PETROKASS MAGAZINE

June 2023

KNOWLEDGE IS THE KEY OF SUCCESS

Monthly Magazine Published and Owned by PETROKASS Company

PETROKASS
Consultaion & Training

"PETROKASS Magazine is a Monthly Magazine Owned by PETROKASS Company Specialized in Petroleum Sector and Generalized in Management and New Technology This Magazine Created by you Containing Chaptered Topics and Information's with New Style and Published all over the World."

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Special Edition

ADVERTISING

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There is no doubt that the world of oil, gas and petroleum industries has become one of the most important areas that the whole world is preoccupied with and that there are great efforts for continuous development, along with serious research efforts for young researchers.

Therefore, we are pleased to present the first issue of **PETROKASS** magazine, which contains among its pages a number of articles, news and editorial presentations in various fields related to the world of the petroleum industry.

This Magazine included honest words to suit the generation of elders of science and its senior professors, the middle generation that seeks promotion and prepares for it, and the young generation of its employees, who the magazine's management was keen to Express their thoughts and allocate a corner for the hardworking and serious among them, in order to achieve the main goal of its issuance.

PETROKASS in words:

PETROKASS is a Specialized and Authorized Education and Consultancy Company established since 2010, providing a wide range of Training & Consultancy services within MENA and overseas in Different Field Industries and Specialized in Oil & Gas and Located in United Arab Emirates.

Our vision:

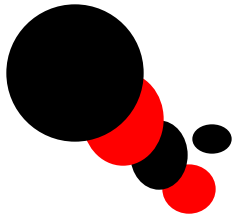
Business Market needs Special services in-which Serve the Potential and requirements Also Looking for an answer for the most Important Question, which how can we develop our Needs, PETROKASS Has the Answer for this its Unique Options and After Market Services.

Our Mission:

To provide the Business market with appropriate professional needs with Assuming the best works to companies *in the field*.

QHSSE

RISK ASSESMENT



- WHAT IS RISK ASSESMENT?

The risk assessment process is the overall process of analyzing and assessing the risks that can be identified through the following points: Identifying potential future events that can adversely affect people, property and the surrounding environment. They are then refuted and categorized to study and analyze each probability separately.

- What are the 5 steps of a risk assessment?

Decide who might be harmed and how. **Evaluate** the risks and decide on control measures. **Record** your findings and **implement** them. **Review** your assessment and

Risk Matrix

		Likelihood of Occurrence			
		Very Unlikely Little or no chance of occurrence	**Unlikely** A rare combination of factors would be required for an incident to result.	**Possible** Not certain to happen but an additional factor may result in an accident	**Probable** More likely to occur than not
Hazard Severity	**Minor** No or minor injury (first aid)	CARE	CARE	CARE	CAUTION
	Moderate Off-site medical treatment or DAFW*	CARE	CARE	CAUTION	ALERT
	Serious More than one DAFW, long-term absence	CARE	CAUTION	ALERT	STOP!
	Major Permanent disability or harm, fatality	CAUTION	ALERT	STOP!	STOP!

*DAFW – Day Away From Work

CARE	Minor harm possible, serious harm very unlikely to occur; implement controls and ensure care is taken when performing activity.
CAUTION	Minor harm probable, major harm unlikely to occur; follow all control measures, increased level of competence required and ongoing self-assessment of risks identified.
ALERT	Moderate degree of harm probable but major harm unlikely; critically assess the risks and appropriate controls. Specific competence required and ongoing assessment of risks by individual and/or supervisor.
STOP!	Serious or major harm will probably occur; stop the activity and critically assess the risks, review safety aspects of activity and implement further, appropriate controls. Consider referencing HSE or other Best Practice, consider involving HSS.

- Risk assessment – the overall process of hazard identification, risk analysis, and risk evaluation.
- Hazard identification – the process of finding, listing, and characterizing hazards.
- Risk analysis – a process for comprehending the nature of hazards and determining the level of risk.

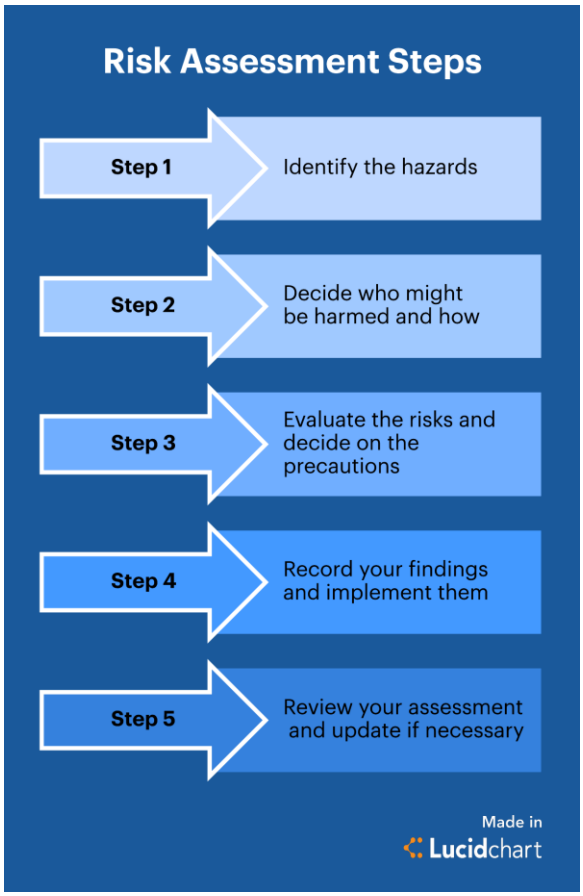
  Notes:

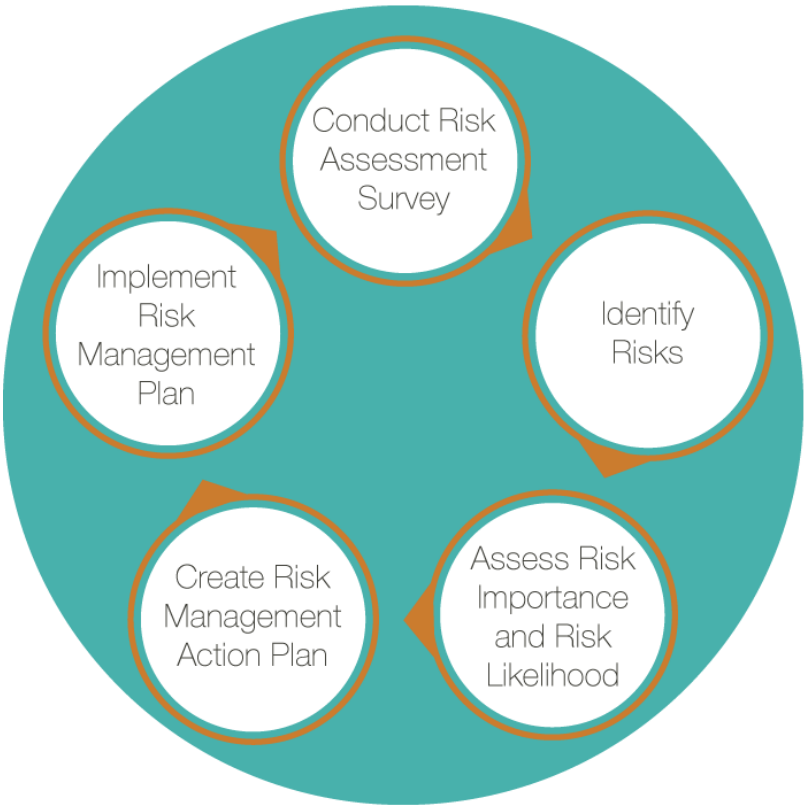
  (1) Risk analysis provides a basis for risk evaluation and decisions about risk control.

  (2) Information can include current and historical data, theoretical analysis, informed opinions, and the concerns of stakeholders.

  (3) Risk analysis includes risk estimation.
- Risk evaluation – the process of comparing an estimated risk against given risk criteria to determine the significance of the risk.
- Risk control – actions implementing risk evaluation decisions.

  Note: Risk control can involve monitoring, re-evaluation, and compliance with decisions.





UNIT CONVERSION TABLE

Value	Previous unit	Symbol	New unit	Symbol	Defining equation
Length	Ångström	Å	meter	m	1 Å = 10^{-10}m
Pressure	mm mercury	mm Hg	pascal	Pa	1 mm Hg = 133,3 Pa
Energy	Erg	erg	joule	J	1 erg = 10^{-7} J
Power	horsepower	PS	watt	W	1 PS = 735,5 W
Dynamic viscosity	Poise	P	pascal second	Pa · s	1 P = 0,1 Pa · s/1c P = 1 m Pa · s
Kinematic viscosity	Stokes	St	cm^2/s	–	1 St = 1 cm^2/s = 10^{-4} m^2/s
Impact value	kpm/cm^2	–	J/cm^2	–	1 kpm/cm^2 = 9,087 J/cm^2
Heat capacity	kcal/°C	–	J/K	–	1 kcal/°C = 4,187 · 10^3 J/K
Heat conductivity	kcal/m · h · °C	–	W/K · m	–	1 kcal/m · h °C = 1,163 W/K · m
Specific heat	kcal/kg · °C	–	J/kg · K	–	1 kcal/kg · °C = 4,187 · 10^3 J/kg · K
Magnetic field strength	Oersted	Oe	ampere / meter	A / m	1 Oe = 79,6 A/m
Magnetic flux density	Gauss	G	tesla	T	1 G = 10^{-4} T
Magnetic flux	Maxwell	M	weber	Wb	1 M = 10^{-8} Wb
Luminous intensity	internat. candle	lK	candela	cd	1 lK = 1,019 cd
Luminace	Stilb	sb	cd/m^2	–	1 sb = 10^4 cd/m^2
Absorbed dose	Rem	rem	J/kg	–	1 rem = 0,01 J/kg
Ion dose	Röntgen	R	C/kg	–	1 R = 2,58 · 10^{-4} C/kg

STANDARD RIG INSPECTION FORM

Rig No.		**Operator**	
Date		**Location**	
		Mast is Being	**Raised** ☐ **Lowered** ☐

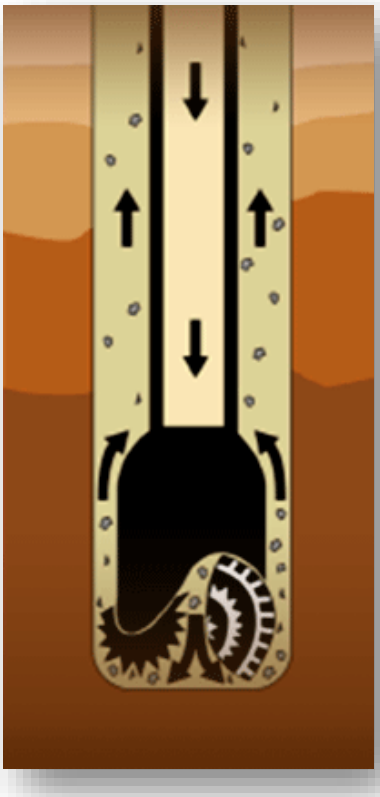
This form is to be completed before mast is raised or lowered

No.	Description	Condition		
		Yes	No	N/A
01	The mast is free of bent or missing braces	☐	☐	☐
02	Is mast ladder secure and in good condition its entire length	☐	☐	☐
03	Are crown sheaves in good condition	☐	☐	☐
04	Is monkey board securely attached	☐	☐	☐
05	Are monkey board fingers	☐	☐	☐
06	Are safety lines attached to diving board, flip up pads, etc.	☐	☐	☐
07	Is derrick man escape line properly attached and no kinks.	☐	☐	☐
08	Are tong hanger pulleys securely bolted and have safety lines.	☐	☐	☐
09	Are tong hanger lines in good condition	☐	☐	☐
10	Is climbing device pulleys and line in good condition	☐	☐	☐
11	Are all mast bolts and pins in place with safety keepers	☐	☐	☐
12	Have all pinning tabs been checks for cracks	☐	☐	☐
13	Does the Kelly hose have snub lines at both ends	☐	☐	☐
14	Is stand pipe securely attached to the mast leg	☐	☐	☐
15	Is drilling line free of wickers and in generally good condition	☐	☐	☐
16	Is deadline anchor and line clamps in good condition	☐	☐	☐
17	Does crown gave two red lights	☐	☐	☐
18	Are all mast lights in good order and secured with safety lines	☐	☐	☐
19	Is crown bumper block in good condition and covered with mesh screen	☐	☐	☐
20	Are there any loose lines or ropes that can snag during raising / lowering	☐	☐	☐
21	Are there any loose parts or tools left in the mast	☐	☐	☐
22	Are all hand rails securely attached	☐	☐	☐
23	Is block hanger line properly attached to mast	☐	☐	☐
24	Are traveling block guards securely bolted	☐	☐	☐
25	Is the mast resting on and not attached to the mast stand	☐	☐	☐
26	Is the rig weight indicator working properly	☐	☐	☐
27	Have bride lines been visually inspected within the permitted number of cycles	☐	☐	☐
28	**Comments and remarks**			

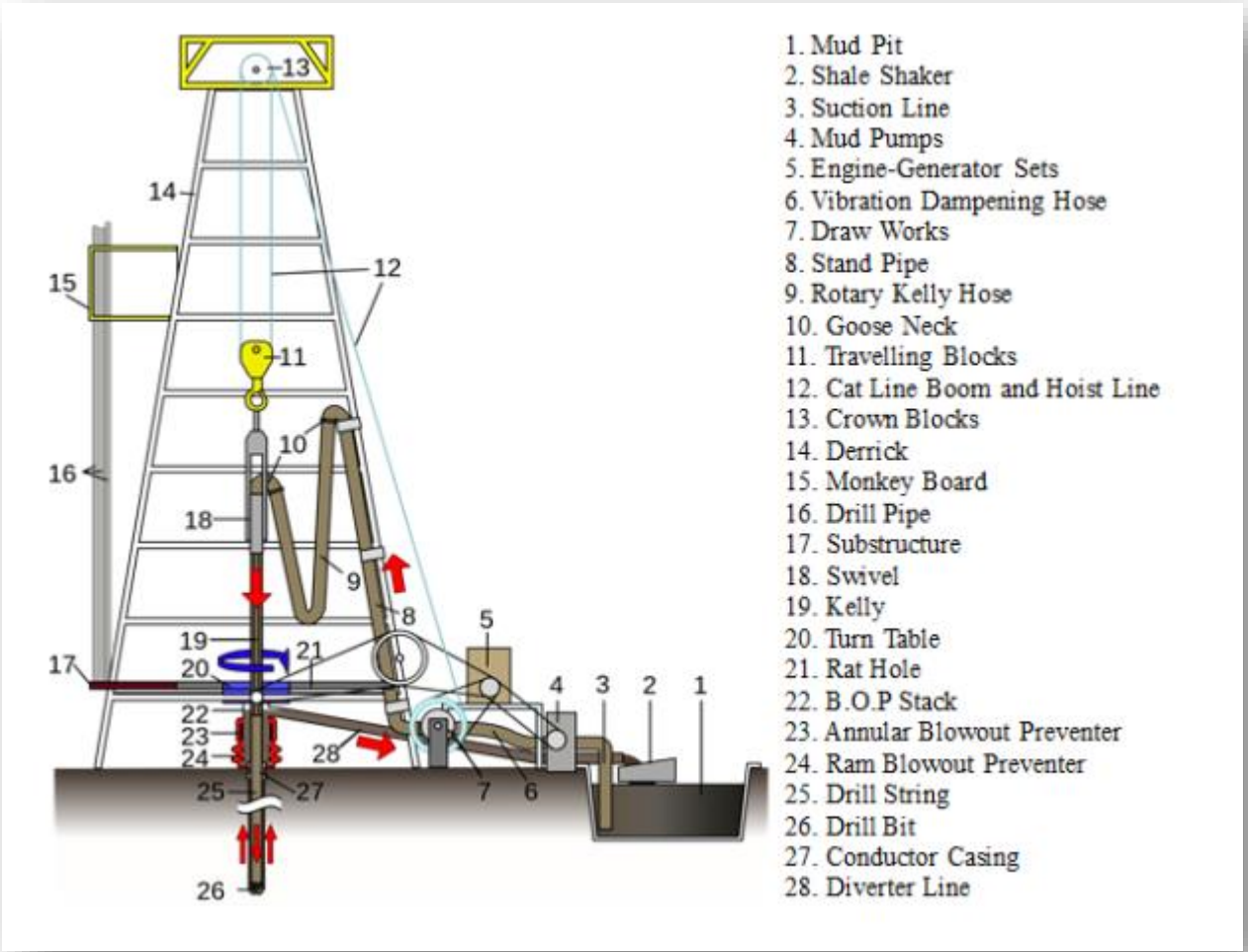
Signature

Sr. Tool Pusher Signature		Operator Rep Signature	

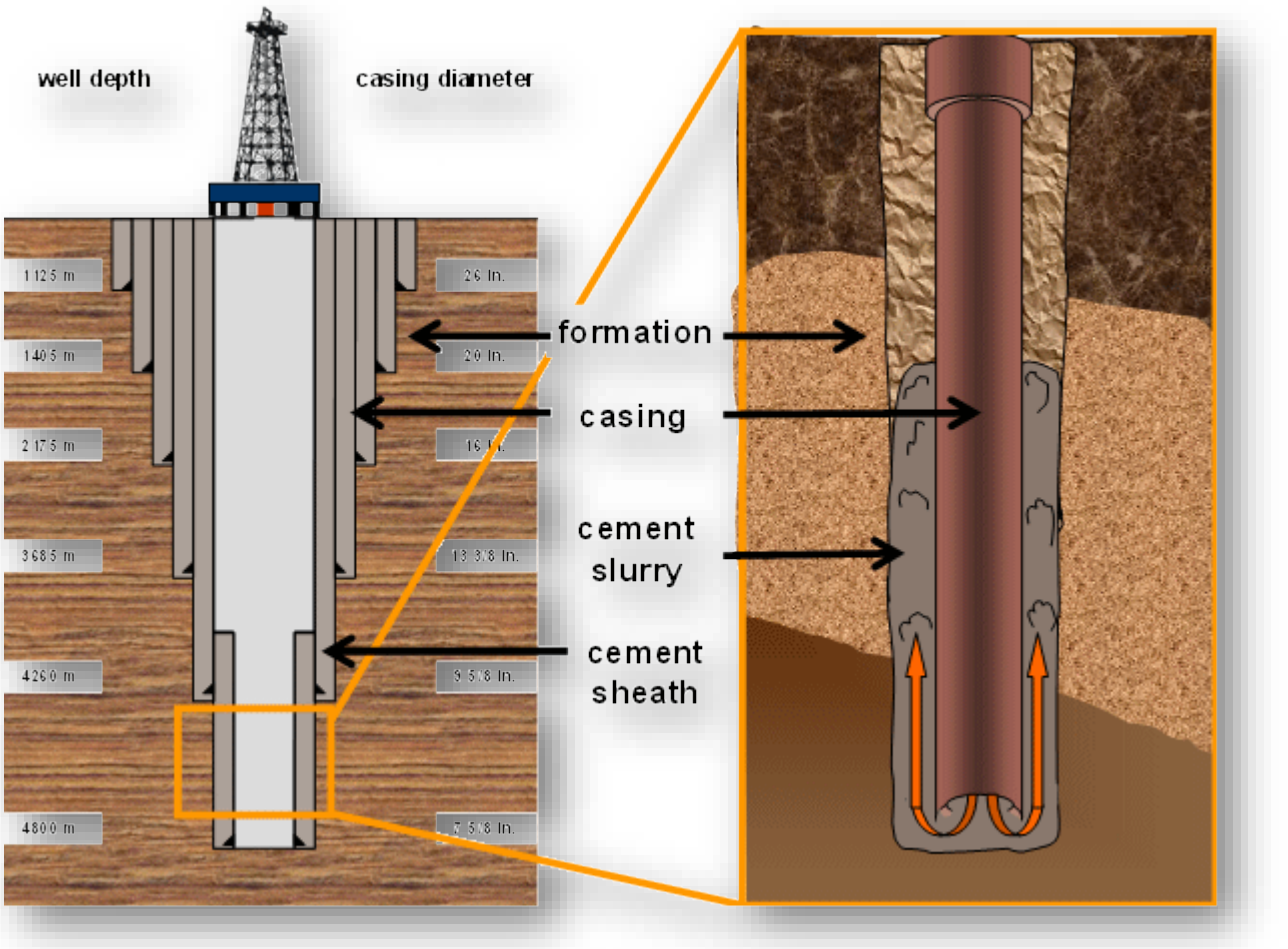
STANDARD DRILLING PROCESS



The crew sets up the rig and starts the drilling operations. First, from the starter hole, the team drills a surface hole down to a pre-set depth, which is somewhere above where they think the oil trap is located. There are five basic steps to drilling the surface hole:
Place the drill bit, collar and drill pipe in the hole.
Attach the kelly and turntable, and begin drilling.
As drilling progresses, circulate mud through the pipe and out of the bit to float the rock cuttings out of the hole.
Add new sections (joints) of drill pipes as the hole gets deeper.
Remove (trip out) the drill pipe, collar and bit when the pre-set depth (anywhere from a few hundred to a couple-thousand feet) is reached.
Once they reach the pre-set depth, they must run and cement the casing -- place casing-pipe sections into the hole to prevent it from collapsing in on itself. The casing pipe has spacers around the outside to keep it centered in the hole.



The casing crew puts the casing pipe in the hole. The cement crew pumps cement down the casing pipe using a bottom plug, a cement slurry, a top plug and drill mud. The pressure from the drill mud causes the cement slurry to move through the casing and fill the space between the outside of the casing and the hole. Finally, the cement is allowed to harden and then tested for such properties as hardness, alignment and a proper seal.
In the next section, we will find out what happens once the drill bit reaches the final depth.



ANSWER THESE QUESTIONS

Questions #1

To control/increase the density of the mud, barite is used. Explain the cause and the negative effects barite might have during drilling of inclined wells.

Questions #2

Figure out which level and state which the forces are involved in cutting transportation in high deviation wellbore.

Questions #2

What are the dominating mechanisms or factors leading to mechanically stuck pipe (differentially s tuck not included)?

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