

2019 NAPS

NORTH AMERICA PERFORATING SYMPOSIUM

AND SAFETY FORUM

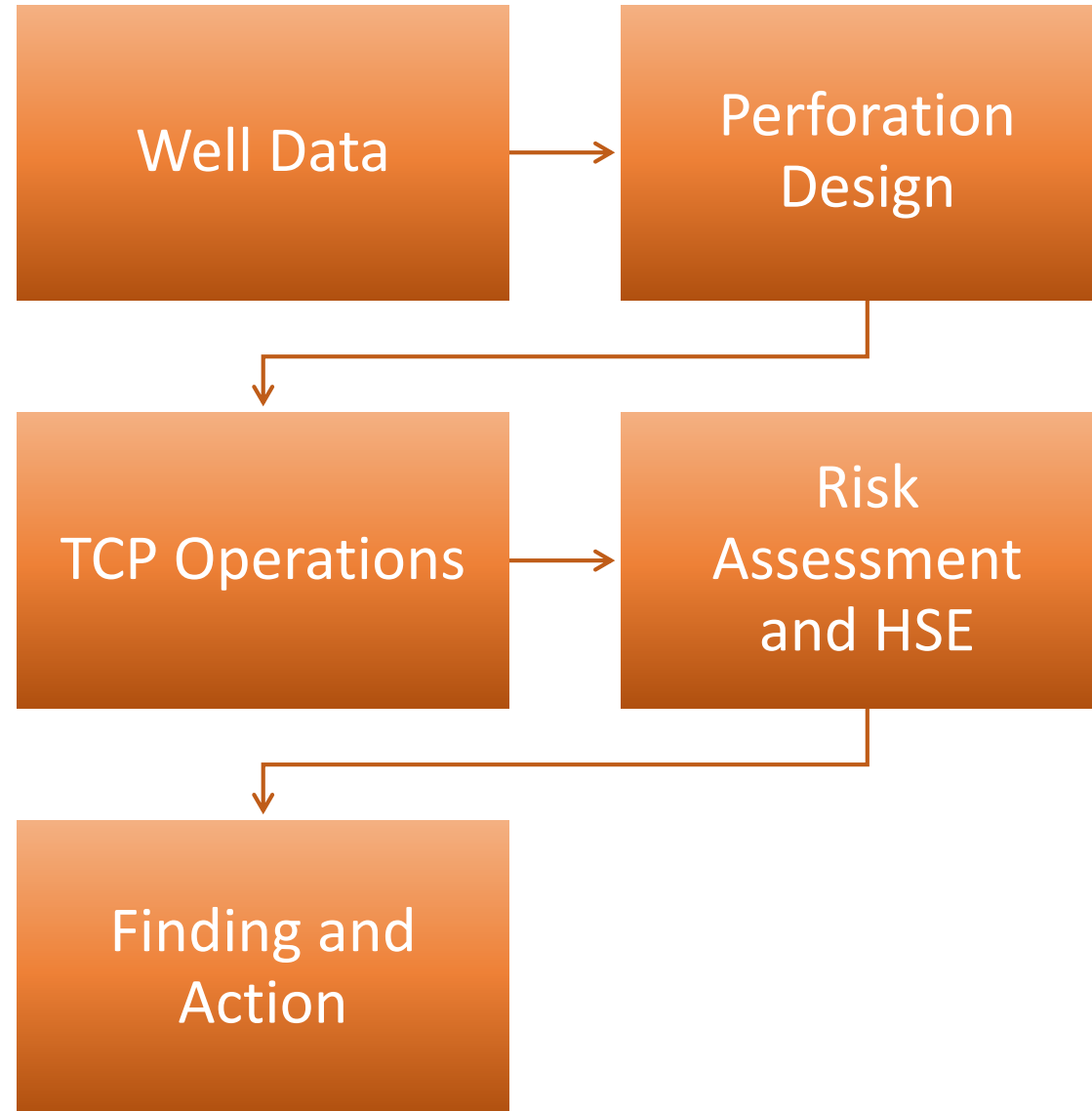
DALLAS - FORT WORTH. AUGUST 5-6, 2019.

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AUTHORS: Hanaey Ibrahim, Petroleum Development of Oman, Khaled Farouk, Schlumberger.

What Happen If Shear Ram closes against Guns?

Agenda



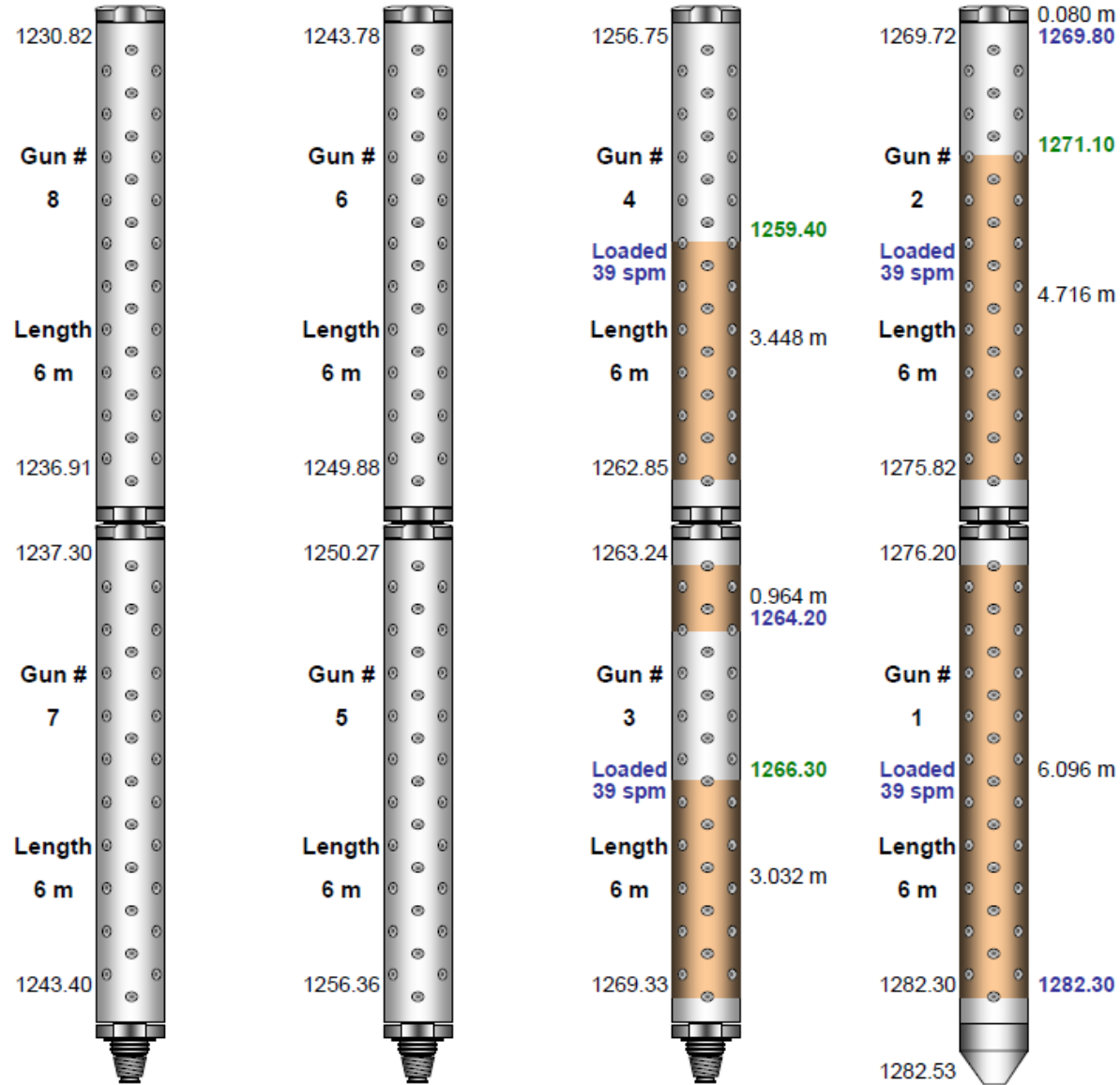
Perforation Intervals and Gun Design

#	Top	Bottom	Net Loaded	Net Blank	Status
1	1172.30 m	1176.70 m	4.40 m		Loaded
	1176.70 m	1184.90 m		8.20 m	Blank
2	1184.90 m	1193.40 m	8.50 m		Loaded
	1193.40 m	1214.50 m		21.10 m	Blank
3	1214.50 m	1220.10 m	5.60 m		Loaded
	1220.10 m	1223.40 m		3.30 m	Blank
4	1223.40 m	1230.70 m	7.30 m		Loaded
	1230.70 m	1259.40 m		28.70 m	Blank
5	1259.40 m	1264.20 m	4.80 m		Loaded
	1264.20 m	1266.30 m		2.10 m	Blank
6	1266.30 m	1269.80 m	3.50 m		Loaded
	1269.80 m	1271.10 m		1.30 m	Blank
7	1271.10 m	1282.30 m	11.20 m		Loaded

- R-12 is a new 7" casing new well.
- Proposed perforated intervals are 7 (45.3 m) and 110 m Gross.
- 4.5" HSD Gun, 12 SPF and under balance TCP.
- Total 18 guns ready for the job.
- Perforation will be carried out by Rig.

Perforation Design

Gun Loading Diagram



- Pick up and RIH guns 1 to 5.
- RIH to make up gun # 6.
- TCP String does not move.
- Check well head found shear ram in close position at 1500 psi.
- Rig supervisor called town.

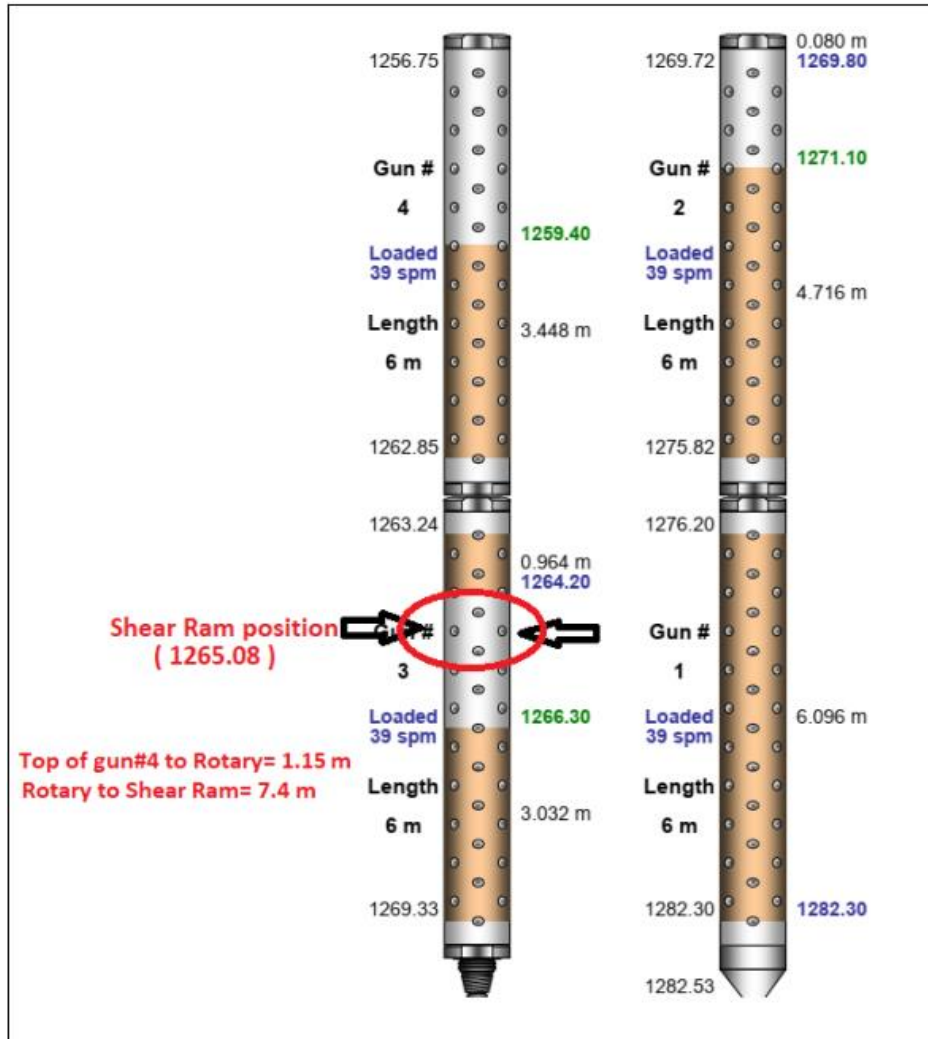
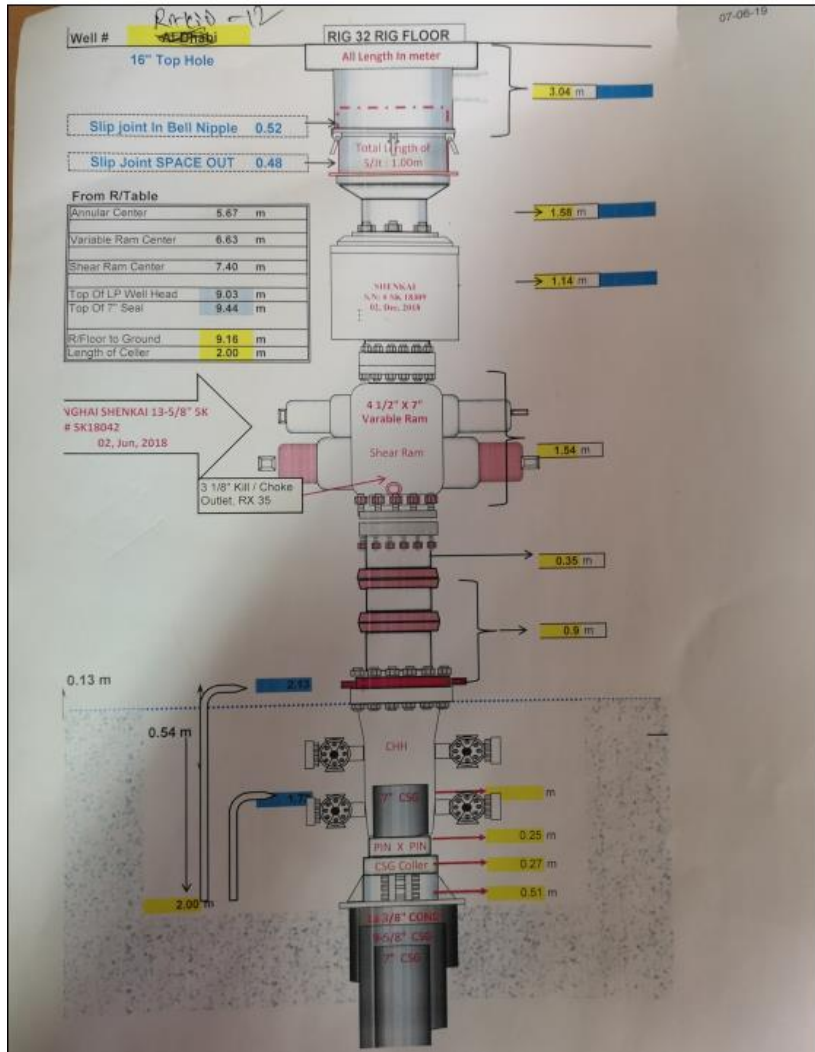
What is the impact of the shear force to gun?

What is the status of the gun?

Where does shear occur?

Way Forward.

Risk Assessment



- Open Shear ram and Drop the gun.
- Flood and lay down guns.
 - How do you flood gun at surface?
 - Hazards of Firing.
 - Safety Considerations.
 - Minimum personnel should be on rig floor.
 - BOP area and below rig floor is evacuated and clear.
- What is in our hands
 - Gun # 5, blank.
 - 1.15 m stick up.

Procedure

- Procedure issued to disassemble Gun # 5 and top adapter of gun # 4.
- Fill gun # 4 with water.
- Record the water volume.
- Monitor water level and record time and displaced volume.
- Refill gun with water in case if level drop.
- Wait for 2 hours.
- Reconnect Gun # 4 adapter.
- Open shear ram and POH with guns 4,3,2 and 1.

Photos of Crimped Gun



Discussion with Operating Company

- Risk of surface detonation is not clear.
- Shear position.
- No standard procedure for such cases.
- Accurate of information.
- Decision Maker.

Post Operations

- How efficiency gun flooding?
- What does the shear look like?
- What is the impact of the shear to the gun?
- How do prevent catastrophic surface detonation?

Did we do our duty to the business?

- How are we going to improve our SOP.
- What is the responsibility of API and IPFC.
- Do we have physical test for gun crush or collapse?
- What will happen if shear ram fully shear gun?

QUESTIONS?
THANK YOU

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AUTHORS: Liam McNelis, Dr. Joern Loehken,
Bernd Fricke, Denis Will, DynaEnergetics.