

<b>Title</b>	Maintenance – Coiled Tubing Equipment					
<b>Target Population</b>	Field Engineers, Field Specialists & Equipment Operators					
This requirement is applicable to:	✓	JFE	✓	FST	✓	EOT
	✓	FE1	✓	FS1	✓	EO1
		FE2		FS2	✓	EO2
				FS3	✓	EO3
					✓	GEO

**Objective:**

The objective of this task is to evaluate and verify the employee’s competency in performing basic maintenance on Coil Tubing Unit under supervision including:

Description		JFE	FE1	FST	FS1	EOT	EO1	EO2	EO3	GEO
1	Batch Mixer	✓		✓		✓	✓			✓
2	Fluid Pumping Unit	✓		✓			✓	✓		✓
3	Nitrogen Converter	✓	✓		✓			✓	✓	✓
4	Coiled Tubing Unit including:	✓	✓		✓				✓	✓
	<i>Power Pack</i>									
	<i>Control Cabin</i>									
	<i>CT Reel</i>									
	<i>Injector Head</i>									
	<i>Pressure Control Equipment</i>			✓						
5	Basic BHA Components	✓	✓	✓				✓	✓	✓

The employee should be able to identify the components of CT equipment including those found in hydraulic circuits, explain their functions, ratings and maintenance procedures. This include filling out the EMC 1 form.

He should have basic knowledge of hydraulics including the various components and principles of operations.

**Tasks:**

The employee will be assigned under an experienced mechanic / electrician or a mentor in the base to guide him in performing the maintenance tasks. This include tracing of the hydraulic lines by referring to Operation and Maintenance Manual.

1. Identify the main components and functions of CTU (i.e. injector head, CT reel, stripper, BOP etc.)
2. Identify main components and functions of basic BHA
3. Physically check the CTU components and fill out the EMC 1 form.
4. Assist in assembly and disassembly of the following components (whenever possible):
  - Injector head conversion. Identify each parts.

- Reel swivel maintenance. Identify each parts.
  - Stripper (replace inserts/brass bushing). Identify each parts.
  - BOP conversion/replacing inserts including function and pressure testing. Identify each parts.
  - Downhole tools (connectors, check valves, nozzles)
5. Show and explain the hydraulics system of the CT unit.
  6. Prepare a report for the activities and explain it to the assigned mentor

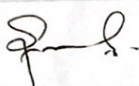
**IMPORTANT NOTE:** The assigned Assessor must conduct the required evaluation to evaluate employee's competency and provide feedback through the respective Task Evaluation Forms PRIOR TO completing this Task Sheet.

This task is deemed INCOMPLETE without the Task Evaluation Forms


**Brief summary of employee's learning outcome (to be completed by Assessor):**

- 1 - ABLE TO OPERATE BATCH MIXER
- 2 - ABLE TO TROUBLESHOOT BASIC PART OF THE BATCH MIXER .
- 3 - ABLE TO PERFORM BASIC MAINTENANCE ON BATCH MIXER .

Assessor's Comments & Recommendation:  
 HAZIQ IS A WORKER WITH GOOD DISCIPLINE. HE QUICKLY UNDERSTOOD WHAT WAS TAUGHT TO HIM, ESPECIALLY HOW TO OPERATE AND TROUBLESHOOT ON BATCH MIXER. EVERY TASK GIVEN IS COMPLETED PERFECTLY.

Signature		Assessment Date	26/02/2024
Name	YUSOF MUZAL	Position	MAINTENANCE SUPT.

FSM / OM Comments & Recommendation:  
 He is able to operate & troub perform maintenance under minimum supervision.

Signature		Assessment Date	26/2/24
Name	M. KHAIRUL RIDHWAN AZIZI CTS FIELD SERVICE MANAGER Dimension Bid (M) Sdn Bhd	Position	

# TASK EVALUATION FOR BASIC MAINTENANCE

(ref. CTS-FORM-93 BASIC MAINTENANCE)

NAME	MUHAMMAD ABDUL HAZIQ BIN MOHD NOR
EMPLOYMENT DATE	27/3/2022
PERFORMANCE CRITERIA	<ol style="list-style-type: none"> <li><b>Equipment design, technical specification, components and functions:</b> Know and understand equipment design, technical specifications, components and functions</li> <li><b>Equipment operation:</b> Able to operate the equipment</li> <li><b>Equipment maintenance / care:</b> Able to perform equipment recommended care / maintenance</li> <li><b>Equipment maintenance report:</b> Able to track on all required equipment data prior to plan for next maintenance</li> <li><b>Maintenance analysis:</b> Able to analyse equipment problem based on problem report and EMC. Hence, to identify root cause and best practice to avoid the same problem from happen</li> </ol>


## ASSESSMENT RESULT SUMMARY

Element of Competency	Score	Assessed By	Assessment Date	
1. Batch Mixer	88%			
2. Fluid Pumping Unit	/			
3. Nitrogen Converter				
4. Coiled Tubing Unit				
4.1 Power Pack				
4.2 Control Cabin				
4.3 CT Reel				
4.4 Injector Head		N/A		
4.5.1 Pressure Control Equipment (Stripper)				
4.5.2 Pressure Control Equipment (SBOP)				
4.5.3 Pressure Control Equipment (Combi BOP)				
5. Maintenance Reporting				

**Important Note:** The minimum passing score is 80%. If the score falls below the minimum passing score, the employee must repeat the assessment

Assessor's Comments & Recommendation (COMPULSORY):

Candidate has shown skill in his work especially to operate batch mixer.

Signature		Assessment Date	23/05/24
Name	TAUFIQ	Position	CJ. SUPERVISOR

12/30/24

# 1. BATCH MIXER

THEORY	COMMENT
1. Identify the Batch Mixer and explain its functions	10
2. Show where the following components of Batch Mixer Power Pack and explain the function	
i. Engine component	8
ii. Hydraulic line	7
iii. Parameter on control panel	10
iv. Zone 2 system	8
3. Show where the following components of Batch Mixer Tank and explain the function	
i. C-Pump	8
ii. Agitator	10
iii. Actuator Valve	10
iv. Butterfly Valve	10
v. Volute	8
vi. Jetting	8
4. How did you rig up hydraulic hose from BMX Power Pack to Tank?	9
5. How did you rig up 4" line?	9
6. What should you check BEFORE start the Batch Mixer Power Pack?	9
7. What should you check and monitor during operating the Batch Mixer Power Pack?	9
8. What is the safety precaution during operating the Batch Mixer Power Pack?	8
9. What should you check BEFORE stop the Batch Mixer Power Pack?	8
10. What should you check BEFORE start the Batch Mixer Tank?	8
11. What should you check and monitor during operating the Batch Mixer Tank?	9
12. What is the safety precaution during operating the Batch Mixer Power Pack?	9
13. What should you check BEFORE stop the Batch Mixer Tank?	9
<b>PRACTICAL</b>	
1. Show how to carry out following basic maintenance	8
i. Check coolant level	
ii. Replace fan and alternator belt	
iii. Replace engine oil filter	
iv. Check battery voltage	
v. Clean crankcase vent breather	
vi. Clean exhaust cooler (pyroban)	
vii. Change transmission oil	
viii. Change fuel filter	
ix. Replace air filter	
x. Clean flame trap	
xi. Grease bearing	
xii. Redress c-pump	

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

# TASK EVALUATION FOR BASIC MAINTENANCE

(ref. CTS-FORM-93 BASIC MAINTENANCE)

NAME	MUHAMMAD ABDUL WAHID BIN MOHD NOR
EMPLOYMENT DATE	27/3/2022
PERFORMANCE CRITERIA	<ol style="list-style-type: none"> <li><b>Equipment design, technical specification, components and functions:</b> Know and understand equipment design, technical specifications, components and functions</li> <li><b>Equipment operation:</b> Able to operate the equipment</li> <li><b>Equipment maintenance / care:</b> Able to perform equipment recommended care / maintenance</li> <li><b>Equipment maintenance report:</b> Able to track on all required equipment data prior to plan for next maintenance</li> <li><b>Maintenance analysis:</b> Able to analyse equipment problem based on problem report and EMC. Hence, to identify root cause and best practice to avoid the same problem from happen</li> </ol>


## ASSESSMENT RESULT SUMMARY

Element of Competency	Score	Assessed By	Assessment Date	
1. Batch Mixer	89%		23/05/24	
2. Fluid Pumping Unit	NA			
3. Nitrogen Converter				
4. Coiled Tubing Unit				
4.1 Power Pack				
4.2 Control Cabin				
4.3 CT Reel				
4.4 Injector Head				
4.5.1 Pressure Control Equipment (Stripper)				
4.5.2 Pressure Control Equipment (SBOP)				
4.5.3 Pressure Control Equipment (Combi BOP)				
5. Maintenance Reporting				

**Important Note:** The minimum passing score is 80%. If the score falls below the minimum passing score, the employee must repeat the assessment

Assessor's Comments & Recommendation (COMPULSORY):

CANDIDATE SHOWS DEEP INTEREST AND UNDERSTANDING OF WHAT IS BEING DONE.

Signature		Assessment Date	23/07/24
Name	YURY ANWA	Position	MS

THEORY

1.

Identify




# TASK EVALUATION FOR BASIC MAINTENANCE

(ref. CTS-FORM-93 BASIC MAINTENANCE)

NAME	MUHAMMAD ABDUL HAZIQ BIN MOHD NOR
EMPLOYMENT DATE	27/3/2022
PERFORMANCE CRITERIA	<ol style="list-style-type: none"> <li><b>Equipment design, technical specification, components and functions:</b> Know and understand equipment design, technical specifications, components and functions</li> <li><b>Equipment operation:</b> Able to operate the equipment</li> <li><b>Equipment maintenance / care:</b> Able to perform equipment recommended care / maintenance</li> <li><b>Equipment maintenance report:</b> Able to track on all required equipment data prior to plan for next maintenance</li> <li><b>Maintenance analysis:</b> Able to analyse equipment problem based on problem report and EMC. Hence, to identify root cause and best practice to avoid the same problem from happen</li> </ol>


## ASSESSMENT RESULT SUMMARY

Element of Competency	Score	Assessed By	Assessment Date
1. Batch Mixer	87%	<i>[Signature]</i>	23/5/24
2. Fluid Pumping Unit			
3. Nitrogen Converter			
4. Coiled Tubing Unit			
4.1 Power Pack			
4.2 Control Cabin		NA	
4.3 CT Reel			
4.4 Injector Head			
4.5.1 Pressure Control Equipment (Stripper)			
4.5.2 Pressure Control Equipment (SBOP)			
4.5.3 Pressure Control Equipment (Combi BOP)			
5. Maintenance Reporting			

**Important Note:** The minimum passing score is 80%. If the score falls below the minimum passing score, the employee must repeat the assessment

Assessor's Comments & Recommendation (COMPULSORY):

~~She~~ Candidate had demonstrate a good practice as standalone Bmx operator.  
He

Signature		Assessment Date	23/5/24
Name	Fidhwan Arizan	Position	FSM

THEORY

1.

Identify the -

2.

St

*BMX operator*

## 1. BATCH MIXER

THEORY	COMMENT
1. Identify the Batch Mixer and explain its functions	10
2. Show where the following components of Batch Mixer Power Pack and explain the function	
i. Engine component	8
ii. Hydraulic line	7
iii. Parameter on control panel	10
iv. Zone 2 system	8
3. Show where the following components of Batch Mixer Tank and explain the function	
i. C-Pump	8
ii. Agitator	10
iii. Actuator Valve	10
iv. Butterfly Valve	10
v. Volute	8
vi. Jetting	8
4. How did you rig up hydraulic hose from BMX Power Pack to Tank?	9
5. How did you rig up 4" line?	9
6. What should you check BEFORE start the Batch Mixer Power Pack?	9
7. What should you check and monitor during operating the Batch Mixer Power Pack?	9
8. What is the safety precaution during operating the Batch Mixer Power Pack?	8
9. What should you check BEFORE stop the Batch Mixer Power Pack?	8
10. What should you check BEFORE start the Batch Mixer Tank?	8
11. What should you check and monitor during operating the Batch Mixer Tank?	9
12. What is the safety precaution during operating the Batch Mixer Power Pack?	9
13. What should you check BEFORE stop the Batch Mixer Tank?	9
<b>PRACTICAL</b>	
1. Show how to carry out following basic maintenance	
i. Check coolant level	
ii. Replace fan and alternator belt	
iii. Replace engine oil filter	
iv. Check battery voltage	
v. Clean crankcase vent breather	
vi. Clean exhaust cooler (pyroban)	
vii. Change transmission oil	
viii. Change fuel filter	
ix. Replace air filter	
x. Clean flame trap	
xi. Grease bearing	
xii. Redress c-pump	8

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