DIMENSION BID

CTS TASK SHEET

Title	End of Well Report and Service Quality Meeting (SQM)					
Target Population	Field Engineers & Field Specialist					
This requirement is applicable to:	✓	JFE		FST		EOT
	✓	FE1		FS1		EO1
	✓	FE2		FS2		EO2
			✓	FS3		EO3

Objective:

DB is committed to providing Service Quality Excellence to our Clients.
The objective of this task is to ensure that employees who are required to compile and / or prepare the report knows the process and required reporting standard and understand the purpose of the report.

Tasks:

- Compile data about the operations performed in a particular well and prepare the End of well Report (EOWR) after operations finished as per Client's requirement. Include all results, analysis, incidents, lesson learned, action plans, suggestion and improvements.
- In case of any catastrophic, major or serious incident occurred during the operation, discuss with HSE manager, FSM and Job Supervisor the analysis and further action plans.
- Include the QHSE recommendations and final investigation report if present in the EOWR.
- Assist in the preparation of a Service Quality Meeting (SQM) with client and present the EOWR.

REQUIRED EVIDENCE:

1 End of Well Report 

OVERALL SCORE	STRONG			ADEQUATE			IMPROVEMENT NEEDED		
	10	9	8	7	6	5	4	3	2

MENTOR / ASSESSOR's Comments & Recommendation (Service Quality Engineer):			
have a good skill and knowledge in preparing end of well report and sqm report.			
Signature		Assessment Date	22/10/2024
Name	M. NOORHAFIZAN AB. MAJID	Position	SERVICE QUALITY ENG.

FSM / OM Comments & Recommendation: Meet expectation.			
Signature		Assessment Date	15/10/24
Name	RIDHWAN AZHAN	Position	FSM

SERVICE QUALITY MEETING (SQM)

CLIENT : PETRONAS

YEAR : 2023

QUARTER: Q2 & Q3

PRESENTATION DATE: 21th NOV 2023

HEALTH, SAFETY, SECURITY & ENVIRONMENT (HSSE) –

HSSE SHARING – SLIP, TRIP & FALL

HEALTH, SAFETY, SECURITY & ENVIRONMENT (HSSE) – PERFORMANCE & STATISTIC

Neu Dimension
Your Integrated Solutions Partner

YEAR	QUARTER	MANHOURS	UNSAFE ACT UNSAFE CONDITION	RECORDABLE INCIDENT
2023	Q2 & Q3	181,879	4,583	0

MANHOURS WORK FOR PCSB : 75,766

UAUC SUBMITTED FOR PCSB: 2,557

HEALTH, SAFETY, SECURITY & ENVIRONMENT (HSSE) – PERFORMANCE & STATISTIC

Neu Dimension
Your Integrated Solutions Partner

MANHOURS

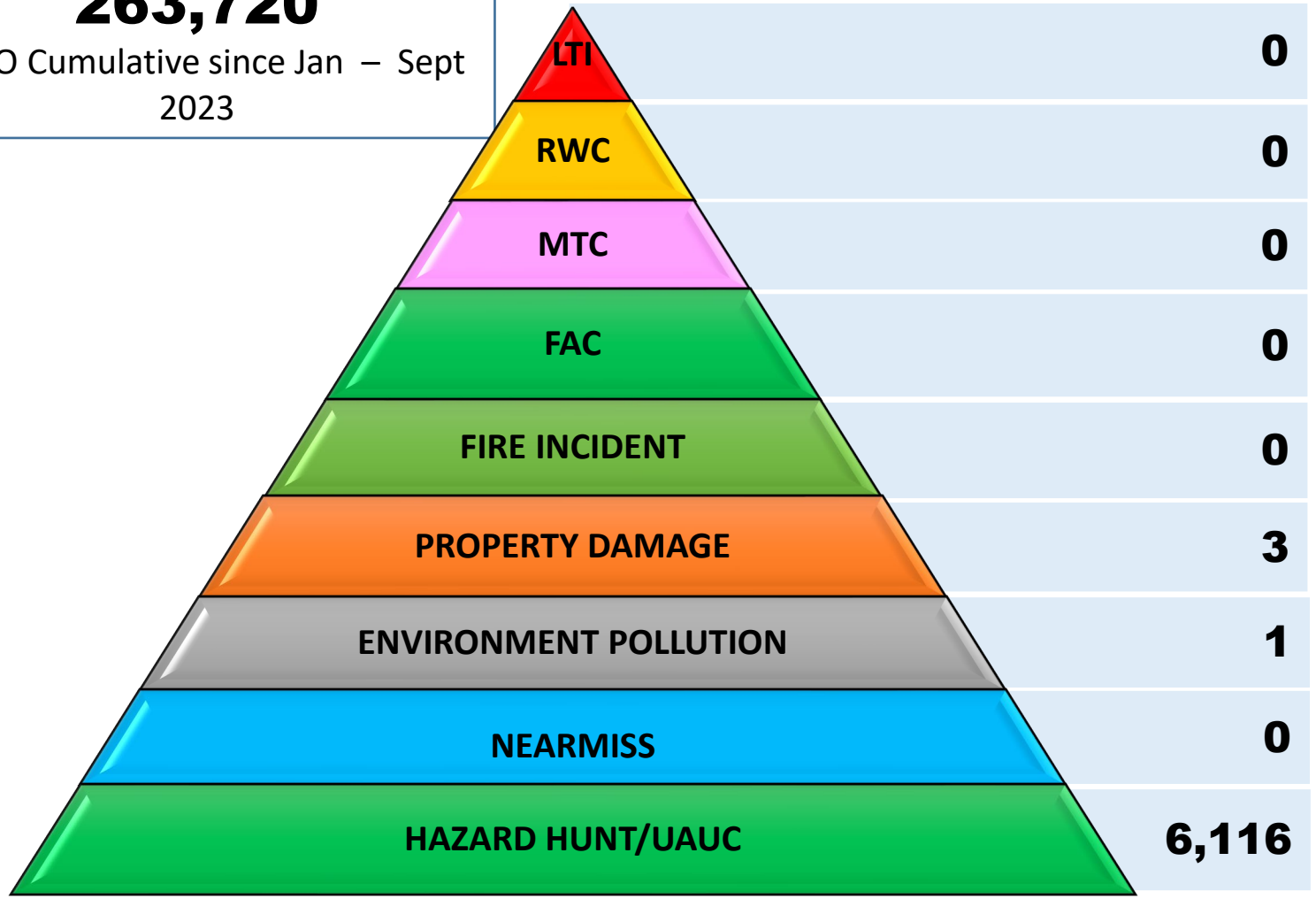
263,720
WMO Cumulative since Jan – Sept 2023

PETRONAS

868,607
Cumulative since 2015 – Sept 2023

DIMENSION BID

6,602,093
Cumulative since 2011 – Sept 2023



HEALTH, SAFETY, SECURITY & ENVIRONMENT (HSSE) – CONTRACT HSSE PLAN

Neu Dimension
Your Integrated Solutions Partner

NO.	HSSE ACTIVITIES	FREQUENCY	TARGET	ACTUAL	MONTH											
					1	2	3	4	5	6	7	8	9	10	11	12
MANAGEMENT COMMITMENT/ LEADERSHIP/COMMUNICATION																
1	HSSE Monthly Meeting	Monthly	12	10												
2	HSSE Committee Meeting	Quarterly	4	3												
3	HSSE Audit & Walkabout	Quarterly	4	3												
4	Business Partner Engagement	Quarterly	4	2												
5	Walk With Expert	Yearly	1	0												
6	PSS I-Care Visit	Yearly	1	1												
7	Petronas Rakan HSE	Yearly	1	0												
8	HSSE Plan 2023 (review)	Yearly	1	0												

HEALTH, SAFETY, SECURITY & ENVIRONMENT (HSSE) – CONTRACT HSSE PLAN

Neu Dimension
Your Integrated Solutions Partner

NO.	HSSE ACTIVITIES	FREQUENCY	TARGET	ACTUAL	MONTH											
					1	2	3	4	5	6	7	8	9	10	11	12
INCENTIVES																
9	HSSE Appreciation/Reward	Monthly	12	9												
TRAINING & PROGRAM																
10	New Employee HSSE Induction	Upon Reporting	100%	100%	Upon request by HR											
11	Toolbox Meeting & Safety Talk	Daily	100%	100%												
12	Safety Campaign	Quarterly														
	• Q1 – Health Awareness Campaign.		1	1												
	• Q2 – Environmental Awareness Campaign.		1	1												
	• Q3 – Right Tools for Right Job Campaign.		1	1												
	• Q4 - Slip and Fall Prevention Campaign.		1	0												
13	General Housekeeping	Monthly	12	9												

HEALTH, SAFETY, SECURITY & ENVIRONMENT (HSSE) – CONTRACT HSSE PLAN

NO.	HSSE ACTIVITIES	FREQUENCY	TARGET	ACTUAL	MONTH											
					1	2	3	4	5	6	7	8	9	10	11	12
TRAINING & PROGRAM																
14	Health & PPE Screening – Offshore personnel	Upon req. by Ops	100%	100%	Blood pressure test & PPE check prior crew mobilization to offshore											
15	Scheduled Waste Disposal	Twice per year	2	1												
16	HIRADC/JHA Review	Twice per year	2	2												
17	Emergency Exercise & Drill	Yearly	1	8												
18	Random Drug & Alcohol Test	Twice per year	2	1												

Percentage Completed	74%

HSSE & FACILITIES FINDINGS UPDATE

SUMMARY OF WMO HSSE & FACILITY FINDING UPDATES

Neu Dimension
Your Integrated Solutions Partner

No.	Date Issue	Type of reporting	Location	Finding Highlight	Date Close	Status
1	29/8/2022	Hazard Hunt	WH13	Roof leaking at WH13. (Repair in progress by KSB Maintenance)	22/2/2023	Closed
2	2/1/2023	Hazard Hunt	Open Yard 20	Water ponding at car park area. (Report to KSB)	10/1/2023	Closed
3	3/1/2023	Hazard Hunt	WH41 CHS	Swing door cannot open and very hard to lock. (Report to KSB)	9/1/2023	Closed
4	29/1/2023	Walkabout	Open Yard	Electrical wire hanging improperly at maintenance workshop.	12/2/2023	Closed
5	29/1/2023	Walkabout	Open Yard	Electrical socket was not function at PCE area and maintenance area.	12/2/2023	Closed
6	1/2/2023	Walkabout	Open Yard 20	Aircond was malfunction at worker's pantry.	12/2/2023	Closed
7	27/2/2023	Walkabout	Open Yard 20	Huge tree Infront of the toilet potential for drop object.	09/7/2023	Closed
8	27/2/2023	Walkabout	Open yard 20	Water ponding at forklift accessway due to heavy rain	6/11/2023	Closed
9	27/2/2023	Walkabout	Open Yard 20	Broken concrete at the back yard area	2/3/2023	Closed
10	27/2/2023	Walkabout	Open yard 20	Dirt fluid discharge from the equipment cleaning activity.	TBA	Open
11	28/2/2023	Hazard Hunt	Open Yard 20	Roof leaking at Office building	TBA	Open
12	26/3/2023	Hazard Hunt	Open Yard 20	Aircond malfunction at office Open Yard	30/5/2023	Closed

SUMMARY OF WMO HSSE & FACILITY FINDING UPDATES

Neu Dimension
Your Integrated Solutions Partner

No.	Date Issue	Type of reporting	Location	Finding Highlight	Date Close	Status
13	23/7/2023	Hazard Hunt	WH41 SLS	Discharge pipe leaking	5/8/2023	Closed
14	24/7/2023	Hazard Hunt	Open yard 20	Existence of stray dogs	10/8/2023	Closed
15	9/8/2023	Hazard Hunt	WH41 SLS	Sprinkler Pipe BOMBA leaking	30/8/2023	Closed
16	9/8/2023	Walkabout	Open Yard 20	Open drain full with sand	14/9/2023	Closed
17	9/8/2023	Walkabout	Open yard 20	Fence open yard is very old and few had collapse	5/10/2023	Closed
18	2/9/2023	Walkabout	Open Yard 20	Water ponding in front of SW storage area	6/11/2023	Closed
19	13/10/2023	Hazard Hunt	Open Yard 20	Aircond malfunction at surau	TBA	Open

Total Findings : 19

Findings Closed : 16

Findings Open : 3

Percentage close : 84%

DB YARD IMPROVEMENT ACTIVITIES

SUMMARY OF 2023 WMO FACILITY PLAN & UPDATES

Neu Dimension
Your Integrated Solutions Partner

Fence installation at Open Yard 20

Project completed at WMO Facility

SUMMARY OF 2023 WMO FACILITY PLAN & UPDATES

Neu Dimension
Your Integrated Solutions Partner

BEFORE

AFTER

Dismantle PCE area

Project completed at WMO Facility

SUMMARY OF 2023 WMO FACILITY PLAN & UPDATES

Neu Dimension
Your Integrated Solutions Partner

Solar Spotlight installation at Abu Yard

Project completed at WMO Facility

SUMMARY OF 2023 WMO FACILITY PLAN & UPDATES

Neu Dimension
Your Integrated Solutions Partner

Concrete slab at Open Yard 20

Project completed at WMO Facility

SUMMARY OF 2023 WMO FACILITY PLAN & UPDATES

Neu Dimension
Your Integrated Solutions Partner

Concrete slab at Open Yard 20

Project completed at WMO Facility

SUMMARY OF 2023 WMO FACILITY PLAN & UPDATES

Neu Dimension
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Concrete slab at Open Yard 20

Project completed at WMO Facility

SUMMARY OF 2023 WMO FACILITY PLAN & UPDATES

Neu Dimension
Your Integrated Solutions Partner

Concrete slab at Open Yard 20

Project completed at WMO Facility

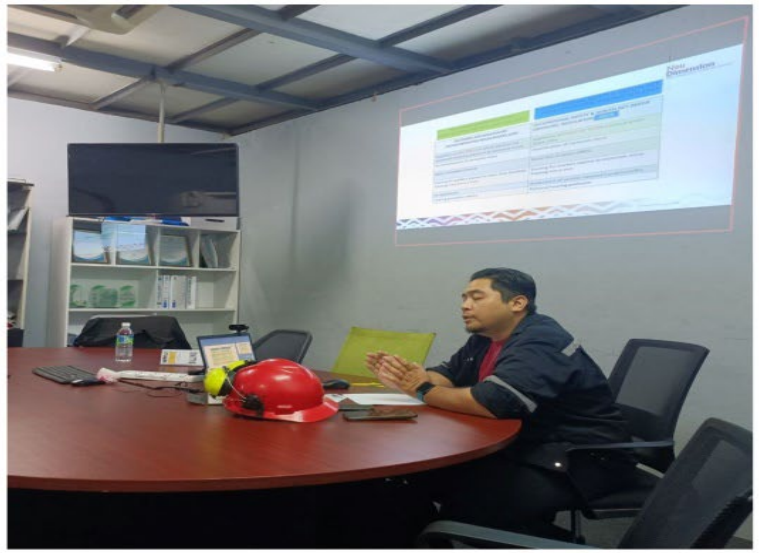
HSSE ACTIVITIES & PROGRAM Q2 & Q3

HSSE PROGRAMS & ACTIVITIES

Neu Dimension
Your Integrated Solutions Partner

01 HSSE AWARENESS TRAINING

FUNDAMENTAL OF NOISE & PPE



HSSE PROGRAMS & ACTIVITIES

02 FACILITY ENHANCEMENT

SAFETY SIGNAGES INSTALLATION

HSSE PROGRAMS & ACTIVITIES

03 MANGROVE SEEDING

DIMENSION BID , SOLAR ALERT & PSS PCSB

HSSE PROGRAMS & ACTIVITIES

04 HSSE REWARDS

HAZARD HUNT/UAUC PROGRAM







HSSE ACTIVITIES & PROGRAM
Q2 & Q3

HSSE PROGRAMS & ACTIVITIES

Neu Dimension
Your Integrated Solutions Partner

01 ROLLOUT Q2 CAMPAIGN

HAND & FINGER AWARENESS

HSSE PROGRAMS & ACTIVITIES

Neu Dimension
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02 HAND & FINGER AWARENESS PROGRAM

PROTECT HAND & FINGER

HSSE PROGRAMS & ACTIVITIES

Neu Dimension
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03 INJURY FREE AWARENESS

HSSE PROGRAMS & ACTIVITIES

Neu Dimension
Your Integrated Solutions Partner

04 HSE DAY DULANG

HSSE PROGRAMS & ACTIVITIES

Neu Dimension
Your Integrated Solutions Partner

05 HSSE REWARDS



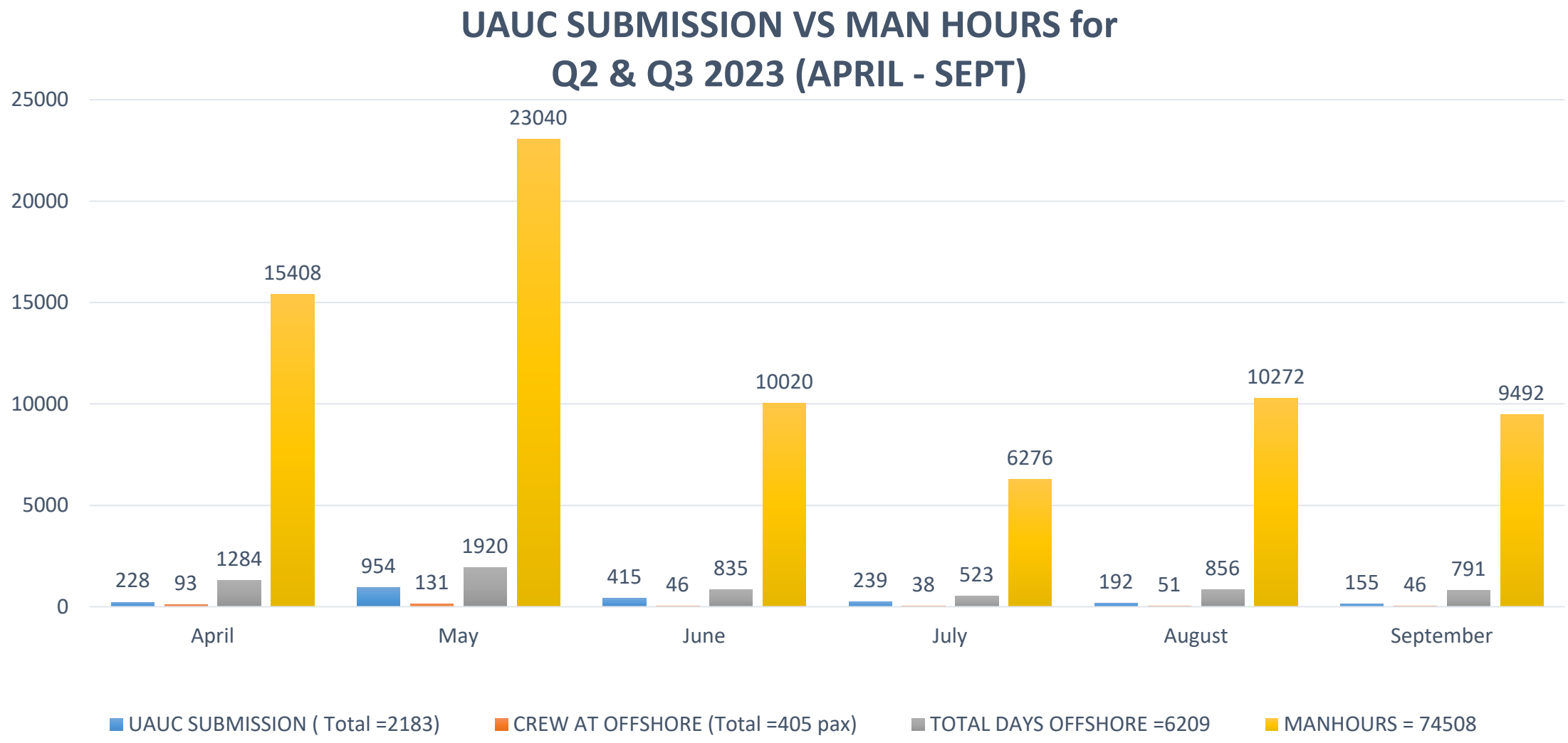





COILED TUBING SERVICES

HEALTH, SAFETY, SECURITY & ENVIRONMENT (HSSE) – MANHOURS

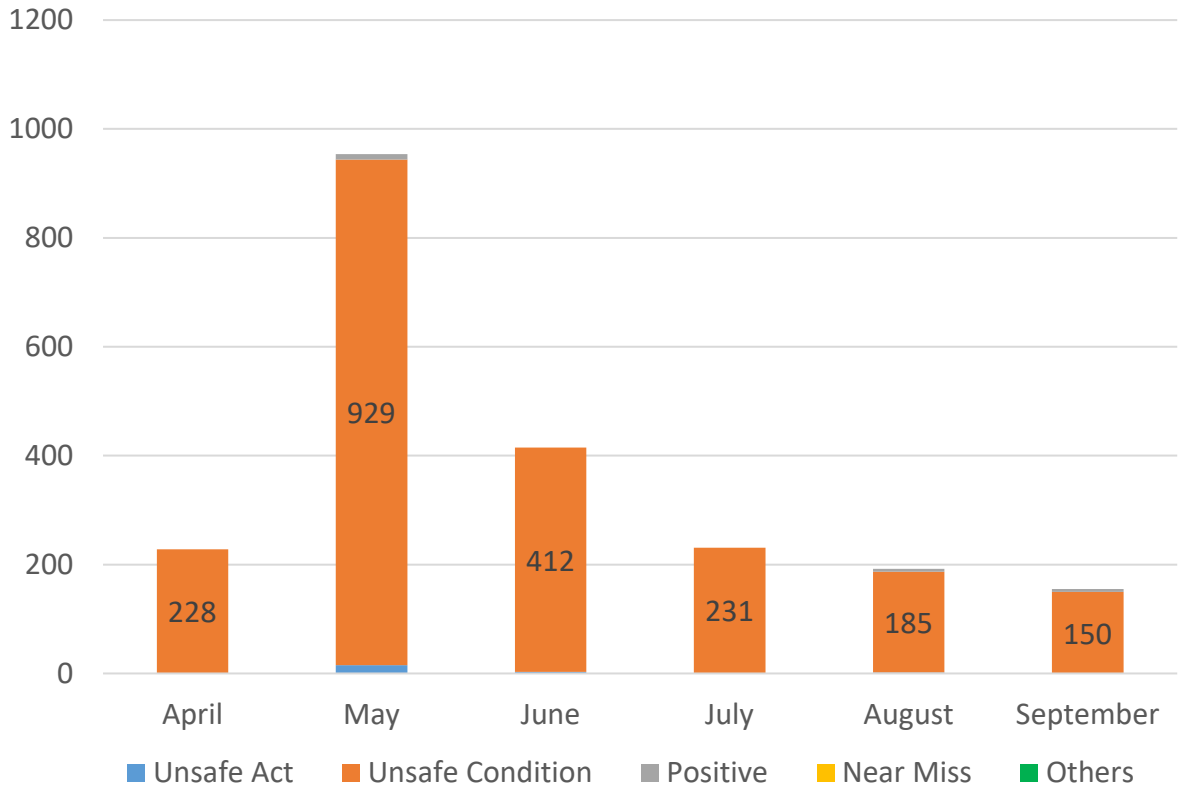
Neu Dimension
Your Integrated Solutions Partner

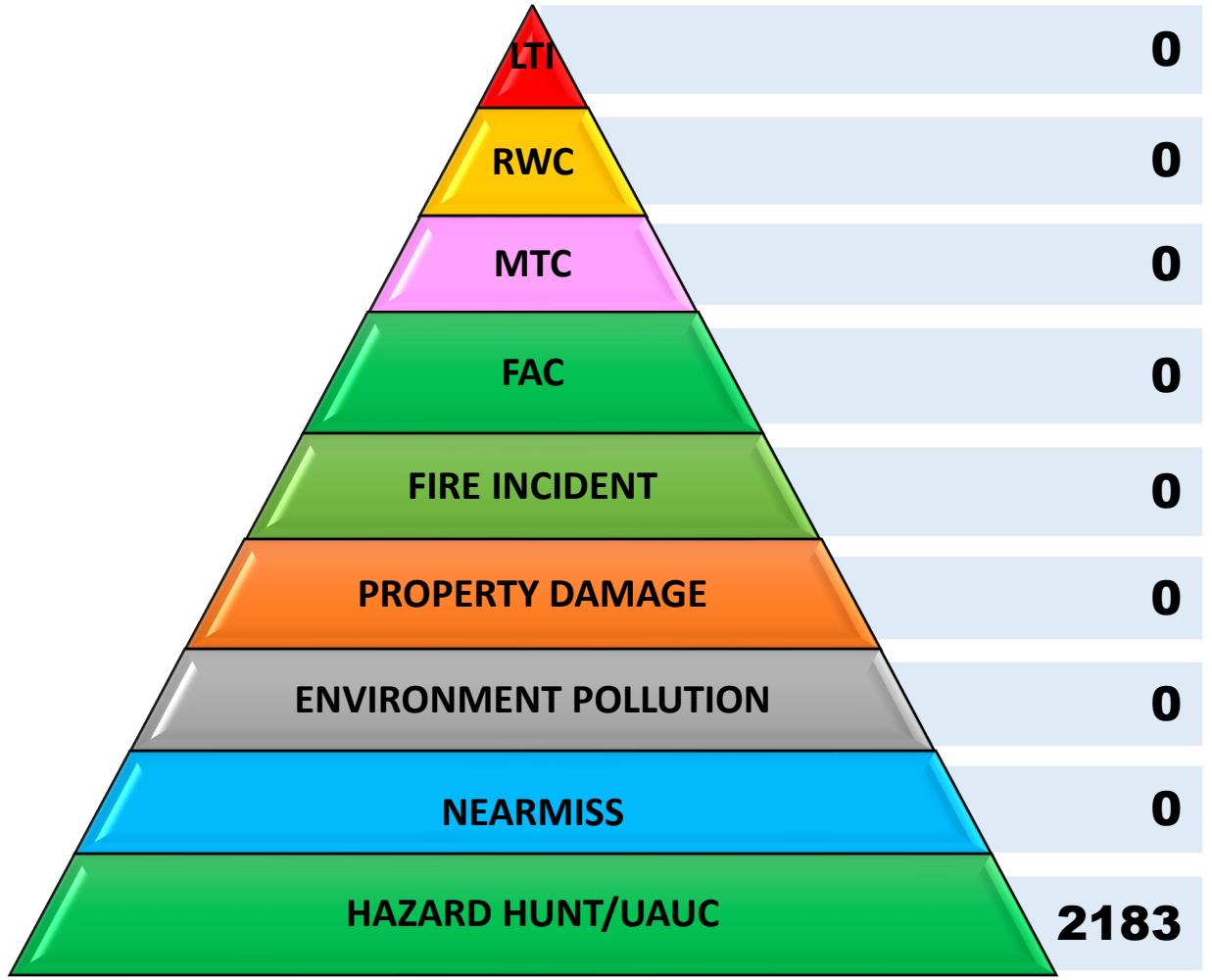


HEALTH, SAFETY, SECURITY & ENVIRONMENT (HSSE) – UAUC BREAKDOWN

Neu Dimension
Your Integrated Solutions Partner

2183 UAUC submitted for 405 man days
No LTI or LTA
1.0 UAUC / man / day





CT#01 OPERATION – OVERVIEW

Neu Dimension
Your Integrated Solutions Partner

MONTH	WELL	PACKAGE	JOB DESCRIPTION	STATUS	SQ INCIDENT	OFFSHORE WORKING DAY (OWD)
April	Angsi-A12S	CT#01	Well Diagnosis with Camera Run (1st Visit)	In-progress	No	17
	Angsi-A24L	CT#01	Nitrogen Unloading	Completed	No	6
	Bekok-A04	CT#01	Zone Shut Off	In-progress	No	7
May	Bekok-A04	CT#01	Zone Shut Off	Completed	No	6
	Angsi-A12S	CT#01	Well Diagnosis with Camera Run (2nd Visit)	In-progress	No	14
June	Angsi-A12S	CT#01	Well Diagnosis with Camera Run (2nd Visit)	In-progress	No	11
	Angsi-A38	CT#01	Scale Milling & Stimulation	In-progress	No	19
July	Angsi-A38	CT#01	Scale Milling & Stimulation	Completed	No	10
	Angsi A-16L	CT#01	SCO & Unloading	In-progress	No	21
Aug	Angsi A-16L	CT#01	SCO & Unloading	Completed	No	14
	A-25	CT#01	SCO & Re-perf	In-progress	No	17
Sept	A-25	CT#01	SCO & Re-perf	Completed	Yes	21

CT#02 OPERATION – OVERVIEW

Neu Dimension
Your Integrated Solutions Partner

MONTH	WELL	PACKAGE	JOB DESCRIPTION	STATUS	SQ INCIDENT	OFFSHORE WORKING DAY (OWD)
Apr	Dulang-B16	CT#02	Zone Change	In-progress	No	30
May	Dulang-B16	CT#02	Zone Change	Completed	No	4
	Dulang-B31	CT#02	SCO	Completed	No	14
	Dulang-B20L	CT#02	SCO	Completed	No	12
June	Dulang-D03	CT#02	Acid Wash	Completed	No	9
	Dulang-D28	CT#02	Acid Wash	In-progress	No	21
July	Dulang-D28	CT#02	Acid Wash	Completed	No	4
	Dulang-D05	CT#02	Acid Wash	In-progress	No	8
Aug	Dulang-D05	CT#02	Acid Wash	Completed	No	24
	Dulang-D15	CT#02	SCO	In-progress	No	7
Sept	Dulang-D15	CT#02	SCO	Completed	No	14
	Dulang-C24	CT#02	Acid Wash	In-progress	No	16

CT#03 OPERATION – OVERVIEW

Neu Dimension
Your Integrated Solutions Partner

MONTH	WELL	PACKAGE	JOB DESCRIPTION	STATUS	SQ INCIDENT	OFFSHORE WORKING DAY (OWD)
April	Angsi C01	CT#03	SCO, Stimulation & SISQ	In-progress	No	5
May	Angsi C01	CT#03	SCO, Stimulation & SISQ	Completed	No	31
June	Angsi C02	CT#03	SCO, Stimulation & SISQ	Completed	No	18

CO#01 & CO#02 OPERATION – OVERVIEW

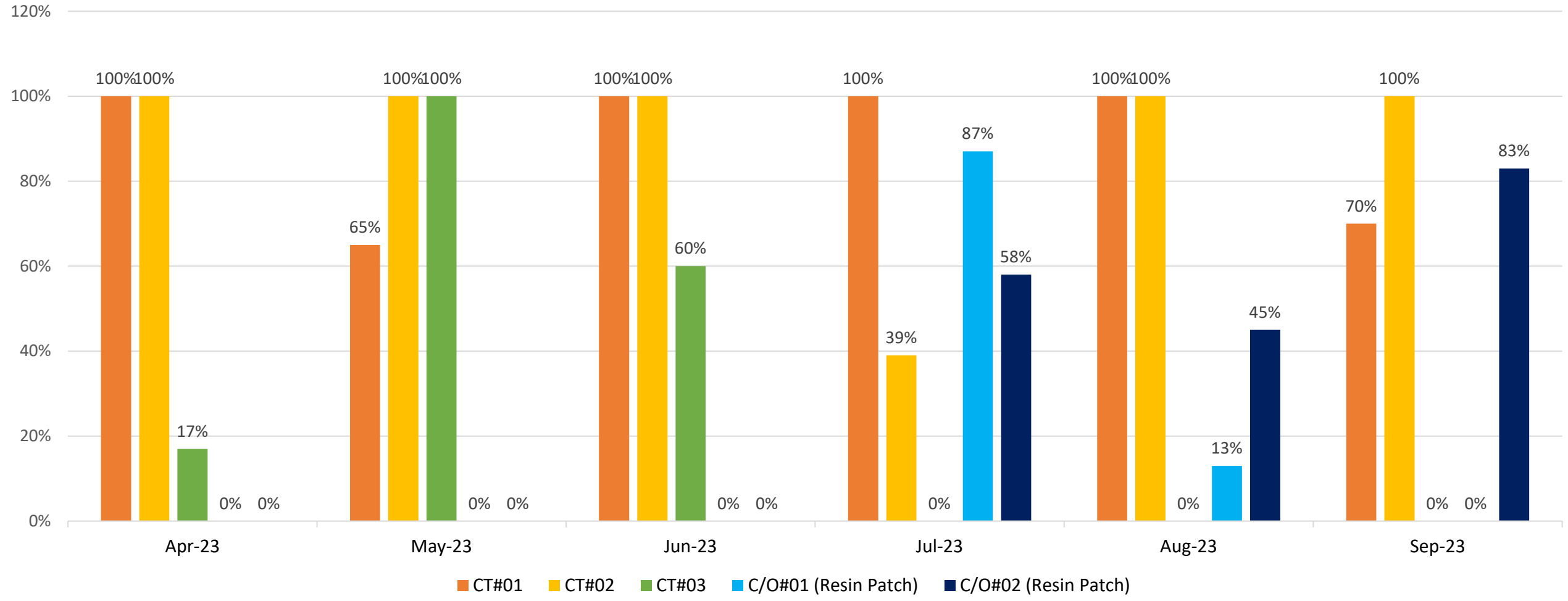
Neu Dimension
Your Integrated Solutions Partner

MONTH	WELL	PACKAGE	JOB DESCRIPTION	STATUS	SQ INCIDENT	OFFSHORE WORKING DAY (OWD)
July	Duyong-A01	CO#1	Resin Patch	Completed	No	13
July	Duyong-C-05	CO#1	Resin Patch	In-progress	No	14
July	Tiong-A20	C0#2	Resin Patch	In-progress	No	18
Aug	Duyong-C-05	CO#1	Resin Patch	Completed	No	4
Aug	Tiong-A20	C0#2	Resin Patch	Completed	No	14
Aug	Tiong-A20	C0#2	Monitor Resin Patch	In-progress	No	4
Sept	Tiong-A20	C0#2	Monitor Resin Patch	Completed	No	25

OPERATION – PACKAGE UTILIZATION

Neu Dimension
Your Integrated Solutions Partner

Average Utilization for Q2 & Q3 2023



CT#01
Angsi A

CT#01 PACKAGE TIMELINE

Neu Dimension
Your Integrated Solutions Partner

CT#01 Package was mobilized to Angsi A. Operation was started on well **A-12S** to perform Well Diagnostic with Camera Run (1st Visit)

19 March 2023

Angsi A-24L: Nitrogen Unloading.

18 April 2023

Partial equipment was demob to KSB prior transfer to Bekok A

- Pumping Package demob to KSB
- CT#01 Package was transferred to Bekok A

CT#01 Package was transferred to Bekok A to perform zone shut off on well **Bekok A-04S.**

24 April – 6 May 2023

CT#01 Package was demob to KSB on 6 May 2023 due to mini TA still on going at Angsi A

CT#01 Package was mobilized to Angsi A to continue operation on well A-12S to perform tubing cut via CT Mechanical Cutter (2nd Visit)

18 May 2023

Angsi A-38: Scale Milling & Acid Stimulation.

12 June 2023

1 shift DB crew was demob to KSB due to platform shutdown.

Angsi A-16L: SCO with contingency N2 Unloading post S/L perforation. Unplanned platform shutdown for 9 days.

10 July 2023

Angsi A-25: SCO & CT Perforation. 9 days of NPT due to CT Welding Hub Leak rectification at KSB.

15 August – 21 Sept 2023

Partial equipment (CIDF, Control Cabin & Power Pack) were demob to KSB for CT Welding Hub Leak rectification at KSB.

OPERATION – ACTIVITY OVERVIEW FOR ANGSI A-12S CT#01

Neu Dimension
Your Integrated Solutions Partner

Angsi A-12S (1st Visit)

HIGHLIGHT/ REMARKS

1. **Completed camera run, impact hammer run and CT acidizing.**
2. **Angsi A12S will be revisited on 18th May 2023 for CT Mechanical Cutter to have full access on I-68 zone prior SISQ Stimulation.**

Highlight:

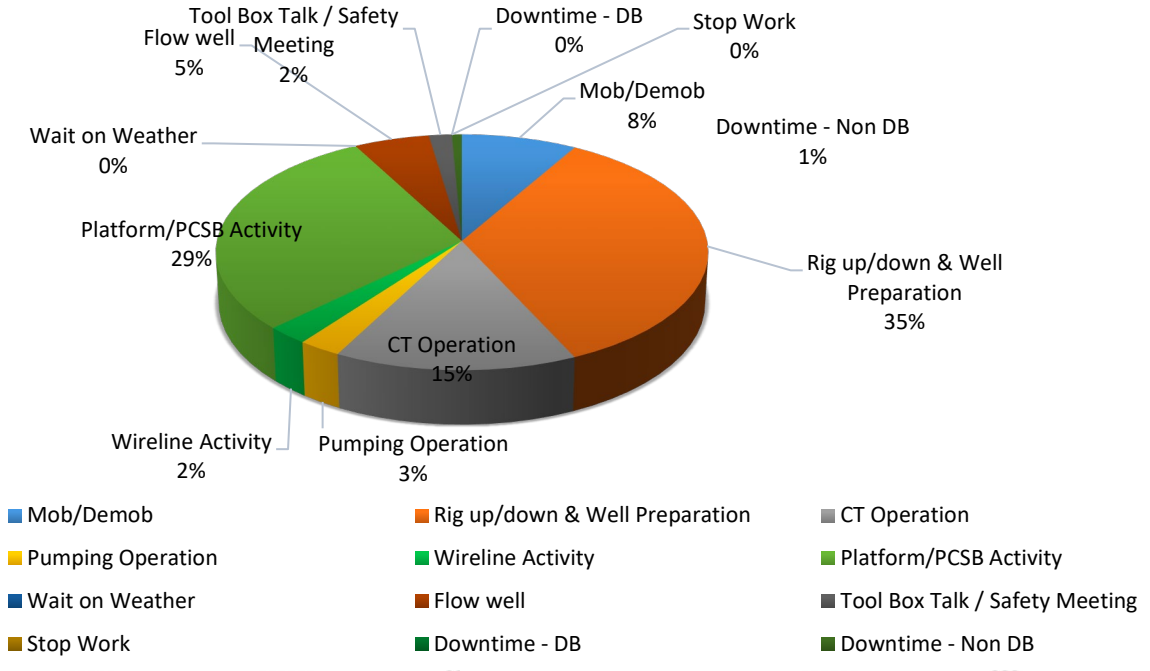
i. **Orientation of plug body was able to captured with EV Camera at TOF depth. However, no visual of tubing cut with minimum circulation from below plug was observed.**
ii. **All acid pumped are able to unload completely and we managed to obtain original well fluid condition (Oil:15% & water: 85%)**

Lowlight:

i. **Remaining plug body with 2.31" OD was unable to pass through XN Nipple profile (2.69") after hammering the plug during CT Run#3: Impact Hammer Run.**
ii. **Delay due to lifting activity on hold due to medivac chopper, construction team also using the crane during CT rig up, crane problem, platform crew change & wireline activity on well A-12S.**

Start Date	End Date
19-Mar-23 21:00	17-Apr-23 23:30

Activity	Hours	Days
Mob/Demob	58:00	02.25
Rig up/down & Well Preparation	243:05	10.07
CT Operation	101:51	4.24
Pumping Operation	17:56	0.75
Wireline Activity	17:30	0.73
Flow Well	38:00	1.58
Platform/PCSB Activity (Platform CC, SDFN & PTW)	118:00	04:55
Tool Box Talk / Safety Meeting	11:30	0.48
Downtime – Non DB (Crane down)	5:00	0.21
Total (Planned Days: 22 Days)	**698:30**	**29.10**



OPERATION – ACTIVITY OVERVIEW FOR ANGSI A-24L CT#01

Neu Dimension
Your Integrated Solutions Partner

Angsi A-24L

HIGHLIGHT/ REMARKS

1. **Completed CT Nitrogen Unloading with 1 day ahead schedule.**
2. **CT campaign at Angsi A was suspend due to well control issue at Bekok A and CT#01 was transferred to Bekok A & remaining pumping package backload to KSB.**

Highlight:

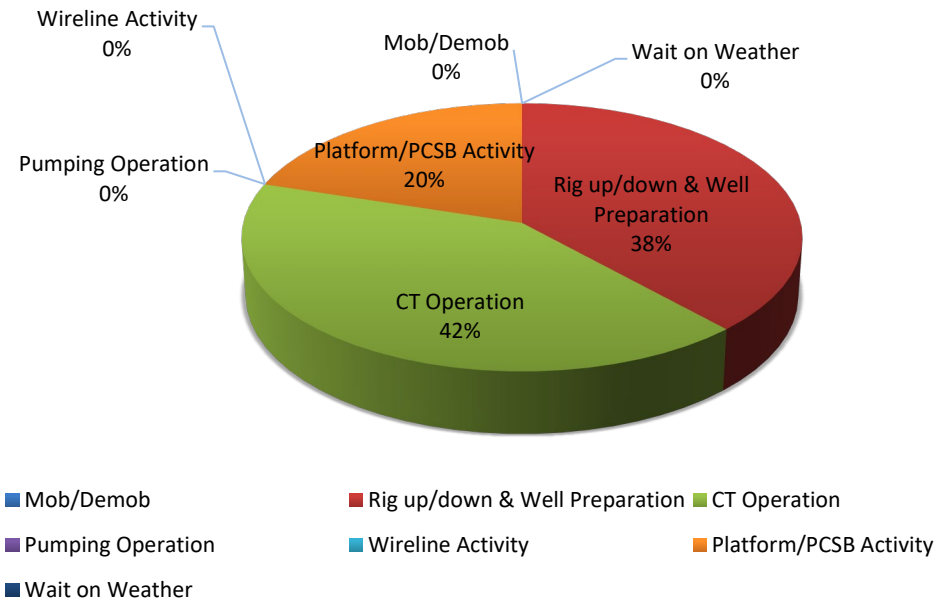
i. **Overall operation were met objective and safely executed without any HSE issue.**

Lowlight:

i. **Even though fluid column inside well is unloaded, well is still unable to flow naturally without N2 assisted.**
ii. **There might be uncertainty due to well problem as based on fluid level at 3,000 m MDDF, the well is still in underbalance & supposedly can flow by itself.**

Start Date	End Date
18-Apr-23 06:30	23-Apr-23 23:00

Activity	Hours	Days
Rig up/down & Well Preparation	52:10	2.17
CT Operation	56:50	2.37
Platform/PCSB Activity (SDFN & wait on permit approval)	27:30	1.15
Total (Planned Days: 7 Days)	**136:30**	**5.69**



OPERATION – ACTIVITY OVERVIEW FOR BEKOK A-04S CT#01

Neu Dimension
Your Integrated Solutions Partner

Bekok A-04S

HIGHLIGHT/ REMARKS

1. A-04S completed operation as per job design without any contingency operation. Job objective was achieved.
2. CT#01 Package was demob to KSB due to mini TA was still on-going at Angsi A.

Highlight:

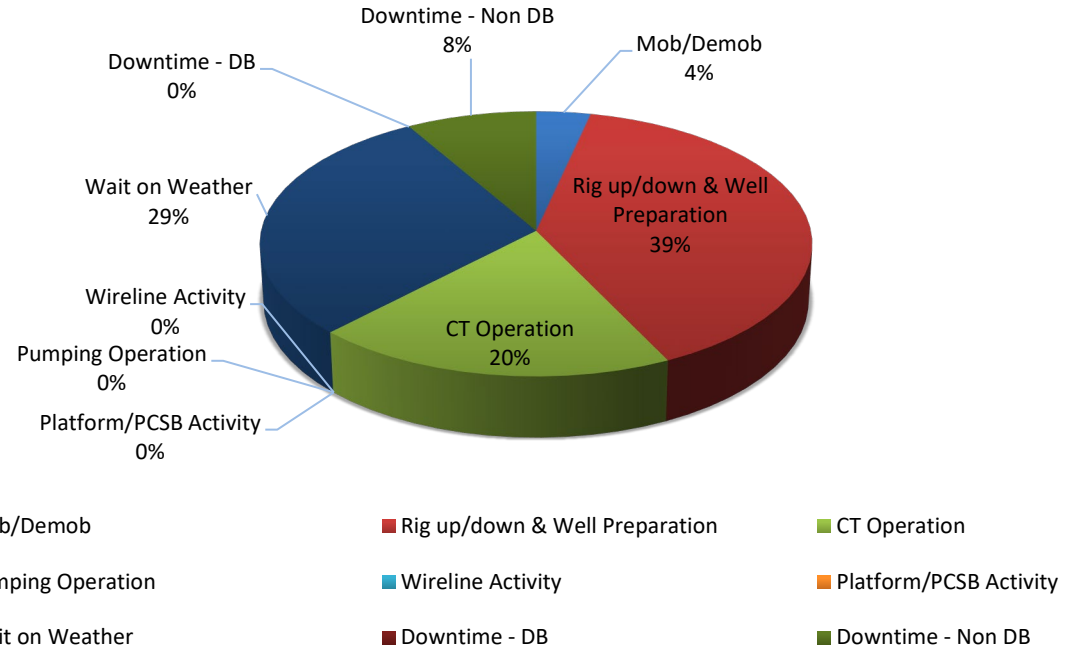
i. Overall operation were met objective and safely executed without any HSE issue
ii. CT Zone Shut Off was completed with Top of Cement tagged at 6,751.5-ft MDDF which is covered the J-Sand perforation interval.

Lowlight:

i. Unexpected weather pick up during equipment backload prolong the job operation.

Start Date	End Date
24-Apr-23 06:30	6-May-23 04:30

Activity	Hours	Days
Mob/Demob	10:00	0.42
Rig up/down & Well Preparation	112:25	4.68
CT Operation	55:35	2.32
Pumping Operation	00:00	0.00
Wireline Activity	00:00	0.00
Platform/PCSB Activity	00:00	00:00
Wait on Weather	84:00	3.50
Downtime Non-DB (Crane down)	24:00	1.00
Total (Planned Days: 11 Days)	**286:00**	**11.92**



OPERATION – ACTIVITY OVERVIEW FOR ANGSI A-12S CT#01

Neu Dimension
Your Integrated Solutions Partner

Angsi A-12S

HIGHLIGHT/ REMARKS

1. **There is high probability that the cut was made across bottom sub of packer #2 since there is limited clearance between TOF & packer #2.**
2. **Angsi A12S SISQ Treatment was suspend due to limited access to I-68 zone. Handover to slickline to perform tubing cutting via chemical cutter / tubing puncher.**

Highlight:

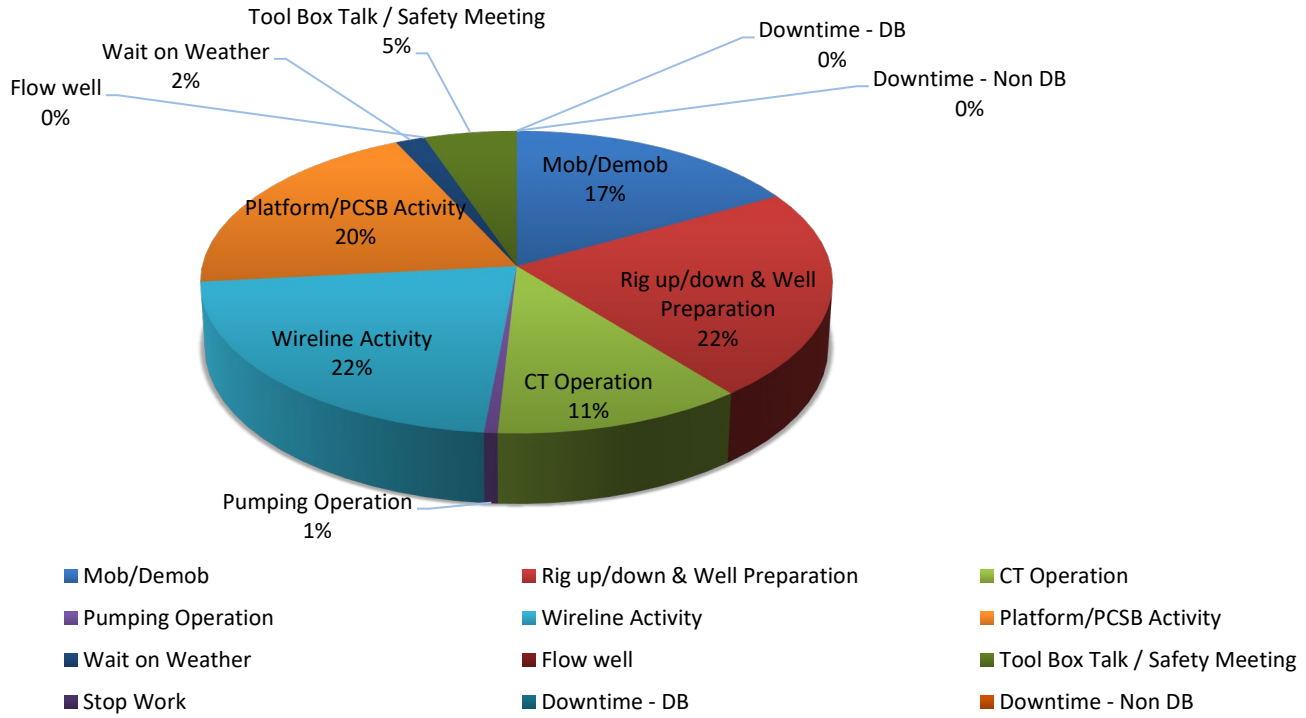
i. **Tubing cut via mechanical cutter was successfully executed safely without any injury & LTI.**

Lowlight:

i. **Even though cutter blade were deployed & engaged to completion tubing. However, tubing section still intact after verify with physical tag.**
ii. **Prolong in tubing cutting operation which require additional CT run along with addendum to ensure tubing cutter able to reach to target depth.**

Start Date	End Date
18-May-23 15:00	12-June-23 18:30

Activity	Hours	Days
Mob/Demob (1st location to BUK & 2 trips)	101:30	4.23
Rig up/down & Well Preparation	132:24	5.64
CT Operation	70:06	2.92
Pumping Operation	03:45	0.16
Wireline Activity	132:00	5.50
Platform/PCSB Activity (Platform CC, SDFN & wait on permit approval)	119:00	4.96
Wait on Weather	10:00	0.42
Toolbox Talk / Safety Meeting	31:45	1.32
Total (Planned Days: 19 Days)	**603:30**	**25.15**



Improvement made from CT Run#1: Tubing Cutting Operation

- Flush CT String & treating line with TIW until clear return is observed to avoid from debris plugged the nozzle (Suspect fine debris from water injection line)
- Pig the CT String with foam pig to ensure no debris inside CT.
- Coat completion tubing with FRS & fill up tubing volume prior CTU entry.
- Purge CT with N2 to ensure no hydrostatic inside CT.
- Place extra retainer & wrapped to ensure the cutter is not opened prematurely.
- Isolate valve to CT & line up to CT Annulus and pumping thru CT Annulus while RIH to lubricate between CT & tubing wall.
- Every 300m/1,000 ft, pump 3 bbls of TIW thru CT Annulus to lubricate the CT. & tubing wall.

Root Cause

- Differential hydrostatic pressure between coil & annulus causing the fluid to exit from nozzle.
- Debris from water injection plugging the end of nozzle amplifying above affect causing both anchor & cutter to opened prematurely, hence encounter HUD.

Image 1: Tubing cutter retain with O-ring & wrapped prior to RIH

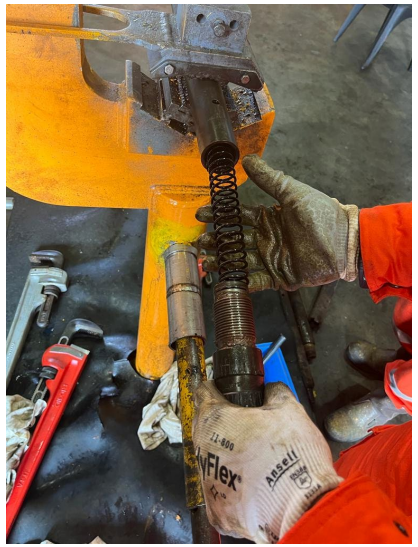
Improvement made from CT Run#2: Tubing Cutting Operation

- Flush CT String & treating line with TIW until clear return is observed to avoid from debris plugged the nozzle (Suspect fine debris from water injection line)
- Pig the CT String with foam pig to ensure no debris inside CT.
- Coat completion tubing with FRS & fill up tubing volume prior CTU entry.
- Purge CT with N2 to ensure no hydrostatic inside CT.
- Place extra retainer & wrapped to ensure the cutter is not opened prematurely.
- Isolate valve to CT & line up to CT Annulus and pumping thru CT Annulus while RIH to lubricate between CT & tubing wall.
- Every 300m/1,000 ft, pump 3 bbls of TIW thru CT Annulus to lubricate the CT. & tubing wall.
- Reconfigure BHA by adding fixed stabilizer.
- Retain the cutter with wire to avoid cutter from opened prematurely.
- Perform surface test tubing cutter with single wire & double wire to confirm at what pumping rate blade cutter start open.

Image 2: Tubing cutter retain with single wire prior to RIH

Post Job Tools Investigation

- After job was completed, tubing cutter package was demob to KSB and had quarantined for investigation to check the tools condition.
- On 22nd June 2023, tools investigation was conducted at Wellpro Warehouse witnessed by PCSB Representative.
- Based on the investigation together with PCSB rep, the tools was observed in good condition & working fine including the internal parts of the tubing cutter & end of nozzle.
- No debris was found inside the tubing cutter & end of nozzle which we can conclude that the tools able to reaching target depth without experience any held up during RIH.
- All cutter (3 piece) was broken which indicate that the cutter had engaged into completion tubing & due to overpull during pick up to re-tag TOF.

OPERATION – ACTIVITY OVERVIEW FOR ANGSI A-38 CT#01

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Angsi A-38

HIGHLIGHT/ REMARKS

1. A-38 completed operation as per job design with one additional milling run. Job objective was achieved.

Highlight:

i. Overall operation were met objective and safely executed without any HSE issue.

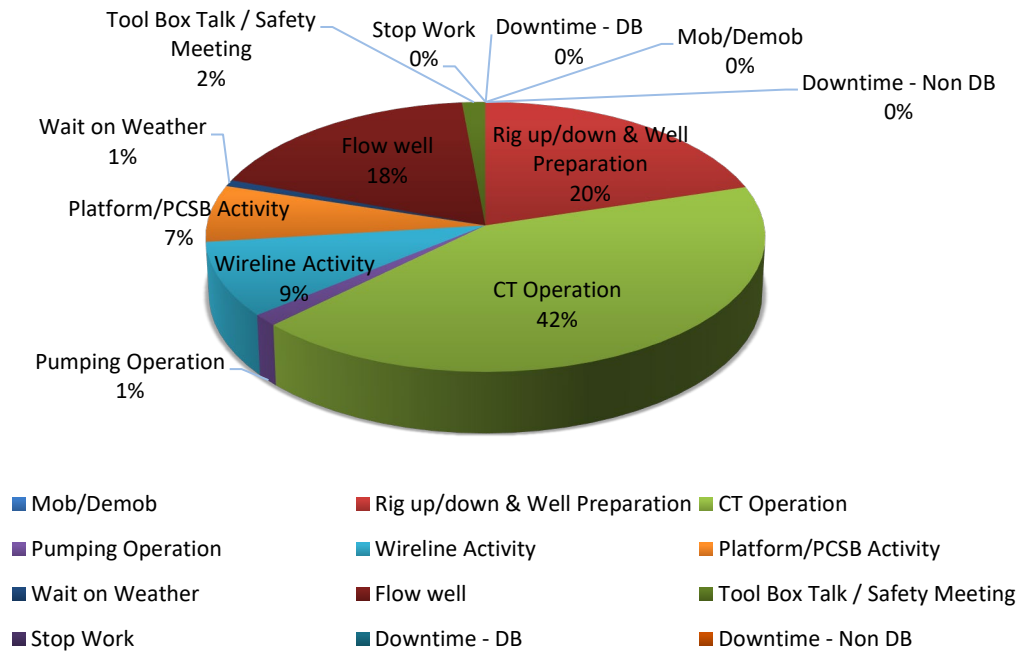
Lowlight:

i. Prolong in milling operation due to hard barite scale which require additional run.

ii. Prolong due to additional scope for slickline to perform GLVC prior SISQ Treatment.

Start Date	End Date
12-June-23 06:30	10-July-23 21:00

Activity	Hours	Days
Mob/Demob	00:00	0.00
Rig up/down & Well Preparation	139:04	5.79
CT Operation	291:18	12.14
Pumping Operation	09:41	0.40
Wireline Activity	61:30	2.56
Platform/PCSB Activity (Platform CC & wait on permit approval)	46:47	1.95
Wait on Weather	5:20	0.22
Flow Well	122:50	5.12
Toolbox Talk / Safety Meeting	10:00	0.42
Total (Planned Days: 19 Days)	**686:30**	**28.60**



OPERATION – ACTIVITY OVERVIEW FOR ANGSI A-16L CT#01

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Angsi A-16L

HIGHLIGHT/ REMARKS

1. A-16L completed operation as per job design with contingency unloading. Job objective was achieved.

Highlight:

i. CT met objective of performing sand cleanout and unloading after slickline perforation. The well is able to flow with increase in oil production.

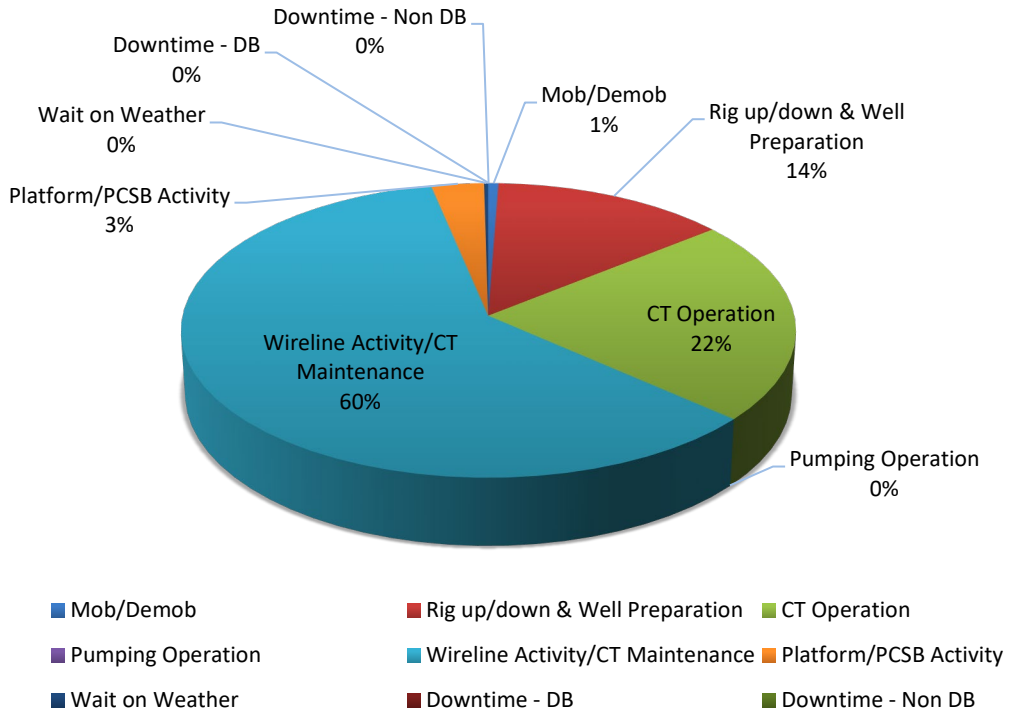
Lowlight:

i. Un-planned platform shutdown for 9 days

ii. Prolong slickline activity on A16S to attempt retrieve the plug body at early stage of intervention

Start Date	End Date
10-July-23 18:30	14-Aug-23 06:30

Activity	Hours	Days
Mob/Demob (9 pax DB demob due to platform shutdown)	05:00	0.21
Rig up/down & Well Preparation	115:00	4.79
CT Operation	188:40	7.86
Pumping Operation	00:00	0.00
Wireline Activity	508:30	21.19
Platform/PCSB Activity (Fire alarm stand down, ESD campaign, platform CC)	25:50	1.08
Wait on Weather	02:00	0.08
Total (Planned Days: 19 Days)	**845:00**	**35.21**



OPERATION – ACTIVITY OVERVIEW FOR ANGSI A-25 CT#01

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Angsi A-25

HIGHLIGHT/ REMARKS

1. A-25 completed operation as per job design without any contingency. Job objective was achieved.

Highlight:

i. CT met objective of performing sand cleanout and re-perforation I15U with pressure deployment system.

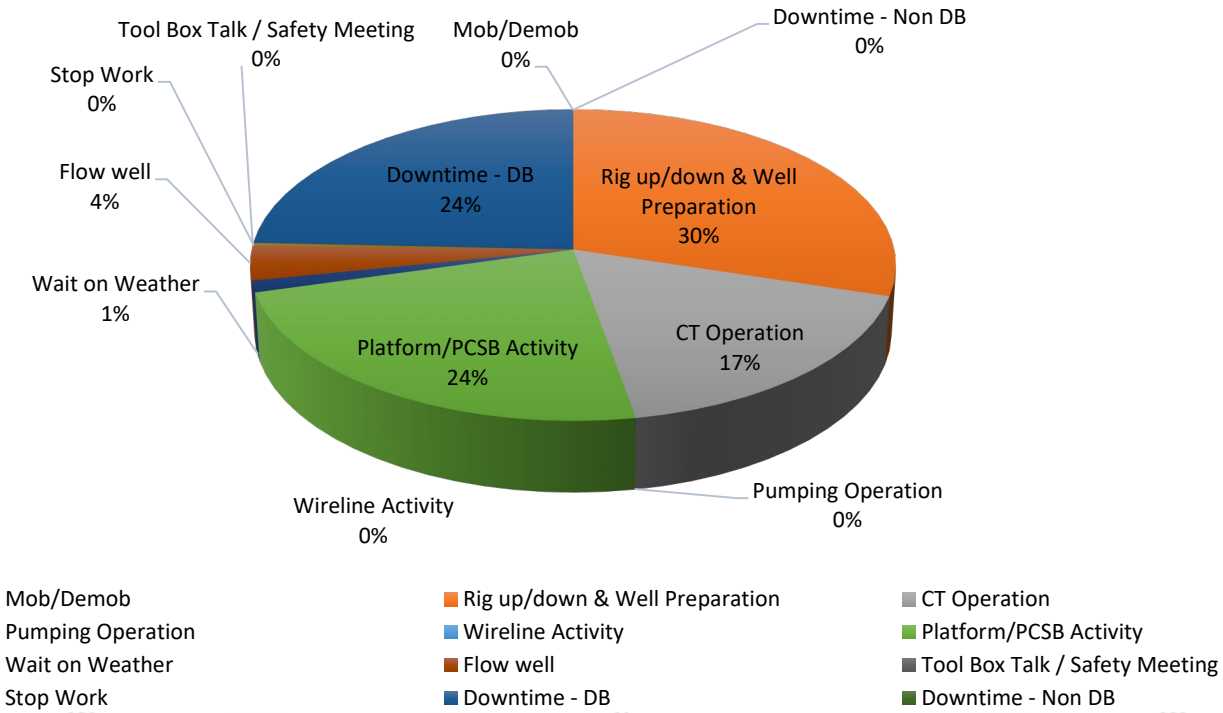
ii. Successfully deploy long perforating 2-3/8" Gun (10metre) using pressure deployment system with total of 2 run instead of 4 conventional CT-perf run.

Lowlight:

i. CT leak at welding hub inside reel drum (9 days of NPT)

Start Date	End Date
15-Aug-23 18:30	21-Sept-23 18:30

Activity	Hours	Days
Mob/Demob	00:00	0.00
Rig up/down & Well Preparation (Deployment)	264:15	11.01
CT Operation	154:49	6.45
Pumping Operation	00:00	0.00
Wireline Activity	00:00	0.00
Platform/PCSB Activity (Wait on PTW & CC)	208:60	8.67
Wait on Weather	10:35	0.44
Flow well	31:45	1.32
Stop work	02:30	0.10
Downtime – DB (Backload CT Reel to rectify leak)	216:00	9.00
Total (Planned Days: 18 Days)	**888:00**	**37.00**



CT#02
Dulang Field

CT#02 PACKAGE TIMELINE

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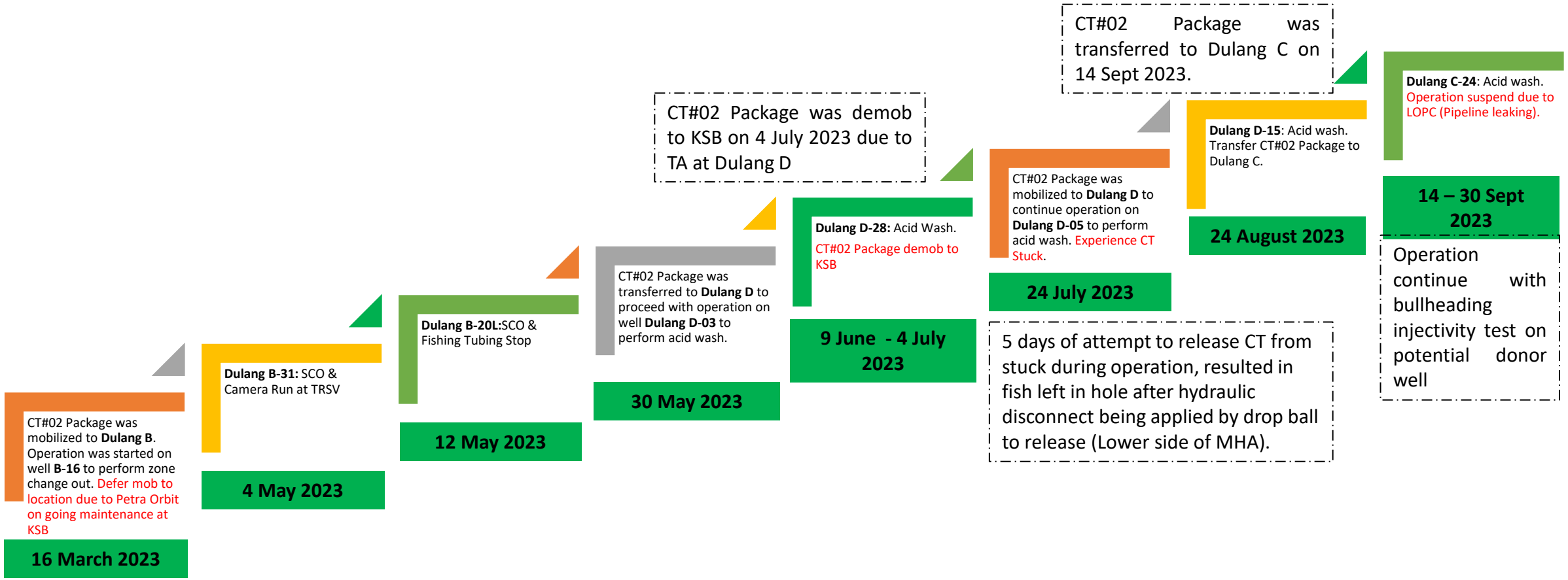


OPERATION – ACTIVITY OVERVIEW FOR DULANG B-16 CT#02

Dulang B-16

HIGHLIGHT/ REMARKS

1. Completed 12 CT Runs , Able to closed SSD#1 (main objective), unable to close SSD#2. Unable to retrieve plug at EOT, successfully cut tubing to give access to zone below EOT.

Highlight:

i. Overall operation were met objective and safely executed without any HSE issues.

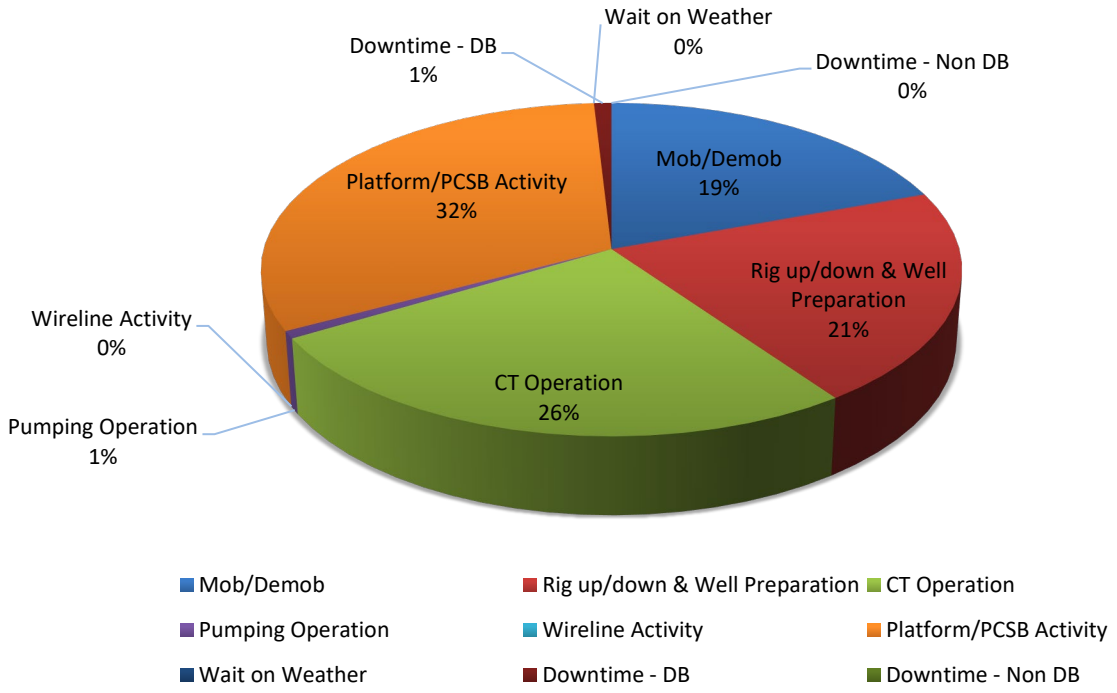
Lowlight:

i. Delay 3 days in crew mobilization to Dulang via Petra Orbit due to crane & boat issue.

ii. NPT recorded during operation, 10 hours – During function test SSD tools.

Start Date	End Date
16-Mar-23 06:30	4-May-23 16:00

Activity	Hours	Days
Mob/Demob (Defer due to PO maintenance)	229:30	9.56
Rig up/down & Well Preparation	246:47	10.28
CT Operation	311:53	13.00
Pumping Operation	08:30	0.35
Platform/PCSB Activity (Fire drill, SDFN, wait on PO anchoring, wait on PTW approval)	378:05	15.75
Downtime – DB (Function test Shifting Tool)	10:45	0.45
Total (Planned Days: 30 Days)	**1185:30**	**49.40**



OPERATION – ACTIVITY OVERVIEW FOR DULANG B-31 CT#02

Dulang B-31

HIGHLIGHT/ REMARKS

1. Completed 3 CT Runs , successfully cleanout on top of SCSSV, able to open flapper after CTU operation.

Highlight:

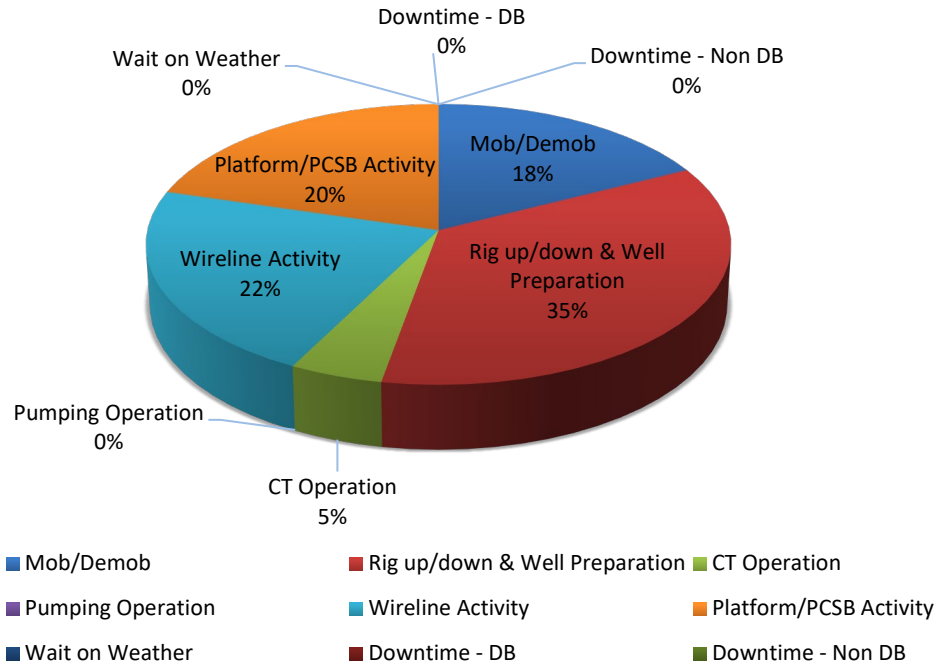
i. Overall operation were met objective (SCO) and safely executed without any HSE issues.

Lowlight:

i. N/A

Start Date	End Date	Remarks
4-May-23 04:00	12-May-23 18:30	Proceed to B-20L after complete B31
24-May-23 22:16	30-May-23 18:30	Rig down captured under B-31

Activity	Hours	Days
Mob/Demob (Defer due to PO maintenance)	57:15	2.39
Rig up/down & Well Preparation	115:24	4.81
CT Operation	15:20	0.64
Wireline Activity	72:00	3.00
Platform/PCSB Activity (Fire drill, SDFN, wait on PTW approval)	66:45	2.78
Total (Planned Days: 44 Days)	**326:44**	**13.61**



OPERATION – ACTIVITY OVERVIEW FOR DULANG B-20L CT#02

Dulang B-20L

HIGHLIGHT/ REMARKS

1. Completed 4 CT Runs , successfully cleanout until top of lower tubing stop.

Highlight:

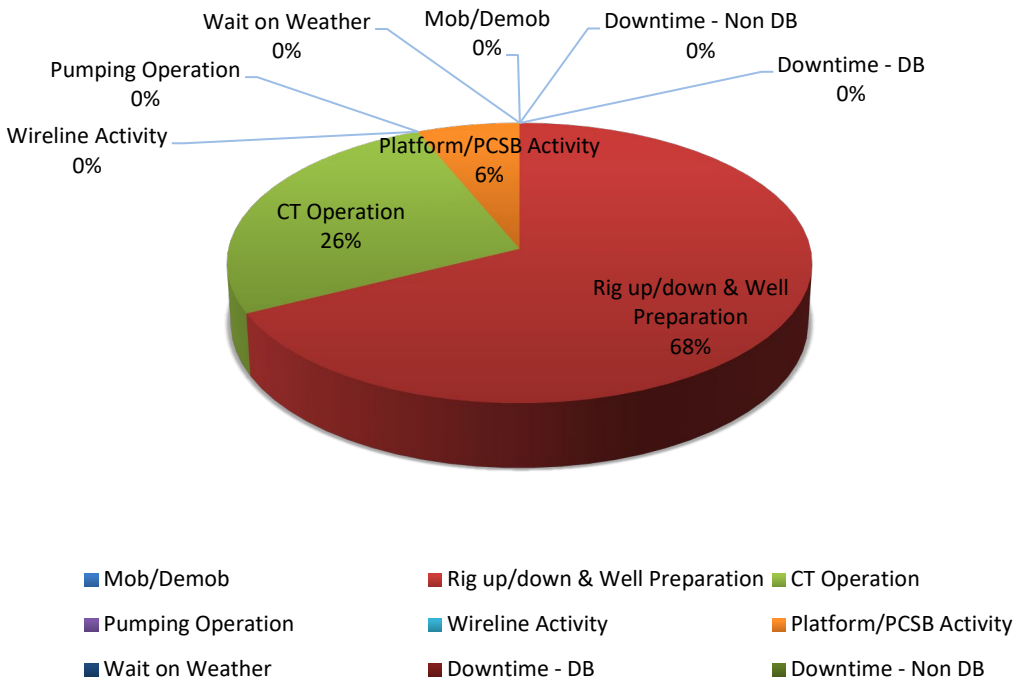
i. Overall operation were partially met objective (SCO) and safely executed without any HSE issues.

Lowlight:

i. Unable to retrieve lower tubing stop and perform cleanout until top of con-slot.

Start Date	End Date
12-May-23 10:30	24-May-23 22:16

Activity	Hours	Days
Rig up/down & Well Preparation	202:48	8.45
CT Operation	78:13	3.26
Platform/PCSB Activity (SDFN, wait on PTW approval)	18:45	0.78
Total (Planned Days: 14 Days)	**299:46**	**12.49**



OPERATION – ACTIVITY OVERVIEW FOR DULANG D-03 CT#02

Dulang D-03

HIGHLIGHT/ REMARKS

1. Completed 2 CT Runs , successfully performed nitrogen unloading & acid wash operation.

Highlight:

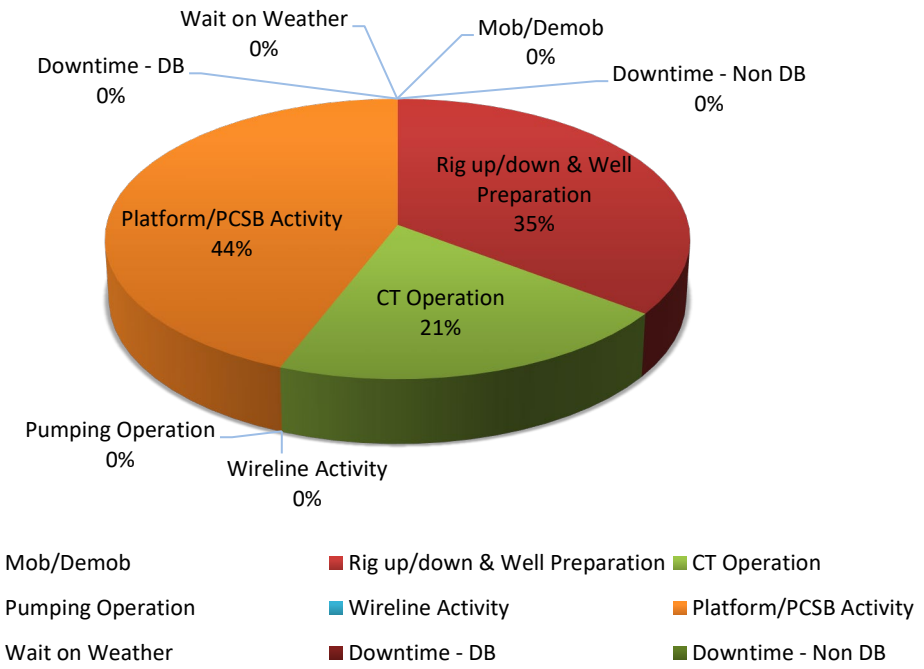
i. Overall operation were partially met objective (Acid Wash) and safely executed without any HSE issues.

Lowlight:

i. N/A

Start Date	End Date
30-May-23 18:30	9-June-23 15:00

Activity	Hours	Days
Rig up/down & Well Preparation	83:25	3.48
CT Operation	48:55	2.04
Platform/PCSB Activity (Fire drill, SDFN, wait on PTW approval)	104:10	4.34
Total (Planned Days: 16 Days)	**236:30**	**9.85**



OPERATION – ACTIVITY OVERVIEW FOR DULANG D-28 CT#02

Dulang D-28

HIGHLIGHT/ REMARKS

1. **Completed 1 CT Runs , successfully acid wash operation.**
2. **CT#02 package demob to KSB due to TA at Dulang Delta.**

Highlight:

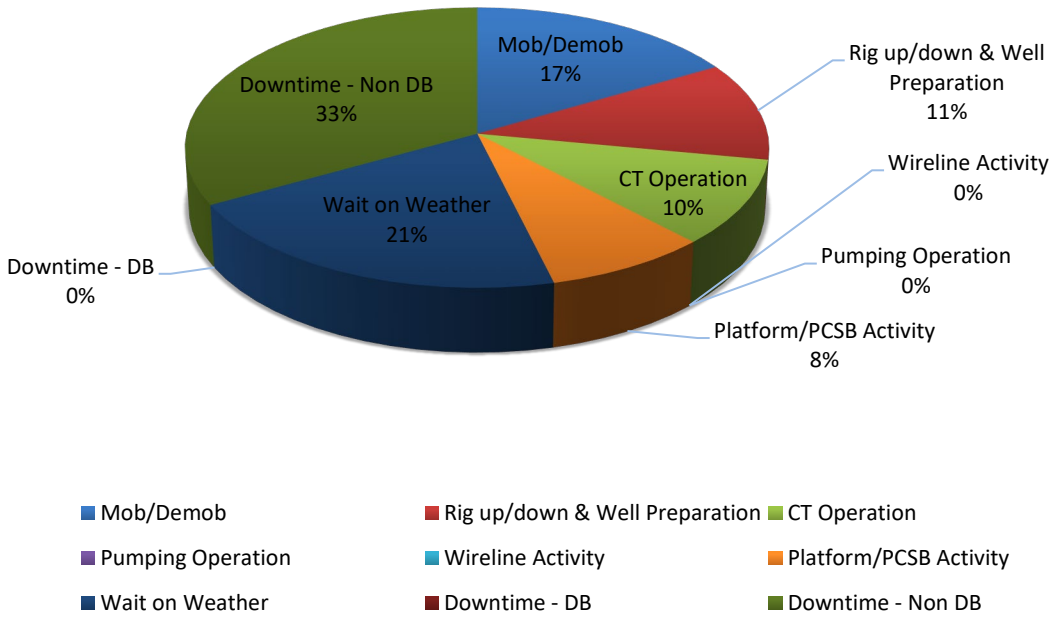
i. **Overall operation were met objective (Acid Wash) and safely executed without any HSE issues.**

Lowlight:

i. **Crane issue, result in delay demobilization equipment during platform TA.**

Start Date	End Date
9-June-23 15:00	4-July-23 18:30

Activity	Hours	Days
Mob/Demob	96:00	4.00
Rig up/down & Well Preparation	66:00	2.75
CT Operation	57:30	2.40
Platform/PCSB Activity (SDFN, wait on PTW approval)	48:00	2.00
Wait on Weather	120:00	5.00
Downtime – Non DB (Crane down & WOP crane spare part)	192:00	8.00
Total (Planned Days: 18 Days)	**579:30**	**24.15**



OPERATION – ACTIVITY OVERVIEW FOR DULANG D-05 CT#02

Dulang D-05

HIGHLIGHT/ REMARKS

1. Completed 3 CT Runs , and 1 Bullheading operation, successfully acid wash operation.

Highlight:

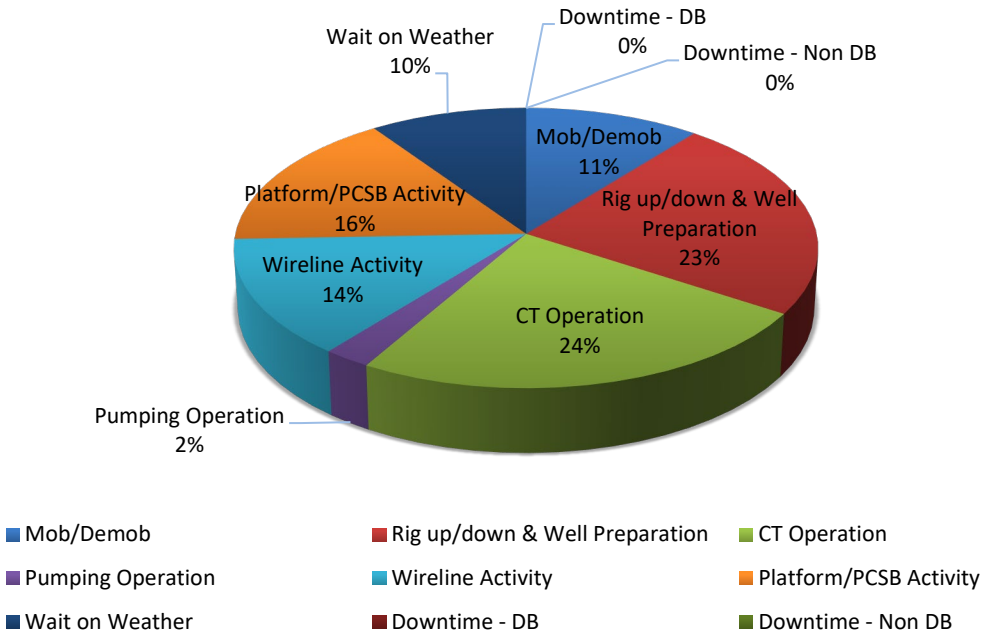
i. Overall operation were met objective (Acid wash) and safely executed without any HSE issues.

Lowlight:

i. CT stuck during operation, resulted in left in hole fish after hydraulic disconnect being applied to release (Lower side MHA).

Start Date	End Date
24-July-23 00:00	24-Aug-23 06:30

Activity	Hours	Days
Mob/Demob	80:30	3.35
Rig up/down & Well Preparation	176:00	7.33
CT Operation (CT being stucked for 5 days)	181:30	7.56
Pumping Operation	18:00	0.75
Wireline Activity	102:30	4.27
Platform/PCSB Activity (SDFN, wait on PTW approval, fire drill)	120:00	5.00
Wait on Weather	72:00	3.00
Total (Planned Days: 21 Days)	**750:30**	**31.27**



CT Stuck- Result in fish left in hole

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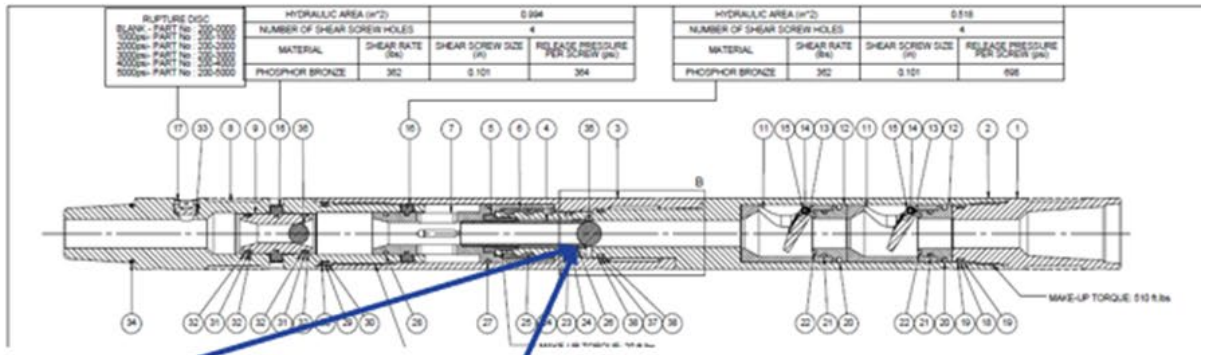
Fish in Hole Details

BHA DRAWING	DESCRIPTION	CONNECTION		ID	OD	TOOL LENGTH	CUMULATIVE LENGTH
		UPHOLE	DOWNHOLE	INCH	INCH	FT	FT
	External Dimple CT Connector	1.5" CT	1.5 AMMT Pin		2.225	0.80	0.8
	2" MHA Disconnect drop ball 1 1/16" Shear pressure 2,800 psi	1.5 AMMT Box	1.5 AMMT Pin		2"	2.30	3.1
	Circulating drop ball 9/16" Shear pressure 1456 psi Burst Disc 5,000 psi						
	5 ft Straight Bar	1.5 AMMT Box	1.5 AMMT Pin		2.125	5.0	8.10
	3 ft Straight Bar	1.5 AMMT Box	1.5 AMMT Pin		2.125	3.0	11.10
	2.75 Fluted Centralizer	1.5 AMMT Box	1.5 AMMT Pin		2.750	1.0	12.10
	Downward Nozzle	1.5 AMMT Box			2.125	0.42	12.52

Disconnect here



CT Run#3 – Details Fishing Profile

ID fishing profile = 1.396

Fishing profile = 2" Nom limar GS

MAXIMUM OD		2.000"
MINIMUM ID		0.531"
EFF.OD		N/A
CONNECTION	TOP	1-1/2" AMMT BOX
	BOTTOM	1-1/2" AMMT PIN
MAKE-UP LENGTH		27.90"
DISCONNECT DROP BALL		0.687"
CIRCULATING DROP BALL		0.562"
FISHING PROFILE		2" NOM LIMAR GS
ACTIVATION PRESSURE		N/A
ADJUSMENT RANGE		N/A
KICK OVER ANGLE		N/A
COLLET RANGE	MIN	N/A
	MAX	N/A
FLOW AREA		0.221 in^2
TEMPERATURE RANGE		-20° / 200°C
WORKING PRESSURE		5,000 psi
TEST PRESSURE		7,500 psi
SERVICE		H2S
STRENGTH	SWL	34,780 lbs
	YIELD	38,640 lbs
	UTS	49,680 lbs
	TORSIONAL	852 ft.lbs
CONNECTION MAKE-UP TORQUE		831 ft.lbs
REDRESS KIT P/N *		105-2000-001-R6-RK
SPARE PART KIT P/N **		105-2000-R6-SPK

Event/Activity: Acid Wash Operation D-05 Run-3 Disconnect MHA

- Retrieved BHA at surface
- Spotted some scratch from metal at Connector and coil (refer above image)
- Grey colour residue sticking to BHA was observed.

OPERATION – ACTIVITY OVERVIEW FOR DULANG D-15 CT#02

Dulang D-15

HIGHLIGHT/ REMARKS

1. Completed 2 CT Runs , successfully cleanout until EOT.

Highlight:

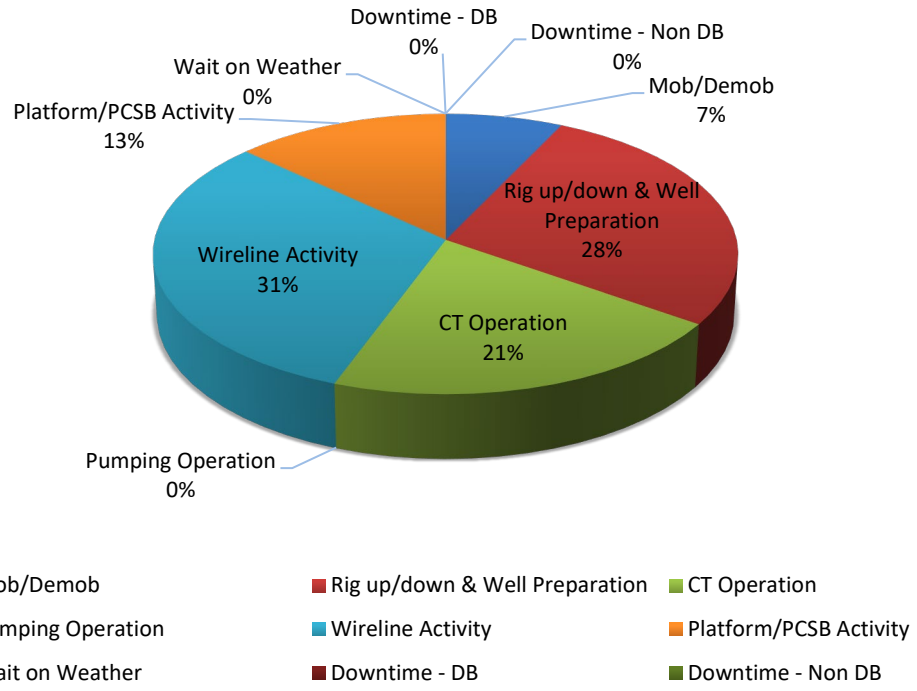
i. Overall operation were met objective (SCO until EOT) and safely executed without any HSE issues.

Lowlight:

i. N/A

Start Date	End Date
24-Aug-23 06:30	14-Sept-23 06:30

Activity	Hours	Days
Mob/Demob (Transfer CT Package to Dlg C)	36:00	1.50
Rig up/down & Well Preparation (Wait for new CT string to arrive)	139:00	5.79
CT Operation	105:20	4.39
Wireline Activity	157:40	6.57
Platform/PCSB Activity (SDFN, wait on PTW approval)	66:00	2.75
Total (Planned Days: 25 Days)	**504:00**	**21.00**



OPERATION – ACTIVITY OVERVIEW FOR DULANG C-24 CT#02

Dulang C-24

HIGHLIGHT/ REMARKS

1. **Completed Injectivity test for Donor well C-23 L and C-23 S**
2. **On-going operation**

Highlight:

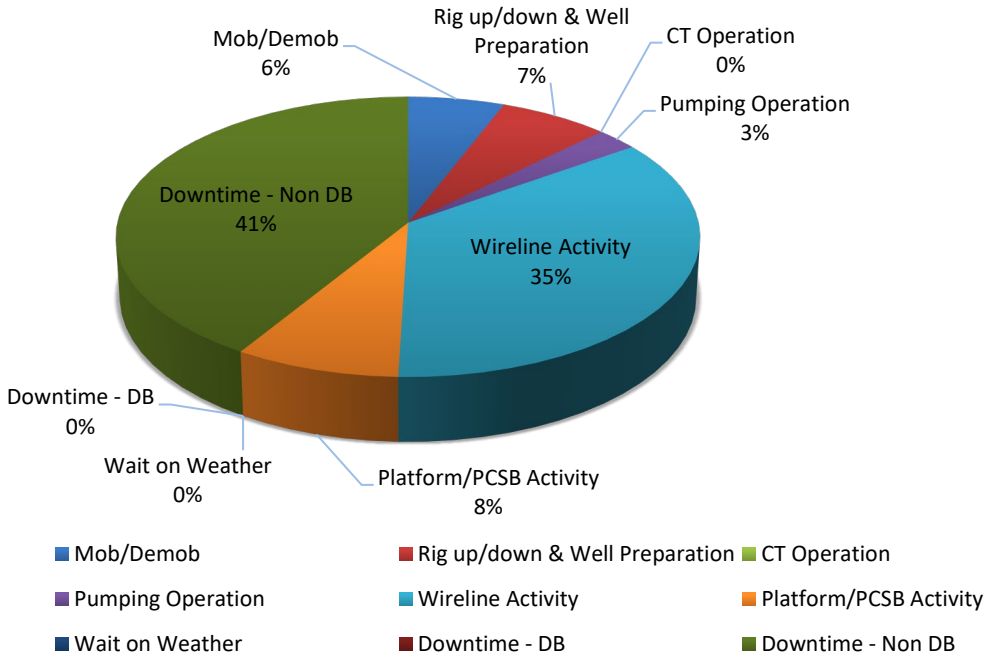
i. **Overall operation were partially met objective (Injectivity Test on Donor Well) and safely executed without any HSE issues.**

Lowlight:

i. **LOPC – Dulang pipeline leaking**
ii. **Limited deck space, unable to rig-up due to no standby boat available (temporary) to store item.**

Start Date	End Date
14-Sept-23 06:30	1-Oct-23 06:30

Activity	Hours	Days
Mob/Demob (Transfer CT#02 Package to Dlg C	24:00	1.00
Rig up/down & Well Preparation	27:25	1.14
Pumping Operation	10:35	0.44
Wireline Activity	144:00	6.00
Platform/PCSB Activity (SDFN, wait on PTW approval)	34:00	1.42
Downtime – Non DB (LOPC)	168:00	7.00
Total (Planned Days: 21 Days)	**408:00**	**17.00**



CT#03 (Catenary CTU)
Angsi C

OPERATION – ACTIVITY OVERVIEW FOR ANGSI C-01 CT#03

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Angsi C-01

HIGHLIGHT/ REMARKS

1. C-01 completed operation as per job design without any contingency. Job objective was achieved.

Highlight:

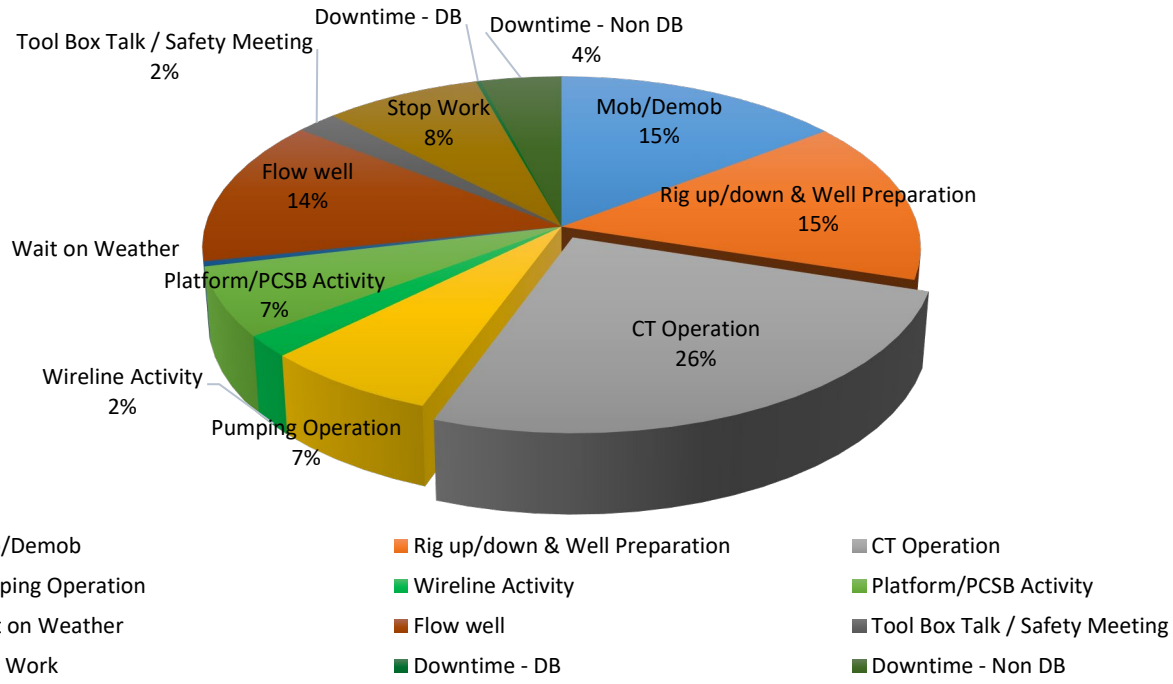
i. CT met objective of performing scale cleanout followed by SISQ treatment via bullheading method.

Lowlight:

i. When CT RIH to target depth, we experienced snub and unable to RIH which we suspect on the lock-up limit of CT at depth

Start Date	End Date
26-Apr-23 09:00	31-May-23 13:00

Activity	Hours	Days
Mob/Demob (including seafastern)	124:30	5.19
Rig up/down & Well Preparation	130:30	5.44
CT Operation	219:00	9.13
Pumping Operation	60:30	2.52
Wireline Activity	17:30	0.73
Platform/PCSB Activity (Management Visit, PASR & SISO Meeting, BMS Installation & SDFN)	56:00	2.33
Wait on Weather	4:00	0.17
Flow well	117:30	4.90
Tool Box Talk / Safety Talk	18:00	0.75
Stop work (Poor lighting, Platform CC)	68:00	2.83
Downtime – DB (Swivel Packing Leak)	2:00	0.08
Downtime – Non DB (Crane down, BIMA 10 delay)	35:00	1.46
Total	**852:30**	**35.52**



OPERATION – ACTIVITY OVERVIEW FOR ANGSI C-02 CT#03

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Angsi C-02

HIGHLIGHT/ REMARKS

1. C-02 completed operation earlier than project timeline due to removal of CT Run#2 (Drift & Tag XN Nipple) without jeopardize job objective.

Highlight:

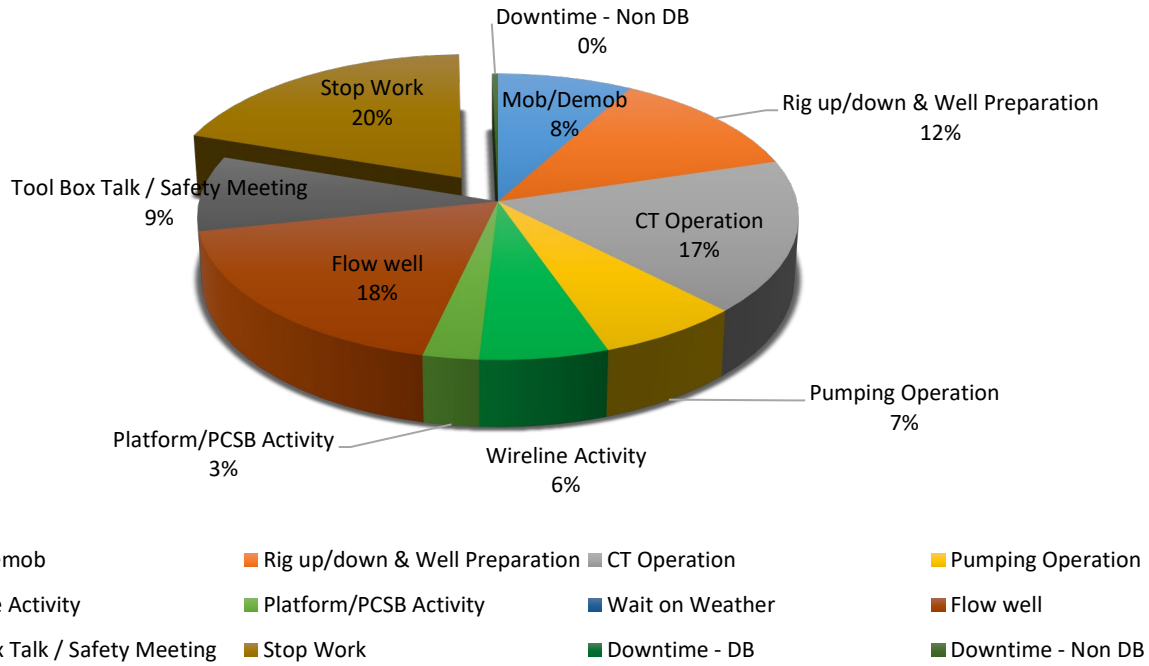
i. CT met objective of performing scale cleanout followed by SISQ treatment via bullheading method.

Lowlight:

i. MPD Crane Down during lifting operation after complete rig down CT Equipment.

Start Date	End Date
31-May-23 13:00	18-June-23 03:00

Activity	Hours	Days
Mob/Demob (including de-seafastern)	34:00	1.42
Rig up/down & Well Preparation	51:45	2.16
CT Operation	73:05	3.05
Pumping Operation	29:30	1.23
Wireline Activity	26:30	1.10
Platform/PCSB Activity (CDFT)	11:30	0.48
Flow well	76:10	3.17
Tool Box Talk / Safety Talk	36:00	1.50
Stop work (No lifting activity allowed > 10 pm)	82:00	3.42
Downtime – Non DB (MPD Crane down)	1:30	0.06
Total (Planned Days: 27 Days)	**422:00**	**17.58**



C/O#01
Duyong A & Duyong C

OPERATION – ACTIVITY OVERVIEW FOR DUYONG A-01 C/O#01

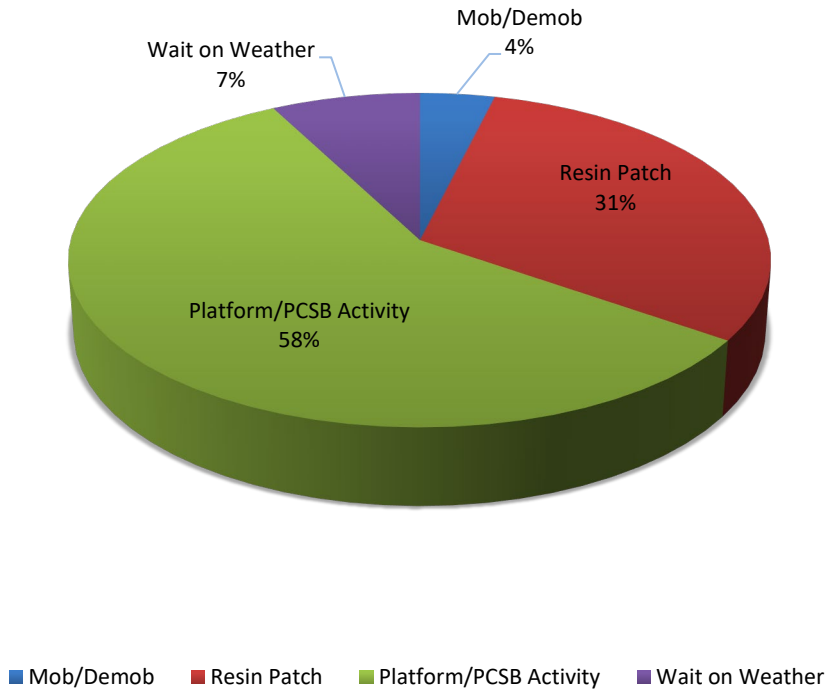
Duyong A-01

HIGHLIGHT/ REMARKS

1. **Platform/PCSB activity is inclusive of SDFN, platform hot work activity, wait on container from other platform.**

Start Date	End Date
03-July-23 06:30	16-July-23 06:30

Activity	Hours	Days
Mob/Demob	12:00	0.50
Resin Patch Acitivity	96:00	4.00
Platform/PCSB Activity	180:00	7.50
Wait on Weather	24:00	1.00
Total	**312:00**	**13.00**



OPERATION – ACTIVITY OVERVIEW FOR DUYONG C-05 C/O#01

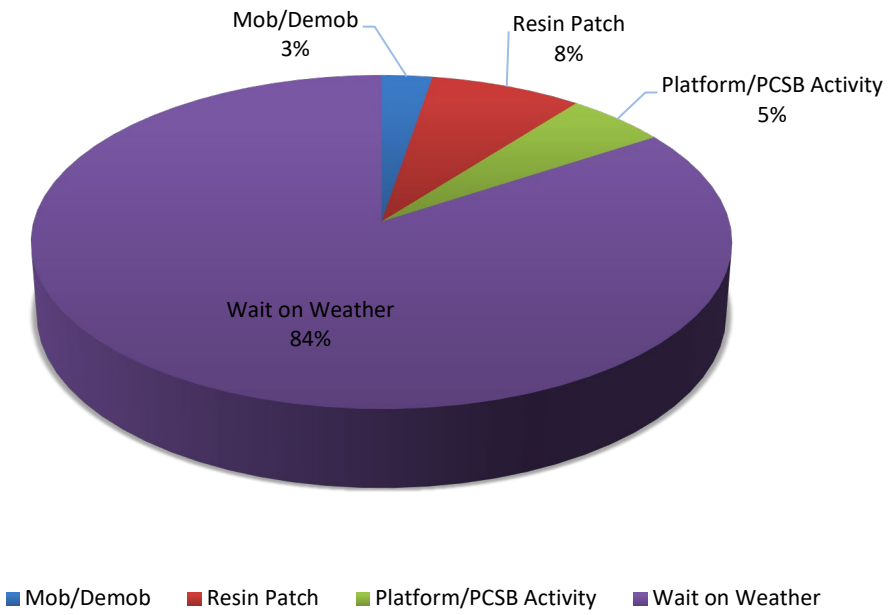
Duyong C-05

HIGHLIGHT/ REMARKS

1. **Platform/PCSB activity is inclusive of SDFN, platform hot work activity, wait on container from other platform.**

Start Date	End Date
16-July-23 06:30	4-Aug-23 06:30

Activity	Hours	Days
Mob/Demob	12:00	0.50
Resin Patch Acitivity	36:00	1.50
Platform/PCSB Activity	24:00	1.00
Wait on Weather	384:00	16.00
Total	**456:00**	**19.00**



C/O#02
Tiong A

OPERATION – ACTIVITY OVERVIEW FOR TIONG A-20 C/O#02

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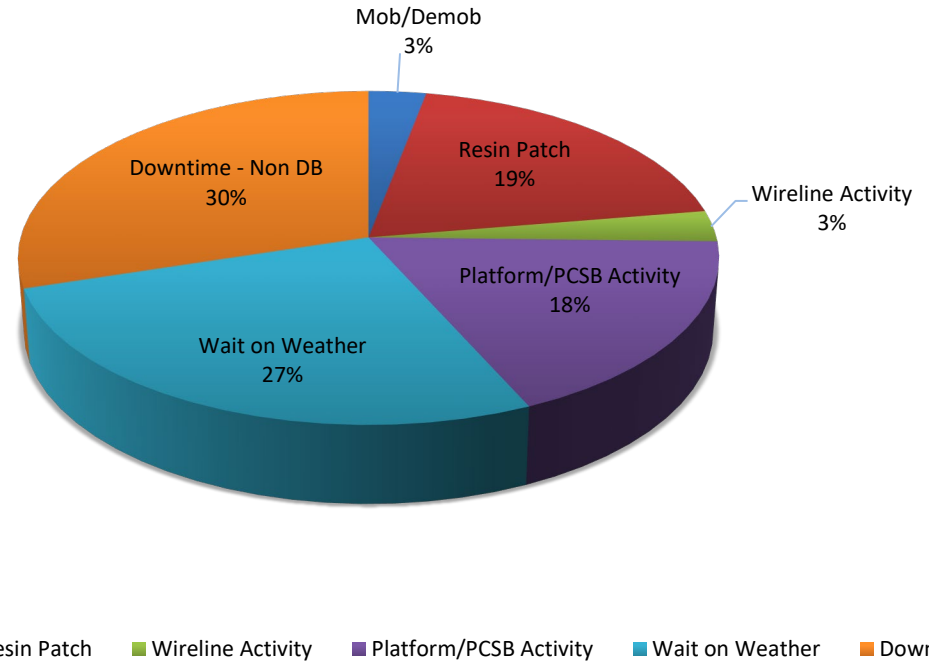
Tiong A-20

HIGHLIGHT/ REMARKS

1. **Platform/PCSB activity is inclusive of SDFN, platform hot work activity, wait on container from other platform**
2. **Downtime non-DB including wait for container to arrived from duyong (unable to lift due to crane issue at Duyong).**

Start Date	End Date
12-July-23 06:30	14-Aug-23 18:30

Activity	Hours	Days
Mob/Demob	24:00	1.00
Resin Patch Activity	156:00	6.50
Wireline Activity	24:00	1.00
Platform/PCSB Activity	144:00	6.00
Wait on Weather	216:00	9.00
Downtime Non-DB	240:00	10.00
Total	**804:00**	**33.50**



OPERATION – ACTIVITY OVERVIEW FOR TIONG A-20 C/O#02

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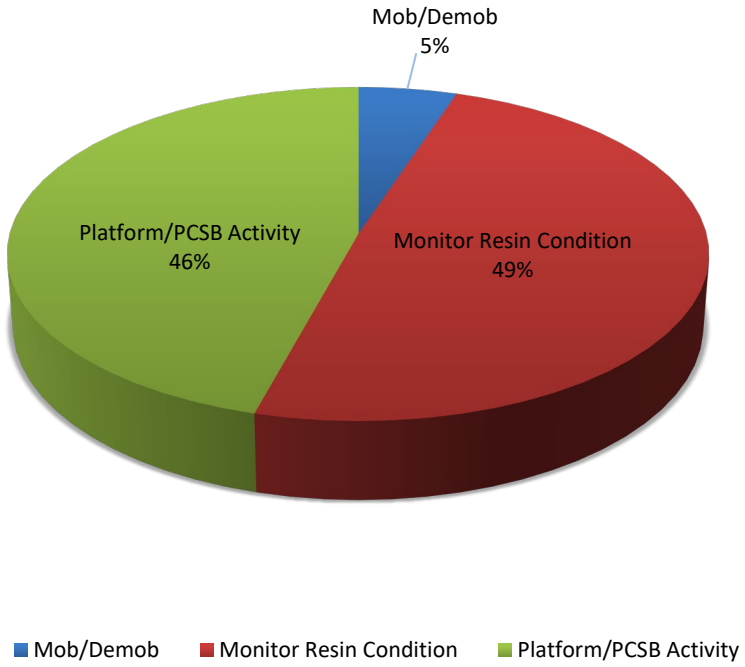
Tiong A-20

HIGHLIGHT/ REMARKS

1. **Monitor Resin condition during Platform TA activity.**

Start Date	End Date
27-Aug-23 06:30	25-Sept-23 18:30

Activity	Hours	Days
Mob/Demob	36:00	1.50
Monitor Resin Condition	348:00	14.50
Platform/PCSB Activity	324:00	13.50
Total	**708:00**	**29.50**



OPERATION – IMPROVEMENT

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IMPROVEMENT		
NO	**CATEGORY (*operational, safety, quality, technical)**	**DESCRIPTION**
1.	Operational	• Additional step prior cleanout stage to include losses rate test.
2.	Operational	• Inline surface filter from 400 micron size change to 200 micron size for better filtration of debris to avoid BHA from clog.
3.	Operational	• Establish CT String maintenance for short term (Flush with turbine & foam pig) & long term period (purge with N2, CT pickle & flush with turbine & foam pig depend on situation).
4.	Operational	• Additional chemical such as WaxClean & LCM were dedicated for every CT package to counter wax issue & losses.
5.	Operational	• Flowback summary report to be shared for every end of shift.
6.	Operational	• Multiple rate test with nitrified fluid during surface function test was conducted to obtain surface parameter as our benchmark.

OPERATION – IMPROVEMENT

Neu Dimension
Your Integrated Solutions Partner

IMPROVEMENT		
NO	**CATEGORY (*operational, safety, quality, technical)**	**DESCRIPTION**
7.	Technical	• TFA with different Friction Factor was included to identify lock up depth.
8.	Technical	• Circa Cleanout simulation analysis comparison with CoilCade Simulation for verification of cleanout effectiveness.
9.	Safety	• Initiative taken from DB SHO to perform blood pressure check up for every 2 week / during Crew Change Day.
10.	Safety	• Active participation from DB SHO to share poster of every program conducted at offshore (eg. PTW Audit, lifting gear inspection, hygiene inspection & etc)

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Your Integrated Solutions Partner

THANK YOU
Q&A SESSION

MINUTES OF MEETING (MOM)				
SQM Q2 & Q3 2023 : CONTRACTOR DIMENSION BID (M) SDN BHD (CTS)				
DATE	**21st Nov 2023 @ 11:00HRS**			
VENUE	**Dulang Meeting Room, PECC**			
Attendees:	**WIS**		**CONTRACTOR**	
	Eddy B Samaile	WIS, Head	Aliff Adenan	DB, CTS GM
	Asraf Nazri	WIS, Cluster 2 Manager	Jayadevan	DB, HSE Manager
	M Izwan B A Jalil	WIS, TP	Kung Yee Han	DB, Tech Advisor
	M Azwan Kifli	WIS, TP	Khairul Ridhwan	DB, CTS, FSM
	Bakri	WIS, Superintendent	Ahmad	DB, HSE
	M. Zhafran Abd Rahman	WIS, Exec	Fitri	DB, HSE
	Azli Maaris	WIS, Exec	Muhd Shahfariz	DB, CTS FE
	Faizal Ali	WIS, Exec	Zaeem	DB, CTS FE
	Pravin Nair	WIS, Exec	Hafiz	DB, CTS FE
	Arsyamimi	WIS, Exec	Wan Amiarina	DB, CTS TA
	Afiqah Aqmal	HSE, Exec		

NO	ITEMS	ACTION ITEM	PIC	DEADLINE	REMARK
1.0	TP Izwan opened the meeting session and welcome to all the attendees. Welcome remarks from WIS, Head Eddy and DB, GM Aliff Adenan	Info 1. Mr. Eddy request DB to conduct SQM for next Quarter at another place (eg. Hotel) 2. DB to submit & compiled all PJR including lesson learnt captured from the operation for each well by end of December 2023. 3. Aliff request PCSB to share Well Data so DB can prepare & source out	 DB DB PCSB EIC	 2024 Dec 2023 TBA	 OPEN OPEN OPEN

		early according to the job requirement for next year 2024.			
2.0	DB, FE Shahfariz brief on the past SQM for Q1 MOM.	1. Shahfariz tick the box on the action item from previous MOM that has been close. 2. Aliff highlighted some of the improvement that has been made by DB: - Hired 10 pax talent (4 pax JFE, 3 pax EOT, 1 pax EO3, 1 pax Mechanic & 1 pax ET) - DB-Slb Partnership. Held monthly meeting to discuss on the improvement & what Slb can support.	DB	SQM Q1 2023	CLOSE
3.0	Health Safety Officer, Ahmad resumed the meeting with Safety Sharing (Topic: Slip, trip and fall)	Info	Nil	Nil	Nil
4.0	**HSE Matters & Performance:** Ahmad presented Q2 & Q3 2023 HSE Overview • Presented on DB HSE Performance & Statistics Q2 & Q3 2023 • DB shared Q2 & Q3 UAUC Breakdown 2023 • DB shared on all the HSE activities & program for both of the Q2 & Q3.	1. DB to include near miss that might cause injury to personnel (eg. CT welding hub leak) in the UAUC breakdown. However, DB has justified that the leak was not expose to the personnel as the leak was inside the CT Drum where no personnel working inside CT Drum during operation.	DB DB	2024 SQM Q1 2023	OPEN CLOSE

		2. Ahmad also highlighted on the yard improvement that has been made as per shows in the SQM slide pack.			
5.0	**OPERATIONS OVERVIEW:** **<u>COILED TUBING SERVICES (CTS)</u>** Shahfariz presented on the DB intervention activities during Q2 & Q3 2023 • Presented on the manhours & UAUC submission statistics for Q2 & Q3 2023 • Briefly attendees on operation overview & timeline for each package (CT#01, CT#02, CT#03, CO#01 & CO#02) • Share on the lesson learnt & improvement made for overall operation	1. Mr. Eddy request DB to optimize operation by explore on the option to have vessel assisted CT Operation for next year. DB engineer to work with respective EIC (Pravin) to look into this option. 2. To segregate utilization rate based on specific activity during Rig Up Activity (eg. Stab in CT, lifting activity & etc). DB has justified as most of rig up / down activity will require general lifting activity as most of the load are more than 40 kg. Hence, we will register under Rig up/down activity & Well Preparation in our utilization rate. 3. TP Azwan request DB to explore on the option to store chemical basket temporarily at satellite platform if operation at Dulang & Angsi field. DB to work with respective EIC to check	DB & PCSB DB DB & PCSB	2024 2024 2024	OPEN OPEN OPEN

		on deck space availability at nearest location. TP Azwan also request DB to			
		4. Pravin request DB to look on how we can do to improve efficiency during mob/demob & rig up activity. DB has justified that average duration for rig up activity & surface preparation is 5 days for full CT & flowback equipment. However, it depends on the actual operation at site and priority as sometime during well intervention activity concurrent with wireline activity, PMCM activity, platform/construction activity. Proper planning & teamwork with EIC is required to ensure smooth operation. Any issue should highlight upfront to avoid any hiccup during operation.	DB & PCSB	2024	OPEN
		5. Aliff highlighted that currently DB already purchase monthly internet service from Starlink for better internet service at offshore. In order to have a better data transferring between offshore & onshore, DB also has already purchase Max Completions Apps where we can view real-time data during CT operation at our mobile phone & laptop so we can have better insight of what's going on at offshore & better decision making.	DB	2024	OPEN

		Currently we are still on trial version for field testing the Max Completions Apps during Resak A-09 CT Operation.			
6.0	**Well Intervention Activity 2024** • Ellisa brief on lookahead for all well intervention activity at PMA for 2024	To share latest lookahead for 2024 for DB to prepare accordingly with the job requirement.	PCSB	Dec 2023	OPEN
7.0	**Q & A Session / AOB** • Closing from DB GM Aliff Adenan	Aliff request PCSB to confirm on the job confirmation for Pumping Job at Angsi E & Angsi B.	EIC Angsi PCSB	Q4 2023	OPEN
	• Closing remarks from WIS Head, Eddy Samaile & WIS TP Izwan	Mr. Eddy remind DB to provide emergency food (eg. Dry food, biscuit, instant food & etc) for all crew at offshore. Mr. Eddy and TP Izwan extend their heartfelt appreciation to DB for the unwavering support they have consistently received.	DB	Q4 2023	ONGOING
8.0	**Meeting adjourned at 1:20 HRS**				

Prepared by:

_____ _____

Muhd Ameerul Zaeem
Dimension Bid (M) Sdn Bhd

Review by:

_____

Aliff Adenan
General Manager, Dimension Bid (M) Sdn Bhd

Review by:

_____

M Izwan B A Jalil
WIS, Petronas Carigali Sdn Bhd

Approved by:

_____

Eddy B Samaile
WIS, Head, Petronas Carigali Sdn Bhd

Post Job Review

DULANG D-06S CTU CEMENT SHUT OFF

03.07.2024

Prepared by	Endorsed by	Approved by
M. Ameerul Zaeem DB Field Engineer	M Izwan B. A Jalil TP	Name Chairperson

Team Member	

1 Overview

Operation at Dulang D was a standalone coil tubing package with all equipment and chemical placed on platform assisted by standby boat Setia Luhur for accommodation and temporary storage.

CT Operation Duration: 43 Days (5th April till 16th May 2024)

➢ Dulang D-22 – SCO & Set Bridge Plug (Dropped)

- Operation start on 5th April once SL arrived at Dulang D
- Operation complete on 27th May once tubing puncher for D06S arrived.
- Operation for D-22 only cover for rig up activity & equipment/chemical mobilization.
- **Actual Operation: 23 days, Planned Operation: 26 days**

➢ Dulang D-06S – Cement Shut Off

- Operation start on 28th April once slickline completed tubing punch on well D-06S
- Operation complete on 16th May once received instruction from town to suspend D-06S & proceed to next candidate D-02 Acid Pumping
- **Actual Operation: 20 days, Planned Operation: 19 days**

Well by Well Review

D-06S

Cement Shut Off

1 Executive Summary

Objective

1. To perform zone shut off on zone E-2A via cement retainer prior rig entry for Plug & Abandonment (P&A) activity.

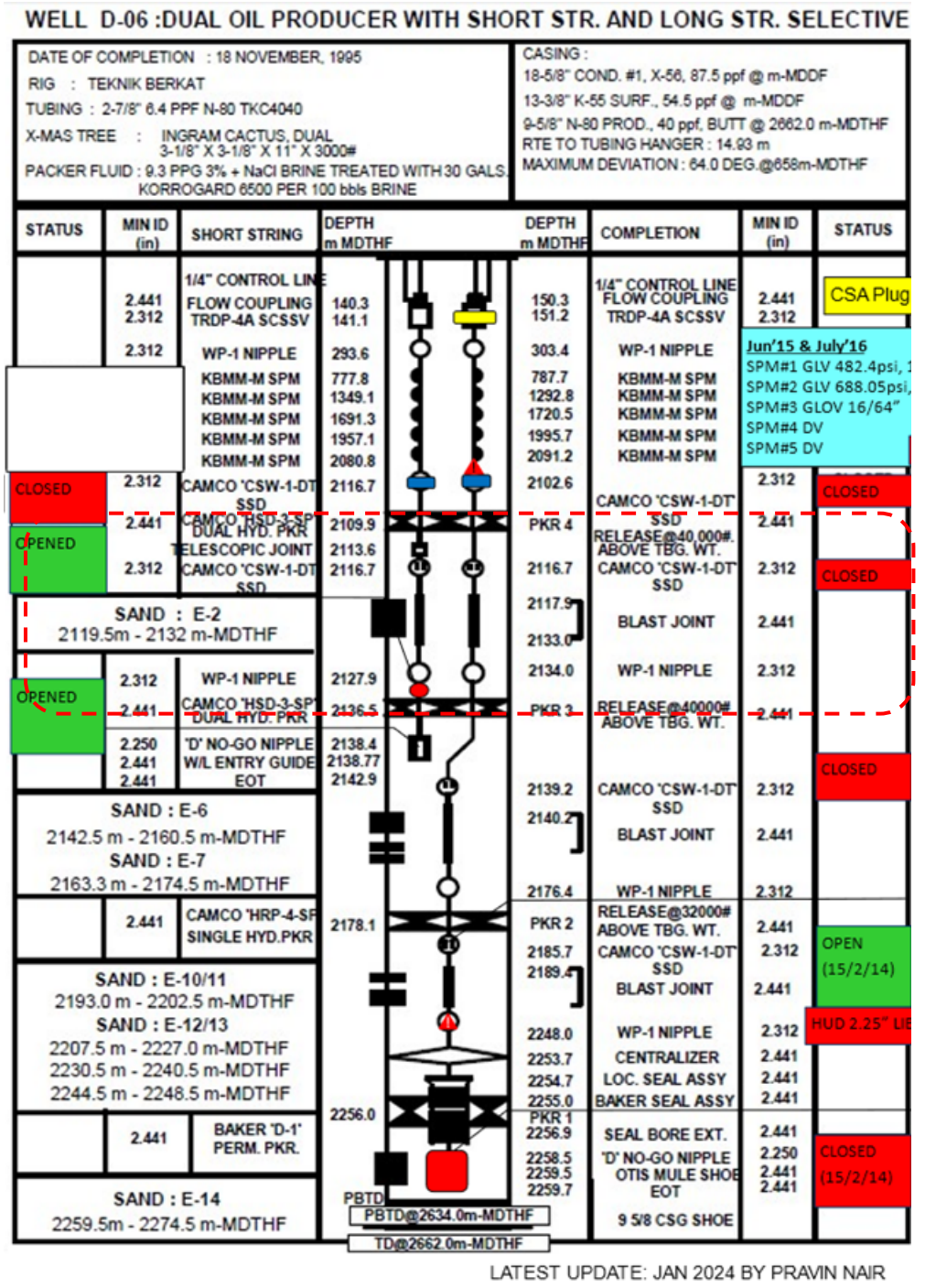
Problem Statement

- The well was suspect to have potential crossflow from higher pressure zones to lower pressure. Hence, zone E2A to be shut off with cement as a partial P&A scope prior to rig entry for a full P&A.

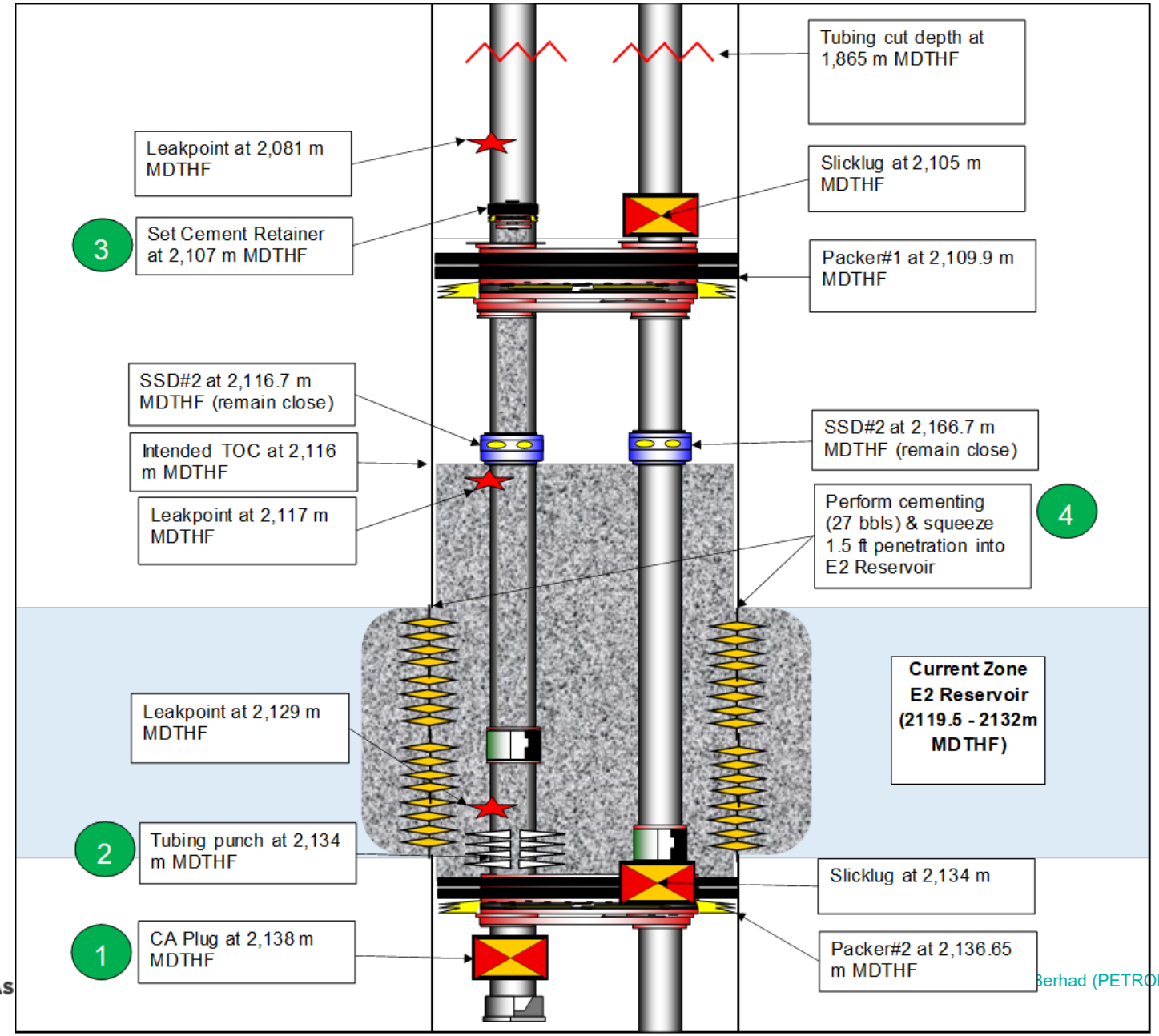
2 D-06 Well Overview

WELL DATA

Input Parameter	Parameter Value
Field	Dulang
Well	D-06S
Max. Deviation (degrees)	64 degree @ 658 m MDTHF
Min. Restriction (inch)	2.25" ('D' Nogo Nipple)
Tubing Specification	2-7/8" Production Tubing (Refer Well Schematic)
Type of Fluid & Density	N/A
Top of Fluid	No fluid level detected
Current Well Status	Both String in Shut-In Condition
Depth of zone	E2A (2119.5 – 2132m MDTHF)
Reservoir Pressure (psi)	E2A: 953 psi
Reservoir Temperature (deg F)	E2A: 224 deg F
Porosity	E2A: 0.278
Permeability (mD)	E2A: 188
Fracture Gradient	0.7 psi/ft
H_2S Content	Not available
CO_2 Content	Not available
Mercury, HG	Not available
Additional Information / Notes / Special Requirement:	
• Leak detected at 2,129.5 m MDTHF	



3 Well Cementing Illustration



3 Summary of Intervention Activities.

Job Description	String	Date	*Remark*
Bullheading Operation	SS	28 April 2024	1. Bullheading Injectivity Test thru Punch Hole at 2,134 m MDTHF
Bullheading Operation	SS	30 April 2024	1. Re-do Injectivity Test
Bullheading Operation	SS	1 May 2024	1. Monitor PBU after complete bleed off & shut in THP at SS, LS & PCP
Wireline Activity	SS	2 – 5 May 2024	1. VIVID Logging
Wireline Activity	LS	6 May 2024	1. Set Slickplug at 2,105 m MDTHF
Bullheading Operation	LS	7 May 2024	1. Bullheading TIT
Wireline Activity	SS	8 May 2024	1. Set Slickplug at 2,107 m MDTHF (to test envelope above CR)
Bullheading Operation	SS	9 May 2024	1. Bullheading TIT
CTU Operation	SS	10 May 2024	1. CT Run#1: Depth Correlation & Drift Run
CTU Operation	SS	11 – 12 May 2024	1. CT Run#2: Set Cement Retainer 2. Job Suspend

3 Plan vs Actual Operation

No.	Planned	Days	Actual	Days
#	**Dulang D-22 SCO (Candidate drop)**	**26**	Lifting & Rig Up Activity: 12 days Crane down: 4 days CC: 1 day Raya Celebration: 1 day WOW: 1 day Standby day due to 4x trip to KSB: 4 days	**23**
#	**Dulang D-06S Cement Shut Off**	**19**		**20**
1	Slickline retrieve MA Plug, TCC & close SSD#2	**2**	Completed during CTU Rig Up	**-**
2	Slickline set nippleless plug & inflow test plug	**4**	Completed during CTU Rig Up	**-**
3	Slickline perform tubing punch	**2**	Bullheading#1 Injectivity Test thru punch hole at 2,134 m MDTHF (1 day) Bullheading#2 Re-do Injectivity Test (2 day) Mobitor PBU after completely bleed off (1 day) VIVID logging (4 days) Set Slickplug at 2,105 m MDTHF at LS (1 day) Bullheading#3 TIT (1 day) Set Slickplug at 2,107 m MDTHF at SS (1 day) Bullheading#3 TIT (1 day) Retrieve Slickplug (1 day)	**13**
4	CT Rig up on Well	**1**	CT Rig up on Well (1 day)	**1**
5	CT Contingency Cleanout	**1.5**	-	**-**
6	CT Run#1 Drift & Depth Correlation	**2**	CT Run#1 Drift & Depth Correlation (1 day)	**1**
7	CT Run#2 Set Cement Retainer & Squeeze 27 bbls of cement. Wait on cement 24 hours	**4**	CT Run#2 Set Cement Retainer (2 days) Job suspend due to CR passing	**2**
8	CT Run#3 Post Cementing Cleanout. Perform positive test on cement integrity	**1.5**	-	**-**
9	Rig down & Skid Well	**1**	Surface preparation while waiting for Slb chemical for D-02	**3**
	Total Planned Days:	**45**	**Total Actual Days:**	**43**

3 Timeline for Dulang D-06S

1st trip & 2nd trip far apart due to platform CC, no activity allowed during Raya Celebration & bad weather.

Lifting activity on hold due to crane main hoist problem & bad weather.

Setia Luhur sailing back to KSB for 3rd trip cementing chemical mob.

5th April
1st Equipment Mob

14th – 17th April
Crane issue

25th – 27th April
3rd Chemical Mob

10th May
CT Run#1 – Drift & Depth Correlation

13th – 19th May
Surface prep for D-02

12th April
2nd Equipment Mob

18th – 24th April
Lifting & Rig up

28th April – 9th May
Pre - Cementing

11th May – 12th May
CT Run#2 – Set Cement Retainer

Received instruction to drop D22 candidate & proceed to well D-06S Cement Shut Off.

Prolong pre CT cementing operation due to communication in SS, LS & PCP which involve slickline activity. Additional scope to identify leak (VIVID) is required prior cementing operation.

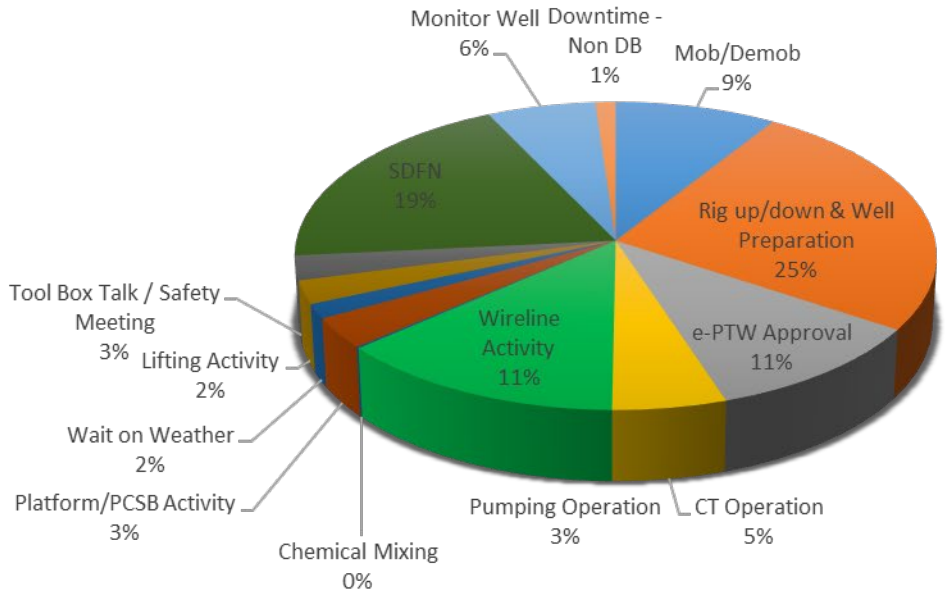
Job suspend due to CR passing during injectivity test.

Legends:

1) Rig up / down phase
2) Operation phase:

Operation Days: 43 days

3 Summary of Intervention Activities.



Activity	Hours	Days
Mob/Demob	94:00	03:55
Rig up/down & Well Preparation	265:57	11:04
e-PTW Approval	111:25	04:38
CT Operation	54:53	02:17
Pumping Operation	30:10	01:15
Wireline Activity	110:10	04:35
Chemical Mixing	01:30	00:03
Platform/PCSB Activity	34:00	01:25
Wait on Weather	16:00	00:40
Lifting Activity	25:35	01:03
Tool Box Talk / Safety Meeting	26:55	01:07
Stop Work	00:00	00:00
SDFN	203:30	08:28
Monitor Well	63:05	02:37
Downtime - DB	00:00	00:00
Downtime - Non DB	11:50	00:29
	1049:00	**43:42**

Highlight:

- **Downtime Non-DB**: Platform crane issue. Crane undergo maintenance resulting in delayed of rig up activity and lifting activity. Total days for rig up: 12 Days
- **Rig up/down Well preparation**: Include all activity involve on main deck (Pressure test, Break/Make up BHA, Skid and reposition equipment, etc.)

PETRONAS

3 Summary of Intervention Activities.

#	Activity	Start	End	Duration	CT Run#	Run Objective	Note
1	Mob/Demob	05-Apr-24 21:00	06-Apr-24 11:40	14:40:00			Check in to KSB and wait for sailing
2	Mob/Demob	06-Apr-24 11:40	07-Apr-24 07:00	19:20:00			Sail from KSB to DLG
3	Platform/PCSB Activity	07-Apr-24 07:00	07-Apr-24 10:30	3:30:00			Inter rig from SL to DLG B
4	e-PTW Approval	07-Apr-24 10:30	07-Apr-24 15:00	4:30:00			
5	Tool Box Talk / Safety Meeting	07-Apr-24 14:35	07-Apr-24 15:00	0:25:00			
6	Downtime - Non DB	07-Apr-24 10:30	07-Apr-24 14:20	3:50:00			Crane under maintenance and waiting for crane operator inter rig from DLG C to DLG D
7	Lifting Activity	07-Apr-24 15:00	07-Apr-24 18:00	3:00:00			
8	SDFN	07-Apr-24 18:00	08-Apr-24 07:20	13:20:00			SDFN
9	Tool Box Talk / Safety Meeting	08-Apr-24 07:20	08-Apr-24 08:05	0:45:00			
10	e-PTW Approval	08-Apr-24 07:00	08-Apr-24 08:05	1:05:00			
11	Rig up/down & Well Preparation	08-Apr-24 08:05	08-Apr-24 18:30	10:25:00			
12	SDFN	08-Apr-24 18:30	09-Apr-24 07:00	12:30:00			
13	e-PTW Approval	09-Apr-24 07:00	09-Apr-24 14:30	7:30:00			
14	Tool Box Talk / Safety Meeting	09-Apr-24 12:00	09-Apr-24 12:30	0:30:00			
15	Rig up/down & Well Preparation	09-Apr-24 14:30	09-Apr-24 17:30	3:00:00			
16	Platform/PCSB Activity	10-Apr-24 07:00	10-Apr-24 18:00	11:00:00			Raya Celebration
17	SDFN	10-Apr-24 18:00	11-Apr-24 07:00	13:00:00			
18	Wait on Weather	11-Apr-24 07:00	11-Apr-24 18:30	11:30:00			
19	SDFN	11-Apr-24 18:30	12-Apr-24 06:30	12:00:00			
20	Wait on Weather	12-Apr-24 06:30	12-Apr-24 11:00	4:30:00			
21	e-PTW Approval	12-Apr-24 11:00	12-Apr-24 14:40	3:40:00			
22	Tool Box Talk / Safety Meeting	12-Apr-24 11:40	12-Apr-24 12:00	0:20:00			
23	Rig up/down & Well Preparation	12-Apr-24 14:40	12-Apr-24 18:30	3:50:00			
24	SDFN	12-Apr-24 18:30	13-Apr-24 06:30	12:00:00			
25	e-PTW Approval	13-Apr-24 06:30	13-Apr-24 09:30	3:00:00			
26	Tool Box Talk / Safety Meeting	13-Apr-24 08:20	13-Apr-24 09:30	1:10:00			
27	Rig up/down & Well Preparation	13-Apr-24 09:30	13-Apr-24 18:40	9:10:00			DLG D crane operator not available due to duty at DLG A. Lifting activity onhold
28	SDFN	13-Apr-24 18:40	14-Apr-24 06:30	11:50:00			
29	e-PTW Approval	14-Apr-24 06:30	14-Apr-24 09:30	3:00:00			
30	Tool Box Talk / Safety Meeting	14-Apr-24 08:15	14-Apr-24 09:30	1:15:00			

3 Summary of Intervention Activities.

#	Activity	Start	End	Duration	CT Run#	Run Objective	Note
31	Lifting Activity	14-Apr-24 09:30	14-Apr-24 12:00	2:30:00			
32	Rig up/down & Well Preparation	14-Apr-24 12:00	14-Apr-24 18:30	6:30:00			Heavy lifting from MV SL hold and continue offload/lifting for rig up on main deck for below 3MT equiment. (5lift OL, 7 lift BL/Storage)
33	SDFN	14-Apr-24 18:30	15-Apr-24 06:30	12:00:00			
34	e-PTW Approval	15-Apr-24 06:30	15-Apr-24 09:30	3:00:00			
35	Tool Box Talk / Safety Meeting	15-Apr-24 07:45	15-Apr-24 08:15	0:30:00			
36	Lifting Activity	15-Apr-24 09:30	15-Apr-24 14:45	5:15:00			
37	Rig up/down & Well Preparation	15-Apr-24 14:45	15-Apr-24 18:30	3:45:00			
38	SDFN	15-Apr-24 18:30	16-Apr-24 06:30	12:00:00			
39	e-PTW Approval	16-Apr-24 06:30	16-Apr-24 09:30	3:00:00			
40	Tool Box Talk / Safety Meeting	16-Apr-24 07:00	16-Apr-24 07:30	0:30:00			
41	Rig up/down & Well Preparation	16-Apr-24 09:30	16-Apr-24 18:30	9:00:00			
42	SDFN	16-Apr-24 18:30	17-Apr-24 06:30	12:00:00			
43	e-PTW Approval	17-Apr-24 06:30	17-Apr-24 09:00	2:30:00			
44	Tool Box Talk / Safety Meeting	17-Apr-24 07:15	17-Apr-24 07:45	0:30:00			
45	Downtime - Non DB	17-Apr-24 09:00	17-Apr-24 17:00	8:00:00			Crane issue
46	Rig up/down & Well Preparation	17-Apr-24 09:00	17-Apr-24 17:00	8:00:00			
47	Lifting Activity	17-Apr-24 17:00	17-Apr-24 18:30	1:30:00			
48	SDFN	17-Apr-24 18:30	18-Apr-24 06:30	12:00:00			
49	e-PTW Approval	18-Apr-24 06:30	18-Apr-24 10:00	3:30:00			
50	Tool Box Talk / Safety Meeting	18-Apr-24 07:15	18-Apr-24 07:45	0:30:00			
51	Rig up/down & Well Preparation	18-Apr-24 10:00	18-Apr-24 17:10	7:10:00			
52	Lifting Activity	18-Apr-24 17:10	18-Apr-24 18:30	1:20:00			
53	SDFN	18-Apr-24 18:30	19-Apr-24 06:30	12:00:00			
54	e-PTW Approval	19-Apr-24 06:30	19-Apr-24 09:00	2:30:00			
55	Tool Box Talk / Safety Meeting	19-Apr-24 07:00	19-Apr-24 07:30	0:30:00			
56	Rig up/down & Well Preparation	19-Apr-24 09:00	19-Apr-24 18:30	9:30:00			
57	Wireline Activity	19-Apr-24 18:30	19-Apr-24 21:00	2:30:00			Assist Geowell pumping to well D-06L
58	SDFN	19-Apr-24 21:00	20-Apr-24 18:30	21:30:00			
59	e-PTW Approval	20-Apr-24 18:30	20-Apr-24 21:00	2:30:00			
60	Tool Box Talk / Safety Meeting	20-Apr-24 07:00	20-Apr-24 07:30	0:30:00			

3 Summary of Intervention Activities.

#	Activity	Start	End	Duration	CT Run#	Run Objective	Note
61	Rig up/down & Well Preparation	20-Apr-24 09:00	20-Apr-24 17:00	8:00:00			
62	Wireline Activity	20-Apr-24 17:00	20-Apr-24 19:40	2:40:00			Assist Geowell pumping to well D-06L
63	SDFN	20-Apr-24 19:40	21-Apr-24 06:30	10:50:00			
64	e-PTW Approval	21-Apr-24 06:30	21-Apr-24 10:00	3:30:00			
65	Tool Box Talk / Safety Meeting	21-Apr-24 09:00	21-Apr-24 09:30	0:30:00			
66	Rig up/down & Well Preparation	21-Apr-24 10:00	21-Apr-24 18:30	8:30:00			
67	SDFN	21-Apr-24 18:30	22-Apr-24 06:30	12:00:00			
68	e-PTW Approval	22-Apr-24 06:30	22-Apr-24 10:00	3:30:00			
69	Tool Box Talk / Safety Meeting	22-Apr-24 09:00	22-Apr-24 09:30	0:30:00			
70	Rig up/down & Well Preparation	22-Apr-24 10:00	22-Apr-24 18:30	8:30:00			
71	SDFN	22-Apr-24 18:30	23-Apr-24 06:30	12:00:00			
72	e-PTW Approval	23-Apr-24 06:30	23-Apr-24 09:00	2:30:00			
73	Rig up/down & Well Preparation	23-Apr-24 09:00	23-Apr-24 18:30	9:30:00			
74	SDFN	23-Apr-24 18:30	24-Apr-24 07:00	12:30:00			
75	e-PTW Approval	24-Apr-24 07:00	24-Apr-24 08:30	1:30:00			
76	Tool Box Talk / Safety Meeting	24-Apr-24 07:30	24-Apr-24 07:45	0:15:00			
77	Lifting Activity	24-Apr-24 08:30	24-Apr-24 10:30	2:00:00			
78	Rig up/down & Well Preparation	24-Apr-24 10:30	24-Apr-24 14:00	3:30:00			
79	Chemical Mixing	24-Apr-24 14:00	24-Apr-24 15:30	1:30:00			
80	Rig up/down & Well Preparation	24-Apr-24 15:30	24-Apr-24 18:30	3:00:00			Perform CT pickling and launch 1,650psi cement dart
81	Mob/Demob	24-Apr-24 18:30	27-Apr-24 06:30	60:00:00			Crew change. MV Setia Luhur sail back to KSB and going back to Dulang
82	e-PTW Approval	27-Apr-24 06:30	27-Apr-24 11:15	4:45:00			
83	Tool Box Talk / Safety Meeting	27-Apr-24 08:00	27-Apr-24 08:30	0:30:00			
84	Lifting Activity	27-Apr-24 11:15	27-Apr-24 14:00	2:45:00			
85	Platform/PCSB Activity	27-Apr-24 14:00	27-Apr-24 15:00	1:00:00			Crew attend PASR Dulang D-06S
86	Rig up/down & Well Preparation	27-Apr-24 15:00	27-Apr-24 18:30	3:30:00			
87	e-PTW Approval	27-Apr-24 18:30	27-Apr-24 21:00	2:30:00			
88	Tool Box Talk / Safety Meeting	27-Apr-24 19:30	27-Apr-24 20:00	0:30:00			
89	Rig up/down & Well Preparation	27-Apr-24 21:00	28-Apr-24 06:30	9:30:00			
90	e-PTW Approval	28-Apr-24 06:30	28-Apr-24 09:00	2:30:00			

3 Summary of Intervention Activities.

#	Activity	Start	End	Duration	CT Run#	Run Objective	Note
91	Rig up/down & Well Preparation	28-Apr-24 09:00	28-Apr-24 18:30	9:30:00			
92	e-PTW Approval	28-Apr-24 18:30	28-Apr-24 20:15	1:45:00			
93	Tool Box Talk / Safety Meeting	28-Apr-24 19:30	28-Apr-24 20:00	0:30:00			
94	Rig up/down & Well Preparation	28-Apr-24 20:15	28-Apr-24 23:00	2:45:00			
95	Pumping Operation	28-Apr-24 23:00	29-Apr-24 02:30	3:30:00			Perform bullheading injectivity test
96	Rig up/down & Well Preparation	29-Apr-24 02:30	29-Apr-24 06:30	4:00:00			
97	e-PTW Approval	29-Apr-24 06:30	29-Apr-24 09:00	2:30:00			
98	Tool Box Talk / Safety Meeting	29-Apr-24 07:15	29-Apr-24 10:30	3:15:00			Wait on PASR to approved
99	Platform/PCSB Activity	29-Apr-24 10:30	29-Apr-24 14:00	3:30:00			Wait on e-PTW emergency drill. Emergency drill cancel at the end
100	Rig up/down & Well Preparation	29-Apr-24 14:00	29-Apr-24 18:30	4:30:00			
101	e-PTW Approval	29-Apr-24 18:30	29-Apr-24 19:30	1:00:00			
102	Tool Box Talk / Safety Meeting	29-Apr-24 18:30	29-Apr-24 19:30	1:00:00			
103	Monitor Well	29-Apr-24 19:30	30-Apr-24 03:30	8:00:00			BLEED OFF THP SS,LS & PCP WELL D06S AND FILL UP TIW THP D06S
104	Pumping Operation	30-Apr-24 03:30	30-Apr-24 06:30	3:00:00			Perform fill-up tubing of 60bbls TIW
105	e-PTW Approval	30-Apr-24 06:30	30-Apr-24 07:30	1:00:00			
106	Tool Box Talk / Safety Meeting	30-Apr-24 06:30	30-Apr-24 07:30	1:00:00			
107	Pumping Operation	30-Apr-24 06:30	30-Apr-24 14:15	7:45:00			
108	Rig up/down & Well Preparation	30-Apr-24 14:15	30-Apr-24 18:30	4:15:00			
109	e-PTW Approval	30-Apr-24 18:30	30-Apr-24 20:00	1:30:00			
110	Tool Box Talk / Safety Meeting	30-Apr-24 18:45	30-Apr-24 19:00	0:15:00			
111	Rig up/down & Well Preparation	30-Apr-24 20:00	30-Apr-24 21:00	1:00:00			
112	Monitor Well	30-Apr-24 21:00	01-May-24 06:30	9:30:00			Bleed off PCP pressure and monitor reading every 1 hour.
113	e-PTW Approval	01-May-24 06:30	01-May-24 08:00	1:30:00			
114	Platform/PCSB Activity	01-May-24 08:00	01-May-24 11:00	3:00:00			Attend well control drill and safety stand down
115	Monitor Well	01-May-24 11:00	01-May-24 18:30	7:30:00			Bleed off and monitor D06L THP
116	e-PTW Approval	01-May-24 18:30	01-May-24 20:00	1:30:00			
117	Tool Box Talk / Safety Meeting	01-May-24 18:30	01-May-24 19:00	0:30:00			
118	Monitor Well	01-May-24 20:00	02-May-24 06:30	10:30:00			Bleed off and monitor D06L THP
119	Monitor Well	02-May-24 06:30	02-May-24 14:30	8:00:00			
120	Wireline Activity	02-May-24 14:30	02-May-24 18:30	4:00:00			Start preparation for Archer and Geowell to enter well

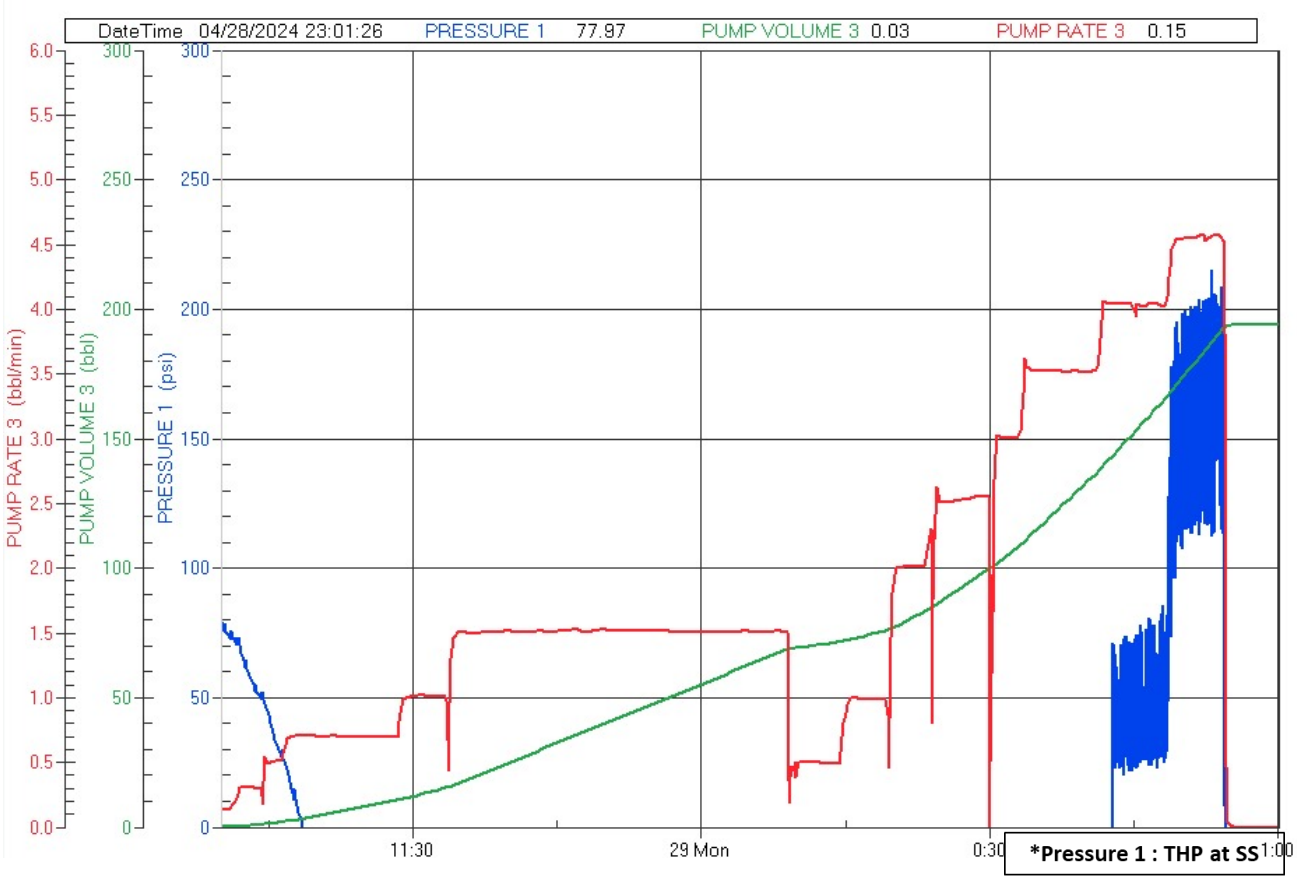
3 Summary of Intervention Activities.

#	Activity	Start	End	Duration	CT Run#	Run Objective	Note
121	e-PTW Approval	02-May-24 06:30	02-May-24 14:30	8:00:00			
122	Tool Box Talk / Safety Meeting	02-May-24 08:30	02-May-24 09:00	0:30:00			
123	e-PTW Approval	02-May-24 18:30	02-May-24 21:00	2:30:00			
124	Wireline Activity	02-May-24 21:00	03-May-24 06:30	9:30:00			
125	e-PTW Approval	03-May-24 06:30	03-May-24 08:30	2:00:00			
126	Tool Box Talk / Safety Meeting	03-May-24 07:30	03-May-24 08:45	1:15:00			
127	Lifting Activity	03-May-24 08:45	03-May-24 16:00	7:15:00			
128	Wireline Activity	03-May-24 16:00	03-May-24 18:30	2:30:00			
129	e-PTW Approval	03-May-24 18:30	03-May-24 21:00	2:30:00			
130	Tool Box Talk / Safety Meeting	03-May-24 19:00	03-May-24 19:30	0:30:00			
131	Wireline Activity	03-May-24 21:00	04-May-24 06:30	9:30:00			Assist slickline to run VIVID Logging
132	e-PTW Approval	04-May-24 06:30	04-May-24 07:30	1:00:00			
133	Tool Box Talk / Safety Meeting	04-May-24 06:30	04-May-24 07:30	1:00:00			
134	Wireline Activity	04-May-24 06:30	04-May-24 18:30	12:00:00			Assist slickline to run VIVID Logging
135	e-PTW Approval	04-May-24 18:30	04-May-24 18:50	0:20:00			
136	Wireline Activity	04-May-24 18:30	05-May-24 06:30	12:00:00			Assist slickline to run VIVID Logging
137	e-PTW Approval	05-May-24 06:30	05-May-24 08:30	2:00:00			
138	Tool Box Talk / Safety Meeting	05-May-24 06:30	05-May-24 07:00	0:30:00			
139	Wireline Activity	05-May-24 06:30	05-May-24 18:30	12:00:00			Assist slickline to run VIVID Logging
140	e-PTW Approval	05-May-24 18:30	05-May-24 19:30	1:00:00			
141	Tool Box Talk / Safety Meeting	05-May-24 18:30	05-May-24 19:30	1:00:00			
142	Wireline Activity	05-May-24 18:30	06-May-24 06:30	12:00:00			
143	e-PTW Approval	06-May-24 06:30	06-May-24 08:45	2:15:00			
144	Tool Box Talk / Safety Meeting	06-May-24 07:00	06-May-24 07:30	0:30:00			
145	Wireline Activity	06-May-24 06:30	06-May-24 18:30	12:00:00			Slickline RIH to set slickplug
146	e-PTW Approval	06-May-24 18:30	06-May-24 19:30	1:00:00			
147	Tool Box Talk / Safety Meeting	06-May-24 18:30	06-May-24 19:30	1:00:00			
148	Wireline Activity	06-May-24 18:30	07-May-24 06:30	12:00:00			
149	Platform/PCSB Activity	07-May-24 06:30	07-May-24 18:30	12:00:00			All permit put on hold due to wss crew change
150	e-PTW Approval	07-May-24 18:30	07-May-24 19:30	1:00:00			

3 Summary of Intervention Activities.

#	Activity	Start	End	Duration	CT Run#	Run Objective	Note
151	Tool Box Talk / Safety Meeting	07-May-24 18:30	07-May-24 19:00	0:30:00			
152	Pumping Operation	07-May-24 18:30	08-May-24 06:30	12:00:00			Perform TIT on slicklplug
153	e-PTW Approval	08-May-24 06:30	08-May-24 06:45	0:15:00			
154	Monitor Well	08-May-24 06:30	08-May-24 11:00	4:30:00			
155	Wireline Activity	08-May-24 11:00	08-May-24 18:30	7:30:00			
156	e-PTW Approval	08-May-24 18:30	08-May-24 19:30	1:00:00			
157	Tool Box Talk / Safety Meeting	08-May-24 18:30	08-May-24 19:00	0:30:00			
158	Pumping Operation	08-May-24 18:30	08-May-24 22:25	3:55:00			Perform TIT on slickplug on well D06L
159	Monitor Well	08-May-24 22:25	09-May-24 06:30	8:05:00			
160	e-PTW Approval	09-May-24 06:30	09-May-24 08:30	2:00:00			
161	Tool Box Talk / Safety Meeting	09-May-24 08:00	09-May-24 08:30	0:30:00			
162	Monitor Well	09-May-24 06:30	09-May-24 13:30	7:00:00			
163	Rig up/down & Well Preparation	09-May-24 13:30	09-May-24 18:30	5:00:00			
164	e-PTW Approval	09-May-24 18:30	09-May-24 20:50	2:20:00			
165	Tool Box Talk / Safety Meeting	09-May-24 19:00	09-May-24 19:30	0:30:00			
166	Rig up/down & Well Preparation	09-May-24 18:30	10-May-24 06:30	12:00:00			Surface Preparation & Pressure Test String & Connector prior To Run In Hole D06S
167	e-PTW Approval	10-May-24 06:30	10-May-24 08:30	2:00:00			
168	Tool Box Talk / Safety Meeting	10-May-24 08:00	10-May-24 08:30	0:30:00			
169	Rig up/down & Well Preparation	10-May-24 06:30	10-May-24 09:50	3:20:00			
170	CT Operation	10-May-24 09:50	10-May-24 18:30	8:40:00	RUN#1	Depth Correlation	:RIH to perform depth correlation.
171	e-PTW Approval	10-May-24 18:30	10-May-24 21:30	3:00:00			
172	Tool Box Talk / Safety Meeting	10-May-24 18:30	10-May-24 19:30	1:00:00			
173	CT Operation	10-May-24 18:30	10-May-24 23:50	5:20:00	RUN#1	Depth Correlation	POOH to surface
174	Rig up/down & Well Preparation	10-May-24 23:50	11-May-24 11:37	11:47:00			Break BHA and make up WFT BHA and Tool
175	e-PTW Approval	11-May-24 06:30	11-May-24 09:00	2:30:00			
176	Tool Box Talk / Safety Meeting	11-May-24 07:30	11-May-24 08:00	0:30:00			
177	CT Operation	11-May-24 11:37	11-May-24 20:40	9:03:00	RUN#2	Set CR	RIH to set CR & perform cementing
178	CT Operation	11-May-24 20:40	12-May-24 06:30	9:50:00	RUN#2	Set CR	Perform TIT, follow by Injectivity test. Perform first and second injectivity test
179	e-PTW Approval	12-May-24 06:30	12-May-24 07:30	1:00:00			
180	CT Operation	12-May-24 06:30	12-May-24 18:30	12:00:00	RUN#2	Set CR	Perform third injectivity test
181	CT Operation	12-May-24 18:30	13-May-24 04:30	10:00:00	RUN#2	Set CR	Perform fourth injectivity test. Inform from town to perform sting out CT from CR. POOH till surface
182	Rig up/down & Well Preparation	13-May-24 04:30	13-May-24 06:30	2:00:00			POOH to surface. Break WFT BHA. Rig down surface
183	e-PTW Approval	13-May-24 06:30	13-May-24 09:00	2:30:00			
184	Tool Box Talk / Safety Meeting	13-May-24 08:00	13-May-24 08:30	0:30:00			
185	Rig up/down & Well Preparation	13-May-24 09:00	16-May-24 18:30	81:30:00			Rig down and perform maintenance on CTU unit. Standbay for next well D02

4 Job Analysis – Bullheading #1 – Injectivity Test



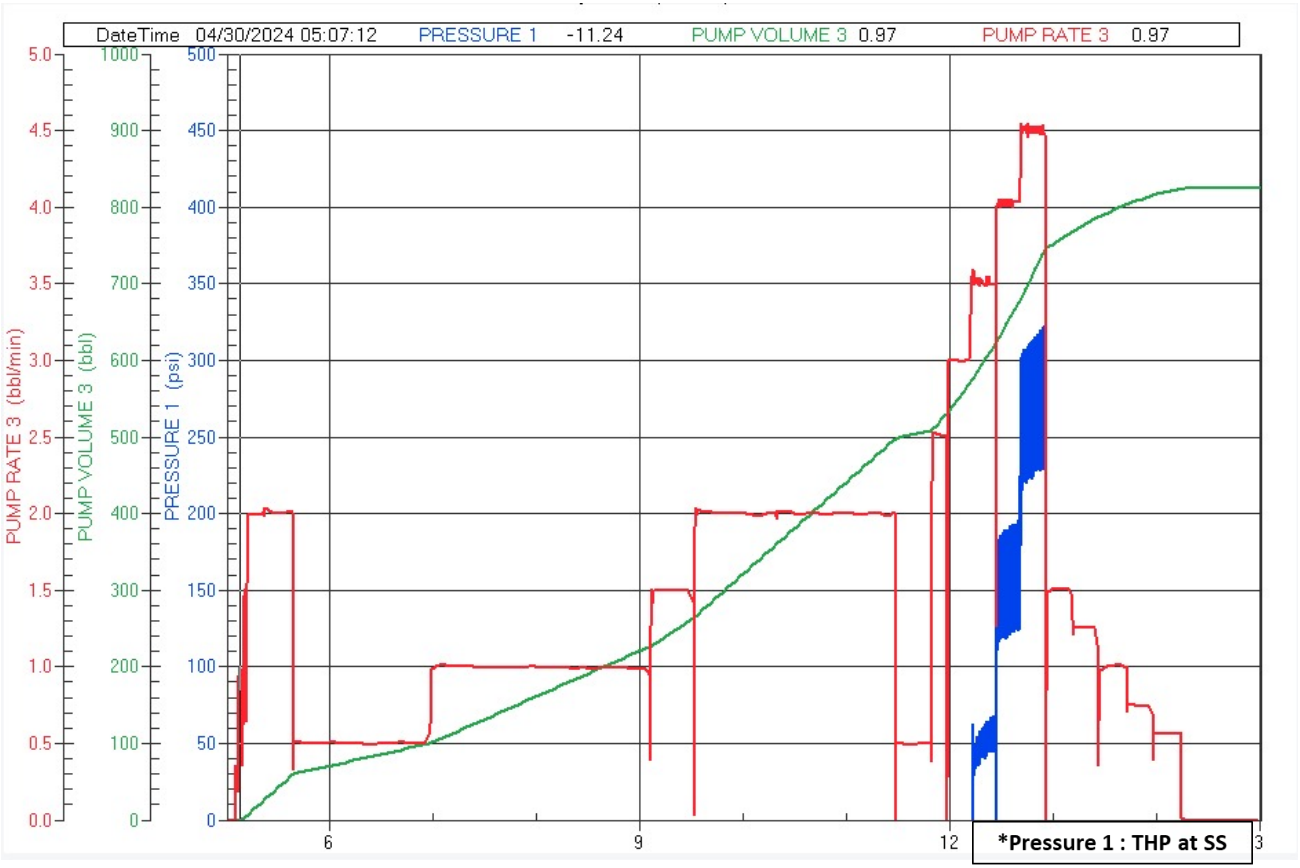
Rate (bpm)	THP LS (psi)	THP SS (psi)	PCP (psi)
0.5	14	0	100
0.7	14	0	100
1	14	0	100
1.5	14	0	100
2	14	0	100
2.5	14	0	100
3	14	0	100
3.5	29	0	116
4	29	50	116
4.5	29	150	130

Table 1: Injectivity Test, maintain at each pump rate for 5 min.

Event Summary

- Initial parameter, THP SS: 0 psi, THP LS: 14 psi, PCP: 100 psi
- Started to pump 69 bbl of injection water and start Injectivity
- Injectivity test was done at rate: 0.5bpm, 0.7bpm, 1.0 bpm, 1.5 bpm, 2.0bpm, 2.5bpm, 3.0bpm, 3.5bpm, 4.0bpm, 4.5bpm.
- At 3.5 bpm, observed that THP at LS & PCP start to increase.

4 Job Analysis – Bullheading #2 – Injectivity Test



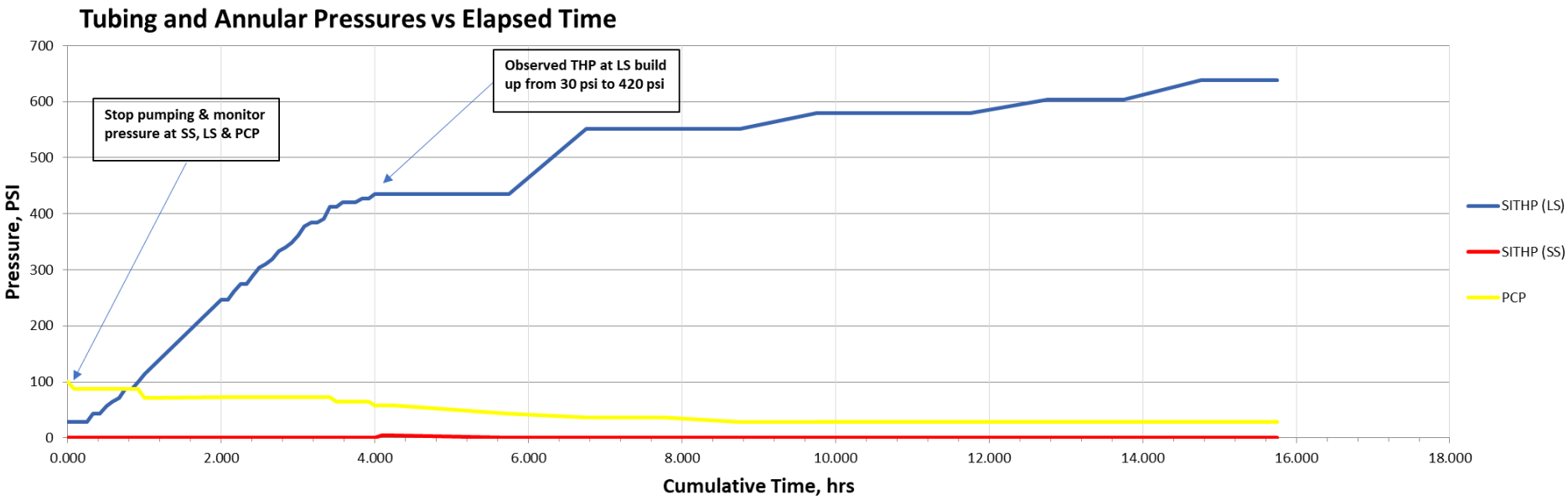
Rate (bpm)	THP LS (psi)	THP SS (psi)	PCP (PSI)
0.5	14	0	58
2.5	14	0	58
3	14	0	58
3.5	29	50	72
4	58	160	101
4.5	87	270	101
1.5	58	0	116
1.25	43	0	116
1	29	0	101
0.75	29	0	101
0.5	29	0	101

Table 2: Injectivity Test, maintain at each pump rate for 15 min.

Event Summary

- Initial parameter, THP SS: 0 psi, THP LS: 14 psi, PCP: 58 psi
- Started to pump 497 bbl of injection water
- Start Injectivity Test at each pump rate: 0.5bpm, 2.5bpm, 3.0 bpm, 3.5 bpm, 4.0bpm, 4.5bpm, 1.5bpm, 1.25bpm, 1.0bpm, 0.75bpm.
- At 3.5 bpm, observed that THP at LS & PCP start to increase.

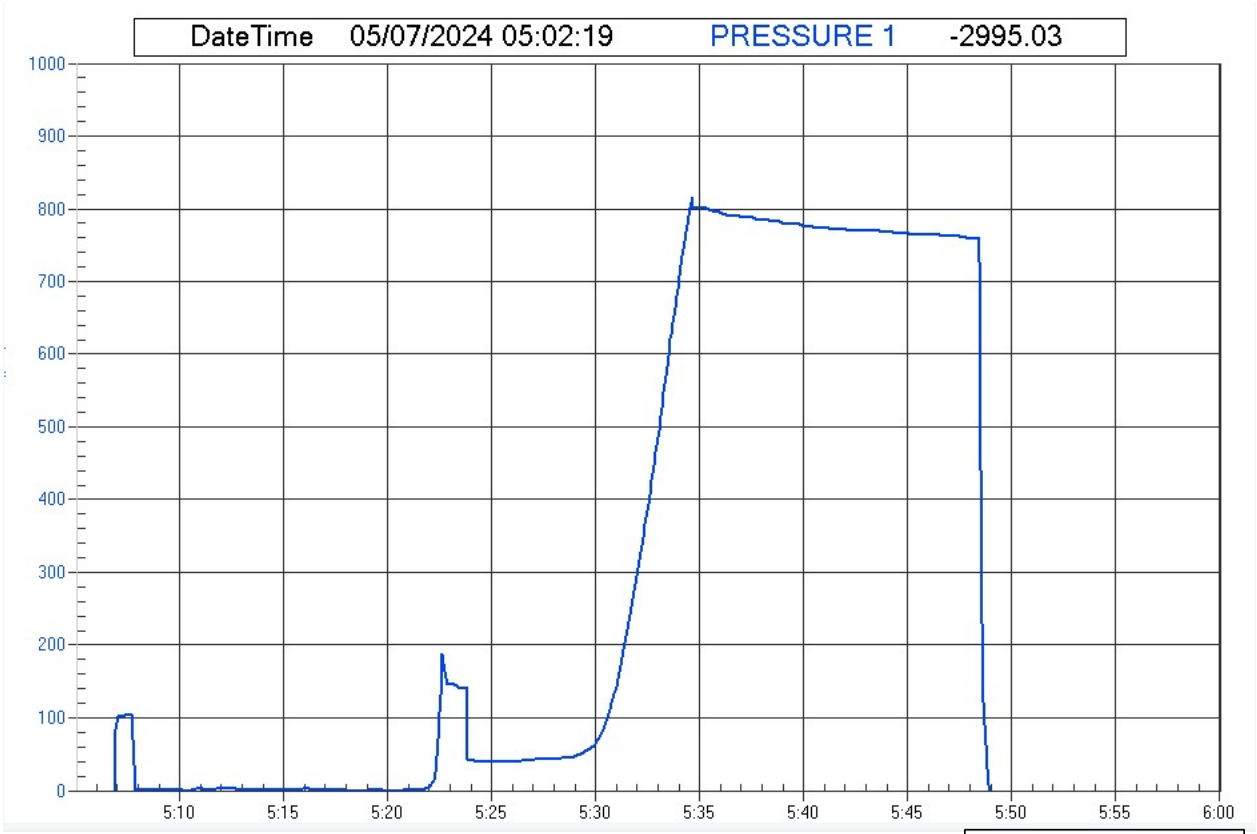
4 Job Analysis – Pressure Monitoring after Injectivity Test



Discussion

- Last recorded parameter after completed 2nd injectivity test. THP SS: 0 psi, THP LS: 30 psi, PCP: 100 psi
- As the THP SS maintain at 0 psi, THP LS build up from 30 psi to 420 psi while PCP drop from 100 psi until 0 psi.
- Result from monitoring pressure on well, the leak point at SS cause the pressure at LS to build up.

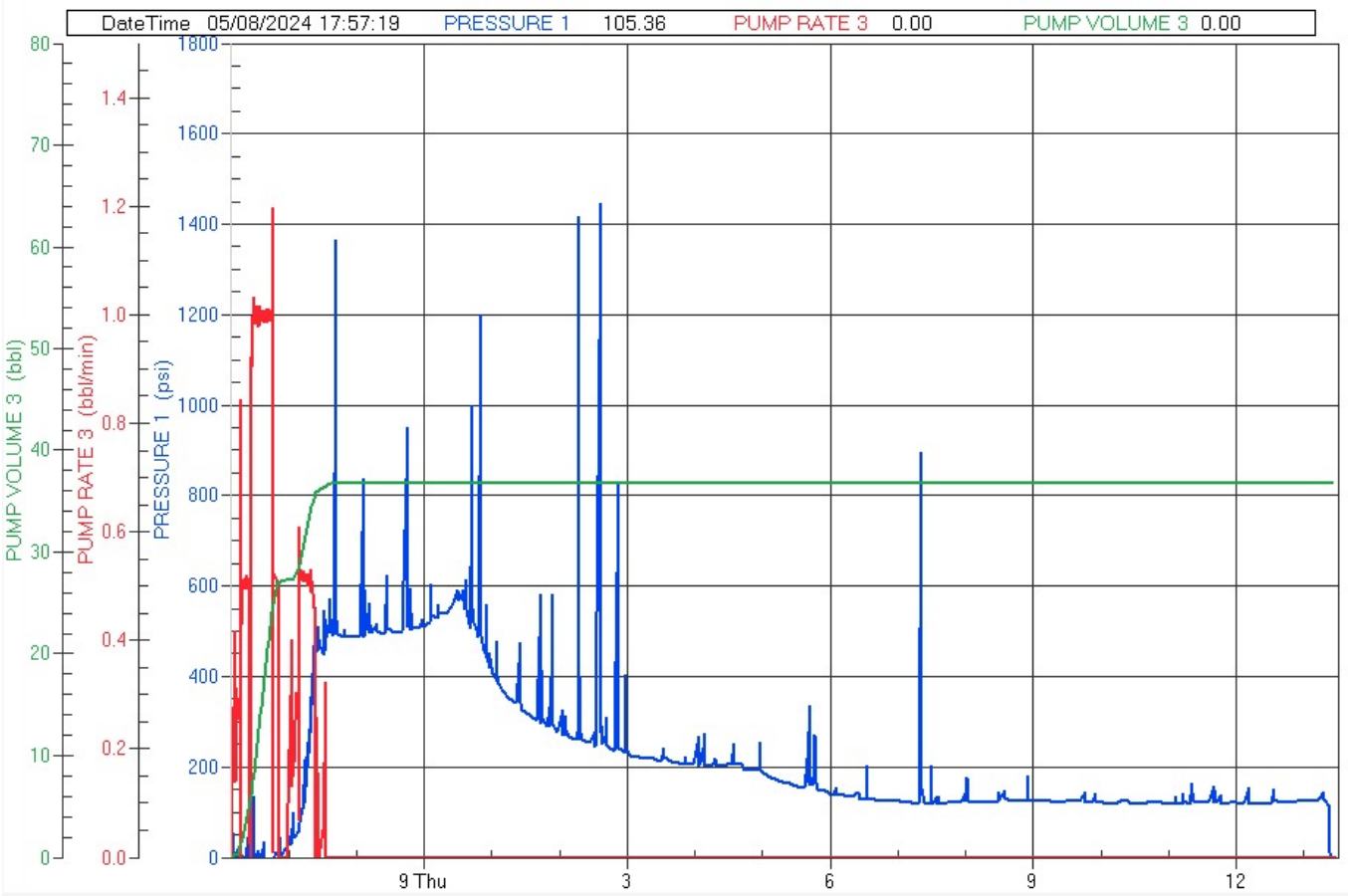
4 Job Analysis – TIT on Slickplug at LS



Event Summary

- TIT Slickplug at Long String at 2,105 m MDTHF on 7 May 2024
- Perform TIT on Slickplug at LS until 800psi. Monitor for 15 min.
- Pressure test monitoring indicated that the Slickplug was in a sound condition with no noticeable leak.

Job Analysis – TIT on Slickplug at SS

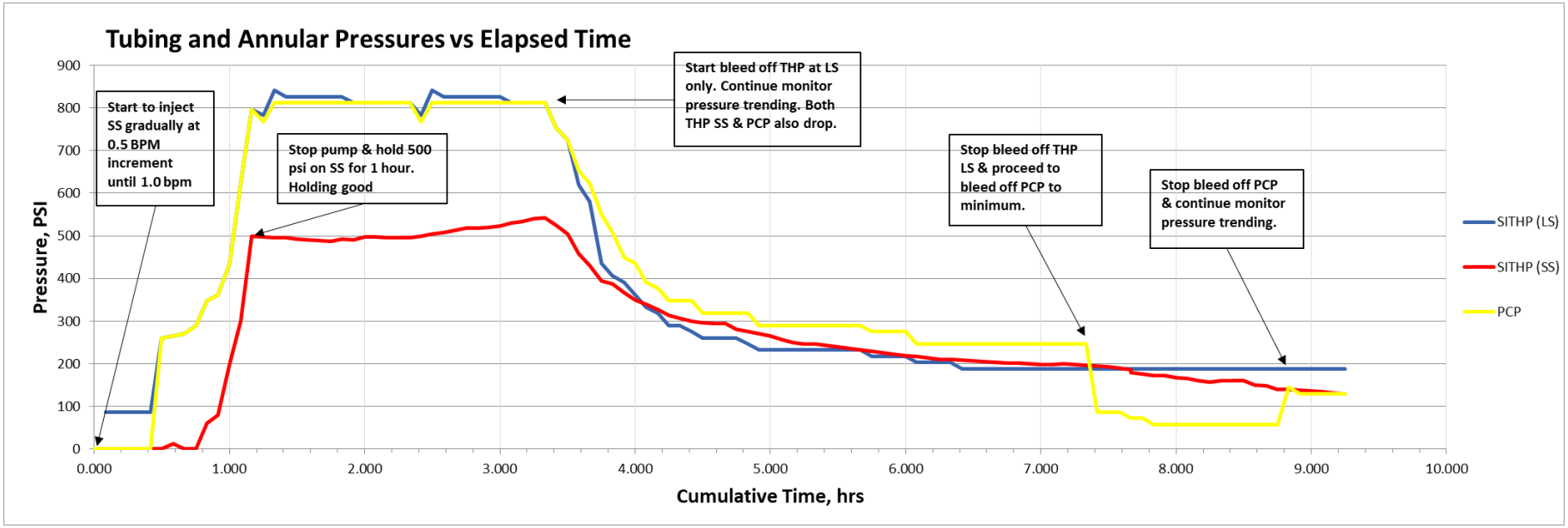


*Pressure 1 : THP at SS

Event Summary

- TIT Slickplug at Short String on 9 May 2024 (to test envelope above CR at 2,107 m MDTHF)
- Perform TIT on Slickplug at SS until 500psi.
- Pressure test monitoring indicated that the Slickplug was in a sound condition with no noticeable leak.

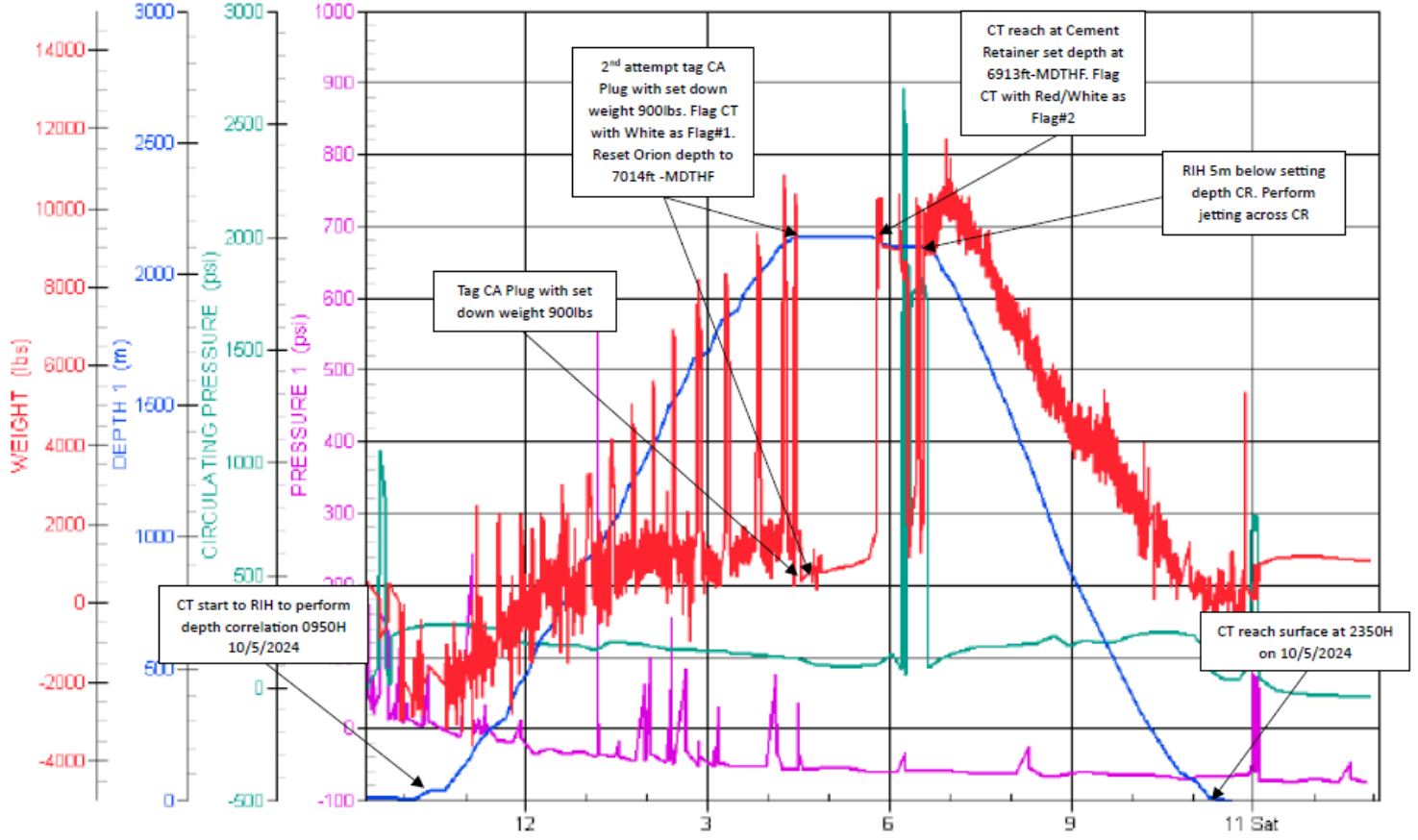
4 Job Analysis – TIT Slickplug LS & SS



Discussion

- Manually record THP SS, THP LS & PCP.
- TIT Slickplug at Short String on 9 May 2024 (to test envelope above CR at 2,107 m MDTHF)
- From above graph, we can conclude there is leak at SS, when bleed LS the THP SS also decrease.
- Pressure test monitoring indicated that the Slickplug was in a sound condition with no noticeable leak.

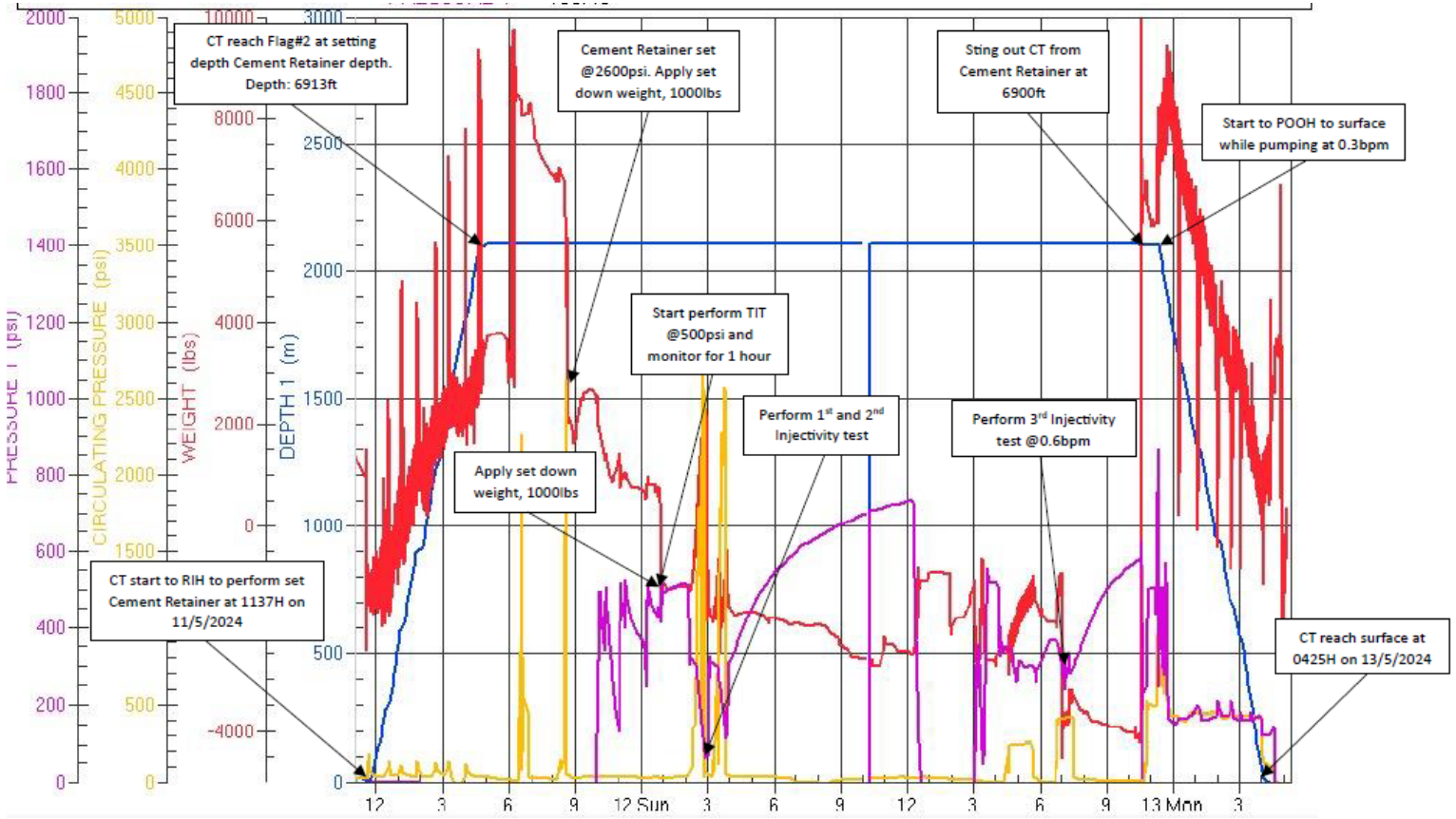
4 Job Analysis – CT Run#1: Depth Correlation & Drift Run



Event Summary

- Start RIH while pumping at 0.3bpm of TIW and perform weight check every 500ft. Return 100% solid water on surface.
- Once CT reach 10m above CA Plug perform check weight, and tag CA plug @7014ft MDTHF with set down weight 900lbs. (Flag#1 CT) . Reset mechanical counter and orion @7,014ft MDTHF.
- POOH CT @6913ft MDTHF and flag CT for CR depth. Increase pump rate to 1bpm and perform jetting across the CR setting depth area (5m below and 5m above).

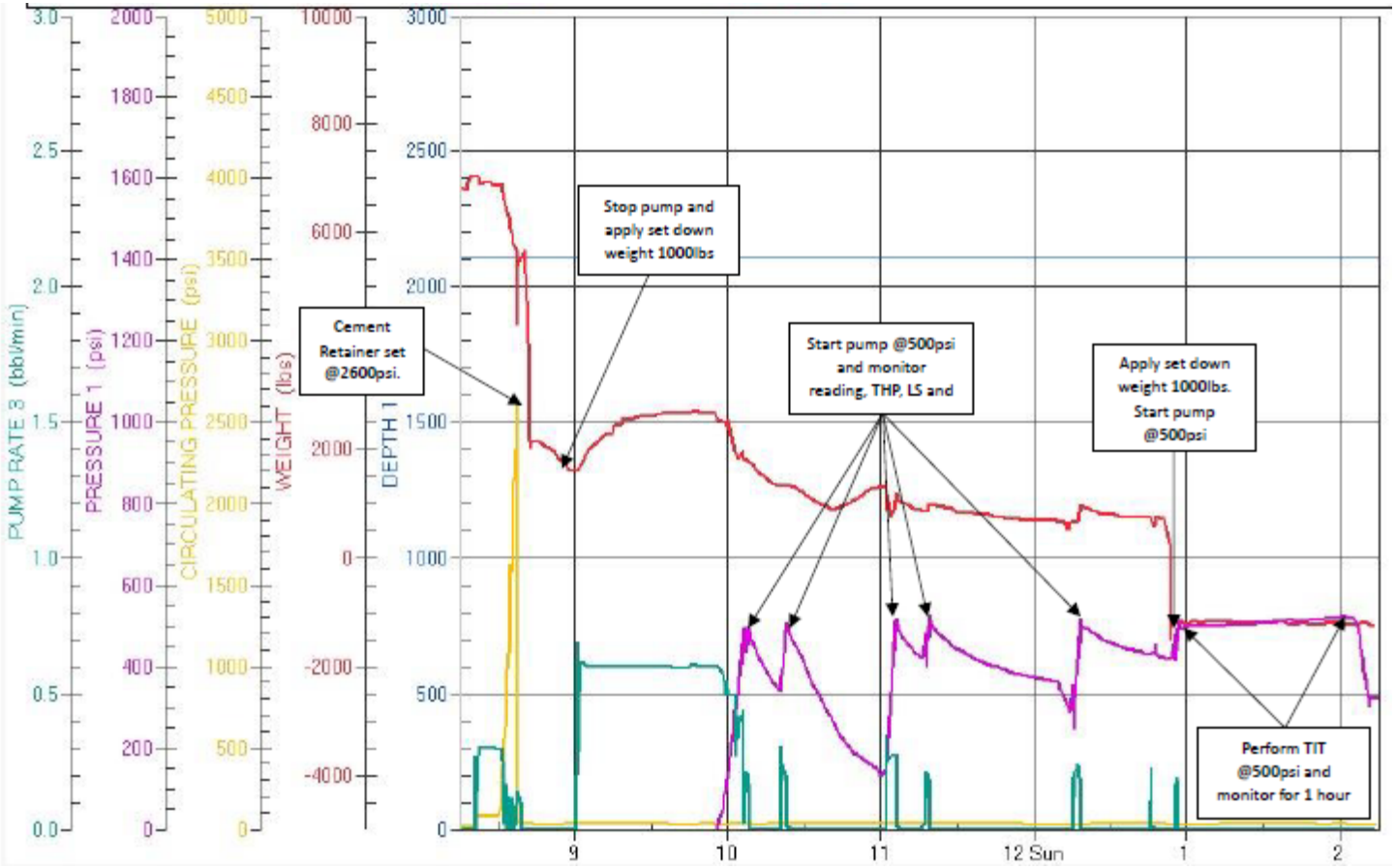
4 Job Analysis – CT Run#2: Set Cement Retainer at 2,107 m / 6,914 ft MDTHF



Event Summary

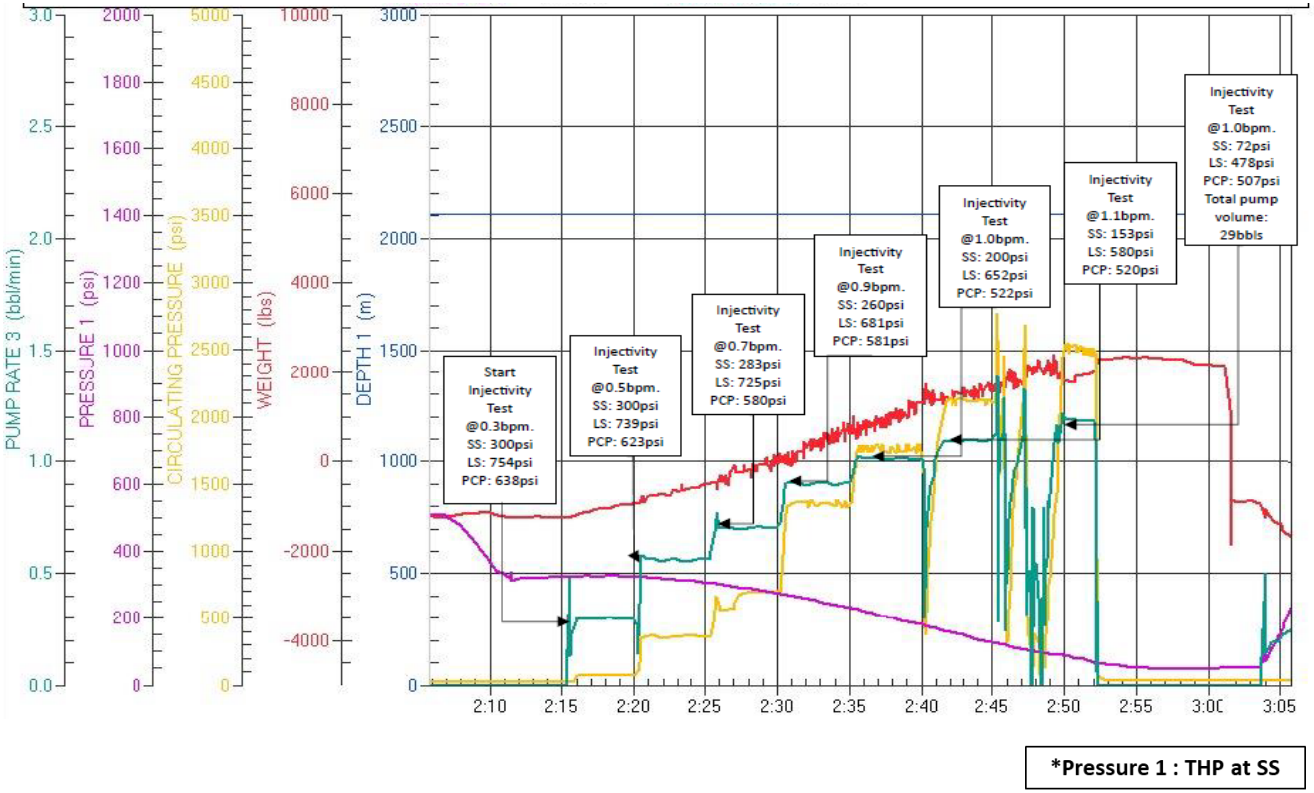
- Start RIH to set CR at set depth while break circulation 1bbl at 0.3bpm for every 1,000 ft.
- Launch ½ ball inside CT to set CR and pressure up to 1,000psi to chase the ball over gooseneck and let the ball seat on HST.
- CR set @ 2,600psi as pressure down to 0psi indicate CR shear have been activated. Apply set down weight at 1,000 lbs to confirm CR is set.

4 Job Analysis – CT Run#2: Set Cement Retainer at 2,107 m / 6,914 ft MDTHF (TIT)



Event Summary
• Perform TIT by filling up CT annulus, LS and PCP and test CR @ 500psi. Monitor for 1 hour and obtained good result after 6x attempt, pressure holding good. Continue with Injectivity Test.

4 Job Analysis – CT Run#2: Set Cement Retainer at 2,107 m / 6,914 ft MDTHF (Injectivity Test)



*Pressure 1 : THP at SS

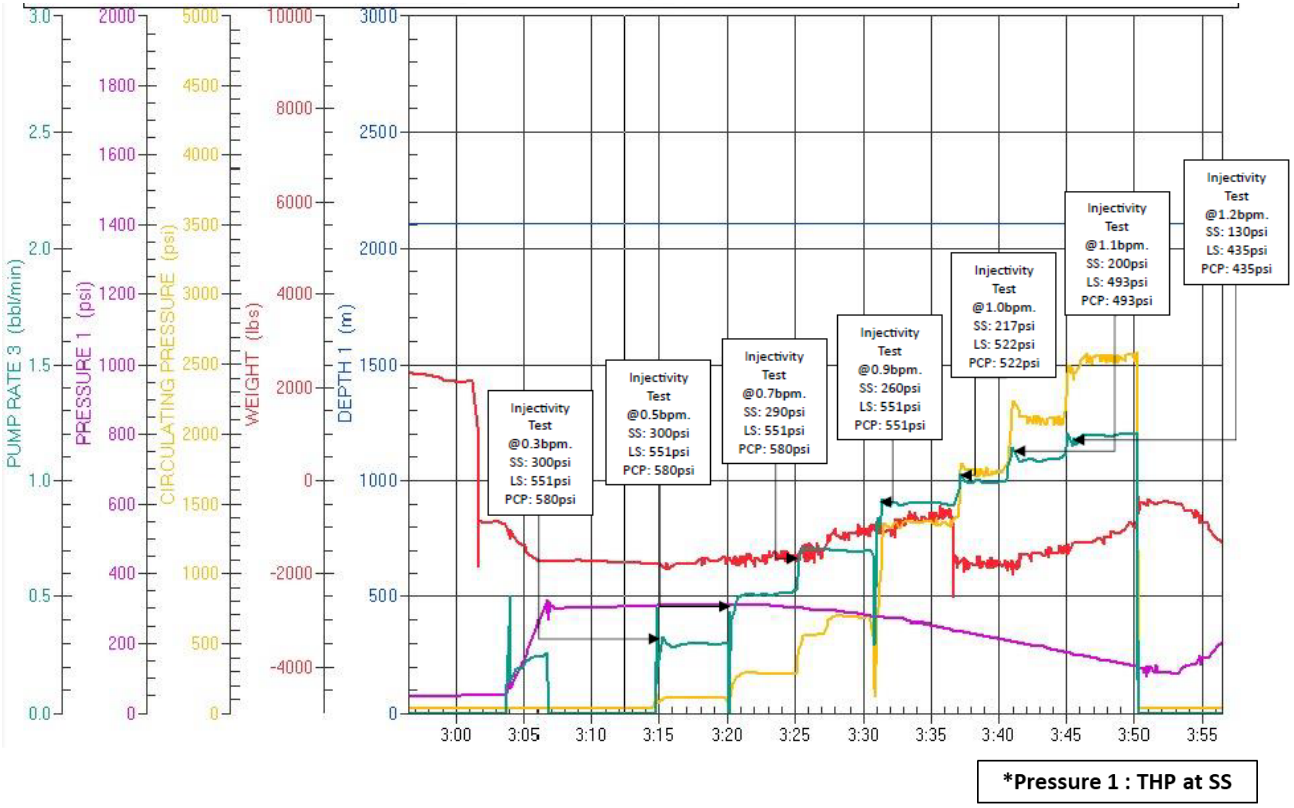
RATE (BPM)	PUMP PRESSURE (PSI)	THP (PSI) SS	THP (PSI) LS	PCP (PSI)
0.3	73	300	754	638
0.5	320	300	739	623
0.7	700	283	725	580
0.9	1365	260	681	551
1	1778	200	652	522
1.1	2132	153	580	520
1.2	2542	72	478	507

Table 3: Injectivity Test prior set CR, maintain at each pump rate for 5 min.

Event Summary

- Perform Injectivity Test. Initial reading for THP SS:500psi THP LS:797psi, PCP:652psi..
- Final reading, THP SS: 72 psi, THP LS: 478 psi, PCP: 507 psi
- At 1.1 bpm, observed that THP at LS & PCP start to decrease.

4 Job Analysis – CT Run#2: Set Cement Retainer at 2,107 m / 6,914 ft MDTHF (Injectivity Test 2nd Attempt)



RATE (BPM)	PUMP PRESSURE (PSI)	THP (PSI) SS	THP (PSI) LS	PCP (PSI)
0.3	102	300	551	580
0.5	290	300	551	580
0.7	690	290	551	580
0.9	1366	260	551	551
1	1743	217	522	522
1.1	2123	200	493	493
1.2	2571	130	435	435

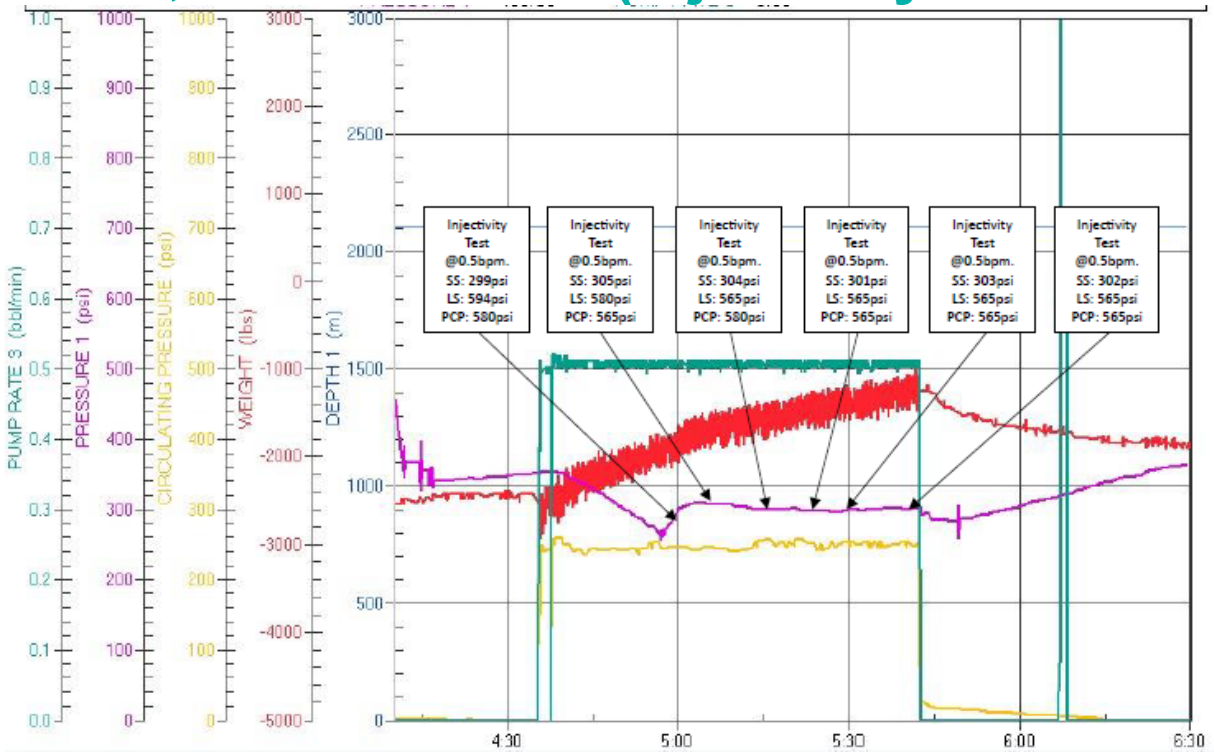
Table 4: Second Injectivity Test prior set CR, maintain at each pump rate for 5 min.

Event Summary

- Start second Injectivity Test at each pump rate: 0.3bpm, 0.5bpm, 0.7bpm, 0.9bpm, 1.0 bpm, 1.1 bpm, 1.2bpm and sustain each pumping rate for 5 minutes.
- Re-attempt Injectivity. Start to pump THP SS to 300psi using Graco pump.
- Injectivity test was done at each pumping rate for every 5 minutes before switch to next rate as per table above.
- Once again at 1.1 bpm, observed that THP at LS & PCP start to decrease

4

Job Analysis – CT Run#2: Set Cement Retainer at 2,107 m / 6,914 ft MDTHF (Injectivity Test 3rd Attempt)



*Pressure 1 : THP at SS

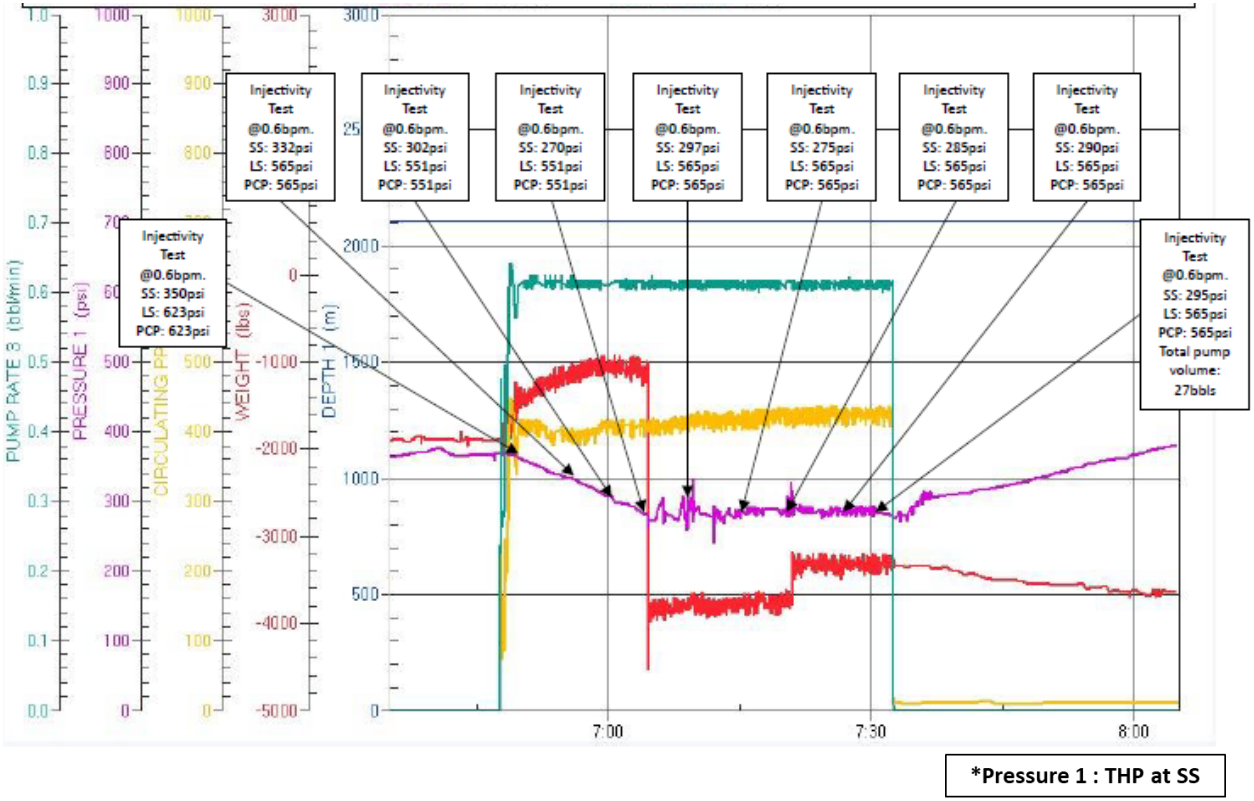
RATE (BPM)	CIRC. PRESSURE (PSI)	THP (PSI) SS	THP (PSI) LS	PCP (PSI)
0.5	240	299	594	580
0.5	245	305	580	565
0.5	240	304	565	580
0.5	245	301	565	565
0.5	250	303	565	565
0.5	251	302	565	565

Table 5: Third Injectivity Test prior set CR, maintain at each pump rate for 5 min.

Event Summary

- Dimension Bid re attempt TIT on CR @500 psi. Pressure holding good.
- Continue perform 3rd Injectivity. Start to pump THP SS to 300psi using Graco pump.
- Injectivity test was done at 0.5bpm for 1 hour and monitor every 10 minutes.
- Observed the pressure at THP LS, THP SS and PCP remain within the same range.

4 Job Analysis – CT Run#2: Set Cement Retainer at 2,107 m / 6,914 ft MDTHF (Injectivity Test 4th Attempt)



*Pressure 1 : THP at SS

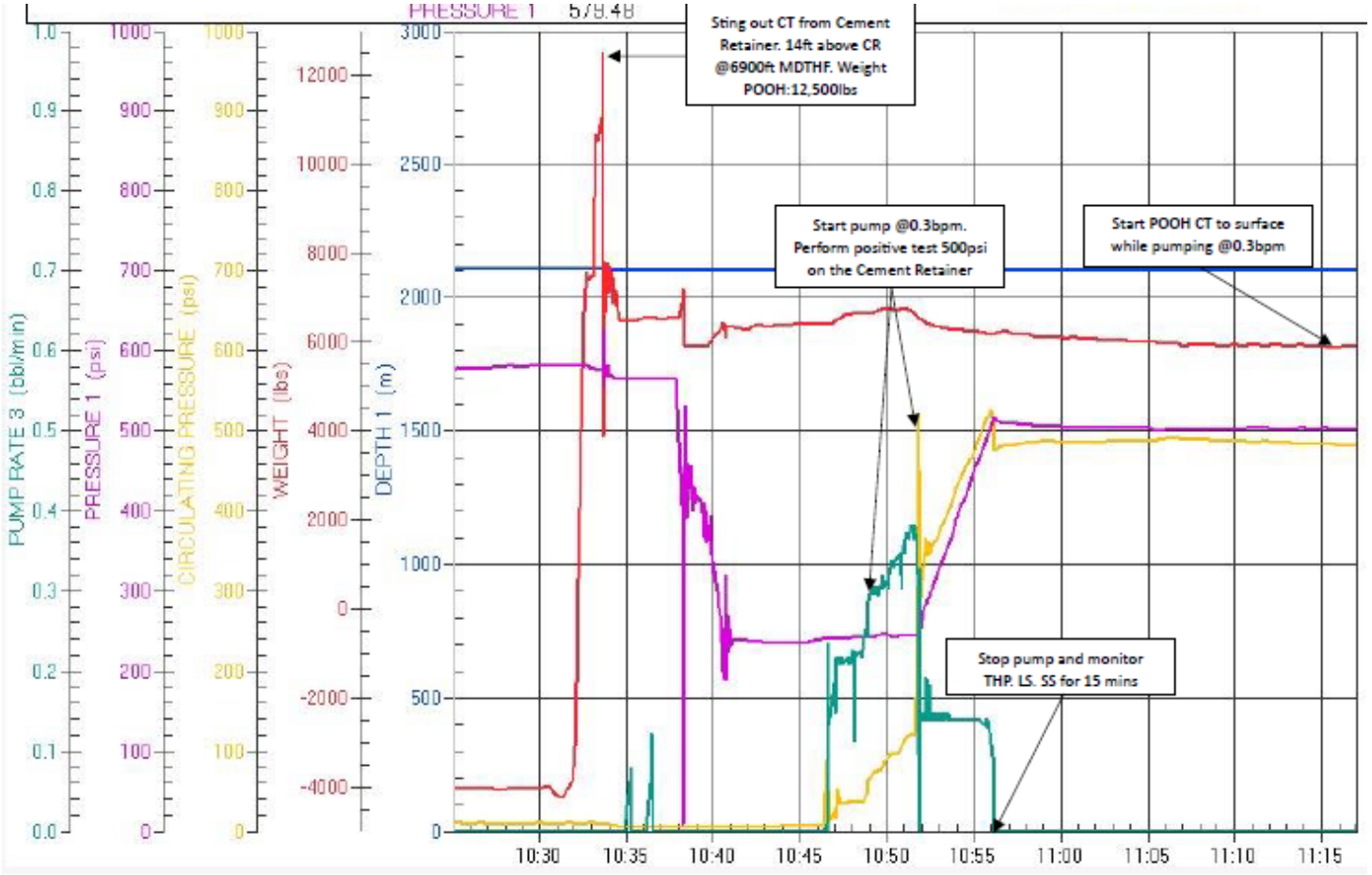
RATE (BPM)	CIRC. PRESSURE (PSI)	THP (PSI) SS	THP (PSI) LS	PCP (PSI)
0.6	413	350	623	623
0.6	405	332	565	565
0.6	420	302	551	551
0.6	412	270	551	551
0.6	417	297	565	565
0.6	433	275	565	565
0.6	434	285	565	565
0.6	436	290	565	565
0.6	439	295	565	565

Table 6: Foryth Injectivity Test prior set CR, maintain at each pump rate for 5 min.

Event Summary

- Continue perform 4th Injectivity. Start to pump THP SS to 300psi using Graco pump.
- Injectivity test was done at 0.6bpm for 45 minutes and monitor every 5 minutes.
- Observed the pressure at THP LS, THP SS and PCP remain within the same range.

Job Analysis – CT Run#2: Sting Out from CR



Event Summary
• From injectivity result, town decide to suspend the job due to unconvince of CR integrity status. • Perform sting out CR from CT. Once confirmed CT stinged out perform positive test at 500psi on the CR with CT. From above graph shown that the pressure is holding. • POOH and secure well and bleed off pressure, flush line and rig down surface line. Break WFT BHA and tool.

6 Conclusion

- Injectivity test conducted through bullheading suggests that there is communication between both the short and long string, as well as the annulus (PCP).
- In order to verify the leak, VIVID logging was carried out at short string. From the result, it can be conclude that there are leak at 2,061 m MDTHF (SPM#5), 2,117 m MDTHF (SSD#2) & below CA Plug at 2,138 m MDTHF. Packer#1 was concluded to be intact.
- A Slickplug was set at 2,105 m MDTHF (5m above Packer#1) in an attempt to reduce the risk of cement slurry ascending the long string. TIT confirms that the plug was intact up to 500psi for 15mins.
- Prior to setting the CR, a Slickplug was installed at 2,107 m MDTHF (the depth for setting the CR) to examine the envelope above the CR setting depth. TIT confirms that the plug was intact up to 500psi for 15mins. Surface pressure of SS & LS and annulus (PCP) held and remain constant.
- CR was set at 2,107 m MDTHF & an injectivity test was conducted to simulate cement slurry pumping at 0.5 bpm & 0.6 bpm. CT annulus pressure (PRESSURE 1) fluctuated during pumping through CT. Based on the results from both injectivity rates and pressure testing on the earlier set Slickplug (pre CR), it can be inferred that the CR is passing.

7 Dulang Well D06S Lesson learnt

Highlight

- ***Overall Operation was successfully completed without any HSE issue.***
- ***From Injectivity test it is confirmed that the well has communication between SS, LS and PCP.***
- ***TIT result on slickplug for both string shown that the pressure still intact.***
- ***Able to complete objective to set Cement Retainer at setting depth and based on TIT, pressure holding good.***

Lowlight

- **Platform crane issue which cause delayed in rig up activity.**
- **Result from injectivity test on CR show the pressure is passing even perform at pump rate 0.5 bpm and 0.6 bpm**
- **Due to unconvincing of CR integrity status, job was suspend.**

Thank you for your passion!

PE/IWR
Post Job Review
DULANG D31 CTU SCALE CLEANOUT & NEAR WELLBORE ACID WASH
20.08.2024

Prepared by	Endorsed by	Approved by
Muhd Ameerul Zaeem DB CTS Field Engineer	Name M Izwan B. A Jalil TP	Name Chairperson

Team Member	

1 Executive Summary

Operation at Dulang D was a standalone coil tubing package with all equipment and chemical placed on platform assisted by standby boat Setia Luhur for accommodation and temporary storage.

CT Operation Duration: 29 Days (16th June till 16th July 2024)

➢ Dulang-D31 - Scale Clean Out and Acid Wash

- Operation start on 16th June once Setia Luhur sailing to Dulang D together with chemical for D-31 and complete on 16th July once flowback is completed.
- **Actual Operation: 31 days, Planned Operation: 14 days**
- Prolong operation due to MSD from 26th June until 8th July 2024 (13 days).

Well by Well Review

D-31
Scale Cleanout & Near Wellbore Acid Wash

2 Executive Summary

Objective

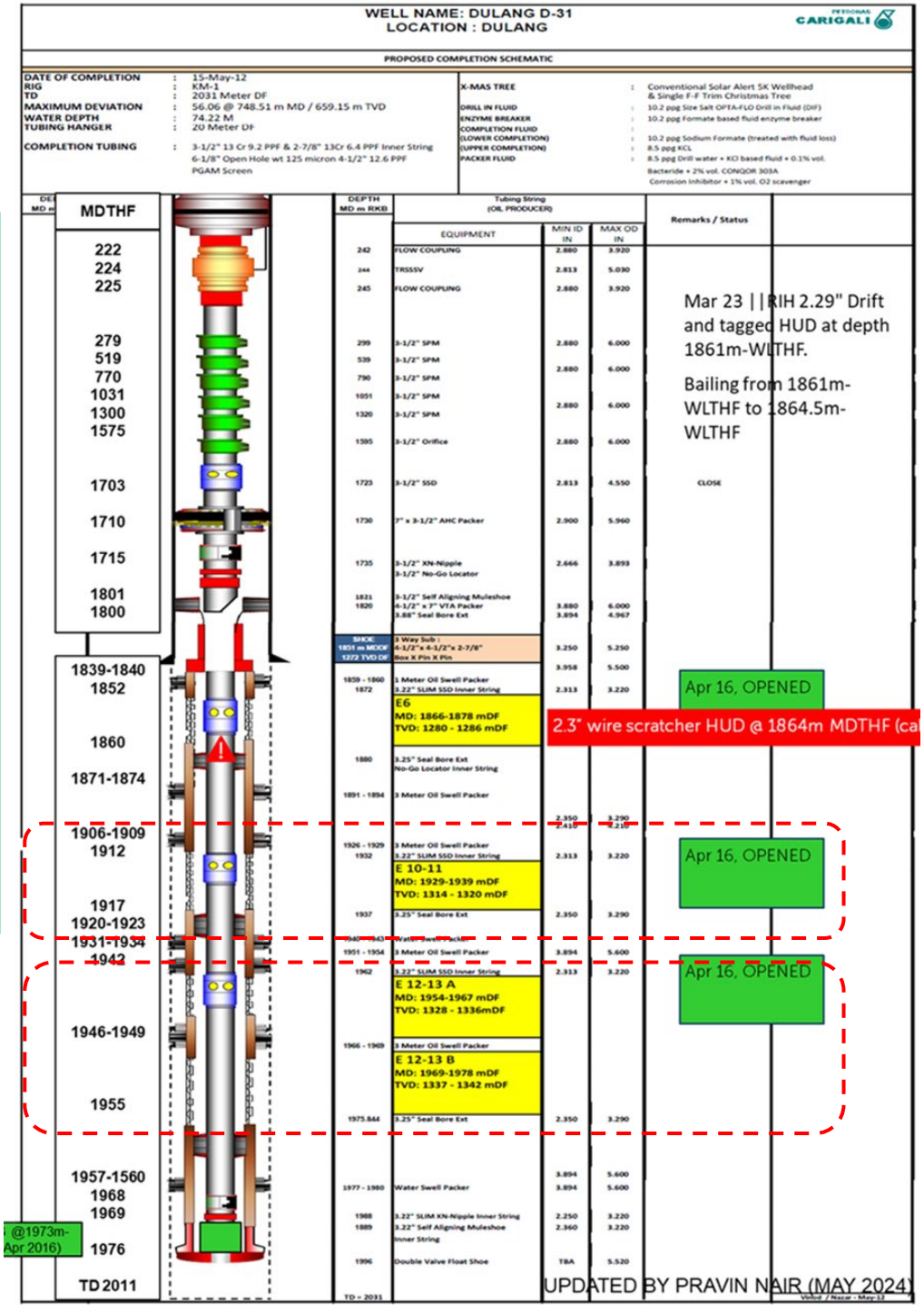
1. To perform scale cleanout and clear HUD (scale) inside completion tubing from 1,855 m MDTHF until 1,973 m MDTHF
2. To perform near wellbore acid wash of E10-11 & E12-13 via bullheading to tackle mainly on the calcite scale issue.

Problem Statement

- The well is underperforming due to restriction at 1,855 m MDTHF during TCC on 15th June 2024 & recovered sand/scale sample after bailing. On 2023, samples was recovered at 3-way sub & from analysis showed major compound presence was Aragonite (calcite) & 94% of the samples was dissolved by HCl after dissolution was conducted for 4 hours.

3 D-31 Well Overview

Input Parameter	Parameter Value
Field	Dulang D-31
Max. Deviation (degrees)	58 Deg @ 1,232 m MDTHF
Min. Restriction (inch)	2.25" (XN Nipple) @ 1,968 m MDTHF
Tubing Specification	3-1/2" & 2-7/8" Production Tubing (Refer Well Schematic)
Type of Fluid & Density	N/A
Top of Fluid	No fluid level detected
Current Well Status	Flowing
Depth of zone	E6 (1,866 – 1,878 m MDDF) E10-11 (1,929 – 1,939 m MDDF) E12-13A (1,954 – 1,967 m MDDF) E12-13B (1,969 – 1,978 m MDDF)
Reservoir Pressure (psi)	E6: 950 psi E10-11: 1,350 psi E12-13A: 1,350 psi E12-13B: 1,350 psi
Reservoir Temperature (deg F)	217 deg F
Porosity	0.2 - 0.3
Permeability (mD)	50 - 200
Fracture Gradient	0.7 psi/ft
H_2S Content	35 ppm
CO_2 Content	60%
Mercury, HG	Not available
Additional Information / Notes / Special Requirement:	
• Latest Scale HUD: 1,855 m MDTHF	



4 Summary of Intervention Activities.

Item	Job Description	Detail
A	Coiled Tubing Operation	1. **Run#1:** Scale Cleanout from HUD at 1,855 m MDTHF Until 1,973 m MDTHF
B	Slickline Activity	1. TCC 2. Slickline Zone Change (Close SSD#2 & SSD#3)
C	Bullheading	1. **Bullheading#1:** Injectivity Test on zone E12-13 2. **Bullheading#2:** Near Wellbore Acid Wash Treatment (E12-13)
D	Slickline Activity	1. Slickline Zone Change (Close SSD#4 & Open SSD#3)
E	Bullheading	1. **Bullheading#1:** Injectivity Test on zone E10-11 2. **Bullheading#2:** Near Wellbore Acid Wash Treatment (E10-11)
F	Slickline Activity	1. Slickline Zone Change (Open SSD#4 & Flow Commingle)

5

Plan vs Actual Operation

Activity	Planned (days)	Actual (days)	Remarks
CT Surface Preparation	1.5	1	
CT Run#1: Scale Cleanout from HUD at 1,855 m MDTHF Until 1,973 m MDTHF	2	5	Prolong due to hard scale & require multiple PDA-15 jetting.
CT Rig Down	0.5	0.5	
Slickline Zone Change (Close SSD#2 & SSD#3)	1	17	Standby due to MSD: 13 days Slickline Activity: 4 days (Prolong due to encounter HUD at 1,865 m suspect wax or crossflow)
Bullheading#1: Injectivity Test on zone E12-13 Bullheading#2: Near Wellbore Acid Wash Treatment (E12-13)	2	2	
Slickline Zone Change (Close SSD#4 & Open SSD#3)	0.75	1	Prolong due to tools not engage
Bullheading#3: Injectivity Test on zone E10-11 Bullheading#4: Near Wellbore Acid Wash Treatment (E10-11)	2	2	
Slickline Zone Change (Open SSD#4)	0.75	0.75	
Contingency	3	2	Eid Adha Celebration & Crew Change
Total	**14 Days**	**31 Days**	

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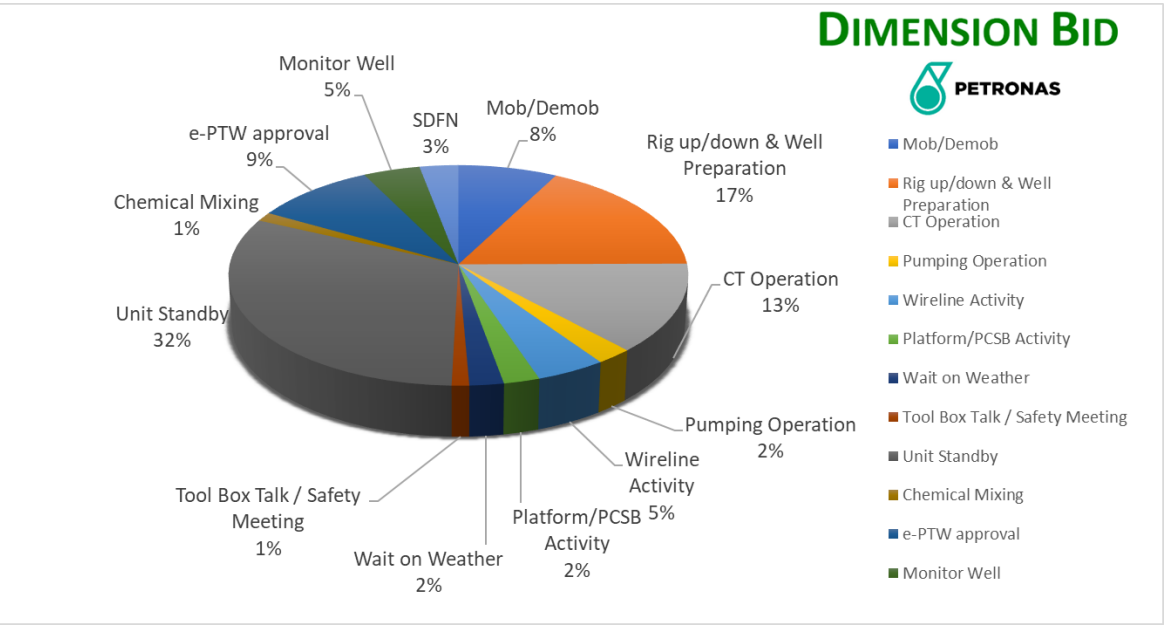
6 Summary of Intervention Activities.



Start Date	End Date
16-Jun-24 12:00	16-Jul-24 18:30

Activity	Hours	Days
Mob/Demob	61:30	02:33
Rig up/down & Well Preparation	137:40	05:44
CT Operation	105:00	04:22
Pumping Operation	18:35	00:46
Wireline Activity	35:45	01:29
Platform/PCSB Activity	18:30	00:46
Wait on Weather	17:30	00:43
Tool Box Talk / Safety Meeting	08:55	00:22
Unit Standby	251:30	10:28
Stop Work	00:00	00:00
Chemical Mixing	10:35	00:26
e-PTW approval	75:15	03:08
Monitor Well	35:15	01:28
SDFN	24:00	01:00
Downtime - DB	00:00	00:00
Downtime - Non DB	00:00	00:00
Total	**800:00**	**33:20**

Remarks:

- Platform/PCSB Activity includes wait on permit, DPIC CC Day
- Wireline Activity – TCC & Zone Change
- Rig up/down & Well Preparation – include lifting activity & equipment maintenance during standby

7 Summary of Intervention Activities.

#	Activity	Start	End	Duration	CT Run#	Run Objective	BHA	Chemical	HUD (m MDTHF)	Note
1	Mob/Demob	16-Jun-24 12:00	17-Jun-24 06:00	18:00:00						Check in to KSB and wait for sailing
2	Tool Box Talk / Safety Meeting	16-Jun-24 09:45	16-Jun-24 10:00	0:15:00						
3	e-PTW approval	16-Jun-24 09:00	16-Jun-24 10:15	1:15:00						
4	Rig up/down & Well Preparation	16-Jun-24 10:15	16-Jun-24 18:00	7:45:00						
5	Platform/PCSB Activity	17-Jun-24 06:00	17-Jun-24 12:30	6:30:00						Eid Adha Celebration
6	Tool Box Talk / Safety Meeting	17-Jun-24 13:45	17-Jun-24 14:00	0:15:00						
7	e-PTW approval	17-Jun-24 13:40	17-Jun-24 14:30	0:50:00						
8	Platform/PCSB Activity	17-Jun-24 12:30	17-Jun-24 18:30	6:00:00						
9	e-PTW approval	18-Jun-24 06:30	18-Jun-24 15:00	8:30:00						
10	Tool Box Talk / Safety Meeting	18-Jun-24 09:00	18-Jun-24 09:20	0:20:00						
11	Rig up/down & Well Preparation	18-Jun-24 15:00	18-Jun-24 18:30	3:30:00						
12	e-PTW approval	18-Jun-24 18:30	18-Jun-24 21:30	3:00:00						
13	Tool Box Talk / Safety Meeting	18-Jun-24 18:45	18-Jun-24 19:00	0:15:00						
14	Rig up/down & Well Preparation	18-Jun-24 18:30	19-Jun-24 00:00	5:30:00						
15	Platform/PCSB Activity	19-Jun-24 00:00	19-Jun-24 03:30	3:30:00						VELOSI perform RT Test
16	Rig up/down & Well Preparation	19-Jun-24 03:30	19-Jun-24 06:30	3:00:00						
17	e-PTW approval	19-Jun-24 06:30	19-Jun-24 08:00	1:30:00						
18	Tool Box Talk / Safety Meeting	19-Jun-24 08:00	19-Jun-24 08:20	0:20:00						
19	Rig up/down & Well Preparation	19-Jun-24 09:20	19-Jun-24 10:55	1:35:00						
20	Rig up/down & Well Preparation	19-Jun-24 10:55	19-Jun-24 12:40	1:45:00						Bunker FW via MV SL
21	Platform/PCSB Activity	19-Jun-24 12:40	19-Jun-24 15:10	2:30:00						Crane under maintenance
22	Rig up/down & Well Preparation	19-Jun-24 15:10	19-Jun-24 18:30	3:20:00						
23	e-PTW approval	19-Jun-24 18:30	19-Jun-24 21:15	2:45:00						
24	Rig up/down & Well Preparation	19-Jun-24 21:15	19-Jun-24 23:00	1:45:00						
25	Wait on Weather	19-Jun-24 23:00	20-Jun-24 02:00	3:00:00						
26	Rig up/down & Well Preparation	20-Jun-24 02:00	20-Jun-24 06:30	4:30:00						Make up BHA and Perform function test on SpinCAT
27	e-PTW approval	20-Jun-24 06:30	20-Jun-24 08:00	1:30:00						
28	Tool Box Talk / Safety Meeting	20-Jun-24 08:00	20-Jun-24 09:30	1:30:00						
29	CT Operation	20-Jun-24 09:30	20-Jun-24 18:30	9:00:00	CT Run#1	Scale Cleanout	1.69" SpinCat BHA	IW		Perform 2 passes jetting at SPM#1 until SPM#6

8 Summary of Intervention Activities.

#	Activity	Start	End	Duration	CT Run#	Run Objective	BHA	Chemical	HUD (m MDTHF)	Note
30	Chemical Mixing	20-Jun-24 15:40	20-Jun-24 16:50	1:10:00						Mix 15% HCl treatment and switch to IW.
31	e-PTW approval	20-Jun-24 18:30	20-Jun-24 19:00	0:30:00						
32	Tool Box Talk / Safety Meeting	20-Jun-24 18:45	20-Jun-24 19:00	0:15:00						
33	CT Operation	20-Jun-24 18:30	21-Jun-24 06:30	12:00:00						Start pump nitrogen until get clear return
34	e-PTW approval	21-Jun-24 06:30	21-Jun-24 07:00	0:30:00						
35	Tool Box Talk / Safety Meeting	21-Jun-24 06:45	21-Jun-24 07:00	0:15:00						
36	Chemical Mixing	21-Jun-24 12:50	21-Jun-24 13:30	0:40:00						
37	CT Operation	21-Jun-24 06:30	21-Jun-24 18:30	12:00:00						Pre Charge Gas lift (SPM#6) at depth 3981ftTHF to establish return at surface
38	e-PTW approval	21-Jun-24 18:30	21-Jun-24 19:30	1:00:00						
39	Tool Box Talk / Safety Meeting	21-Jun-24 19:00	21-Jun-24 19:10	0:10:00						
40	CT Operation	21-Jun-24 18:30	22-Jun-24 06:30	12:00:00						Cont. Clean out from depth 6202 ftTHF
41	e-PTW approval	22-Jun-24 06:30	22-Jun-24 07:30	1:00:00						
42	Tool Box Talk / Safety Meeting	22-Jun-24 07:00	22-Jun-24 07:10	0:10:00						
43	Chemical Mixing	22-Jun-24 10:05	22-Jun-24 10:45	0:40:00						
44	CT Operation	22-Jun-24 06:30	22-Jun-24 18:30	12:00:00						Spot & Soaking 15% HCL 5bbls & Pick up CT to 5978ftTHF
45	e-PTW approval	22-Jun-24 18:30	22-Jun-24 19:30	1:00:00						
46	Tool Box Talk / Safety Meeting	22-Jun-24 19:00	22-Jun-24 19:10	0:10:00						
47	CT Operation	22-Jun-24 18:30	23-Jun-24 06:30	12:00:00						
48	e-PTW approval	23-Jun-24 06:30	23-Jun-24 06:40	0:10:00						
49	Tool Box Talk / Safety Meeting	23-Jun-24 06:40	23-Jun-24 06:50	0:10:00						
50	Chemical Mixing	23-Jun-24 15:50	23-Jun-24 16:20	0:30:00						
51	CT Operation	23-Jun-24 06:30	23-Jun-24 18:30	12:00:00						
52	e-PTW approval	23-Jun-24 18:30	23-Jun-24 18:50	0:20:00						
53	Tool Box Talk / Safety Meeting	23-Jun-24 18:40	23-Jun-24 18:50	0:10:00						
54	CT Operation	23-Jun-24 18:30	24-Jun-24 06:30	12:00:00						
55	e-PTW approval	24-Jun-24 06:30	24-Jun-24 06:40	0:10:00						
56	Tool Box Talk / Safety Meeting	24-Jun-24 06:30	24-Jun-24 06:45	0:15:00						
57	Chemical Mixing	24-Jun-24 09:45	24-Jun-24 10:40	0:55:00						
58	CT Operation	24-Jun-24 06:30	24-Jun-24 18:30	12:00:00	CT Run#1	CT at surface				Start pump 7.5% HCl (Tubing Pickling) for 65bbls. CT at surface at 1830 hr
59	e-PTW approval	24-Jun-24 18:30	24-Jun-24 19:30	1:00:00						
60	Tool Box Talk / Safety Meeting	24-Jun-24 18:30	24-Jun-24 18:45	0:15:00						

9 Summary of Intervention Activities.

#	Activity	Start	End	Duration	CT Run#	Run Objective	BHA	Chemical	HUD (m MDTHF)	Note
61	Rig up/down & Well Preparation	24-Jun-24 18:45	24-Jun-24 21:45	3:00:00						
62	Monitor Well	24-Jun-24 21:45	25-Jun-24 03:45	6:00:00						Well flowback. Last pH result =8
63	Wireline Activity	25-Jun-24 03:45	25-Jun-24 06:30	2:45:00						Zone Change
64	e-PTW approval	25-Jun-24 06:30	25-Jun-24 10:00	3:30:00						
65	Tool Box Talk / Safety Meeting	25-Jun-24 08:30	25-Jun-24 09:00	0:30:00						
66	Wireline Activity	25-Jun-24 06:30	25-Jun-24 18:30	12:00:00						Zone Change
67	Rig up/down & Well Preparation	25-Jun-24 06:30	25-Jun-24 18:30	12:00:00						7 pax DB sail back to KSB
68	e-PTW approval	25-Jun-24 18:30	25-Jun-24 20:30	2:00:00						
69	Wireline Activity	25-Jun-24 18:30	26-Jun-24 06:30	12:00:00						
70	Rig up/down & Well Preparation	25-Jun-24 18:30	26-Jun-24 06:30	12:00:00						
71	e-PTW approval	26-Jun-24 06:30	26-Jun-24 08:30	2:00:00						
72	Rig up/down & Well Preparation	26-Jun-24 08:30	26-Jun-24 15:00	6:30:00						
73	Mob/Demob	26-Jun-24 15:00	27-Jun-24 11:30	20:30:00						13 pax DB sail back to KSB due to MSD from 27 June - 7 July 2024
74	Unit Standby	27-Jun-24 11:30	07-Jul-24 23:00	251:30:00						MSD 11 days
75	Mob/Demob	07-Jul-24 23:00	08-Jul-24 17:30	18:30:00						
76	e-PTW approval	08-Jul-24 17:30	08-Jul-24 23:30	6:00:00						
77	Rig up/down & Well Preparation	08-Jul-24 23:30	09-Jul-24 06:30	7:00:00						
78	e-PTW approval	09-Jul-24 06:30	09-Jul-24 11:00	4:30:00						
79	Tool Box Talk / Safety Meeting	09-Jul-24 06:30	09-Jul-24 07:00	0:30:00						
80	Rig up/down & Well Preparation	09-Jul-24 07:00	09-Jul-24 16:45	9:45:00						
81	Pumping Operation	09-Jul-24 16:45	09-Jul-24 18:30	1:45:00	Bullheading	Dissolve Wax at S/L HUD		WaxClen300		Assist Slickline pumping 5 bbls of WaxClean
82	Wait on Weather	09-Jul-24 18:30	10-Jul-24 06:30	12:00:00						
83	e-PTW approval	10-Jul-24 06:30	10-Jul-24 10:30	4:00:00						
84	Tool Box Talk / Safety Meeting	10-Jul-24 09:15	10-Jul-24 09:30	0:15:00						
85	Rig up/down & Well Preparation	10-Jul-24 10:30	10-Jul-24 18:30	8:00:00						
86	e-PTW approval	10-Jul-24 18:30	10-Jul-24 21:15	2:45:00						
87	Tool Box Talk / Safety Meeting	10-Jul-24 21:15	10-Jul-24 21:30	0:15:00						
88	Chemical Mixing	10-Jul-24 21:30	10-Jul-24 23:20	1:50:00						
89	Pumping Operation	10-Jul-24 23:20	11-Jul-24 01:20	2:00:00	Bullheading	Dissolve Wax at S/L HUD		WaxClen300		Assist Slickline pumping 5 bbls of WaxClean

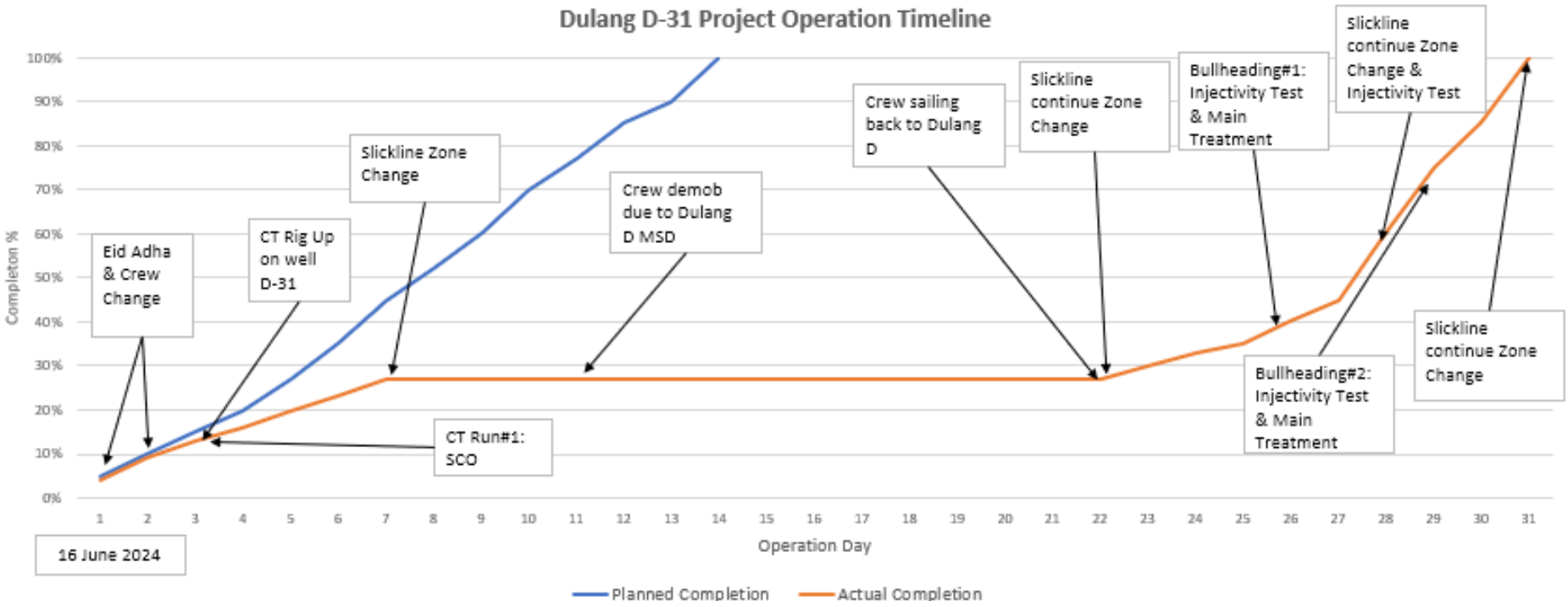
10 Summary of Intervention Activities.

#	Activity	Start	End	Duration	CT Run#	Run Objective	BHA	Chemical	HUD (m MDTHF)	Note
90	Rig up/down & Well Preparation	11-Jul-24 01:20	11-Jul-24 06:30	5:10:00						
91	e-PTW approval	11-Jul-24 06:30	11-Jul-24 09:30	3:00:00						
92	Tool Box Talk / Safety Meeting	11-Jul-24 09:15	11-Jul-24 09:30	0:15:00						
93	Wireline Activity	11-Jul-24 09:30	11-Jul-24 18:30	9:00:00						DB Surface preparation
94	e-PTW approval	11-Jul-24 18:30	11-Jul-24 21:30	3:00:00						
95	Tool Box Talk / Safety Meeting	11-Jul-24 21:15	11-Jul-24 21:30	0:15:00						
96	Wait on Weather	11-Jul-24 21:30	12-Jul-24 00:00	2:30:00						
97	Rig up/down & Well Preparation	12-Jul-24 00:00	12-Jul-24 02:40	2:40:00						
98	Pumping Operation	12-Jul-24 02:40	12-Jul-24 06:30	3:50:00	Bullheading#1 : Injectivity Test	Injectivity test on zone E-12-13		TFW		
99	e-PTW approval	12-Jul-24 06:30	12-Jul-24 09:30	3:00:00						
100	Tool Box Talk / Safety Meeting	12-Jul-24 09:10	12-Jul-24 09:30	0:20:00						
101	Chemical Mixing	12-Jul-24 09:30	12-Jul-24 12:50	3:20:00						
102	Pumping Operation	12-Jul-24 12:50	12-Jul-24 15:20	2:30:00	Bullheading#2 : Main Treatment	Main Treatment on zone E-12-13		18 bbls Preflush, 63 bbls 15% HCl, 65 bbls TSW		
103	Rig up/down & Well Preparation	12-Jul-24 15:20	12-Jul-24 18:30	3:10:00						
104	e-PTW approval	12-Jul-24 18:30	12-Jul-24 19:45	1:15:00						
105	Tool Box Talk / Safety Meeting	12-Jul-24 19:30	12-Jul-24 19:45	0:15:00						
106	Monitor Well	12-Jul-24 19:45	13-Jul-24 06:30	10:45:00						Inject Soda Ash
107	e-PTW approval	13-Jul-24 06:30	13-Jul-24 09:30	3:00:00						
108	Tool Box Talk / Safety Meeting	13-Jul-24 09:10	13-Jul-24 09:30	0:20:00						
109	Rig up/down & Well Preparation	13-Jul-24 09:30	13-Jul-24 18:30	9:00:00						
110	e-PTW approval	13-Jul-24 18:30	13-Jul-24 20:30	2:00:00						
111	Monitor Well	13-Jul-24 20:30	14-Jul-24 06:30	10:00:00						
112	e-PTW approval	14-Jul-24 06:30	14-Jul-24 08:30	2:00:00						
113	Tool Box Talk / Safety Meeting	14-Jul-24 08:10	14-Jul-24 08:30	0:20:00						
114	Pumping Operation	14-Jul-24 08:30	14-Jul-24 17:00	8:30:00	Bullheading#3 & #4: Injectivity Test & Main Treatment	Injectivity Test & Main Treatment on zone E10-11		TFW, 8 bbls Preflush, 29 bbls 15% HCl, 62 bbls TSW		

11 Summary of Intervention Activities.

#	Activity	Start	End	Duration	CT Run#	Run Objective	BHA	Chemical	HUD (m MDTHF)	Note
115	Rig up/down & Well Preparation	14-Jul-24 17:00	14-Jul-24 18:30	1:30:00						
116	e-PTW approval	14-Jul-24 18:30	14-Jul-24 20:30	2:00:00						
117	Tool Box Talk / Safety Meeting	14-Jul-24 20:10	14-Jul-24 20:30	0:20:00						
118	Chemical Mixing	14-Jul-24 20:30	14-Jul-24 22:00	1:30:00						
119	Monitor Well	14-Jul-24 22:00	15-Jul-24 06:30	8:30:00						Inject Soda Ash
120	e-PTW approval	15-Jul-24 06:30	15-Jul-24 08:30	2:00:00						
121	Tool Box Talk / Safety Meeting	15-Jul-24 08:10	15-Jul-24 08:30	0:20:00						
122	Rig up/down & Well Preparation	15-Jul-24 08:30	15-Jul-24 18:30	10:00:00						Maintenance unit
123	e-PTW approval	15-Jul-24 18:30	15-Jul-24 20:45	2:15:00						
124	Tool Box Talk / Safety Meeting	15-Jul-24 20:15	15-Jul-24 20:30	0:15:00						
125	Rig up/down & Well Preparation	15-Jul-24 20:45	16-Jul-24 06:30	9:45:00						
126	e-PTW approval	16-Jul-24 06:30	16-Jul-24 08:30	2:00:00						
127	Rig up/down & Well Preparation	16-Jul-24 08:30	16-Jul-24 14:00	5:30:00						
128	Mob/Demob	16-Jul-24 14:00	16-Jul-24 18:30	4:30:00						Return to MV Setia Luhur. SL sail back to KSB

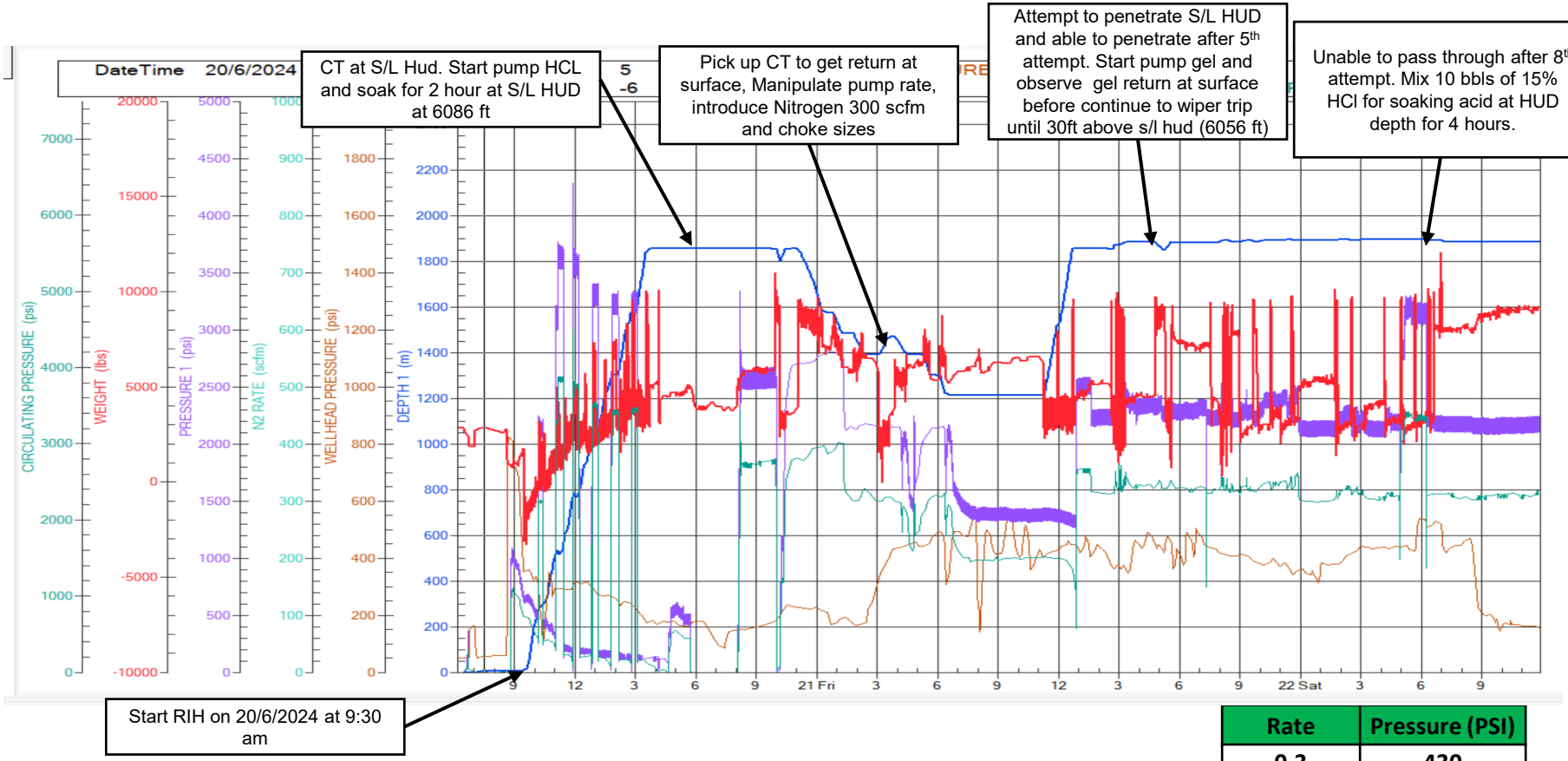
12 Summary of Intervention Activities.



Remarks:

1. 0% - 15% - Rig up on Well & Surface Preparation. (Eid Adha & Crew Change Day)
2. 15% - 27% - CT Run#1 Scale Cleanout. (Prolong operation due to hard scale)
3. 27% - 35% - Slickline zone change (Prolong due to waxy condition & MSD)
4. 35% - 52% - Bullheading #1: Injectivity Test & Main Treatment on zone E12-13
5. 52% - 70% - Slickline zone change
6. 70% - 85% - Bullheading#2: Injectivity Test & Main Treatment on zone E10-11
7. 85% -100% - Slickline zone change

Job Analysis – CT Run#1 – Scale Cleanout from 1,855 m until 1,973 m (PXN Plug)



- BHA Configutation: 1.69” Internal Dimple Connector, 1.69” MHA, 1.69” 5 Ft Straight Bar, 1.69” Downhole Filter and 1.69” SpinCat Nozzle.
- Start RIH and perform jetting clean across every SPM during RIH
- CT at S/L HUD at 6,086 ft THF, start soak 15% HCl for 2 hours
- Attempt to penetrate and able to penetrate 100ft below S/L HUD after 5th attempt
- Continue attempt to penetrate until target depth at PXN Plug (6,470 ft)

THP, psi	PCP, psi
790	610

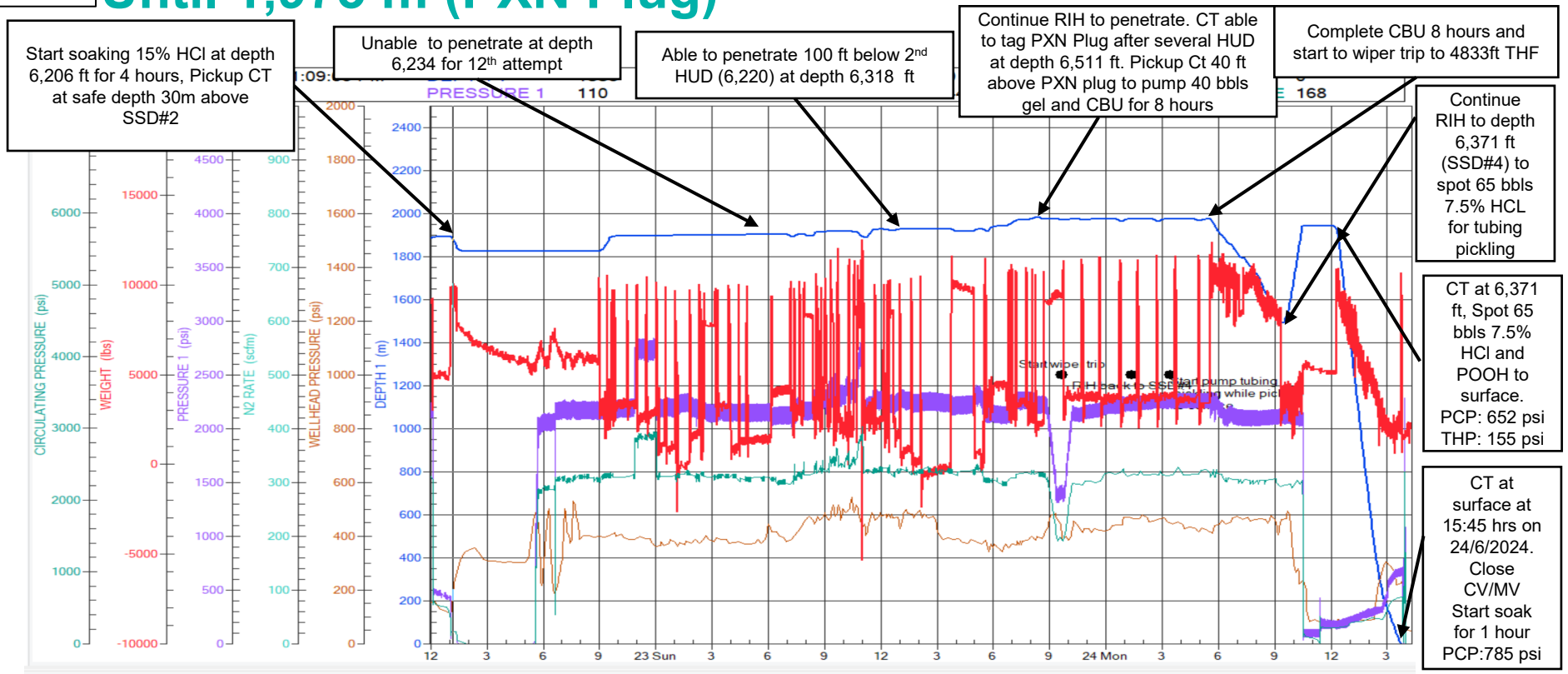
Table 1: Initial well pressure before CT Operation

Rate	Pressure (PSI)
0.3	430
0.5	1000
0.7	2050
0.8	2400
0.9	3000
1.0	3700
1.1	4300

Table 2: Spincat function test prior RIH. Highlighted Spncat start turning

PETRONAS

Job Analysis – CT Run#1 – Scale Cleanout from 1,855 m Until 1,973 m (PXN Plug)



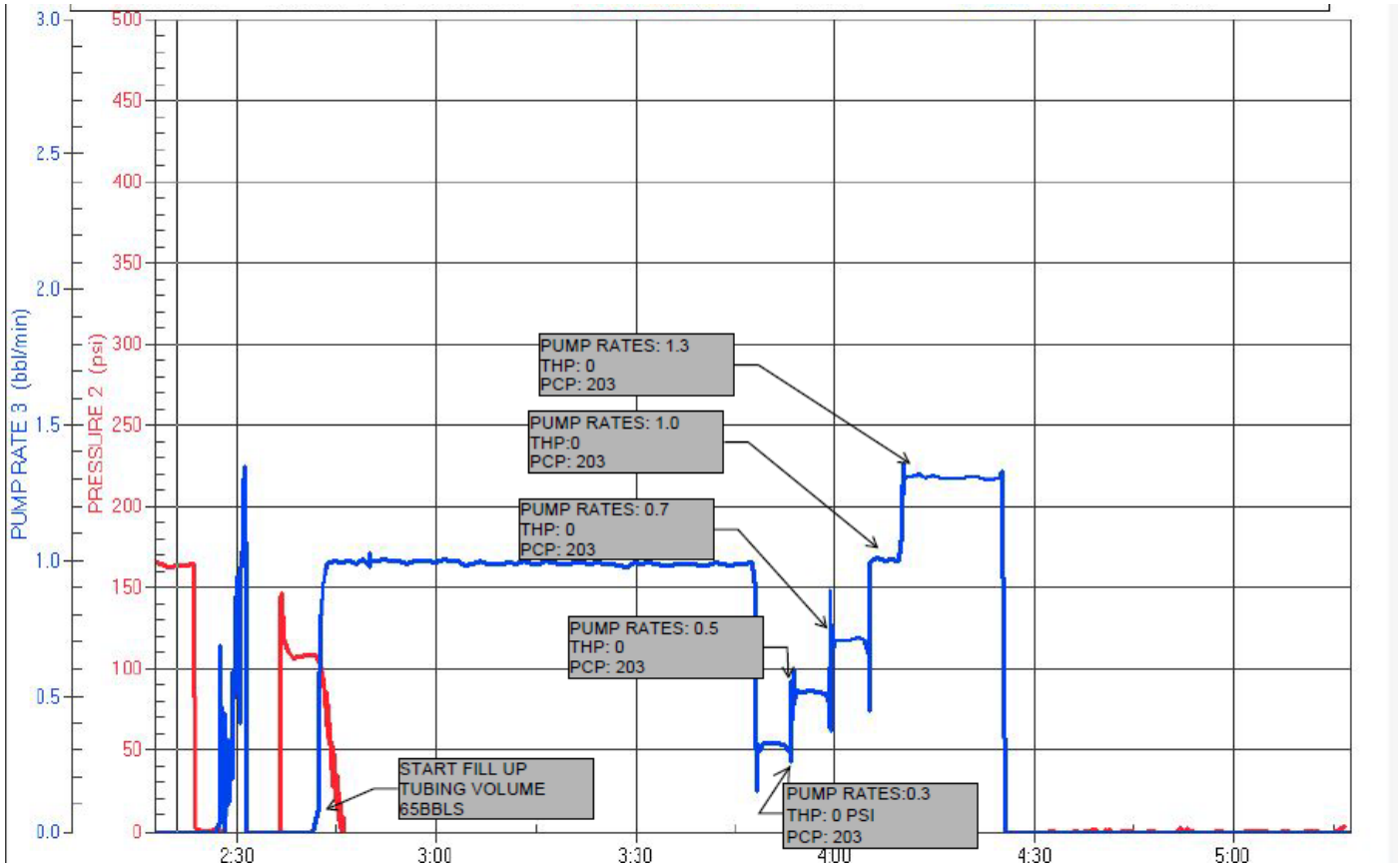
SpinCat Nozzle Running Hours: 81 hours / 3.5 days

- CT tag several HUD and repeat the step to soak and jetting acid at HUD depth.
- Able to penetrate until PXN Plug Depth (6,551 ft), Tag twice on PXN plug observe in increase of weight of string and increase in circulating pressure
- Start CBU for 8 hours and start to wiper trip to 4,833 ft.
- RIH to 6,370 SSD#4 depth to spot for tubing pickling 7.5% HCl and POOH to surface.
- Soak acid for 1 hour and inform DPIC to flow well for flowback after complete soaking.

Job Analysis – CT Run#1 – Scale Cleanout from 1,855 m Until 1,973 m (Summary of CT HUD)

Date	CT HUD	Depth (ft)	Depth (m)	CT Penetration (ft)	Total CT Penetration (ft)	Fluid Type
21/6/2024	S/L HUD	**6086**	**1855**	60	130	IW
	1	6109	1862	4		IW
	2	6113	1863	5		IW
	3	6118	1865	15		IW
	4	6133	1869	16		IW
	5	6149	1874	24		IW
	6	6173	1881	3		15% HCl
	7	6176	1882	3		15% HCl
22/6/2024	8	6179	1883	3	18	15% HCl
	9	6182	1884	2		IW
	10	6184	1885	1		IW
	11	6185	1885	12		15% HCl
23/6/2024	12	6197	1889	8	82	IW
	13	6206	1891	3		IW
	14	6210	1893	3		IW
	15	6213	1894	20		IW
	16	6233	1900	29		IW
	17	6262	1909	19		IW
	18	6281	1914	52		15% HCl
	19	6333	1930	30		IW
	20	6363	1939	62		IW
	21	6425	1958	49		IW
	22	**6474**	**1973**	*PXN Plug		IW

Job Analysis – Bullheading#1 – Injectivity Test (E12-13)

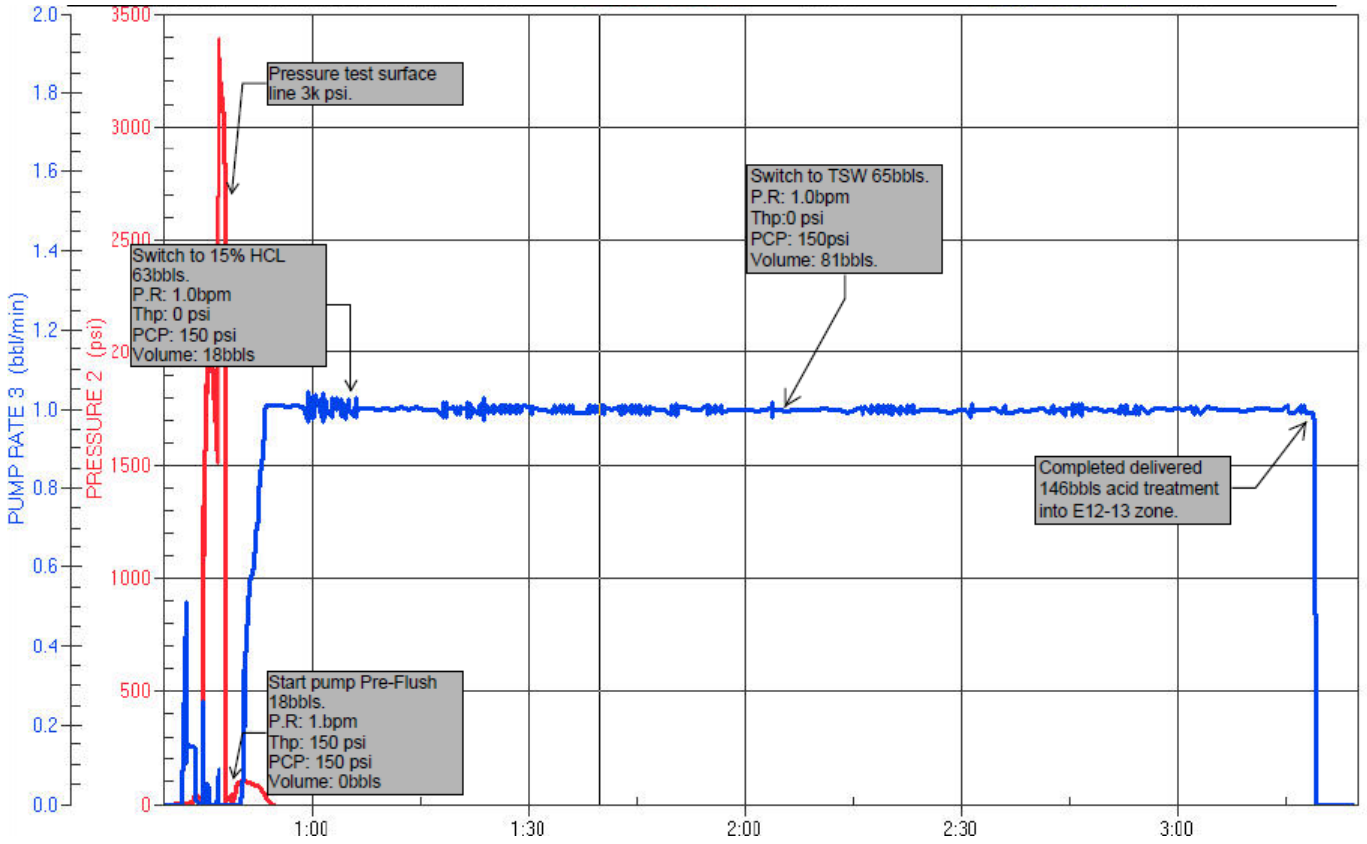


PCP, psi	THP, psi
200	140

Table 1: Initial well pressure before Pumping Operation

- Start Pumping on 12th July 24 @0240 hr and finish pumping on 12th July 24 @0430hr (Operation Duration: 2hrs)
- Prior to Injectivity Test on zone E12-13, well was filled up to 65 bbls of TFW with consistent pump rate at 1.0 BPM.
- Once complete filled up, Injectivity Test was conducted at 0.3, 0.5, 0.7, 1.0 & 1.3 bpm and sustain each rate for 5 minutes. THP were observed maintain at 0 psi for every stage pumping rate.

Job Analysis – Bullheading#2 – Main Treatment (E12-13)



PCP, psi	THP, psi
150	150

Table 1: Initial well pressure before Pumping Operation

- Start Pumping on 12th July 24 @1250 hr and finish pumping on 12th July 24 @1530hr (Operation Duration: 2 hrs 30 mins)
- Perform Main Treatment by pumping 18 bbls of Preflush, 63 bbls of PDA-15 and followed by 65 bbls of TSW for Displacement. (Water Injection was down & received instruction from town to proceed with TSW).
- Shut in well and start soaking at 1530 hr (12th July 24) for 4 hours.
- Well able to flow at 2020 hr (12th July 24) once gas lift has completely fill up into PCP.

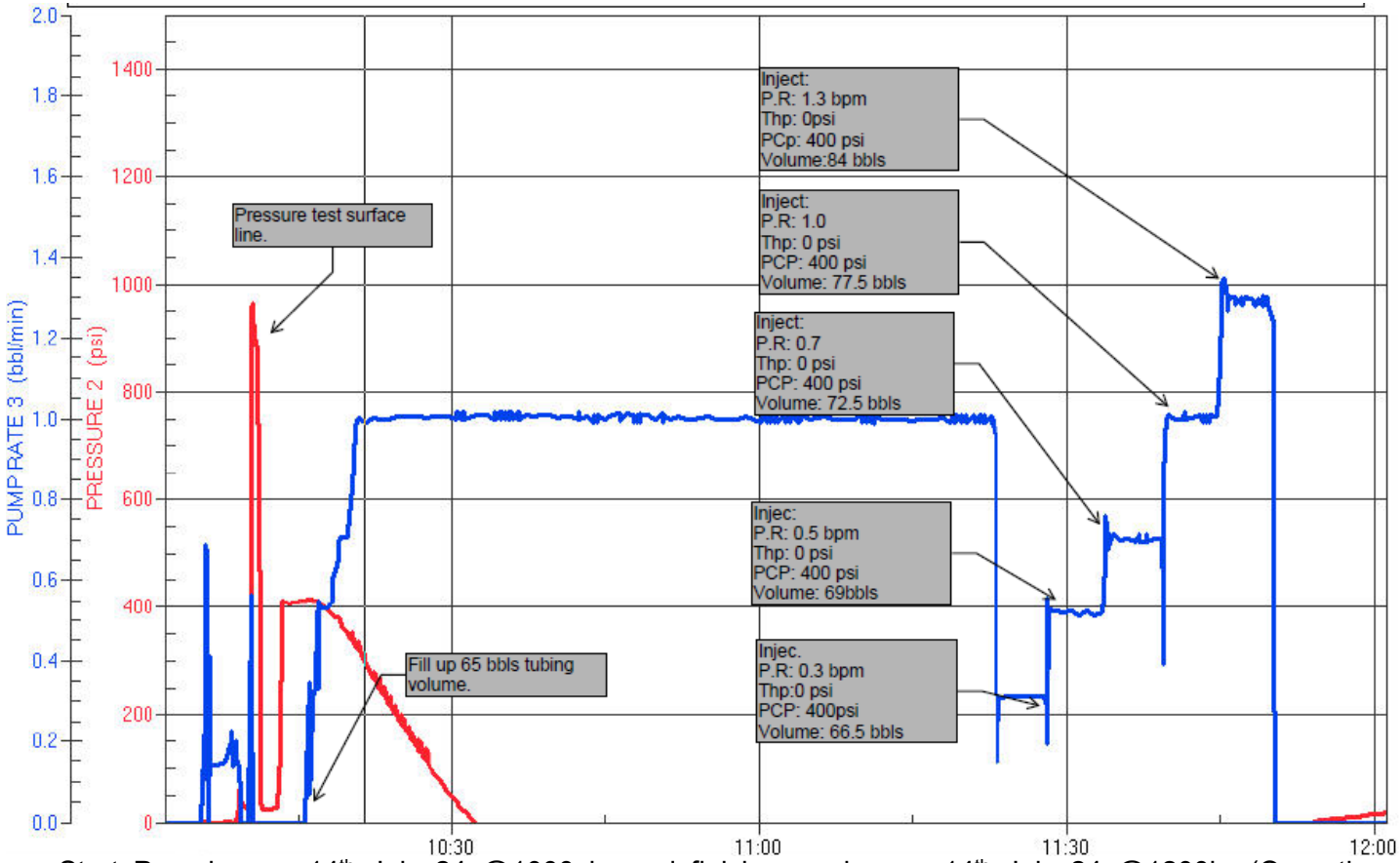
Job Analysis – Bullheading – Flowback well after Main Treatment (E12-13)

DATE	TIME	CHOKE SIZE	Ph.	% WATERCUT	PCP (psi)	FLT (Deg C)	FTHP (psi)	REMARK
12/7/2024	20:20	100%	2	100	812	47	180	Start flowing well
12/7/2024	20:35	100%	2	100	812	52	162	Monitor flowing
12/7/2024	20:45	100%	2	100	812	52	138	Start inject soda ash
12/7/2024	21:00	100%	7	100	812	61	138	Continue inject soda ash
12/7/2024	21:15	100%	6	100	812	61	138	Continue inject soda ash
12/7/2024	21:30	100%	5	100	812	61	134	Continue inject soda ash
12/7/2024	21:45	100%	5	100	812	63	134	Continue inject soda ash
12/7/2024	22:00	100%	6	100	812	63	134	Continue inject soda ash
12/7/2024	22:15	100%	6	100	812	63	132	Continue inject soda ash
12/7/2024	22:30	100%	5	100	812	65	129	Continue inject soda ash
12/7/2024	22:45	100%	5	100	812	65	129	Continue inject soda ash
12/7/2024	23:00	100%	6	100	812	65	129	Continue inject soda ash
12/7/2024	23:15	100%	6	100	812	66	129	Continue inject soda ash
12/7/2024	23:30	100%	6	95	812	66	129	Continue inject soda ash
12/7/2024	23:45	100%	6	95	812	66	126	Continue inject soda ash
12/7/2024	0:00	100%	6	95	812	66	126	Continue inject soda ash
12/7/2024	0:15	100%	6	95	812	66	129	Continue inject soda ash
12/7/2024	0:30	100%	6	95	812	63	127	Continue inject soda ash
12/7/2024	0:45	100%	6	95	812	63	127	Continue inject soda ash
12/7/2024	1:00	100%	6	95	812	62	138	Continue inject soda ash
12/7/2024	1:15	100%	6	95	812	63	128	Continue inject soda ash
12/7/2024	1:30	100%	6	95	812	63	128	Continue inject soda ash
12/7/2024	1:45	100%	6	95	812	63	128	Continue inject soda ash
12/7/2024	2:00	100%	6	90	812	63	128	Continue inject soda ash
12/7/2024	2:15	100%	6	90	812	69	125	Continue inject soda ash
12/7/2024	2:30	100%	6	95	812	69	138	Continue inject soda ash
12/7/2024	2:45	100%	7	95	812	69	127	Continue inject soda ash
12/7/2024	3:00	100%	7	95	812	58	127	Continue inject soda ash
12/7/2024	3:15	100%	7	95	812	58	127	Continue inject soda ash
12/7/2024	3:30	100%	6	95	812	63	118	Continue inject soda ash
12/7/2024	3:45	100%	6	95	812	63	118	Continue inject soda ash
12/7/2024	4:00	100%	6	95	812	68	127	Continue inject soda ash
12/7/2024	4:15	100%	6	90	812	68	127	Continue inject soda ash
12/7/2024	4:30	100%	7	90	812	68	120	Continue inject soda ash
12/7/2024	4:45	100%	9	90	812	72	123	Observe pH at '9'
12/7/2024	5:00	100%	7	90	812	72	123	Stop inject soda ash
12/7/2024	5:15	100%	7	90	812	72	137	Continue monitoring pH
12/7/2024	5:30	100%	7	90	812	72	137	Continue monitoring pH
12/7/2024	5:45	100%	7	90	812	72	132	Continue monitoring pH
12/7/2024	6:00	100%	7	90	812	72	132	Continue monitoring pH
12/7/2024	6:15	100%	7	90	812	72	129	Continue monitoring pH
12/7/2024	6:30	100%	7	90	812	72	129	Continue monitoring pH

While unload the well with the aid of gas lift, the sample was taken at sampling point at production header to check pH return and recorded in table:

Image 1: Last sample taken on 13st July 24. Oil: 5%, water: 95%

Job Analysis – Bullheading#3 – Injectivity Test (E10-11)

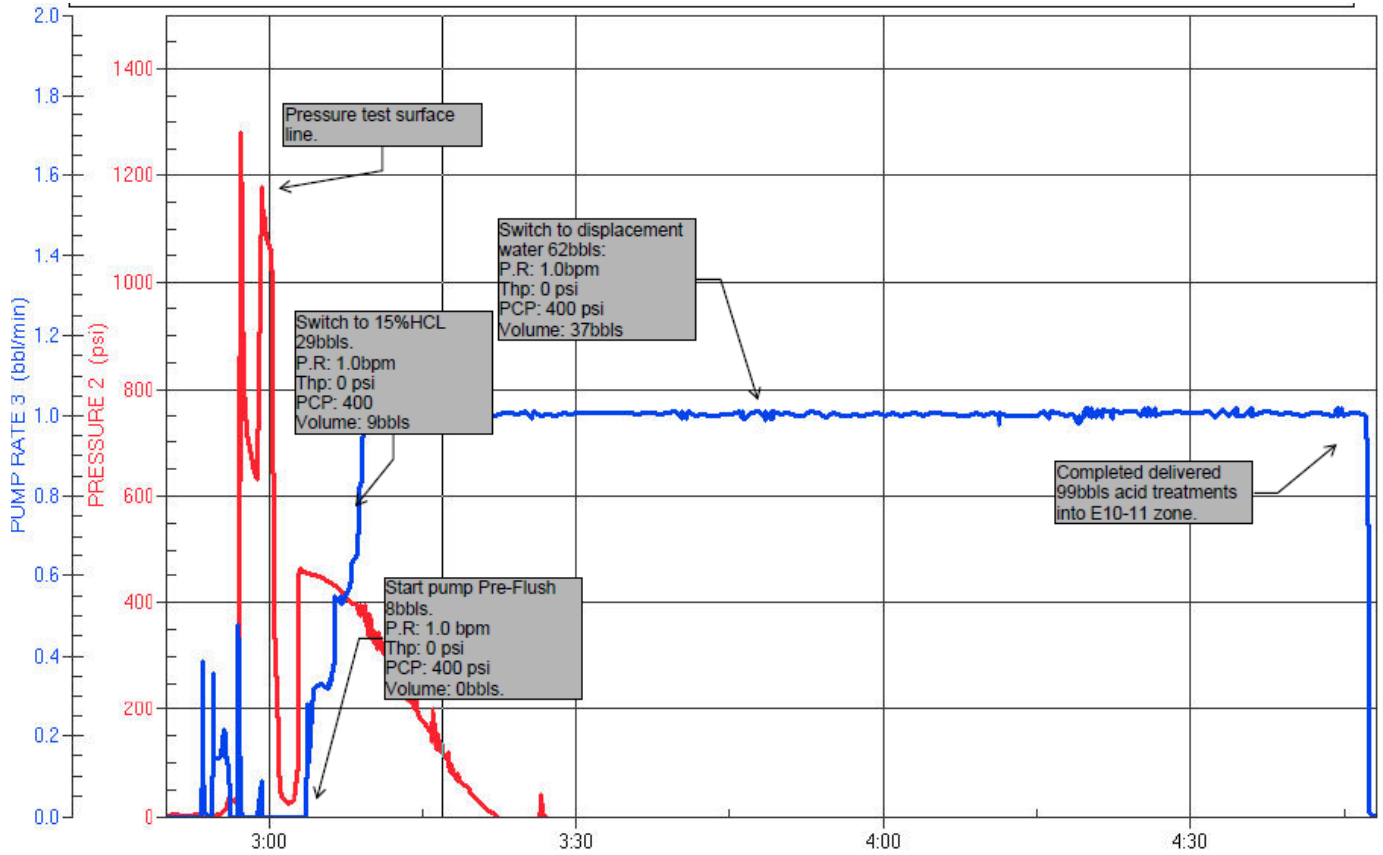


PCP, psi	THP, psi
400	400

Table 1: Initial well pressure before Pumping Operation

- Start Pumping on 14th July 24 @1000 hr and finish pumping on 14th July 24 @1200hr (Operation Duration: 2hrs)
- Prior to Injectivity Test on zone E10-11, well was filled up to 65 bbls of TFW with consistent pump rate at 1.0 BPM.
- Once complete filled up, Injectivity Test was conducted at 0.3, 0.5, 0.7, 1.0 & 1.3 bpm and sustain each rate for 5 minutes. THP were observed maintain at 0 psi for every stage pumping rate.

Job Analysis – Bullheading#4 – Main Treatment (E10-11)



PCP, psi	THP, psi
400	450

Table 1: Initial well pressure before Pumping Operation

- Start Pumping on 14th July 24 @1500 hr and finish pumping on 14th July 24 @1645 hr (Operation Duration: 2 hrs)
- Perform Main Treatment by pumping 8 bbls of Preflush, 29 bbls of PDA-15 and followed by 62 bbls of TSW for Displacement. (Water Injection was down & received instruction from town to proceed with TSW).
- Shut in well and start soaking at 1700 hr (14th July 24) for 4 hours.
- Well able to flow at 2130 hr (14th July 24) once gas lift has completely fill up into PCP.

Job Analysis – Bullheading – Flowback well after Main Treatment (E10-11)

DATE	TIME	CHOKE SIZE	Ph.	% WATERCUT	PCP (psi)	FLT (Deg C)	FTHP (psi)	REMARK
14/7/2024	21:30	100%	7	100	957	32	175	Well start flow
14/7/2024	21:45	100%	7	100	957	38	175	Continue monitor
14/7/2024	22:00	100%	2	100	928	48	175	Acid at surface. Start inject soda ash
14/7/2024	22:15	100%	6	100	900	55	180	Continue inject soda ash
14/7/2024	22:30	100%	5	100	900	55	180	Continue inject soda ash
14/7/2024	22:45	100%	5	100	900	51	180	Continue inject soda ash
14/7/2024	23:00	100%	5	100	900	53	200	Continue inject soda ash
14/7/2024	23:15	100%	5	100	900	53	200	Continue inject soda ash
14/7/2024	23:30	100%	5	100	900	53	200	Continue inject soda ash
14/7/2024	23:45	100%	6	100	900	58	180	Continue inject soda ash
15/7/2024	0:00	100%	7	100	900	58	190	Continue inject soda ash
15/7/2024	0:15	100%	7	100	900	50	180	Continue inject soda ash
15/7/2024	0:30	100%	7	100	900	56	180	Continue inject soda ash
15/7/2024	0:45	100%	7	100	900	56	180	Continue inject soda ash
15/7/2024	1:00	100%	7	100	900	56	170	Continue inject soda ash
15/7/2024	1:15	100%	7	100	900	60	170	Continue inject soda ash
15/7/2024	1:30	100%	8	100	900	59	170	Observe ph at '8'
15/7/2024	1:45	100%	8	100	900	58	180	Stop inject soda ash
15/7/2024	2:00	100%	7	95	900	53	180	Continue monitor pH
15/7/2024	2:15	100%	7	95	900	55	180	Continue monitor pH
15/7/2024	2:30	100%	7	95	900	55	180	Continue monitor pH
15/7/2024	2:45	100%	7	95	900	56	190	Continue monitor pH
15/7/2024	3:00	100%	7	95	900	57	190	Continue monitor pH
15/7/2024	3:15	100%	7	95	900	56	180	Continue monitor pH
15/7/2024	3:30	100%	7	95	900	57	180	Continue monitor pH
15/7/2024	3:45	100%	7	95	900	57	180	Continue monitor pH
15/7/2024	4:00	100%	7	90	900	59	175	Continue monitor pH
15/7/2024	4:15	100%	7	90	900	55	175	Continue monitor pH
15/7/2024	4:30	100%	7	90	900	54	175	Continue monitor pH
15/7/2024	4:45	100%	7	90	900	54	175	Continue monitor pH
15/7/2024	5:00	100%	7	90	900	58	180	Continue monitor pH
15/7/2024	5:15	100%	7	90	900	58	180	Continue monitor pH
15/7/2024	5:30	100%	7	90	900	58	180	Continue monitor pH
15/7/2024	5:45	100%	7	90	900	58	180	Continue monitor pH
15/7/2024	6:00	100%	7	90	900	55	180	Continue monitor pH
15/7/2024	6:15	100%	7	90	900	55	180	Continue monitor pH
15/7/2024	6:30	100%	7	90	900	55	180	Continue monitor pH

While unload the well with the aid of gas lift, the sample was taken at sampling point at production header to check pH return and recorded in table:

24 Conclusion

- CT Scale Cleanout & Near Wellbore Acid Wash via Bullheading for Dulang D-31 was successfully completed and met our main objective for this operation.
- In CT Run#1, cleanout run was performed with 1.69" SpinCat BHA to cleanout from slickline HUD at 1,855 m MDTHF and CT managed to cleanout until 1,973 m MDTHF.
- Due to prolong in CT cleanout operation, it was decided to jet & soak with PDA-15 after multiple attempt jetting with IW but no progress in term of penetration. In this run, CT able to cleanout until 1,973 m MDTHF. However, according to mechanical depth counter shows 1,984 m MDTHF(PXN Plug). After discussion with town, all agree target depth has reached & proceed to POOH while spotting 63 bbls of 7.5% HCl Acid (Tubing Pickling) prior to proceed main Near Wellbore Acid Wash treatment via bullheading.
- The operation then continue with slickline to close SSD#2 & SSD#3 to isolate zone E10-11. Intervention operation had to temporary suspend due to MSD.
- After multiple attempt to perform zone change via slickline, they encounter HUD & recovered solid wax on toolstring at surface. Addendum was made to spot 5 bbls of WaxClen300 on slickline HUD depth at 1,865 m MDTHF.
- Slickline managed to isolate zone E10-11 after spot another 5 bbls of WaxClen300.
- Prior to main treatment on E12-13, bullheading injectivity test was conducted on zone E12-13 & good injectivity were observed up to 1.3 bpm with THP of 0 psi. Operation then continue to perform acid main treatment on zone E12-13.
- Handover well to slickline to perform zone change to open SSD#3 (E10-11) & close SSD#4 to isolate zone E12-13.
- Prior to main treatment on E10-11, bullheading injectivity test was conducted on zone E10-11 & good injectivity were observed up to 1.3 bpm with THP of 0 psi. Operation then continue to perform acid main treatment on zone E10-11.
- Overall, the operation was successfully executed with 200 BOPD in oil gained.

Dulang D-31 Lesson learnt

Highlight

- ***Overall operation were met objective and safely executed without any HSE issue.***
- ***Managed to cleanout inside the tubing until PXN Plug depth @ 1,973 m MDTHF***
- ***Acidizing operation thru CT (Tubing Pickling) & Near Wellbore Acid Wash Treatment was completed successfully via bullheading using PDA-15 resulting in oil gained of 200 BOPD.***

Lowlight

- **Prolong in cleanout operation due to hard scale which require PDA-15 jetting & soaking for several times.**
- **Prolong intervention operation due to MSD at Dulang D.**

Thank you for your passion!

PE/IWR
POST JOB REVIEW
DULANG D05S NEAR WELLBORE ACID SCREENWASH
01.09.2024

Prepared by	Endorsed by	Approved by
Name Zaeem	Name TP	Name Chairperson

Team Member	

1 Presentation Outline

Operation at Dulang D05 is a pumping operation with equipment placed on platform. Respective offshore personnel accommodate at standby vessel throughout the operation.

Pumping Operation Duration: 16th July 2024 – 15th August 2024

➢ Well: Dulang D05S– Near Wellbore Acid Screenwash

- The campaign is overall conveyed by Dimension Bid CTU is to perform near wellbore acid wash at E1 & E8 via bullheading to remove formation damage due to injection solids plugging and possible solids accumulation across perf interval. Subsequently improving water injector injectivity / injection rate within safe water injection operating envelope (SWIOPE).

Well by Well Review

D05S

Acid Screen Wash

2 Executive Summary

Objective

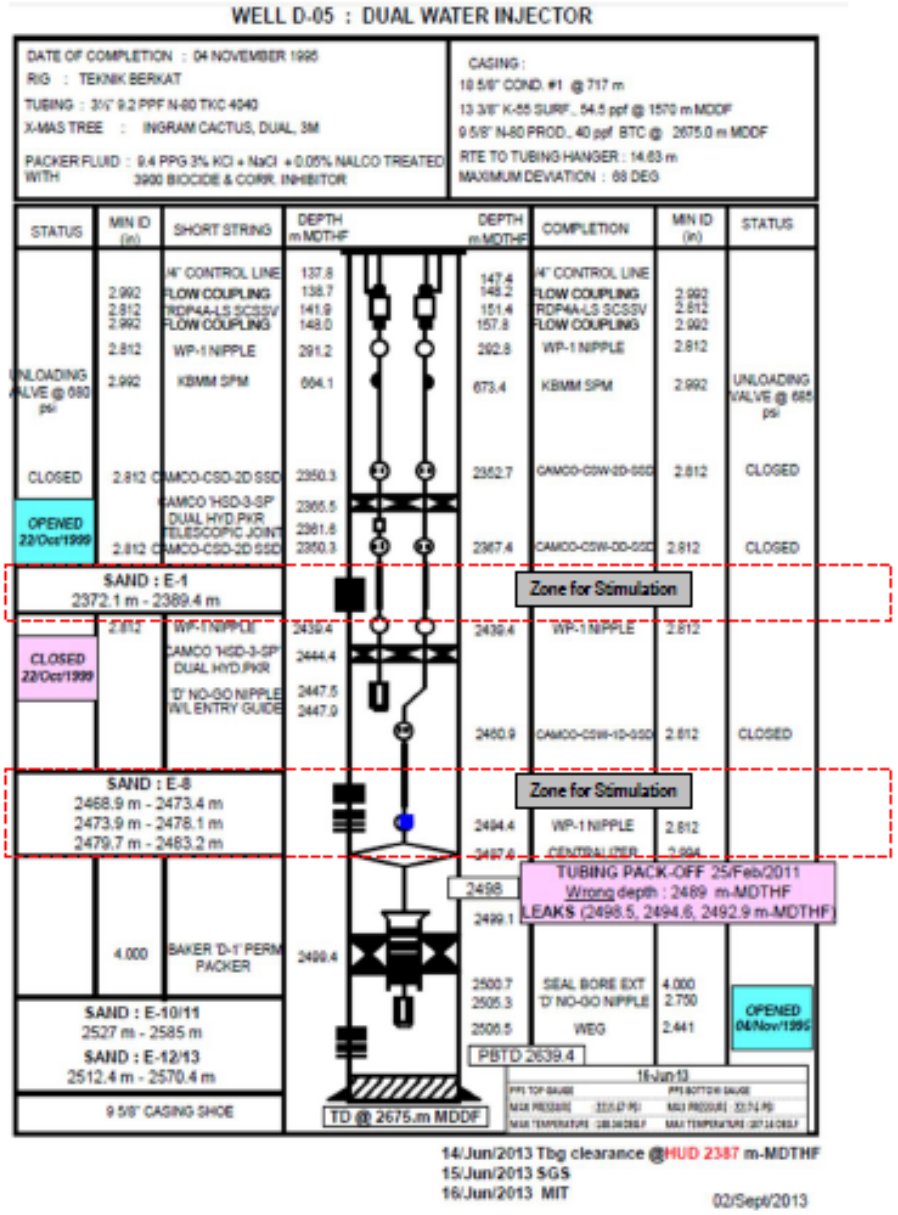
- To perform bullheading at E1 and E8 to remove formation damage due to injection solids plugging and possible solids accumulation across perf interval. Subsequently improving water injector injectivity / injection rate within safe water injection operating envelope (SWIOPE)

Problem Statement

- Well D05S encounter issue with formation damage possible due to the plugging of solid across perf interval.

3 Dulang D05S Well Overview

WELL DIAGRAM



- Tubing : 3-1/2, 9.2#

- Treatment Zone :

E-1
(2,372 – 2,389 m-MDTHF)
E-8
(2,468.9 – 2,473.4 m-MDTHF)
(2,473.9 – 2,478.1 m-MDTHF)
(2,479.7 – 2,483.2 m-MDTHF)

- SSD Status:
- SSD#1 – Closed
- SSD#2 – Opened
- SSD#3 - Closed

Well History	Well History
Feb 2011	Set tubing packoff. Found leak @2498.5, 2494.6, 2492.9m MDTHF)

4 Summary of Intervention Activities

No	Job Scope	Planned	Date	Remark
1	Dimension Bid	Bullheading#1; Injectivity Test	21th July 2024	
2	Dimension Bid	Bullheading#2: Tubing Pickling	23th July 2024	
3	Dimension Bid	Bullheading#3: Main Treatment	4th August 2024	

5 Plan vs Actual Operation

Activity	Plan (Days)	Actual (Days)	Remarks
Transfer pumping package (already onboard Dulang D) and chemicals loadout	0.5	3	2 days of chemical loadout 1 day of WOW
Rig up pumping on well	1	3	Prolong due to Slickline Activity still on going 2 days of WOW
Pre job injectivity test (2ft penetration)	0.5	0.5	
Tubing Pickling & 2Hrs soak	0.5	1.5	Prolong due to low pumping rate
Overflush (5ft penetration)	0.5	1.5	Prolong due to low pumping rate
Pre-Flush /Formation conditioning (2ft penetration)	0.5	18	Prolong due high pumping pressure, SL movement to pick up filtration unit, vessel swapping, crane issue & WOW
Main Treatment (2 ft penetration)	0.5	-	Not proceed due to suspect formation plugging
Post Flush (2ft penetration)	0.5	-	Not proceed due to suspect formation plugging
Displacement fluid	0.5	-	Not proceed due to suspect formation plugging
Rig down and handover welll	1	-	Job suspend & transfer CTU Package to Dlg B
Total Days:	6	25	

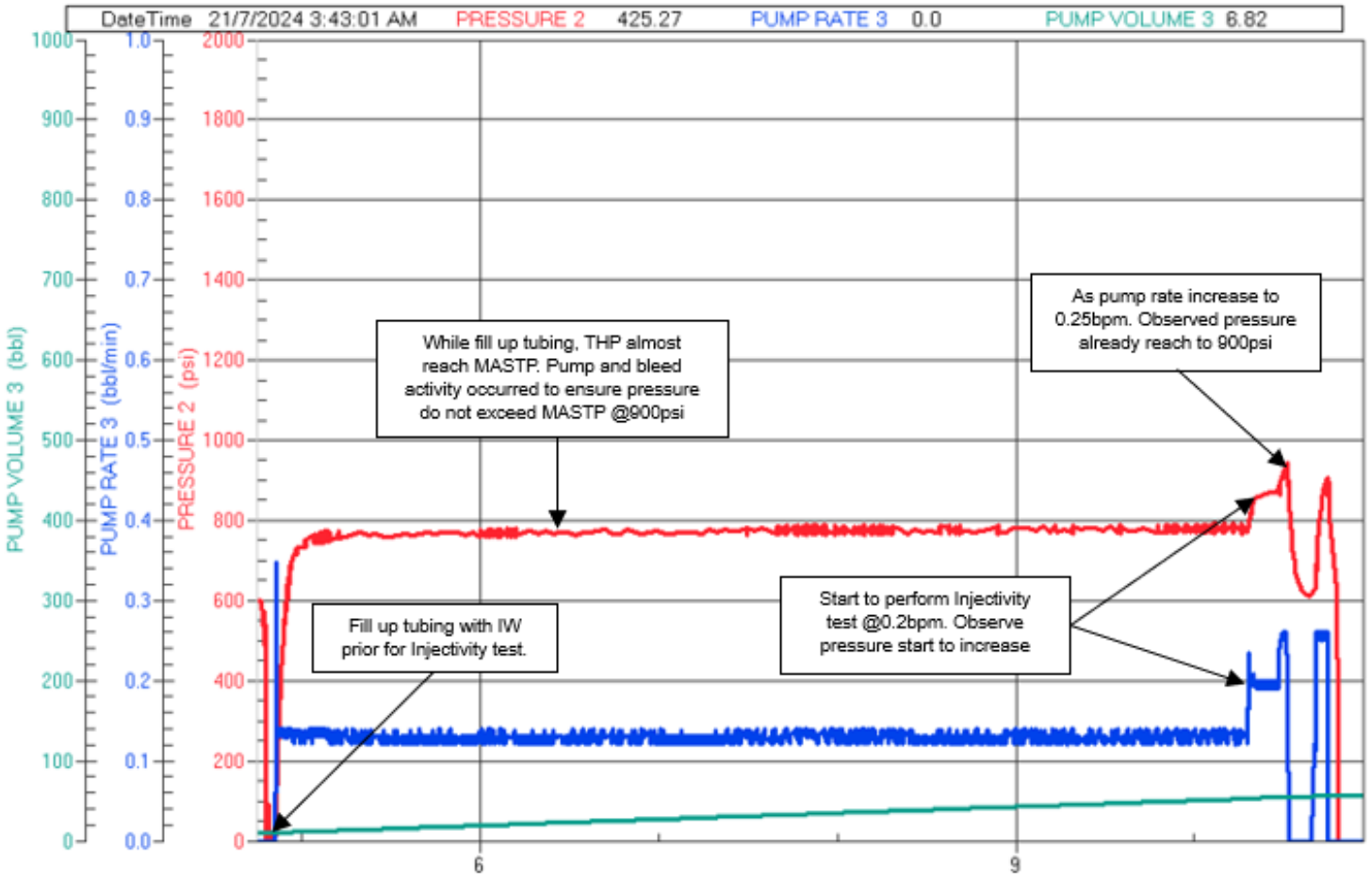
6 Job Analysis – Bullheading#1- Injectivity Test

Dimension Bid started to perform Injectivity Test on 20th July 2024. Open well, Initial reading for THP:1220psi, PCP:15psi and bleed THP until 0 psi. Based on job program, well need to be filled up with 120 bbls of IW before proceed to Injectivity test, however, while filling up tubing with IW crew observed pressure rapidly increase until reach MASTP. Therefore, crew decide stop pump and bleed THP until 0psi then continue to fill up the well back. Unfortunately, the same situation occurred. Inform town for further decision, and get information to just proceed with injectivity test as the well already fill up as the liquid return as sampling point.

Date	Time	Pump Rates (bpm)	Pressure (psi)	Volume (bbls)	Remarks
21/7/2024	0425H	0.3	900	1	
	0425H	0.15	750		
	0445H	0.15	750	5	
	0630H	0.13	770	17	
	0830H	0.13	780		
	0930H	0.13	780	36	
	1015H	0.13	780	42	
	1018H	0.2	870	44.8	
	1028H	0.25	900	55	Sustain 3 mins

Start to perform Injectivity test at 1018H. Pump rate maintain at 0.2 bpm to ensure pressure below MASTP (919 psi).

Job Analysis – Bullheading#1- Injectivity Test Graph



- At 0.25bpm observed the THP already reach to 900 psi, therefore, decided to maintain at 0.2bpm while keep monitoring the pressure.
- The maximum injectivity from this injectivity test was set at below than 0.25 bpm to ensure not exceeding MASTP @ 919 psi
- Injectivity test result as per post job graph above.

8 Job Analysis – Bullheading#2- Tubing Pickling

Dimension Bid started to perform bullheading Tubing Pickling on 23th July 2024. Initial THP: 200psi and PCP:0psi. After completed 70 bbls of Tubing Pickling solution, start to soaking for 2 hours. Started to pump 70 bbl of 7.5% HCl solution followed by fluid treated seawater to performed overflush for 522 bbls.

Tubing Pickling

Date	Time	Pump Rates (bpm)	THP (psi)	PCP (psi)	Volume (bbls)
23/7/2024	1715H	0.2	200	0	0
	1800H	0.2	200	0	0
	1830H	0.2	800	0	10.6
	1845H	0.2	800	0	17
	1900H	0.2	800	0	20
	1930H	0.2	800	0	25
	2030H	0.2	790	0	37
	2130H	0.2	780	0	50
	2134H	0.25	835	0	51
	2230H	0.25	820	0	64
	2255H	0.25	815	0	70

9 Job Analysis – Bullheading#2- Tubing Pickling

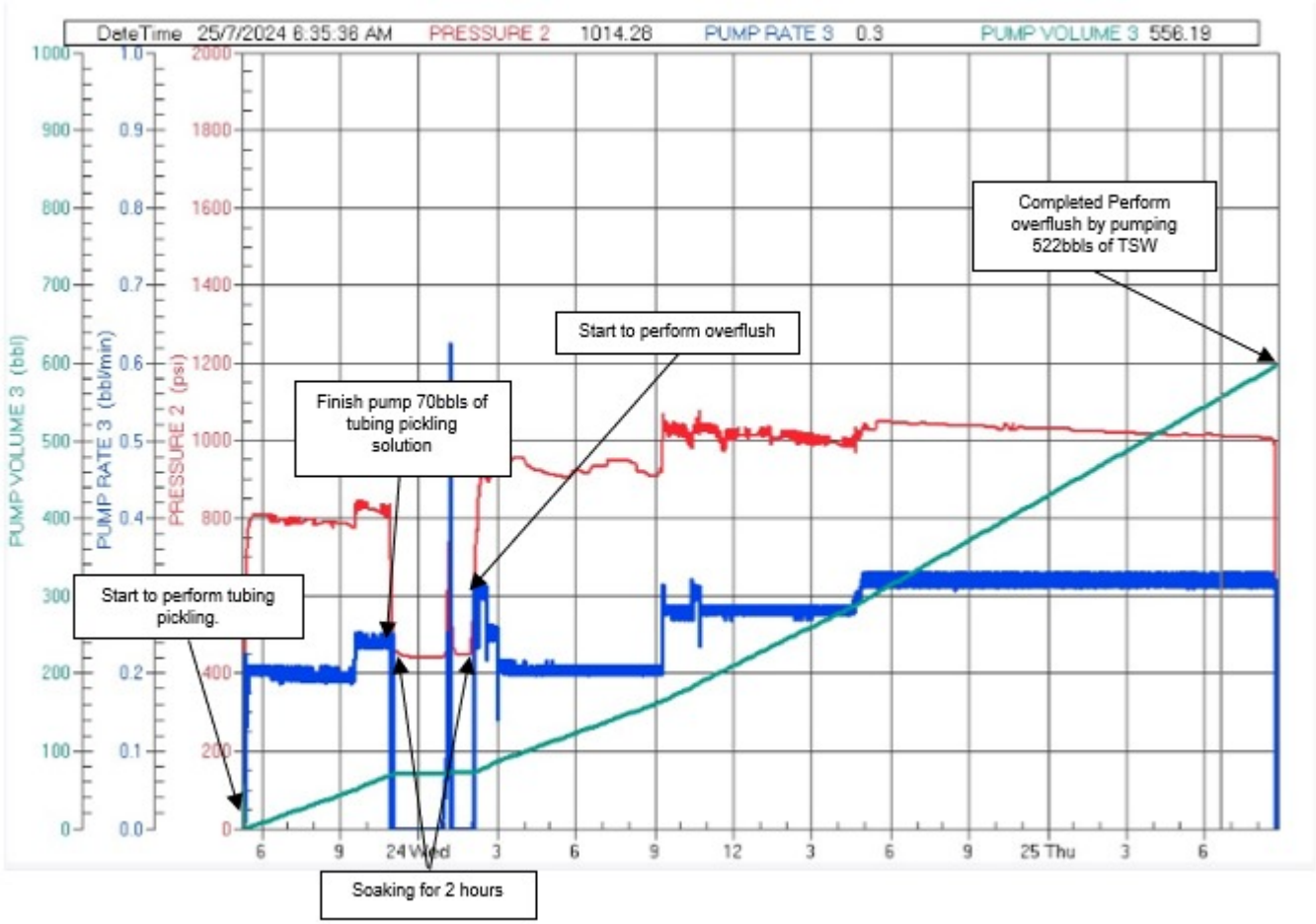
Overflush (522bbls)

Date	Time	Pump Rates (bpm)	THP (psi)	PCP (psi)	Volume (bbls)
24/7/2024	2:07	0.25	500	0	70
	2:15	0.25	780	0	74
	2:30	0.25	890	0	79
	2:45	0.25	900	0	83
	3:00	0.2	900	0	87
	3:30	0.2	900	0	92
	4:00	0.2	900	0	99
	4:30	0.2	900	0	105
	5:00	0.2	900	0	111
	5:30	0.2	900	0	118
	6:00	0.2	900	0	124
	6:15	0.2	900	0	126
	6:30	0.2	900	0	133
	7:30	0.2	900	0	142
	8:00	0.2	900	0	148
	8:30	0.2	900	0	155
	9:00	0.2	900	0	160
	9:30	0.3	1040	0	167
	10:00	0.3	1030	0	176
	10:30	0.3	1000	0	184
	11:00	0.3	1000	0	193
	11:30	0.3	1000	0	201
	12:00	0.3	1000	0	210
	12:30	0.3	1000	0	218
	13:00	0.3	1000	0	229
	13:30	0.3	1000	0	235
	14:00	0.3	1000	0	244
24/7/2024	14:30	0.3	1000	0	253
	15:00	0.3	1000	0	260
	15:30	0.3	1000	0	269
	16:00	0.3	1000	0	278
	16:30	0.3	1000	0	284
	16:45	0.32	1000	0	290
	17:00	0.32	1000	0	294
	17:30	0.32	1000	0	305
	18:00	0.32	1000	0	314
	18:30	0.32	1000	0	320
	19:00	0.32	1000	0	333
	19:30	0.32	1000	0	343
	20:00	0.32	1000	0	354
	20:30	0.32	1000	0	362
	21:00	0.32	1000	0	372
	21:30	0.32	1000	0	382
	22:00	0.32	1000	0	391
	22:30	0.32	1000	0	401
	23:00	0.32	1000	0	411
	23:30	0.32	1000	0	420

Job Analysis – Bullheading#2- Tubing Pickling

Date	Time	Pump Rates (bpm)	THP (psi)	PCP (psi)	Volume (bbls)
25/7/2024	0:00	0.32	1000	0	430
	0:30	0.32	1000	0	439
	1:00	0.32	1000	0	449
	1:30	0.32	1000	0	458
	2:00	0.32	1000	0	468
	2:30	0.32	1000	0	477
	3:00	0.32	1000	0	487
	3:30	0.32	1000	0	498
	4:00	0.32	1000	0	506
	4:30	0.32	1000	0	516
	5:00	0.32	1000	0	525
	5:30	0.32	1000	0	537
	6:00	0.32	1000	0	546
	6:30	0.32	1000	0	555
	7:07	0.32	1000	0	565
	7:15	0.32	1000	0	571
	7:30	0.32	1000	0	575
	8:00	0.32	1000	0	584
	8:30	0.32	1000	0	590
	8:41	0.32	1000	0	597

Job Analysis – Bullheading#2- Tubing Pickling (Graph)



- Start Pumping on 23th July 24 @1715 hr and finish pumping on 8th July 24 @0841hr
- Tubing Pickling (7.5% HCl Acid) was pumped to 70 bbls with consistent pump rate at 0.2-0.25bpm.
- After pumping tubing pickling, continue soaking for 2 hours, followed by overflush by pump 522 bbls of TSW. During soaking period observe the THP maintain at the same range @450psi.
- Tubing pickling result as per post job graph above.

12 Job Analysis – Bullheading#3- Main Treatment

Dimension Bid started to perform bullheading Main Treatment on 4th August 2024. Initial THP to 520 psi and PCP:10 psi. Started to pumping 120 bbl of pre-flush solution, and continue pump with 70 bbls of displacement fluid TSW. However, during tubing displacement stage, experience high pumping pressure due to suspect formation plugging. Due to high pumping pressure, town decide to displace pre-flush acid with 75 bbls of TSW to displace away acid from reacting with tubing. This main treatment activity end on 10th August 2024. While performing pump activity, THP pressure keep increasing and reached to MASTP for several times, therefore, crew attempt pumping with bleed & lubricate method.

Date	Time	Pump Rates (bpm)	THP (psi)	PCP (psi)	Volume (bbls)	Remark
4/8/2024	15:55	0.3	730	0	1	Start to pump pre-flush
	16:10	0.4	880	0	3.6	
	16:35	0.55	925	0	15	
	16:45	0.62	1005	0	20	
	17:50			0		
	18:30	0.62	1030	0	79	
	18:48	0.25	910	0	88	
	19:15	0.65	900	0	97	
	19:30	0.36	915	0	105	
	19:38	0.13	915	0	108	
	19:55	0.2	910	0	108	
	20:03	0.2	919	0	111	
	20:10	0.13	750	0	112	
	20:20		919	0		Stop pump and bleed pressure
	20:42	0.16	880	0	114	
	21:30	0.16	880	0	120	Completed pump pre flush 120 bbls
	21:42	0.18	835	0	122	Start to switch to TSW
	22:18	0.18	919	0	127	Stop pump and bleed pressure
	22:46	0.13	882	0	127	
	22:50		919	0		Stop pump and bleed pressure
	23:34	0.13	700	0	128	
	23:43		919	0		Stop pump and bleed pressure
5/8/2024	0:38	0.13	690	0	129	
	0:50		919	0		Stop pump and bleed pressure
	2:08	0.13	670	0	131	
	2:18	0.13	919	0	132	Stop pump and bleed pressure
	3:21		780	0		
	3:29	0.13	919	0	133	Stop pump and bleed pressure

Job Analysis – Bullheading#3- Main Treatment (Cont.)

Date	Time	Pump Rates (bpm)	THP (psi)	PCP (psi)	Volume (bbls)	Remark
5/8/2024	7:00		940	0	133	
	8:00		150	0		
	8:11	0.14	200	0	133	Start pump TSW @0.14bpm
	8:30	0.14	720	0	136	
	8:43	0.14	1095	0	137	Stop pump and bleed pressure
	9:55			0		
	10:50	0.14	170	0	137	Start pump TSW @0.14bpm
	11:20	0.14	950	0	141	Stop pump and bleed pressure
	12:30			0		Perform Taking Sample for NTU test
	13:40	0.14	500	0	141	
	14:00		950	0	143	Stop pump and bleed pressure
	14:55	0.14	300	0	143	
	15:15	0.14	950	0	145	Stop pump and bleed pressure
6/8/2024	12:55		1005	0		Stop pump and bleed pressure
	13:05	0.14	50	0	145	Start pump TSW @0.14bpm
		0.3	250	0		
	13:18	0.14	880	0	150	
	13:20		950	0	151	Stop pump and bleed pressure
	13:25		680	0		
	14:05	0.14	215	0	151	
	14:15	0.14		0	152	Stop pump and bleed pressure
	14:43	0.14	610	0	153	
	14:50			0	153	Stop pump as crew need to return to AWB due to bad weather

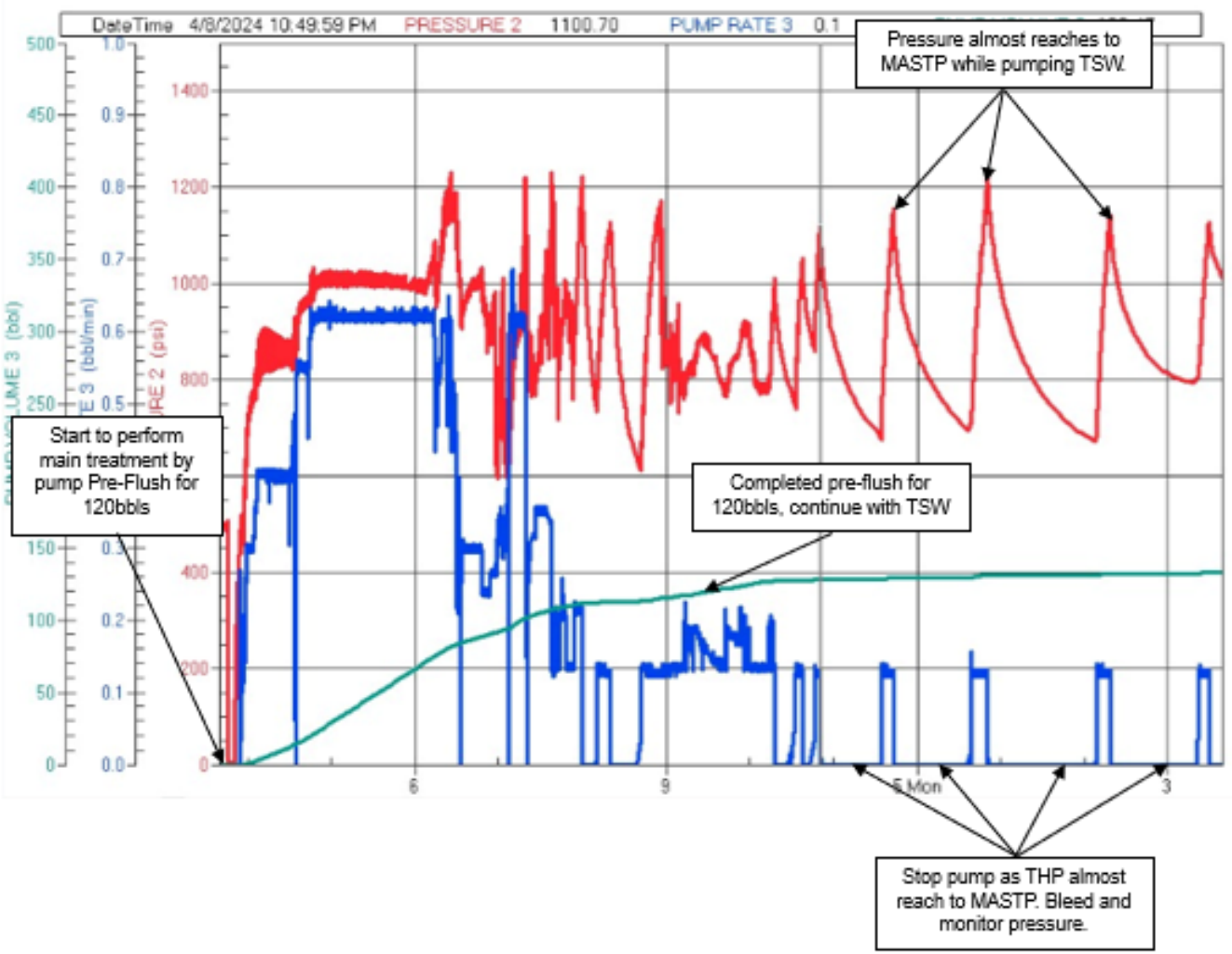
Job Analysis – Bullheading#3- Main Treatment (Cont.)

Date	Time	Pump Rates (bpm)	THP (psi)	PCP (psi)	Volume (bbls)	Remark
8/7/2024	22:50	0.13	153	0	153	Start pump TSW @0.13bpm
	23:00	0.13	154	0	154	
	23:14	0.13	156	0	156	
9/8/2024	0:00		1250	0	161	Stop pump and bleed pressure
	1:00		1165	0		
	3:00		1160	0		
	3:17	0.13	1160	0		Start pump TSW @0.13bpm
	4:15		1250	0	163	Stop pump and bleed pressure
	5:00		1200	0		Continue monitor THP
	5:30		1200	0		Continue monitor THP. Night shift crew extend e-PTW until 1000H as day shift crew unable to interig
	6:00		1200	0		
	8:00		1170	0		
	10:00		1170	0		

Job Analysis – Bullheading#3- Main Treatment (Cont.)

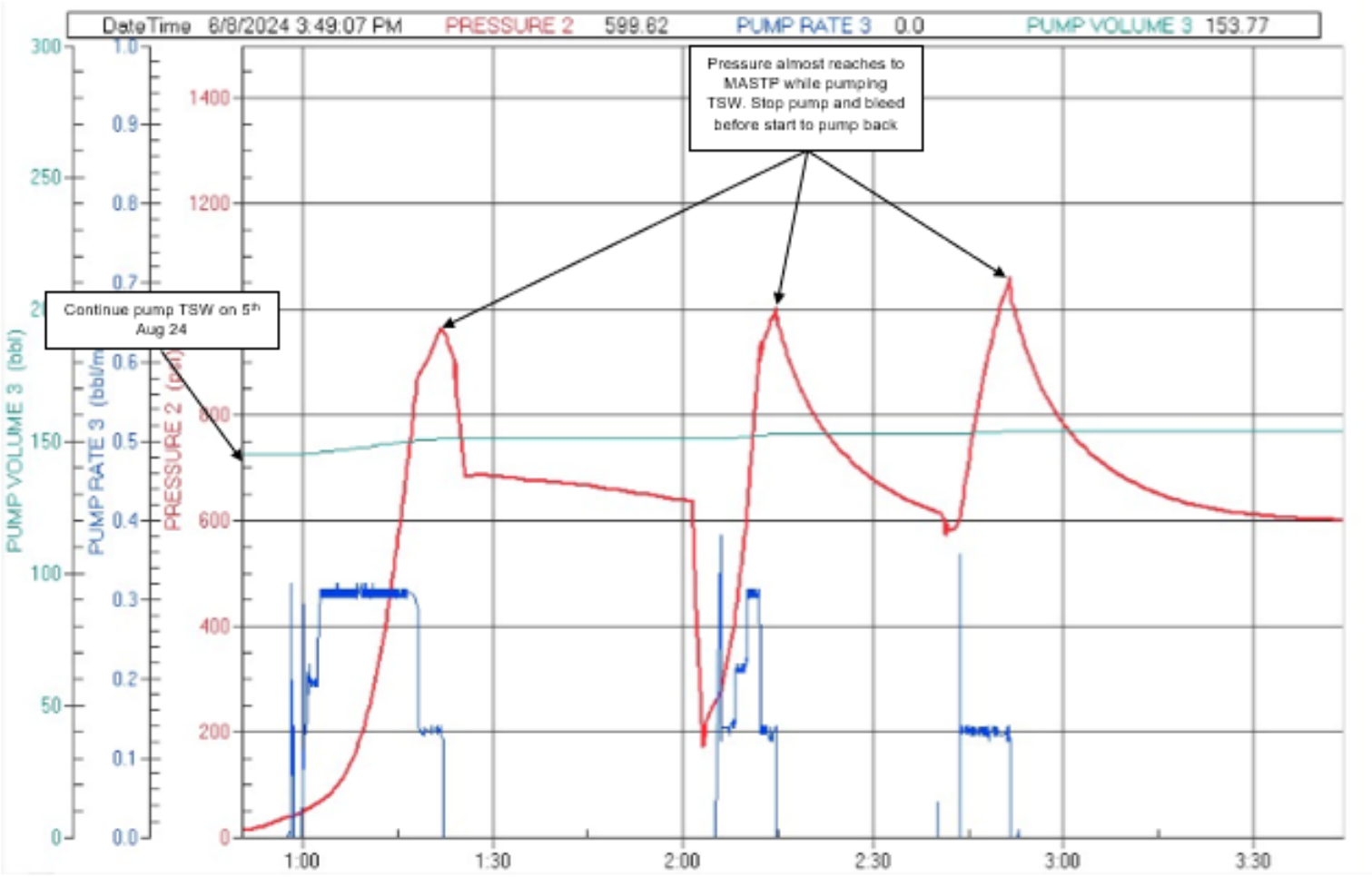
Date	Time	Pump Rates (bpm)	THP (psi)	PCP (psi)	Volume (bbls)	Remark
10/8/2024	0:00		300	0		
	0:15	0.13	300	0	163	Start pump IW @0.13bpm. MASTP:1500psi
	0:22	0.13	700	0	164	
	1:58		1450	0	175.5	Stop pump and bleed pressure
	4:00		600	0		
	4:05	0.13	600	0		Start pump IW @0.13bpm.
	4:10	0.13	900	0		
	4:33		1450	0	178.5	Stop pump and bleed pressure
	6:00		600	0		
	6:06	0.13	600	0		Start pump IW @0.13bpm.
	6:26		1450	0	181	Stop pump and bleed pressure
	10:10	0.13	620	0	181	Start pump IW @0.13bpm.
	10:34	0.13	1450	0	184	Stop pump and bleed pressure
	11:05		700	0		
	11:10	0.13	720	0	184	Start pump IW @0.13bpm.
	11:26		1425	0	186	Stop pump and bleed pressure
	12:05		670	0		
	12:08	0.13	680	0	186	Start pump IW @0.13bpm.
	12:25		1453	0	188	Stop pump and bleed pressure
	13:35		630	0		
	13:37	0.13	650	0	188	Start pump IW @0.13bpm.
	14:02		1460	0	191	Stop pump and bleed pressure
	14:35		715	0		
	14:37	0.13	730	0	191	Start pump IW @0.13bpm.
	15:02		1475	0	194	Stop pump and bleed pressure
	16:10		640	0		
	16:15	0.13	705	0	194	Start pump IW @0.13bpm.
	16:28		1380	0	196	Complete pump. Total volume 70 + 5 bbls

Job Analysis – Bullheading#3- Main Treatment Graph



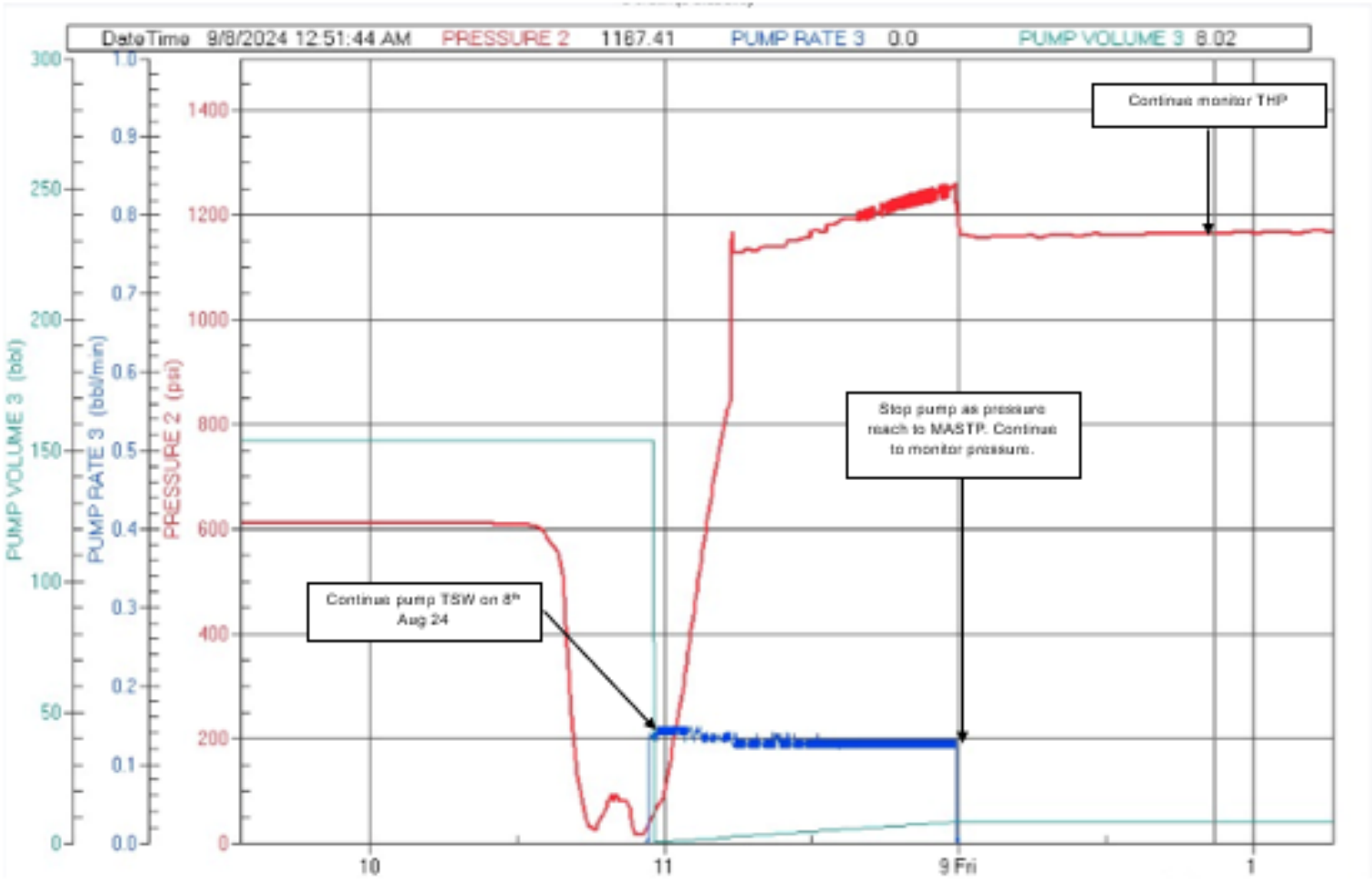
- Start Pumping on 4th August 2024.Pre-flush solution was pumped to 120bbls and switch to TSW.

Job Analysis – Bullheading#3- Main Treatment Graph



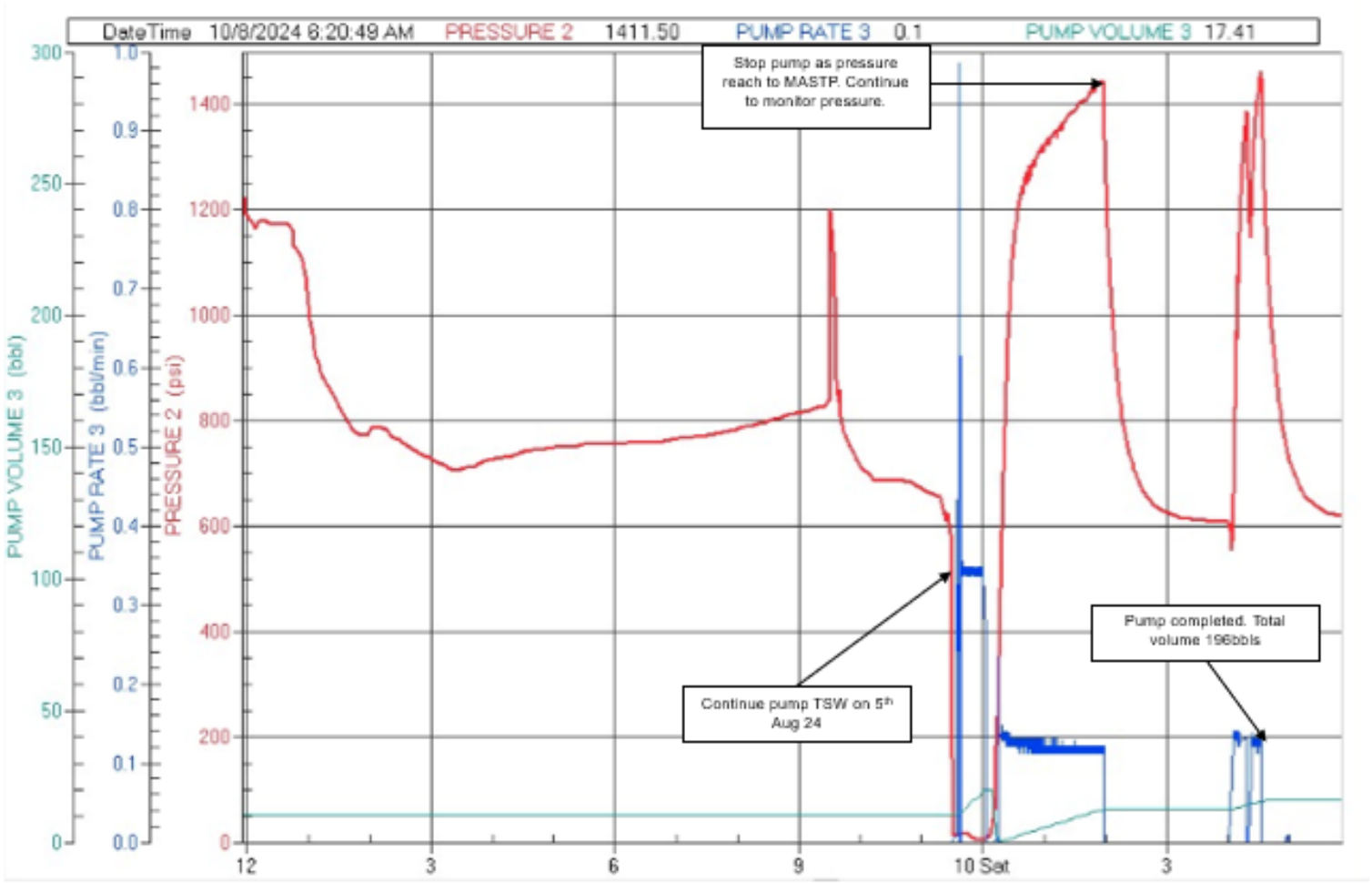
- Continue to pump TSW on 5th August 2024. Total pump volume 145bbls.
- On 5th August 2024, sample of TSW was send to CHEMSAIN for turbidity test.

Job Analysis – Bullheading#3- Main Treatment Graph



- Continue to pump TSW on 8th August 2024. Total pump volume 163 bbls
- Continue monitor pressure after stop pump at 0000H on 9th August 2024.

Job Analysis – Bullheading#3- Main Treatment Graph



- Continue to pump TSW on 10th August 2024. Completed with total 70 + 5bbls extra (TSW + IW).
- Total pump volume pre-flush + Displacement was 196 bbls.

Dulang D05S Lesson learnt

Highlight

- ***Overall Operation was successfully completed without any HSE issue.***

Lowlight

- ***Pumping operation was prolonged due to weather condition, unexpected vessel plan, crane issue, prolong slickline operation.***
- ***Pumping operation was suspend due to suspect formation plugging.***

Conclusion

- Dulang D05S Acid Screen Wash was successfully executed safely.
- While fill up the well prior for injectivity test, observed THP trending was maintain at 800 psi indication that the well not taking any fluid. Crew proceed with Injectivity test after confirm liquid return at surface. However, only managed to pump max injectivity at 0.25 bpm for 3 minutes before reaching MASTP at 919 psi.
- While perform pumping main treatment, well frequently reach to MASTP, therefore, pump need to stop and continue to monitor well to reduce the pressure before start to pump back.

POST JOB EVALUATION

Event/Activity: Tubing pickling and Preflush solution was displaced with TSW

What supposed to happen

- Tubing displacement and overflush with TIW

What actually happened

- WIS emailed Pchem to check if it is ok to inject with TSW on 16 July right before WTAP.
- Pchem replied on 22 July to clarify on the TSW details
- On 23 July, started injecting TP solution. WI DLC-DLD riser was reported to be leaking soon after. Explored option to bring filtration unit and bunkering TIW from DLB – Bunkering was not feasible due to adverse weather and Setia Luhur pump was not functioning. Hence, opted to bring filtration unit from KSB
- Pchem agreed that the solids from seawater should be manageable, SW upon treating with chemicals should also mitigate concerns mentioned (see appendix). Mitigation plan was to monitor the injecting rate and SITHP – it was ok during overflush with unfiltered TSW at 0.2bpm, then increased to 0.3bpm @ 1100 psi, below 100% MASTP of 1149 psi
- WOW/WOV for 5 days, Formation was clogged when pumping 15% HCl preflush. Suspected (i) iron debris carried by the HCl or (ii) unexpected and unknown by product reaction from stagnant unfiltered TSW clogged the formation

What we have learnt

- Unfiltered TSW might cause formation plugging

What are we going to do

- Suspend job if TIW is unavailable due to reasons such as WIMS module down, WIMS DLC-DLD riser leak etc

Open

Event/Activity: Acid left inside tubing for a prolonged period of time and project delayed significantly due to WOV and unable to transfer via PTB

What supposed to happen

- Two Kasturi mobs fly hoist wirerope replacement on 6th Aug

What actually happened

- Crane Wirerope DLD has issues, hence cannot support to transfer crew via PTB. Hence, crew couldn't inter rig to DLD due to boat unable to approach boat landing for safe personnel transfer
- PTB cannot be used due to fly hoist wirerope OOS and replacement unable to mob from KSB on 6th Aug because Two Kasturi engaged with offtake activities

What we have learnt

- Need a backup vessel to account for unexpected emergencies

Open

What are we going to do

- Suspend any jobs involved with acid until weather forecast shows mild weather OR until crane for PTB is fixed for remote locations

PETRONAS

Event/Activity: Displacement of TSW to move acid out of tubing was suspended due to high NTU detected

What supposed to happen

- Have a proper understanding on NTU that it is a qualitative measurement not quantitative measurement.
- Should have, instead, used linear plot slope test for solids measurement.

What actually happened

- Displacement of TSW was suspended to push 15% HCl out of tubing due to high NTU measurement detected as the sampling points were never flushed before measurement was taken.

What we have learnt

- Slope test is a better quantitative solids measurement and should be used when TIW is not available to measure TSW quality.

What are we going to do

Open

Event/Activity: Activity planning did not account for possible delays such as WOW, WOV

What supposed to happen

- Include WOW and WOV into planning consideration

What actually happened

- YEP project cost was bound to exceed SVAC cost if the job was continued due to over optimistic planning without considering WOW and WOV

What we have learnt

- Project cost is very likely to exceed SVAC cost due to over optimistic planning without considering WOW and WOV

What are we going to do

- Include WOW and WOV into planning consideration

Open

APPENDIX (TSW ok to inject)

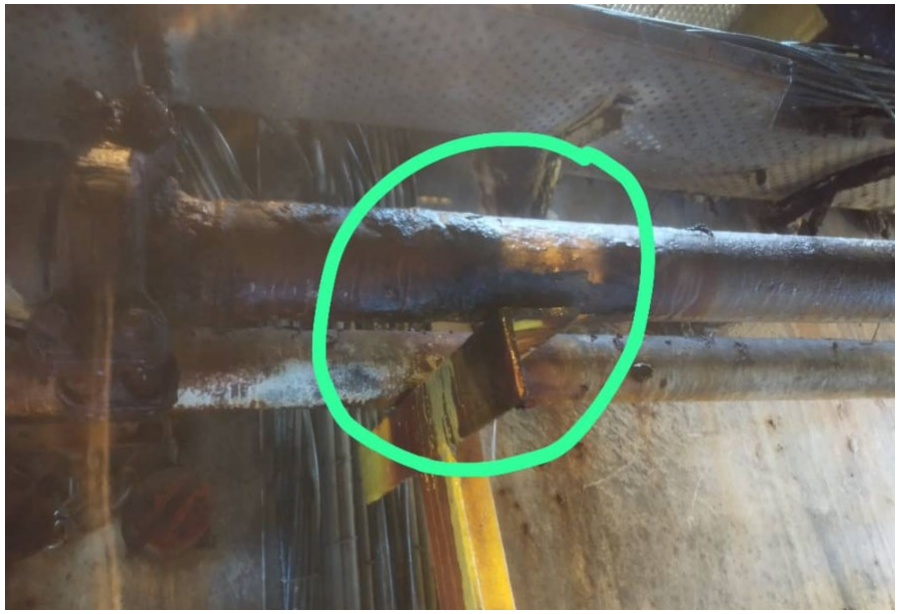
Type	Target	IW @ 5/8/2024	TSW @ 5/8/2024
Slope test	0.3 at DLB 0.6 at remotes	0.3 at DLB 0.38 at DLA 2.0 at DLC DLD (overboard)	Could not be performed as slope test needed continuous flowing, while we pump bleed, pump bleed
Iron content	0.50 ppm	0.03	Mitigated by CI (TSW formulation)
Turbidity	0.4 NTU	0.1	2.0 NTU after filtered & treated 1 – 5 NTU if unfiltered & treated
Oxygen content	<10 pptb	~1.0	Mitigated by oxygen scavenger (TSW formulation)
SRB	$<10^2$/mL	Not tested. Equipment OOS	Mitigated by H2S CI (TSW formulation)
Other test	Residual chlorine test Residual sulphite		

APPENDIX (No compatibility issue between unfiltered TSW with 7.5% HCl acid, 15% HCl acid & SAS)

TSW +	After 24 hours monitoring	Remarks
7.5% HCl Acid		No residue / precipitation occurred after 24 hours monitoring
15% HCl Acid		No residue / precipitation occurred after 24 hours monitoring
SAS		No residue / precipitation occurred after 24 hours monitoring

Internal

APPENDIX (Cannot Resume WI)



Dulang D5S injection flow line pinhole leak located below WH grating

APPENDIX (Possible Causes of Plugging)

- Subpar quality TSW (1-4 NTU) precipitates inside formation due to long idling days
- Undissolved debris (35%) and scale clog the formation as 15% HCl preflush is being pumped down
- Formation collapse/closure due to WIMS stop pumping. WIMS pumped above fracture gradient (1200 psi) – double confirm, input from operation current pressure fluctuates between 1100 to 1150 psi at surface

APPENDIX (MIT Report)

1. MIT survey was logged from depth 2453.57 to 14.64 m-MDDF.
2. There are 10 joints with multiple possible holes. Most of the severely damaged joints are located below **SSD#2 at depth 2380.3 m-MDDF**. You may refer **below**

Most penetrated joints

Penetration of 100.00% (0.25in) in Joint 241.11 at depth 2381.8m
Penetration of 100.00% (0.25in) in Joint 241.12 at depth 2383.2m
Penetration of 100.00% (0.25in) in Joint 242 at depth 2385.9m
Penetration of 100.00% (0.25in) in Joint 243 at depth 2396.6m
Penetration of 100.00% (0.25in) in Joint 244 at depth 2412.9m
Penetration of 100.00% (0.25in) in Joint 245 at depth 2418.1m

Most projected joints

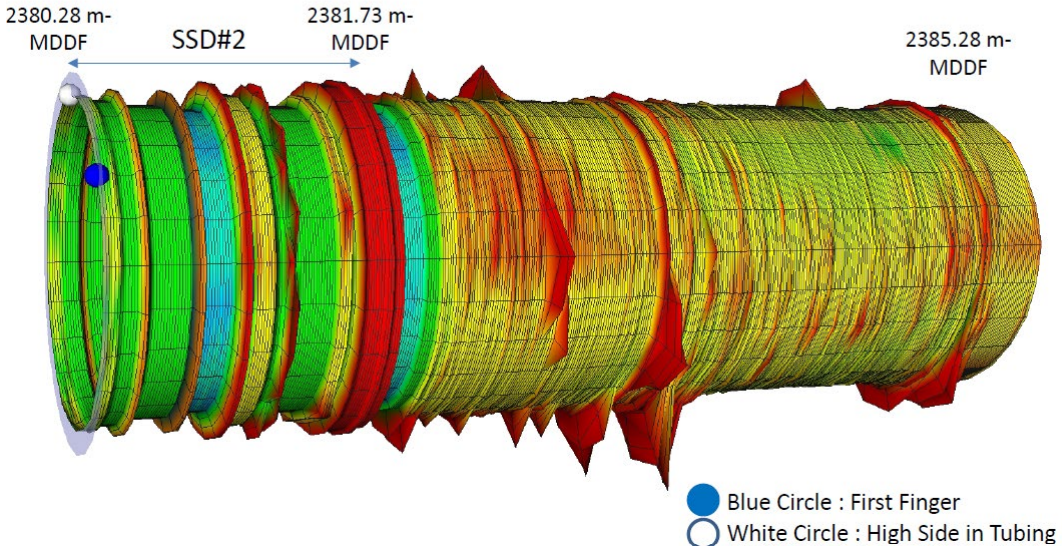
Projection of 38.58% (0.58in) in Joint 243 at depth 2395.9m
Projection of 29.13% (0.44in) in Joint 248 at depth 2443.6m
Projection of 27.07% (0.41in) in Joint 245 at depth 2420.3m
Projection of 16.60% (0.25in) in Joint 244 at depth 2412.5m

3. Max Metal Loss is 59.4% at Tubing Joint 243 at depth 2394.5 m-MDRKB.

APPENDIX (MIT Report)

3D View MIT Dulang D05S

Depth 2380.28 – 2385.28 m-MDDF

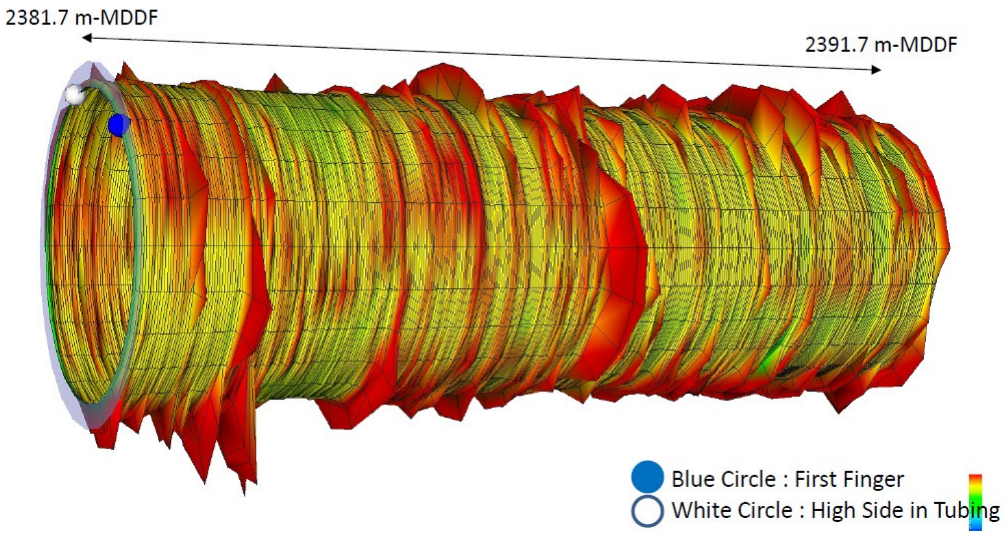


Internal

APPENDIX (MIT Report)

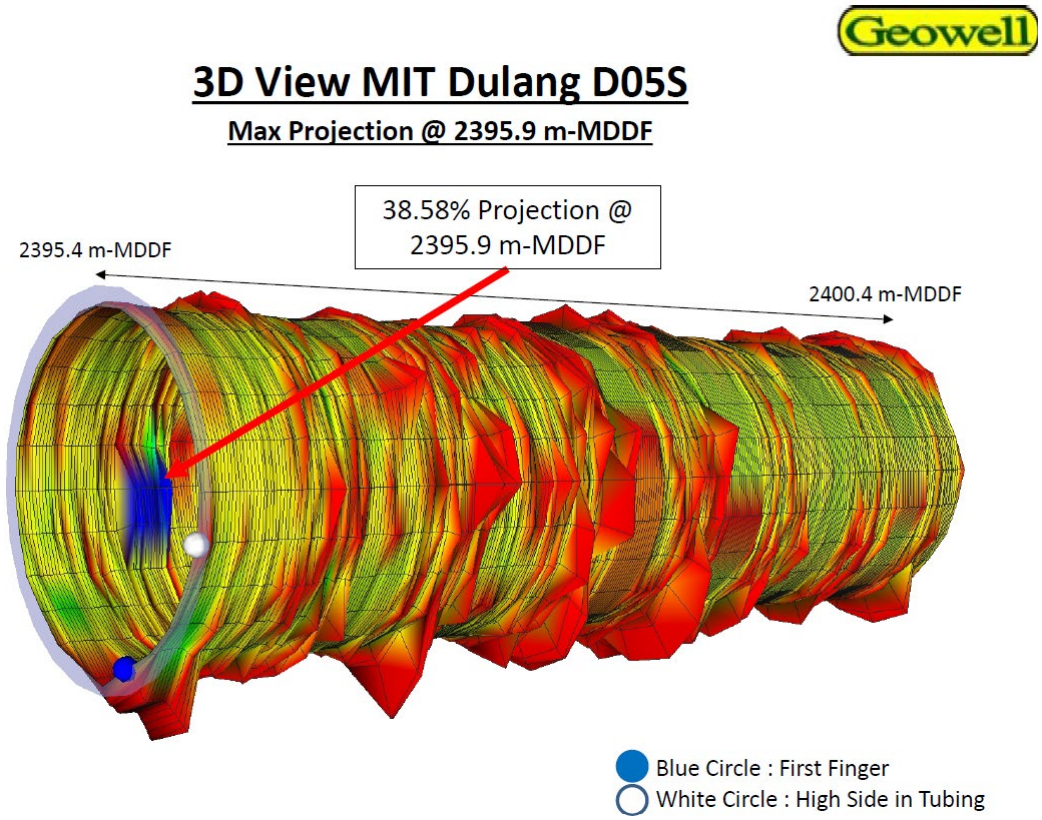
3D View MIT Dulang D05S

10m below SSD#2 (Depth 2381.7 – 2391.7 m-MDDF)



Internal

APPENDIX (MIT Report)



Internal

Thank you for your passion!

PE/IWR
POST JOB REVIEW
DULANG D-02 MATRIX ACIDIZING
31.07.2024

Prepared by	Endorsed by	Approved by
Name M. Ameerul Zaeem Field Engineer	Name M Izwan B. A Jalil TP	Name Chairperson

Team Member	

1

Executive Summary

Operation at Dulang D-02 is a pumping operation with pumping equipment placed on platform. Respective offshore personnel accommodate at supply vessel Setia Luhur throughout the operation.

Pumping Operation Duration: 15 Days (20th May to 3rd June 2024)

➢ Well: Dulang D02

- The campaign is overall conveyed by Dimension Bid CTU is to remove the fines and migratory clays damage on three different zones.
    a) E-14B sand – 4,670.5ft – 4,691.2ft – MDDF
    b) E-12B sand – 4,593.4ft – 4,608.5ft – MDDF
    c) E-11A sand – 4,553.7ft – 4,563.9ft – MDDF

Well by Well Review

DULANG D-02
Matrix Acidizing Operation

Executive Summary

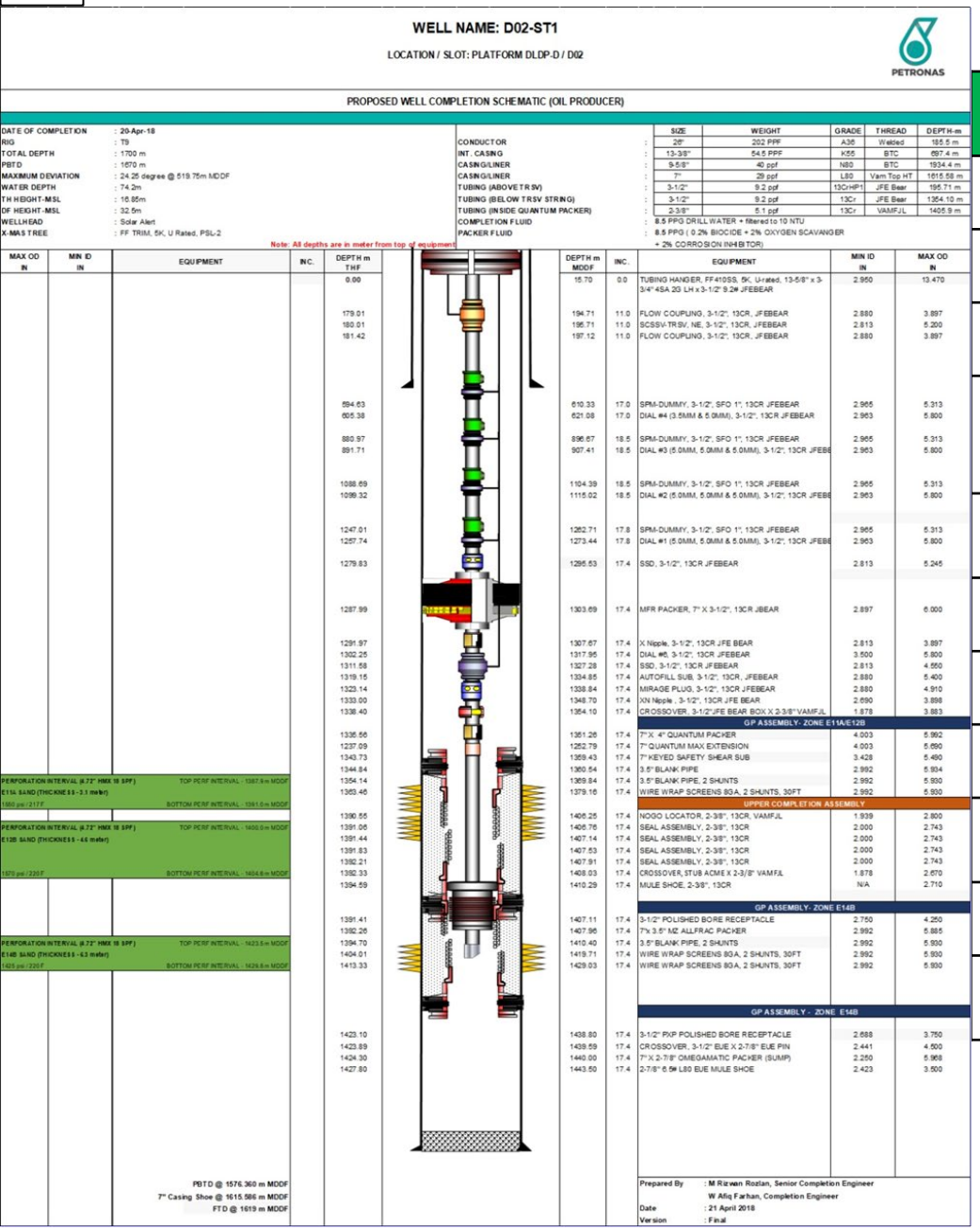
Objective

- The campaign is overall conveyed by Dimension Bid to remove the fines and migratory clays damage on three different zones.
    a) E-14B sand – 4,670.5ft – 4,691.2ft – MDDF
    b) E-12B sand – 4,593.4ft – 4,608.5ft – MDDF
    c) E-11A sand – 4,553.7ft – 4,563.9ft – MDDF

Problem Statement

- Dulang D-02 is a single string oil producer and was completed on April 2018. Based on production history and the mineralogy data, this well was suspected to have damage mechanism most probably due to the fines and migratory clays on three different zones.

3 Dulang D-02 Well Overview



WELL NAME: D02-ST1

LOCATION / SLOT: PLATFORM DLDP-D / D02

PETRONAS

PROPOSED WELL COMPLETION SCHEMATIC (OIL PRODUCER)

DATE OF COMPLETION	: 20-Apr-18
RIG	: T9
TOTAL DEPTH	: 1700 m
PBTD	: 1670 m
MAXIMUM DEVIATION	: 24.25 degree @ 519.75m MDDF
WATER DEPTH	: 74.2m
TH HEIGHT-MSL	: 16.85m
DF HEIGHT-MSL	: 32.5m
WELLHEAD	: Solar Alert
X-MAS TREE	: FF TRIM, 5K, U Rated, PSL-2

		SIZE	WEIGHT	GRADE	THREAD	DEPTH-m
CONDUCTOR	:	26"	202 PPF	A36	Welded	185.5 m
INT. CASING	:	13-3/8"	54.5 PPF	K55	BTC	697.4 m
CASING/LINER	:	9-5/8"	40 ppf	N80	BTC	1934.4 m
CASING/LINER	:	7"	29 ppf	L80	Vam Top HT	1615.58 m
TUBING (ABOVE TRSV)	:	3-1/2"	9.2 ppf	13CrHP1	JFE Bear	195.71 m
TUBING (BELOW TRSV STRING)	:	3-1/2"	9.2 ppf	13Cr	JFE Bear	1354.10 m
TUBING (INSIDE QUANTUM PACKER)	:	2-3/8"	5.1 ppf	13Cr	VAM/FJL	1405.9 m
COMPLETION FLUID	:	8.5 PPG DRILL WATER + filtered to 10 NTU				
PACKER FLUID	:	8.5 PPG (0.2% BIOCIDE + 2% OXYGEN SCAVANGER + 2% CORROSION INHIBITOR)				

Note: All depths are in meter from top of equipment

MAX OD IN	MIN ID IN	EQUIPMENT	INC.	DEPTH m THF
				0.00
				179.01
				180.01
				181.42
				594.63
				605.38
				880.97
				891.71
				1088.69
				1099.32
				1247.01
				1257.74
				1279.83
				1287.99
				1291.97
				1302.25
				1311.58
				1319.15
				1323.14
				1333.00
				1338.40
				1336.56
				1237.09
				1343.73
				1344.84
				1354.14
				1363.46
PERFORATION INTERVAL (6.72" HMX 18 SPF) E11A SAND (THICKNESS - 3.1 meter) 1360 psi / 217F		TOP PERF INTERVAL - 1357.9 m MDDF BOTTOM PERF INTERVAL - 1361.0 m MDDF		
				1390.55
PERFORATION INTERVAL (6.72" HMX 18 SPF) E12B SAND (THICKNESS - 4.6 meter) 1370 psi / 220F		TOP PERF INTERVAL - 1400.0 m MDDF BOTTOM PERF INTERVAL - 1404.6 m MDDF		1391.06 1391.44 1391.83 1392.21 1392.33 1394.59
				1391.41
				1392.26
PERFORATION INTERVAL (6.72" HMX 18 SPF) E14B SAND (THICKNESS - 6.3 meter) 1425 psi / 220F		TOP PERF INTERVAL - 1423.5 m MDDF BOTTOM PERF INTERVAL - 1429.8 m MDDF		1394.70 1404.01 1413.33
				1423.10
				1423.89
				1424.30
				1427.80
		PBTD @ 1576.360 m MDDF 7" Casing Shoe @ 1615.586 m MDDF FTD @ 1619 m MDDF		

DEPTH m MDDF	INC.	EQUIPMENT	MIN ID IN	MAX OD IN
15.70	0.0	TUBING HANGER, FF410SS, 5K, U-rated, 13-5/8" x 3-3/4" 4SA 2G LH x 3-1/2" 9.2# JFEBEAR	2.950	13.470
194.71	11.0	FLOW COUPLING, 3-1/2", 13CR, JFEBEAR	2.880	3.897
196.71	11.0	SCSSV-TRSV, NE, 3-1/2", 13CR, JFEBEAR	2.813	5.200
197.12	11.0	FLOW COUPLING, 3-1/2", 13CR, JFEBEAR	2.880	3.897
610.33	17.0	SPM-DUMMY, 3-1/2", SFO 1", 13CR JFEBEAR	2.965	5.313
621.08	17.0	DIAL #4 (3.5MM & 5.0MM), 3-1/2", 13CR JFEBEAR	2.963	5.800
896.67	18.5	SPM-DUMMY, 3-1/2", SFO 1", 13CR JFEBEAR	2.965	5.313
907.41	18.5	DIAL #3 (5.0MM, 5.0MM & 5.0MM), 3-1/2", 13CR JFEBE	2.963	5.800
1104.39	18.5	SPM-DUMMY, 3-1/2", SFO 1", 13CR JFEBEAR	2.965	5.313
1115.02	18.5	DIAL #2 (5.0MM, 5.0MM & 5.0MM), 3-1/2", 13CR JFEBE	2.963	5.800
1262.71	17.8	SPM-DUMMY, 3-1/2", SFO 1", 13CR JFEBEAR	2.965	5.313
1273.44	17.8	DIAL #1 (5.0MM, 5.0MM & 5.0MM), 3-1/2", 13CR JFEBE	2.963	5.800
1295.53	17.4	SSD, 3-1/2", 13CR JFEBEAR	2.813	5.245
1303.69	17.4	MFR PACKER, 7" X 3-1/2", 13CR JBEAR	2.897	6.000
1307.67	17.4	X Nipple, 3-1/2", 13CR JFE BEAR	2.813	3.897
1317.95	17.4	DIAL #5, 3-1/2", 13CR JFEBEAR	3.500	5.800
1327.28	17.4	SSD, 3-1/2", 13CR JFEBEAR	2.813	4.550
1334.85	17.4	AUTOFILL SUB, 3-1/2", 13CR, JFEBEAR	2.880	5.400
1338.84	17.4	MIRAGE PLUG, 3-1/2", 13CR JFEBEAR	2.880	4.910
1348.70	17.4	XN Nipple, 3-1/2", 13CR JFE BEAR	2.690	3.898
1354.10	17.4	CROSSOVER, 3-1/2" JFE BEAR BOX X 2-3/8" VAM/FJL	1.878	3.883
		GP ASSEMBLY- ZONE E11A/E12B		
1361.26	17.4	7" X - 4" QUANTUM PACKER	4.003	5.992
1362.79	17.4	7" QUANTUM MAX EXTENSION	4.003	5.690
1369.43	17.4	7" KEYED SAFETY SHEAR SUB	3.428	5.490
1360.54	17.4	3.5" BLANK PIPE	2.992	5.934
1369.84	17.4	3.5" BLANK PIPE, 2 SHUNTS	2.992	5.930
1379.16	17.4	WIRE WRAP SCREENS 8GA, 2 SHUNTS, 30FT	2.992	5.930
		UPPER COMPLETION ASSEMBLY		
1406.26	17.4	NOGO LOCATOR, 2-3/8", 13CR, VAM/FJL	1.939	2.800
1406.76	17.4	SEAL ASSEMBLY, 2-3/8", 13CR	2.000	2.743
1407.14	17.4	SEAL ASSEMBLY, 2-3/8", 13CR	2.000	2.743
1407.53	17.4	SEAL ASSEMBLY, 2-3/8", 13CR	2.000	2.743
1407.91	17.4	SEAL ASSEMBLY, 2-3/8", 13CR	2.000	2.743
1408.03	17.4	CROSSOVER, STUB ACME X 2-3/8" VAM/FJL	1.878	2.670
1410.29	17.4	MULE SHOE, 2-3/8", 13CR	N/A	2.710
		GP ASSEMBLY- ZONE E14B		
1407.11	17.4	3-1/2" POLISHED BORE RECEPTACLE	2.750	4.250
1407.96	17.4	7"x 3.5" NIZ ALLFRAC PACHER	2.992	5.885
1410.40	17.4	3.5" BLANK PIPE, 2 SHUNTS	2.992	5.930
1419.71	17.4	WIRE WRAP SCREENS 8GA, 2 SHUNTS, 30FT	2.992	5.930
1429.03	17.4	WIRE WRAP SCREENS 8GA, 2 SHUNTS, 30FT	2.992	5.930
		GP ASSEMBLY - ZONE E14B		
1438.80	17.4	3-1/2" PXP POLISHED BORE RECEPTACLE	2.688	3.750
1439.59	17.4	CROSSOVER, 3-1/2" EUE X 2-7/8" EUE PIN	2.441	4.500
1440.00	17.4	7" X 2-7/8" OMEGAMATIC PACKER (SUMP)	2.250	5.968
1443.50	17.4	2-7/8" 6.5# L80 EUE MULE SHOE	2.423	3.500

Prepared By	: M Rizwan Rozlan, Senior Completion Engineer W Afiq Farhan, Completion Engineer
Date	: 21 April 2018
Version	: Final

Input Parameter	Parameter Value
Field Name	Dulang D-02
Well Type	Oil Producer
Artificial Lift	Gas-Lifted
Treatment Zone	a) E-14B sand – 4,670.5ft – 4,691.2ft – MDDF b) E-12B sand – 4,593.4ft – 4,608.5ft – MDDF c) E-11A sand – 4,553.7ft – 4,563.9ft – MDDF
Tubing	3-1/2" 9, 2# 13Cr ID: 2.992
Casing	7" 29#, L80
Max Deviation	24℃ at 519m
BHST	222 ℉
Reservoir Pressure	1431 psi
Oil Rate	103 BOPD, 20% WC
Fracture Gradient	0.7 psi/ft (assumed)

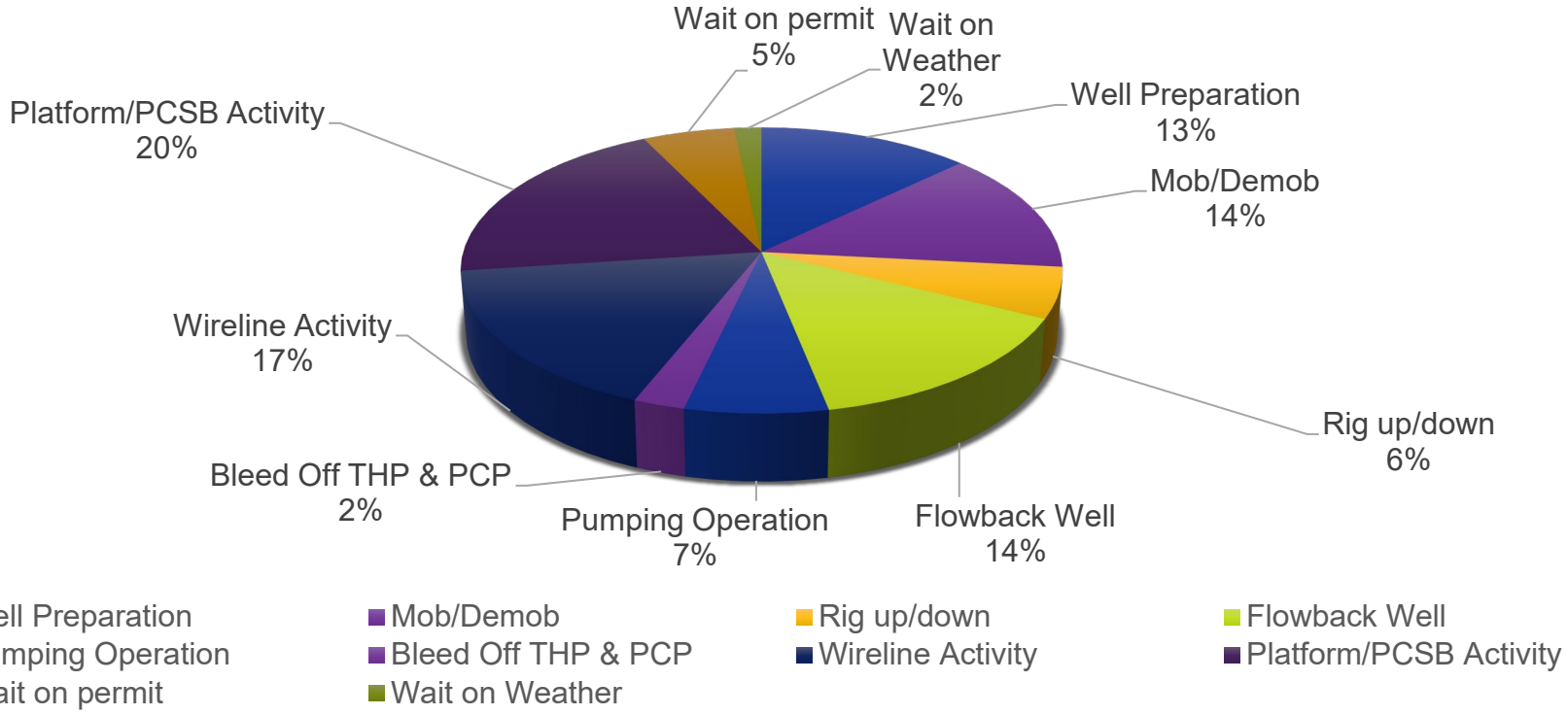
4 Summary of Plan Vs Actual

Activity	Planned (days)	Actual (days)	Remarks
GLVC	5	3 (TBC)	
Slickline #1 – Close SSD for E11A and E12B	1	1 (TBC)	
Transfer Pumping Package	1	-	Equipment already onboard
Rig Up Pumping on well	1	1	
Bullheading #1 – Solvent Treatment for wax removal, soak for 4 hours and Flowback well	1	1	
Bullheading #2 – Tubing Pickling Flowback well	1	1	
Bullheading #3 – Injectivity Test for Zone E14B	1	1	
Bullheading #4 – Mixing and Pumping Main Treatment for Zone E-14B	1	1	
Bullheading #5 Flowback E-14B	1	1	
Slickline #2 – Set plug at EOT & open SSD E11A and E12B	1	1	
Bullheading #6 – Injectivity Test for Zone E11A & E12B	1	1	
Bullheading #7 – Mixing and Pumping Main Treatment for Zone E11A & E12B	1	1	
Bullheading #8 – Flowback E11A & E12B	1	1	
Slickline #3 – Retrieve PXN Plug and 1,348 m MDTHF	0.5	2 (TBC)	
R/D and handover well to operation	1	1	
Total	**18 Days**	**17 (TBC) Days**	

Summary of Intervention Activities

No	Job Scope	Details	Addendum
1	Dimension Bid	Bullheading #1 Operation – Solvent Pumping	
		Bullheading #2 Operation – Tubing Pickling	
		Bullheading #3 Operation – Injectivity Test Prior Acid Stimulation Zone E14B	
		Bullheading #4 Operation – Acid Stimulation for Zone E14B	
		Bullheading #5 Operation – Injectivity Test Prior Acid Stimulation Zone E11A & E12B	
		Bullheading #6 Operation – Acid Stimulation for Zone E11A & E12B	

Summary of Intervention Activities.



Start Date	End Date
20-May-24 06:30	03-Jun-24 18:30

Operation Days = 15 days

Activity	Hours	Days
Well Preparation	44:59	1.87
Mob/Demob	47:45	1.99
Rig up/down	20:00	0.83
Flowback Well	50:15	2.09
Pumping Operation	23:44	0.99
Bleed Off THP & PCP	08:32	0.36
Wireline Activity	58:30	2.44
Platform/PCSB Activity	69:00	2.88
Wait on permit	19:30	0.81
Wait on Weather	05:45	0.24
	348:00	**14.50**

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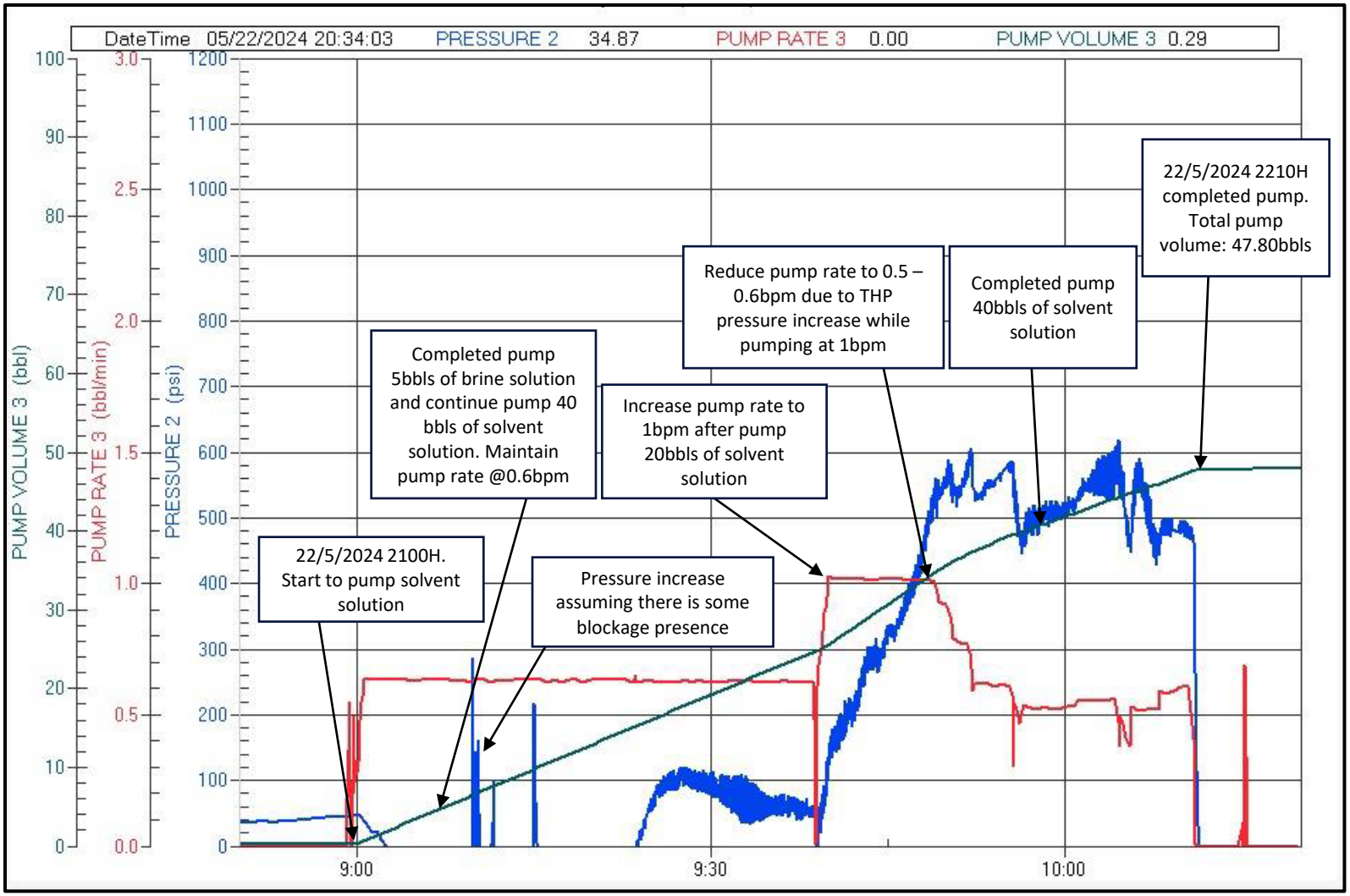
Summary of Intervention Activities.

#	Activity	Start	End	Duration	CT Run#	Note
1	Mob/Demob	20-May-24 06:30	21-May-24 09:15	26:45:00		3 PAX SLB MOB VIA SETIA LUHUR
2	Wait on permit	21-May-24 09:15	21-May-24 10:15	1:00:00		
3	Wait on Weather	21-May-24 10:15	21-May-24 11:00	0:45:00		
4	Well Preparation	21-May-24 11:00	21-May-24 14:00	3:00:00		SLB ARRIVED AT DULANG FIELD, PRE JOB BRIEFING TOGETHER WITH 3 PAX SLB AND WSS
5	Wait on Weather	21-May-24 14:00	21-May-24 15:00	1:00:00		
6	Well Preparation	21-May-24 15:00	21-May-24 18:30	3:30:00		
7	Wait on permit	21-May-24 18:30	21-May-24 20:30	2:00:00		
8	Well Preparation	21-May-24 20:30	22-May-24 02:00	5:30:00		
9	Wait on Weather	22-May-24 02:00	22-May-24 06:00	4:00:00		
10	Well Preparation	22-May-24 06:00	22-May-24 06:30	0:30:00		
11	Wait on permit	22-May-24 06:30	22-May-24 08:30	2:00:00		
12	Well Preparation	22-May-24 08:30	22-May-24 18:30	10:00:00		
13	Wait on permit	22-May-24 18:30	22-May-24 20:30	2:00:00		
14	Well Preparation	22-May-24 20:30	22-May-24 20:40	0:10:00		
15	Bleed Off THP & PCP	22-May-24 20:40	22-May-24 21:10	0:30:00		Open CV & LMV •SITHP : 700Psi (bleed until 50Psi) •PCP : 330 Psi
16	Pumping Operation	22-May-24 21:10	23-May-24 03:15	6:05:00		BULLHEADING#1: SOLVENT
17	Flowback Well	23-May-24 03:15	23-May-24 12:45	9:30:00		FLOWBACK WELL TO RECOVER 75BBLS (1.5 TOTAL PUMP - 8HRS)
18	Bleed Off THP & PCP	23-May-24 12:45	23-May-24 16:45	4:00:00		STOP BLEED OFF PCP & ISOLATE WING VALVE. PCP = 390PSI
19	Pumping Operation	23-May-24 16:45	23-May-24 21:00	4:15:00		BULLHEADING#2: TUBING PICKLING
20	Flowback Well	23-May-24 21:00	24-May-24 03:15	6:15:00		FLOWBACK ON WELL. PCP = 682PSI, PH=5.THP = 170PSI
21	Platform/PCSB Activity	24-May-24 03:15	24-May-24 15:15	12:00:00		STOP ACTIVITY DUE TO PIGGING IN PROGRESS
22	Pumping Operation	24-May-24 15:15	24-May-24 17:00	1:45:00		BULLHEADING#3: INJECTIVITY TEST
23	Well Preparation	24-May-24 17:00	24-May-24 18:30	1:30:00		
24	Wait on permit	24-May-24 18:30	24-May-24 20:00	1:30:00		
25	Platform/PCSB Activity	24-May-24 20:00	25-May-24 01:00	5:00:00		RT activity by Velosi
26	Well Preparation	25-May-24 01:00	25-May-24 06:30	5:30:00		
27	Wait on permit	25-May-24 06:30	25-May-24 07:30	1:00:00		
28	Pumping Operation	25-May-24 07:30	25-May-24 12:00	4:30:00		BULLHEADING#4: MAIN TREATMENT ON E-14B
29	Flowback Well	25-May-24 12:00	26-May-24 01:00	13:00:00		FLOWBACK ON WELL.
30	Wireline Activity	26-May-24 01:00	27-May-24 11:30	34:30:00		SET PLUG & OPEN SSD#2
31	Bleed Off THP & PCP	27-May-24 11:30	27-May-24 15:32	4:02:00		PCP=406psi.SITHP=147psi
32	Pumping Operation	27-May-24 15:32	27-May-24 17:06	1:34:00		BULLHEADING #5: INJECTIVITY TEST
33	Well Preparation	27-May-24 17:06	28-May-24 08:25	15:19:00		
34	Pumping Operation	28-May-24 08:25	28-May-24 14:00	5:35:00		BULLHEADING #6: MAIN TREATMENT
35	Flowback Well	28-May-24 14:00	29-May-24 11:30	21:30:00		Take sample & got return at surface (pH6) •PCP : 725Psi •FTHP : 187Psi •Temp : 52Psi
36	Platform/PCSB Activity	29-May-24 11:30	29-May-24 15:30	4:00:00		DPIC PERFORM WELL TEST FOR 4 HOURS
37	Rig up/down	29-May-24 15:30	29-May-24 18:30	3:00:00		
38	Wait on permit	29-May-24 18:30	29-May-24 19:30	1:00:00		
39	Rig up/down	29-May-24 19:30	30-May-24 06:30	11:00:00		
40	Wait on permit	30-May-24 06:30	30-May-24 12:30	6:00:00		
41	Rig up/down	30-May-24 12:30	30-May-24 18:30	6:00:00		
42	Platform/PCSB Activity	30-May-24 18:30	31-May-24 06:30	12:00:00		SDFN
43	Wait on permit	31-May-24 06:30	31-May-24 09:30	3:00:00		
44	Mob/Demob	31-May-24 09:30	31-May-24 18:30	9:00:00		3 PAX SLB DEMOB
45	Platform/PCSB Activity	31-May-24 18:30	01-Jun-24 06:30	12:00:00		SDFN
46	Wireline Activity	01-Jun-24 06:30	01-Jun-24 18:30	12:00:00		
47	Platform/PCSB Activity	01-Jun-24 18:30	02-Jun-24 06:30	12:00:00		SDFN
48	Wireline Activity	02-Jun-24 06:30	02-Jun-24 18:30	12:00:00		
49	Platform/PCSB Activity	02-Jun-24 18:30	03-Jun-24 06:30	12:00:00		SDFN
50	Mob/Demob	03-Jun-24 06:30	03-Jun-24 18:30	12:00:00		9 PAX CREW & CHEMICAL BASKET DEMOB, 3 PAX STANDBY FOR LIFTING ACTIVITY & MAINTENANCE

Job Analysis – Bullheading #1 Operation – Solvent Pumping



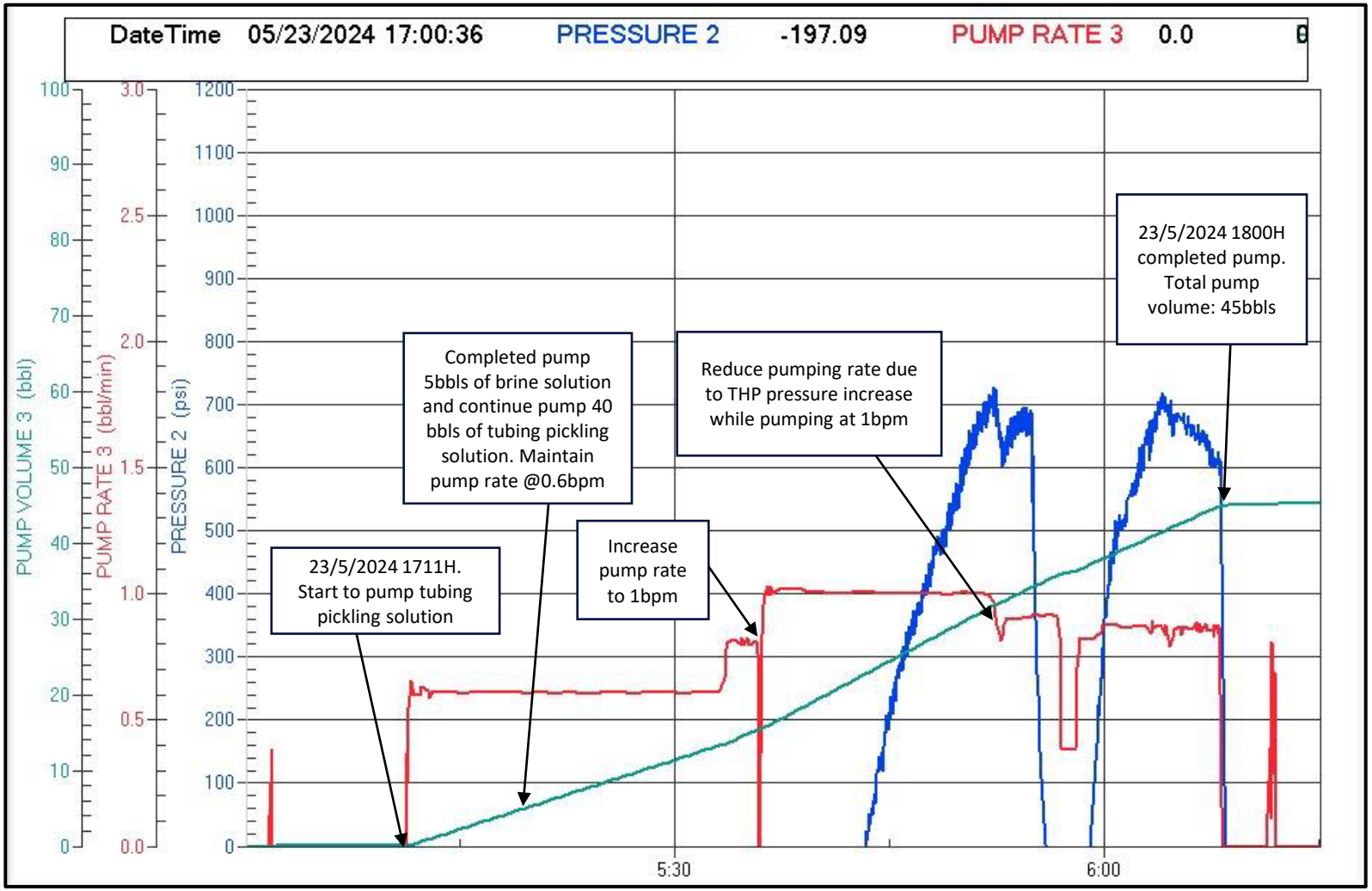
Job Analysis – Bullheading #1 Operation – Solvent Pumping

Time (Hours)	Pump Rate (bpm)	Volume (bbl)	THP (psi)	PCP (psi)
2110H	0.6	8.2	0	330
2120H	0.6	12.75	0	330
2130H	0.6	19.2	86	330
2140H	1	25	159	330
2145H	1	30	330	330
2148H	1	34	490	330
2150H	0.7	36	550	330
2152H	0.6	37	550	330
2155H	0.5	40	562	330
2200H	0.5	42	520	330
2205H	0.5	45	613	330
2210H	0.6	47.8	484	330

Job Analysis – Bullheading #1 Operation – Flowback Data Solvent Pumping

No	Date	Time	Choke Size	pH	PCP kPa	FTHP kPa
1	23-May-24	0315	50%	3		
2	23-May-24	0415	50%	3		
3	23-May-24	0515	50%	4	5500	1173
4	23-May-24	0615	50%	4	4900	1167
5	23-May-24	0715	50%	5	4500	1133
6	23-May-24	0815	75%	5	4600	1158
7	23-May-24	0915	75%	6	4600	1144
8	23-May-24	1015	75%	6	4700	1126
9	23-May-24	1115	75%	6	4700	1150
10	23-May-24	1215	75%	6	4700	1153

Job Analysis – Bullheading #2 Operation – Tubing Pickling



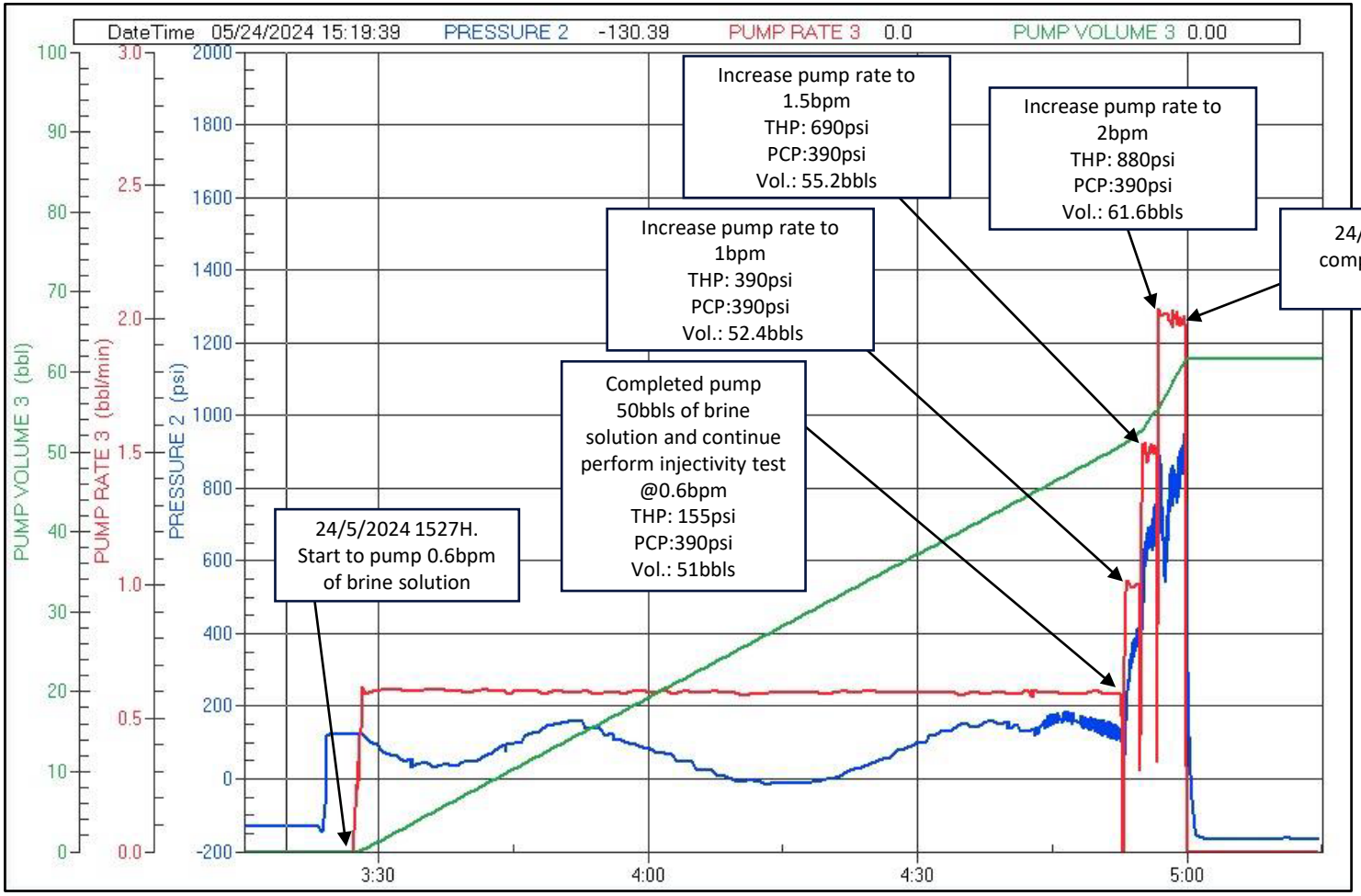
Job Analysis – Bullheading #2 Operation – Tubing Pickling

Time (Hours)	Pump Pressure (psi)	Pump rate (bpm)	Volume (bbl)	THP (psi)	PCP (psi)
17:11	0	0.6	0	0	390
17:21	0	0.6	6.7	0	390
17:31	0	0.6	12.1	0	390
17:41	0	1	21.5	0	390
17:51	800	1	30.8	650	390
18:01	650	0.9	38.8	510	390
18:08	700	0.9	45.2	600	390

Job Analysis – Bullheading #2 Operation – Flowback Data Tubing Pickling

No	Date	Time	Choke Size	pH	PCP kPa	FTHP kPa
1	23-May-24	2105	50%	1		
2	23-May-24	2135	50%	7		
3	23-May-24	2235	50%	4	5500	1173
4	23-May-24	2335	50%	4	4900	1167
5	24-May-24	0035	50%	5	4500	1133
6	24-May-24	0135	75%	5	4600	1158
7	24-May-24	0235	75%	5	4600	1144
8	24-May-24	0335	75%	5	4700	1126
9	24-May-24	0435	75%	5	4700	1150
10	24-May-24	0535	75%	5	4700	1153
11	24-May-24	0635	75%	5	4700	1153
12	24-May-24	0735	75%	5	4700	1171
13	24-May-24	0835	75%	5	4700	1162
14	24-May-24	0935	75%	5	4700	1168
15	24-May-24	1035	75%	5	4700	1171
16	24-May-24	1135	75%	5	4700	1165
17	24-May-24	1235	75%	5	4700	1170

Job Analysis – Bullheading #3 Operation – Injectivity Test Prior Acid Stimulation Zone E14B

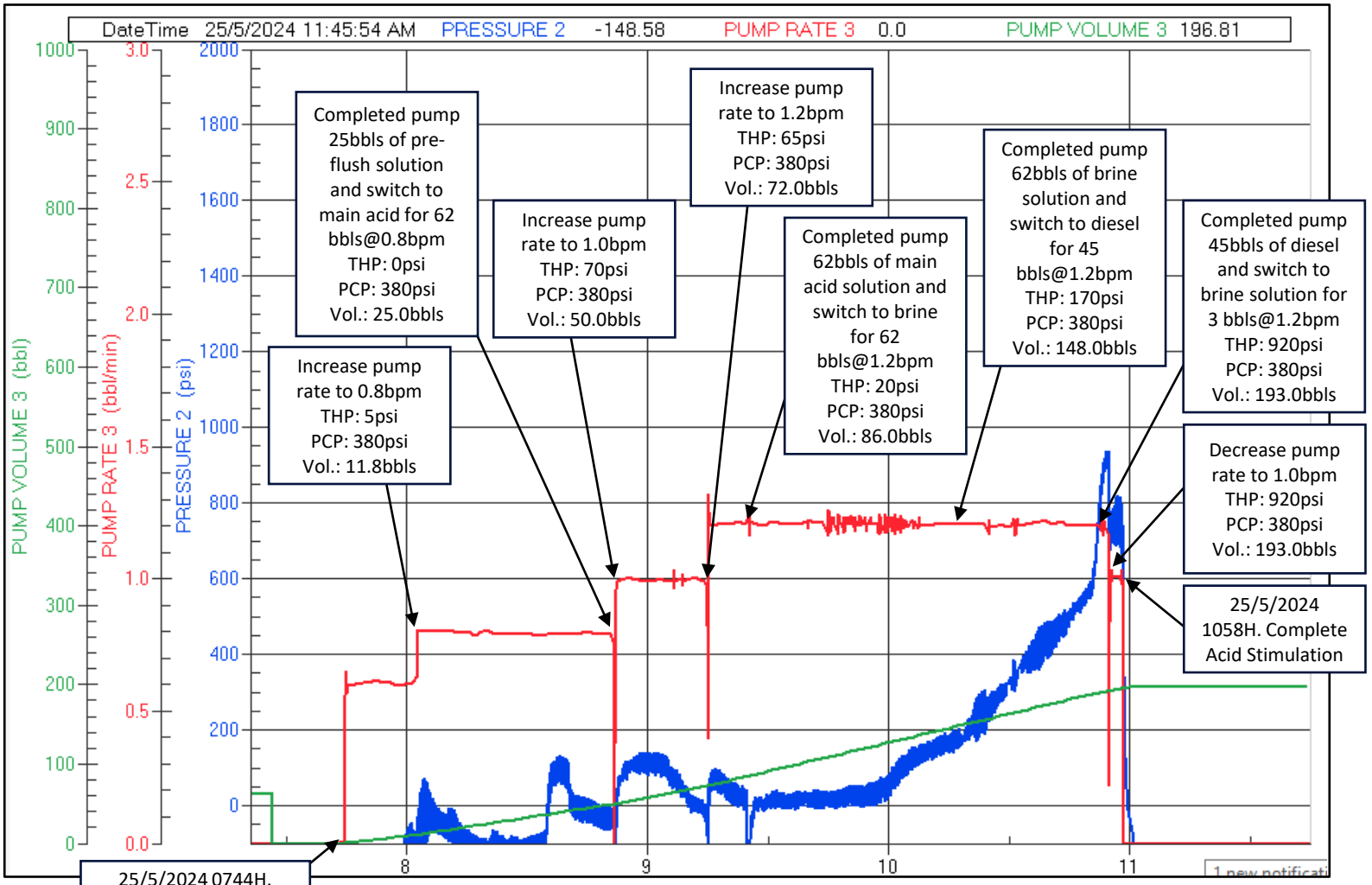


Job Analysis – Bullheading #3 Operation – Injectivity Test Prior Acid Stimulation Zone E14B

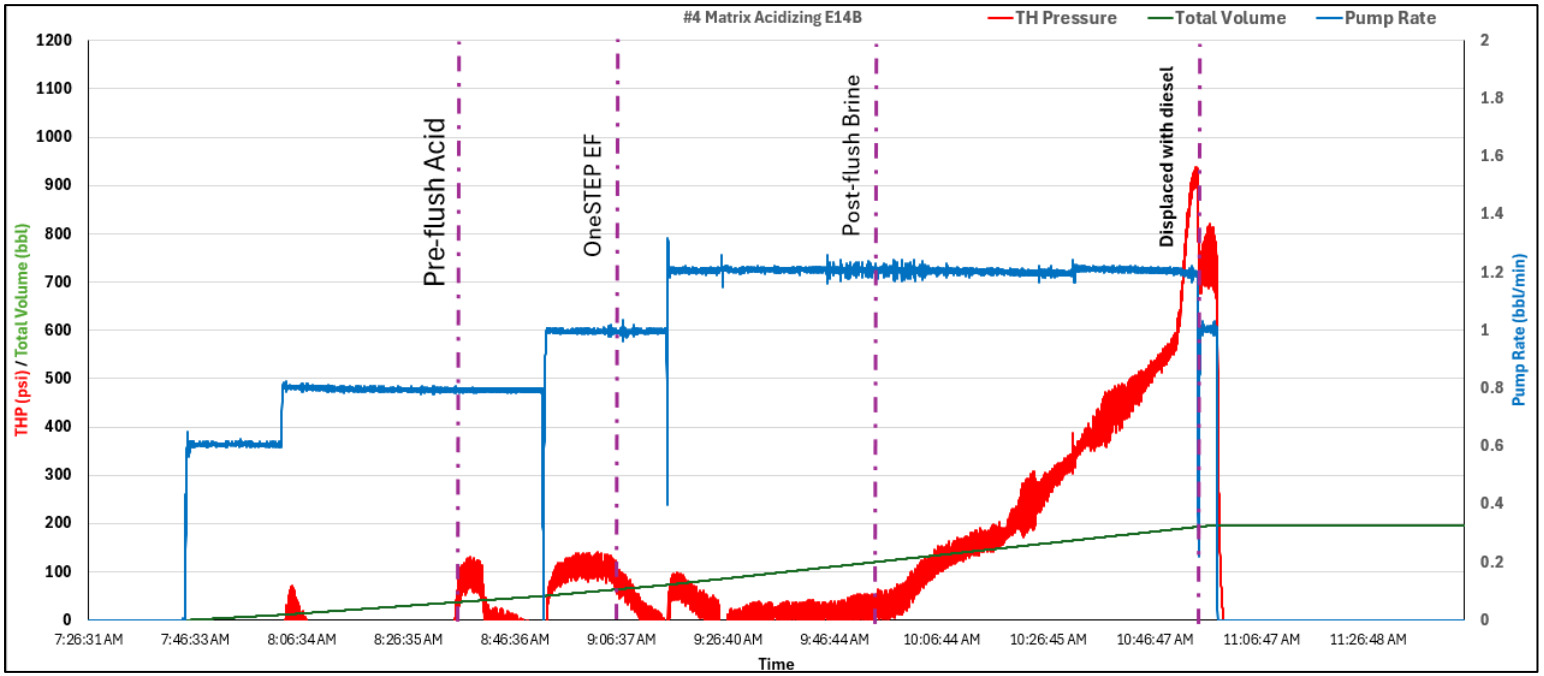
FILL UP COMPLETION TUBING 50BBLS					
TIME (min)	PUMP PRESS (psi)	RATE (bpm)	VOLUME (bbls)	THP (psi)	PCP (psi)
15:28	300	0.6	0.6	125	390
15:38	220	0.6	5.6	40	390
15:48	300	0.6	12.3	80	390
15:58	300	0.6	17.9	105	390
16:08	180	0.6	24.1	20	390
16:18	120	0.6	30.1	0	390
16:28	200	0.6	36.2	90	390
16:38	250	0.6	42	152	390
16:48	250	0.6	47.9	158	390
16:51	250	0.6	50	156	390

INJECTIVITY TEST					
RATE(bpm)	PUMP PRESS (psi)	TIME(min)	VOLUME (bbls)	THP (psi)	PCP (psi)
0.6	250	1	51	155	390
1	580	1	52.4	390	390
1.5	730	1	55.2	690	390
2	990	5	61.6	880	390

Job Analysis – Bullheading #4 Operation – Acid Stimulation for Zone E14B



Job Analysis – Bullheading #4 Operation – Acid Stimulation for Zone E14B



- As the 10% Acetic Acid enters the formation, the pressure was observed to increase and then drop. This shows that acetic acid might have carried some particles into the gravel pack or perforation. However, the acid is able to dissolve the plugging, and the pressure drops back to zero.
- Pressure drop was observed as OneSTEP enters the formation which showing OneSTEP is working on removing the fines migration damage.
- When the Post-flush brine enters the formation, the THP begins to increase gradually due to the changes in the hydrostatic and increase in friction pressure.

Job Analysis – Bullheading #4 Operation – Acid Stimulation for Zone E14B

PUMPING PARAMETER					
TIME (min)	PUMP PRESS(psi)	VOLUME (bbls)	PCP (psi)	THP (psi)	REMARK
8:00	20	10.2	380	0	Continue pump Pre Flush
8:02	20	11.8	380	5	Increased pumping rate 0.8bpm as per SLB rep.
8:20	20	25	380	0	Completed for 25bbls of Pre flush & switch to Main Acid for 62bbls
8:51	200	50	380	70	Increased pump rate to 1bpm
9:15	200	72	380	65	Increased pump rate to 1.2bpm
9:25	130	86	380	20	Completed for 62 bbls of Main Acid & switch to Brine for 62bbls.
10:17	300	148	380	170	Completed for 62 bbls of Brine & switch to Diesel for 45bbls.
10:40	600	177	380	450	THP increase gradually to 450psi
10:55	1100	193	380	920	Completed for 45 bbls of Diesel & switch to Brine for 3 bbls.Decreased PR to 1bpm.
10:58	800	196.8	380	680	Stop pumping Brine.

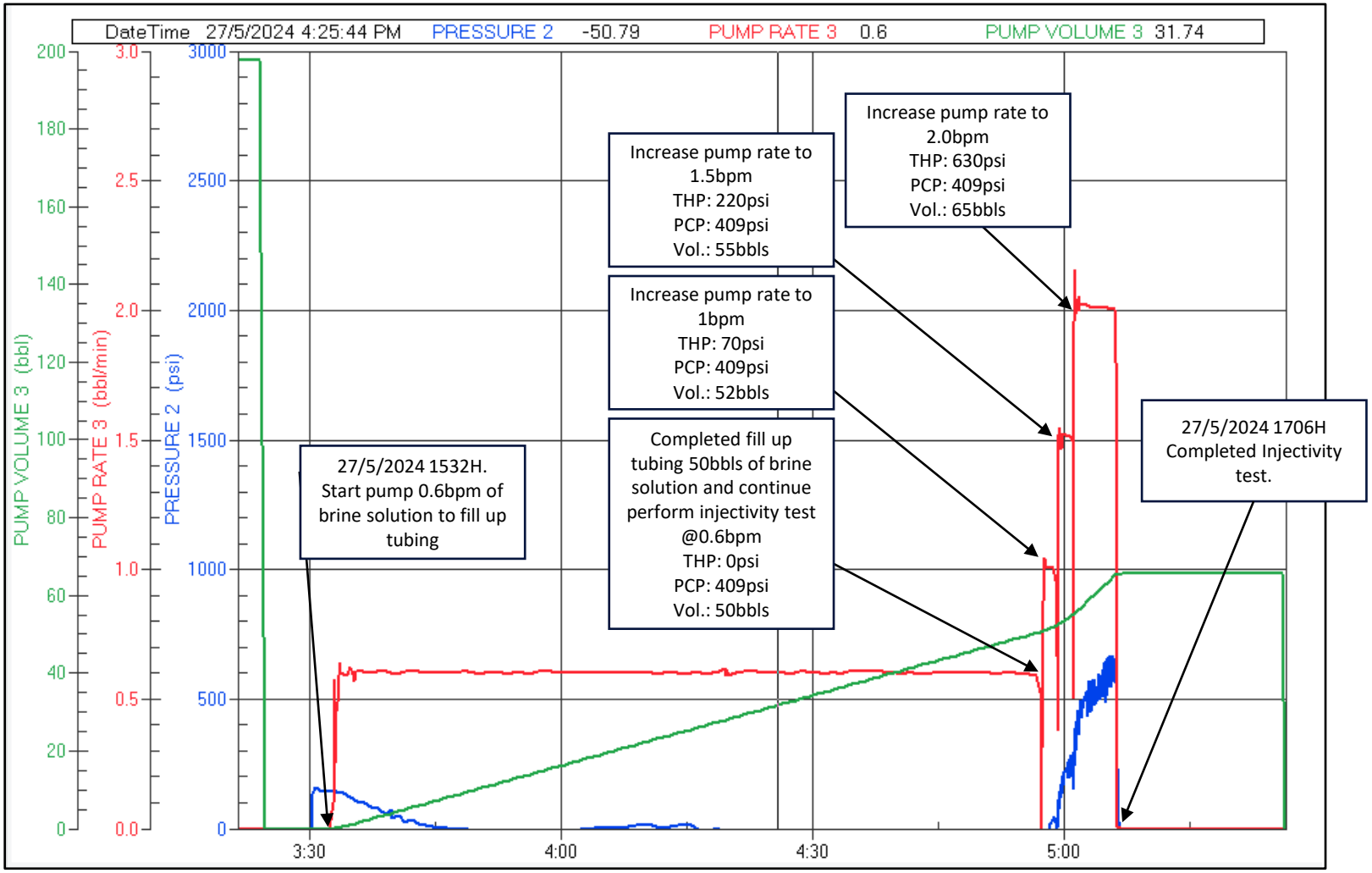
Job Analysis – Bullheading #4 Operation – Flowback Data Acid Stimulation for Zone E14B

No	Date	Time	Choke Size	pH	PCP kPa	FTHP kPa	Temp (degC)
1	25-May-24	2000H	100%	3	5000	1108	46
2	25-May-24	2100H	100%	4	5000	1172	48
3	25-May-24	2200H	100%	4	5500	1173	48
4	25-May-24	2300H	100%	5	4800	1177	45
5	26-May-24	0100H	100%	5	4800	1174	49
6	26-May-24	0300H	100%	5	4800	1176	47
7	26-May-24	0500H	100%	5	4800	1173	49
8	26-May-24	0700H	100%	5	4800	1187	50
9	26-May-24	0900H	100%	5	4800	1196	49
10	26-May-24	1100H	100%	5	4800	1230	50
11	26-May-24	1300H	100%	5	4800	1232	50
12	26-May-24	1500H	100%	5	4800	1238	51

Job Analysis – Bullheading #4 Operation – Flowback Data Acid Stimulation for Zone E14B

Date and Time	Event
25-May-24 15:07	Opened the well at 32/64” choke. Brine and diesel was observed on surface with pH 4.
25-May-24 15:18	Choke was adjusted from 32/64” to 64/64”
25-May-24 17:35	Received the pH 3 and began to inject soda ash. No emulsion was observed.
25-May-24 23:00	Soda ash was then stopped as the flowback pH reached 5
26-May-24 09:27	100% crude was obtained with pH 5 with no emulsion. The sample turned to solid wax after being exposed to surface temperature.  
26-May-24 14:02	Set up the flowback to flow through Multiphase Flowmeter (MPFM) to perform well test data. The well test data with 64/64” is then completed after 4 hours of monitoring and recording.

Job Analysis – Bullheading #5 Operation – Injectivity Test Prior Acid Stimulation Zone E11A & E12B

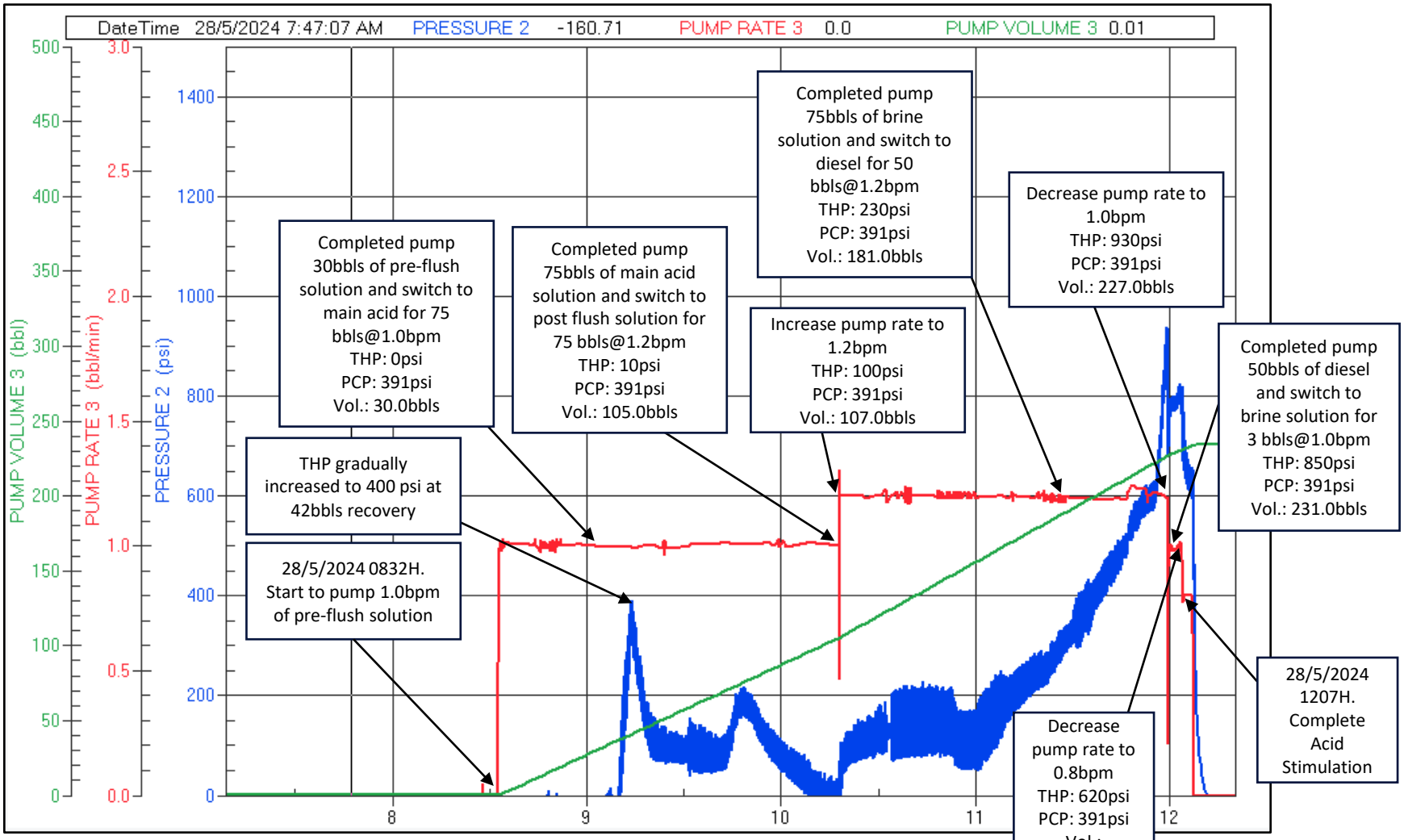


Job Analysis – Bullheading #5 Operation – Injectivity Test Prior Acid Stimulation Zone E11A & E12B

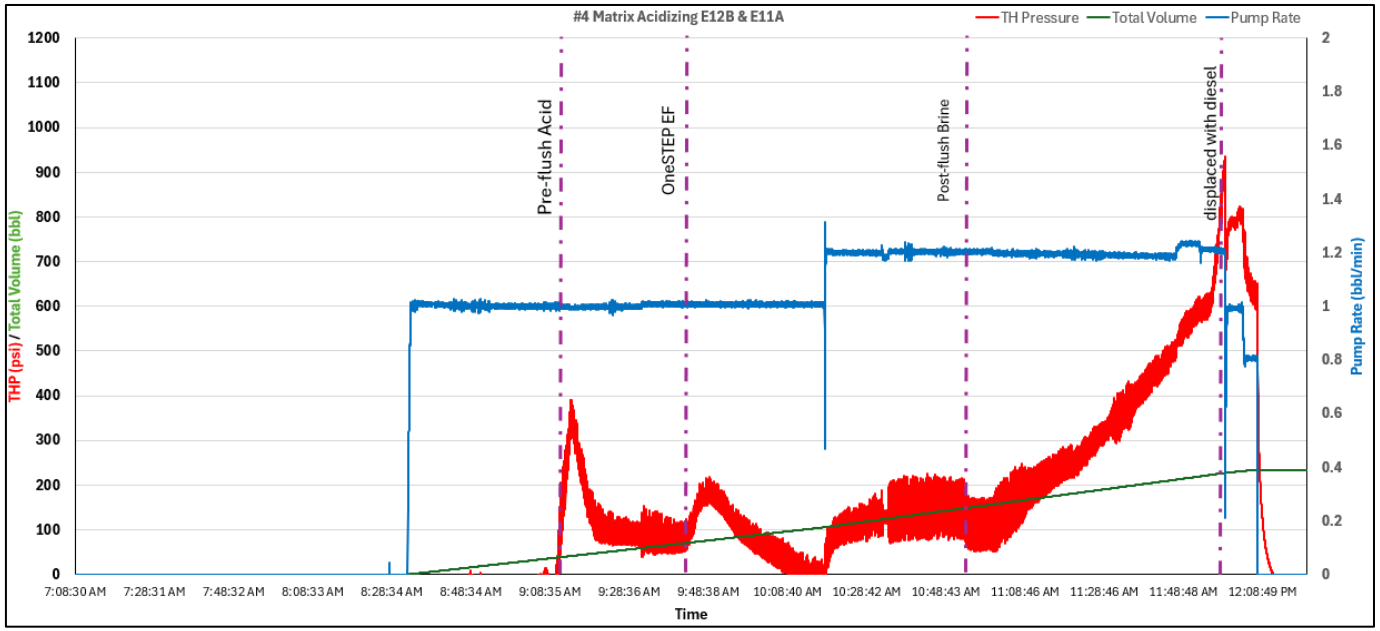
FILL UP COMPLETION TUBING 50BBLS					
TIME (min)	PUMP PRESS (psi)	RATE (bpm)	VOLUME (bbls)	THP (psi)	PCP (psi)
15:32	200	0.6	0.6	147	406
15:44	50	0.6	8.2	0	406
16:10	50	0.6	22.5	10	406
16:21	50	0.6	30.5	0	406
16:56	50	0.6	50	0	406

INJECTIVITY TEST					
RATE (bpm)	PUMP PRESS(psi)	TIME(min)	VOLUME (bbls)	THP (psi)	PCP (psi)
0.6	50	1	50	0	409
1	120	1	52	70	409
1.5	350	2	55	220	409
2	750	6	65	630	409

Job Analysis – Bullheading #6 Operation – Acid Stimulation for Zone E11A & E12B



Job Analysis – Bullheading #6 Operation – Acid Stimulation for Zone E11A & E12B



- As the 10% Acetic Acid enters the formation, the pressure was observed to pick up and then drop. This pressure increase could be due to rust or particles inside wellbore that was carried into the gravel pack or perforation. However, the acetic acid managed to dissolve most of the particles, which is indicated by the pressure drop while the acid entered the formation.
- A small pressure increase was observed as OneSTEP EF enters the formation. Then the pressure was dropping from 200 psi to below 50 psi which showing OneSTEP is working on removing the fines migration damage.
- When the Post-flush brine enters the formation, the THP begins to increase gradually due to the changes in the hydrostatic and increase in friction pressure.

Job Analysis – Bullheading #6 Operation – Acid Stimulation for Zone E11A & E12B

PUMPING PARAMETER E-11A & E12B					
TIME (min)	PUMP PRESS(psi)	VOLUME (bbls)	PCP (psi)	THP (psi)	REMARK
8:32	50	1	391	0	Start pump 1bpm gradually of Pre-Flush
9:03	120	30	391	0	Completed for 30bbls of Pre Fush & switch to Main Acid for 75bbls
9:10	200	37	391	50	THP start icreased gradually to 400psi at 42bbls recovery.
10:17	100	105	391	10	Completed for 75bbls of Main Acid & switch to Post-Flush for 75bbls
10:19	220	107	391	100	Increased pump rate to 1.2bpm.
11:21	350	181	391	230	Completed for 75bbls of Brine & switch to Diesel for 50bbls
11:59	1100	227	391	930	Decreased pumping rate to 1 bpm.
12:03	1000	231	391	850	Completed for 50bbls of Diesel & switch to Brine for 3 bbls
12:04	800	232	391	620	Decreased pumping rate to 0.8 bpm.
12:07	0	234	391	0	Completed surface displacement. Stop pumping.

Job Analysis – Bullheading #6 Operation – Flowback Data Acid Stimulation for Zone E11A & E12B

No	Date	Time	Choke Size	pH	PCP kPa	FTHP kPa	Temp (degC)
1	28-May-24	1830H	75%	3	5500	1256	55
2	28-May-24	1930H	75%	3	5500	1296	56
3	28-May-24	2000H	50%	4	5300	1300	55
4	28-May-24	2100H	50%	4	5200	1304	53
5	28-May-24	2200H	50%	4	5200	1324	52
6	28-May-24	2300H	50%	4	5200	1295	53
7	29-May-24	0000H	50%	4	5100	1316	50
8	29-May-24	0100H	50%	5	5100	1314	52
9	29-May-24	0200H	50%	6	5000	1289	52
10	29-May-24	0400H	50%	6	4900	1285	51
11	29-May-24	0600H	50%	6	4900	1262	50
12	29-May-24	0800H	50%	6	4900	1301	50
13	29-May-24	1000H	50%	6	4900	1285	50

Job Analysis – Bullheading #6 Operation – Fowback Data Acid Stimulation for Zone E11A & E12B

Date and Time	Event
28-May-24 14:03	Opened the well at 64/64” choke. Brine and diesel was observed on surface with pH 4.
28-May-24 16:35	Received the pH 3 and began to inject soda ash.
28-May-24 17:00	Production choke down to 48/64”
28-May-24 20:00	Production choke down to 32/64” due to D-Bravo unable to control the water produced
28-May-24 22:00	Still injecting soda ash as the pH received is still 4 

Job Analysis – Bullheading #6 Operation – Fowback Data Acid Stimulation for Zone E11A & E12B

Date and Time	Event
29-May-24 00:00	Still injecting soda ash as the pH received is still 4 
29-May-24 02;00	Stop soda ash injection as the pH increased to 6 and crude oil is obtained. 

Job Analysis – Bullheading #6 Operation – Fowback Data Acid Stimulation for Zone E11A & E12B

Date and Time	Event
29-May-24 10;00	Return sample with pH 6 and water cut 30%. No emulsions was observed. Set up the flowback to flow through Multiphase Flowmeter (MPFM) to perform well test data. The well test data with choke 32/64” is then completed after 4 hours of monitoring and recording. 

Lowlights and Highlights

HIGHLIGHTS

- Completed Bullheading Dulang D02 intervention without any LTI recorded.
- Job met objective removing the fines and migratory clays damage on three different zones. The well is able to flow with increase in oil production & reduction in water cut.

LOWLIGHTS

- Limited space on the deck, we are not able to employ an extra vertical tank to store diesel for the acid stimulation activity required for this operation.

Conclusion

Dimension Bid has successfully completed matrix acidizing operation for well Dulang D-02;

- The Dulang D-02 Matrix Stimulation Treatment with **OneSTEP EF** was successfully carried out as per planned with zero HSE incidents.
- When the main acid and pre-flush acid reached the formation, a good THP pressure response was observed, indicating that the acid interacted to remove the formation clays and calcite. Furthermore, observed that there is increment on the well oil production rate.
- The slickline run-in-hole to retrieve No-Go plug and begins to flowback the well with choke size of 64" through MPFM to commingle zone and the well test result are as follows:

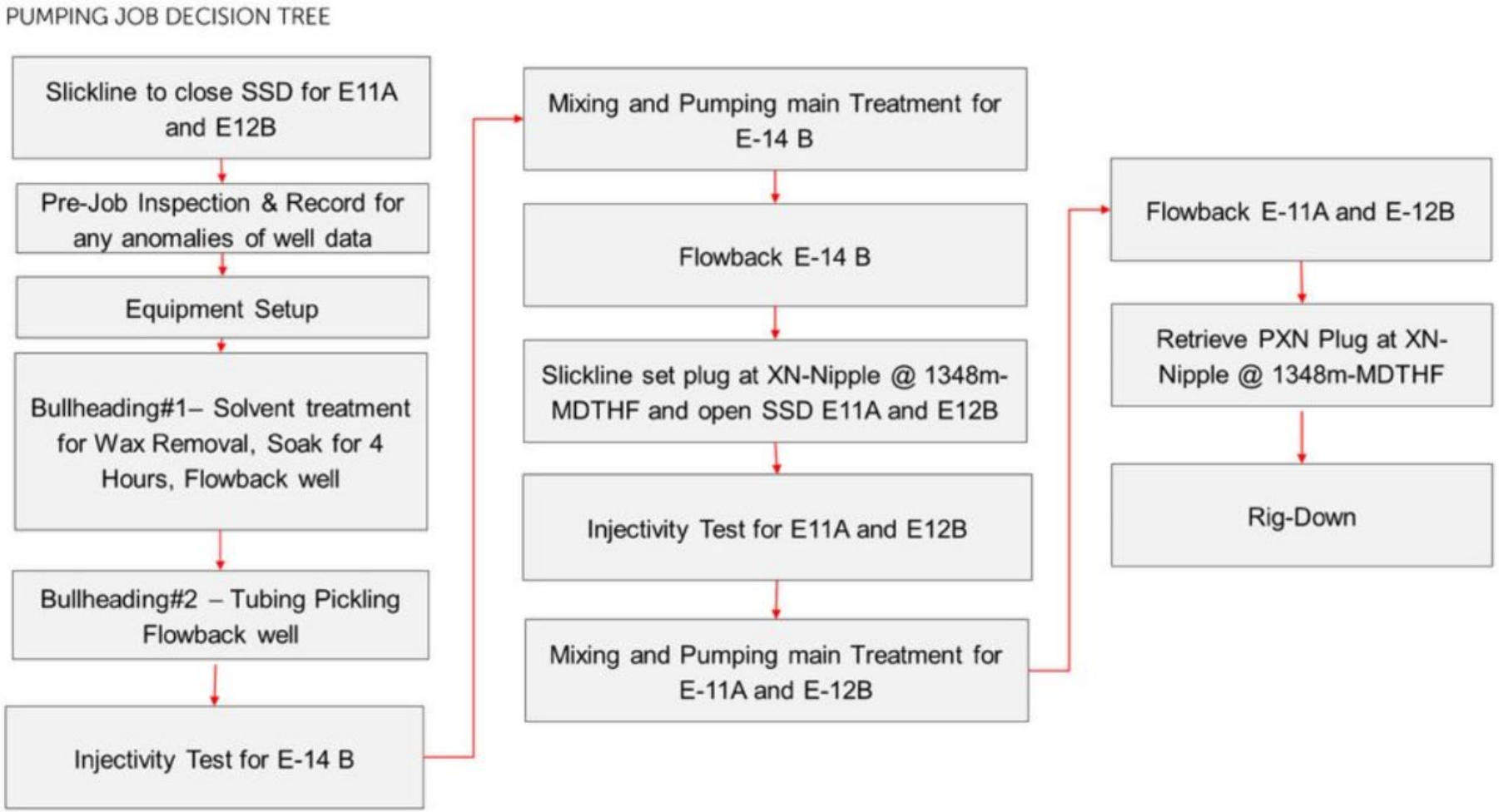
Choke (/64")	FTHP (kPag)	PCP (psi)	Gas Lift Pressure (psi)	Water Rate (BPD)	Oil Rate (BPD)	Water Cut (%)
64/64	203	725	1174.8	103	813.5	11.01

- Liquid rate gain & water cut reduction as per below:

Liquid Rate (bbl/day) (April 2024)	Liquid Rate (bbl/day) (June 2024)
103	**800**

Water Cut (April 2024)	Water Cut (June 2024)
20%	**11%**

Pumping Job Decision Tree



Thank you for your passion!