

QHSE MANAGEMENT SYSTEM RESOURCE PLANT AND EQUIPMENT RISK ASSESSMENT (P&E RA)

DOCUMENT NUMBER
HSE-LP--P&E RA-V1.0

P&E Description & Location/s Used:	TEC Cable Pneumatic Spooling Unit - Asset Tag #03-06	Assessment No:	20180528	Rev:	1.1
		Date:	28-May-20		
References used for this assessment: (Inc. Legal obligations)	<ul style="list-style-type: none"> WHS Act & Regulation 2011 Managing the risk of Plant Code of Practice 2013 Transport Operations (Road Use Management – Vehicle Standards & Safety) Regulation 2010 Generic Site Layout 	Assessment Team:	J. Hollingworth / G. Humphreys		
		Company / Dept.:	Huracan - Reservoir Monitoring		
		Frequency of Activity:	Daily		
		Persons Affected:	Gauge Installation Crew / Rig Crew		

RELEVANT LEGISLATION / STANDARDS & PLANT DOCUMENTATION		COMMENTS
Is plant required to be registered?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
Is a user license required?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
Are operator's manuals accessible?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Is this a restricted use item?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
Does this item require safe use documents/test?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
Does this item require a Plant Maintenance Book?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
Is this item subject to prescribed obligations in relation to weight?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	(Weight of P&E is 700kg, 2200 kg fully cable drum)

Hazards Inspected		Risk Description	Risk Score	Control Measures	Person to Apply	Person to Monitor	Residual Risk
ENTANGLEMENT Can anyone's hair, clothing, gloves, cleaning brushes, tools, rags or other materials become entangled with moving parts of the plant or materials?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Serious injury can occur if entanglement occurs in chain / sprocket	Low (C4)	Guards placed so that no access is available to chain / sprocket and air motor during operation.	Maintenance personnel to install guards.	Plant operator to ensure guards are installed prior to use	Low (E1)
IMPACT AND CUTTING INJURIES - Can anyone be crushed / cut / struck etc. due to:							
Material falling off the plant?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Uncontrolled / unexpected movement of plant/load?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Injury to person	Low (D2)	No personnel in area while cable is being run in hole. Exclusion area around spooler with authorised access only.	Plant Operator	Plant Operator	Neg (E2)



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Lack of capacity to slow, stop or immobilize plant?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Injury to person while under rig control	Med (B3)	No personnel in area while cable is being run in hole. Exclusion area around spooler with authorised access only.	Plant Operator / Rig Crew	Plant Operator	Low (E3)
The plant tipping or rolling over?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Parts of the plant disintegrating or collapsing?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Contact with moving parts during testing, inspection, operation, maintenance, cleaning or repair?	Y <input type="checkbox"/> N <input type="checkbox"/>	Injury to person from loose items	Med (B2)	1-Ensure guards are installed prior to testing of unit. 2-Competent maintenance personnel only. 3-No loose items of clothing while maintaining Chain / Sprocket or air motor.	Maintenance Personnel	Maintenance personnel / Operator to ensure guards are in place	Low (E2)
Being thrown off / under the plant?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Contact with sharp or flying objects? (e.g. work pieces being ejected)	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
The mobility of the plant?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Inappropriate parts and accessories being used?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Other	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
SHEARING Can anyone's body parts be sheared between two parts of plant, or between a part of the plant and a work piece or structure?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Serious injury to personnel operating equipment	Med (C4)	1-Guards installed to cover drum access. 2-Guard installed over chain and sprocket 3-Competent personnel operating machinery	Maintenance Personnel	Plant Operator	Neg (E1)
PRESSURISED CONTENT Can anyone come into contact with fluids or gases under high pressure, due to plant failure or misuse of the plant?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						

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ELECTRICITY - Can anyone be injured or burnt due to:							
Live electrical conductors? (e.g. exposed wires)	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Working in close proximity to electrical conductors?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	-		-			
Access to electricity?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Damaged or poorly maintained electrical leads, cables or switches?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Water near electrical equipment?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Lack of isolation procedures?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Other	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
ERGONOMICS - Can anyone be injured due to:							
Poorly designed workstation?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Repetitive body movement?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Constrained body posture or the need for excessive effort?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Design deficiency causing psychological stress?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Inadequate or poorly placed lighting?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Does the plant impact on the surrounding workplace and create potential hazards? (Consider safe access and egress from plant, workflow and design of the workplace)	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Injury to personnel from TEC cable breaking while under tension.	Low (C2)	1 -Exclusion zone between the unit and the rig during installation 2 -Unit self-spools when rig trips pipe in hole 3- Limited tension due to pneumatic system	Operator	Operator	Neg (E2)

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Is the location of the plant inappropriate? (Consider potential affects due to environmental conditions and terrain)	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Other	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
RADIATION Can anyone using the plant, or in the vicinity of the Plant suffer injury or illness due to exposure to radiation in the form of any of the following: <ul style="list-style-type: none"> infra-red radiation ultra violet light microwaves 	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
NOISE Can anyone using the plant, or in the vicinity of the plant, suffer injury due to exposure to noise?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
VIBRATION Can anyone be injured or suffer ill-health from exposure to vibration?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
FRICTION Can anyone be burnt due to contact with moving parts, materials or surfaces of the plant?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
SUFFOCATION Can anyone be suffocated due to lack of oxygen, or atmospheric contamination?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						



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Hazards Inspected		Risk Description	Risk Score	Control Measures	Person to Apply	Person to Monitor	Residual Risk
CONDITION							
Is a hazard likely due to the age and condition of the plant? (<i>Consider how hard the machine has been worked, and whether it is used constantly or rarely</i>).	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Can anyone be injured as a result of the plant not serviced appropriately and / or maintained in line with manufacturer's recommendations?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
SLIPS / TRIPS / FALLS - Can anyone using the plant, or in the vicinity of the plant, slip, trip or fall due to:							
Uneven, slippery or steep work surfaces?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Injury (slips / falls) adverse terrain on lease as equipment is operated from the ground	Med (A1)	Spot spooler on level ground and perform hazard ID around spooling area for trip hazards	Operator	Operator	Neg (D1)
Poor housekeeping, e.g. spillage in the vicinity?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Obstacles being placed in the vicinity of the plant?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Inappropriate or poorly maintained floor or walking surfaces (i.e. lack of a slip-resistant surface, unprotected holes, penetrations or gaps?)	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Use of work platforms, stairs or ladders?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Lack of guardrails or other suitable edge protection?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Other	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
FIRE AND EXPLOSION							
Can anyone be injured by fire?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						



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Can anyone be injured by explosion of gases, vapours, liquids, dusts, or other substances?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
TEMPERATURE / MOISTURE Can anyone come into contact with objects at high or low temperatures?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Can anyone suffer ill-health due to exposure to high or low temperatures?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Can anyone be injured or suffer ill-health due to exposure to moisture?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
OTHER - Can anyone be injured or suffer ill-health from exposure to:							
Chemicals?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Toxic gases or vapours?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Fumes / Dusts?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
Other? (please specify)	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>						
HUMAN MACHINE INTERFACE (HMI) – Can anyone be injured from:							
Can the equipment perform a cycle of movement with one touch button?	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>			<i>Shut-down method of inadvertent operation:</i>			
Is there any opportunity for the joy stick / lever to fail “on”?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Damage to cable from back spooling	Low (B1)	<i>Shut-down method after joystick/lever failure: Remove air from unit</i>	Operator	Operator	Neg (D1)
Operator of the equipment has full view of equipment movement?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>			<i>If not, demonstrate exclusion zone integrity prior to movement:</i>			

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Are exclusion zones required?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Injury to personnel from TEC cable breaking while under tension.	Low (C2)	<i>How are exclusion zones implemented?</i> <ul style="list-style-type: none"> - Crew to set physical exclusion zone between rig and spooler and around unit. <i>Can anyone be within exclusion zone without equipment isolated?</i> <ul style="list-style-type: none"> - Operator allowed within exclusion zone to operate equipment, use remote panel while using. 	Operator	Operator	Neg (E2)
Does this equipment require isolating i.e. for maintenance, shut-down etc.	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Injury if entanglement occurs while guards are off during maintenance	Med (C4)	<i>How is equipment isolated?</i> <ul style="list-style-type: none"> - Airline removed from system to isolate from air motor 	Maintenance Personnel	Maintenance Personnel	Neg (E1)
If appropriate, is an ESD fitted?	Y <input type="checkbox"/> N <input type="checkbox"/>			<i>Test ESD, is it clearly identified?</i>			

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NOTE: Using the Risk Matrix below, identify the Consequence & Probability of each risk occurring and enter the risk score in the Inherent column. Review the consequence, probability and risk score after appropriate controls have been agreed upon. Remember, the consequence does not change unless you eliminate the hazard, only the probability may change!

Consequence

HEALTH AND SAFETY	First Aid Injury (FAI)	Medical Treatment (MTI)	Lost time Injury (LTI)	Permanent Disability / Fatality	Fatalities (multiple)
FINANCIAL IMPACT	< \$20K	\$20K - \$200K	\$200K - \$2M	\$2M - \$20M	\$20M+
REPUTATION	Minimal impact on business reputation, land holder only	Some impact on business reputation, local community exposure	Moderate impact on business reputation, local media exposure	Significant impact on business reputation, national media exposure	Critical impact on reputation, international media exposure
ENVIRO.	Incident. No breach of regulations / EA. Minimal and short term impact to any local environment.	Minor breach of regulations / EA resulting in notification to regulator. Localised, short term, recoverable minor impact on flora and fauna	Serious breach of regulations / EA resulting in reporting to regulator, investigation, environment notice or fines. Significant localised but short term environmental impact	Major breach of legislation resulting in prosecution or litigation and regulatory intervention. Serious and long term ecological impact and environmental harm. Emergency Management activated.	Significant compliance breach resulting in prosecution / class action or loss of licence. Severe environmental harm with widespread or permanent Impact Crisis Management activated.

1. Insignificant

2. Minor

3. Moderate

4. Major

5. Catastrophic

Likelihood

A common event that is likely to occur in the industry many times per year	A. Highly Likely	Medium (A1)	Medium (A2)	High (A3)	Extreme (A4)	Extreme (A5)
An event likely to occur more than once a year in the industry	B. Likely	Low (B1)	Medium (B2)	Medium (B3)	High (B4)	Extreme (B5)
An event that may occur in the industry over 10 years	C. Possible	Low (C1)	Low (C2)	Medium (C3)	Medium (C4)	High (C5)
An event not likely to occur in the industry over 10 years	D. Unlikely	Negligible (D1)	Low (D2)	Low (D3)	Medium (D4)	Medium (D5)
An event that has not previously been experienced in the industry but may occur in exceptional circumstances	E. Remote	Negligible (E1)	Negligible (E2)	Low (E3)	Low (E4)	Medium (E5)

Hierarchy of Controls	Level 1 – Eliminate the Hazard	Level 2 – Substitute, Isolate & Engineer	Level 3 - Admin & PPE Controls
Reporting Requirements	Report Only – All Negligible Classifications	Investigate – All Low to Medium	TapRoot – High or above, or any Hi-Po



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