1 month, Damage between 500k - 1000kUS	Tier 2, Regional assistance required	National TV, international papers						
Critical (5)	More than One Fatality	Production loss >1 Month, Damage > 1000kUS	Tier 3, International assistance required	International TV, extended coverage						

- 5) Risk matrix displays PoF-CoF levels, selecting the maximum value for each failure to show in the table.



### 3.2.9 Library

Library tab is a repository of all related files such as construction document, inspection report, MOC., etc. It can also generate the template excel files for integration with SAP.

**LIBRARY**

Files Storage		
Construction Document	Inspection Report	General Document Other (e.g. MOC, related communication email, etc.)
<span style="color: red;">+</span> 2-GC-C2N-1130.pdf <small>Tuesday, September 14, 2021 11:12</small>	<span style="color: red;">+</span> MDPP-UTM-2-GC-C2N-1130-2017-11-14.pdf <small>Tuesday, September 14, 2021 11:12</small>	<span style="color: red;">+</span> Piping (WIN-IDCUKJ77UFS) 2021-08-25 14-56-57.mp4 <small>Friday, September 17, 2021 13:23</small>
<span style="color: green;">+</span> Install year.xlsx <small>Friday, September 17, 2021 13:26</small>	<span style="color: red;">+</span> MDPP-VT-2-GC-C2N-1130-2016-05-09.pdf <small>Tuesday, September 14, 2021 11:13</small>	<span style="color: green;">+</span> lm_utm_2-GC-C2N-1130-SAMPLE.csv <small>Friday, September 17, 2021 13:24</small>
<span style="color: green;">+</span> File name <small>Uploaded date</small>	<span style="color: green;">+</span> Final_Report_GSP4_RBI_2009038_08032021_STA.docx <small>Friday, September 17, 2021 13:26</small>	<span style="color: red;">+</span> Joint Integrity Management of Critical Flange - Initiative PL&Structure.pptx <small>Friday, September 17, 2021 13:26</small>
<span style="color: green;">+</span> <span style="color: green;">+</span> <span style="color: green;">+</span>	<span style="color: green;">+</span> <span style="color: green;">+</span> <span style="color: green;">+</span>	<span style="color: green;">+</span> <span style="color: green;">+</span> <span style="color: green;">+</span>

<b>INSPECTION DATE</b> Jan 1, 2020 <span style="color: green;">+</span> Jan 1, 2017 <span style="color: green;">+</span> Jan 1, 2014 <span style="color: green;">+</span>	<b>SAP NOTIFICATION HEADER DATA</b> Description: MDLQ-2-GC-C2N-1130-SAMPLE-ClampRepla Object Part Code: 002   FITTING Planner Grp Planning Plant: 3000 Damage Code: ELU   EXTERNAL LEAKAGE-UTILITY MEDIUM Main WorkCir: JV1-JKA-29   PIPING SYSTEM Cause Code: D13   Mechanical Failure-Clearance/Alignment Failure <small>Lorum ipsum is simply dummy text of the printing and typesetting industry. Lorum ipsum has been the industry's standard dummy text ever since the 1500s when an unknown printer took a galley of type and scrambled it to make a type specimen book. Lorum ipsum is simply dummy text of the printing and typesetting industry. Lorum ipsum has been the industry's standard dummy text ever since the 1500s when an unknown printer took a galley of type and scrambled it to make a type specimen book.</small>
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- 1) At files storage, click + to upload a file.
- 2) Click 🔍 to preview file with default viewer program.
- 3) Click 🗑 to delete a file.
- 4) At the bottom page, click 🔍 in each inspection date to display SAP notification header data.
- 5) Click + to create SAP notification header data for each inspection date.



### 3.2.10 Manage

This tab allows to add a new piping, edit info data, or even delete tags from the system.

### 3.2.11 Report Approval

The generated report shows the status for approval by authorized person. Thickness report and visual report can be clicked to preview before rejection or approval. For every report approved, it is automatically signed at the bottom of the report.

INSPECTION INFORMATION	THICKNESS REPORT	THICKNESS APPROVAL	VISUAL REPORT	VISUAL APPROVAL	
Inspection date: Sep 21, 2021 Inspection type: CUI Report number: WO number:	ULTRASONIC THICKNESS CML MARKED-UP ISO THICKNESS ANOMALY THICKNESS REPORT	No Report    	VISUAL CHECKLIST VISUAL PICTURE LOG VISUAL MARKED-UP ISO VISUAL REPORT	    	Waiting for approval by Site Supervisor    
Inspection date: Jan 1, 2021 Inspection type: Routine Report number: WO number:	ULTRASONIC THICKNESS CML MARKED-UP ISO THICKNESS ANOMALY THICKNESS REPORT	    	VISUAL CHECKLIST VISUAL PICTURE LOG VISUAL MARKED-UP ISO VISUAL REPORT	    	Approved    
Inspection date: Jan 1, 2017 Inspection type: Routine Report number: WO number:	ULTRASONIC THICKNESS CML MARKED-UP ISO THICKNESS ANOMALY THICKNESS REPORT	    	VISUAL CHECKLIST VISUAL PICTURE LOG VISUAL MARKED-UP ISO VISUAL REPORT	    	Waiting for approval by Inspection Engineer    

#### 1) Report status

- ⊖ No report.
- ⊕ The report has not been approved.
- ⊕ The report has been approved.

#### 2) Previewing report

User can click **THICKNESS REPORT** / **VISUAL REPORT** or **FINAL REPORT** to preview the report before approval.

#### 3) Approval status

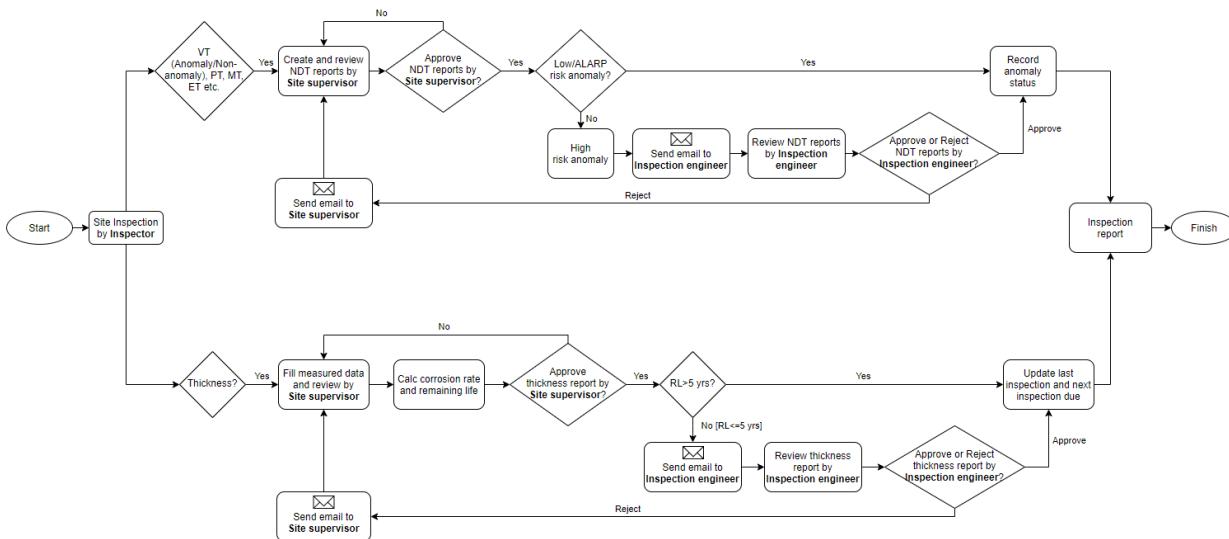
- APPROVE** ⇒ Waiting for approval by authorized person.
- REJECT** ⇒ Return the report for review again.
- APPROVED** ⇒ Approval is complete.

#### 4) Approval step

Authorized person can click on approval status to sign the report. The system will automatically send an email to the person involved



to take action. The flowchart below shows the process from report creation to completed approval.



### Summary of approval authority

- Ultrasonic Thickness Report: **General Inspector**
- CML Marked-Up ISO Report: **General Inspector**
- Thickness Anomaly Report: **General Inspector** ⇒ **Inspection Engineer**
- Visual Checklist Report: **General Inspector** ⇒ **Inspection Engineer**
- Visual Picture Log Report: **General Inspector**
- Visual Marked-Up ISO Report: **General Inspector**
- Visual Anomaly Report: **General Inspector** ⇒ **Inspection Engineer**

### 5) Sample of email from the system

[PIPING] Reviewed, Thickness inspection report of 2-DF-B2-6077-SAMPLE is waiting for your review.

 aims@dacon-inspection.com  
To: Settapon Santiwongchai  
Thu 18-Nov-21 4:23 PM

Dear Inspection Engineer,

The piping thickness inspection report of 2-DF-B2-6077-SAMPLE Inspection date: 11/18/2021 has been reviewed by General Inspector with found anomaly (P6).

Comment from General Inspector:

Please review in AIMS

Thank you very much.

Piping line number : 2-DF-B2-6077-SAMPLE

Best Regards,  
Mr. Site Supervisor  
Site Supervisor

**AIMS**  
ASSET INTEGRITY MANAGEMENT SYSTEM

**Click to access this line**



## 4. PRESSURE VESSEL

### 4.1 Pressure Vessel Dashboard

#### 4.1.1 Cylinder

At the top right of pressure vessel dashboard page, click **CYLINDER** to access cylinder management.

CYLINDER									<a href="#">◀ BACK</a>	<a href="#">EXPORT EXCEL</a>	<a href="#">+ ADD CYLINDER</a>
SERIAL NO	Search serial no	STATUS	ALL	PLATFORM	ALL	DISCIPLINE	ALL	CYLINDER STATUS			
Total record: 583											
ADA	CO2 Snuffing (A-1294)	B5124	Instrument		Feb 2021	Feb 2022		ACCEPTED	<a href="#">DETAIL</a>	<a href="#">EDIT</a>	<a href="#">DELETE</a>
ADA	CO2 Snuffing (A-1294)	B5127	Instrument		Feb 2021	Feb 2022		ACCEPTED	<a href="#">DETAIL</a>	<a href="#">EDIT</a>	<a href="#">DELETE</a>
ADA	CO2 Snuffing (A-1294)	B5128	Instrument		Feb 2021	Feb 2022		ACCEPTED	<a href="#">DETAIL</a>	<a href="#">EDIT</a>	<a href="#">DELETE</a>
ADA	CO2 Snuffing (A-1294)	B5129	Instrument		Feb 2021	Feb 2022		ACCEPTED	<a href="#">DETAIL</a>	<a href="#">EDIT</a>	<a href="#">DELETE</a>
ADA	CO2 Analyzer (AIT-12101)	875087	Instrument		Feb 2021	Feb 2022		ACCEPTED	<a href="#">DETAIL</a>	<a href="#">EDIT</a>	<a href="#">DELETE</a>
ADA	CO2 Analyzer (AIT-12101)	39935	Instrument		Feb 2021	Feb 2022	Oct 2016	HT EXPIRING	<a href="#">DETAIL</a>	<a href="#">EDIT</a>	<a href="#">DELETE</a>
ADA	CO2 Analyzer (AIT-12101)	816057	Instrument		Feb 2021	Feb 2022		ACCEPTED	<a href="#">DETAIL</a>	<a href="#">EDIT</a>	<a href="#">DELETE</a>

- 1) Click **+ ADD CYLINDER** to add a new record of cylinder.

STATUS	ALL	PLATFORM	ALL	DISCIPLINE	ALL
--------	-----	----------	-----	------------	-----

- 2) Select dropdown of **STATUS**, **PLATFORM** and **DISCIPLINE** to filtering.

SERIAL NO	Search serial no	<a href="#">Q</a>
-----------	------------------	-------------------

- 3) Enter word or full name of serial number, and then click [Q](#) or press "ENTER" on keyboard for searching.
- 4) Click **EXPORT EXCEL** to export excel file to the desktop. This file contains the data of each serial number that was filtered by filter tool.
- 5) Click [C](#) to reset filter as a default.

✖ EDIT CYLINDER

PLATFORM	ADA	DECK	CELLAR
LOCATION (Equipment/Package)	CO2 Analyzer (AIT-12101)		REQUIRED
SERIAL NO	39935	DISCIPLINE	Instrument
GAS TYPE	Nitrogen	MANUFACTURER	SOXAL
MATERIAL	Carbon Steel	VALVE/FITTING	Select valverfitting
COMP. (%)	Select compound	NET WEIGHT (Kg)	ACCEPTED
VOLUME (L)	47.5	WORK PRESSURE (Bar)	HT EXPIRING
TEST PRESSURE (Bar)	250	CYLINDER STATUS	HT OVERDUE NOT FOUND REJECTED
<input type="button" value="SUBMIT"/>			

- 6) Click **EDIT** to edit cylinder data and update cylinder status.



- 7) Click **DELETE** to delete data in each row.
- 8) Click **DETAIL** to access inspection details of cylinder.

The screenshot shows the 'CYLINDER' detail page. On the left, there's a sidebar with various cylinder specifications like Serial number (39935), Platform (ADA), Deck (CELLAR), Discipline (Instrument), Location (CO2 Analyzer (AIT-12101)), Gas type (Nitrogen), Manufacturer (SOXAL), Material (Carbon Steel), Valve/Fitting, COMP. (%), Net weight (kg), Volume (L), Work pressure (bar), Test pressure (bar), and Cylinder status (HT EXPIRING). In the center, there's a table titled 'Inspection Record' with columns for 'INSPECTION INFORMATION' and 'REPORT'. It lists inspection dates, types, and reports (e.g., Visual, Hydro Test, FINAL REPORT) with status (Approved) and outcome (APPROVED or REJECT). Below this is a 'CHECKLIST' section with tabs for CHECKLIST, PICTURE LOG, and HYDRO TEST, and a '+ ADD CHECKLIST' button. A large blue-bordered area contains a 'Inspection Detail' button.

- 9) On cylinder detail page, click **+ ADD INSPECTION RECORD** to create a new inspection record.

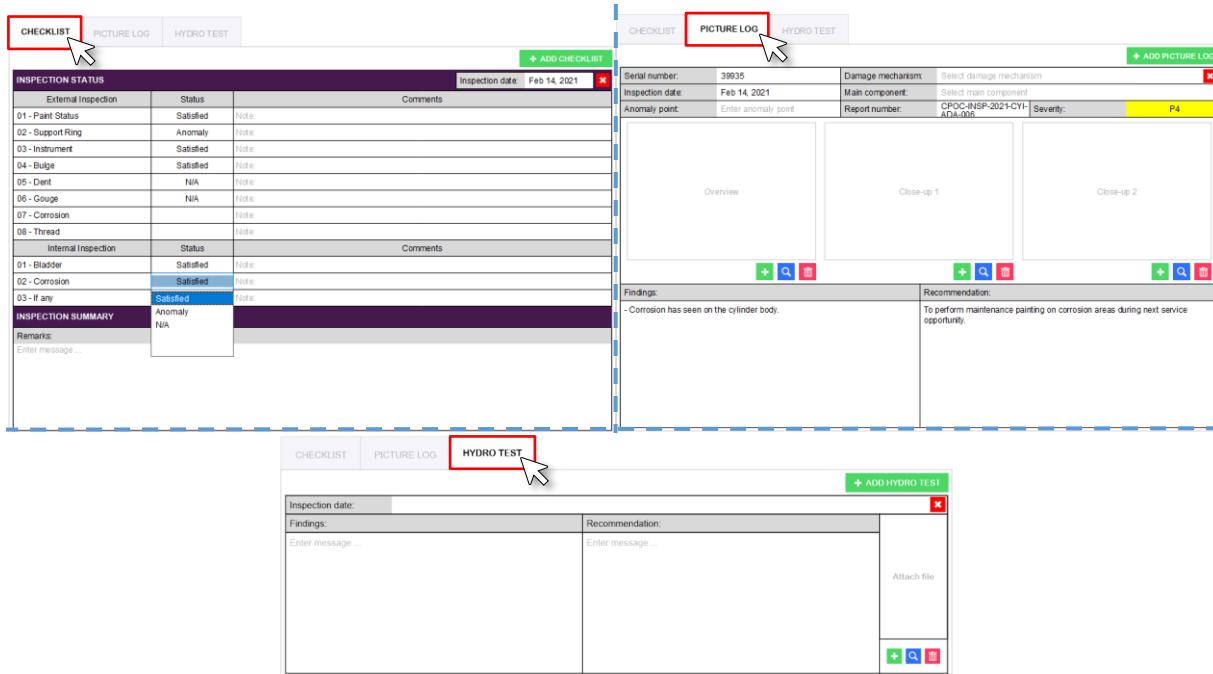
The screenshot shows the 'CYLINDER' detail page. The sidebar has the same cylinder specifications as the previous screenshot. In the center, there are three sections for attachments: 'Construction Document', 'Inspection Report', and 'General Document'. Each section has fields for 'Enter file name', 'File name' (with preview icons), and 'Uploaded date'. There are also '+', search, and delete icons for managing files. A vertical toolbar on the right side provides additional file management functions.

- 10) At the **LIBRARY** of cylinder, click **+** to attach file.
- 11) Click **🔍** to preview file with default viewer program.
- 12) Click **>Delete** to delete a file.



REPORT	
VISUAL CHECKLIST	
VISUAL PICTURE LOG	
HYDRO TEST	
FINAL REPORT	
Waiting for approval by Inspection Engineer	
APPROVE	
REJECT	

- 13) At the last column of each row, click to edit data of inspection record.
- 14) Click to delete inspection record.
- 15) Click to view inspection detail.



- 16) At the inspection detail part, click **CHECKLIST** tab > to create a new cylinder checklist, then input inspection info in the form.
- 17) Click **PICTURE LOG** tab > to create a new picture log record.
- 18) Enter anomaly point, select the component part about cylinder and damage mechanism that occur on its.
- 19) Click to upload picture of overview or close-up view from inspection findings.
- 20) Click to preview file with default image viewer program.
- 21) Click to delete a picture.
- 22) Enter findings and recommendation of inspection in text box.
- 23) Select severity status for the point of anomaly.



- 24) At **HYDRO TEST** tab, click **+ ADD HYDRO TEST** to create a new record for enter data of inspection findings and recommendation.  
In addition, the file about hydro test must also be attached.

REPORT	
VISUAL CHECKLIST	✓
VISUAL PICTURE LOG	✓
HYDRO TEST	✓
FINAL REPORT	

- 25) **Status of REPORT** at the cylinder inspection history change to active (Yellow status).

#### 4.1.2 Pressure Vessel Filter Data

Pressure vessel number of all platforms are displayed on pressure vessel dashboard page. Additionally, each PV number can be filtered for monitoring with multiple conditions in real time.

PRESSURE VESSEL													APPROVAL PENDING	EXPORT SAP	EXPORT EXCEL	CYLINDER	
PV NO	Search PV no		PLATFORM	RISK RANKING	ALL	STATUS	ALL	P1 RL≤0.25	P2 0.25≤RL≤0.5	P3 0.5≤RL≤1	P4 1≤RL≤3	P5 3≤RL≤5	P6 RL>5	20 NO INSPECT	TOTAL 508		
Total record: 508																	
PLATFORM	PV NUMBER	DESCRIPTION		CORROSION LOOP NUMBER	DESCRIPTION	RISK RANKING	INTEGRITY STATUS	EXTERNAL INSPECTION LAST	NEXT	STATUS	TEMPORARY	PERMANENT	TEMPORARY	PERMANENT	INTERNAL INSPECTION LAST	NEXT	INTERNAL ANOMALY STATUS TEMPORARY PERMANENT
MDA	T-0153	OPEN DRAIN COLLECTION TANK	CL-01005A	Open Drain	LOW	P4	2021	2026	Not due	2024	Not due				2026	Not due	
MDA	T-0155	OPEN DRAIN TOTE TANK	CL-01005A	Open Drain	LOW	NO INSPECT	2013	Overdue							2028	Not due	
MDA	T-0173	DIESEL DAY TANK	CL-01007A	Diesel Fuel	ALARP	NO INSPECT	2013	Overdue							2023	Not due	Line List Table
MDA	T-0191	METHANOL STORAGE TOTE TANK	CL-01006-C	Methanol	ALARP	NO INSPECT	2013	Overdue							2023	Not due	
MDA	V-0111	TEST SEPARATOR	CL-01001-D1	Gas & Condensate	ALARP	P5	2021	2026	Not due	2028	Not due				2019	Overdue	
MDA	V-0151	CLOSED DRAIN DRUM	CL-01002-A	Closed Drain	ALARP	P5	2021	2026	Not due	2026	Not due				2026	Not due	

P1 RL≤0.25	4 0.25≤RL≤0.5	P2 0.5≤RL≤1	6 1≤RL≤3	P3 3≤RL≤5	47 RL>5	P4 P5 P6 20 NO INSPECT	TOTAL 170
---------------	------------------	----------------	-------------	--------------	------------	------------------------------------	--------------

- 1) Click the status button to display the filtered data for each status.

PLATFORM	ALL	RISK RANKING	ALL	STATUS	ALL
----------	-----	--------------	-----	--------	-----

- 2) Select dropdown of **STATUS**, **RISK RANKING** and **PLATFORM** to filtering.  
3) Click **EXPORT EXCEL** to export excel file to the desktop. This file contains the data of each pressure vessel number that was filtered by filter tool.  
4) Click **EXPORT SAP** to generate SAP template to the desktop (if any).

PV NO	Search PV no	Q
-------	--------------	---

- 5) Enter word or full name of pressure vessel number, and then click **Q** or press "ENTER" on keyboard for searching.



- 6) Click  to reset filter as a default.

PV NO	E-1000	Q	PLATFORM	ALL	RISK RANKING	ALL	STATUS	ALL	P1 RLS0.25	4 0.25<RLS0.5	6 0.5<RLS1	P3 1<RLS3	47 34RLS3	P4 54RLS5	176 34RLS5	P5 85	P6 P6	20 NO INSPECT	TOTAL 170	508					
Total record: 1																									
PLATFORM	PV NUMBER	DESCRIPTION	CORROSION LOOP	NUMBER	DESCRIPTION	RISK RANKING	INTEGRITY STATUS	EXTERNAL INSPECTION	DUCE EXT VISUAL ANOMALY	DUCE EXT THICKNESS ANOMALY	INTERNAL INSPECTION	DUCE INTERNAL ANOMALY	LAST	NEXT	STATUS	TEMPORARY	PERMANENT	TEMPORARY	PERMANENT	LAST	NEXT	STATUS	TEMPORARY	PERMANENT	
MDPP	E-1000	MDA Well Fluid Cooler Train	CL-009-A	1	Cooling Water Supply	ALAR	P3	2021	2026	Not due	2016	2026	Not due	2022	Not due					2021	On due				

- 7) Click  to access the PV number on pressure vessel module.

#### 4.1.3 Approval Pending

At the top of pressure vessel dashboard page, click  to access **APPROVAL PENDING** section. Approval pending contains a list of reports that are pending approval from authorized persons.

PRESSURE VESSEL APPROVAL PENDING													
VISUAL		THICKNESS											
LINE NO	Search line no		START DATE		END DATE		SEARCH						
Total record:													
LINE NUMBER	INSPECTION DATE	INSPECTION TYPE	APPROVAL BY GENERAL INSPECTOR	APPROVAL BY INSPECTION ENGINEER	ANOMALY STATUS	APPROVAL STATUS							
F-4650	25 Jan 2022	External			Y	Waiting for approval by General Inspector							
MH-1410-A	4 Jan 2022	External			Y	Waiting for approval by General Inspector							
MH-1410-B	4 Jan 2022	External			N	Waiting for approval by General Inspector							
MH-1410-C	4 Jan 2022	External			N	Waiting for approval by General Inspector							

- 1) The table of approval pending is divided into two parts, visual and thickness.

- 2) Enter word or full name of tag number, and then click  or press "ENTER" on keyboard for searching.

LINE NO	Search line no			
START DATE		END DATE		SEARCH

- 3) Select start date and end date, then click **SEARCH** button for filtering  
 4) Click  to access pressure vessel module for approval tasks.



## 4.2 Pressure Vessel Management System

Pressure vessel module contains the data of design, operating, inspection and RBI, moreover, there are library that collect uploaded files. General information of each pressure vessel number is on the left side and menu tabs are on the top of page.

**PRESSURE VESSEL**

Tag number: CPOC-MDPP-E-1000  
Pressure vessel number: E-1000  
Platform: MDPP | MUDA Production Platform  
Equipment type: Heat Exchanger  
Equipment desc: MDA Well Fluid Cooler Train 1  
Orientation: Height (mm)  
Horizontal: 1001  
P&ID number: B17-1-PP-PR-05-0120  
Drawing number: Test-123-456  
Design code: ASME VIII Div. 1  
In-service date: Jan 1, 2008  
CA: Design life (yrs)  
3.00 25.00  
Cladding: Lining: Int. Coating:  
No No  
Insulation Y/N Material/Type Size  
No  
Component group 1: Shell Side  
Design Pressure (psi): 243.60  
Design Temperature (°C): -29/150  
Corrosion loop number: CL-009-A  
Component group 2: Tube Side

Search PV no:

**Menu Tabs**

DASHBOARD  INFO  = THICKNESS  VISUAL  TUBE  RBI  LIBRARY  MANAGEMENT

## INSPECTION HISTORY

+ ADD INSPECTION RECORD

INSPECTION INFORMATION		THICKNESS REPORT	THICKNESS APPROVAL	VISUAL AND TUBE REPORT		VISUAL APPROVAL	
Inspection date:	Oct 1, 2021	ULTRASONIC THICKNESS	Approved	VISUAL SUMMARY	VISUAL MARKED-UP DWG	Waiting for approval by Inspection Engineer	<input type="button"/> FINAL REPORT
Inspection type:	External	CML MARKED-UP DWG		VISUAL CHECKLIST	VISUAL ANOMALY		<input type="button"/> FINAL REPORT
WO number:	456	THICKNESS ANOMALY		VISUAL PICTURE LOG	TUBE INSPECTION		<input type="button"/> FINAL REPORT
Report number:	123	THICKNESS REPORT	APPROVE REJECT	VISUAL REPORT	TUBE REPORT	APPROVE REJECT	<input type="button"/> FINAL REPORT
Inspection date:	Apr 13, 2016	ULTRASONIC THICKNESS	No Report	VISUAL SUMMARY	VISUAL MARKED-UP DWG	Waiting for approval by Site Supervisor	<input type="button"/> FINAL REPORT
Inspection type:	Internal	CML MARKED-UP DWG		VISUAL CHECKLIST	VISUAL ANOMALY		<input type="button"/> FINAL REPORT
WO number:		THICKNESS ANOMALY		VISUAL PICTURE LOG	TUBE INSPECTION		<input type="button"/> FINAL REPORT
Report number:		THICKNESS REPORT	APPROVE REJECT	VISUAL REPORT	TUBE REPORT	APPROVE REJECT	<input type="button"/> FINAL REPORT
Inspection date:	Aug 22, 2012	ULTRASONIC THICKNESS	Waiting for approval by Inspection Engineer	VISUAL SUMMARY	VISUAL MARKED-UP DWG	Approved	<input type="button"/> FINAL REPORT
Inspection type:	External	CML MARKED-UP DWG		VISUAL CHECKLIST	VISUAL ANOMALY		<input type="button"/> FINAL REPORT
WO number:		THICKNESS ANOMALY		VISUAL PICTURE LOG	TUBE INSPECTION		<input type="button"/> FINAL REPORT
Report number:		THICKNESS REPORT	APPROVE REJECT	VISUAL REPORT	TUBE REPORT	APPROVED REJECT	<input type="button"/> FINAL REPORT

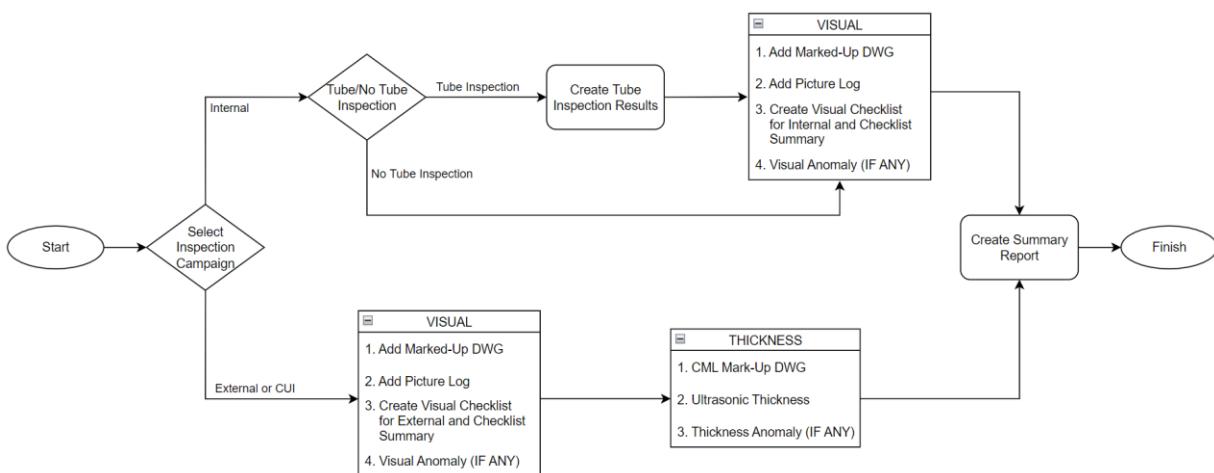
E-1000 CML MARKED-UP DRAWING (EXTERNAL)

DWG B01-S0707-D08-E 1000/11

Drawing

#### **4.2.1 Overview of the Inspection Report Creation**

Generating inspection reports of pressure vessel equipment will be considered as two approaches for **external or CUI** inspection and **internal** inspection.





- **External or CUI** inspection campaigns consist of the following reports.
  - 1) Visual Marked-Up DWG ⇒ 4.2.3
  - 2) Visual Picture Log ⇒ 4.2.4
  - 3) Visual Checklist for External and Checklist Summary ⇒ 4.2.6
  - 4) Visual Anomaly (If there is an anomaly) ⇒ 4.2.7
  - 5) CML Marked-Up DWG ⇒ 4.2.8
  - 6) Ultrasonic Thickness ⇒ 4.2.9
  - 7) Thickness Anomaly (If there is an anomaly) ⇒ 4.2.10
  - 8) Summary ⇒ 4.2.11
- **Internal** inspection campaign consists of the following reports.
  - 1) Tube (If there is a tube inspection) ⇒ 4.2.5
  - 2) Visual Marked-Up DWG ⇒ 4.2.3
  - 3) Visual Picture Log ⇒ 4.2.4
  - 4) Visual Checklist for Internal and Checklist Summary ⇒ 4.2.6
  - 5) Visual Anomaly (If there is an anomaly) ⇒ 4.2.7
  - 6) Summary ⇒ 4.2.11

#### 4.2.2 Inspection History

On **INFO** tab, Click **+ ADD INSPECTION RECORD** and input data in the fields, then click **SUBMIT** to generate a new inspection campaign record. **OSI Type** can be selected by inspection engineer user.

INSPECTION HISTORY					
INSPECTION INFORMATION	THICKNESS REPORT	THICKNESS APPROVAL	VISUAL AND TUBE REPORT	VISUAL APPROVAL	
Inspection date: Oct 1, 2021	ULTRASONIC THICKNESS ✓	Approved	VISUAL SUMMARY ✓ VISUAL MARKED-UP DWG ✓ VISUAL CHECKLIST ✓ VISUAL ANOMALY ✓ VISUAL PICTURE LOG ✓ TUBE INSPECTION ✓	Waiting for approval by Inspection Engineer	<b>+ ADD INSPECTION RECORD</b>
Inspection type: External	CML MARKED-UP DWG ✓	<b>APPROVE</b> <b>REJECT</b>	VISUAL REPORT ✓ TUBE REPORT	<b>APPROVE</b> <b>REJECT</b>	<b>FINAL REPORT</b>
WO number: 456	THICKNESS ANOMALY ✓				
Report number: 123	THICKNESS REPORT				
Inspection date: Apr 13, 2016	ULTRASONIC THICKNESS ✓	No	<b>X</b> <b>ADD INSPECTION RECORD</b>	MARKED-UP DWG ✓ Waiting for approval by Site Supervisor	
Inspection type: Internal	CML MARKED-UP DWG ✓		Inspection Date: 02-12-2021 Inspection Type: Internal	ANOMALY ✓ INSPECTION ✓ TUBE REPORT ✓	<b>APPROVE</b> <b>REJECT</b>
WO number:	THICKNESS ANOMALY ✓	<b>APPROVE</b>	Report Number: T-12345	Approved	<b>FINAL REPORT</b>
Report number:	THICKNESS REPORT		WO Number: 11111	TUBE REPORT ✓	<b>APPROVE</b> <b>REJECT</b>
Inspection date: Aug 22, 2012	ULTRASONIC THICKNESS ✓	Waiting for Site Supervisor	OSI Type: Select type <b>FOR INSPECTION ENGINEER</b>		
Inspection type: External	CML MARKED-UP DWG ✓		<b>SUBMIT</b>		
WO number:	THICKNESS ANOMALY ✓	<b>APPROVE</b>			
Report number:	THICKNESS REPORT				

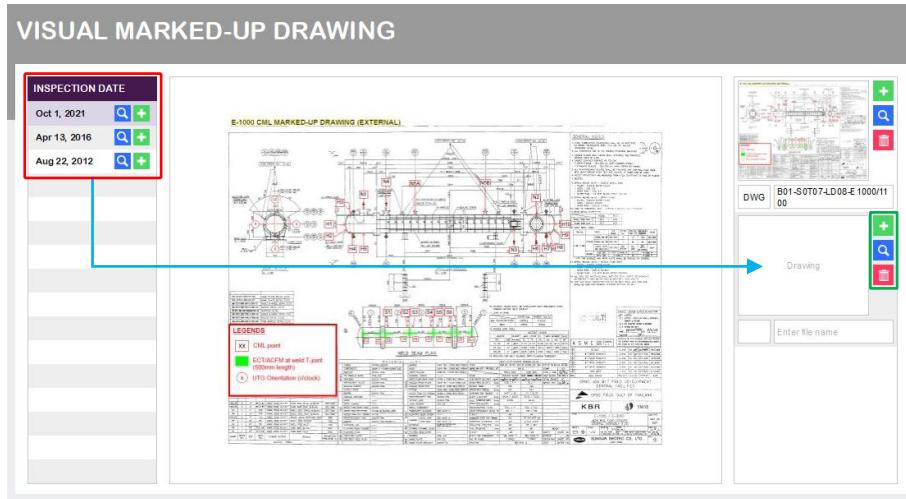


INSPECTION INFORMATION	THICKNESS REPORT	THICKNESS APPROVAL	VISUAL AND TUBE REPORT		VISUAL APPROVAL	
Inspection date: Dec 2, 2021	ULTRASONIC THICKNESS ✓	No Report	VISUAL SUMMARY ✓ VISUAL MARKED-UP DWG ✓ VISUAL CHECKLIST ✓ VISUAL ANOMALY ✓ VISUAL PICTURE LOG ✓ TUBE INSPECTION ✓ VISUAL REPORT ✓ TUBE REPORT		No Report	<b>FINAL REPORT</b>
Inspection type: Internal	CML MARKED-UP DWG ✓	<b>APPROVE</b> <b>REJECT</b>			<b>APPROVE</b> <b>REJECT</b>	
WO number: 11111	THICKNESS ANOMALY ✓					
Report number: T-12345	THICKNESS REPORT					



#### 4.2.3 Visual Marked-Up DWG

On **VISUAL > MARKED-UP DWG** tab, upload the visual marked-up file to this section to add these marked up in the final visual report.



The screenshot shows the 'VISUAL MARKED-UP DRAWING' tab. On the left, there's a sidebar titled 'INSPECTION DATE' with three entries: 'Oct 1, 2021', 'Apr 13, 2016', and 'Aug 22, 2012', each with a magnifying glass icon and a green plus sign icon. A blue arrow points from this sidebar to the main drawing area. The main area contains a large technical drawing titled 'E-1000 CML MARKED-UP DRAWING (EXTERNAL)' with various annotations. Below the drawing is a legend box with three items: 'CML point' (red square), 'ECTACDM or weld T-joint' (green circle), and 'UTD Orientation (clock)' (blue circle). To the right of the drawing is a preview window titled 'Drawing' showing a smaller version of the same drawing, with a red trash bin icon at the bottom. At the bottom of the preview window is a text input field labeled 'Enter file name'.

- 1) Click  in each inspection date at the top left to display mark-up DWG of each visual inspection campaign.
- 2) Click  to create a new container for upload drawing.
- 3) **Status of VISUAL MARKED-UP DWG report** at the inspection history change to active (On INFO tab).
- 4) At the container, click  to upload drawing.
- 5) Click  to preview file with default image viewer program.
- 6) Click  to delete a file.



#### 4.2.4 Visual Picture Log

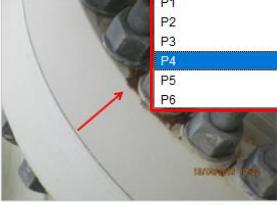
On **VISUAL > PICTURE LOG** tab, create a visual picture log for picture uploading and input the data into the form.

**PICTURE LOG**

INSPECTION DATE	Tag number:	CPOC-MDPP-E-1000	Damage mechanism:	Select damage mechanism				
Oct 1, 2021	Inspection date:	Oct 1, 2021	Main component:	Select main component				
Apr 13, 2016	Anomaly point:	Enter anomaly point	Wo number:	458				
Aug 22, 2012			Severity:	Select severity				
<div style="display: flex; justify-content: space-around;"> <span>Overview</span> <span>Close-up 1</span> <span>Close-up 2</span> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <span>+ </span> <span>+ </span> <span>+ </span> </div>								
<table border="1"> <thead> <tr> <th>Findings:</th> <th>Recommendation:</th> </tr> </thead> <tbody> <tr> <td>Enter message ...</td> <td>Enter message ...</td> </tr> </tbody> </table>					Findings:	Recommendation:	Enter message ...	Enter message ...
Findings:	Recommendation:							
Enter message ...	Enter message ...							
Tag number:	CPOC-MDPP-E-1000	Damage mechanism:	Ext-Painting deterioration					
Inspection date:	Oct 1, 2021	Main component:	Flange and fastenings					
Anomaly point:	F1-1	Wo number:	458	Severity: P4				
<div style="display: flex; justify-content: space-around;">    </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <span>+ </span> <span>+ </span> <span>+ </span> </div>								
<table border="1"> <thead> <tr> <th>Findings:</th> <th>Recommendation:</th> </tr> </thead> <tbody> <tr> <td>Overall external condition of the equipment found satisfactory except the corrosion part need rectification.</td> <td>Corrosion need to perform surface preparation and repaint.</td> </tr> </tbody> </table>					Findings:	Recommendation:	Overall external condition of the equipment found satisfactory except the corrosion part need rectification.	Corrosion need to perform surface preparation and repaint.
Findings:	Recommendation:							
Overall external condition of the equipment found satisfactory except the corrosion part need rectification.	Corrosion need to perform surface preparation and repaint.							

- 1) Click in each inspection date at the top left to display the picture log record of each visual inspection campaign.
- 2) Click to create a new form to be part of visual inspection report.
- 3) **Status of VISUAL PICTURE LOG report** at the inspection history change to active (On INFO tab).



Tag number:	CPOC-MDPP-E-1000	Damage mechanism:	Ext-Painting deterioration	
Inspection date:	Oct 1, 2021	Main component:	Flange and fastenings	
Anomaly point:	F1-1	Wo number:	456	Severity: <span style="background-color: #ADD8E6; color: blue; padding: 2px;">P4</span>
				<span style="border: 1px solid red; padding: 2px;">P1</span> <span style="border: 1px solid red; padding: 2px;">P2</span> <span style="border: 1px solid red; padding: 2px;">P3</span> <span style="background-color: #ADD8E6; color: blue; padding: 2px;">P4</span> <span style="border: 1px solid red; padding: 2px;">P5</span> <span style="border: 1px solid red; padding: 2px;">P6</span>
<span style="color: green; font-size: small;">+</span> <span style="color: blue; font-size: small;">🔍</span> <span style="color: red; font-size: small;">🗑</span>		<span style="color: green; font-size: small;">+</span> <span style="color: blue; font-size: small;">🔍</span> <span style="color: red; font-size: small;">🗑</span>	<span style="color: green; font-size: small;">+</span> <span style="color: blue; font-size: small;">🔍</span> <span style="color: red; font-size: small;">🗑</span>	
Findings:		Recommendation:		
Overall external condition of the equipment found satisfactory except the corrosion part need rectification.		Corrosion need to perform surface preparation and repaint.		

- 4) Enter anomaly point, select the component part about pressure vessel and damage mechanism that occur on its.
- 5) Click + to upload picture of overview or close-up view from inspection findings.
- 6) Click 🔍 to preview file with default image viewer program.
- 7) Click 🗑 to delete a picture.
- 8) Enter findings and recommendation of inspection in text box.
- 9) Select severity status for the point of anomaly.



#### 4.2.5 Tube

In case of inspection type is an **internal** with tube inspection, user must go to the **TUBE** tab to add information and upload file of tube inspection into the system.

**TUBE**

TUBE INFORMATION		Final Integrity Status for Tube Inspection	
Tube material:	ASME SA 789 UNS S31803	Tube type:	Straight
Tube Outside Dia (mm):	19.05	Tube service:	Gas and Condensate
Tube thickness (mm):	2.11	Tube length (mm):	8100
Tube Inside Dia (mm):	14.83	Tube quantity (tubes):	14.83

INSPECTION DATE		INSPECTION RESULTS	
Oct 1, 2021		Inspection method: RFT - Remote Field Testing	Integrity status: P4
Apr 13, 2016		Findings: Observed erosion (wall loss < 30%) approximately for 1 meter near to the closed shell side (FE).	Recommendation: All the tubes should be monitored subject to the internal inspection using Remote Field Testing within the next available opportunity.
Aug 22, 2012			E-1000 (2016-05).pdf

CALIBRATION DATA		INSPECTION RESULTS	
Inspection procedure:	PTSB/SOP/RFT-02	Inspection equipment:	Ferroscope F308
Calibration tube no:	DUPLEX UNS S 31803	Calibration standard:	ASME
Transducer frequency:	Select value	Frequency:	Enter value
Sensitivity:	Select value	Tested type:	Select value

INSPECTION RESULTS	
Inspection method: RFT - Remote Field Testing	Integrity status: P4
Findings: Enter message ...	Recommendation: Enter message ...

- 1) At the top of the TUBE page, input data of tube in the blank.
- 2) Click in each inspection date at the left side to display tube inspection results of each inspection method.
- 3) Click to create a new record. Then, enter the data of inspection result and calibration.
- 4) **Status of TUBE INSPECTION report** at the inspection history change to active (On INFO tab).
- 5) At the container of result file, click to upload report file.
- 6) Click to preview file with default program.
- 7) Click to delete a file.
- 8) Select integrity status for each inspection method.
- 9) At the top right, the highest severity of last inspection date will represent the final integrity status of tube for this pressure vessel number.



#### 4.2.6 Visual Checklist

On **VISUAL > CHECKLIST** tab, create a visual checklist and input the data into the form of checklist.

**CHECKLIST**

INSPECTION DATE	EXTERNAL	INTERNAL	SUMMARY
Oct 1, 2021			
Apr 13, 2016			
Aug 22, 2012			

EXTERNAL VISUAL INSPECTION			CoF = 4	P3	ALAR-1
Main Component	Part   Component	Status	Note		
	Shell	Select status	Note:		
	Head	Select status	Note:		
	Cover   Channel   Cover   Head Cover	Select status	Note:		
	Channel   Head Channel	Select status	Note:		

- 1) Click in each inspection date to display the checklist record of each visual inspection type.
- 2) Click to create a new checklist for external, internal and visual summary.
- 3) **Status of VISUAL CHECKLIST report** at the inspection history change to active (On INFO tab).
- 4) Visual checklist is considered by the type of inspection as follow.



#### 4.2.6.1 External

External or CUI inspection must enter data in external checklist, and then comment in visual summary tab.

**CHECKLIST**

INSPECTION DATE		EXTERNAL	INTERNAL	SUMMARY			
Dec 7, 2021							
Oct 1, 2021							
Apr 13, 2016							
Aug 22, 2012							
<b>EXTERNAL VISUAL INSPECTION</b>							
			CoF = 4	P2	HIGH		
Shell, Head and Nozzle	Part   Component	Status	Note				
	Shell	Not found	P6	Note:			
	Head	Insignificant	P5	Note:			
	Cover   Channel   Cover   Head Cover	Not found	P6	Note:			
	Channel   Head Channel	Insignificant	P5	Note:			
	Cone	Minor	P4	Note:			
	Welds	Moderate	P3	Note:			
	Manholes	Major	P2	Note:			
	Nozzles	N/A		Note:			
	Davit	Not found		Note:			
Others	Enter value		Note:				
Structure	Frames	Moderate		Note:			
	Skirt	Major		Note:			
	Saddle support	Severe		Note:			
	Leg support	Select status		Note:			
	Platform and grating	Select status		Note:			
	Handrail	Select status		Note:			
	Ladders	Select status		Note:			
	Others	Enter value		Note:			
Instrument, piping and attachment part	Level gauge	Select status		Note:			
	Transmitter	Select status		Note:			
	Pressure gauge	Select status		Note:			
	Temperature gauge	Select status		Note:			
	Valve	Select status		Note:			
	Bolts, nuts and gaskets	Select status		Note:			
	Name plate	Select status		Note:			
	Earthing lugs	Select status		Note:			
	Piping	Select status		Note:			
	Piping supports	Select status		Note:			
Insulation	Pressure relief devices	Select status		Note:			
	Others	Enter value		Note:			
	Insulation material	Select status		Note:			
	Jacket   Cladding	Select status		Note:			
Banding	Select status		Note:				
Sealing	Select status		Note:				

- 1) Select **EXTERNAL** tab for evaluation of external visual inspection.
- 2) Select status and take note for severity of damage mechanism or other finding that was inspected.
- 3) The highest severity status (P1-P6) from external or internal inspection will represent the status of visual checklist on the top right.



#### 4.2.6.2 Internal

Internal inspection must enter data in internal checklist, and then comment in visual summary tab. For tube inspection, enter data in the tube bundle section.

**CHECKLIST**

INSPECTION DATE	EXTERNAL	INTERNAL	SUMMARY
Dec 7, 2021			
Oct 1, 2021			
Apr 13, 2016			
Aug 22, 2012			
<b>INTERNAL VISUAL INSPECTION : AT OPENING</b>			
Component	Part	Status	Note
Internal component	Overview	Major	P2
	Others <input type="text"/> Enter value	Select status	Note:
	Others <input type="text"/> Enter value	Select status	Note:
	Others <input type="text"/> Enter value	Select status	Note:
Finding	Characteristics		Note
Deposit	Overview	Note:	
	Quantity and Location	Note:	
	Colour	Note:	
	Others <input type="text"/> Enter value	Note:	
<b>INTERNAL VISUAL INSPECTION : AFTER CLEANING</b>			
Main Component	Part   Component	Status	Note
Shell, Head and Nozzle	Shell	Select status	Note:
	Head	Not found	P6
	Cover   Channel   Cover   Head Cover	Insignificant	P5
	Channel   Head Channel	Moderate	P3
	Cone	Not found	P6
	Nozzles	Insignificant	P5
	Manholes	Insignificant	P5
	Coating/Lining	Minor	P4
	Cladding	N/A	Note:
	Seam Weld	Not found	Note:
	Attached welds	Insignificant	Note:
	Others <input type="text"/> Enter value	Minor	Note:
	Others <input type="text"/> Enter value	Moderate	Note:
	General component	Heating coils   Elements	Major
Momentum breaker		Severe	Note:
Demister   Packing		Select status	Note:
Vortex Breaker		Select status	Note:
Baffle plate   Wier		Select status	Note:
Supports		Select status	Note:
Internal bolts   Nuts		Select status	Note:
Others <input type="text"/> Enter value		Select status	Note:
Others <input type="text"/> Enter value		Select status	Note:
Others <input type="text"/> Enter value		Select status	Note:
Tube bundle	Tubes	Insignificant	P5
	Tubesheet	Select status	Note:
	Baffles	Select status	Note:
	Tie rods and Spacers	Select status	Note:
	Others <input type="text"/> Enter value	Select status	Note:
	Others <input type="text"/> Enter value	Select status	Note:

- 1) Select **INTERNAL** tab for evaluation of internal visual inspection.
- 2) Select status and take note for severity of damage mechanism or other finding that was inspected.
- 3) Tube inspection must enter data of tube bundle to the bottom of internal checklist.



- 4) The highest severity status (P1-P6) from external or internal inspection will represent the status of visual checklist on the top right.

#### 4.2.6.3 Summary

The summary section must always be entered data for each inspection type.

**CHECKLIST**

INSPECTION DATE	EXTERNAL	INTERNAL	SUMMARY
Dec 7, 2021			
Oct 1, 2021			
Apr 13, 2016			
Aug 22, 2012			

VISUAL INSPECTION SUMMARY		CoF = 4	P3	ALAR-1
EXTERNAL VISUAL INSPECTION		RECOMMENDATION AND SUGGESTION		
Enter message ...		Enter message ...		
INTERNAL VISUAL INSPECTION		RECOMMENDATION AND SUGGESTION		
Enter message ...		Enter message ...		
TUBE BUNDLE VISUAL INSPECTION		RECOMMENDATION AND SUGGESTION		
Enter message ...		Enter message ...		

- 1) Select **SUMMARY** tab to summarize on each inspection type by inspection campaign.
- 2) The highest severity status (P1-P6) from external or internal inspection will represent the status of visual checklist on the top right.



#### 4.2.7 Visual Anomaly

On **VISUAL > ANOMALY** tab, create visual anomaly report and input the data into the form.

**VISUAL ANOMALY**

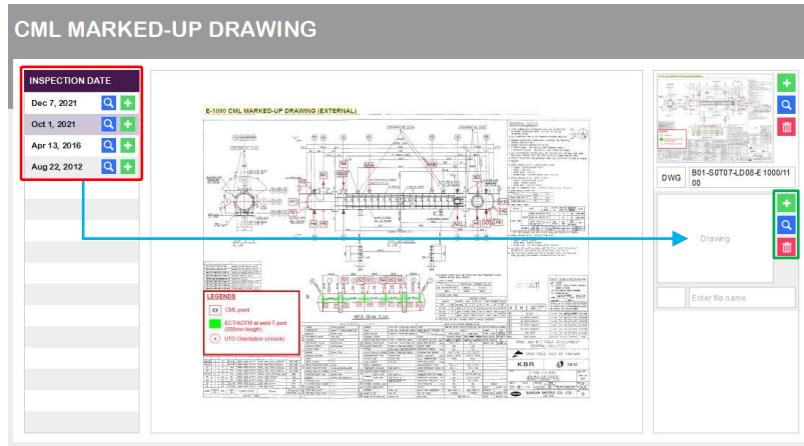
INSPECTION DATE		PRESSURE VESSEL INFORMATION			
Dec 7, 2021		Tag number:	CPOC-MDPP-E-1000	WO number:	3333
Oct 1, 2021		PV number:	E-1000	Report number:	2222
Apr 13, 2016		Equipment type:	Heat Exchanger	Inspection date:	Apr 13, 2016
Aug 22, 2012		Service Shell   Tube:	Cooling Water Supply   Gas & Condensate	In-service date:	Jan 1, 2008
INSPECTION SUMMARY					
Support corroded					
RECOMMENDATION BY GENERAL INSPECTOR (API INSPECTOR)					
Repaint					
RECOMMENDATION BY INSPECTION ENGINEER					
Enter message ...					
ANOMALY CORRECTIVE MAINTENANCE					
Temporary repair: (Due date)		Select date	Select status	Select repair type	
Description:					
Enter message ...					
Permanent repair: (Due date)		May 26, 2016	Pending	Repaint	
Description:					
Enter message ...					
Monitoring: (Due date)		Select date			
Description:					
Enter message ...					

- 1) Click in each inspection date to display the visual anomaly record of each visual inspection campaign.
- 2) Click to create a new record to be part of visual inspection report.
- 3) **Status of VISUAL ANOMALY report** at the inspection history change to active (On INFO tab).
- 4) Take note for inspection summary and recommendation.
- 5) **Anomaly Corrective Maintenance** of visual anomaly can specify the repair type, comment, due date for action and status update of maintenance.
- 6) If the repair status is **Completed**, the visual anomaly status will be **P6**, which will be used to consider the final integrity status.



#### 4.2.8 CML Marked-Up DWG

On **THICKNESS > CML MARKED-UP DWG** tab, upload the CML marked-up file to this section to add these CML marked up in the final thickness report.



- 1) Click  in each inspection date at the top left to display CML marked-up of each thickness inspection campaign.
- 2) Click  to create a new container for upload drawing.
- 3) **Status of CML MARKED-UP DWG report** at the inspection history change to active (On INFO tab).
- 4) At the container, click  to upload drawing.
- 5) Click  to preview file with default image viewer program.
- 6) Click  to delete a file.

#### 4.2.9 Ultrasonic Thickness

On **THICKNESS > THICKNESS** tab, it is divided into three sections as follow.

- **Actual Thickness Record:** Record the actual thickness from inspection
- **CML Test Point Data Table:** The table shows the data of each CML test point
- **Probe data:** Record info of UT equipment and probe



**THICKNESS**

CML		TP		UTM										
CML No	Group	Component Type	Desc	Material Spec	tnom (mm)	treq (mm)	CML-TP	TP Desc	CML-TP	Inspection Date	tactual (mm)	RL (yrs)	Integrity Status	Status Criteria
H1	Tube Side	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	25.50	24.40			H1-1	3				
H2	Tube Side	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	25.50	24.40			H1-2	6				
H3	Tube Side	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	25.50	24.40			H1-3	9				
H4	Tube Side	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	25.50	24.40			H1-4	12				
H5	Tube Side	Cylindrical	Tube Side Channel	ASME SA 516 Grade 70	25.50	25.04								
H6	Tube Side	Cylindrical	Tube Side Channel	ASME SA 516 Grade 70	25.50	25.04								
H7	Tube Side	Cylindrical	Tube Side Channel	ASME SA 516 Grade 70	25.50	25.04								
H8	Tube Side	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	25.50	24.40								
H9	Tube Side	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	25.50	24.40								
H10	Tube Side	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	25.50	24.40								

**Actual Thickness Record**

**CML Test Point Data Table**

**Probe Data**

## 1) Actual Thickness Record

CML		TP		UTM										
CML No	Group	Component Type	Desc	Material Spec	tnom (mm)	treq (mm)	CML-TP	TP Desc	CML-TP	Inspection Date	tactual (mm)	RL (yrs)	Integrity Status	Status Criteria
H1-1	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	3	Jan 1, 2008	25.50	24.40			H1-1	3			
H1-2	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	6	Jan 1, 2008	25.50	24.40			H1-2	6			
H1-3	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	9	Jan 1, 2008	25.50	24.40			H1-3	9			
H1-4	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	12	Jan 1, 2008	25.50	24.40			H1-4	12			
H2-1	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	3	Jan 1, 2008	25.50	24.40			H2-1	3			
H2-2	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	6	Jan 1, 2008	25.50	24.40			H2-2	6			
H2-3	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	9	Jan 1, 2008	25.50	24.40			H2-3	9			
H2-4	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	12	Jan 1, 2008	25.50	24.40			H2-4	12			
H3-1	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	3	Jan 1, 2008	25.50	24.40			H3-1	3			
H3-2	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	6	Jan 1, 2008	25.50	24.40			H3-2	6			
H3-3	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	9	Jan 1, 2008	25.50	24.40			H3-3	9			
H3-4	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	12	Jan 1, 2008	25.50	24.40			H3-4	12			
H4-1	Cylindrical	Tube Side Channel	ASME SA 516 Grade 70	3	Jan 1, 2008	25.50	25.04			H4-1	3			
H4-2	Cylindrical	Tube Side Channel	ASME SA 516 Grade 70	6	Jan 1, 2008	25.50	25.04			H4-2	6			
H4-3	Cylindrical	Tube Side Channel	ASME SA 516 Grade 70	9	Jan 1, 2008	25.50	25.04			H4-3	9			
H4-4	Cylindrical	Tube Side Channel	ASME SA 516 Grade 70	12	Jan 1, 2008	25.50	25.04			H4-4	12			
H5-1	Cylindrical	Tube Side Channel	ASME SA 516 Grade 70	3	Jan 1, 2008	25.50	25.04			H5-1	3			
H5-2	Cylindrical	Tube Side Channel	ASME SA 516 Grade 70	6	Jan 1, 2008	25.50	25.04			H5-2	6			
H5-3	Cylindrical	Tube Side Channel	ASME SA 516 Grade 70	9	Jan 1, 2008	25.50	25.04			H5-3	9			
H5-4	Cylindrical	Tube Side Channel	ASME SA 516 Grade 70	12	Jan 1, 2008	25.50	25.04			H5-4	12			

- Click **DOWNLOAD INSPECT FORM** to generate form for carrying to take notes thickness value by inspector.
- Click **+** and fill in data to create a new CML.

**CML**

CML No	Group	Component Type	Desc	Material Spec	treq (mm)	treq (mm)	DETAIL	EDIT	DELETE
H1	Tube Side	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	25.50	24.40			
H2	Tube Side	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	25.50	24.40			
H3	Tube Side	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	25.50	25.04			
H4	Tube Side	Cylindrical	Tube Side Channel	ASME SA 516 Grade 70	25.50	25.04			
H5	Tube Side	Cylindrical	Tube Side Channel	ASME SA 516 Grade 70	25.50	25.04			
H6	Tube Side	Cylindrical	Tube Side Channel	ASME SA 516 Grade 70	25.50	25.04			
H7	Tube Side	Cylindrical	Tube Side Channel	ASME SA 516 Grade 70	25.50	25.04			
H8	Tube Side	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	25.50	24.40			
H9	Tube Side	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	25.50	24.40			
H10	Tube Side	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	25.50	24.40			

- Click **☰** on CML part, then click **EDIT** to edit CML data.



**EDIT CML**

CML Number	Component Group	Component	Component Type
H1	Tube Side	Head	Ellipsoidal
<b>REQUIRED</b> Component Desc Tube Side Channel Head	<b>REQUIRED</b> Material Spec ASME SA 516 Grade 70	<b>REQUIRED</b> Material Type Select material type	<b>REQUIRED</b> Internal Lining Type S31803
Stress (psi) 20015.52	Inside Diameter (mm) 950.00	Outside Diameter (mm) 1001.00	t <sub>nom</sub> (mm) 25.50
<b>REQUIRED</b> Joint Factor 1.00	<b>REQUIRED</b> NPS (inch) Enter value	<b>REQUIRED</b> Schedule Select schedule	<b>REQUIRED</b> Clad Thickness (mm) 3.00
<b>REQUIRED</b> Degree (for cone) Enter value	<b>REQUIRED</b> C (for flat head) Enter value	<b>REQUIRED</b> Manual required (mm) Enter value	<b>REQUIRED</b> Sequence for sort 1
In-service Date (if edit) Select date			
Replacement Date Select date			
<b>SUBMIT</b> 			

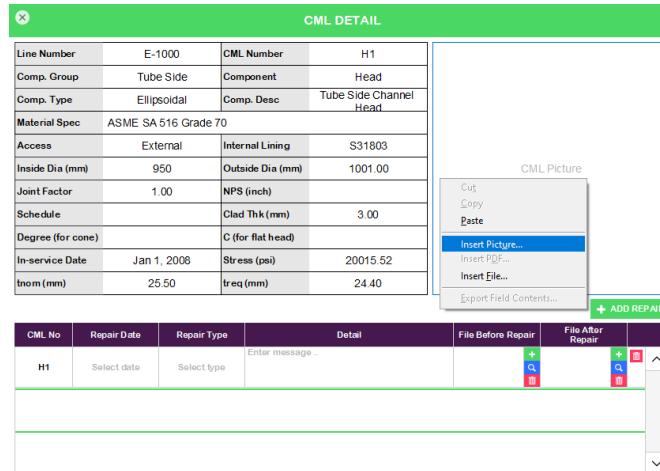
- In case of replacing the component, user must select a replacement date in **EDIT CML**.
- **Importance!**: After selecting replacement date and clicking **SUBMIT**, test point data will be cleared all over.
- Click **DELETE** to delete a CML data.
- Click **ADD TP**, then specify the number of test points to create.

**ADD TP**

Line Number	E-1000	
CML Number	?	
Number of TP		
1		
<b>REQUIRED</b>	<b>SUBMIT</b>	



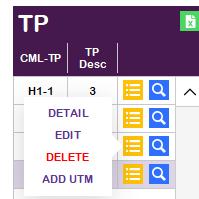
- At the **DETAIL** of CML part, user can record repairing information.



The screenshot shows the 'CML DETAIL' section of the AIMS system. It displays technical specifications for a component (Line Number: E-1000, CML Number: H1, Comp. Group: Tube Side, Comp. Type: Ellipsoidal, etc.) and a repair history table. A context menu is open over a 'CML Picture' entry, with options like 'Insert Picture...', 'Insert PDF...', and 'Insert File...'. A green button at the bottom right says '+ ADD REPAIR'.

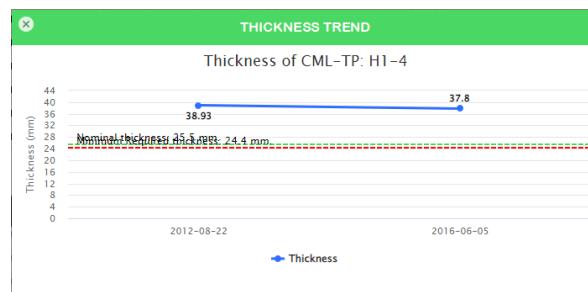
CML No	Repair Date	Repair Type	Detail	File Before Repair	File After Repair
H1	Select date	Select type	Enter message..		

- Right click on CML picture, then select **Insert Picture...** to upload picture that represent the latest repairing.
- Click **+ ADD REPAIR** to create a new repair record.
- Fill in data and attach files of before-repair and after-repair.
- Click to insert files.
- Click to preview file with default viewer program.
- Click to delete a file.



The screenshot shows the 'TP' (Test Point) interface. It lists test points (H1-1, H1-2, H1-3) with their descriptions and provides actions: EDIT, DELETE, and ADD UTM.

- Click on TP part, then click **EDIT** to edit test point data.
- Click **DELETE** to delete a test point data.
- Click **ADD UTM**, then specify UTM data to record.
- Status of ULTRASONIC THICKNESS report** at the latest inspection history change to active (On INFO tab).
- Click **DETAIL** to show thickness trend of each test point.





- Click  on UTM part, then click **EDIT** to edit UTM data.

UTM						
CML-TP	Inspection Date	tactual (mm)	RL (yrs)	Integrity Status	Status Criteria	
H1-4	Jun 5, 2016	26.00	0.47	P2	0.25 < RL ≤ 0.5	 
H1-4	Aug 22, 2012	38.93	121.08	P6	RL > 5	 

- Click **DELETE** to delete a UTM data.

THICKNESS										
CML				TP				UTM		
CML No	Group	Component Type	Desc	Material spec	t <sub>nom</sub> (mm)	t <sub>req</sub> (mm)		TP Desc	Inspection Date	tactual (mm)
H1	Tube Side	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	25.50	24.40	 	3	Jun 5, 2016	26.00
H2	Tube Side	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	25.50	24.40	 	6	Aug 22, 2012	38.93

- In the case that there is a large amount of data to input in the AIMS, either CML, TP or UTM data. Users can use the import function to help import data at once.
- Click **DOWNLOAD FORM** to download excel template to desktop.
- Fill in the data to excel template and click **IMPORT FORM** to upload import file.

## 2) CML Test Point Data Table

The table displayed a summary of thickness data in each CML test point.

CML-TP	Component Type	Component Desc	Material Spec	TP Desc	In-service Date	t <sub>nom</sub> (mm)	t <sub>req</sub> (mm)	First Date   Thk (mm)		Prev Date   Thk (mm)		Last Date   Thk (mm)		ST_CR (mm/yr)	LT_CR (mm/yr)	RL (yrs)	Integrity Status	Status Criteria	Thk Trend	<b>STATUS</b> All 
								First Date	Thk (mm)	Prev Date	Thk (mm)	Last Date	Thk (mm)							
H1-4	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	12	Jan 1, 2008	25.50	24.40	Aug 22, 2012	38.93	Aug 22, 2012	38.93	Jun 5, 2016	26.00	3.41	3.41	0.47	P2	0.25 < RL ≤ 0.5	 	
H2-1	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	3	Jan 1, 2008	25.50	24.40	Aug 22, 2012	32.02	Aug 22, 2012	32.02	Jun 5, 2016	35.85	-1.01	-1.01	95.42	P6	RL > 5	 	
H2-2	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	6	Jan 1, 2008	25.50	24.40	Aug 22, 2012	32.10	Aug 22, 2012	32.10	Jun 5, 2016	38.08	-1.58	-1.58	114.00	P6	RL > 5	 	
H2-3	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	9	Jan 1, 2008	25.50	24.40	Aug 22, 2012	31.98	Aug 22, 2012	31.98	Jun 5, 2016	36.50	-1.19	-1.19	100.83	P6	RL > 5	 	
H2-4	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	12	Jan 1, 2008	25.50	24.40	Aug 22, 2012	31.89	Aug 22, 2012	31.89	Jun 5, 2016	37.20	-1.40	-1.40	106.67	P6	RL > 5	 	
H3-1	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	3	Jan 1, 2008	25.50	24.40	Aug 22, 2012	32.02	Aug 22, 2012	32.02	Jun 5, 2016	38.99	-1.84	-1.84	121.58	P6	RL > 5	 	
H3-2	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	6	Jan 1, 2008	25.50	24.40	Aug 22, 2012	32.10	Aug 22, 2012	32.10	Jun 5, 2016	38.72	-1.75	-1.75	119.33	P6	RL > 5	 	
H3-3	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	9	Jan 1, 2008	25.50	24.40	Aug 22, 2012	31.98	Aug 22, 2012	31.98	Jun 5, 2016	38.99	-1.85	-1.85	121.58	P6	RL > 5	 	
H3-4	Ellipsoidal	Tube Side Channel Head	ASME SA 516 Grade 70	12	Jan 1, 2008	25.50	24.40	Aug 22, 2012	31.89	Aug 22, 2012	31.89	Jun 5, 2016	38.65	-1.78	-1.78	118.75	P6	RL > 5	 	

- Click **STATUS** All  to select integrity status to show in the table.
- Click  in column **Thk Trend** to show thickness trend of each CML test point.



### 3) Probe Data

At the bottom of thickness page, probe data and UT equipment data can record to each inspection campaign.

INSPECTION DATE	UT EQUIPMENT DATA	PROBE DATA
Oct 1, 2021	UT equipment: OLYMPUS EPOCH LTC UT equipment S/N: OBA4-748D-2039-3C06S	Probe type: TR Probe angle: 0
Apr 13, 2016	Couplant: WALLPAPER PASTE	Brand:
Aug 22, 2012	Calibration block: STEP WEDGE Calibration block S/N: 161011-1	Probe S/N: 1305427 Size (mm): 7.9
	Equipment calib record no: NDT 220209P2015 Surface condition: SATISFACTORY	Frequency (MHz): 5 Calibration range (mm):
	Test temperature: AMBIENT	Signal range: 0-50

- 1) Click in each inspection date to show information record of inspection tools.
- 2) Click to add a new record in each inspection campaign.

#### 4.2.10 Thickness Anomaly

On **THICKNESS > ANOMALY** tab, create anomaly report of CML test point to take action for corrective maintenance.

ANOMALY																							
INSPECTION DATE	THICKNESS SUMMARY																						
Oct 1, 2021	<table border="1"> <tr> <td>CML-TP: H1-4</td> <td></td> </tr> <tr> <td>CML description: Tube Side</td> <td></td> </tr> <tr> <td>Scripture: 12</td> <td></td> </tr> <tr> <td>Size (mm): 6</td> <td></td> </tr> <tr> <td>Min. req. thick (mm): 25.60</td> <td></td> </tr> <tr> <td>Wing thick (mm): 26.00</td> <td></td> </tr> <tr> <td>Wall loss thick (mm): -0.50</td> <td></td> </tr> <tr> <td>Min. req. thick (mm): 24.40</td> <td></td> </tr> <tr> <td>Selected CR (mm/y): 3.41</td> <td></td> </tr> <tr> <td>Remaining life (yrs): 0.47</td> <td></td> </tr> <tr> <td>Status: P2</td> <td></td> </tr> </table>	CML-TP: H1-4		CML description: Tube Side		Scripture: 12		Size (mm): 6		Min. req. thick (mm): 25.60		Wing thick (mm): 26.00		Wall loss thick (mm): -0.50		Min. req. thick (mm): 24.40		Selected CR (mm/y): 3.41		Remaining life (yrs): 0.47		Status: P2	
CML-TP: H1-4																							
CML description: Tube Side																							
Scripture: 12																							
Size (mm): 6																							
Min. req. thick (mm): 25.60																							
Wing thick (mm): 26.00																							
Wall loss thick (mm): -0.50																							
Min. req. thick (mm): 24.40																							
Selected CR (mm/y): 3.41																							
Remaining life (yrs): 0.47																							
Status: P2																							
Oct 1, 2021	INSPECTION SUMMARY																						
Oct 1, 2021	RECOMMENDATION BY GENERAL INSPECTOR (API INSPECTOR)																						
Oct 1, 2021	RECOMMENDATION BY INSPECTION ENGINEER																						
Oct 1, 2021	ANOMALY CORRECTIVE MAINTENANCE																						
Oct 1, 2021	Temporary repair (Due date): Nov 24, 2021 Pending																						
Oct 1, 2021	Others: Description: Due date:																						
Oct 1, 2021	Permanent repair (Due date): Dec 29, 2021 Pending																						
Oct 1, 2021	Others: Description: Due date:																						
Oct 1, 2021	Monitoring (Due date): Select due date																						
Oct 1, 2021	Description: Due date:																						

- 1) Click in each inspection date at the top left to display anomaly thickness of each inspection campaign.
- 2) Click to add anomaly form.
- 3) Select **ADD AUTO** to generate anomaly point with status P1-P5.
- 4) Select **ADD BLANK FORM** to generate a blank form for manual key CML-TP
- 5) **Status of THICKNESS ANOMALY report** at the inspection history change to active (On INFO tab).



## ANOMALY

INSPECTION DATE		THICKNESS SUMMARY	
Oct 1, 2021		H1-4	
Apr 13, 2016		Tube Side	
Aug 22, 2012		12	
		Pipe size (inch):	0
		Original thk (mm):	25.50
		Remaining thk (mm):	26.00
		Wall loss thk (mm):	-0.50
		Min. req. thk (mm):	24.40
		Selected CR (mm/yr):	3.41
		Remaining life (yrs):	0.47
		Status:	P2
INSPECTION SUMMARY			
Enter message ...			

- 6) Enter CML-TP with the same format of text as CML-TP test point data table in thickness page. Other data will automatically appear in the thickness summary table.
- 7) **Anomaly Corrective Maintenance** of thickness measurement can specify the repair type, comment, due date for action and status update of maintenance.
- 8) If the repair status is **Completed**, status of thickness will be **P6**.  
Note: In case of replacement, the user should be updated a new thickness of this part.



#### 4.2.11 Summary Report

On **VISUAL > SUMMARY** tab, create a summary report of each inspection campaign to summarize and recommend for inspection findings.

SUMMARY															
INSPECTION DATE		PRESSURE VESSEL INFORMATION													
Dec 30, 2021		Tag number:	CPOC-MDPP-E-1000		WO number:										
Dec 29, 2021		PV number:	E-1000		Report number:										
Oct 1, 2021		Equipment type:	Heat Exchanger		Inspection date:	Dec 30, 2021									
Apr 13, 2016		Service Shell   Tube:	Cooling Water Supply	Gas & Condensate	In-service date:	Jan 1, 2008									
Aug 22, 2012		INSPECTION INFORMATION													
INSPECTION CAMPAIGN		INSPECTION METHOD		<input type="checkbox"/> At opening <input checked="" type="checkbox"/> After cleaning											
Baseline	<input checked="" type="checkbox"/>	External	<input checked="" type="checkbox"/>	VT	<input checked="" type="checkbox"/>	UTM	<input checked="" type="checkbox"/>	PT	<input type="checkbox"/> MT	<input type="checkbox"/> RT	<input type="checkbox"/> UT	<input type="checkbox"/> PAUT	<input type="checkbox"/> PMI	<input type="checkbox"/> ET	<input type="checkbox"/>
On-stream	<input type="checkbox"/>	Internal	<input type="checkbox"/>	VT	<input type="checkbox"/>	UTM	<input type="checkbox"/>	PT	<input type="checkbox"/> MT	<input type="checkbox"/> RT	<input type="checkbox"/> UT	<input type="checkbox"/> PAUT	<input type="checkbox"/> PMI	<input type="checkbox"/> ET	<input type="checkbox"/>
Others	<input type="checkbox"/>	Leak Test	<input type="checkbox"/>	Hydrostatic Test	<input type="checkbox"/>	Pneumatic Test	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others	<input type="checkbox"/>	Tube	<input type="checkbox"/>	ETC	<input type="checkbox"/>	IRIS	<input type="checkbox"/>	PT	<input type="checkbox"/> Leak Test	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
THICKNESS MEASUREMENT SUMMARY															
Component	Material	t <sub>nom</sub> (mm)	t <sub>req</sub> (mm)	CML No.	t <sub>actual</sub> (mm)	SCR (mm/yrs)	RL (yrs)								
Shell															
Head															
Nozzle															
Tube															
THICKNESS MEASUREMENT RECOMMENDATION															
Enter message ...															
VISUAL INSPECTION SUMMARY															
EXTERNAL VISUAL INSPECTION FINDING					RECOMMENDATION										
Enter message ...					Enter message ...										
INTERNAL VISUAL INSPECTION FINDING															
Enter message ...					Enter message ...										
TUBE INSPECTION SUMMARY (IF ANY)															
Enter message ...															
FURTHER NOT INSPECTION SUMMARY															
Enter message ...															
NEXT SHUTDOWN REQUIREMENT AND RECOMMENDATION															
Enter message ...															

- 1) Click in each inspection date at the top left to display summary report of each inspection campaign.
- 2) Click to add a summary form.
- 3) **Status of SUMMARY report** at the inspection history change to active (On INFO tab).
- 4) In each inspection summary topic, enter the details about the inspection findings and recommendations.



#### 4.2.12 RBI

RBI tab contains probability of failure (POF) and consequence of failure (COF) record. User can select the level of failure for damage mechanism and consequence to show on risk matrix.

**RBI**

RBI ASSESSMENT DATE		COMPONENT	
Sep 6, 2015			

RBI Assessment date:	Sep 6, 2015	Component:	Tube Side	Risk ranking:		
----------------------	-------------	------------	-----------	---------------	--	--

**DAMAGE MECHANISM**

**POF | PROBABILITY OF FAILURE**

Damage Mechanism	Probability of Failure Level	Comment
CO2 Corrosion		Unlikely (2)   Occurred several time in E&P industry (10-20 Years)
Corrosion Under Insulation (CUI)		Unlikely (2)   Occurred several time in E&P Industry (10-20 Years)
Select damage mechanism		Select probability of failure
Select damage mechanism		Select probability of failure
Select damage mechanism		Select probability of failure

**COF | CONSEQUENCE OF FAILURE**

Consequence	Consequence of Failure Level	Comment
People	Major (4)   One Fatality Multiple PD's	
Assets / Production Loss	Moderate (3)   Production loss <1 wk, Damage between 100-500kUS	
Environment	Major (4)   Tier 2, regional assistance required	
Reputation	Moderate (3)   Local TV, national papers	

- 1) At **RBI ASSESSMENT DATE**, click to create a new record for RBI assessment date.

Sep 6, 2015					
-------------	--	--	--	--	--

- 2) On each date, click to view subcomponent.
- 3) Click to view RBI report and export PDF file.
- 4) Click to edit RBI assessment date.
- 5) Click to delete RBI record.
- 6) Click to create a new component of pressure vessel for RBI recording.



COMPONENT	
Head	ALARP   
Tube Side	ALARP   
Shell Side	LOW   

- 7) At **COMPONENT** section, click  to view the RBI data.
- 8) Click  to edit component.
- 9) Click  to delete RBI record.

RBI Assessment date:	Sep 6, 2015	Component:	Head	Risk ranking:	ALARP
<b>DAMAGE MECHANISM</b>					
<b>POF   PROBABILITY OF FAILURE</b>					
Damage Mechanism	Probability of Failure Level	Comment			
Erosion / Erosion-Corrosion 	Likely (8)   Happens several times per year in CPOC (0.5-4 Years) 	Note:			
Select damage mechanism 	Select probability of failure 	Note:			
Select damage mechanism 	Select probability of failure 	Note:			
Select damage mechanism 	Select probability of failure 	Note:			
Select damage mechanism 	Select probability of failure 	Note:			
<b>COF   CONSEQUENCE OF FAILURE</b>					
Consequence	Consequence of Failure Level	Comment			
People	Insignificant (1)   First Aid, RWD, MTC 	Note:			
Assets / Production Loss					
Environment					
Reputation					

- 10) Select failure levels of POF and COF for each component.
- 11) Click  to clear the item that was selected.
- 12) After selecting POF and COF, a risk ranking status will appear at the top right of the table.

CPOC RISK MATRIX									
CoF					PoF				
Severity	People	Assets / Production Loss	Environment	Reputation	Rare (1)	Unlikely (2)	Credible (5)	Likely (8)	Certainly (10)
					Rarely or never heard of in E&P industry R.L (> 20 Years)	Occurred Several time in E&P Industry (10-20 Years)	Incident has occurred in CPOC (4-10 Years)	Happens several times per year in CPOC (0.5-4 Years)	Happens several times per year at a particular location (0-0.5 Years)
Insignificant (1)	First Aid, RWD, MTC	Slight Damage or loss	Slight impact of limited duration	Local media interest				8-1	
Minor (2)	LTI	Production loss <1 day. Damage <100kUS	Tier 1, Minor effect	Local written media					
Moderate (3)	Multiple LTI's, One PD	Production loss <1 wk. Damage between 100-500kUS	Tier 1, Localized effect	Local TV, national papers					
Major (4)	One Fatality, Multiple PD's	Production loss <1 month. Damage between 500k - 1000kUS	Tier 2, Regional assistance required	National TV, international papers					
Critical (5)	More than One Fatality	Production loss >1 Month. Damage > 1000kUS	Tier 3, International assistance required	International TV, extended coverage					

- 13) Risk matrix displays PoF-CoF levels, selecting the maximum value for each failure to show in the table.



#### 4.2.13 Library

Library tab is a repository of all related files such as construction document, inspection report, MOC., etc. It can also generate the template excel files for integration with SAP.

**LIBRARY**

**Files Storage**

Construction Document	Inspection Report	General Document Other (e.g. MOC, related communication email, etc.)												
 E-1000 Install year.doc   E-1000_Construction.xlsx  <input type="button" value="File name"/> <input type="button" value="Uploaded date"/>	 E-1000 Inspection Report.pdf  <input type="button" value="File name"/> <input type="button" value="Uploaded date"/>	 CPOC_AIMS_Video.mp4   Email Approve.msg  <input type="button" value="File name"/> <input type="button" value="Uploaded date"/>												
<input type="button" value="Generate SAP Template"/>														
<table border="1"> <thead> <tr> <th>INSPECTION DATE</th> <th>SAP NOTIFICATION HEADER DATA</th> </tr> </thead> <tbody> <tr> <td>Dec 30, 2021</td> <td><input type="button" value="Q"/></td> </tr> <tr> <td>Dec 29, 2021</td> <td><input type="button" value="Q"/></td> </tr> <tr> <td>Oct 1, 2021</td> <td><input type="button" value="Q"/></td> </tr> <tr> <td>Apr 13, 2016</td> <td><input type="button" value="Q"/></td> </tr> <tr> <td>Aug 22, 2012</td> <td><input type="button" value="Q"/></td> </tr> </tbody> </table>			INSPECTION DATE	SAP NOTIFICATION HEADER DATA	Dec 30, 2021	<input type="button" value="Q"/>	Dec 29, 2021	<input type="button" value="Q"/>	Oct 1, 2021	<input type="button" value="Q"/>	Apr 13, 2016	<input type="button" value="Q"/>	Aug 22, 2012	<input type="button" value="Q"/>
INSPECTION DATE	SAP NOTIFICATION HEADER DATA													
Dec 30, 2021	<input type="button" value="Q"/>													
Dec 29, 2021	<input type="button" value="Q"/>													
Oct 1, 2021	<input type="button" value="Q"/>													
Apr 13, 2016	<input type="button" value="Q"/>													
Aug 22, 2012	<input type="button" value="Q"/>													

- 1) At files storage, click  to upload a file.
- 2) Click  to preview file with default viewer program.
- 3) Click  to delete a file.
- 4) At the bottom page, click  in each inspection date to display SAP notification header data.
- 5) Click  to create SAP notification header data for each inspection date.



#### 4.2.14 Manage

This tab allows to add a new pressure vessel, edit info data, or even delete tags from the system.

The screenshot shows the 'PRESSURE VESSEL' section of the AIMS system. On the left, there's a sidebar with fields for 'Tag number' (CPOC-MDA-V-0111), 'Pressure vessel number' (V-0111), and 'Platform'. The main area is titled 'LIBRARY' and contains tabs for 'Construction Document', 'Inspection Report', and 'General Document'. A dropdown menu on the right offers options to '+ ADD VESSEL', 'EDIT INFO', and 'DELETE VESSEL'.

#### 4.2.15 Report Approval

The generated report shows the status for approval by authorized person. Thickness report, visual report and tube inspection report can be clicked to preview before rejection or approval. For every report approved, it is automatically signed at the bottom of the report.

The screenshot shows the 'INSPECTION HISTORY' section. It features a table with columns for 'INSPECTION INFORMATION', 'THICKNESS REPORT', 'THICKNESS APPROVAL', 'VISUAL AND TUBE REPORT', 'VISUAL APPROVAL', and 'FINAL REPORT'. Each row represents an inspection record with details like date, type, and specific report results (e.g., 'ULTRASONIC THICKNESS', 'VISUAL SUMMARY'). Buttons for 'APPROVE' and 'REJECT' are present in the 'THICKNESS APPROVAL' and 'VISUAL APPROVAL' sections.

In the inspection history record and cylinder inspection record of the pressure vessel module, report approval can be approved by an authorized person.

The screenshot shows the 'CYLINDER' section. It displays a table with columns for 'INSPECTION INFORMATION', 'REPORT', and 'APPROVAL'. The 'INSPECTION INFORMATION' column includes fields like 'Inspection date', 'Inspection type', 'Report number', and 'Inspector name'. The 'REPORT' column lists various tests like 'VISUAL CHECKLIST', 'HYDRO TEST', and 'FINAL REPORT'. The 'APPROVAL' column contains buttons for 'APPROVE' and 'REJECT', along with icons for search and delete.



### 1) Report status

- ⊖ → No report.
- ⊕ → The report has not been approved.
- ✓ → The report has been approved.

### 2) Previewing report

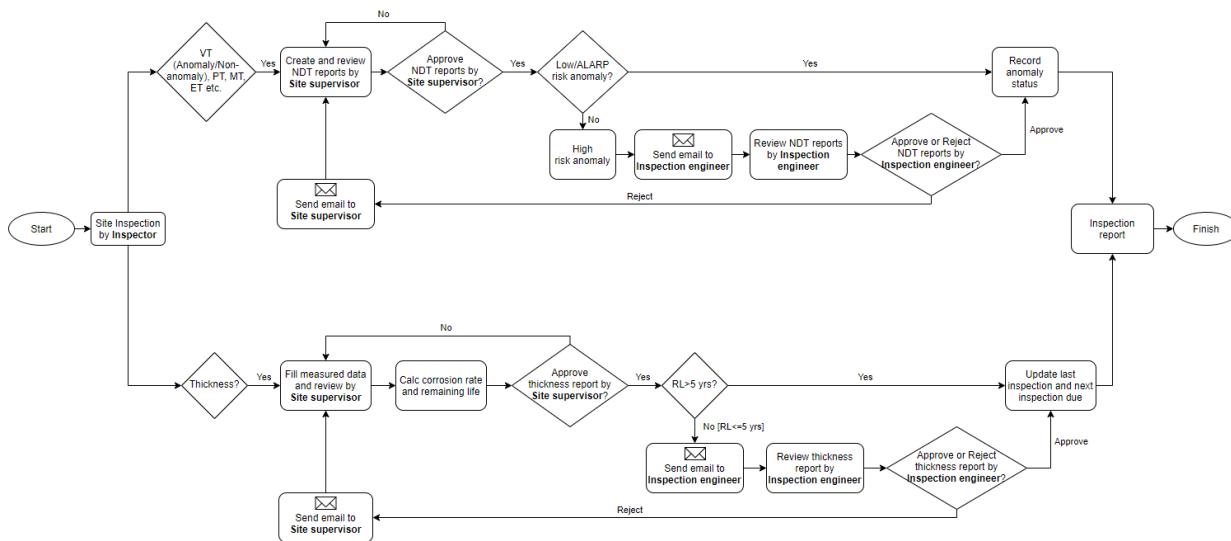
User can click **THICKNESS REPORT** / **VISUAL REPORT** / **TUBE REPORT**  
 or  (**FINAL REPORT**) to preview the report before approval.

### 3) Approval status

- APPROVE** → Waiting for approval by authorized person.
- REJECT** → Return the report for review again.
- APPROVED** → Approval is complete.

### 4) Approval step

Authorized person can click on approval status to sign the report.  
 The system will automatically send an email to the person involved  
 to take action. The flowchart below shows the process from report  
 creation to completed approval.



### Summary of approval authority

- Ultrasonic Thickness Report: **General Inspector**
- CML Marked-Up DWG Report: **General Inspector**
- Thickness Anomaly Report: **General Inspector** ⇒ **Inspection Engineer**
- Visual Checklist Report: **General Inspector**
- Visual Picture Log Report: **General Inspector**
- Visual Marked-Up DWG Report: **General Inspector**
- Visual Anomaly Report: **General Inspector** ⇒ **Inspection Engineer**
- Tube Inspection Report: **General Inspector**
- Summary Report: **General Inspector**



## 5) Sample of email from the system

[PRESSURE VESSEL] Reviewed, Visual inspection report of E-1000 is waiting for your review.

 aims@dacon-inspection.com  
To Settapon Santatiwongchai

Thu 06-Jan-22 4:51 PM

Dear Inspection Engineer,

The pressure vessel visual inspection report of **E-1000** Inspection date: 10/1/2021 has been reviewed by General Inspector with found anomaly (P3)..

Comment from General Inspector:  
1. Minor corrosion at flanges. 2. Severe corrosion at saddle.  
1. To paint the corroded area.

Please review in AIMS

Thank you very much.

[Pressure vessel number : E-1000](#)  

**Click to access this tag**

Best Regards,  
Mr. Dacon Inspection Technologies  
Site Supervisor

**AIMS**  
ASSET INTEGRITY MANAGEMENT SYSTEM



## 5. PIPELINE

### 5.1 Pipeline Dashboard

There are four sections in the pipeline dashboard: pipeline filter data, anomaly tracking, pipeline schematic and approval pending.

#### 5.1.1 Pipeline Filter Data

The pipeline dashboard page shows all of pipeline assessments. In addition, each tag number can be filtered for real-time monitoring on multiple conditions.

PIPELINE											APPROVAL PENDING	EXPORT EXCEL	ANOMALY TRACKING																								
TAG NO		Search tag no		STATUS		ALL		Filters																													
								<table border="1"> <tr> <td>P1</td><td>0</td><td>P2</td><td>1</td><td>P3</td><td>0</td><td>P4</td><td>1</td><td>P5</td><td>0</td><td>P6</td><td>8</td><td>NO INSPECT</td><td>TOTAL</td></tr> <tr> <td>RL≤0.25</td><td></td><td>0.25&lt;RL≤0.5</td><td>0.5&lt;RL≤1</td><td>1&lt;RL≤3</td><td></td><td>3&lt;RL≤5</td><td></td><td>RL&gt;5</td><td></td><td></td><td>5</td><td></td><td>15</td></tr> </table>		P1	0	P2	1	P3	0	P4	1	P5	0	P6	8	NO INSPECT	TOTAL	RL≤0.25		0.25<RL≤0.5	0.5<RL≤1	1<RL≤3		3<RL≤5		RL>5			5		15
P1	0	P2	1	P3	0	P4	1	P5	0	P6	8	NO INSPECT	TOTAL																								
RL≤0.25		0.25<RL≤0.5	0.5<RL≤1	1<RL≤3		3<RL≤5		RL>5			5		15																								
Total record: 15																																					
TAG NUMBER	Pipeline Name	Risk Ranking	Location	Pipeline / Riser Number	Type of Inspection	Due Inspection			Type of Inspection	Due Inspection			Section Status	Integrity Status																							
Last	Next	Status	Last	Next	Status	Last	Next	Status	Last	Next	Status	Section Status	Integrity Status																								
18-JKB-JKA	Gas Condensate Gathering Pipeline	ALARP	Outgoing riser above splash zone Outgoing riser subsea	18-GC-B31.8-06011 18-JKB-JKA	UT ROV	2020 2021	2021 2026	On due Not due	VT	2020 2025	2021 On due	P4																									
			Incoming riser subsea	18-GC-B31.8-02201	ROV	2021	2026	Not due	ROV	2020	2025	Not due	NO INSPECT	P4																							
			Incoming riser above splash zone	18-GC-B31.8-02201	UT	2020	2021	On due	VT	2020	2021	On due	P5																								
18-MDE-MDPP	Gas Condensate Gathering Pipeline	ALARP	Outgoing riser above splash zone Outgoing riser subsea	18-GC-B31.8-07209 18-MDE-MDPP	UT ROV	2021 2020	2022 2025	Not due Not due	VT	2021 2020	2022 2025	Not due Not due	P6																								
			Incoming riser subsea	18-GC-B31.8-1119	ROV				ROV	2020	2025	Not due	P6	P2																							
			Incoming riser above splash zone	18-GC-B31.8-1119	UT	2018	2019	Oversue	VT	2018 2019	2019 Oversue	P2																									
18-MDF-MDPP	Gas Condensate Gathering Pipeline		Outgoing riser above splash zone Outgoing riser subsea	18-GC-B31.8-09214 18-MDF-MDPP	UT ROV				VT				Tag List Table																								
			Pipeline	18-MDF-MDPP	ILI	2021	2026	Not due	ROV	2021	2026	Not due	NO INSPECT	P6																							
			Incoming riser subsea	18-GC-PL1-1458	ROV				ROV	2021	2022	Not due	P6																								
			Incoming riser above splash zone	18-GC-PL1-1458	UT	2021	2022	Not due	VT	2021	2022	Not due																									

P1	0	P2	1	P3	0	P4	1	P5	0	P6	8	NO INSPECT	TOTAL
RL≤0.25		0.25<RL≤0.5	0.5<RL≤1	1<RL≤3		3<RL≤5		RL>5			5		15

1) Click the status button to display the filtered data for each status.

STATUS	ALL
--------	-----

2) Select P-status from dropdown of STATUS to filtering.

3) Click EXPORT EXCEL to export excel file to the desktop. This file contains the data of each pipeline tag number that was filtered by filter tool.

TAG NO	Search tag no	🔍
--------	---------------	---

4) Enter word or full name of tag number, and then click 🔍 or press "ENTER" on keyboard for searching.

5) Click C to reset filter as a default.

TAG NO		Search tag no		STATUS		ALL		Filters																													
								<table border="1"> <tr> <td>P1</td><td>0</td><td>P2</td><td>1</td><td>P3</td><td>0</td><td>P4</td><td>1</td><td>P5</td><td>0</td><td>P6</td><td>8</td><td>NO INSPECT</td><td>TOTAL</td></tr> <tr> <td>RL≤0.25</td><td></td><td>0.25&lt;RL≤0.5</td><td>0.5&lt;RL≤1</td><td>1&lt;RL≤3</td><td></td><td>3&lt;RL≤5</td><td></td><td>RL&gt;5</td><td></td><td></td><td>5</td><td></td><td>15</td></tr> </table>		P1	0	P2	1	P3	0	P4	1	P5	0	P6	8	NO INSPECT	TOTAL	RL≤0.25		0.25<RL≤0.5	0.5<RL≤1	1<RL≤3		3<RL≤5		RL>5			5		15
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Total record: 15																																					
TAG NUMBER	Pipeline Name	Risk Ranking	Location	Pipeline / Riser Number	Type of Inspection	Due Inspection			Type of Inspection	Due Inspection			Section Status	Integrity Status																							
Last	Next	Status	Last	Next	Status	Last	Next	Status	Last	Next	Status	Section Status	Integrity Status																								
18-JKB-JKA	Gas Condensate Gathering Pipeline	ALARP	Outgoing riser above splash zone Outgoing riser subsea	18-GC-B31.8-06011 18-JKB-JKA	UT ROV	2020 2021	2021 2026	On due Not due	VT	2020 2025	2021 On due	P4																									
			Incoming riser subsea	18-GC-B31.8-02201	ROV	2021	2026	Not due	ROV	2020	2025	Not due	NO INSPECT	P4																							
			Incoming riser above splash zone	18-GC-B31.8-02201	UT	2020	2021	On due	VT	2020	2021	On due	P5																								



- 6) Click to access the tag number on pipeline module.

### 5.1.2 Anomaly Tracking

At the top right of pipeline dashboard page, click to access **ANOMALY TRACKING** section.

PIPELINE ANOMALY TRACKING												
TAG NUMBER	PIPELINE NAME	LOCATION	PIPELINE / RISER NUMBER	DUE VISUAL ANOMALY				DUE THICKNESS ANOMALY				ANOMALY PRIORITY
				TEMPORARY	STATUS	PERMANENT	STATUS	TEMPORARY	STATUS	PERMANENT	STATUS	
18-JKB-JKA	Gas Condensate Gathering Pipeline	Outgoing riser above splash zone	18-GC-B31.8-06011	2023	Not due	2022	On due					
		Outgoing riser subsea	18-JKB-JKA	2022	On due	2023	Not due				2022	
		Incoming riser subsea	18-GC-B31.8-02201								Completed	
		Incoming riser above splash zone										

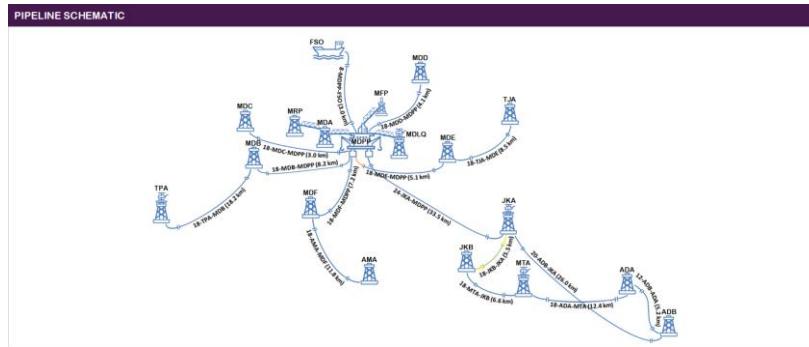
- 1) The table of pipeline anomaly tracking will be retrieved tag number from the total record that was filtered on the pipeline dashboard page to display its anomaly.

<b>TAG NO</b>	Search tag no	
---------------	---------------	--

- 2) Enter word or full name of tag number, and then click or press "ENTER" on keyboard for searching.  
 3) Click to access the tag number on pipeline module

### 5.1.3 Pipeline Schematic

Pipeline schematic shows the overall platform with pipeline network. Each route from one platform to another platform will represent the integrity status of each section, which consists of outgoing riser, pipeline and incoming riser.



### 5.1.4 Approval Pending

At the top of pipeline dashboard page, click to access **APPROVAL PENDING** section. Approval pending contains a list of reports that are pending approval from authorized persons.



## OUTGOING TOPSIDE RISER APPROVAL PENDING

◀ BACK

VISUAL	THICKNESS																				
<input style="width: 100px; height: 20px; border: none; border-bottom: 1px solid black; margin-bottom: 5px;" type="text"/> LINE NO <input style="width: 100px; height: 20px; border: none; border-bottom: 1px solid black;" type="button" value="Search line no"/>	<input style="width: 100px; height: 20px; border: none; border-bottom: 1px solid black; margin-bottom: 5px;" type="button" value="START DATE"/> <span style="font-size: 2em; margin-right: 10px;">CALENDAR</span> <input style="width: 100px; height: 20px; border: none; border-bottom: 1px solid black;" type="button" value="END DATE"/> <span style="font-size: 2em; margin-left: 10px;">CALENDAR</span>																				
<input style="width: 100px; height: 20px; background-color: #000080; color: white; border: none;" type="button" value="SEARCH"/>																					
Total record: 5169																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">LINE NUMBER</th> <th style="width: 20%;">INSPECTION DATE</th> <th style="width: 20%;">INSPECTION TYPE</th> <th style="width: 20%;">APPROVAL BY GENERAL INSPECTOR</th> <th style="width: 20%;">APPROVAL BY INSPECTION ENGINEER</th> <th style="width: 20%;">ANOMALY STATUS</th> <th style="width: 20%;">APPROVAL STATUS</th> </tr> <tr> <th>NAME</th> <th>DATE</th> <th></th> <th>NAME</th> <th>DATE</th> <th>N</th> <th>Waiting for approval by General Inspector</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">13 Mar 2022</td> <td style="text-align: center;">Routine</td> <td></td> <td></td> <td></td> <td style="text-align: center;">N</td> <td style="text-align: center;">Waiting for approval by General Inspector</td> </tr> </tbody> </table>	LINE NUMBER	INSPECTION DATE	INSPECTION TYPE	APPROVAL BY GENERAL INSPECTOR	APPROVAL BY INSPECTION ENGINEER	ANOMALY STATUS	APPROVAL STATUS	NAME	DATE		NAME	DATE	N	Waiting for approval by General Inspector	13 Mar 2022	Routine				N	Waiting for approval by General Inspector
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NAME	DATE		NAME	DATE	N	Waiting for approval by General Inspector															
13 Mar 2022	Routine				N	Waiting for approval by General Inspector															

- 1) The table of approval pending is divided into two parts, visual and thickness. It depends on the type of inspection in each section.

- 2) Enter word or full name of tag number, and then click  or press "ENTER" on keyboard for searching.

- 3) Select start date and end date, then click **SEARCH** button for filtering
- 4) Click  to access flowline module for approval tasks.



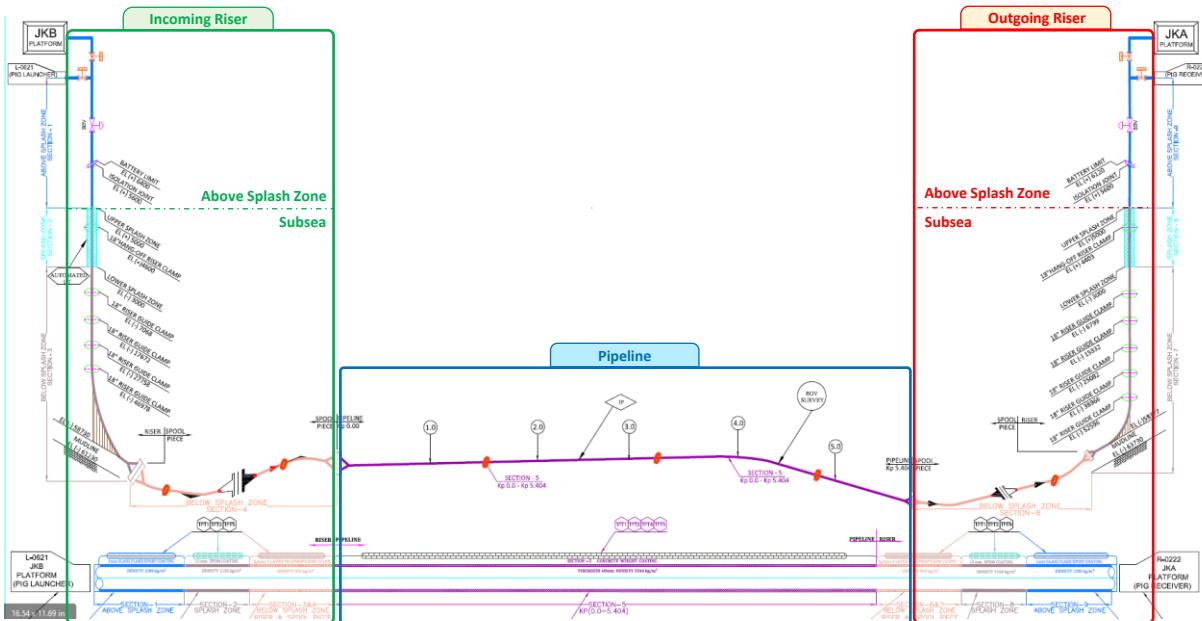
## 5.2 Pipeline Management System

Pipeline module contains the data of design, operating, inspection and RBI, moreover, there are library that collect uploaded files. General information of each line is on the left side and menu tabs are on the top of page.

The screenshot shows the AIMS Pipeline Management System interface. At the top, there are menu tabs: DASHBOARD, HISTORY INFO, OUTGOING RISER, PIPELINE, INCOMING RISER, RBI, and MANAGE. The main area is titled "INSPECTION HISTORY". It displays two sections: "OUTGOING RISER ABOVE SPLASH ZONE INSPECTION HISTORY" and "OUTGOING RISER SUBSEA INSPECTION HISTORY". Each section has a table with columns for INSPECTION INFORMATION, THICKNESS REPORT, THICKNESS APPROVAL, VISUAL REPORT, and VISUAL APPROVAL. The tables show inspection details like date, type, report number, and WO number, along with status (Approved or Pending) and approval/rejection buttons. There are also "FINAL REPORT" buttons and icons for visual checklist, visual anomaly, visual picture log, and visual marked-up ISO.

There are three sections to the pipeline management system as follows.

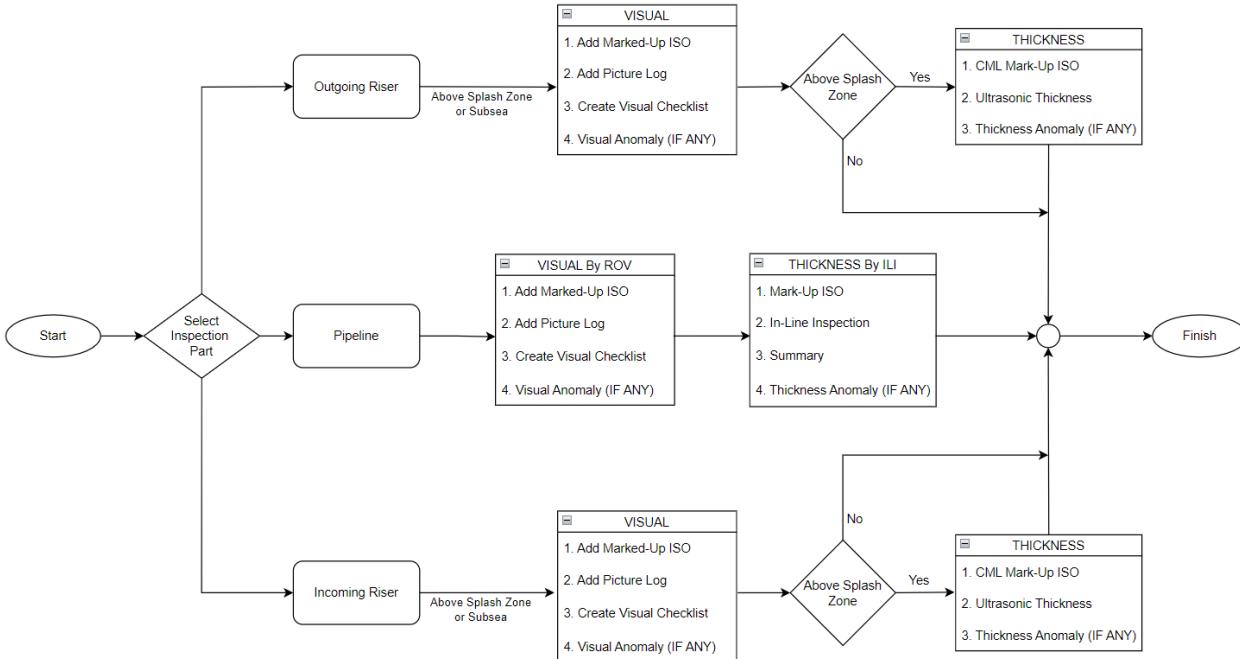
- 1) **Incoming Riser:** Consists of above splash zone and subsea, which are on the side of the pig launcher.
- 2) **Outgoing Riser:** Consists of above splash zone and subsea, which are on the side of the pig receiver.
- 3) **Pipeline:**





## 5.2.1 Overview of the Inspection Report Creation

Pipeline inspection report generation is divided into three main sections:  
**Outgoing Riser, Incoming Riser and Pipeline.**



- **Outgoing and Incoming riser** inspection campaigns for “**above splash zone (ASZ)**” section may consist of the following reports.
  - 1) Visual Marked-Up ISO ⇒ 5.2.3
  - 2) Visual Picture Log ⇒ 5.2.4
  - 3) Visual Checklist ⇒ 5.2.5
  - 4) Visual Anomaly (If there is an anomaly) ⇒ 5.2.6
  - 5) CML Marked-Up ISO ⇒ 5.2.7
  - 6) Riser Thickness ⇒ 5.2.8
  - 7) Riser Thickness Anomaly (If there is an anomaly) ⇒ 5.2.9
- **Outgoing and Incoming riser** inspection campaigns for “**subsea**” section may consist of the following reports.
  - 1) Visual Marked-Up ISO ⇒ 5.2.3
  - 2) Visual Picture Log ⇒ 5.2.4
  - 3) Visual Checklist ⇒ 5.2.5
  - 4) Visual Anomaly (If there is an anomaly) ⇒ 5.2.6
- **Pipeline** inspection campaigns may consist of the following reports.
  - 1) Visual Marked-Up ISO ⇒ 5.2.3
  - 2) Visual Picture Log ⇒ 5.2.4
  - 3) Visual Checklist ⇒ 5.2.5
  - 4) Visual Anomaly (If there is an anomaly) ⇒ 5.2.6
  - 5) Pipeline Thickness ⇒ 5.2.10



- 6) Pipeline List of Thickness Anomalies (If there is an anomaly)  
⇒ 5.2.11
- 7) Pipeline Thickness Anomaly (If there is an anomaly) ⇒ 5.2.12
- 8) Pipeline Thickness Summary (Automatically generated) ⇒ 5.2.13

### 5.2.2 Inspection History

On **HISTORY INFO** tab, inspection history is divided into subcategories based on the inspection method used. Therefore, it is important to create a valid inspection campaign record for each section first. Both **OUTGOING RISER** and **INCOMING RISER** sections have the same reporting process, but there are some differences from the **Pipeline** section.

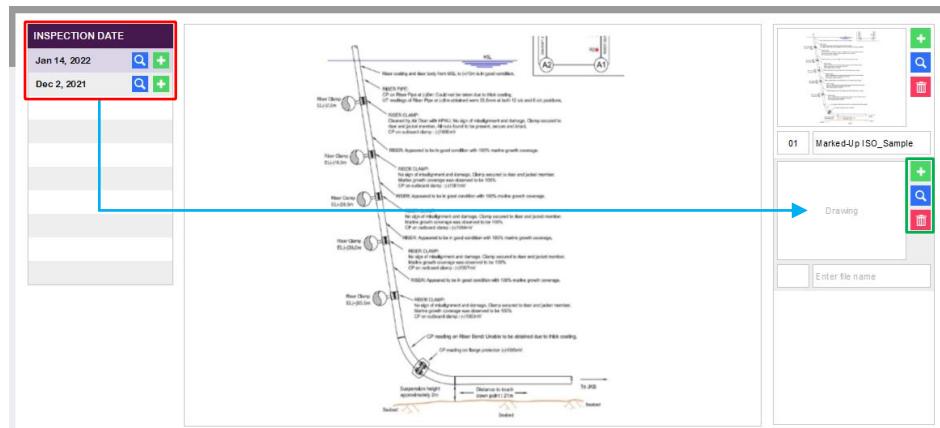
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Inspection type: Routine			VISUAL PICTURE LOG ✓	CATHODIC PROTECTION ✓																																																																																					
Report number: Riser-Subsea-001	THICKNESS ANOMALY ✓		VISUAL MARKED-UP ISO ✓																																																																																						
WO number: WO-45612	THICKNESS REPORT	APPROVE REJECT	VISUAL REPORT		APPROVE REJECT																																																																																				
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- 1) Select pipeline section on **section tabs (OUTGOING RISER, PIPELINE or INCOMING RISER)** to create the inspection campaign.
- 2) Consider the riser zones that will be added a record for outgoing and/or incoming (Above splash zone or Subsea zone).
- 3) Click **+ ADD INSPECTION RECORD** and input data in the fields.
- 4) Click **SUBMIT** to generate a new inspection campaign record.

### 5.2.3 Visual Marked-Up ISO

Visual Marked-Up ISO is a part of several zones, such as riser above splash zone, riser subsea and pipeline. Marked-up ISO contained in this section will be used as part of the final visual report.



- 1) Click **🔍** in each inspection date at the top left to display mark-up ISO of each visual inspection campaign.
- 2) Click **+** to create a new container for upload drawing.
- 3) **Status of VISUAL MARKED-UP ISO report** at the latest inspection history change to active (On HISTORY INFO tab).
- 4) At the container, click **+** to upload drawing.
- 5) Click **🔍** to preview file with default image viewer program.
- 6) Click **刪除** to delete a file.



### 5.2.4 Visual Picture Log

Visual Picture Log is a part of report in visual inspection for all zone of pipeline (Riser above splash zone, riser subsea and pipeline). Visual inspection findings can create a visual picture log for uploading and inputting the data into the form.

<b>INSPECTION DATE</b> Jan 14, 2022   Dec 2, 2021  	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Outgoing riser number: 18-GC-B31.8-06011</td> <td style="width: 33%;">Damage mechanism: Select damage mechanism</td> <td style="width: 33%; text-align: right;"></td> </tr> <tr> <td>Inspection date: Jan 14, 2022</td> <td>Main component: Select main component</td> <td></td> </tr> <tr> <td>Anomaly point: Enter anomaly point</td> <td>Wo number:</td> <td>Severity: </td> </tr> <tr> <td colspan="3" style="text-align: center; padding: 10px;">  Overview       Close-up 1       Close-up 2         </td> </tr> <tr> <td colspan="3" style="text-align: center; padding: 10px;">  Findings       Recommendation         </td> </tr> <tr> <td colspan="3" style="text-align: center; padding: 10px;">           Enter message ...      Enter message ...         </td> </tr> <tr> <td colspan="3" style="text-align: center; padding: 10px;">  </td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Outgoing riser number: 18-GC-B31.8-06011</td> <td style="width: 33%;">Damage mechanism: Ext-No anomaly found</td> <td style="width: 33%; text-align: right;"></td> </tr> <tr> <td>Inspection date: Jan 14, 2022</td> <td>Main component: Pipe</td> <td></td> </tr> <tr> <td>Anomaly point: 3-3</td> <td>Wo number:</td> <td>Severity: </td> </tr> <tr> <td colspan="3" style="text-align: center; padding: 10px;">  Close-up 1       Close-up 2         </td> </tr> <tr> <td colspan="3" style="text-align: center; padding: 10px;">  Findings       Recommendation         </td> </tr> <tr> <td colspan="3" style="text-align: center; padding: 10px;">           There are variables of Lorem ipsum available, but the majority have suffered alteration in some form, by injected humor, or randomised words which don't look even slightly believable.      Monitoring in next 3 months.         </td> </tr> <tr> <td colspan="3" style="text-align: center; padding: 10px;">  </td> </tr> </table>	Outgoing riser number: 18-GC-B31.8-06011	Damage mechanism: Select damage mechanism		Inspection date: Jan 14, 2022	Main component: Select main component		Anomaly point: Enter anomaly point	Wo number:	Severity: 	 Overview  Close-up 1  Close-up 2			 Findings  Recommendation			Enter message ...      Enter message ...						Outgoing riser number: 18-GC-B31.8-06011	Damage mechanism: Ext-No anomaly found		Inspection date: Jan 14, 2022	Main component: Pipe		Anomaly point: 3-3	Wo number:	Severity: 	 Close-up 1  Close-up 2			 Findings  Recommendation			There are variables of Lorem ipsum available, but the majority have suffered alteration in some form, by injected humor, or randomised words which don't look even slightly believable.      Monitoring in next 3 months.					
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- 1) Click  in each inspection date at the top left to display the picture log record of each visual inspection campaign.
- 2) Click  to create a new form to be part of visual inspection report.
- 3) **Status of VISUAL PICTURE LOG report** at the latest inspection history change to active (On HISTORY INFO tab).

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- 4) Enter anomaly point, select the component part about riser or pipeline and damage mechanism that occur on its.
- 5) Click  to upload picture of overview or close-up view from inspection findings.
- 6) Click  to preview file with default image viewer program.
- 7) Click  to delete a picture.
- 8) Enter findings and recommendation of inspection in text box.
- 9) Select severity status for the point of anomaly.

## 5.2.5 Visual Checklist

Visual Checklist of each pipeline section has different details as below.

### 5.2.5.1 Riser Above Splash Zone Checklist

Outgoing and incoming of riser above splash zone will be evaluated the damage mechanism of each component for visual inspection findings.

INSPECTION DATE		OUTGOING RISER ABOVE SPLASH ZONE INFORMATION			CoF = 4	P2	HIGH	X
Jan 14, 2022		Tag number:	18-GC-B318-06011-18-JKB-JKA-18-GC-B31 o_00004	Service:	Full Well Stream (Sour multiphase fluid)			
Apr 8, 2020		Outgoing riser number:	18-GC-B318-06011	Material spec:	API 5L X65 - (Sour Service) Carbon Steel			
Mar 2, 2020		Pipeline route drawing:	B17-2-JKB-PL-032-0001	Design data:	1015.26	psi		*C
Nov 12, 2018		Drawing number:	B17-2-JKB-PR-005-0004	Operating data:		psi		*C
Jul 22, 2016		DAMAGE MECHANISM CHECKLIST						
		1 Crack	Insignificant	P5	Note:			
		2 Leakage or Seepage	Minor	P4	Note:			
		3 General corrosion	Insignificant	P5	Note:			
		4 Pitting or Pinhole	Moderate	P3	Note:			
		5 Corrosion under insulation (CUI)	Not found	P6	Note:			
		6 Corrosion under support (CUS)	Moderate	P3	Note:			
		7 Vibration	Major	P2	Note:			
		8 Misalignment	Not found	P6	Note:			
		9 Others <input type="text" value="Enter value"/>			Note:			
COMPONENT CHECKLIST								
1 Pipe spool		Insignificant	P5	Note:				
2 Small bore / Dead leg		Insignificant	P5	Note:				
3 Pipe support (Shoes, Members, Hanger, Clamp, U-Bolt)		Not found	P6	Note:				
4 Spring support		Minor	P4	Note:				
5 Flange connection (Flange, Bolt, Nut, Gasket)		Insignificant	P5	Note:				
6 Fittings (Elbow, Tee, Reducers, Cap)				Note:				
7 Threaded and Socket-welded Fittings (Coupling, Union, Cap, Tee)		N/A		Note:				
8 Insulation (Jacket, Banding, Seal, Clamp)		Not found		Note:				
9 Valves (PRD, Choke, Control, On-off, Check, Ball, Butterfly)		Insignificant		Note:				
10 Others <input type="text" value="Enter value"/>		Minor		Note:				
VISUAL INSPECTION FINDINGS								
<input type="text" value="Enter message..."/>								

- 1) Click  in each inspection date to display the checklist record of each visual inspection campaign.
- 2) Click  to create a new checklist to be part of visual inspection report.
- 3) **Status of VISUAL CHECKLIST report** at the latest inspection history change to active (On HISTORY INFO tab).



- 4) Select status and take note for severity of damage mechanism or other finding that was inspected.
- 5) The highest severity status (P1-P6) will represent the status of visual checklist on the top right.

### 5.2.5.2 Riser Subsea Checklist

Outgoing and incoming of riser subsea will be evaluated the damage mechanism of each component same as the riser above splash zone checklist. In addition, Cathodic Protection will be recorded at the bottom of page.

INSPECTION DATE		OUTGOING RISER SUBSEA INFORMATION				CoF = 4	P4	ALAR-P-2	
Jan 14, 2022		Tag number:	18-GC-B31.8-06011-18-JKB-JKA-18-GC-B31. 9.02.201	Service:	Full Well Stream (Sour multiphase fluid)				
Dec 2, 2021		Outgoing riser number:	18-GC-B31.8-06011	Material spec:	API 5L X65 - (Sour Service) Carbon Steel				
		Pipeline route drawing:	B17-2-JKB-PL-032-0001	Design data:	1015.26	psi			
		Drawing number:	B17-2-JKB-PR-005-0004	Operating data:		psi			
DAMAGE MECHANISM CHECKLIST									
1	Physical damage		Not found	P6	Note:				
2	Corrosion		Insignificant	P5	Note:				
3	Leakage		Insignificant	P5	Note:				
4	Others <input type="text" value="Enter value"/>		Not found	P6	Note:				
COMPONENT CHECKLIST									
1	Riser body		Not found	P6	Note:				
2	Riser clamps		Minor	P4	Note:				
3	Riser bend		Not found	P6	Note:				
4	Flange connection				Note:				
5	Others <input type="text" value="Enter value"/>				Note:				
VISUAL INSPECTION FINDINGS									
<input type="text" value="Enter message ..."/>									
RECOMMENDATION									
<input type="text" value="Enter message ..."/>									
CATHODIC PROTECTION									
Depth	Component Type	Component ID	CP Value (mV)	UT Measurement	Integrity Status	INSPECTION DATE Jan 14, 2022			
EL(-)7m	Riser Support	R1-CL-2	1012	18.60	18.70	P5			

- 1) Click in each inspection date to display the checklist record of each visual inspection campaign.
- 2) Click to create a cathodic protection anomaly record and input data in the fields.
- 3) **Status of VISUAL CHECKLIST report** at the latest inspection history change to active (On HISTORY INFO tab).



- 4) Click  on a row of each record, then click **EDIT** to edit the cathodic protection data.
- 5) Click **DELETE** to delete the data row.

CATHODIC PROTECTION								INSPECTION DATE	Jan 14, 2022	 	
Depth	Component Type	Component ID	CP Value (mV)	UT Measurement	12 O/C	3 O/C	6 O/C	9 O/C	Integrity Status	Note	  
EL(-)7m	Riser Support	R1-CL-2	1012	19.60		18.70			P5		

- 6) In the case that there is a large amount of data to input in the Cathodic protection part, either Depth, Component Type, Component ID, CP Value, UT-Measurement, Integrity Status or Note. Users can use the import function to help import data at once.
- 7) Click **DOWNLOAD FORM** to download excel template to the desktop.
- 8) Fill in the data to excel template and click **IMPORT FORM** to upload import file.

### 5.2.5.3 Pipeline Checklist

The visual inspection of pipeline is divided into a checklist tab and five topic tabs, as shown below.

#### 1) Checklist

On **CHECKLIST** tab, select the severity of damage mechanism of each component, which step is the same as the riser above splash zone checklist.

PIPELINE CHECKLIST																																																																																			
INSPECTION DATE	Sep 11, 2020	 	CHECKLIST	CATHODIC	ANODE																																																																														
			FRLANGE	FREESPAN	BURIAL																																																																														
<b>Pipeline Information</b> <table border="1"> <tr> <td>Tag number:</td> <td>18-GC-B31.8-060118-JKB-JKA-18-GC-B31. 2.2020x</td> <td>Service:</td> <td colspan="3">Full Well Stream (Sour multiphase fluid)</td> </tr> <tr> <td>Pipeline number:</td> <td>18-JKB-JKA</td> <td>Material spec:</td> <td>API 5L X65 - (Sour Service)</td> <td colspan="2">Carbon Steel</td> </tr> <tr> <td>Pipeline name:</td> <td>Gas Condensate Gathering Pipeline</td> <td>Design data:</td> <td>1015.26</td> <td>psi</td> <td>°C</td> </tr> <tr> <td>Pipeline route drawing:</td> <td>B172-JKB-PL-032-0001</td> <td>Operating data:</td> <td></td> <td>psi</td> <td>°C</td> </tr> </table>						Tag number:	18-GC-B31.8-060118-JKB-JKA-18-GC-B31. 2.2020x	Service:	Full Well Stream (Sour multiphase fluid)			Pipeline number:	18-JKB-JKA	Material spec:	API 5L X65 - (Sour Service)	Carbon Steel		Pipeline name:	Gas Condensate Gathering Pipeline	Design data:	1015.26	psi	°C	Pipeline route drawing:	B172-JKB-PL-032-0001	Operating data:		psi	°C																																																						
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## 2) Cathodic Protection

- On **CATHODIC tab**, click  to create a cathodic protection anomaly record and input data in the fields.
- In the case that there is a large amount of data to input in the cathodic protection part, Users can use the import function to help import data at once.

CHECKLIST	CATHODIC	ANODE	FLANGE	FREESPACE	BURIAL
<b>CATHODIC PROTECTION</b>					
No.	KP	Anode/Steel	CP Value (mV)	Integrity Status	Note
1	0.127 & 0.272	Anode	(-996	P6	
2	14.663 & 2.463	Anode	(-1028	P6	
3	0.001	Steel	(-983	P6	
4	5.484	Steel	(-1012	P6	

- Click **DOWNLOAD FORM** to download excel template to desktop.
- Fill in the data to excel template and click **IMPORT FORM** to upload import file.
- Click  on a row of each record, then click **EDIT** to edit the cathodic protection data.

## 3) Anode Inspection

- On **ANODE tab**, click  to create an anode inspection record and input data in the fields.
- In the case that there is a large amount of data to input in the anode part, Users can use the import function to help import data at once.

CHECKLIST	CATHODIC	ANODE	FLANGE	FREESPACE	BURIAL
<b>ANODE</b>					
No.	KP	CP Value (mV)	Field Gradient ( $\mu$ V/cm)	Depletion (%)	Integrity Status
1	0.018	-997	-133	Depletion<25	P6
2	0.092	-1001	-174	Depletion<25	P6
3	0.127	-996	-189	Depletion<25	P6
4	0.272	-996	-142	Depletion<25	P6

- Click **DOWNLOAD FORM** to download excel template to desktop.
- Fill in the data to excel template and click **IMPORT FORM** to upload import file.



- Click  on a row of each record, then click **EDIT** to edit the anode data.

#### 4) Flange Connection

- On **FLANGE tab**, click  to create a flange record and input data in the fields.
- In the case that there is a large amount of data to input in the flange connection part, Users can use the import function to help import data at once.

CHECKLIST	CATHODIC	ANODE	<b>FLANGE</b>	FREESPAWN	BURIAL
<b>FLANGE CONNECTION</b>					
No.	KP	CP Value (mV)	Integrity Status	Note	
1	-0.084	-1004	P6	Restricted access for ROV to obtain CP on both flange side due to flange protector	 
2	0.001	-983	P6	Restricted access for ROV to obtain CP on both flange side due to flange protector	 
3	5.431	-987	P6	Restricted access for ROV to obtain CP on both flange side due to flange protector	 

- Click **DOWNLOAD FORM** to download excel template to desktop.
- Fill in the data to excel template and click **IMPORT FORM** to upload import file.
- Click  on a row of each record, then click **EDIT** to edit the flange connection data.

#### 5) Freespan

- On **FREESPAWN tab**, click  to create a freespan record and input data in the fields.
- In the case that there is a large amount of data to input in the freespan part, Users can use the import function to help import data at once.

CHECKLIST	CATHODIC	ANODE	FLANGE	<b>FREESPAWN</b>	BURIAL
<b>FREESPAWN</b>					
No.	Start Span (KP)	End Span (KP)	Span Length (m)	Span Height (m)	Integrity Status
1	-0.09	-0.08	5	1.43	P6
2	0.24	0.25	6	.17	P6
3	2.45	2.46	12	.34	P6
4	3.27	3.29	27	.64	P6
				A021	

- Click **DOWNLOAD FORM** to download excel template to desktop.
- Fill in the data to excel template and click **IMPORT FORM** to upload import file.



- Click  on a row of each record, then click **EDIT** to edit the freespan data.

## 6) Burial

- On **BURIAL tab**, click  to create a burial record and input data in the fields.
- In the case that there is a large amount of data to input in the burial part, Users can use the import function to help import data at once.

CHECKLIST	CATHODIC	ANODE	FLANGE	FREESPAN	<b>BURIAL</b>	INSPECTION DATE	Sep 11, 2020		
<b>BURIAL</b>									
No.	Start Burial (KP)	End Burial (KP)	Burial Length (m)	Integrity Status	Note			IMPORT CML	
1	-0.05	-0.04	19	P6	A018 Rev 01			<b>DOWNLOAD FORM</b>	<b>IMPORT FORM</b>
2	-0.03	-0.00	31	P6	A018 Rev 01				
3	0.00	0.02	18	P6	A018 Rev 01				

- Click **DOWNLOAD FORM** to download excel template to desktop.
- Fill in the data to excel template and click **IMPORT FORM** to upload import file.
- Click  on a row of each record, then click **EDIT** to edit the burial data



## 5.2.6 Visual Anomaly

For all pipeline zones, Visual Anomaly uses the same report format to record anomaly corrective maintenance.

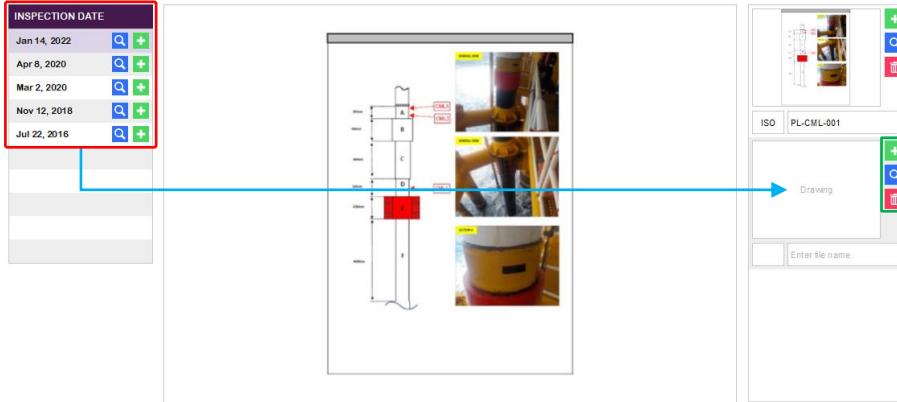
INSPECTION DATE		OUTGOING RISER SUBSEA INFORMATION			X
Nov 4, 2017		Tag number: 18-GC-B31.8-06011-18-JKB-JKA-18-GC-B31 o_00004	Service: Full Well Stream (Sour multiphase fluid)		
		Outgoing riser number: 18-GC-B31.8-06011	Material spec: API 5L X65 - (Sour Service)	Carbon Steel	
		Pipeline route drawing: B17-2-JKB-PL-032-0001	Design data: 1015.26	psi	*C
		Drawing number: B17-2-JKB-PR-005-0004	Operating data:	psi	*C
INSPECTION SUMMARY					
Debris at Riser No. R1, Telescopic Clamp at (-) 16.5m, obstructing contact CP measurement at riser damp.					
RECOMMENDATION BY GENERAL INSPECTOR (API INSPECTOR)					
Enter message ...					
RECOMMENDATION BY INSPECTION ENGINEER					
Enter message ...					
ANOMALY CORRECTIVE MAINTENANCE					
Temporary repair: (Due date)		Select date	Select status	Select repair type	
Description:					
Enter message ...					
Permanent repair: (Due date)		Jan 1, 2023	Pending	Others	
Description:					
Due date is required Inspection Engineer to finalize. This due date's purpose is to display anomaly record.					
Monitoring: (Due date)		Select date			
Description:					
Enter message ...					

- 1) Click in each inspection date to display the visual anomaly record of each visual inspection campaign.
- 2) Click to create a new record to be part of visual inspection report.
- 3) **Status of VISUAL ANOMALY report** at the inspection history change to active (On HISTORY INFO tab).
- 4) Take note for inspection summary and recommendation.
- 5) **Anomaly Corrective Maintenance** of visual anomaly can specify the repair type, comment, due date for action and status update of maintenance.
- 6) If the repair status is **Completed**, the visual anomaly status will be **P6**, which will be used to consider the final integrity status.



### 5.2.7 CML Marked-Up ISO

The thickness part in each section has the feature for uploading images of CML marked-up ISO.



- 1) Click in each inspection date at the top left to display CML marked-up of each thickness inspection campaign.
- 2) Click to create a new container for upload drawing.
- 3) **Status of CML MARKED-UP ISO report** at the inspection history change to active (On HISTORY INFO tab).
- 4) At the container, click to upload drawing.
- 5) Click to preview file with default image viewer program.
- 6) Click to delete a file.

### 5.2.8 Riser Thickness

Incoming and outgoing of riser above splash zone have thickness inspection to monitor potential risks. This part consists of the following four components.

- **Info of Riser Section:** Detail of riser section
- **Actual Thickness Record:** Record the actual thickness from inspection
- **CML Test Point Data Table:** The table shows the data of each CML test point
- **Probe data:** Record info of UT equipment and probe



EDIT RISER DATA			+ ADD SECTION		
Outgoing riser number:	18-GC-B31.8-06011			Max Operating temp ('c):	90.00
Design life (yrs):	25.00			Nominal outer dia (mm):	469.80
CA (mm):	12.00			Nominal internal dia (mm):	428.60
PWHT:	Yes			Nominal wall thickness (mm):	20.60
Design temp ('c):	135.00			Min required thickness (mm):	4.10
Operating pressure:	642.52 psi			44.30 barg	
MAOP:	1015.26 psi			70.00 barg	
Design corrosion:				mils	mm/yr

Section	Nominal Outer Dia (mm)	Nominal Internal Dia (mm)	Nominal Wall Thickness (mm)	As per ASME B31.8 Thickness Required = (Pd)/2(Se)	
1	469.80	428.60	20.60	5.10	
2	469.80	428.60	20.60	5.10	
3	469.80	428.60	20.60	5.10	
4	469.80	428.60	20.60	5.10	

CML			TP		UTM						
CML No	CML Desc	tnom (mm)	tpres (mm)	TP Desc	CML-TP	TP Desc	Inspection Date	tactual (mm)	RL (yrs)	Integrity Status	Status Criteria
1	Elbow	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6
2	Elbow	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6
3	Elbow	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6
4	Pipe	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6
5	Pipe	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6
6	Pipe	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6
7	Pipe	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6
8	Pipe	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6
9	Pipe	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6
10	Pipe	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6

CML Test Point Data Table															
CML-TP	CML Desc	TP Desc	MPS (psi)	Inservice Date	Issue (mm)	Ins (mm)	First Date / Thk (mm)	Prev Date / Thk (mm)	Last Date / Thk (mm)	ST_CR (mm/yr)	LT_CR (mm/yr)	RL (yrs)	Integrity Status	Status Criteria	Tsk Trend
1-1	Elbow	12	18	Jan 1, 2013	20.60	5.10									
1-2	Elbow	3	18	Jan 1, 2013	20.60	5.10									
1-3	Elbow	6	18	Jan 1, 2013	20.60	5.10									
1-4	Elbow	9	18	Jan 1, 2013	20.60	5.10									
2-1	Elbow	12	18	Jan 1, 2013	20.60	5.10									
2-2	Elbow	3	18	Jan 1, 2013	20.60	5.10									
2-3	Elbow	6	18	Jan 1, 2013	20.60	5.10									
2-4	Elbow	9	18	Jan 1, 2013	20.60	5.10									
3-1	Elbow	12	18	Jan 1, 2013	20.60	5.10									
3-2	Elbow	3	18	Jan 1, 2013	20.60	5.10									
3-3	Elbow	6	18	Jan 1, 2013	20.60	5.10									
3-4	Elbow	9	18	Jan 1, 2013	20.60	5.10									
4-1	Pipe	12	18	Jan 1, 2013	20.60	5.10									
4-2	Pipe	3	18	Jan 1, 2013	20.60	5.10									
4-3	Pipe	6	18	Jan 1, 2013	20.60	5.10									

INSPECTION DATE			UT EQUIPMENT DATA			PROBE DATA		
Sep 21, 2021	UT equipment ID:	OLYMPUS CTG10 LTC	UT equipment SN:	CTG10-00000000000000000000000000000000	Probe angle:	0°	Calibration date:	
Jan 1, 2001	UT equipment ID:	OLYMPUS CTG10 LTC	UT equipment SN:	CTG10-00000000000000000000000000000000	Probe angle:	0°	Calibration date:	
Jan 1, 2017	Calibration tool:	CTGP-WTGT	Calibration block SN:	10101-1	Block (mm):	7.0	Frequency (MHz):	5
Jan 1, 2001	Calibration tool:	Calibration block SN:	10101-1	Block (mm):	7.0	Calibration range (mm):	0.10	
	Test temperature:	AMBIENT				Signal range:		

CML			TP		UTM							
CML No	CML Desc	tnom (mm)	tpres (mm)	TP Desc	CML-TP	CML Desc	TP Desc	Inspection Date	tactual (mm)	RL (yrs)	Integrity Status	Status Criteria
1	Elbow	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6	
2	Elbow	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6	
3	Elbow	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6	
4	Pipe	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6	
5	Pipe	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6	
6	Pipe	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6	
7	Pipe	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6	
8	Pipe	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6	
9	Pipe	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6	
10	Pipe	20.6	5.1	5-1	12	5-2	3	5-3	6	5-4	P6	

## 1) Info of Riser Section

EDIT RISER DATA			+ ADD SECTION		CML Test Point Data Table		
Outgoing riser number:	18-GC-B31.8-06011			Max Operating temp ('c):	90.00		
Design life (yrs):	25.00			Nominal outer dia (mm):	469.80		
CA (mm):	12.00			Nominal internal dia (mm):	428.60		
PWHT:	Yes			Nominal wall thickness (mm):	20.60		
Design temp ('c):	135.00			Min required thickness (mm):	4.96		
Operating pressure:	642.52 psi			44.30 barg			
MAOP:	1015.26 psi			70.00 barg			
Design corrosion:				mils	mm/yr		

- Click **EDIT RISER DATA** to edit riser data.
- Click **+ ADD SECTION** to add riser section.
- Click **■** on section part, then click **EDIT** to edit section data.
- Click **DELETE** to delete a section data.

## 2) Actual Thickness Record

CML			TP		UTM		
CML No	CML Desc	tnom (mm)	tpres (mm)	TP Desc	CML-TP	CML Desc	TP Desc
1	Elbow	20.6	5.1	5-1	12	5-2	3
2	Elbow	20.6	5.1	5-1	12	5-2	3
3	Elbow	20.6	5.1	5-1	12	5-2	3
4	Pipe	20.6	5.1	5-1	12	5-2	3
5	Pipe	20.6	5.1	5-1	12	5-2	3
6	Pipe	20.6	5.1	5-1	12	5-2	3
7	Pipe	20.6	5.1	5-1	12	5-2	3
8	Pipe	20.6	5.1	5-1	12	5-2	3
9	Pipe	20.6	5.1	5-1	12	5-2	3
10	Pipe	20.6	5.1	5-1	12	5-2	3



- Click **DOWNLOAD INSPECT FORM** to generate form for carrying to take notes thickness value by inspector.

No	Serial No.	Chk. Desc.	Top Chkd.	NPS (mm)	Probe Spec.	IDN	IN-SERVICE DATA		PROBE DATA											
							In-service date	Thickness (mm)	Min. thick.	Max. thick.	Last date	Layer (mm)	UT Chkd.	UT Chkd.	%L. (mm)	Calibration date	Calibration range (mm)			
1	1	Elbow	12	18																
2	2	Elbow	12	18																
3	3	Elbow	12	18																
4	4	Elbow	12	18																
5	5	Elbow	12	18																
6	6	Elbow	12	18																
7	7	Tee	12	18																
8	8	Elbow	12	18																
9	9	Elbow	12	18																
10	10	Elbow	12	18																
11	11	Elbow	3	18																
12	12	Elbow	3	18																
13	13	Elbow	3	18																
14	14	a-2	3	18																
15	15	a-2	3	18																
16	16	a-2	3	18																
17	17	T-2	3	18																
18	18	a-2	3	18																
19	19	a-2	3	18																
20	20	16-2	3	18																
21	21	16-2	3	18																

- Click **+** and fill in data to create a new CML.

- Click **EDIT** on CML part, then click **EDIT** to edit CML data.

EDIT CML		
CML Number	CML Desc	NPS (inch)
1	Elbow	18.000
<b>REQUIRED</b>	<b>REQUIRED</b>	<b>REQUIRED</b>
tnom (mm)	In-service Date (if edit)	Replacement Date
20.60	Select date	Select date
<b>REQUIRED</b>		

- In case of replacing the riser, user must select a replacement date in **EDIT CML**.
- Importance!** After selecting replacement date and clicking **SUBMIT**, test point data will be cleared all over.
- Click **DELETE** to delete a CML data.
- Click **ADD TP**, then specify the number of test points to create.



**ADD TP**

Line Number	18-GC-B31.8-06011	
CML Number	5	Pipe
Number of TP		
1		
<b>REQUIRED</b>		
<b>SUBMIT</b>		

- At the **DETAIL** of CML part, user can record repairing information.

**CML DETAIL**

Line Number	18-GC-B31.8-06011	
CML Number	5	NPS (inch) 18.000
CML Desc	Pipe	t <sub>nom</sub> (mm) 20.60
t <sub>design</sub> (mm)	5.10	t <sub>struc</sub> (mm) 2.80
t <sub>req</sub> (mm)	5.10	

CML Picture

Cut

Copy

Paste

Insert Picture...

Insert PDF...

Insert File...

Export Field Contents...

+ ADD REPAIR

CML No	Repair Date	Repair Type	Detail	File Before Repair	File After Repair
5	Select date	Select type	Enter message ..	<span style="color: green;">+</span> <span style="color: blue;">Q</span> <span style="color: red;">D</span>	<span style="color: green;">+</span> <span style="color: blue;">Q</span> <span style="color: red;">D</span>

- Right click on CML picture, then select **Insert Picture...** to upload picture that represent the latest repairing.
- Click **+ ADD REPAIR** to create a new repair record.
- Fill in data and attach files of before-repair and after-repair.
- Click + to insert files.
- Click Q to preview file with default viewer program.
- Click D to delete a file.

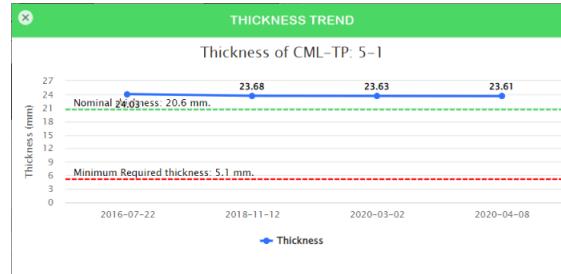
**TP**

CML-TP	TP Desc
5-1	12
<span style="color: yellow;">[ ]</span> <span style="color: blue;">Q</span> <span style="color: red;">D</span> <span style="color: yellow;">[ ]</span> <span style="color: blue;">Q</span> <span style="color: red;">D</span> <span style="color: yellow;">[ ]</span> <span style="color: blue;">Q</span> <span style="color: red;">D</span> <span style="color: yellow;">[ ]</span> <span style="color: blue;">Q</span> <span style="color: red;">D</span>	
<span style="color: yellow;">[ ]</span> <span style="color: blue;">Q</span> <span style="color: red;">D</span> <span style="color: yellow;">[ ]</span> <span style="color: blue;">Q</span> <span style="color: red;">D</span> <span style="color: yellow;">[ ]</span> <span style="color: blue;">Q</span> <span style="color: red;">D</span> <span style="color: yellow;">[ ]</span> <span style="color: blue;">Q</span> <span style="color: red;">D</span>	

- Click [ ] on TP part, then click **EDIT** to edit test point data.
- Click **DELETE** to delete a test point data.
- Click **ADD UTM**, then specify UTM data to record.



- **Status of ULTRASONIC THICKNESS report** at the latest inspection history change to active (On HISTORY INFO tab > Riser above splash zone).
- Click **DETAIL** to show thickness trend of each test point.



- Click  on UTM part, then click **EDIT** to edit UTM data.

UTM								
CML-TP	CML Desc	TP Desc	Inspection Date	tactual (mm)	RL (yrs)	Integrity Status	Status Criteria	
5-1	Pipe	12	8 Apr 2020	23.61	93.82	P6	RL > 5	 
5-1	Pipe	12	2 Mar 2020	23.63	167.40	P6		 
5-1	Pipe	12	12 Nov 2018	23.68	122.61	P6		 
5-1	Pipe	12	22 Jul 2016	24.03	39.44	P6		 

- Click **DELETE** to delete a UTM data.



CML				TP				UTM			
CML No	CML Desc	t <sub>nom</sub> (mm)	t <sub>req</sub> (mm)	CML-TP	TP Desc	Inspection Date	tactual (mm)	RL (yrs)	Integrity Status	Status Criteria	
1	Elbow	20.6	5.1	 	5-1	12	8 Apr 2020	23.61	93.82	P6	RL > 5
2	Elbow	20.6	5.1	 	5-2	3	2 Mar 2020	23.63	167.40	P6	RL > 5

- In the case that there is a large amount of data to input in the AIMS, either CML, TP or UTM data. Users can use the import function to help import data at once.
- Click **DOWNLOAD FORM** to download excel template to the desktop.
- Fill in the data to excel template and click **IMPORT FORM** to upload import file.



### 3) CML Test Point Data Table

The table displayed a summary of thickness data in each CML test point.

CML_TP	CML Desc	TP Desc	NPS (inch)	In-service Date	tnom (mm)	treq (mm)	First Date   Thk (mm)	Prev Date   Thk (mm)	Last Date   Thk (mm)	ST_CR (mm/yr)	LT_CR (mm/yr)	RL (yrs)	Status		Thk Trend
													P6	All	
5-3	Pipe	6	18	1 Jan 2013	20.60	5.10	22 Jul 2016   24.12	2 Mar 2020   24.02	8 Apr 2020   23.98	0.39	0.04	47.85	P6	RL > 5	
5-4	Pipe	9	18	1 Jan 2013	20.60	5.10	22 Jul 2016   23.62	2 Mar 2020   23.32	8 Apr 2020   22.39	9.17	0.33	1.88	P4	1 < RL ≤ 3	
6-1	Pipe	12	18	1 Jan 2013	20.60	5.10	22 Jul 2016   27.72	2 Mar 2020   27.57	8 Apr 2020   27.60	-0.30	0.03	696.58	P6	RL > 5	
6-2	Pipe	3	18	1 Jan 2013	20.60	5.10	22 Jul 2016   24.02	2 Mar 2020   23.40	8 Apr 2020   23.32	0.79	0.19	23.09	P6	RL > 5	
6-3	Pipe	6	18	1 Jan 2013	20.60	5.10	22 Jul 2016   21.56	2 Mar 2020   21.47	8 Apr 2020   21.62	-1.48	-0.02	34.42	P6	RL > 5	
6-4	Pipe	9	18	1 Jan 2013	20.60	5.10	22 Jul 2016   23.12	2 Mar 2020   23.80	8 Apr 2020   24.40	-5.92	-0.34	40.21	P6	RL > 5	
7-1	Pipe	12	18	1 Jan 2013	20.60	5.10	22 Jul 2016   24.42	2 Mar 2020   24.34	8 Apr 2020   24.61	-2.66	-0.05	40.65	P6	RL > 5	
7-2	Pipe	3	18	1 Jan 2013	20.60	5.10	22 Jul 2016   23.76	2 Mar 2020   23.60	8 Apr 2020   24.00	-3.95	-0.06	39.38	P6	RL > 5	
7-3	Pipe	6	18	1 Jan 2013	20.60	5.10	22 Jul 2016   24.65	2 Mar 2020   24.16	8 Apr 2020   24.18	-0.20	0.13	150.82	P6	RL > 5	
7-4	Pipe	9	18	1 Jan 2013	20.60	5.10	22 Jul 2016   23.77	2 Mar 2020   23.27	8 Apr 2020   23.29	-0.20	0.13	140.79	P6	RL > 5	
8-1	Pipe	12	18	1 Jan 2013	20.60	5.10	22 Jul 2016   24.13	2 Mar 2020   24.24	8 Apr 2020   24.28	-0.39	0.00	39.96	P6	RL > 5	
8-2	Pipe	3	18	1 Jan 2013	20.60	5.10	22 Jul 2016   23.23	2 Mar 2020   23.31	8 Apr 2020   22.85	4.54	0.10	3.91	P5	3 < RL ≤ 5	
8-3	Pipe	6	18	1 Jan 2013	20.60	5.10	22 Jul 2016   24.09	2 Mar 2020   23.94	8 Apr 2020   23.83	1.09	0.07	17.26	P6	RL > 5	
8-4	Pipe	9	18	1 Jan 2013	20.60	5.10	22 Jul 2016   23.53	2 Mar 2020   23.06	8 Apr 2020   23.19	-1.28	0.09	197.66	P6	RL > 5	
9-1	Pipe	12	18	1 Jan 2013	20.60	5.10	22 Jul 2016   22.16	2 Mar 2020   22.06	8 Apr 2020   21.98	0.79	0.05	21.39	P6	RL > 5	
9-2	Pipe	3	18	1 Jan 2013	20.60	5.10	22 Jul 2016   22.14	2 Mar 2020   22.09	8 Apr 2020   22.30	-2.07	-0.04	35.83	P6	RL > 5	
9-3	Pipe	6	18	1 Jan 2013	20.60	5.10	22 Jul 2016   22.14	2 Mar 2020   22.09	8 Apr 2020   22.40	-3.06	-0.07	36.04	P6	RL > 5	
9-4	Pipe	9	18	1 Jan 2013	20.60	5.10	22 Jul 2016   22.16	2 Mar 2020   21.87	8 Apr 2020   21.96	-0.89	0.05	313.18	P6	RL > 5	
10-1	Pipe	12	18	1 Jan 2013	20.60	5.10	22 Jul 2016   21.98	2 Mar 2020   21.93	8 Apr 2020   21.81	1.18	0.05	14.12	P6	RL > 5	
10-2	Pipe	3	18	1 Jan 2013	20.60	5.10	22 Jul 2016   21.94	2 Mar 2020   21.91	8 Apr 2020   21.86	0.49	0.02	33.98	P6	RL > 5	

- Click  to select integrity status to show in the table.
- Click in column **Thk Trend** to show thickness trend of each CML test point.

### 4) Probe data

At the bottom of riser thickness page, probe data and UT equipment data can record to each inspection campaign.

INSPECTION DATE	UT EQUIPMENT DATA	PROBE DATA
8 Apr 2020		UT equipment: OLYMPUS EPOCH LTC Probe type: TR
2 Mar 2020		UT equipment S/N: OB44-7402-2839-3DBS Probe angle: 0
12 Nov 2018		Couplant: WALLPAPER PASTE Brand:
22 Jul 2016		Calibration block: STEP WEDGE Probe S/N: Calibration block S/N: 161011-1 Equipment calib record no: NDT 02030SP2015 Surface condition: SATISFACTORY Test temperature: AMBIENT
		Size (mm): 7.9 Frequency (MHz): 5 Calibration range (mm): Signal range: 0-50

- Click in each inspection date to show information record of inspection tools.
- Click to add a new record in each inspection campaign.



### 5.2.9 Riser Thickness Anomaly

Incoming and outgoing of riser above splash zone that have thickness anomaly, the riser thickness anomaly will use the same report format to record anomaly corrective maintenance.

INSPECTION DATE		THICKNESS SUMMARY			
8 Apr 2020		CML-TP:	5-4	B-2	
2 Mar 2020		CML description:	Pipe	Pipe	
12 Nov 2018		TP description:	9	3	
22 Jul 2016		Pipe size (inch):	18	18	
		Original thk (mm):	20.60	20.60	
		Remaining thk (mm):	22.39	22.85	
		Wall loss thk (mm):	-1.79	-2.25	
		Min. req. thk (mm):	5.10	5.10	
		Selected CR (mm/yr):	9.17	4.54	
		Remaining life (yrs):	1.88	3.91	
		Status:	P4	P5	
INSPECTION SUMMARY					
Enter message ...					
ANOMALY CORRECTIVE MAINTENANCE					
		Temporary repair (Due date):	28 Apr 2020	Completed	
		Non-metallic composite wrap			
		Description:			
		Note:			
RECOMMENDATION BY GENERAL INSPECTOR (API INSPECTOR)					
Enter message ...					
RECOMMENDATION BY INSPECTION ENGINEER					
Enter message ...					

- 1) Click in each inspection date at the top left to display anomaly thickness of each inspection campaign.
- 2) Click to add anomaly form.
- 3) Select **ADD AUTO** to generate anomaly point with status P1-P5.
- 4) Select **ADD BLANK FORM** to generate a blank form for manual key CML-TP.
- 5) **Status of THICKNESS ANOMALY report** at the inspection history change to active (On History INFO tab > Riser above splash zone).

INSPECTION DATE		THICKNESS SUMMARY			
8 Apr 2020			CML-TP:	5-4	B-2
2 Mar 2020			CML description:	Pipe	Pipe
12 Nov 2018			TP description:	9	3
22 Jul 2016			Pipe size (inch):	18	18
			Original thk (mm):	20.60	20.60
			Remaining thk (mm):	22.39	22.85
			Wall loss thk (mm):	-1.79	-2.25
			Min. req. thk (mm):	5.10	5.10
			Selected CR (mm/yr):	9.17	4.54
			Remaining life (yrs):	1.88	3.91
			Status:	P4	P5
INSPECTION SUMMARY					
Enter message ...					

- 6) Enter CML-TP with the same format of text as CML-TP test point data table in thickness page. Other data will automatically appear in the thickness summary table.
- 7) **Anomaly Corrective Maintenance** of thickness measurement can specify the repair type, comment, due date for action and status update of maintenance.
- 8) If the repair status is **Completed**, status of thickness will be **P6**.  
Note: In case of pipe replacement, the user should be updated a new thickness value of this part.



### 5.2.10 Pipeline Thickness

Pipeline thickness data is stored by importing data via a template. **PIPE TALLY** tab contains the following two subsections.

- **Info of Pipeline Section:** Detail of pipeline section
- **Pipe Tally Data Table:** Record the pipe tally by importing

PIPELINE DATA										
<input checked="" type="checkbox"/> EDIT PIPELINE DATA		+ ADD SECTION								
Section	Kp (KM)	Nominal Outer Dia (mm)	Nominal Internal Dia (mm)	Nominal Wall Thickness (mm)	CA (mm)	Max Allowable free span length (m)	Design Corrosion	As per ASME B31.8 Thickness Required = (PxD)(2xE) Where, S=0.72xExSYMS, E=1		
5	0.000	5.404	457.20	422.20	17.50	12	24.00	31.62	0.60	4.96
Design life (yrs):	20.00									
Operating pressure:	633.81	psig	43.70	barg						
MAOP:	1015.26	psig	70.00	barg						
Design temp (°C):	100.00									
Max Operating temp (°C):	87.00									
PWHT:	Yes									

Info of Pipeline Section

PIPE TALLY															
<input checked="" type="checkbox"/> EDIT PIPELINE DATA		+ ADD SECTION													
Log Distance (m)	Technology Type	Component/ Anomaly Type	Component/ Anomaly Ident	Joint Number	Joint Length (m)	Nominal Wall Thickness (mm)	o'clock Orientation	To Upstream Girth Weld (m)	Dent Part (%)	Depth (%)	Length (mm)	Width (mm)	EPR (ASME)	Surface Location	Comment
889.54	MFL-AMD	Anode				20.60	12:00:00								
895.70	MFL-AMD	Weld				20.60	12:00:00								
907.93	MFL-AMD	Weld				20.60	12:00:00								
920.20	MFL-AMD	Weld				20.60	12:00:00								
932.37	MFL-AMD	Weld				20.60	06:00:00								
943.99	MFL-AMD	Weld				20.60									
956.26	MFL-AMD	Weld				20.60	06:00:00								
968.44	MFL-AMD	Weld	Launcher End	10	3.24	20.60								Jengka B	

Pipe Tally Data Table

#### 1) Info of Pipeline Section

<input checked="" type="checkbox"/> EDIT PIPELINE DATA		+ ADD SECTION								
Section	Kp (KM)	Nominal Outer Dia (mm)	Nominal Internal Dia (mm)	Nominal Wall Thickness (mm)	CA (mm)	Max Allowable free span length (m)	Design Corrosion	As per ASME B31.8 Thickness Required = (PxD)(2xE) Where, S=0.72xExSYMS, E=1		
5	0.000	5.404	457.20	422.20	17.50	12	24.00	31.62	0.60	4.96
Pipeline number:	18-JKB-JKA	6	6							
Design life (yrs):	20.00									
Operating pressure:	633.81	psig	43.70	barg						
MAOP:	1015.26	psig	70.00	barg						
Design temp (°C):	100.00									
Max Operating temp (°C):	87.00									
PWHT:	Yes									

- Click  EDIT PIPELINE DATA to edit pipeline data.
- Click  + ADD SECTION to add pipeline section.
- Click on section part, then click **EDIT** to edit section data.
- Click **DELETE** to delete a section data.

#### 2) Pipe Tally Data Table

PIPE TALLY															
<input checked="" type="checkbox"/> EDIT PIPELINE DATA		+ ADD SECTION													
Log Distance (m)	Technology Type	Component/ Anomaly Type	Component/ Anomaly Ident	Joint Number	Joint Length (m)	Nominal Wall Thickness (mm)	o'clock Orientation	To Upstream Girth Weld (m)	Dent Part (%)	Depth (%)	Length (mm)	Width (mm)	EPR (ASME)	Surface Location	Comment
889.54	MFL-AMD	Anode				20.60	12:00:00								
895.70	MFL-AMD	Weld				20.60	12:00:00								
907.93	MFL-AMD	Weld				20.60	12:00:00								
920.20	MFL-AMD	Weld				20.60	12:00:00								
932.37	MFL-AMD	Weld				20.60	06:00:00								
943.99	MFL-AMD	Weld				20.60									
956.26	MFL-AMD	Weld				20.60	06:00:00								
968.44	MFL-AMD	Weld	Launcher End	10	3.24	20.60								Jengka B	

- Select **INSPECTION DATE** for displaying the records of pipe tally.
- Click **DOWNLOAD FORM** to download excel template to the desktop.



- Fill in the data to excel template and click **IMPORT DATA** to upload import file.
- Status of PIPE TALLY report** at the latest inspection history change to active (On HISTORY INFO tab).
- Click **EXPORT DATA** to generate excel file of information about pipe tally to desktop.
- Click **DELETE** to delete all of pipe tally from each inspection date

### 5.2.11 Pipeline List of Thickness Anomalies

On **PIPELINE > THICKNESS > LIST OF ANOMALIES** tab, import list of anomalies and ovality from the report of pipeline. This tab has divided into two sections as follow.

- List of Anomalies:** Information of pipeline anomalies thickness
- Ovality:** Record of ovality data

PIPELINE THICKNESS ANOMALIES																	INSPECTION DATE			CHART		DOWNLOAD FORM		IMPORT DATA		EXPORT DATA		DELETE											
Weld Line Distance (m)	Anomaly to Weld (m)	Joint Number	Joint Length (m)	Log Distance (m)	O'clock Orientation	Anomaly Type	Anomaly Identification	Dimension	Depth (%)	Length (mm)	Width (mm)	Surface Location	Comment	Location Class	Safe Pressure (bar)	Inserv Date	Nominal Wall Thickness (mm)	Mn Required Thickness (mm)	Inspection Date	Actual Thickness (mm)	Corrosion Rate (mm/year)	ERF (ASME)	ERF Status	Dent Part (%)	Dent Status	RL (psi)	RL Status	Integrity Status	11 Sep 2020										
227.56	-4.44	440	12.20	232.00	10:51	Anomaly	Corrosion	Pothole	10.00	8.00	15.00	Internal	FUN	—	1116.53	3582.68	1 Jan 2013	17.50	4.96	0.23	0.91	P6	47.47	P6	P6	^													
239.76	-1.19	450	12.18	240.95	01:05	Anomaly	Corrosion	Pothole	10.00	8.00	15.00	Internal	FUN	—	1116.53	3582.68	1 Jan 2013	17.50	4.96	0.11	0.91	P6	47.47	P6	P6														
239.76	-3.58	450	12.18	243.34	01:10	Anomaly	Corrosion	Pothole	12.00	8.00	15.00	Internal	FUN	—	1116.48	3582.68	1 Jan 2013	17.50	4.96	0.11	0.91	P6	38.28	P6	P6														
239.76	-4.49	450	12.18	244.25	01:07	Anomaly	Corrosion	Pothole	11.00	10.00	15.00	Internal	FUN	—	1116.35	3582.68	1 Jan 2013	17.50	4.96	0.11	0.91	P6	42.59	P6	P6														
264.11	-0.45	470	12.19	264.55	01:15	Anomaly	Corrosion	Pothole	18.00	10.00	15.00	Internal	FUN	—	1116.03	3582.68	1 Jan 2013	17.50	4.96	0.35	0.41	0.91	P6	22.95	P6	P6													
264.11	-0.68	470	12.19	264.79	01:13	Anomaly	Corrosion	Pothole	10.00	8.00	15.00	Internal	FUN	—	1116.53	3582.68	1 Jan 2013	17.50	4.96	0.11	0.91	P6	47.47	P6	P6														
264.11	-0.71	470	12.19	264.81	01:19	Anomaly	Corrosion	Pothole	13.00	13.00	15.00	Internal	FUN	—	1116.90	3582.68	1 Jan 2013	17.50	4.96	0.11	0.91	P6	34.83	P6	P6														
264.11	-1.33	470	12.19	265.48	01:19	Anomaly	Corrosion	Pothole	11.00	10.00	15.00	Internal	FUN	—	—	—	—	—	4.96	0.25	0.91	P6	42.59	P6	P6														
276.30	-0.38	480	12.15	276.68	11:01	Anomaly	Corrosion	Pothole	10.00	8.00	15.00	Internal	FUN	—	—	—	—	—	4.96	0.11	0.91	P6	47.47	P6	P6														
276.30	-0.39	480	12.15	276.69	12:33	Anomaly	Corrosion	Pothole	13.00	14.00	15.00	Internal	FUN	—	—	—	—	—	4.96	0.23	0.91	P6	34.83	P6	P6														
276.30	-0.41	480	12.15	276.71	01:00	Anomaly	Corrosion	Pothole	11.00	9.0	15.00	Internal	FUN	—	—	—	—	—	4.96	0.11	0.91	P6	42.59	P6	P6														
276.30	-2.05	480	12.15	278.35	10:11	Anomaly	Corrosion	Pothole	10.00	8.00	15.00	Internal	FUN	—	1116.53	3582.68	1 Jan 2013	17.50	4.96	0.23	0.91	P6	47.47	P6	P6														
276.30	-3.30	480	12.15	278.59	12:04	Anomaly	Corrosion	Pothole	13.00	9.00	15.00	Internal	FUN	—	1116.36	3582.68	1 Jan 2013	17.50	4.96	0.11	0.91	P6	34.83	P6	P6														
276.30	-3.92	480	12.15	280.21	10:13	Anomaly	Corrosion	Pothole	11.00	8.00	15.00	Internal	FUN	—	1116.50	3582.68	1 Jan 2013	17.50	4.96	0.11	0.91	P6	42.59	P6	P6														
276.30	-3.98	480	12.15	280.28	01:12	Anomaly	Corrosion	Pothole	10.00	11.00	15.00	Internal	FUN	—	1116.31	3582.68	1 Jan 2013	17.50	4.96	0.11	0.91	P6	47.47	P6	P6														
276.30	-4.24	480	12.15	280.54	10:14	Anomaly	Corrosion	Pothole	11.00	10.00	15.00	Internal	FUN	—	1116.35	3582.68	1 Jan 2013	17.50	4.96	0.25	0.91	P6	42.59	P6	P6														
276.30	-4.35	480	12.15	280.64	10:10	Anomaly	Corrosion	Pothole	19.00	9.00	15.00	Internal	FUN	—	1116.13	3582.68	1 Jan 2013	17.50	4.96	0.11	0.91	P6	21.38	P6	P6														
276.30	-4.46	480	12.15	280.76	11:31	Anomaly	Corrosion	Pothole	10.00	8.00	15.00	Internal	FUN	—	1116.53	3582.68	1 Jan 2013	17.50	4.96	0.11	0.91	P6	47.47	P6	P6														
276.30	-4.47	480	12.15	280.76	10:13	Anomaly	Corrosion	Pothole	10.00	10.00	15.00	Internal	FUN	—	1116.39	3582.68	1 Jan 2013	17.50	4.96	0.11	0.91	P6	47.47	P6	P6														
276.30	-4.59	480	12.15	280.89	10:13	Anomaly	Corrosion	Pothole	12.00	9.00	15.00	Internal	FUN	—	1116.40	3582.68	1 Jan 2013	17.50	4.96	0.11	0.91	P6	38.28	P6	P6	^													

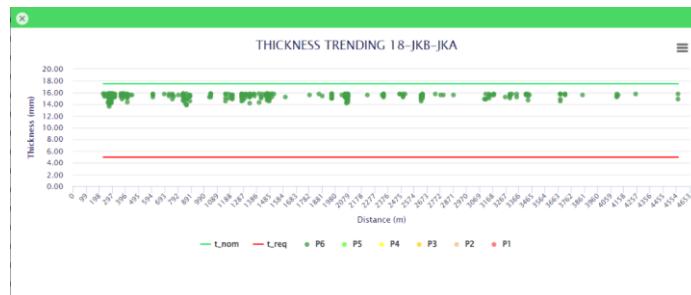
PIPELINE THICKNESS ANOMALIES																
OVALITY																
+ ADD ROW																
List of Anomalies																
<b>ILI ABBREVIATION</b>																
<b>ROV ABBREVIATION</b>																
<b>OVALITY</b>																

### 1) List of Anomalies

PIPELINE THICKNESS ANOMALIES																																								
OVALITY																																								
+ ADD ROW																																								
List of Anomalies																																								
Weld Line Distance (m)	Joint Number	Joint Length (m)	Log Distance (m)	O'clock Orientation	Anomaly Type	Anomaly Identification	Dimension	Depth (%)	Length (mm)	Width (mm)	Surface Location	Comment	Location Class	Safe Pressure (bar)	Inserv Date	Nominal Wall Thickness (mm)	Measured Wall Thickness (mm)	Inspection Date	Actual Thickness (mm)	Corrosion Rate (mm/year)	ERF (ASME)	ERF Status	Dent Part (%)	Dent Status	RL (psi)	RL Status	Integrity Status	INSPECTION DATE			CHART		DOWNLOAD FORM		IMPORT DATA		EXPORT DATA		DELETE	
																	11 Sep 2020																							
227.56	-4.44	440	12.20	232.00	10:51	Anomaly	Corrosion	Pothole	10.00	8.00	15.00	Internal	FUN	—	1116.53	3582.68	1 Jan 2013	17.50	4.96	0.23	0.91	P6	47.47	P6	P6	^														
239.76	-1.19	450	12.18	240.95	01:05	Anomaly	Corrosion	Pothole	10.00	8.00	15.00	Internal	FUN	—	1116.53	3582.68	1 Jan 2013	17.50	4.96	0.11	0.91	P6	47.47	P6	P6															
239.76	-3.58	450	12.18	243.34	01:10	Anomaly	Corrosion	Pothole	12.00	8.00	15.00	Internal	FUN	—	1116.48	3582.																								



- Click **DOWNLOAD FORM** to download excel template to the desktop.
- Fill in the data to excel template and click **IMPORT DATA** to upload import file.
- **Status of LIST OF ANOMALIES report** at the latest inspection history change to active (On HISTORY INFO tab).
- Click **EXPORT DATA** to generate excel file of information about list of anomalies to desktop.
- Click **DELETE** to delete all of anomalies list from each inspection date
- Click **CHART** to show thickness trend of each test point.



## 2) Ovality

OVALITY									<b>+ ADD OVALITY</b>
Log Distance (m)	Joint Number	To Upstream Girth Weld (m)	ID Max (mm)	ID Min (mm)	ID Max - ID Min (mm)	% Ovality	Integrity Status	Status Criteria	
276.68	480	0	17.5	4.96	12.54	111.665183	P1	ovality_percent ≥ 9	<input checked="" type="checkbox"/> 

- Click **+ ADD OVALITY** to create anomaly of ovality from report.
- Click  to edit the data.
- Click  to delete a record.



### 5.2.12 Pipeline Thickness Anomaly

On **Pipeline > Thickness > ANOMALY** tab, create anomaly report to take action for corrective maintenance.

INSPECTION DATE		PIPELINE INFORMATION			
16 Mar 2021		Tag number:	24-GC-B31.8-02204-24-JKA-MDPP-24-GC-P	Service:	Condensate
11 Nov 2017		Pipeline number:	24-JKA-MDPP	Material spec:	API 5L X65-PSL2 (Sour Crude)
		Pipeline name:	Gas Condensate Gathering Pipeline	Design data:	1015.26 psi °C
		Pipeline route drawing:	D-CPOC-JKA-PL-00-015	Operating data:	psi °C
INSPECTION SUMMARY					
Enter message ...					
RECOMMENDATION BY GENERAL INSPECTOR (API INSPECTOR)					
Enter message ...					
RECOMMENDATION BY INSPECTION ENGINEER					
Enter message ...					
ANOMALY CORRECTIVE MAINTENANCE					
Temporary repair: (Due date)		Select date	Select status	Select repair type	
Description:					
Enter message ...					
Permanent repair: (Due date)		27 Jan 2022	Pending	Replace spool	
Description:					
Enter message ...					
Monitoring: (Due date)		Select date			
Description:					
Enter message ...					

- 1) Click in each inspection date at the top left to display anomaly thickness of each inspection campaign.
- 2) Click to add anomaly form.
- 3) Enter inspection summary or recommendation to the form.
- 4) **Anomaly Corrective Maintenance** of thickness measurement can specify the repair type, comment, due date for action and status update of maintenance.
- 5) **Status of THICKNESS ANOMALY report** at the latest inspection history change to active (On HISTORY INFO tab).
- 6) If the repair status is **Completed**, status of thickness will be **P6**.



### 5.2.13 Pipeline Thickness Summary

Pipeline thickness summary of each inspection campaign will be generated automatically.

PIPELINE SPECIAL POF STATISTIC AND FINDING			
INSPECTION DATE		NUMBER OF METAL LOSS ANOMALY LISTED ACCORDING AT INTERNAL PIPEWALL	
16 Mar 2021		Internal	191
11 Nov 2017		Non-internal	0
		N/A	0
		Total	191
NUMBER OF METAL LOSS ANOMALY LISTED ACCORDING TO ANOMALY DIMENSION			
Axial grooving		0	
Axial slotting		0	
Pinhole		153	
Circumferential grooving		0	
Circumferential slotting		0	
Pitting		10	
General		0	
Total		163	
NUMBER OF METAL LOSS ANOMALY LISTED ACCORDING TO ANOMALY DEPTH			
DEPTH (%)	INTERNAL	NON-INTERNAL	N/A
Depth < 10%	0	0	0
10% ≤ Depth < 20%	190	0	0
20% ≤ Depth < 30%	1	0	0
30% ≤ Depth < 40%	0	0	0
40% ≤ Depth < 50%	0	0	0
50% ≤ Depth < 60%	0	0	0
60% ≤ Depth < 70%	0	0	0
70% ≤ Depth < 80%	0	0	0
80% ≤ Depth < 90%	0	0	0
90% ≤ Depth < 100%	0	0	0
Total	191	0	0
NUMBER OF METAL LOSS ANOMALY LISTED ACCORDING TO ERF VALUE			
ERF < 0.5	191		
0.5 ≤ ERF < 0.6	0		
0.6 ≤ ERF < 0.8	0		
0.8 ≤ ERF < 1.0	0		

### 5.2.14 Library

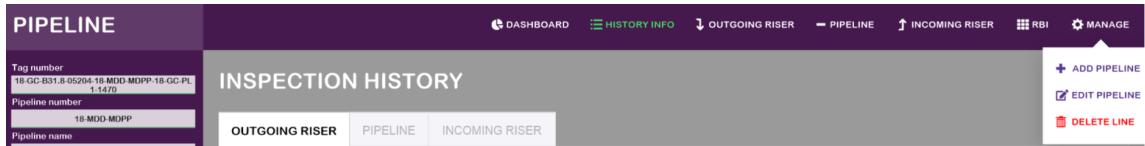
On **INCOMING RISER, OUTGOING RISER** and **Pipeline > LIBRALY** tab have storage area which is a repository of all related files such as construction document, inspection report, MOC., etc.

Construction Document	Inspection Report	General Document Other (e.g. MOC, related communication email, etc.)
2-GC-C2N-1130.pdf Tuesday, September 14, 2021 11:12	MDPP-UTM-2-GC-C2N-1130-2017-11-14.pdf Tuesday, September 14, 2021 11:12	Piping (WN-IDOUKJ77UFD) 2021-08-26 14-06-07.mpd Friday, September 17, 2021 13:23
Install year.xlsx Friday, September 17, 2021 13:26	MDPP-VT-2-GC-C2N-1130-2016-05-09.pdf Tuesday, September 14, 2021 11:13	im_utm_2-GC-C2N-1130-SANFILE.csv Friday, September 17, 2021 13:24
File name Uploaded date	Final Report_GSP4 RBI 20090316_06032021_STA.docx Friday, September 17, 2021 13:26	Joint Integrity Management of Critical Flange - Initiative FL&Structure.pptx Friday, September 17, 2021 13:26



### 5.2.15 Manage

This tab allows to add a new flowline, edit info data, or even delete tags from the system.



### 5.2.16 RBI

RBI tab contains probability of failure (POF) and consequence of failure (COF) record. The pipeline will separate by section. User can select the level of failure for damage mechanism and consequence in each section to show on risk matrix.

RBI ASSESSMENT DATE		SECTION SECTION NAME				
Aug 10, 2015		1	ABOVE SPLASH ZONE	ALARP		
		2	SPLASH ZONE	ALARP		
		3	SUBSEA (RISER)	ALARP		
		4	SPOOL PIECE	ALARP		
		5	Pipeline	ALARP		
RBI Assessment date:	Aug 10, 2015	Section:	1	Risk ranking:	ALARP	
POF   PROBABILITY OF FAILURE						
EXTERNAL DAMAGE MECHANISM						
Damage Mechanism	Probability of Failure Level	Comment				
Atmospheric Corrosion		Rare (1)   Rarely or never heard of in E&P industry (> 20 Years)				
External Corrosion		Unlikely (2)   Occurred several time in E&P industry (10-20 Years)				
Select damage mechanism	Select probability of failure	Note:				
INTERNAL DAMAGE MECHANISM						
Damage Mechanism	Probability of Failure Level	Comment				
Erosion / Erosion-Corrosion		Rare (1)   Rarely or never heard of in E&P industry (> 20 Years)				
CO2 Corrosion		Credible (5)   Incident has occurred in CPOC (4-10 Years)				
Select damage mechanism	Select probability of failure	Note:				
Select damage mechanism	Select probability of failure	Note:				
OTHER THREATS						
Threat Type	Probability of Failure Level	Comment				
Equipment Damage		Rare (1)   Rarely or never heard of in E&P industry (> 20 Years)				

#### 1) RBI Assessment Date

- Click at the top of RBI assessment date table to create a record for RBI assessment.
- Click to view RBI record.
- Click to view pipeline RBI report.
- Click in a row of assessment date to create new pipeline section.
- Click to edit RBI assessment date.



- Click  to delete RBI record.

### 2) Section of Pipeline

- Click  to view RBI record on each section.
- Click  to edit pipeline section.
- Click  to delete RBI section.

### 3) Risk Matrix

Risk matrix displays PoF-CoF levels, selecting the maximum value for each failure to show in the table.

CPOC RISK MATRIX					PoF								
					Rare (1)		Unlikely (2)		Credible (5)		Likely (8)		Certainty (10)
Severity	People	Assets / Production Loss	Environment	Reputation	Rarely or never heard of in E&P industry R.L (>20 Years)	Occurred Several time In E&P Industry (10-20 Years)	Incident has occurred in CPOC (4-10 Years)	Happens several times per year in CPOC (0.5-4 Years)	Happens several times per year at a particular location (0.0-0.5 Years)				
Insignificant (1)	First Aid, RWD, MTC	Slight Damage or loss	Slight impact of limited duration	Local media interest									
Minor (2)	LTI	Production loss <1 day. Damage <100k US	Tier 1, Minor effect	Local written media									
Moderate (3)	Multiple LTIs, One PD	Production loss <1 wk. Damage between 100-500k US	Tier 1, Localized effect	Local TV, national papers									
Major (4)	One Fatality/ Multiple PD's	Production loss <1 month. Damage between 200k-1000k US	Tier 2, Regional assistance required	National TV, international papers									
Critical (5)	More than One Fatality	Production loss >1 Month. Damage > 1000k US	Tier 3, International assistance required	International TV, extended coverage					5-5				

### 5.2.17 Report Approval

The generated report shows the status for approval by authorized person. Thickness report and visual report can be clicked to preview before rejection or approval. For every report approved, it is automatically signed at the bottom of the report.

**INSPECTION HISTORY**

OUTGOING RISER
Pipeline
INCOMING RISER

OUTGOING RISER ABOVE SPLASH ZONE INSPECTION HISTORY					<b>+ ADD INSPECTION RECORD</b>
INSPECTION INFORMATION		THICKNESS REPORT	THICKNESS APPROVAL	VISUAL REPORT	VISUAL APPROVAL
Inspection date:	8 Apr 2020	THICKNESS	Waiting for approval by Inspection Engineer	VISUAL CHECKLIST  VISUAL ANOMALY	No Report
Inspection type:	Routine	CML MARKED UP ISO		VISUAL PICTURE LOG	
Report number:	THICKNESS ANOMALY	<b>APPROVE</b> <b>REJECT</b>		VISUAL MARKED-UP ISO	<b>APPROVE</b> <b>REJECT</b>
WO number:	THICKNESS REPORT			VISUAL REPORT	
Inspection date:	2 Mar 2020	THICKNESS	Approved	VISUAL CHECKLIST  VISUAL ANOMALY	No Report
Inspection type:	Routine	CML MARKED-UP ISO		VISUAL PICTURE LOG	
Report number:	THICKNESS ANOMALY	<b>APPROVED</b> <b>REJECT</b>		VISUAL MARKED-UP ISO	<b>APPROVE</b> <b>REJECT</b>
WO number:	THICKNESS REPORT			VISUAL REPORT	
Inspection date:	12 Nov 2018	THICKNESS	Approved	VISUAL CHECKLIST  VISUAL ANOMALY	No Report
Inspection type:	Routine	CML MARKED-UP ISO		VISUAL PICTURE LOG	
Report number:	THICKNESS ANOMALY	<b>APPROVED</b> <b>REJECT</b>		VISUAL MARKED-UP ISO	<b>APPROVE</b> <b>REJECT</b>
WO number:	THICKNESS REPORT			VISUAL REPORT	

OUTGOING RISER SUBSEA INSPECTION HISTORY					<b>+ ADD INSPECTION RECORD</b>
INSPECTION INFORMATION		VISUAL REPORT			VISUAL APPROVAL
Inspection date:	4 Nov 2017	VISUAL CHECKLIST  VISUAL ANOMALY	CATHODIC PROTECTION	Approved	
Inspection type:	ROV	VISUAL PICTURE LOG			
Report number:	THICKNESS REPORT	VISUAL MARKED-UP ISO		<b>APPROVED</b> <b>REJECT</b>	
WO number:	THICKNESS REPORT	VISUAL REPORT			



INSPECTION HISTORY					
OUTGOING RISER	Pipeline	INCOMING RISER			
PIPELINE INSPECTION HISTORY					
INSPECTION INFORMATION	THICKNESS REPORT	THICKNESS APPROVAL	VISUAL REPORT	VISUAL APPROVAL	+ ADD INSPECTION RECORD
Inspection date: 11 Sep 2020	PIPE TALLY	Waiting for approval by Inspection Engineer	VISUAL CHECKLIST	Approved	FINAL REPORT
Inspection type: MFL-A/MO	SUMMARY		VISUAL PICTURE LOG		
Report number:	LIST OF ANOMALIES		VISUAL MARKED UP ISO		
WO number:	ANOMALY		VISUAL ANOMALY		
	MARKED UP ISO	<b>APPROVE</b> <b>REJECT</b>	VISUAL REPORT	<b>APPROVED</b> <b>REJECT</b>	
	THICKNESS REPORT				
Inspection date: 4 Nov 2017	PIPE TALLY	No Report	VISUAL CHECKLIST	Approved	FINAL REPORT
Inspection type: ROV	SUMMARY		VISUAL PICTURE LOG		
Report number:	LIST OF ANOMALIES		VISUAL MARKED UP ISO		
WO number:	ANOMALY		VISUAL ANOMALY		
	MARKED UP ISO	<b>APPROVE</b> <b>REJECT</b>	VISUAL REPORT	<b>APPROVED</b> <b>REJECT</b>	
	THICKNESS REPORT				

### 1) Report status

⇒ No report.

⇒ The report has not been approved.

⇒ The report has been approved.

### 2) Previewing report

User can click **THICKNESS REPORT** / **VISUAL REPORT** or **FINAL REPORT** to preview the report before approval.

### 3) Approval status

**APPROVE** ⇒ Waiting for approval by authorized person.

**REJECT** ⇒ Return the report for review again.

**APPROVED** ⇒ Approval is complete.

### 4) Approval step

Authorized person can click on approval status to sign the report. The system will automatically send an email to the person involved to take action.

### Summary of approval authority (Riser and Pipeline)

- Ultrasonic Thickness Report: [General Inspector](#)
- CML Marked-Up ISO Report: [General Inspector](#)
- Thickness Anomaly Report: [General Inspector](#) ⇒ [Inspection Engineer](#)
- Visual Checklist Report: [General Inspector](#)
- Visual Picture Log Report: [General Inspector](#)
- Visual Marked-Up ISO Report: [General Inspector](#)
- Visual Anomaly Report: [General Inspector](#) ⇒ [Inspection Engineer](#)
- Cathodic Protection Report: [General Inspector](#)
- Pipe Tally Report: [General Inspector](#)
- Summary Report: [General Inspector](#)
- List of Anomalies Report: [General Inspector](#)



## 5) Sample of email from the system

[PIPELINE] Reviewed, Thickness inspection report of 18-JKB-JKA is waiting for your review.



aims@dacon-inspection.com  
To Settapon Santatiwongchai

Reply | Reply All | Forward | ...  
Tue 18/Jan/2022 23:23

Dear Inspection Engineer,

The pipeline thickness inspection report of **18-JKB-JKA** Inspection date: 11/09/2020 has been reviewed by General Inspector with found anomaly (P6).

Comment from General Inspector:  
Test Anomaly recommendation by GI

Please review in AIMS

Thank you very much.

Pipeline number : 18-JKB-JKA

**Click to access this line**

Best Regards,  
Mr. Dacon Inspection Technologies  
Site Supervisor

**AIMS**

ASSET INTEGRITY MANAGEMENT SYSTEM



## 6. STRUCTURE

### 6.1 Structure Dashboard

An overview of the due inspection date for each zone of the structure. There is also a representative status of each platform for monitoring.

#### 6.1.1 Platform Filter

All platforms are displayed on structure dashboard page. Additionally, each platform can be filtered for monitoring with multiple conditions in real time.

PLATFORM STRUCTURE												APPROVAL PENDING			
PLATFORM	PHASE	INTEGRITY STATUS	TOPSIDE			SPLASH ZONE			SUBSEA			TOTAL	8296		
			DUE INSPECTION DATE			DUE INSPECTION DATE			DUE INSPECTION DATE						
			LAST	NEXT	STATUS	LAST	NEXT	STATUS	LAST	NEXT	STATUS				
MDA	1	P4	2020	2026	Not due	2020	2026	Not due	2017	2022	On due				
MDB	1	P6		2022	On due		2022	On due	2017	2022	On due				
MDC	1	P6		2022	On due		2022	On due	2017	2022	On due				
MDD	1	P6		2022	On due		2022	On due	2017	2022	On due				
MDPP	1	P6	2021	2027	Not due	2021	2023	Not due	2017	2022	On due				
MDLQ	1	P6	2020	2024	Not due	2020	2026	Not due	2017	2022	On due				
JKA	1	P6		2022	On due		2022	On due	2017	2022	On due				
MHP	1	NO INSPECT		2022	On due		2022	On due							

P1	0	P2	0	P3	0	P4	1	P5	0	P6	5748	NO INSPECT	TOTAL	8296
2547														

- 1) Click the status button to display the filtered data for each status.

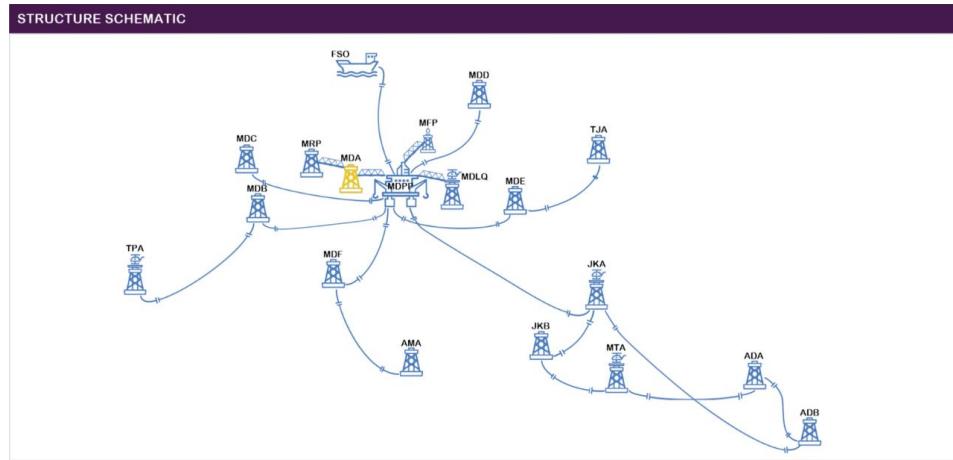
PLATFORM	ALL	STATUS	ALL
----------	-----	--------	-----

- 2) Select **P-status** or **Platform** from dropdown list to filtering.
- 3) Click to access platform dashboard on structure module.



### 6.1.2 Structure Schematic

Structure schematic shows the overall platform of CPOC. Each platform will represent the integrity status of structure which is determined by the highest status from topside, splash zone and subsea.



### 6.1.3 Approval Pending

At the top right of structure dashboard page, click **APPROVAL PENDING** to access **APPROVAL PENDING** section. Approval pending contains a list of reports that are pending approval from authorized persons.

STRUCTURE APPROVAL PENDING								<a href="#">BACK</a>
VISUAL	NDE							
TAG NO	Search Tag no	<input type="button" value="SEARCH"/>	START DATE	<input type="button" value="CALENDAR"/>	END DATE	<input type="button" value="CALENDAR"/>	<input type="button" value="SEARCH"/>	
<b>Total record:</b>								
TAG NUMBER	INSPECTION DATE	INSPECTION CLASS	APPROVAL BY GENERAL INSPECTOR	APPROVAL BY INSPECTION ENGINEER	ANOMALY STATUS	APPROVAL STATUS		
MDA-T-COK-BBM-01	27 Jan 2021	Class I (GV)	Mr. Dacon Inspection Technologies	10 Mar 2022	Y	Waiting for approval by Inspection Engineer	<input type="button" value="SEARCH"/>	<a href="#">^</a>

- 1) The table of approval pending is divided into two parts, visual and NDE.

<b>TAG NO</b>	Search tag no	<input type="button" value="SEARCH"/>
---------------	---------------	---------------------------------------

- 2) Enter word or full name of tag number, and then click  or press "ENTER" on keyboard for searching.

<b>START DATE</b>	<input type="button" value="CALENDAR"/>	<b>END DATE</b>	<input type="button" value="CALENDAR"/>	<b>SEARCH</b>
-------------------	---	-----------------	---	---------------

- 3) Select start date and end date, then click **SEARCH** button for filtering
- 4) Click  to access the platform on structure module for approval tasks.



## 6.2 Platform Dashboard

### 6.2.1 Structure Filter Data

The integrity status of each tag number on the platform is displayed. Additionally, there will be a notification status for any inspection or repair work to be performed. For all platforms, zones are divided into topside, splash and subsea.

**PLATFORM: MDA**

[BACK](#) [EXPORT EXCEL](#) [INSPECTION RECORD](#)

TOPSIDE			SPLASH ZONE		SUBSEA		Filters								
TAG NO	Search tag no	RISK RANKING	ALL	STATUS	ALL	P1	0 P2	1 P3	1 P4	0 P5	0 P6	211	NO INSPECT	TOTAL	
Total record:						0	0	0	0	0	0	211	0	213	
PLATFORM	TAG NUMBER	DESCRIPTION	STRUCTURE TYPE	RISK RANKING	INTEGRITY STATUS	VISUAL INSPECTION			NDE INSPECTION			DUE VISUAL ANOMALY		DUE NDE ANOMALY	
						LAST	NEXT	STATUS	LAST	NEXT	STATUS	TEMPORARY	PERMANENT	TEMPORARY	PERMANENT
MDA	MDA-T-CDK-BBM-01	Cellar Deck-Burner Boom BBM-01	SECONDARY	Low	P2	2021	2027	Not due	2022	2028	Not due	2021	2022	2022	On due
MDA	MDA-T-CDK-BBM-SUP-01	Cellar Deck-Burner Boom Support SUP-01	SECONDARY	Low	P3	2020	2026	Not due	2022	2028	Not due			2022	On due
MDA	MDA-T-CDK-DRN-01	Cellar Deck-Drain DRN-01	TERTIARY	Low	P6	2020	2026	Not due							Q
MDA	MDA-T-CDK-DRN-02	Cellar Deck-Drain DRN-02	TERTIARY	Low	P6	2020	2026	Not due							Q
MDA	MDA-T-CDK-DRN-03	Cellar Deck-Drain DRN-03	TERTIARY	Low	P6	2020	2026	Not due							Q

P1 0 P2 1 P3 1 P4 0 P5 0 P6 211 NO INSPECT 0 TOTAL 213

- 1) Click the status button to display the filtered data for each status.

- 2) Select dropdown of **STATUS** and **RISK RANKING** to filtering.
- 3) Click [EXPORT EXCEL](#) to export excel file to the desktop. This file contains the data of each tag number that was filtered by filter tool.

- 4) Enter word or full name of tag number, and then click  or press "ENTER" on keyboard for searching.
- 5) Click  to reset filter as a default.

**PLATFORM: MDA**

[BACK](#) [EXPORT EXCEL](#) [INSPECTION RECORD](#)

TOPSIDE			SPLASH ZONE		SUBSEA		Filters								
TAG NO	Search tag no	RISK RANKING	ALL	STATUS	ALL	P1	0 P2	1 P3	1 P4	0 P5	0 P6	211	NO INSPECT	TOTAL	
Total record: 213						0	0	0	0	0	0	211	0	213	
PLATFORM	TAG NUMBER	DESCRIPTION	STRUCTURE TYPE	RISK RANKING	INTEGRITY STATUS	VISUAL INSPECTION			NDE INSPECTION			DUE VISUAL ANOMALY		DUE NDE ANOMALY	
						LAST	NEXT	STATUS	LAST	NEXT	STATUS	TEMPORARY	PERMANENT	TEMPORARY	PERMANENT
MDA	MDA-T-CDK-BBM-01	Cellar Deck-Burner Boom BBM-01	SECONDARY	Low	P2	2021	2027	Not due	2022	2028	Not due	2021	2022	2022	On due

- 6) Click  to access the tag number on structure module.



## 6.2.2 Generate Quick Report

Function for generating multiple visual checklist reports at once with P6 status.

**PLATFORM: MDA**

**TOPSIDE**   **SPLASH ZONE**   **SUBSEA**

**PLATFORM: MDA**

Total record: 213

PLATFORM	TAG NUMBER	DESCRIPTION	LAST INSPECTION DATE	INTEGRITY STATUS
MDA	MDA-T-CDK-BBM-01	Cellar Deck-Burner Boom-01	11 Mar 2022	P6
MDA	MDA-T-CDK-BBM-SUP-01	Cellar Deck-Burner Boom Support SUP-01	9 Feb 2020	P6
MDA	MDA-T-CDK-DRN-01	Cellar Deck-Drain DRN-01		P6
MDA	MDA-T-CDK-DRN-02	Cellar Deck-Drain DRN-02		P6
MDA	MDA-T-CDK-DRN-03	Cellar Deck-Drain DRN-03		P6
MDA	MDA-T-CDK-DRN-04	Cellar Deck-Drain DRN-04		P6
MDA	MDA-T-CDK-DRN-05	Cellar Deck-Drain DRN-05		P6
MDA	MDA-T-CDK-DRN-06	Cellar Deck-Drain DRN-06		P6
MDA	MDA-T-CDK-FRM-01	Cellar Deck-Flooring FRM-01		P6

**CREATE**

**DUPLICATE**   **DUE NDE ANOMALY**

**PERMANENT**   **TEMPORARY**   **PERMANENT**

- 1) Click **INSPECTION RECORD** to access to check box page for visual checklist report creation.

- 
- 2) Enter word or full name of tag number, and then click **Q** or press "ENTER" on keyboard for searching.
  - 3) Select the tag number to generate the report by clicking the check box.
  - 4) Select date of inspection, then click on **CREATE** button to perform an action.

**INSPECTION HISTORY**

**+ ADD INSPECTION RECORD**

INSPECTION INFORMATION	NDE REPORT	NDE APPROVAL	VISUAL REPORT	VISUAL APPROVAL	
Inspection date: 14 Mar 2022	INSPECTION REPORT	No Report	VISUAL CHECKLIST	Waiting for approval by General Inspector	<b>FINAL REPORT</b>
Inspection class: ANOMALY REPORT			VISUAL PICTURE LOG		
Report number:		APPROVE	VISUAL ANOMALY	APPROVE	REJECT
WO number:	NDE REPORT	REJECT	VISUAL REPORT	REJECT	

- 5) Visual checklist report is automatically generated with status P6.



## 6.3 Structure Management System

Structure module contains the data of design, inspection and RBI, moreover, there are library that collect uploaded files. General information of each tag number is on the left side and menu tabs are on the top of page.

### 6.3.1 Inspection History

On **INFO** tab, Click **+ ADD INSPECTION RECORD** and input data in the fields, then click **SUBMIT** to generate a new inspection campaign record.

INSPECTION HISTORY					
INSPECTION INFORMATION		NDE REPORT	NDE APPROVAL	VISUAL REPORT	VISUAL APPROVAL
Inspection date:	Dec 15, 2021	INSPECTION REPORT	No Report	VISUAL CHECKLIST	No Report
Inspection type:	Routine	ANOMALY REPORT		VISUAL PICTURE LOG	
Report number:	N15-2			VISUAL ANOMALY	
WO number:	1558	THICKNESS REPORT	APPROVE	VISUAL REPORT	APPROVE
Inspection date:	Dec 10, 2021	INSPECTION REPORT	Waiting for approval by Site Supervisor	VISUAL CHECKLIST	Waiting for approval by Site Supervisor
Inspection type:	Routine	ANOMALY REPORT		VISUAL PICTURE LOG	
Report number:			APPROVE	VISUAL ANOMALY	APPROVE
WO number:		THICKNESS REPORT		VISUAL REPORT	

**+ ADD INSPECTION RECORD**

Inspection Date: 12/15/2021      Inspection Type: Routine

**REQUIRED**      **REQUIRED**

Report Number: N15-2      WO Number: 1558

**SUBMIT**

INSPECTION HISTORY					
INSPECTION INFORMATION		NDE REPORT	NDE APPROVAL	VISUAL REPORT	VISUAL APPROVAL
Inspection date:	Dec 15, 2021	INSPECTION REPORT	No Report	VISUAL CHECKLIST	No Report
Inspection type:	Routine	ANOMALY REPORT		VISUAL PICTURE LOG	
Report number:	N15-2			VISUAL ANOMALY	
WO number:	1558	THICKNESS REPORT	APPROVE	VISUAL REPORT	APPROVE



### 6.3.2 Visual Checklist

On **VISUAL > CHECKLIST** tab, create a visual checklist and input the data into the form of checklist.

CHECKLIST																																																																							
<b>INSPECTION DATE</b> 11 Mar 2022 <span style="border: 1px solid blue; padding: 2px;">Q</span> <span style="border: 1px solid green; padding: 2px;">+</span> 9 Feb 2021 <span style="border: 1px solid blue; padding: 2px;">Q</span> <span style="border: 1px solid green; padding: 2px;">+</span> 9 Feb 2020 <span style="border: 1px solid blue; padding: 2px;">Q</span> <span style="border: 1px solid green; padding: 2px;">+</span>		<b>STRUCTURE INFORMATION</b> Tag number: MDA-T-CDK-BBM-01 Sub structure: CELLAR DECK Description: Cellar Deck-Burner Boom BBM-01 Component type: Burner Boom Platform: MDA Component type class: Boom Structure zone: Topside Structure type: SECONDARY																																																																					
<b>DAMAGE MECHANISM CHECKLIST</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">1</td> <td>Crack</td> <td></td> <td>Note:</td> </tr> <tr> <td>2</td> <td>General corrosion</td> <td></td> <td>Note:</td> </tr> <tr> <td>3</td> <td>Localized corrosion</td> <td>Insignificant</td> <td>P6 Note:</td> </tr> <tr> <td>4</td> <td>Pitting or Pinhole</td> <td></td> <td>Note:</td> </tr> <tr> <td>5</td> <td>Corrosion under fireproof (CUF)</td> <td></td> <td>Note:</td> </tr> <tr> <td>6</td> <td>Deformation and physical damage such as dentied, holed</td> <td>Minor</td> <td>P4 Note:</td> </tr> <tr> <td>7</td> <td>Vibration</td> <td></td> <td>Note:</td> </tr> <tr> <td>8</td> <td>Misalignment</td> <td></td> <td>Note:</td> </tr> <tr> <td>9</td> <td>Coating damage</td> <td></td> <td>Note:</td> </tr> <tr> <td>10</td> <td>Marine growth</td> <td></td> <td>Note:</td> </tr> <tr> <td>11</td> <td>Weld defect including crack-like indication</td> <td></td> <td>Note:</td> </tr> <tr> <td>12</td> <td>Blocked intake</td> <td></td> <td>Note:</td> </tr> <tr> <td>13</td> <td>Cathodic Protection</td> <td></td> <td>Note:</td> </tr> <tr> <td>14</td> <td>Design variation</td> <td></td> <td>Note:</td> </tr> <tr> <td>15</td> <td>Missing bolt/nut</td> <td></td> <td>Note:</td> </tr> <tr> <td>16</td> <td>Missing component</td> <td></td> <td>Note:</td> </tr> <tr> <td>17</td> <td>Others [Enter other]</td> <td></td> <td>Note:</td> </tr> </table>				1	Crack		Note:	2	General corrosion		Note:	3	Localized corrosion	Insignificant	P6 Note:	4	Pitting or Pinhole		Note:	5	Corrosion under fireproof (CUF)		Note:	6	Deformation and physical damage such as dentied, holed	Minor	P4 Note:	7	Vibration		Note:	8	Misalignment		Note:	9	Coating damage		Note:	10	Marine growth		Note:	11	Weld defect including crack-like indication		Note:	12	Blocked intake		Note:	13	Cathodic Protection		Note:	14	Design variation		Note:	15	Missing bolt/nut		Note:	16	Missing component		Note:	17	Others [Enter other]		Note:
1	Crack		Note:																																																																				
2	General corrosion		Note:																																																																				
3	Localized corrosion	Insignificant	P6 Note:																																																																				
4	Pitting or Pinhole		Note:																																																																				
5	Corrosion under fireproof (CUF)		Note:																																																																				
6	Deformation and physical damage such as dentied, holed	Minor	P4 Note:																																																																				
7	Vibration		Note:																																																																				
8	Misalignment		Note:																																																																				
9	Coating damage		Note:																																																																				
10	Marine growth		Note:																																																																				
11	Weld defect including crack-like indication		Note:																																																																				
12	Blocked intake		Note:																																																																				
13	Cathodic Protection		Note:																																																																				
14	Design variation		Note:																																																																				
15	Missing bolt/nut		Note:																																																																				
16	Missing component		Note:																																																																				
17	Others [Enter other]		Note:																																																																				
<b>RUST GRADE</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>FINDING</th> <th>DEGREE</th> <th>NOTE</th> </tr> <tr> <td>Enter finding</td> <td>Select value</td> <td>Note:</td> </tr> </table>				FINDING	DEGREE	NOTE	Enter finding	Select value	Note:																																																														
FINDING	DEGREE	NOTE																																																																					
Enter finding	Select value	Note:																																																																					

- 1) Click Q in each inspection date to display the checklist record of each visual inspection campaign.
- 2) Click + to create a new checklist to be part of visual inspection report.
- 3) **Status of VISUAL CHECKLIST report** at the latest inspection history change to active (On INFO tab).
- 4) Select status and take note for severity of damage mechanism or other finding that was inspected.
- 5) The highest severity status (P1-P6) will represent the status of visual checklist on the top right.



### 6.3.3 Visual Picture Log

On **VISUAL > PICTURE LOG** tab, create a visual picture log for picture uploading and input the data into the form.

**PICTURE LOG**

INSPECTION DATE	Tag number:	Damage mechanism:
Nov 5, 2021	CPOC-MDA-4-GC-H11N Anomaly point: A	Select damage mechanism
Mar 14, 2020	Mar 14, 2020	Main component:
Nov 2, 2019	Enter anomaly point	Severity:
Mar 24, 2015	W0 number:	Select severity

Findings:	Recommendation:
Enter message ...	Enter message ...

INSPECTION DATE	Tag number:	Damage mechanism:
Mar 14, 2020	CPOC-MDA-4-GC-H11N Anomaly point: A	Select damage mechanism
Nov 2, 2019	Mar 14, 2020	Main component:
Mar 24, 2015	Enter anomaly point	Severity:
	W0 number:	P5

Findings:	Recommendation:
 There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable.	 There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable.

- 1) Click  in each inspection date at the top left to display the picture log record of each visual inspection campaign.
- 2) Click  to create a new form to be part of visual inspection report.
- 3) **Status of VISUAL PICTURE LOG report** at the latest inspection history change to active (On INFO tab).
- 4) Enter anomaly point, select the component part and damage mechanism that occur on its.



Tag number:	CPOC-MDA-4-GC-H11N-01010	Damage mechanism:	Ext-General corrosion	
Inspection date:	Mar 14, 2020	Main component:	Pipe	
Anomaly point:	Enter anomaly point	Wo number:	Severity:	P5
 <span style="float: right; margin-right: 10px;"> </span>		 <span style="float: right; margin-right: 10px;"> </span>	P1 P2 P3 P4 <b>P5</b> (highlighted) P6	
			Close	
Findings:		Recommendation:		
<p>There are many variations of passages of Lorem ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable.</p>		<p>There are many variations of passages of Lorem ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable.</p>		

- 5) Click to upload picture of overview or close-up view from inspection findings.
- 6) Click to preview file with default image viewer program.
- 7) Click to delete a picture.
- 8) Enter findings and recommendation of inspection in text box.
- 9) Select severity status for the point of anomaly.

#### 6.3.4 Visual and NDE Anomaly

On **VISUAL** or **NDE > ANOMALY** tab, create anomaly report and input the data into the form.

INSPECTION DATE		STRUCTURE INFORMATION			
11 Mar 2022		Tag number:	MDA-T-COK-BBM-01	Sub structure:	CELLAR DECK
9 Feb 2021		Description:	Cellar Deck-Burner Boom BBM-01		
9 Feb 2020		Platform:	MDA	Component type:	Burner Boom
		Structure zone:	Topside	Component type class:	Boom
				Structure type:	SECONDARY
INSPECTION SUMMARY					
<p>Enter message ...</p>					
RECOMMENDATION BY GENERAL INSPECTOR (API INSPECTOR)					
<p>Enter message</p>					
RECOMMENDATION BY INSPECTION ENGINEER					
<p>Enter message</p>					
ANOMALY CORRECTIVE MAINTENANCE					
Temporary repair: (Due date)	25 Feb 2021	Select date	Pending	Select repair type	
<p>Description:</p> <p>Enter message</p>					
Permanent repair: (Due date)	Select date	Select status	Select repair type		
<p>Description:</p> <p>Enter message</p>					
Monitoring: (Due date)	Select date				
<p>Description:</p> <p>Enter message</p>					



- 1) Click  in each inspection date to display the anomaly record of each inspection campaign.
- 2) Click  to create anomaly form.
- 3) **Status of NDE ANOMALY report or VISUAL ANOMALY report** at the inspection history changes to active (On INFO tab).
- 4) Take note for inspection summary and recommendation.
- 5) **Anomaly Corrective Maintenance** of visual anomaly can specify the repair type, comment, due date for action and status update of maintenance.
- 6) If the repair status is **Completed**, the visual anomaly status will be **P6**, which will be used to consider the final integrity status.

### 6.3.5 Visual ROV Anomaly

Anomalies investigated by ROV are recorded in the following sections.

- **SZCI** ⇒ Splash Zone Coating Inspection
- **CATHODIC** ⇒ Cathodic Protection
- **ANODE** ⇒ Anode Inspection
- **SANI** ⇒ Selected Anode Inspection
- **FWD** ⇒ Flooded Member Detection
- **RISER GUARD** ⇒ Riser Guard Inspection
- **CAISSON** ⇒ Caisson Inspection
- **MARINE GROWTH** ⇒ Marine Growth Inspection
- **SCOUR SURVEY** ⇒ Scour Survey
- **EXPOSED PILE** ⇒ Exposed pile Survey
- **DEBRIS SURVEY** ⇒ Debris Survey
- **SEABED DEBRIS SURVEY** ⇒ Seabed Debris Survey



INSPECTION DATE	SZCI	CATHODIC	ANODE	SANI	FWD	RISER GUARD	CAISSON	INSPECTION DATE	
Dec 10, 2021								Dec 10, 2021	
CAISSON INSPECTION BY ROV									
No	Component Type	Component Name	Depth	Visible Damage	Catch Grid	Blockage	CP Reading (mV)	Description	Integrity Status

MARINE GROWTH	SCOUR SURVEY	EXPOSED PILE	DEBRIS SURVEY	SEABED DEBRIS			
SEABED DEBRIS SURVEY BY ROV				INSPECTION DATE Dec 10, 2021			
No	Survey Type	Component Name	Length (m)	Width (m)	Height (m)	Integrity Status	Comment

- 1) Click in each inspection date to display the checklist record of each visual inspection campaign.
- 2) Select inspection type at the top of table.
- 3) Select inspection date.
- 4) Click to create a new anomaly record, then enter information and select integrity status for that inspection.
- 5) In the case that there is a large amount of data to input in the AIMS, users can use the import function to help import data at once via excel template.

### 6.3.6 NDE

On **NDE > NDE** tab, create an inspection report and input data into the form.

INSPECTION DATE	NDE SUMMARY																						
Dec 15, 2021																							
Dec 10, 2021																							
<table border="1"> <thead> <tr> <th>Inspection method:</th> <th>Select method</th> <th>Integrity status:</th> <th>Select status</th> </tr> </thead> <tbody> <tr> <td>Findings:</td> <td>Recommendation:</td> <td></td> <td></td> </tr> <tr> <td>Enter message ...</td> <td>Enter message ...</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>Result file</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td> </td> </tr> </tbody> </table>				Inspection method:	Select method	Integrity status:	Select status	Findings:	Recommendation:			Enter message ...	Enter message ...					Result file					
Inspection method:	Select method	Integrity status:	Select status																				
Findings:	Recommendation:																						
Enter message ...	Enter message ...																						
		Result file																					

- 1) Click in each inspection date to display the NDE summary record of each inspection campaign.
- 2) Click to create an inspection report.
- 3) Select inspection method.
- 4) Select status and take note for severity finding that was inspected.
- 5) At Result file, click to attach an inspection report.



### 6.3.7 RBI

RBI tab contains probability of failure (POF) and consequence of failure (COF) record. User can select the level of failure for damage mechanism and consequence to show on risk matrix.

POF   PROBABILITY OF FAILURE					
Risk		Probability of Failure Level		Comment	
A	Fatigue Analysis	High   Remaining Fatigue Life ≤ 60 years	100	Note:	
B	Accidental Damage	High   Susceptible to dropped objects and boat impacts	100	Note:	
C	Anomalies	Medium   Pitting corrosion, D/10 > Impact > D/20	35	Note:	
D	Probability of Corrosion	Low   Above Splash Zone, Topsides   Low corrosive zone as compare to subsea and splash zone	5	Note:	
E	Confidence in Assessment	Medium   General Visual Inspection   Anomalies: Medium   No Anomalies: Low	10	Note:	
F	Utilization Factor	Medium   0.9 >= Utilization Ratio (UR) >= 0.85   0.95 >= Punching Ratio (PR) >= 0.9	35	Note:	
Total		285	$X = A + B + C + D + E + F$		
COF   CONSEQUENCE OF FAILURE					
Risk		Consequence of Failure Level		Comment	
G	Fatigue Analysis	High	20	Note:	
H	Accidental Damage	High	100	Note:	
I	Anomalies	Medium   Other Contents (like utility service)	20	Note:	
J	Probability of Corrosion	Medium   Production Significance Per Event Price in USD 1,000,000 -5,000,000	20	Note:	
K	Confidence in Assessment	High   Location: Subsea   Extensive	20	Note:	
Total		180	$Y = G + H + I + J + K$		
System Factor S	Criticality Ranking	Criticality Ranking Criteria	Inspection Priority	Inspection Frequency	Risk Level
0.4	20520	>=15,000	1	12 months	Very High

- 1) Click  to create a record for RBI assessment.
- 2) Click  to view flowline RBI report.
- 3) Click  to delete RBI record.
- 4) Click  to view RBI record.

### 6.3.8 Library

Library tab is a repository of all related files such as construction document, inspection report, MOC., video, etc.

LIBRARY					
Construction Document		Inspection Report		General Document Other (e.g. MOC, related communication email, etc.)	
Enter file name		Enter file name		Enter file name	
File name		Subsea by ROV.pdf		File name	
Uploaded date		Monday, March 14, 2022 2:36		Uploaded date	



### 6.3.9 Manage

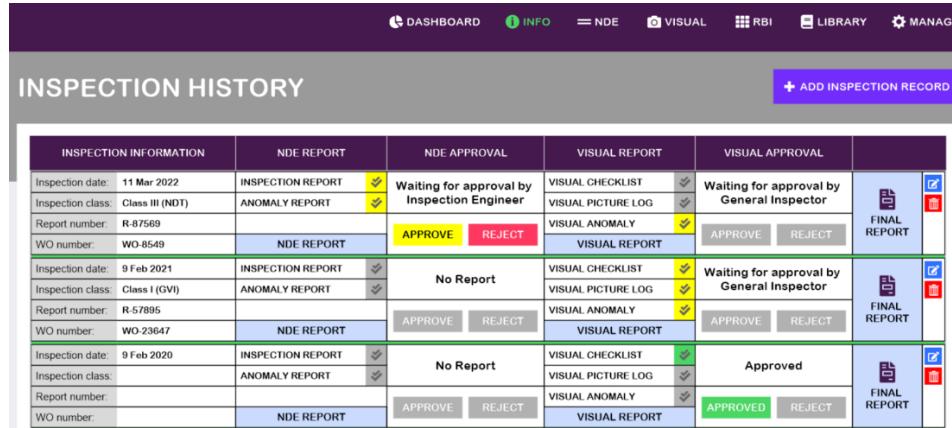
This tab allows to add a new structure, edit info data, or even delete tags from the system.



The screenshot shows the 'STRUCTURE' tab selected. It displays basic information: Tag number (MDA-T-CDK-BBM-01), Description (Cellar Deck-Burner Boom BBM-01), and Platform (Platform). The 'LIBRARY' tab is also visible, containing sections for Construction Document, Inspection Report, General Document, and Other (e.g. MOC-related documents).

### 6.3.10 Report Approval

The generated report shows the status for approval by authorized person. NDE report and visual report can be clicked to preview before rejection or approval. For every report approved, it is automatically signed at the bottom of the report.



The screenshot shows the 'INSPECTION HISTORY' table. It includes columns for Inspection Information, NDE Report, NDE Approval, Visual Report, Visual Approval, and Final Report. The table lists three inspection records with their details and approval status.

INSPECTION INFORMATION	NDE REPORT	NDE APPROVAL	VISUAL REPORT	VISUAL APPROVAL	FINAL REPORT
Inspection date: 11 Mar 2022 Inspection class: Class III (NDT) Report number: R-87569 WO number: WO-8549	INSPECTION REPORT ANOMALY REPORT NDE REPORT	Waiting for approval by Inspection Engineer APPROVE REJECT	VISUAL CHECKLIST VISUAL PICTURE LOG VISUAL ANOMALY VISUAL REPORT	Waiting for approval by General Inspector APPROVE REJECT	FINAL REPORT APPROVED
Inspection date: 9 Feb 2021 Inspection class: Class I (GVI) Report number: R-57895 WO number: WO-23647	INSPECTION REPORT ANOMALY REPORT NDE REPORT	No Report APPROVE REJECT	VISUAL CHECKLIST VISUAL PICTURE LOG VISUAL ANOMALY VISUAL REPORT	Waiting for approval by General Inspector APPROVE REJECT	FINAL REPORT APPROVED
Inspection date: 9 Feb 2020 Inspection class: ANOMALY REPORT Report number: WO number:	INSPECTION REPORT ANOMALY REPORT NDE REPORT	No Report APPROVE REJECT	VISUAL CHECKLIST VISUAL PICTURE LOG VISUAL ANOMALY VISUAL REPORT	Approved APPROVED REJECT	FINAL REPORT APPROVED

#### 1) Report status

- ✗ No report.
- 🟡 The report has not been approved.
- 🟢 The report has been approved.

#### 2) Previewing report

User can click **NDE REPORT** / **VISUAL REPORT** or **FINAL REPORT** to preview the report before approval.

#### 3) Approval status

- APPROVE** ⇒ Waiting for approval by authorized person.
- REJECT** ⇒ Return the report for review again.
- APPROVED** ⇒ Approval is complete.

#### 4) Approval step

Authorized person can click on approval status to sign the report. The system will automatically send an email to the person involved to take action.



### **Summary of approval authority**

- NDE Report: **General Inspector**
- NDE Anomaly Report: **General Inspector** ⇒ **Inspection Engineer**
- Visual Checklist Report: **General Inspector**
- Visual Picture Log Report: **General Inspector**
- Visual Anomaly Report: **General Inspector** ⇒ **Inspection Engineer**

### **5) Sample of email from the system**

[STRUCTURE] Reviewed, Visual inspection report of MDA-T-PLF1-FRM-01 is waiting for your review.

 aims@dacon-inspection.com  
 To: Settapon Santatiwongchai

Reply | Reply All | Forward |  ...  
 Mon 07/Feb/2022 16:37

Dear Inspection Engineer,

The structure visual inspection report of **MDA-T-PLF1-FRM-01** Inspection date: 09/02/2020 has been reviewed by General Inspector..

Comment from General Inspector:

Please review in AIMS

Thank you very much.

Structure tag number : MDA-T-PLF1-FRM-01 

**Click to access this tag**

Best Regards,  
**Mr. Dacon Inspection Technologies**  
 Site Supervisor

**AIMS**  
 ASSET INTEGRITY MANAGEMENT SYSTEM



## 7. LIFTING

### 7.1 Lifting Dashboard

The lifting tags in this module are divided into two groups, including equipment and crane.

#### 7.1.1 Lifting Filter Data

All lifting tag number are displayed on lifting dashboard page. Additionally, each platform can be filtered for monitoring with multiple conditions in real time.

LIFTING EQUIPMENT										APPROVAL PENDING	EXPORT EXCEL	SUMMARY	INSPECTION RECORD		
EQUIPMENT		CRANE		Filters											
PLATFORM	TAG NUMBER	CATEGORY	EQUIPMENT TYPE	DESCRIPTION			INSPECTION DATE	EXPIRATION DATE	COLOR CODE	INSPECTION STATUS	C				
				ACCEPTED 1340	REJECTED 7	QUARANTINE 0	MAINTENANCE 42	OVERDUE 0	NO INSPECT 0	TOTAL 1389					
<b>Total record:</b>															
MDPP	002 A	Lifting Accessories	Shackles	Anchor shackle, bolt type Ø 7/8", WLL. 6.5 MT.			6 Apr 2021	6 Apr 2022	Pink	Accepted					
MDPP	002 B	Lifting Accessories	Shackles	Anchor shackle, bolt type Ø 7/8", WLL. 6.5 MT.			6 Apr 2021	6 Apr 2022	Pink	Accepted					
	004 A	Lifting Accessories	Shackles	Anchor shackle, bolt type Ø 7/8", WLL. 6.5 MT.			15 Apr 2021	15 Apr 2022	Pink	Accepted					
MDLQ	00E-A6969-2	Lifting Accessories	Sling	Masterlink & Hook, Ø 38 mm x 2.5 m, WLL. 12.0 MT			14 Apr 2021	14 Apr 2022	Pink	Accepted					
MDPP	01	Lifting Accessories	Shackles	Anchor shackle, bolt type Ø 5/8", WLL. 3.25 MT.			15 Apr 2021	15 Apr 2022	Pink	Accepted					
MDPP	002 A	Lifting Accessories	Shackles	Anchor shackle, bolt type Ø 7/8", WLL. 6.5 MT.			02 Apr 2024	02 Apr 2025	Black	Accepted					

- Select tab of lifting group (**EQUIPMENT** or **CRANE**) to show all of tag numbers.

ACCEPTED 1340	REJECTED 7	QUARANTINE 0	MAINTENANCE 42	OVERDUE 0	NO INSPECT 0	TOTAL 1389
------------------	---------------	-----------------	-------------------	--------------	-----------------	---------------

- Click the status button to display the filtered data for each status.

PLATFORM	ALL	STATUS	ALL
----------	-----	--------	-----

- Select **Status** or **Platform** from dropdown list to filtering.
- Click **EXPORT EXCEL** to export excel file to the desktop. This file contains the data of each tag number that was filtered by filter tool.

TAG NO	Search tag no		PLATFORM	ALL	STATUS	ACCEPTED	ACCEPTED 1340	REJECTED 7	QUARANTINE 0	MAINTENANCE 42	OVERDUE 0	NO INSPECT 0	TOTAL 1389	
<b>Total record: 1340</b>														
MDPP	002 A	Lifting Accessories	Shackles	Anchor shackle, bolt type Ø 7/8", WLL. 6.5 MT.			6 Apr 2021	6 Apr 2022	Pink	Accepted				
	004 A	Lifting Accessories	Shackles	Anchor shackle, bolt type Ø 7/8", WLL. 6.5 MT.			15 Apr 2021	15 Apr 2022	Pink	Accepted				

- Click to access the tag number on structure module.



SUMMARY OF LIFTING EQUIPMENT					
Equipment/Tools	Accepted	Rejected	Quarantine	Maintenance	Total
Beam Clamp	17	0	0	0	17
Beams	76	0	0	2	78
CCU	83	0	0	2	85
Crane	18	0	0	3	21
Eye Bolt	108	0	0	0	108
Fibre Rope	0	0	0	0	0
Hoists	50	0	0	6	56
Master Link	17	0	0	0	17
Padeyes	240	0	0	26	266
Shackles	433	0	0	1	434
Slink	0	0	0	0	0
Total	1,042	0	0	40	1,082

- 8) At equipment tab, Click **SUMMARY** to show the table summary of lifting equipment.

LIFTING CRANE INSPECTION SUMMARY INSPECTION SECTION   MAINTENANCE AND INSPECTION DEPARTMENT										
NO	TAG NO	PLATFORM	INSPECTION DATE	INSPECTION FINDING	RECOMMENDATION	REPORT NO	RECTIFICATION BY	RECTIFICATION STATUS	REMARK	
1	20416C	ADA	8 Apr 2021	TestTest		Test01	Test	Completed		

- 9) At crane tab, Click **SUMMARY** to show the table summary of lifting crane.
- 10) Click **INSPECTION RECORD** to download excel form to desktop or import data via template.

### 7.1.2 Approval Pending

At the top right of structure dashboard page, click **APPROVAL PENDING** to access **APPROVAL PENDING** section. Approval pending contains a list of reports that are pending approval from authorized persons.

LIFTING CRANE APPROVAL PENDING						<a href="#">BACK</a>
CRANE		EQUIPMENT				
TAG NO	Search tag no	SEARCH	START DATE	END DATE	SEARCH	
Total record: 5169						
TAG NUMBER	INSPECTION DATE	APPROVAL BY GENERAL INSPECTOR			APPROVAL STATUS	
NAME	DATE					
20416C	8 Apr 2021				Waiting for approval by Inspection Engineer	<a href="#">Q</a> <a href="#">^</a>

- 1) The table of approval pending is divided into two parts, crane and equipment.

TAG NO	Search tag no	SEARCH
--------	---------------	--------

- 2) Enter word or full name of tag number, and then click **SEARCH** or press "ENTER" on keyboard for searching.

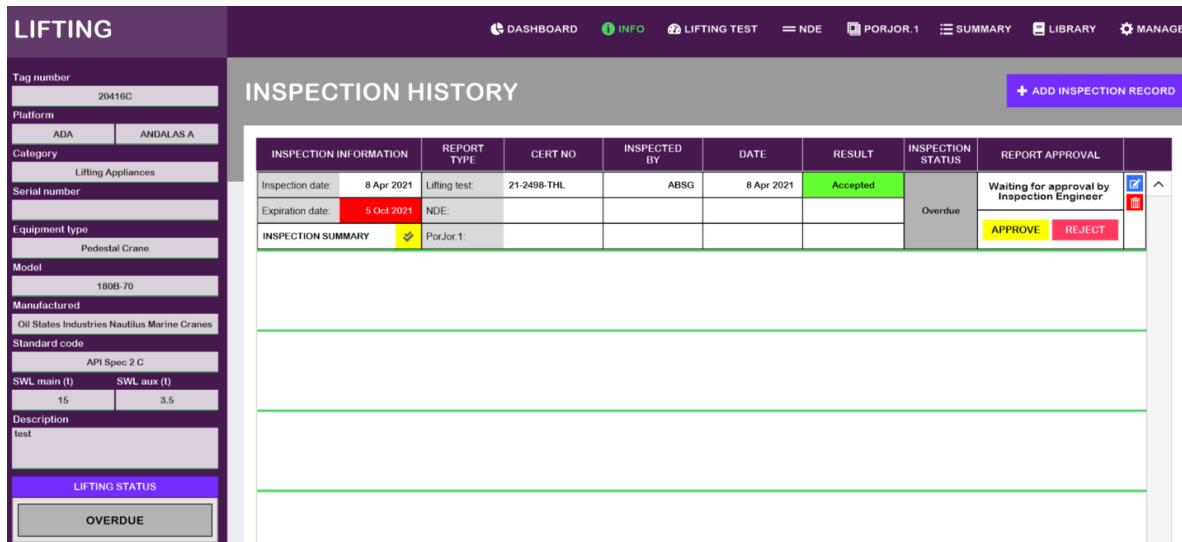


START DATE		END DATE		SEARCH
------------	--	----------	--	--------

- 3) Select start date and end date, then click **SEARCH** button for filtering
- 4) Click  to access the lifting module for approval tasks.

## 7.2 Lifting Management System

Lifting module contains the data of category, equipment type, working limit load and safety working load, moreover, there are library that collect uploaded files.



The screenshot shows the 'LIFTING' module interface. On the left, a sidebar displays component details: Tag number (20416C), Platform (ADA ANDALAS A), Category (Lifting Appliances), Serial number, Equipment type (Pedestal Crane), Model (180B-70), Manufactured by (Oil States Industries Nautilus Marine Cranes), Standard code (API Spec 2 C), SWL main (t) (15), SWL aux (t) (3.5), and Description (test). Below this is a 'LIFTING STATUS' section with an 'OVERDUE' button. The main area is titled 'INSPECTION HISTORY' and contains a table with columns: INSPECTION INFORMATION, REPORT TYPE, CERT NO, INSPECTED BY, DATE, RESULT, INSPECTION STATUS, and REPORT APPROVAL. One row is shown with inspection date 8 Apr 2021, report type Lifting test, cert no 21-2498-THL, inspected by ABSG, date 8 Apr 2021, result Accepted, status Overdue, and approval buttons APPROVE and REJECT. A note says 'Waiting for approval by Inspection Engineer'. At the top right, there are menu tabs: DASHBOARD, INFO, LIFTING TEST, NDE, PORJOR.1, SUMMARY, LIBRARY, and MANAGE. A 'ADD INSPECTION RECORD' button is also present.

General information of each component is on the left side and menu tabs are on the top of page.

### 7.2.1 Overview of Lifting Inspection

Inspection reports of lifting will be considered two types of inspection as follows **lifting equipment** inspection and **lifting crane** inspection.

- **Lifting Equipment** inspection campaigns consist of the following reports.
  - 1) Lifting Report ⇒ 7.2.3
  - 2) NDE Report ⇒ 7.2.4
- **Lifting Crane** inspection campaigns consist of the following reports.
  - 1) Lifting Report ⇒ 7.2.3
  - 2) NDE Report ⇒ 7.2.4
  - 3) PORJOR.1 Report ⇒ 7.2.5
  - 4) Crane Summary Report ⇒ 7.2.6



### 7.2.2 Inspection History

On **INFO** tab, Click **+ ADD INSPECTION RECORD** and input data in the fields, then click **SUBMIT** to generate a new inspection campaign record.

The color code will change from status (**Accepted**: orange, purple, yellow and pink, **Reject**: red, **maintenance**: white, **Quarantine**: blue and **Overdue**: gray).

INSPECTION HISTORY								
INSPECTION INFORMATION	REPORT TYPE	CERT NO	INSPECTED BY	DATE	RESULT	INSPECTION STATUS	REPORT APPROVAL	
Inspection date: 8 Apr 2021	Lifting test:	21-2498-THL	ABSG	8 Apr 2021	Accepted	Overdue	Waiting for approval by Inspection Engineer	<input checked="" type="checkbox"/> <input type="checkbox"/>
Expiration date: 5 Oct 2021	NDE:						<input type="checkbox"/> <input checked="" type="checkbox"/>	
INSPECTION SUMMARY <span style="color: green;">PorJor.1:</span>								

**+ ADD INSPECTION RECORD**

Inspection Date	Status
Select date	Select status
<b>REQUIRED</b>	<b>REQUIRED</b>
<b>SUBMIT</b>	



INSPECTION INFORMATION	REPORT TYPE	CERT NO	INSPECTED BY	DATE	RESULT	INSPECTION STATUS	REPORT APPROVAL	
Inspection date: 14 Mar 2022	Lifting test:					Quarantine	No Report	<input checked="" type="checkbox"/> <input type="checkbox"/>
Expiration date: NDE:							<input type="checkbox"/> <input checked="" type="checkbox"/>	
INSPECTION SUMMARY <span style="color: green;">PorJor.1:</span>								
Inspection date: 8 Apr 2021	Lifting test:	21-2498-THL	ABSG	8 Apr 2021	Accepted	Overdue	Waiting for approval by Inspection Engineer	<input checked="" type="checkbox"/> <input type="checkbox"/>
Expiration date: 5 Oct 2021	NDE:						<input type="checkbox"/> <input checked="" type="checkbox"/>	
INSPECTION SUMMARY <span style="color: green;">PorJor.1:</span>								

### 7.2.3 Lifting Test

On **LIFTING TEST** tab, create a lifting inspection record and input the data into the form.

INSPECTION DATE	LIFTING REPORT																						
<input type="text" value="Jan 10, 2022"/>   <input type="text" value="Apr 6, 2021"/>  	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Test cert no:</td> <td>Enter test cert number</td> <td style="width: 30%;">Inspected by:</td> <td>Enter name</td> <td style="width: 30%;">Test date:</td> <td>Select date</td> </tr> <tr> <td>Findings:</td> <td colspan="3">Recommendation:</td> <td colspan="2">Result file</td> </tr> <tr> <td>Enter message ...</td> <td colspan="3">Enter message ...</td> <td colspan="2"> <input data-bbox="1334 1664 1362 1700" type="button" value="+"/> <input data-bbox="1367 1664 1395 1700" type="button" value="Search"/> <input data-bbox="1400 1664 1428 1700" type="button" value="Delete"/> </td> </tr> </table>					Test cert no:	Enter test cert number	Inspected by:	Enter name	Test date:	Select date	Findings:	Recommendation:			Result file		Enter message ...	Enter message ...			<input data-bbox="1334 1664 1362 1700" type="button" value="+"/> <input data-bbox="1367 1664 1395 1700" type="button" value="Search"/> <input data-bbox="1400 1664 1428 1700" type="button" value="Delete"/>	
Test cert no:	Enter test cert number	Inspected by:	Enter name	Test date:	Select date																		
Findings:	Recommendation:			Result file																			
Enter message ...	Enter message ...			<input data-bbox="1334 1664 1362 1700" type="button" value="+"/> <input data-bbox="1367 1664 1395 1700" type="button" value="Search"/> <input data-bbox="1400 1664 1428 1700" type="button" value="Delete"/>																			

- 1) Click  in each inspection date to display the lifting inspection record of each lifting inspection campaign.
- 2) Click  to create a new lifting inspection record.



- 3) Enter information for visual test and load test.
- 4) Click  to attach an inspection report.

#### 7.2.4 NDE

On **NDE** tab, create an inspection record and input data into the form.

INSPECTION DATE		NDE							
Jan 10, 2022	 	Test cert no:	Enter test cert number	Inspected by:	Enter name	Test date:	Select date	Test result:	Select result
Apr 6, 2021	 	Findings:		Recommendation:		Result file			
		Enter message ...		Enter message ...					
									

- 1) Click  in each inspection date to display the NDE record of each lifting inspection campaign.
- 2) Click  to create a new record.
- 3) Enter information for NDE inspection.
- 4) Click  to attach an inspection report.

#### 7.2.5 PORJOR.1

On **PORJOR.1** tab, create a PORJOR.1 inspection record and input data into the form.

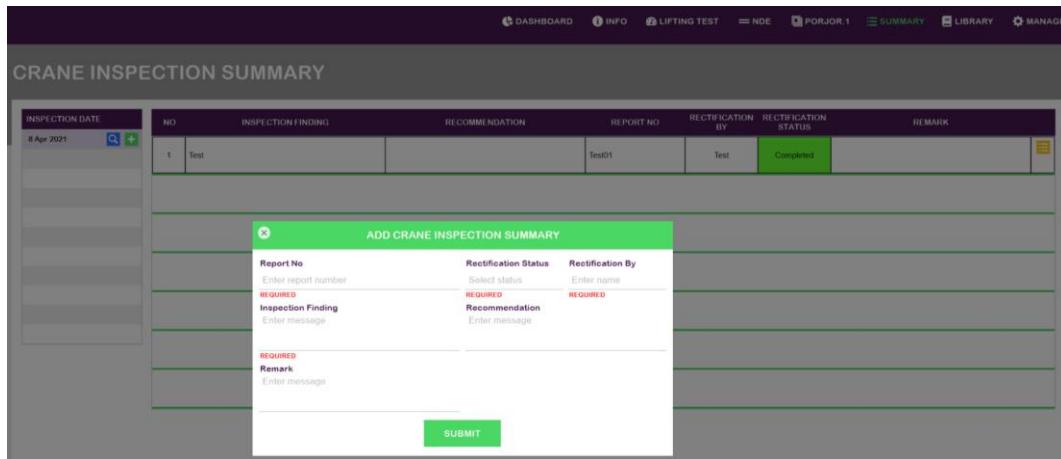
INSPECTION DATE		PORJOR.1 TEST							
Jan 10, 2022	 	Test cert no:	Enter test cert number	Inspected by:	Enter name	Test date:	Select date	Test result:	Select result
Apr 8, 2021	 	Findings:		Recommendation:		Result file			
		Enter message ...		Enter message ...					
									

- 1) Click  in each inspection date to display the PORJOR.1 inspection record of each lifting crane inspection campaign.
- 2) Click  to create an inspection report.
- 3) Enter information for PORJOR.1 inspection.
- 4) Click  to attach an inspection report.



### 7.2.6 Crane Inspection Summary

On **SUMMARY** tab, create lifting crane inspection summary to take action for corrective maintenance.



INSPECTION DATE	NO	INSPECTION FINDING	RECOMMENDATION	REPORT NO	RECTIFICATION BY	RECTIFICATION STATUS	REMARK
8 Apr 2021	1	Test		Test01	Test	Completed	

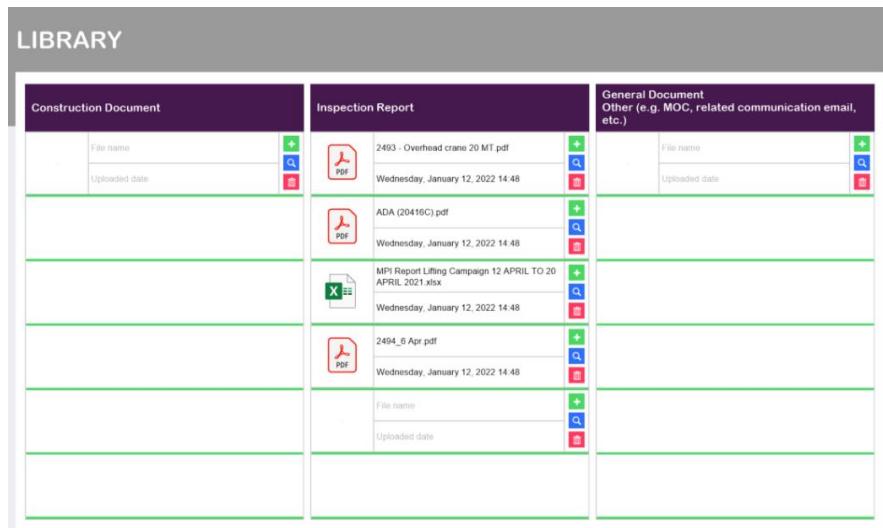
**ADD CRANE INSPECTION SUMMARY**

Report No <small>Enter report number</small>	Rectification Status <small>Select status</small>	Rectification By <small>Enter name</small>
<b>REQUIRED</b>	<b>REQUIRED</b>	<b>REQUIRED</b>
Inspection Finding <small>Enter message</small>	Recommendation <small>Enter message</small>	
<b>REQUIRED</b>		
Remark <small>Enter message</small>		
<b>SUBMIT</b>		

- 1) Click  in each inspection date at the top left to display summary of each lifting crane inspection campaign.
- 2) Click  to add inspection summary.
- 3) Record inspection summary and recommendation, then click **SUBMIT** button to save data in the system.

### 7.2.7 Library

On **LIBRARY** tab is a repository of all related files such as construction document, inspection report, MOC., Video, etc.



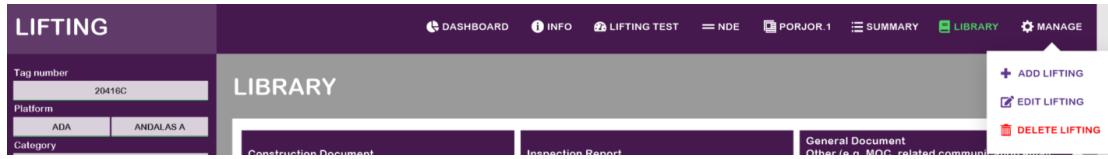
Construction Document	Inspection Report	General Document Other (e.g. MOC, related communication email, etc.)
File name  Uploaded date  	2493 - Overhead crane 20 MT.pdf Wednesday, January 12, 2022 14:48   ADA (20416C).pdf Wednesday, January 12, 2022 14:48   MPI Report Lifting Campaign 12 APRIL TO 20 APRIL 2021.xlsx Wednesday, January 12, 2022 14:48   2494_6_Apr.pdf Wednesday, January 12, 2022 14:48   File name  Uploaded date  	File name  Uploaded date  

- 1) At **LIBRARY** tab, click  to upload a file.
- 2) Click  to preview file with default viewer program.
- 3) Click  to delete a file.



## 7.2.8 Manage

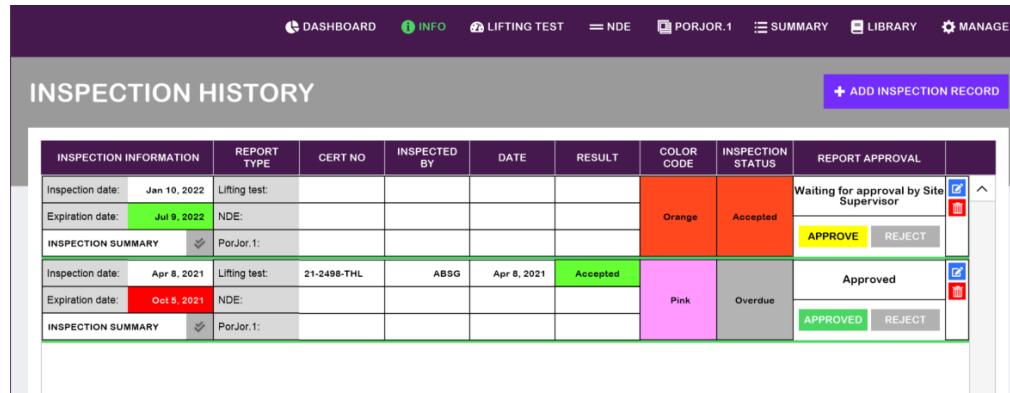
This tab allows to add a new lifting, edit info data, or even delete tags from the system.



The screenshot shows the 'LIBRARY' section of the AIMS system. It includes tabs for 'Construction Document', 'Inspection Report', and 'General Document'. On the right, there are buttons for 'ADD LIFTING', 'EDIT LIFTING', and 'DELETE LIFTING'.

## 7.2.9 Report Approval

The report shows the status for approval by authorized person. For every report approved, it is automatically signed at the bottom of the report.



The screenshot shows the 'INSPECTION HISTORY' section of the AIMS system. It displays a table of inspection records. The 'REPORT APPROVAL' column contains buttons for 'APPROVE' (yellow), 'REJECT' (red), and 'APPROVED' (green). The 'Color Code' column uses orange for 'Accepted' and pink for 'Overdue'.

INSPECTION INFORMATION		REPORT TYPE	CERT NO	INSPECTED BY	DATE	RESULT	COLOR CODE	INSPECTION STATUS	REPORT APPROVAL
Inspection date:	Jan 10, 2022	Lifting test:					Orange	Accepted	Waiting for approval by Site Supervisor <input checked="" type="checkbox"/> APPROVE <input type="checkbox"/> REJECT
Expiration date:	Jul 9, 2022	NDE:							<input type="checkbox"/> APPROVE <input checked="" type="checkbox"/> REJECT
INSPECTION SUMMARY		PorJor.1:							
Inspection date:	Apr 8, 2021	Lifting test:	21-2498-THL	ABSG	Apr 8, 2021	Accepted	Pink	Overdue	Approved <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECT
Expiration date:	Oct 5, 2021	NDE:							
INSPECTION SUMMARY		PorJor.1:							

### 1) Approval status

- APPROVE ⇒ Waiting for approval by authorized person.
- REJECT ⇒ Return the report for review again.
- APPROVED ⇒ Approval is complete.

### 2) Approval step

Authorized person can click on approval status to sign the report. The system will automatically send an email to the person involved to take action.

### Summary of approval authority

- Lifting Report: **General Inspector**
- NDE Report: **General Inspector**
- PORJOR.1 Report: **General Inspector**
- Crane Inspection Summary Report: **General Inspector** ⇒ **Inspection Engineer**



### 3) Sample of email from the system

[LIFTING CRANE] Reviewed, Inspection report of 20416C is waiting for your review.



aims@dacon-inspection.com  
To Nopharat Chammak

Dear Inspection Engineer,

The lifting crane inspection report of 20416C Inspection date: 17/01/2022 has been reviewed by General Inspector.

Comment from General Inspector:

Please review in AIMS

Thank you very much.

Lifting crane number : 20416C

**Click to access this tag**

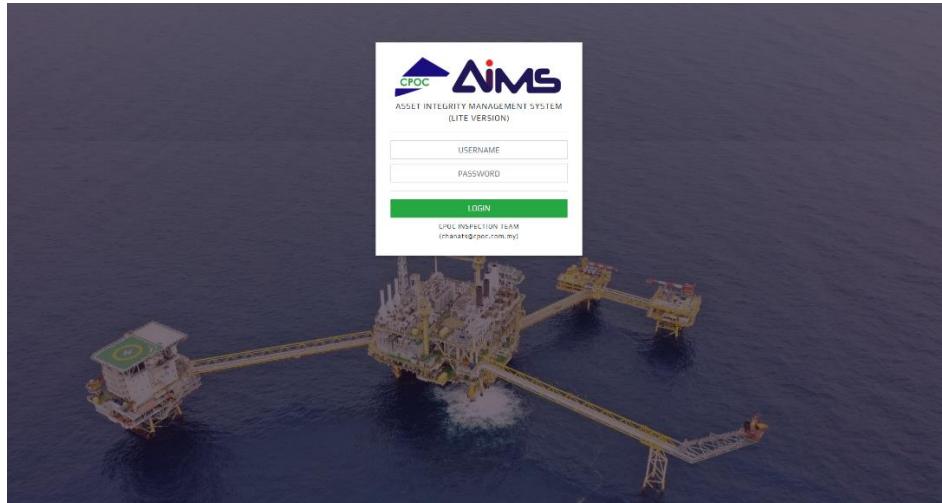
Best Regards,  
Mr. Dacon Inspection Technologies  
Site Supervisor

**AIMS**

ASSET INTEGRITY MANAGEMENT SYSTEM



## 8. AIMS WEB-BASED



AIMS in web-based version can be accessed through a web browser with URL: [https://aims-muda.cpoc.com.my/CPOC\\_AIMS](https://aims-muda.cpoc.com.my/CPOC_AIMS). Users must access AIMS web-based only via CPOC's internal network. An overview of web-based usage can be summarized as follows.

- **Data Retrieval**

The data display is retrieved from the central server (AIMS server). In other words, it is read-only and cannot be edited through the web-based.

- **Summary Dashboard**

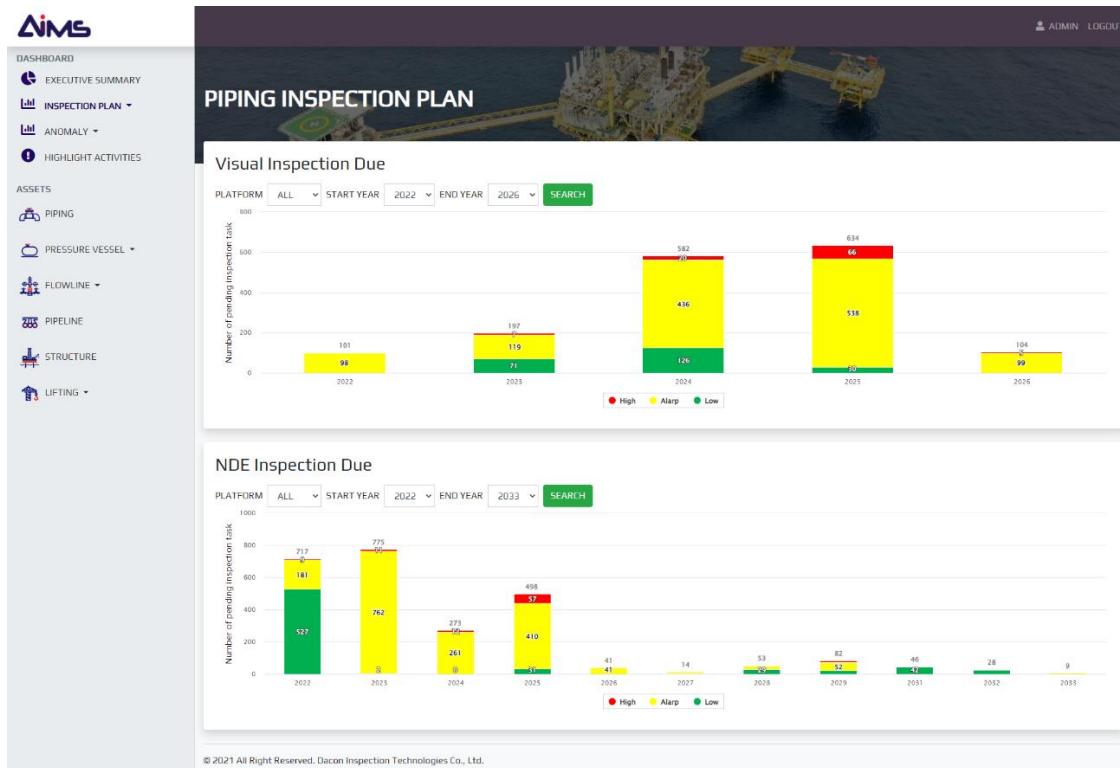
Summary dashboard similar to the AIMS application is also displayed to users on the web-based.

⇒ Executive summary for management review

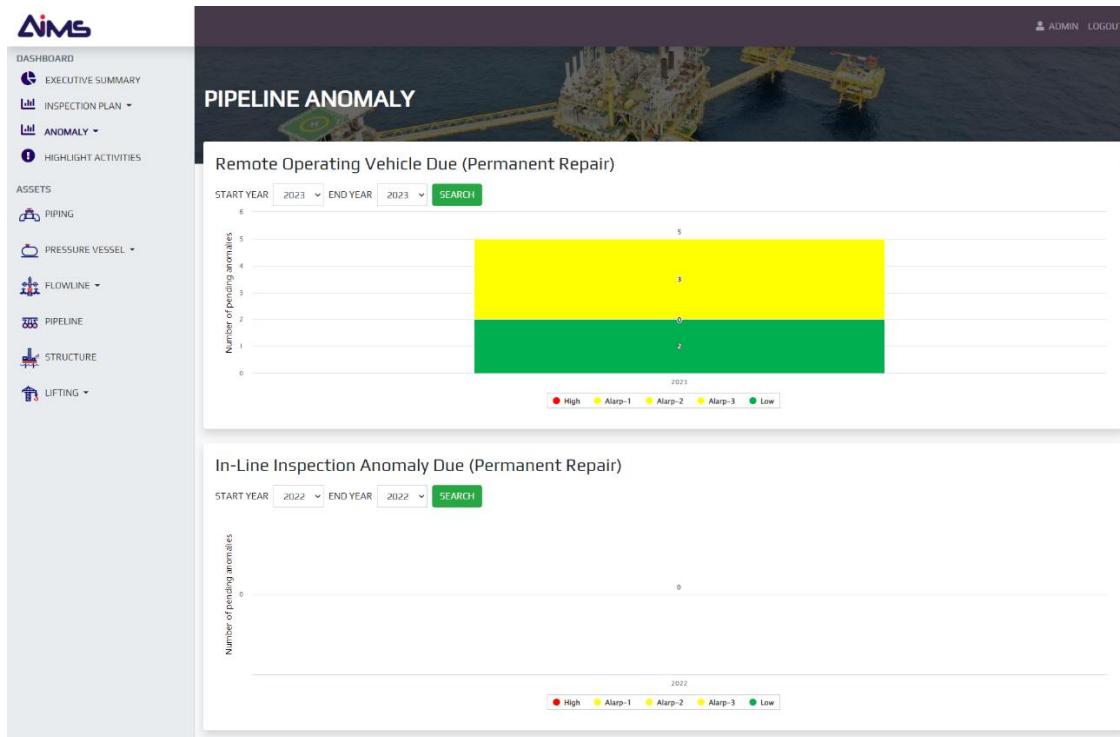
Module	Inspection Plan	Anomaly Management	Note
Piping	● Not Due	● Not Due	No Piping inspection has been run or inspection program is not yet underway or inactive.
Pressure Vessel	● Not Due	● Not Due	No Pressure vessel inspection has been run or inspection program is not yet underway or inactive.
Pipeline	● Not Due	● Not Due	No Pipeline inspection has been run or inspection program is not yet underway or inactive.
Structures	● Not Due	● Not Due	No Structure inspection has been run or inspection program is not yet underway or inactive.
Silos/Storage	● Not Due	● Not Due	No Silo/Storage inspection has been run or inspection program is not yet underway or inactive.
Lifting	● Not Due	● Not Due	No Lifting inspection has been run or inspection program is not yet underway or inactive.



⇒ Inspection plan show the number of pending inspection task



⇒ Number of pending anomalies





⇒ Highlight activities (inspection campaign, rectification campaign and management of change)

### • Info Data

Operating and design data of each tag number will be retrieved from the AIMS system to show on web.



- **Export data**

Export information of each equipment to excel file.

- **Preview Document**

Preview inspection report file from AIMS system on web-based.