

Property & Business Interruption - Underwriting & Claims

March 6, 2019

Workshop Facilitator

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ENERGY SECTOR LOSSES

- SECTOR COVERED
 - OIL & GAS
 - POWER GENERATION



OIL AND GAS

- **EXPLORATION**
- **OPERATING WELLS**
- **PURIFICATION**
- **TRANSMISSION**
- **REFINING**





RISK COVERED | OIL - GAS EXPLORATION

- **BLOW OUT OF WELLS:**

Where a Well cannot be controlled with the means of well flow control equipment i.e. B.O.P's

- **UNDERGROUND BLOWOUT:**

Where flow from one zone to another zone via the bore of well and resulting in it's flow which cannot be controlled with the help of control equipment.

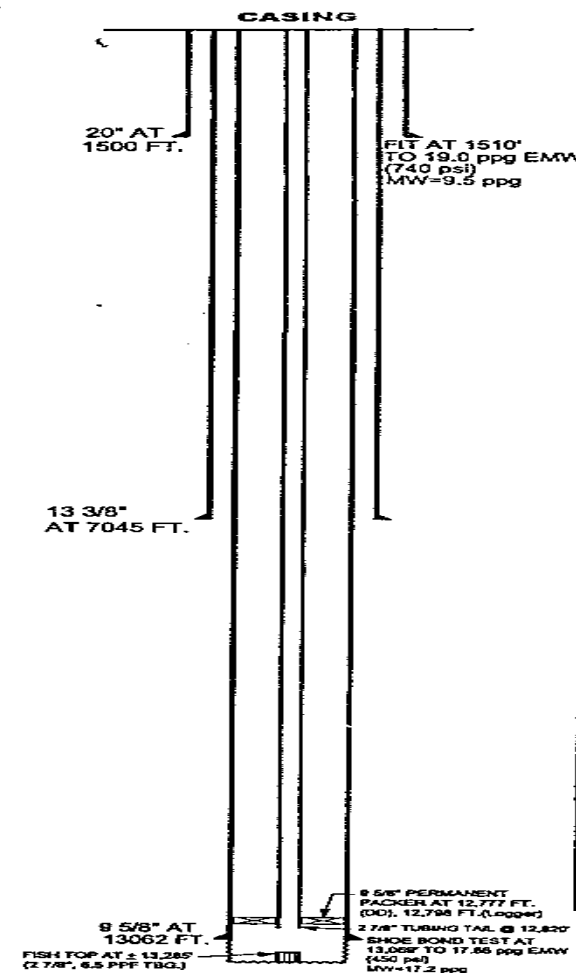
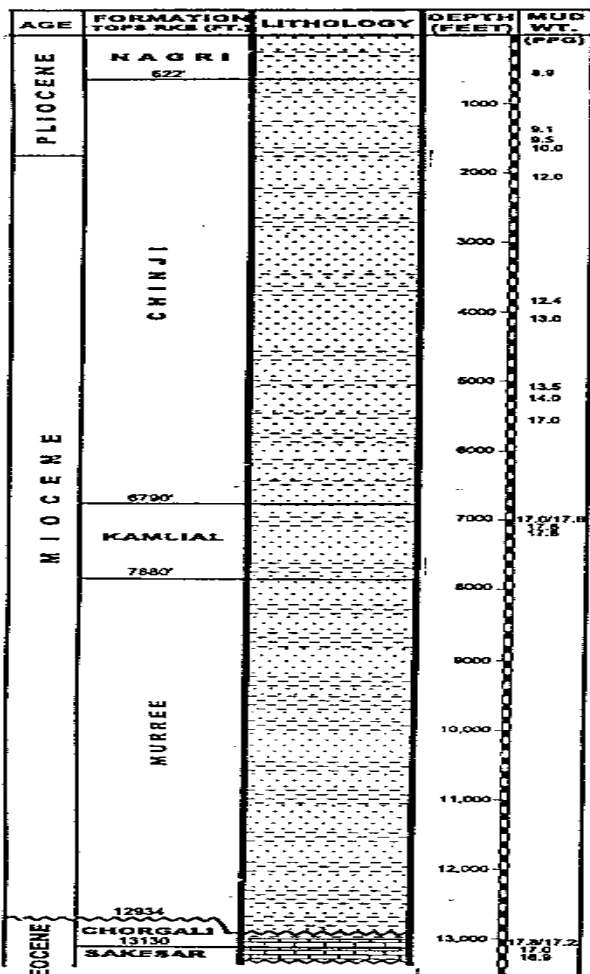


RISK COVERED | OIL - GAS EXPLORATION

- REMEDIES:
 - Such cases usually result in cementing the hole and in losing the hole/well.
 - Drilling of Relief Well.
- CONSEQUENCE:
 - Cost of regaining control.
 - Cost of Relief Well.
 - Cost of Re-drill to the same level where the loss occurred.



COMPLETION DIAGRAM



LOG RUNS

AT 1505 FT.	# 1 :BHC-GR (1500 - SURFACE)
AT 7050 FT.	# 1 :LSS-AIS-GR (7047 - 1300')
	# 2 :BGS-GR (7048 - 1320')
AT 13062 FT.	# 1 :LSS-AIS-GR (13081' - 7052')
AT 13276 FT.	# 1 :CBL-VDL GR (13151' - 5477')
AT 13345 FT.	NOT LOGGED

FORMATION TOPS & THICKNESS

FORMATION	SAMPLE TOPS (FT)	TOPS BASED ON LOGS (FT)	THICKNESS (FT) BASED ON LOGS
NAGRI	SURFACE	622	622
CHINJI	635	622	618
KAMLIAL	6650	6790	1000
MURREE	7750	7880	5054
CHORGALI	12925	12970 (TOP LET)	196
SAKESAR	13135	13130	+ 215
F.T.D.	13345	NT	

LOSS / GAIN IN THE WELL

DEPTH (FT.)	FLOW CHECK	IN	OUT	LOSS/GAIN
30	INFLOW	17.0	17.0	+ 5 bbls
7050	INFLOW	17.0	16.0	+ 2 bbls
7050/364	INFLOW	17.8	17.8	+ 108 bbls
7050/421	INFLOW	17.8	16.0	+ 17 bbls
7050/4541	LOSS	16.0	17.8	- 248 bbls
7050	INFLOW	17.0	17.8	+ 811 bbls
7180	INFLOW	17.8	17.8	+ 27 bbls
8650	PARTIAL LOSSES	17.8	17.8 + LCM	- 20 bbls
11831	PARTIAL LOSSES	17.8	17.8 + LCM	- 40 bbls
11725	PARTIAL LOSSES	17.8	17.8 + LCM	- 10 bbls
11875	PARTIAL LOSSES	17.8	17.8 + LCM	- 2 bbls
12985	PARTIAL LOSSES	17.8	17.8	- 2 bbls
12908	PARTIAL LOSSES	17.8	17.8 + LCM	- 8 bbls
13038	PARTIAL LOSSES	17.8	17.8 + LCM	- 30 bbls
13062	SEVERE LOSSES	WHILE CEMENTING 1 1/2\"/>		
13151	LOSS	17.2	17.8	- 180 bbls
13182	LOSS	17.0	16.0	- 37 bbls

MAXIMUM GAS PEAKS

DEPTH (FT.)	GAS PEAK / SG	DEPTH (FT.)	GAS PEAK / SG
1282	103 / 55	13020	1007/85
13008	122 / 55	13048	73 / 55
13014	274 / 65	13331	24 / 52
13018	130 / 60		

CUTTING OIL SHOWS
 (13200'-13290') : TRACE PALE YELLOW DIRECT FLUORESCENCE, SLOW BLUSH WHITE CUT, VERY WEAK MILKY WHITE RESIDUAL RING.
 (13290 - 13345') : TRACE PALE YELLOW DIRECT FLUORESCENCE, SLOW BLUSH WHITE STREAKING CUT, WEAK MILKY WHITE RESIDUAL RING.

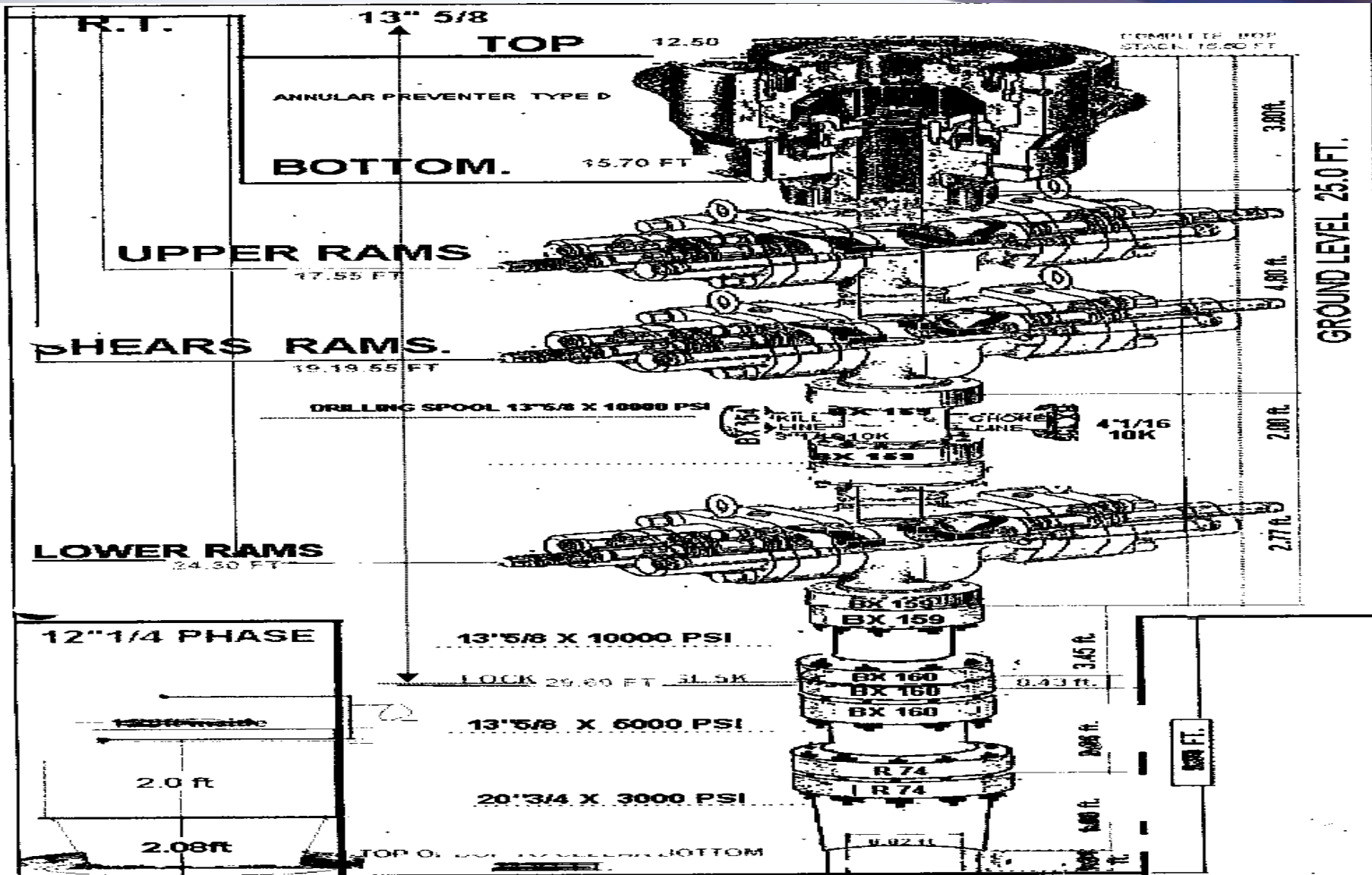
TESTING

OPEN HOLE DST # 1 CHORGALI/SAKESAR (13062' - 13345').

CHARGE	INFL	OUT	FLOW	INFL	OUT
1282	103	55	1000	1007	85
13008	122	55	1300	73	55
13014	274	65	1300	24	52
13018	130	60	1300		

CARRIED OUT MATRIX ACID JOB OF 15000 GALS MSR-15 + 3000 GALS SDA DIVERTORS @ 14 BPH (9000 PSI) FOLLOWED BY 150 BBL TREATED WATER.

TIME	INFL	OUT	FLOW	INFL	OUT
20 / 64	8720	2520	7.4	2937	20
24 / 64	8512	3000	8.8	2933	14
28 / 64	8142	3420	11.2	2960	18
32 / 64	8630	6236	16.6	2981	24





OPERATING WELLS

- Usually the Christmas tree comprises of well control valves
- Both above cases (Exploration & Operational) can result in:
 - Control of Well
 - Pollution Claims
 - Due uncontrolled emission of Gas
 - I. Flow of oil
 - II. Flow of water



LOSS HISTORY OF SOME MAJOR LOSSES ATTENDED IN OIL & GAS SECTOR

- Fire Loss at the Fuel Refinery.
- Fire Loss at Lube Building Plant of an OMC
- Flood Loss at various locations of Gas Pipeline.
- Flood loss of various Installations / Terminals due to major floods of 2010.
- Fire Loss at Compression Station.



LOSS HISTORY OF SOME MAJOR LOSSES ATTENDED IN OIL & GAS SECTOR

- Gas Compression Expansion Project.
- Turbine damage during Commissioning.
- Breakdown of valve of Pindori Well No.1
- Blowout of Pindori Well No.3
- Various losses of installation / Gas wellhead at Gas fields.
- Damage to multi stage compressor due to failure of blades.



• **POWER GENERATION**

- POWER PLANT OPERATION
- HYDEL GENERATION
- THERMAL GENERATION
- STEAM TURBINES
 - GAS TURBINES / COMBINED CYCLE
 - INTERNAL COMBUSTION (ENGINE BASED)



LOSSES IN THE POWER GENERATION UNITS

- Fire Losses to Air Filter Units during constructions.
- Breakdown Losses of Generating Transformers.
- Fire during commissioning.
- Arcing and contamination of Generator.
- Breakdown of Steam Valve.



LOSSES IN THE POWER GENERATION UNITS

- Turbine Bearing Failure
- Various Losses to Turbo Chargers of varying intensities
- Breakdown of Generators.
- Some of these have resulted in substantial consequential loss claims.
- Importance of VAR in a loss.



CASE HISTORY

- Loss due to fire at an Air Filter Unit, which also resulted in DSU during construction.
- Loss due to breakdown of Main Steam Valve.
- Loss due to breakdown of Generating Transformer.
- Loss due to Turbo Charger.



THANK YOU

