



Australian Government

RIINHB326 Conduct coil tube drilling

Release: 1

RIINHB326 Conduct coil tube drilling

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 5.0.

Application

This unit describes the skills and knowledge required to conduct coil tubing in drilling. It prepares individuals to install and remove storage reel, trip out with coil tubing and slip and cut coil tubing-grinder/rod cutter.

It applies to those working in operational roles. They generally perform tasks involving a broad range of skilled applications in a wide variety of contexts, which may involve some discretion and judgement in selecting equipment, services and contingency measures.

Licensing, legislative and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Users must check requirements with relevant body before applying the unit.

Unit Sector

Drilling

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare for coiled tubing	1.1 Obtain, confirm and apply work instructions 1.2 Access, interpret and apply coil tube drilling documentation and confirm work activity is compliant 1.3 Identify and minimise environmental issues and potential hazards, and assess and address risks within scope of own role and according to workplace procedures 1.4 Select and wear personal protective equipment required for work activities 1.5 Communicate with other personnel at site according to work requirements and confirm briefings and handover details are

ELEMENT	PERFORMANCE CRITERIA
	communicated and received 1.5 Select equipment, tools and equipment required to carry out tasks, check for serviceability and rectify or report any faults within scope of own role 1.6 Check restraining devices on all pressure hoses 1.7 Fit and replace restraining devices on pressure hoses as required 1.8 Raise alarm and report as required
2. Install storage reel	2.1 Position the crane hook to the centre of the storage reel 2.2 Hoist the storage reel over the centre of the carrier and lower into saddles 2.3 Lock down the storage reel with retainer brackets and set tension screws 2.4 Install circulating equipment
3. Remove storage reel	3.1 Remove mud tank side hoses, swivel and cross over 3.2 Line up saddles and cut excess coil tubing on rig floor with casing cutter 3.3 Align saddles to remove storage reel 3.4 Install dog nut and chain coil 3.5 Cut coil tubing according to manufacturer and work requirements 3.6 Open level wind box, shut off the motor and lockout rig and open storage reel saddles 3.7 Remove the lockout and prepare to pick up the coil 3.8 Measure amount of coil cut and record remaining length
4. Install tubing snake connector	4.1 Prepare coil tubing ends 4.2 Conduct NDT crack test on the tubing stake connector 4.3 Check the o-rings for die retention are not stretched out 4.4 Separate the two-piece tubing snake connector in the middle at the threads 4.5 Size, install and tighten threaded half of tubing snake connector into the tail end of the coil tubing on the storage reel 4.6 Size, install and tighten threaded half of tubing snake connector into tail end of coil tubing on the injector side 4.7 Align tubing connector up and screw two tubing stake connector pieces together at centre threads 4.8 Perform and pull test on the tubing snake and confirm that the connector is locked in prior to removing chains
5. Handle tubing snake	5.1 Inspect derrick and rig floor for equipment

ELEMENT	PERFORMANCE CRITERIA
connector	5.2 Raise derrick until injector coil tubing end and storage reel coil tubing line up 5.3 Check the integrity of the tubing stake connection by performing a pull test 5.4 Lock out floor motor according to manufacturer requirements 5.5 Remove storage reel retention chain and dog nut 5.6 Remove lock from the floor motor 5.7 Engage storage reel while maintaining the correct pressure 5.8 Run coil with tubing stake connector through injector making cuts until the tubing snake connector is completely through the injector
6. Install set screw tubing dimple	6.1 Prepare coil tubing ends with a grinder 6.2 Install the dimple template 6.3 Tighten all set screws on the dimple template 6.4 Loosen screws and remove template 6.5 Deepen the template indents with a drill to dimple screw depth 6.6 Install the tubing dimple and dimple set screws according to manufacturer requirements
7. Conduct bottom hole assembly operations	7.1 Prepare subs for use 7.2 Place float on bit and install bit sub onto bit 7.3 Run drill collar up v-door and pick up with top drive and elevators 7.4 Stab drill collar in bit sub and make up drill collar into bit sub 7.5 Pick up sub and position where needed for stabbing into stump 7.6 Stab the tubing dimple into the bottom hole assembly on the stump 7.7 Apply make up tong to dimple while rotating table to make up BHA 7.8 Apply breakout tong to dimple and make up to BHA while torqueing up BHA
8. Tripping in with coil tubing	8.1 Set bottom hole assembly depths at rotary Kelly bushing before lowering the lube tube 8.2 Confirm lube tube is down and air bag inflated on flow T 8.3 Confirm stripping head is deflated 8.4 Confirm the reel drag is set to no higher than 1000 psi 8.5 Set the traction pressure on the injector as low as possible without coil tubing slippage 8.6 Verify the trip speed with the Rig Manager

ELEMENT	PERFORMANCE CRITERIA
	8.7 Verify level wind is continuously in line with coil tubing, depths are tracking correctly and conduct flow checks at the shaker box
9. Tripping out with coil tubing	9.1 Grease and inspect injector as per industry standards 9.2 Check the air bag on flow T is still inflated 9.3 Verify stripper rubber on the injector is inflated to the correct pressure, level wind is continuously in line with coil tubing and all depths are tracking at all times 9.4 Verify the trip speed with the Rig Manger 9.5 Lift the lube tube when bottom hole assembly reaches 75 metres prior to pulling out of hole 9.6 Conduct flow checks at specified intervals
10. Slip and cut coil tubing-grinder/rod cutter	10.1 Place tubing dimple at the desired working height 10.2 Place the hole cover in position 10.3 Remove tubing dimple 10.4 Run coil tubing through table to correct working height in cellar 10.5 Cut coil tubing with grinder/rod cutter 10.6 Remove with double wrapping sling and wire line 10.7 Lay down through v door

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Reading	Identifies and interprets information from workplace and documentation
Oral Communication	Uses verbal communication techniques to communicate with others

Unit Mapping Information

New unit

Links

Companion Volume implementation guides is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIINHB326 Conduct coil tube drilling

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 5.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- conduct coiled tube drilling on at least two occasions, including:
 - using the following equipment:
 - coil tubing (diameter 1,200 – 2,200 metres)
 - storage reel
 - mud motor
 - dop drive
 - injector
 - level wind
 - in-coder
 - storage reel
 - spool coil
 - tubing snake connector
 - tubing dimple
 - saddles
 - lube tube
 - interpreting information from the weight indicator
 - measuring line string components and calculates hole depth
 - disassembling, describing the function of and inspecting components, replacing unserviceable parts and reassembling a bottom hole assembly.

During the above, the candidate must:

- locate and apply required documentation, policies and procedures
- work with others to conduct coil tube drilling that meets required outcomes, including:
 - using a range of communication techniques and strategies to communicate and coordinate information and activity to others

- communicating the hazards of cuttings in the return air stream to all crew members.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- key policies, procedures and established requirements for conducting coil tube drilling, including those for:
 - emergencies
 - work health and safety
 - environmental requirements
 - safe equipment operation
 - identifying faults with, performing maintenance on and cleaning equipment
 - monitoring hole for returns, cutting and sample quality
 - limiting the contamination of samples, cuttings and returns
 - identifying problems related to inaccurate measurement of bits and other related components
 - housekeeping
- the critical need to hoist storage reel over the centre of the carrier correctly
- bit selection methods for different types of drilling and different ground conditions
- the role that blockages play in affecting sample quality
- the critical need for restraining devices to be fitted to all pressure delivery hoses and sample delivery hoses (if used), the devices available and their methods of attachment
- the importance of checking gauges and monitoring pressures, flow rates and temperatures.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - personal protective equipment
 - equipment required to conduct coiled tubing
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the RII implementation guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume implementation guides is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>