

Nijensleek 01: Well interventon program

Perform workover to change out tubing.

Task	Title	Signed	Date
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Reviewed by			
Approved by			2019-01-31

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1. General Informaton

Objective:

Change out completon tubing that is afected by internal corrosion.

Background:

The Nijensleek well was drilled by [redacted] in 1987. The well was brought on stream in 2000 and developed the Nijensleek Vlieland sandstone reservoir as a single well. Near the end if fled life a 1.75" velocity string was installed in 2006 to increase recovery. Producton was ceased in 2008 as no more gas could economically be recovered. Nijensleek-1 has been converted into a water disposal well and to that efect the velocity string was removed in 2010. In 2017 we performed Mult finger caliper survey to check the integrity of the tubing. The majority of the 3-1/2" tubing joints have a maximum penetraton between 20-35%. Some have maximum penetraton of 100%.

Follow up pressure testng was conducted on the frst annulus and indicated communicaton with the tubing.

With the company [redacted] there is now a workover planned to change out the completon.

1. General data:

Licence	Nijensleek
Operator	
Partners	EBN 50%
AFE No.	NE 18029
Well Name	Nijensleek 01
NORMS	Yes
H ₂ S	NO
CO ₂	0.0 %
Deviaton profile:	Deviated, KOP at 620 M/rkb max 38 deg
Estimated reservoir pressures:	11 bar at 21-9-18 2444 M/rkb
Datum Depth	
Estimated reservoir temperature:	92 deg C
Max CITHP	0 bar
Rig Floor Elevaton	8.3 m above GL
Ground Level Above NAP	2.70 m
Total Depth:	2139 M/RKB
PBTD:	2139 M/RKB
Top of TCP Assembly:	N/A
Perforated intervals:	1960.6-1969.1 M/RKB
Rotliegend	2057.6 - 2067.1 M/RKB, plugged of
Grid Coordinate System:	Rijks Driehoek (RD)
Conductor coordinates (m)	X = 206019,03 Y = 539197,19
ETRS89 Coordinates:	LAT 50.254528, LON 8.660531
Municipality:	Steenwijk

CITHP / A / B / C Annulus Pressures:	0/0/0 bar
Well Status:	Injector/ shut in
Open Flow Potential:	0 KM3/day
Estimated Duraton of Activity:	~10 Days

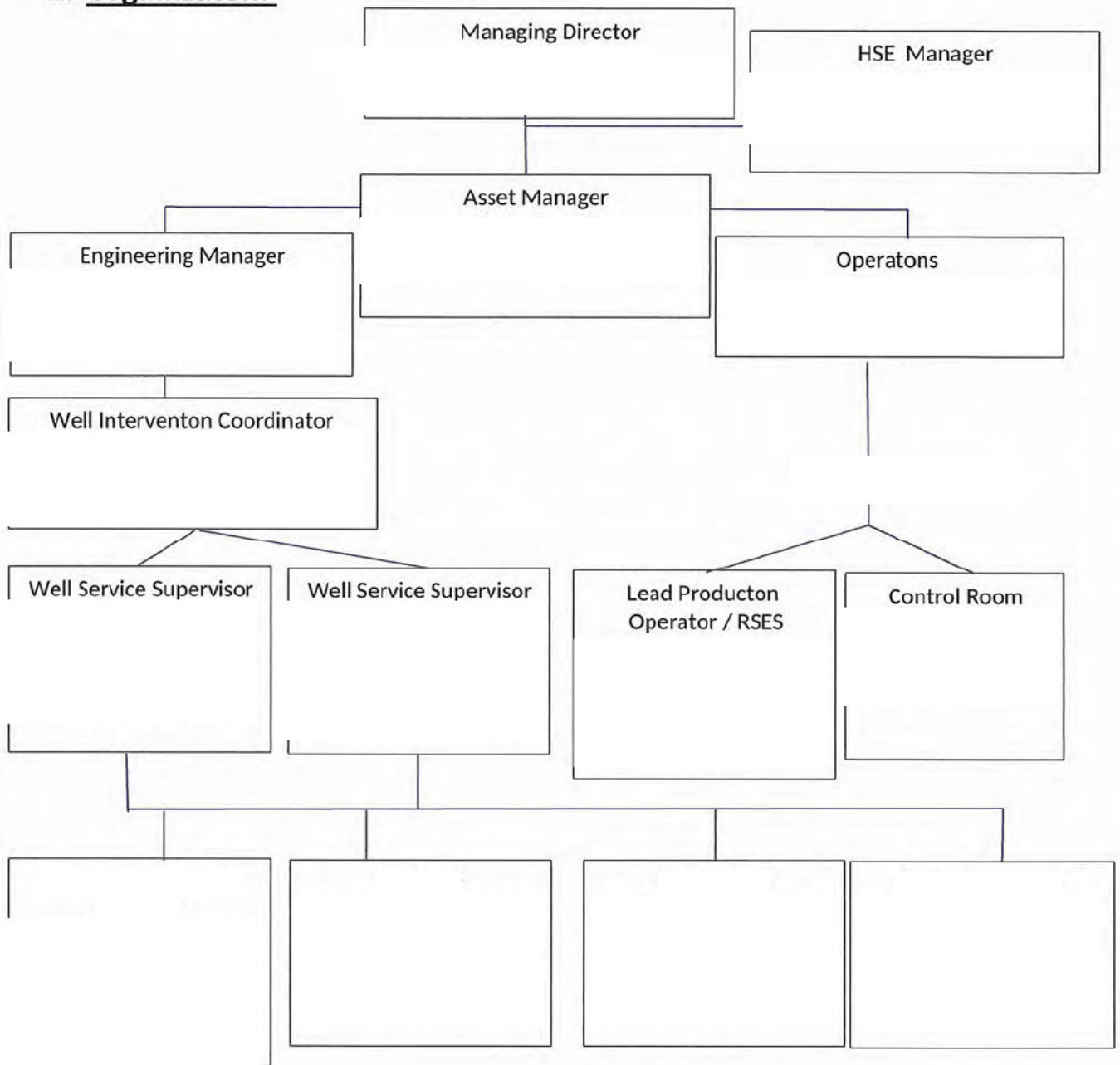
2. Supervisor and Service Companies.

<input type="text"/> supervisors:	
Service companies:	

3. Notfcatoons

Area LPO: <input type="text"/>
SodM
Operatons Manager: <input type="text"/>
Land & Lease Coordinator: <input type="text"/>
Technical Team Lead Engineering - East Asset: <input type="text"/>
Engineering Manager: <input type="text"/>
Well Interventon Coordinator: <input type="text"/>
<input type="text"/>
Control Room

2. Organizaton.



3. Well Control & Barriers

Program overview.

3.1.1.1 Rig Up Wireline^e

Step #	Action	Barrier Diagram #
1	Check well and obtain work permit	1
2	Rig in Slick line Unit and equipment	4
3	Check all incoming equipment for LSA. Function test equipment and BOP	4
4	Pressure test pressure control equipment with water/glycol mixture	4

3.1.12.1 Bullhead pumping^f

Step #	Action	Barrier Diagram #
1	Rig Up pumping equipment to X-mas Tree.	1
3	Pump required volume of fluid monitoring pump pressure, flow rate and volume.	3
4	Rig Down pumping equipment.	1

3.1.2.1 Pull WRSCSSVⁱⁱ

Step #	Action	Barrier Diagram #
1	Rig Up Slickline as per section 3.1.1.1	
2	Run in Hole with pulling tool and engage SCSSV.	5
3	Pull out of hole with SCSSV.	5
4	Rig down Slickline as per section	

3.1.3.1 Run Tubing Plug^v

Step #	Action	Barrier Diagram #

1	Rig Up Slickline as per section 3.1.1.1	
2	Run in Hole with tubing plug and set in nipple profile.	5
3	Pull out of hole with setting tool.	5
4	Run in Hole with prong.	5
5	Pull out of hole with setting tool	5
6	Rig down Slickline as per section	

3.1.5.1 Open Sliding Sleeve^e

Step #	Action	Barrier Diagram #
1	Rig Up Slickline as per section 3.1.1.1	
2	Run in Hole shifting tool and engage in SSD. Shift in correct direction to open.	5
3	Pull out of hole with shifting tool.	5
4	Rig down Slickline as per section	

3.1.12.3 Circulating Well Fluidsⁱ

Step #	Action	Barrier Diagram #
1	Rig Up pumping equipment to X-mas Tree.	1
2	Align valves to allow forward or reverse circulation.	3
3	Pump required volume of fluid monitoring returns and choke pressure.	3
4	Rig Down pumping equipment.	1

3.1.37 Set Backpressure / Two Way Check Valveⁱⁱ

Step #	Action	Barrier Diagram #
1	Rig Up Dry Rod running tool equipment.	1
2	Set valve in tubing hanger using dry rod assembly.	5
3	Infow test valve.	5
4	Rig Down Dry rod running tool equipment.	1

3.1.1.3 Rig Up Hydraulic Workover Unitⁱⁱⁱ

Step #	Action	Barrier Diagram #
1	Check well and obtain work permit	1
2	Check all incoming equipment for LSA. Spot, check & function test equipment.	1
3	Rig Up HWU and Equipment (including remove tree and install BOP after three barriers placed in well).	2
4	Pressure test pressure control equipment with water/glycol mixture	2

3.1.10.1 Tubing Changeout^x

Step #	Action	Barrier Diagram #
1	Rig up Hydraulic Workover Unit (as per section 3.1.1.3).	
2	Rig up Slickline Unit (as per section 3.1.1.1)	
3	Remove barriers in upper completion	9
4	Rig Down Slickline Unit (as per section 3.1.1.5)	
5	Install landing joint in tubing hanger and detach from On-Of sub above production packer as per vendor instructions.	8
6	Pull upper completion out of hole and lay down.	8
7	Perform cleanout trip if required.	8
8	Run in Hole with new upper completion.	8
9	Break circulation and string onto on-of, stopping circulation as pressure increases.	8
10	Overpull to confirm On-Of tool latched.	8
11	Space out completion string, come off On-Of and install required pups.	8
12	Terminate SCSSSV control line in tubing hanger and pressure test.	8
13	Break circulation and string onto on-of, stopping circulation as pressure increases.	8
14	Overpull to confirm On-Of tool latched.	8
15	Land Tubing Hanger.	8
16	Pressure Test Completion string.	8
17	Retrieve Hold Open Sleeve from TRSCSSSV (as per section 3.1.2.3)	9
18	Install Two Way Check Valve (as per section 3.1.3.7).	9

19	Rig Down Hydraulic Workover Unit (as per section 3.1.1.7).	2
20	Pressure Test X-mas Tree.	1
21	Remove Two Way Check Valve (as per section 3.1.3.8)	4
22	Rig up slickline and remove tubing plug (as per section 3.1.3.3)	5
23	Open Sliding Side Door (as per section 3.1.5.1)	5
24	Rig up Nitrogen Unit and displace tubing to Nitrogen (as per section 3.1.13.1).	3
25	Close Sliding Side Door (as per section 3.1.5.2) and pressure test annulus.	5
26	Infow Test TRSCSSSV as per Well Integrity Management System.	1
27	Displace Nitrogen down the tubing (as per section 3.1.13.2) and open TRSCSSSV.	3
28	Retrieve Tubing plug (as per section 3.1.3.3).	5
29	Bleed of N2 (as per section 3.1.12.4)	3
30	Rig Down Slickline (as per section 3.1.1.5)	4

3.1.1.7 Rig Down Hydraulic Workover Unit

Step #	Acton	Barrier Diagram #
1	Install Barriers	8
2	N/D BOPS and install X-mas Tree	2
3	Rig down - Demob HWU	1

3.1.3.8 Pull Backpressure / Two Way Check Valveⁱ

Step #	Acton	Barrier Diagram #
1	Rig Up Dry Rod running tool equipment.	1
2	Pull valve from tubing hanger using dry rod assembly.	5
3	Rig Down Dry rod running tool equipment.	1

3.1.3.3 Pull Tubing Plugⁱⁱ

Step #	Acton	Barrier Diagram #
1	Rig Up Slickline (as per secton 3.1.1.1 Well service catalogue)	
2	Run in Hole pulling tool and recover prong.	5
3	Pull out of hole with prong.	5
4	Run in Hole with pulling tool and recover tubing plug.	5
5	Pull out of hole with tubing plug.	5
6	Rig down Slickline (as per secton 3.1.1.5 Well service catalogue)	

3.1.12.4 Venting^{xiii}

Step #	Acton	Barrier Diagram #
1	Rig Up Separator / Vent Stack equipment to X-mas Tree.	1
2	Install gas monitoring equipment.	1
3	Open choke and vent N2, paying atenton to wind directon, untl burnable gas is observed.	3

4. Equipment List:

- LSA monitor
 - LSA PPE and containment material kit.
 - Sufcient gas detectors & charger
 - 3-1/2" VAM TOP 9.2# L80Cr13 tubing ().
 - 3-1/2" VAM TOP 9.2# L80Cr13 Pup joints.
-
- Slickline unit, PCE, Pump in tee, QTS sub, wellhead crossover, tool container.
 - 4-1/16" Flange x 5" Vamtop HC.
 - Diesel powered compressor.
 - Back packers for HMV and TR-SCSSV.
 - Pressure test pump with glycol/water mix for PCE pressure testng.
 - 2 each 2.75" X-Nipple Plug and Prong (Junckbasket) and running pulling tools.
 - 2.813" X-Isolaton sleeve for WR-SCSSSV nipple profle and running pulling tools.
 - 2,875" Nom Ots B-profle S4 and running and pulling tools.

- 2,855" SA4 plug and running and pulling tools.
- 1-7/8" Toolstring, wire suitable for 2.5% CO.
- Lubricator bleed hose and silencer

- Completions assemblies.

- HWO unit.
- Koomey unit.
- Pump unit.
- Flowmeter.
- Triptank.
- Ofces.
- Snubbing Rams.
- BOP's.
- 3-1/2" Tubing handling equipment.
- TIW, Flanges, Jetsub and well control X-overs
- Crane.
- Storage tanks 2 x 100m³.
- Crane

- Redress parts for hanger.
- Pressure test pump.
- Grease and check X-mas tree

5. Recommended Operaton Procedure.

1. Pre Job

1. Review job safety, hazards & procedures.
2. Check the well head and perform gas test on locaton and equipment.
3. Hold safety meetng & orientate all personnel.
 - Ensure all contractors working on locaton have read General HSE rules and have signed the acknowledgement form in the back of the book as well as to ensure all contractors have seen the introducton video.
 - All workers on site should be aware of their right to refuse unsafe work or conditons.
 - Ensure a copy of the On Scene Commander section of the ERP is onsite and the relevant contact informaton is up to date.
 - Confm that service company crews are capable of safely operatng the equipment on site.
 - BOP drills will be held at regular intervals and as required by the regulatons.
 - All personnel are expected and encouraged to participate – At a minimum, 1 unsafe act and 1 unsafe conditon should be reviewed at each safety meetng.
 - Meetngs will be held with all personnel to ensure that all individuals are familiar with the overall job, their own dutes/responsibilites, pressures, limitatons, emergency & safety procedures.
 - It is imperative that all personnel driving to or from the locaton adhere to the speed limits.
 - All waste materials must be disposed of in a regulatory approved manner. Absolutely no litering will be tolerated.
 - A NORM workplan has been prepared in case the well/tubing is found contaminated.
 - A level 5B is to be present when performing the workover. A level 3 when pulling tubing.
4. Obtain work permit to perform the operatons.
5. Complete Well Handover form notng limits of handover as. Producton department has to infow test the HVM and swab valve before hand over and fow line partially removed and blind capped to the installaton.
6. Spot Equipment on locaton as per layout drawing in Appendix A.

- Close the rainwater pit valve to the environment before work activities commence. When there is only clean rainwater in the rainwater pit, the valve can be opened again upon completion of the work activities. If there is any possibility that chemicals might have ended up in the rainwater pit during the work activities a liquid sample needs to be taken and analyzed before opening the valve to the environment.
7. All incidents, spills and high potential Near Misses or Hazard ID's must be reported to the Intervention Coordinator in a timely manner (before shift handover, at the latest). Serious incidents should be reported immediately.

2. Rig-up r pump Unit and Equipment

1. Hook up pump unit on A-annulus and Kill wing valve on tree, include NRV, as close as possible to the well, as per P&ID in appendix.
2. Pressure test connections to 20bar/200bar for 5/10 minutes to close A-annulus outlet valves.

3. Rig-up Slickline Unit and Equipment

1. Test slick line equipment for LSA contamination before rigging up on the wellhead. Note levels in Daily Report.
2. Inspect tools for damage from prior use i.e.; cracking, bad threads, signs of wear, etc. - If tools are suspect in any way, or do not have appropriate certification, do not use and order replacement equipment.
3. Check the 0.125" wire using API RP 9A procedure.
4. Function test equipment and check BOP and Well Control Unit that will be used to operate the DHSV and HMV.
5. Pressure test lubricator against closed swab valve with water/glycol mixture to 20bar/200bar for 5/10 minutes. Use chart recorder, sign chart and submit to office as part of job closeout.
6. Infow test wireline BOP.
 - Close BOP's, bleed lubricator to zero bar and monitor pressure between swab valve and BOP's for 10 minutes.
 - Equalize pressure to lubricator and bleed down to 20 bar.
 - Close BOP's, bleed lubricator to zero bar and monitor pressure between swab valve and BOP's for 5 minutes.
 - Use chart recorder, sign chart and submit to office as part of job closeout.
8. Isolate DHSV and HMV from production system and connect to Well Servicing Well Control Unit.
 - Pressure test hydraulic line from WS control panel to TR-SCSSV connection to 20/350bar for 5/10minutes.
 - Pressure test Hydraulic line from WS control panel to HMV connection to 20/200bar for 5/10minutes.
 - Pressure up DHSV to 350 Bar to open.
 - Pressure up HMV to 200 Bar to open.

4. Slickline Operaton.

1. Open swab valve. Run in hole with 3" GS, probe and prong and pull the 2.75" DHSV at 90,7mTH (see Wellbore Diagram in Appendix). Open SCSSSV and latch on, bleed down the control line pressure to wellhead pressure and close outer control line valve. Jar up to release the lock, and pull out of hole.
2. Close Swab valve and HMV, bleed down lubricator, break lubricator at QTS sub and break out tools. Check tools on LSA contaminaton.
3. M/U 3" wire brush, connect lubricator, pressure test QTS to 200 bar for 5 min. Open HMV and swab valve.
4. RIH with slickline and wire brush the whole tubing 4 tmes from 0 to 1942 MTH Brush section around 1931 mTH 10 tmes, plug setng depth. POOH
5. Close Swab Valve and HMV, bleed of pressure and break lubricator at QTS sub. Check tools on LSA contaminaton.
6. Open up HMV and kill wing and fush the tubing with 15 M3 3% KCL brine at max rate, not exceeding 50 bar. Close kill wing and HMV.
7. M/U 2,75" PX plug with X-line running tool, stab lubricator and pressure test QTS sub to 200bar for 5 minutes. Open HMV and Swab Valve.
8. RIH with slickline and set 2,75" PX plug body in 2,75" Ots X-lock mandrel at 1931mTH. POOH with slickline.
9. Close Swab Valve and HMV, bleed of pressure and break lubricator at QTS sub. Check tools on LSA contaminaton.
10. M/U Prong with 2,75" Junck basket, stab lubricator and pressure test QTS sub to 200bar for 5 minutes. Open HMV and Swab Valve.
11. RIH with slickline and set Prong with junk basket in 2,75" PX plug body at 1931mTH. POOH with slickline.
12. Close Swab Valve and HMV, bleed of pressure and break lubricator at QTS sub. Check tools on LSA contaminaton.
13. Fill up the well tubing and annulus with Inhibited fresh water.
Note: deepest penetraton of tubing at 1500m. Total volume to fil the well will be approx. 8,4m3 for tubing and annulus volume 59m3.
14. Pressure up well (tubing and Annulus) against 2,75" Plug and prong at 1931mTH and Producton packer to 20bar/50bar for 5min/20min. Bleed down pressure to zero.
Note: Monitor and record volume pumped and returned.
15. M/U B-Shifting tool (Shear pin inside tool/ Up to open), stab lubricator and pressure test QTS sub to 200bar for 5 minutes. Open HMV and swab valve.
16. RIH with slickline and open 3-1/2" OTIS XA SSD at 1891mTH (Up to open).POOH with slickline.
17. Close Swab Valve and HMV, bleed of pressure and break lubricator at QTS sub. Check tools on LSA contaminaton.
18. Flow check well for 30min to confrm well is stable.
Note: if not stable reverse circulate annulus contents with pump.
19. M/U 2,875" A-plug, stab lubricator and pressure test QTS sub to 200bar for 5 minutes. Open HMV and Swab Valve.
20. RIH with slickline and set 2,875" XS plug inside hanger. POOH with slickline.
21. Close Swab Valve and HMV, bleed of pressure and break lubricator at QTS sub.
22. Pressure up via A-annulus against the 2,875" XS- Hanger plug at 0 mTH to 20bar/50bar for 5/20minutes. Bleed of pressure.
Note: Monitor and record volume pumped and returned.
23. Rig down slickline PCE.
24. Barriers in place for installing BOP:

Operaton: N/D Xmas tree. and install BOP	String	Annulus
First Barrier	Deep set 2.75" Plug and prong in X- Nipple. Pressure tested.	Pressure tested PHL Packer.
Second Barrier	Kill weight brine on tested deep set plug.	Kill weight brine on tested packer.
Third Barrier	2.875" A-plug in hanger. Pressure tested from below.	Pressure tested Tubing Hanger

5. Remove X-mas tree and fowlines.

1. remove X-mas tree, store in safe place.
Note: check all equipment on NORM.
2. Remove metal to metal seal (pancake).
 - Check for pressure in control line, remove needle valve from pancake.
 - Inspect threads in metal to metal seal body.
 - Install jack on top of hanger, install rods.
 - Apply hydraulic pressure to the jack to free metal to metal seal.
3. Remove 11" x 7-1/16" Intermediate fange.
4. Check the ACME thread from the SRT seal assy.
5. Remove the tubing hanger fow protector from the hanger, inspect the threads. Hanger thread is 3-1/2" New Vam.
6. Release 1 te down bolt at the tme, so you can measure the travel distance from the inner pin.
7. Check if tubing hanger te down bolts are working properly.

6. Rig up BOP and Hydraulic workover unit

1. Wellgear to install 13-5/8" 10K BOP on 11" 10K Flange.
 - Support fange.
 - 2-7/8" x 5" Variable bore rams.
 - Blind-Shear rams.
 - 2-7/8" x 5" Variable bore rams.
 - Annular preventer 5K.
 - Kill line with double manual valves and NRV
 - Choke line with manual valves.
2. Set the Koomey unit controls to minimum hydraulic pressure.
3. Functon test all BOP rams from Koomey unit and remote consoles as per commissioning sheet:
 - Nitrogen pre charge pressure. (pressure 1000psi when switching on 1 air pump afer 2 strokes.
 - Pump capacity test. (0-3000psi within 15 minutes)
 - Functon test pumps.
 - Pressure gauges read out on closing unit and remote control must be same.
 - Closing unit volume test, close open close with remaining accumulator pressure of 200psi over pre-charge.

- Closing unit remote panel function test.
 - Pressure test closing unit operating hoses.
4. Fill the stack and trip tank with inhibited fresh water.
 5. Circulate fluid across the stack to verify the trip tank is operating and lined up correctly.
 6. Line the fluid pump onto the standpipe and test the standpipe and all valve to 20bar/345bar for 5/10 minutes.
 7. Close blind shear rams and the HCR valve on the choke line.
 8. Apply 20bar/345bar for 5/10 minutes via kill line to the BOP, testing the blind rams and choke line HCR against 2,875" A plug.
 9. Bleed of pressure in kill line and monitor BOP pressure to confirm operation of check valve in kill line. Bleed of pressure through choke line.
 10. Realign valves to pump into choke line.
 11. Close outer kill line manual valve and pressure test 20bar/345bar for 5/10 minutes through choke line. Bleed of pressure.
 12. Close inner kill line manual valve and pressure test 20bar/345bar for 5/10 minutes through choke line. Bleed of pressure. Realign valves to pump into kill side. Open blind rams.
 13. Run SRT seal assembly running tool (Acme threads) on drillpipe and latch onto the hanger adapter with turns to right.
 14. Close the lower variable rams, open the choke HCR valve and close the choke manual valve.
 15. Apply 20bar/345bar for 5/10 minutes via kill line to the BOP, testing the lower variable rams and manual choke valve. Bleed of pressure and open lower rams.
 16. Close the upper variable rams.
 17. Apply 20bar/345bar for 5/10 minutes via kill line to the BOP, testing the upper variable rams and inner manual valve on choke line. Bleed of pressure and open upper rams.
 18. Close the annular
 19. Apply 20bar/345bar for 5/10 minutes via kill line to the BOP, testing the annular rams and inner manual valve on lower stripper rams. Bleed of pressure.
 20. Open the kill line and choke line valves.
 21. Test the choke manifold inlet valves to 20bar/345bar for 5/10 minutes.
 22. Bleed of pressure and open inlet valves close the choke outlet valves.
 23. Test the choke manifold outlet valve to 20bar/345bar for 5/10 minutes.
 24. Test remaining surface line as per procedures and P&ID.
 25. Rig up Hydraulic Workover unit on BOP (see layout diagram as per Section 5).
 26. Fill out the HWU acceptance sheet.
 27. Function test HWU unit, tubulars tongs.
 28. Barriers in place for HWU operations:

Operaton: Pull Completion with HWU	String	Annulus
First Barrier	2.75" Plug and prong in X-Lock Nipple. Infow tested.	Pressure tested PHL Packer.
Second Barrier	Continuously monitored overbalanced brine on deepset plug and packer.	Continuously monitored overbalanced brine on deepset plug and packer.
Closable Barrier	FOSV with Xover to completion threads	Tested BOPs

7. Rig up slickline and Pull plugs from completion cut tubing.

1. Retract the te-down bolt. Pull the SRT seal assembly from the tubing head spool.

Note: Be sure A-annulus valve are open to avoid swabbing.

2. Break out Seal assembly from ACME running tool and remove running tool from the drillpipe.
3. Pick up 3-1/2" New vam landing string and screw into tubing hanger.
4. Pull tension over string weight to reach 5cm upwards travel of tubing hanger.
5. Remove protector caps from SRT rams. Open SRT rams by turning 12 turns to left.
Note: If unable to turn rams apply additional pull on landing joint to ensure tubing hanger is not resting on rams. String is landed off in Neutral weight and running weight was 30 tons.
6. Pull tubing in tension and set in slips
7. Rig up slickline unit.
8. Install sheave on rig floor.
9. Check that A-annulus pressure is zero. Open gate valve.
10. RIH with slickline and retrieve the SX-plug from the 2,875" S4 nipple at 0mTH. POOH.
11. Close gate valve, break lubricator at QTS, check SX-plug and pulling tools for LSA contamination.
12. Flow check well for 30 minutes.
13. Rig down slickline unit and check all equipment on NORM.
14. Rig up
15. RIH with Mechanical Cutter on e-line.
16. Correlate cutter to depth 1915,50mTH to cut the 3-1/2" 9,2# pup joint above the
Note: Length of pup joint 4,79mtr, leave enough length for the wash-over overshot on the new completion.
17. Activate cutter and cut tubing. POOH
18. Rig down E-line and check all equipment on LSA.

8. Retrieve completion from well.

1. Pull tension over string weight to reach 5cm upwards travel of tubing hanger.
2. Remove protector caps from SRT rams. Open SRT rams by turning 12 turns to left.
Note: If unable to turn rams apply additional pull on landing joint to ensure tubing hanger is not resting on rams.
3. Lift hanger to POOH with completion.
4. Flow check well for 30 minutes.
5. POOH with completion
 - Check all items on Norm contamination.
 - Break out tubing and assemblies carefully.
 - Check if all control line clamps are recovered.
 - Clean threads and inspect threads, re-dope threads.
 - Check trip tank during POOH.
6. When all completion at surface, count all pipe on deck.

9. Run 3-1/2" Completion.

1. RIH with Jet sub and jet hanger profile and BOP stack with jet sub.
2. Rig up for running completion.
 - Drift tubing while picking up tubing joints.
 - All threads need to be visually inspected and doped.
 - Stabbing valve with TIW for all type of tubing must be ready on the HWU floor.
 - Torque connection to optimum torque using jet-lube API modified.
 - Torque values 3-1/2" Vam top 9,2# Min 2610f/lbs, Opt 2900f/lbs, Max 3190f/lbs.
 - Bolt cutter needs to be on HWU floor to cut control line in emergency.
 - A roll duct tape is to be available on the HWU floor.
 - Flush control line with Bio Hydran TMP46 Mineral oil.

- Rig up sheave wheel into work window for control line.
 - Record amount of clamps used.
 - Inform supervisor should any joints be rejected (lay down and paint the damaged end red).
3. Rig up sheave wheel into work window
 4. Pick up and make up completion sub-assemblies and RIH as per the running tally.
 - Overshot assembly.
 - 2.75" X-nipple assembly.
 - 9-5/8" Completion packer assembly.
 - 1 each full joint 3-1/2" 9.2# Vam top 13Cr.
 5. Continue RIH with 3-1/2" 9.2# Vam top 13Cr tubing as per tally.
 6. Make up 2,75"-WR-SCSSV landing nipple assembly with 2.75" Isolaton sleeve pre-installed (+ 50m/TH depth).

Note: needed for 2,75" WR-SCSSV.
 7. Pressure test control line to 20bar/414bar for 5/20minutes. Bleed down pressure.
 8. Continue RIH with 3-1/2" 9.2# Vam top 13Cr tubing as per tally.
 9. Tag the 3-1/2" New Vam 3-1/2" pupjoint stump and slack of weight.
 10. Pull up and calculate the space out.
 11. Make up tubing hanger assembly and connect WR-SCSSV control line.
 12. Pressure test control line to 20/414 bar for 5/20 min
 13. Make up the required pup joint and tubing hanger (with ports plugged of) assembly as per calculated space out.

Note: Overshot must be over the 3-1/2" tubing stump to be able to fish 2,75" deep set PX plug and prong below old production packer at 1931mTH.
 14. Open A-annulus valve and assign a competent person -in radio contact with the driller- at the wellhead A-annulus outlet to monitor for well flow when A-annulus is open.
 15. Position string 45cm above land of point.
 16. Rig up slickline equipment.
 17. RIH with slickline and retrieve 2,813" X isolaton sleeve from WR-SCSSV nipple. POOH with slickline. Close gate valve
 18. M/U 2,75" PX plug with X-line running tool. Open gate valve.
 19. RIH with slickline and set 2,75" PX plug body in 2,75" X-lock mandrel at +/-1912mTH. POOH with slickline. Close gate valve.
 20. M/U Prong for 2,75" Lock mandrel, stab lubricator and pressure test QTS sub to 200bar for 5 minutes. Open gate valve.
 21. RIH with slickline and set Prong in 2,75" PX plug body at +/-1912mTH. POOH with slickline.
 22. Pressure up well against 2,75" Plug and prong at +/-1912mTH to 20bar/290bar for 5min/20min this will set the completion packer. Bleed down pressure to zero.

Note: Monitor and record volume pumped and returned
 23. Perform a pull test of 4000lbs to confirm packer is set.
 24. Land of hanger put 5 tons compression on Packer, close SRT rams.
 25. Unscrew landing string and lay down same.
 26. P/U SRT seal assembly with ACME running tool on drillpipe.
 27. RIH with SRT seal assembly and install onto tubing head spool as per instruction engineer.

Note: Be sure A-annulus valve are open.
 28. Lock down with te-down pins, tighten gland nuts.
 29. Open string at surface.
 30. Pressure up A-annulus to 20bar/100bar for 5/20min to test the completion packer and Hanger seals. Bleed down pressure to zero.

Note: Monitor and record volume pumped and returned

31. Unscrew ACME running tool and lay down same.
32. M/U 2,875" AVA plug.
33. RIH with slickline and set 2,875" AVA plug in 2,875" X-lock mandrel at 0mTH (Hanger profile).
POOH with slickline.
34. Pressure test against 2,875" AVA Plug at 0mTH to 20bar/200bar for 5min/20min.

Note: Monitor and record volume pumped and returned

35. Barriers in place:

Operaton: N/D BOP install X-mas tree.	String	Annulus
First Barrier	2.75" Plug and prong in X-Lock Nipple. Infow tested.	Pressure tested PHL Packer.
Second Barrier	Kill weight brine on tested deepset plug.	Kill weight brine on tested packer.
Third Barrier	2.875" A-plug in hanger. Pressure tested from above.	Pressure tested Tubing Hanger

36. Rig down HWU and nipple down BOP's.
37. Backload all equipment and clean the area.
38. Clean tubing hanger polished neck and TH spool cavity. Clean any debris from top 2,875" A Plug.
39. Install pancake fange for SCSSSV control line and fush
40. Connect control line and pressure test 20/414 bar and nipple up 3-1/8" X-mas tree.
41. Pressure test the TH neck cavity through bonnet test port: ring gasket, hanger seals and neck seals to 20/345bar for 5min/10min.
Note: Lower master valve and A-annulus valve open during test.
42. Pressure test X-mas tree against 2.875" AVA- plug to 20bar/290bar for 5/10mins.
Note: Tree and all valves are pressure tested ofine on charts.

10. Retrieve Slickline plugs.

1. Install PCE and pressure test 20/290bar for 5/10 minutes.
9. Connect TR-SCSSV and HMV lines to Well Servicing Well Control Unit.
 - Pressure test hydraulic line from WS control panel to TR-SCSSV connecton to 20/350bar for 5/10minutes.
 - Pressure test Hydraulic line from WS control panel to HMV connecton to 20/200bar for 5/10minutes.
 - Pressure up DHSV to 350 Bar to open.
 - Pressure up HMV to 200 Bar to open.
2. Check that A-annulus pressure is zero. Open Swab valve.
3. Stab lubricator and pressure test QTS to 290bar for 5 minutes. Open HMV and Swab valve.
4. Run in hole with slickline and retrieve 2,875" AVA plug at 0mTH (Hanger). POOH.
5. Close HMV and swab valve, bleed down lubricator. Break lubricator at QTS and change tool string. Check tools for LSA contaminaton
6. Stab lubricator and pressure test QTS to 290 bar for 5 minutes. Open HMV and Swab valve.
7. Run in hole with slickline and retrieve prong from 2.75" PX plug at 1912mTH . Pull out of hole.
8. Close HMV and swab valve, bleed down lubricator. Break lubricator at QTS and change tool string. Check tools for LSA contaminaton.
9. Stab lubricator and pressure test QTS to 290bar for 5 minutes. Open HMV and Swab valve.

10. Run in hole with slickline GS pulling tool to retrieve 2,75" PX plug body at 1912mTH. POOH
11. Close HMV and swab valve, bleed down lubricator. Break lubricator at QTS and change tool string. Check tools for LSA contaminaton.
12. Stab lubricator and pressure test QTS to 290bar for 5 minutes. Open HMV and Swab valve.
13. Run in hole with slickline and retrieve prong with Junk catcher from 2.75" PX plug at 1931mTH . Pull out of hole.
14. Close HMV and swab valve, bleed down lubricator. Break lubricator at QTS and change tool string. Check tools for LSA contaminaton
15. Stab lubricator and pressure test QTS to 290bar for 5 minutes. Open HMV and Swab valve.
16. Run in hole with slickline GS pulling tool to retrieve 2,75" PX plug body at 1931mTH. POOH
17. Close HMV and swab valve, bleed down lubricator. Break lubricator at QTS and change tool string. Check tools for LSA contaminaton
18. Stab lubricator and pressure test QTS to 290bar for 5 minutes. Open HMV and Swab valve
19. Run in hole with slickline and install WR-SCSSV inside 2,75" X-nipple at 50mTH. POOH.
20. Pressure up control line to 20bar/345bar for 5/10minutes to test the seals of WR-SCSSV.
21. Close HMV and swab valve, bleed down lubricator. Break lubricator at QTS and change tool string. Check tools for LSA contaminaton
22. Rig down slickline unit and check all equipment on NORM.
23. Pressure test tree cap 20bar/220bar for 5/10minutes.
24. Handover well to producton.

This program as issued is final, however, if the executor finds cause to question a step in the program, or if any problems are encountered, he should immediately contact one of the following personnel in the order provided:

: (Well Intervention Coordinator)

(Engineering Manager)

7. APPENDIX

1. Well Schematc Old

		COMPLETION STRING 1				NSL-001	
		String 2	String 3	String 4	Completion date: 22/10/1987		
N°	Bottom hole equipment	ID	OD	Depth	Length		
	RKB/Top TBG Head spool			8.29	8.29		
2	3 1/2" tubing NVAM 10.2 lbs/ft L80 + pup joint	2.922	3.500	97.15	88.51		
4	Safety valve landing nipple Otis XXO 3 1/2" NVAM 9 Cr 1Mo	2.750	3.500	99.84	0.68		
7	Sliding slide door Otis XA 3 1/2" NVAM 9Cr 1Mo	2.750	3.500	1901.19	1.18		
10	2 Eye joints 3 1/2" NVAM 10.2 lbs/ft L80	2.922	3.500	1917.63	9.48		
12	Pup joint 3 1/2" NVAM 10.2 lbs/ft L80	2.922	3.500	1924.46	4.68		
15	X-Over 3 1/2" NVAM box x 4 1/2" NVAM pin	2.922	3.500	1929.84	0.21		
18	Millout extension 7" NVAM 32 lbs/ft L80	2.922	3.500	1934.46	2.27		
20	Pup joint 3 1/2" NVAM 10.2 lbs/ft L80	2.922	3.500	1939.36	4.78		
23	Wire line entry guide 3 1/2" NVAM 9 Cr 1Mo	2.750	3.917	1940.9	0.37		
24	Production packer I r 82DAB40 5" NVAM	3.250	5.466	2033.19	1.47		
27	Pup joint 3 1/2" NVAM 10.2 lbs/ft L80	2.922	3.500	2040.46	4.76		
29	Landing nipple Otis X 3 1/2" NVAM 9Cr 1Mo	2.750	3.500	2041.55	0.32		
Miscellaneous (Casing, Plug, Fish...)		ID	Lbs/ft	Bot depth	Top depth		
I	Down conductor pipe 2 1/2"			57.00			
J	Production casing 9 5/8 BDS 53.5 lbs/ft L80	6.535	53.50	2017.90			
Perforation intervals		Comments					
Depth / Log	Type	Status					
B 2067.50 - 2077.00			Packer fluid = inhibited water				
			Max Inclination 28.9° at 2050m				
			Packer fluid Type DRW SG 1.00				
			Completion type Simple				
Type of SCSSV	Wire line retrievable valve	Weight	\				
Type of Packer	Permanent						
Bottom gauge	<input type="radio"/> Yes <input checked="" type="radio"/> No	Weight/Height on PKR					
Tubing OD	3"1/2	Rig					
Production casing OD	9 5/8 x 7"	Reference depth					
Activation type	Eruptive	Final depth 2327m					

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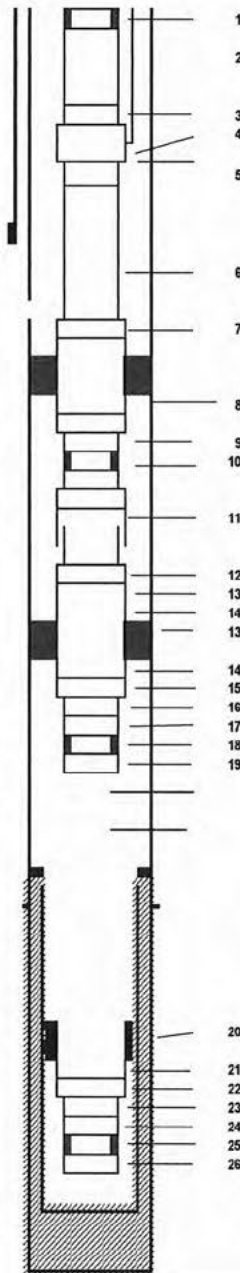
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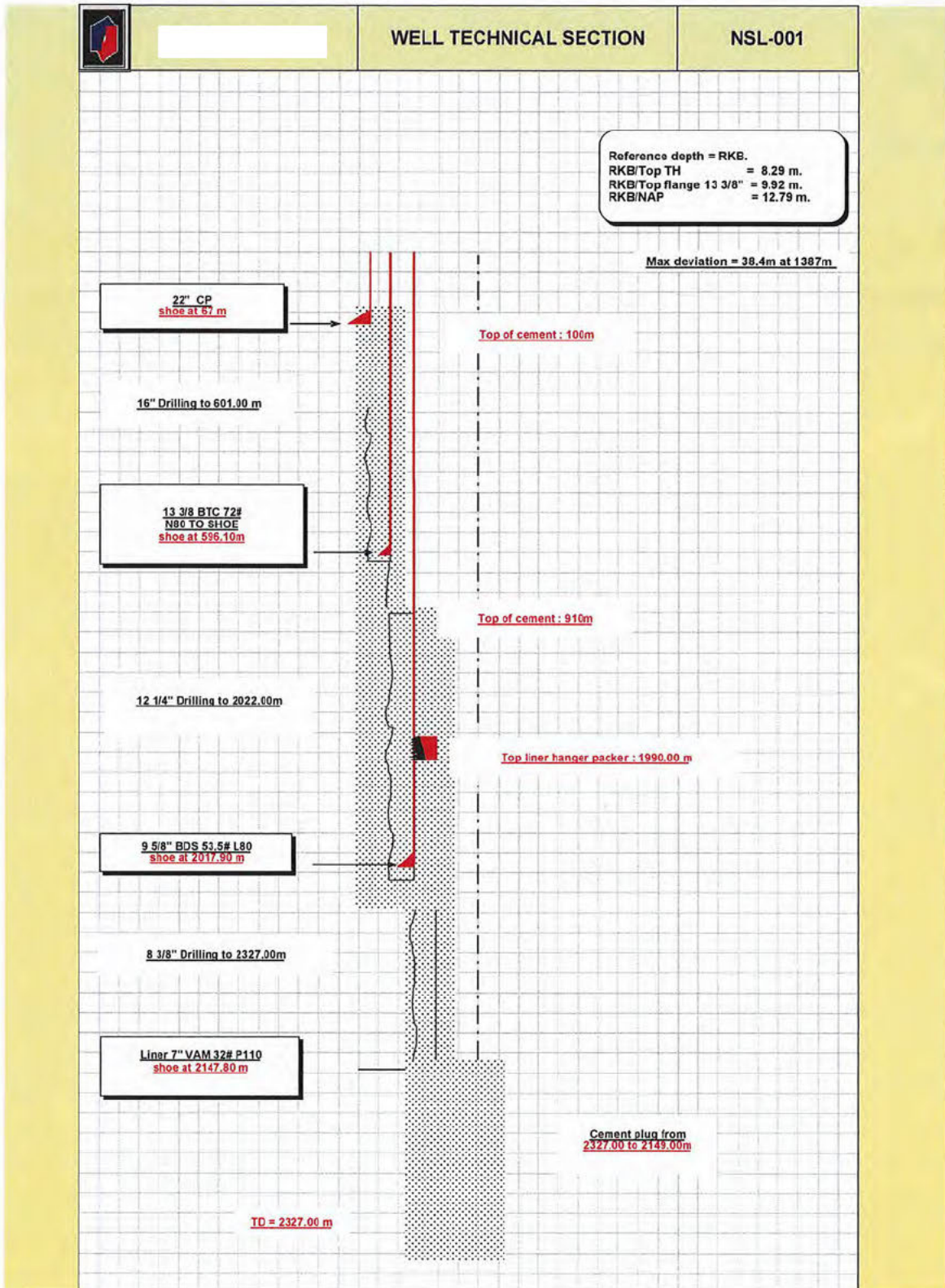
B

2. Well Schematic New.

DRAFT		FIELD : STEENWIJK	WELL : NIJENSLEEK 1	
RT/TH: 9.92		ANNULUS FLUID : INHIBITED FRESH WATER		
COMPLETION DATE : JULY 2018		INHIBITED FRESH WATER		
VOLUMES		DRILLING DEPTHS		
TUBING : 8.4 m ³		9 5/8" SHOE 2008 M / RT		
ANNULUS : 59 m ³		7" LINER TOP 1984.2 M/RT		
HOLE : 76 m ³		CEMENT AT 2139 M/RT		
Xmas TREE				
TUBING HEAD		SRT HANGER		
TUBING HANGER		SRT HANGER		
L MASTER VALVE				
U MASTER VALVE		MCEVOY 3 1/8" - 5000 COMPACT TREE		
SWAB VALVE		(FORECAST UPGRADE SPRING 2000)		
WING VALVES				
TOP CAP		3 1/8"-5000 X 6.5 -4 OTIS ACME Q.U.		
STRING				
ITEM	QTY	DESIGNATION	Depth/Th	ID/in
1	1	TUBING HANGER WITH 2.875" OTIS S4 PROFILE		2,750
2		TUBING 3 1/2" VAM TOP L80 9.2# 13Cr		2,921
3	1	PUP X-OVER 3-1/2" VAMTOP X 3-1/2" NEW VAM		
4	1	OTIS FLOW COUPLING 3 1/2" NEW VAM		
4	1	OTIS 2.813" X SAFETY VALVE NIPPLE	50.00	2,813
4	1	OTIS FLOW COUPLING 3 1/2" NEW VAM		
5	1	PUP X-OVER 3-1/2" NEW VAMTOP X 3-1/2" VAM TOP		
6		TUBING 3 1/2" VAM TOP L80 9.2# 13Cr		2,921
7	1	PUPJOINT 3-1/2"		
7	1	X-OVER 3-1/2" VAMTOP X 5-1/2" VAM TOP		2,750
7	1	PUPJOINT 5-1/2"		
8	1	9-5/8" COMPLETION PACKER		
8	1	PUPJOINT 5-1/2"		
9	1	X-OVER 5-1/2" VAMTOP X 3-1/2" VAM TOP		
9	1	PUPJOINT 3-1/2"		
9	1	PUPJOINT 3-1/2"		
10	1	OTIS 2.75" "X" NIPPLE		2,750
10	1	PUPJOINT 3-1/2"		
10	1	X-OVER 3-1/2" VAMTOP X 4-1/2" VAM TOP		
10	1	PUPJOINT 4-1/2"		
11	1	OVERSHOT 5-1/2" (WASH OVER 2MTR OVER PUPJOINT)	1917.50	4.885
12	1	3 1/2" PUP JOINT (CUT AT 1915.50mTH)		
13	1	XOVER 3 1/2" NEW VAM X 4 1/2" NEW VAM	1921.40	2,921
13	1	ANCHOR SEAL "KBH" 190DA60	1922.40	
14	1	9 5/8" 194DAB60 PACKER		
15	1	7" MILLOUT EXTENSION	1923.90	
16	1	XOVER 7" 32# X 3 1/2" 10.2# NEW VAM	1926.20	2,921
17	1	3 1/2" PUP JOINT	1926.30	2,921
17	1	3 1/2" FLOW COUPLING	1931.10	2,921
18	1	2.75" OTIS X LANDING NIPPLE	1934.90	2,750
19	1	WIRELINE ENTRY GUIDE	1932.60	2,921
20	1	7" 82DAB40 PACKER	2020.10	
21	1	5" MILLOUT EXTENSION	2021.50	
22	1	XOVER 5" X 3 1/2"	2023.80	2,921
23	1	3 1/2" PUP JOINT	2024.00	2,921
24	1	3 1/2" FLOW COUPLING	2028.70	2,921
25	1	2.75" OTIS X LANDING NIPPLE	2029.50	2,750
26	1	WIRELINE ENTRY GUIDE	2030.00	2.9
PERFORATIONS DEPTH/RT				
FROM	TO			
19 70.5	19 79.0	2 1/8" SCALLOP 4 SHTS/FT		
20 67.5	20 77.0	2 1/8" ENERJET (INTERVAL NOT PRODUCING)		
Note- historic completion diagrams mistakenly quoted perforation depths at TH				
NORM CLASSIFIED : NO				
DEVIATION : 38.37 DG (KOP AT 620 M)				

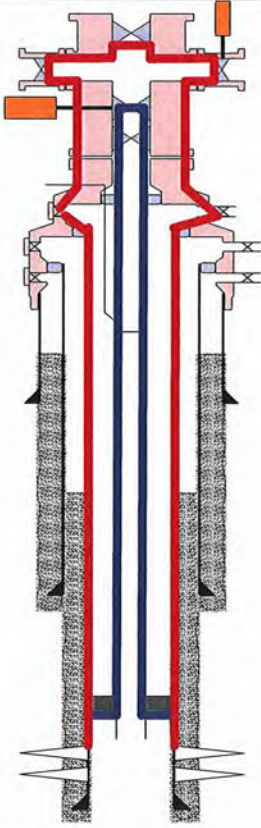


3. Casing and cement depths

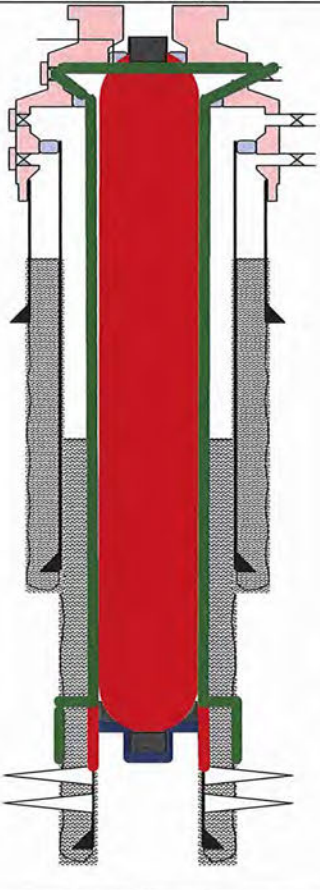


4. Well control diagrams.

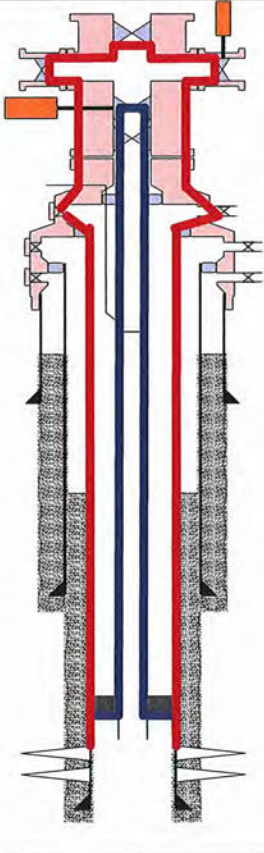
Barrier Diagram 1; Typical well capable of flowing shut-in

Barrier Diagram	Well Barrier Elements	Comments
	Primary Well Barrier	
	Casing	From Perfs to Production Packer
	Production Packer	
	Completion String	
	Tubing Hanger	
	Upper Master Valve	
	Secondary Well Barrier	
	Casing Cement	
	Casing	
	Wellhead	
	Annulus Valves	
X-mas Tree		

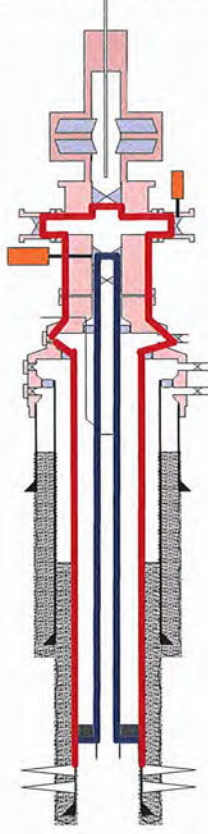
Barrier Diagram 2; Temporary Abandonment.

Barrier Diagram	Well Barrier Elements	Comments
	Primary Well Barrier	
	Casing	From Perfs to Producton Packer
	Producton Packer	
	Deep Set Plug	
	Secondary Well Barrier	
	Casing Cement	
	Tubing and Annulus kill fluid	
Tertiary Well Barrier		
Cap Rock		
Casing		
Annulus Valves		
Wellhead		
Tubing Hanger		
Backpressure Valve		

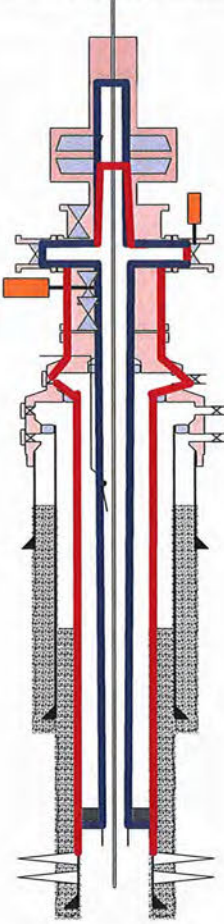
Barrier Diagram 3; Pumping through Tubing.

Barrier Diagram	Well Barrier Elements	Comments
	Primary Well Barrier	
	Casing	From Perfs to Producton Packer
	Producton Packer	
	Completon String	
	Tubing Hanger	
	Upper Master Valve	
	Secondary Well Barrier	
	Casing Cement	
	Casing	
	Wellhead	
	Annulus Valves	
	X-mas Tree	

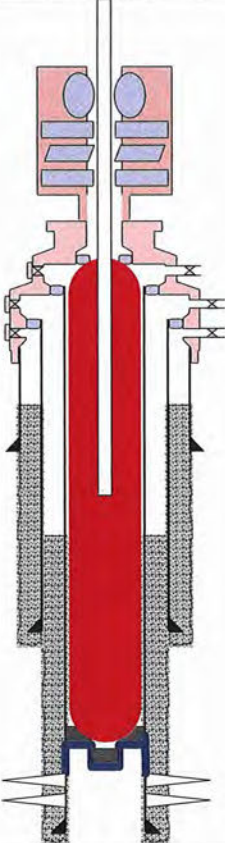
Barrier Diagram 4; Rigging wireline equipment above Xmas tree.

Barrier Diagram	Well Barrier Elements	Comments
	Primary Well Barrier	
	Casing	From Perfs to Producton Packer
	Producton Packer	
	Completon String	
	Tubing Hanger	
	Upper Master Valve	
	Secondary Well Barrier	
	Casing Cement	
	Casing	
	Wellhead	
	Annulus Valves	
	X-mas Tree	

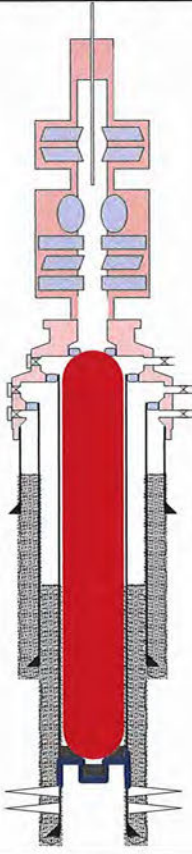
Barrier Diagram 5; Running wireline through X-mas tree.

Barrier Diagram	Well Barrier Elements	Comments
	Primary Well Barrier	
	Casing	From Perfs to Producton Packer
	Producton Packer	
	Completon String	
	Tubing Hanger	
	X-mas Tree	
	Wireline Pressure Control Equipment	Includes risers, BOP body and Lubricator.
	Wireline Stufng Box/Grease Head	
	Secondary Well Barrier	
	Casing Cement	
	Casing	
	Wellhead	
	Annulus Valves	
	X-mas Tree	
	Wireline Pressure Control Equipment	Includes risers and BOP body
	BOP Rams	

Barrier Diagram 8; Running work string in well- Hydraulic Workover unit.

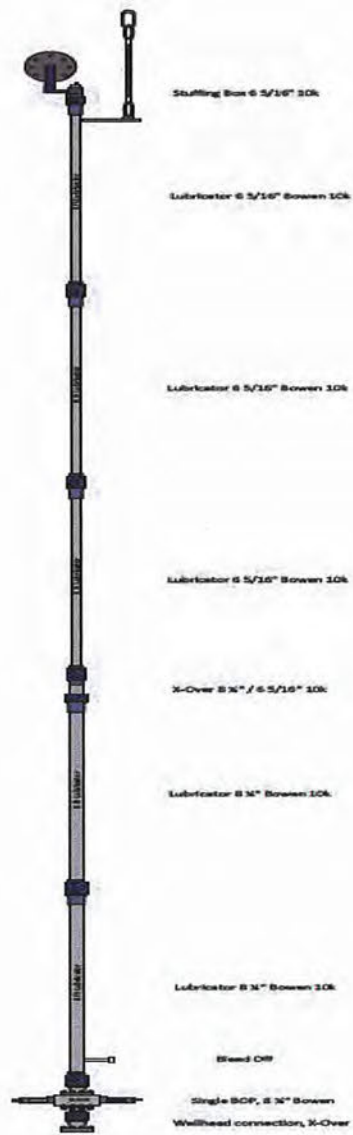
Barrier Diagram	Well Barrier Elements	Comments
	Primary Well Barrier	
	Casing	From Perfs to Producton Packer
	Producton Packer	
	Deep Set Plug	
	Secondary Well Barrier	
	Fluid Column	

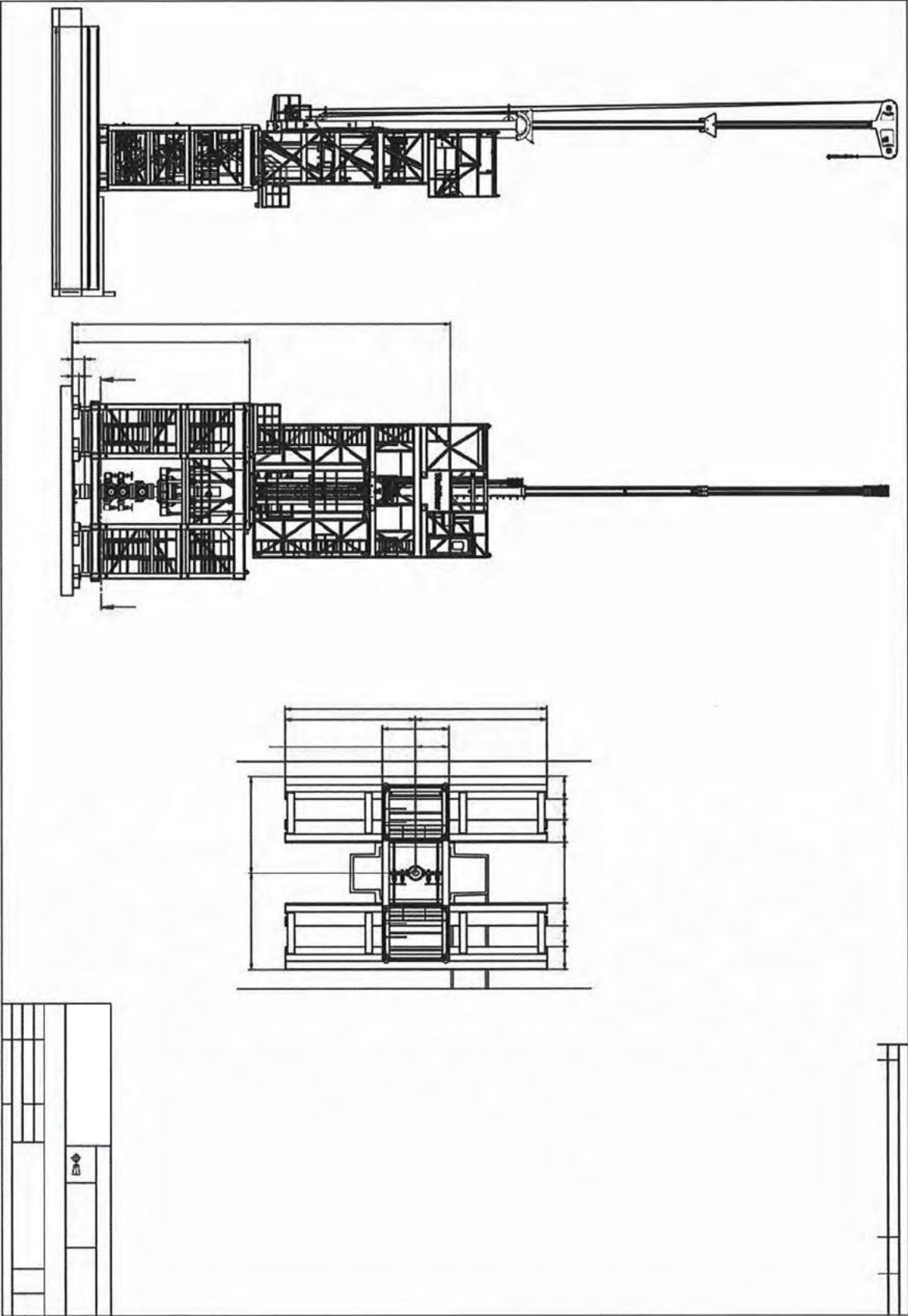
Barrier Diagram 9; Rigging Wireline Equipment above BOP's.

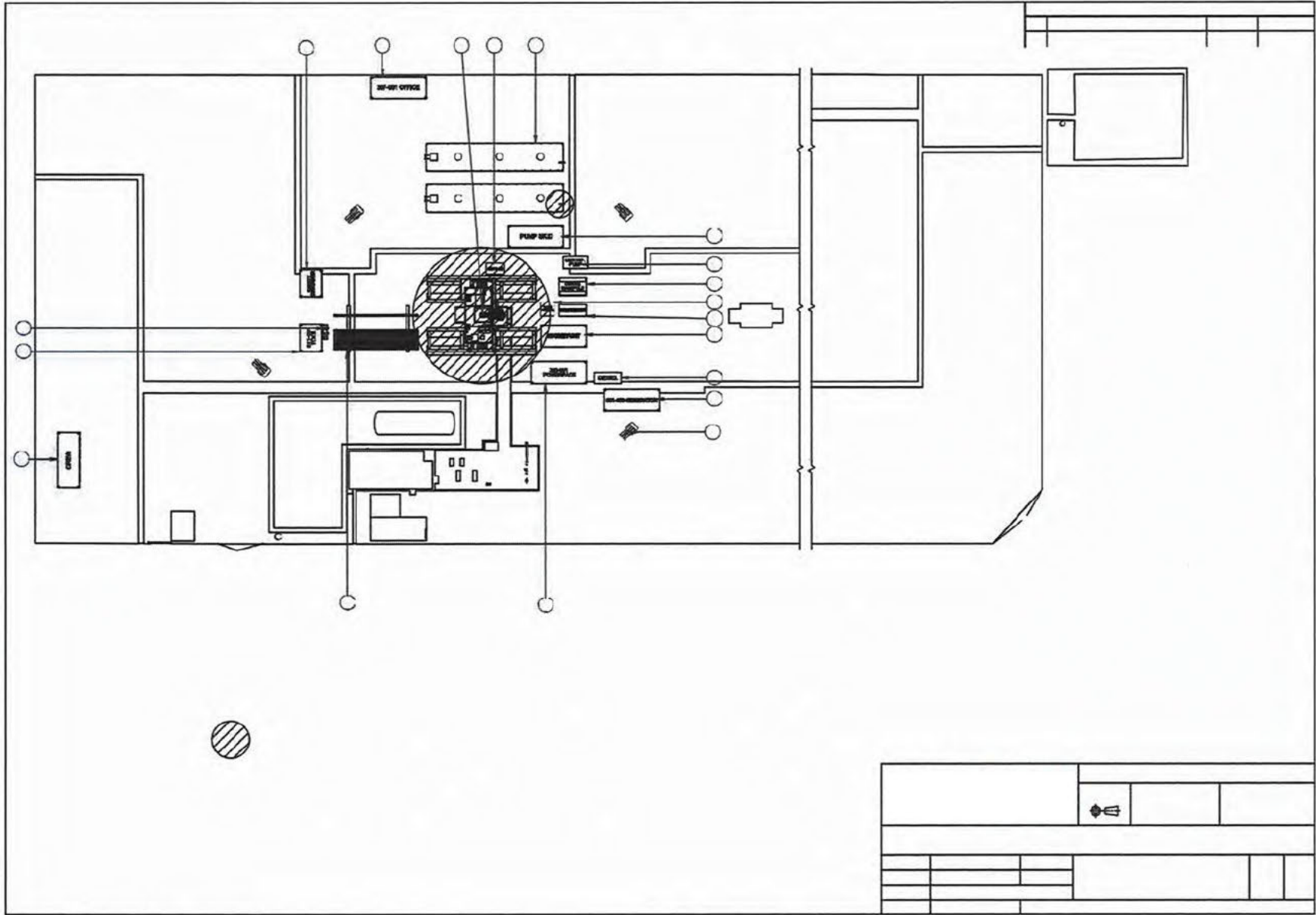
Barrier Diagram	Well Barrier Elements	Comments
	Primary Well Barrier	
	Casing	From Perfs to Producton Packer
	Producton Packer	
	Deep Set Plug	
	Secondary Well Barrier	
	Fluid Column	

5. Rig up Schematics,

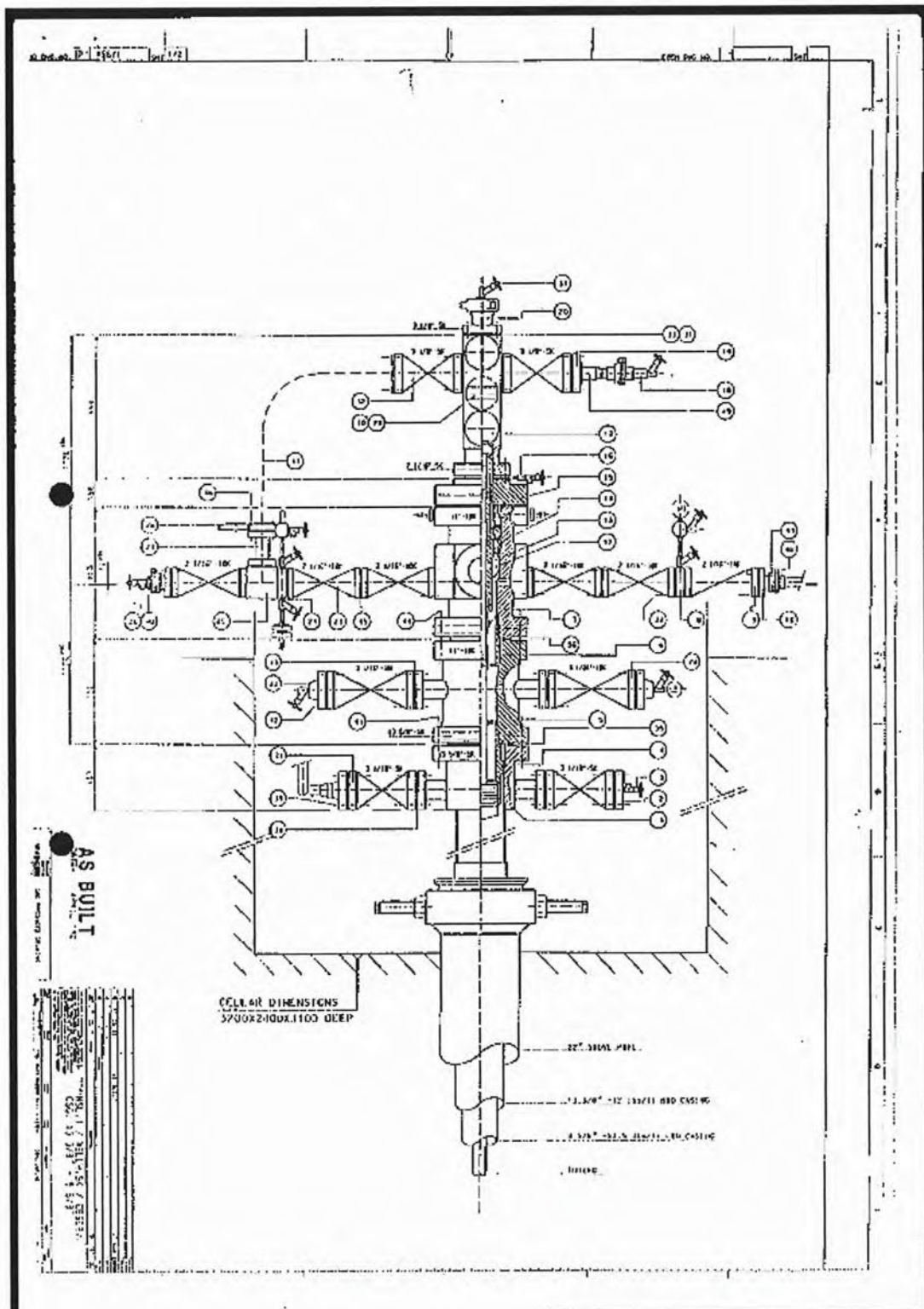
Slick-line:



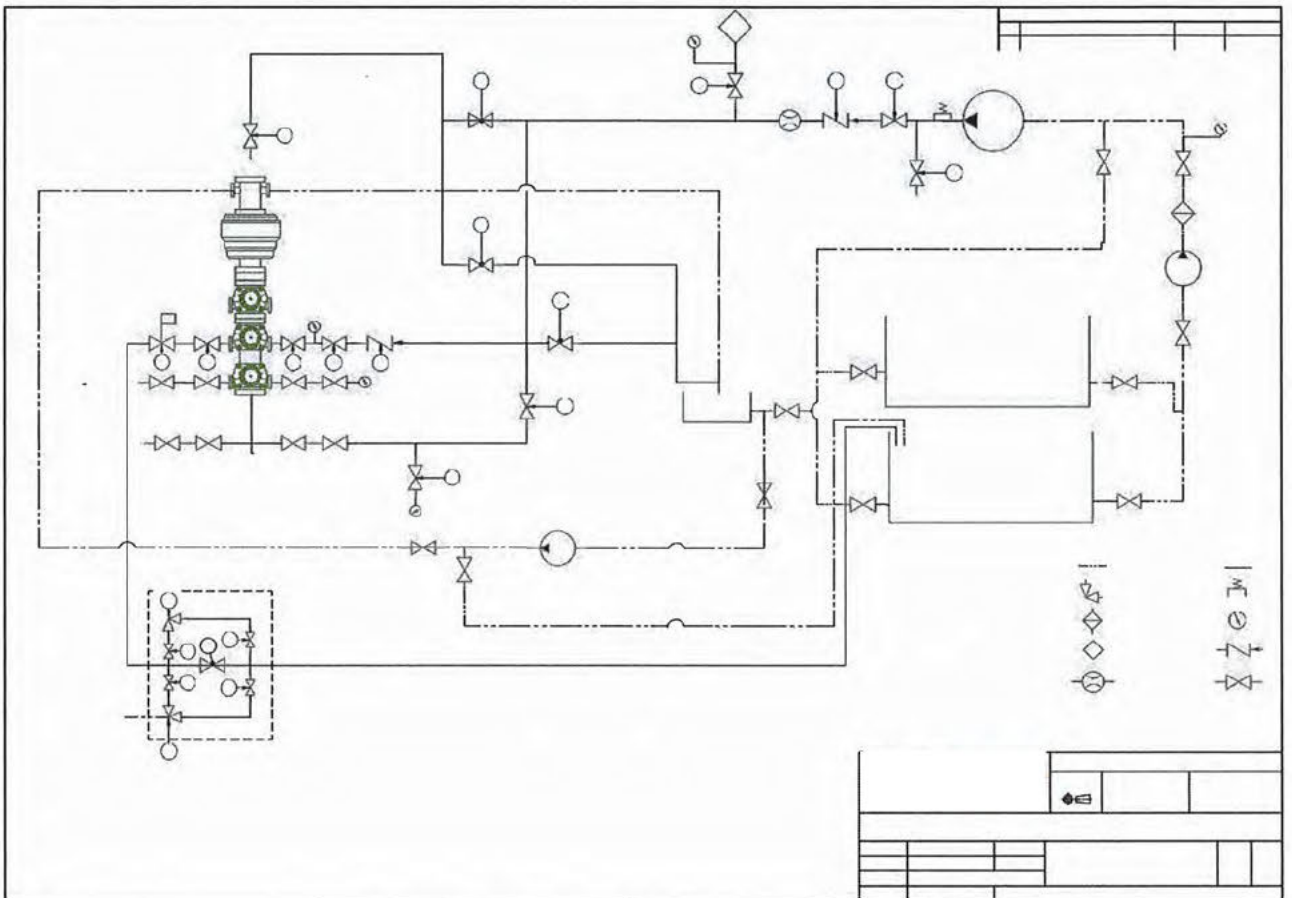




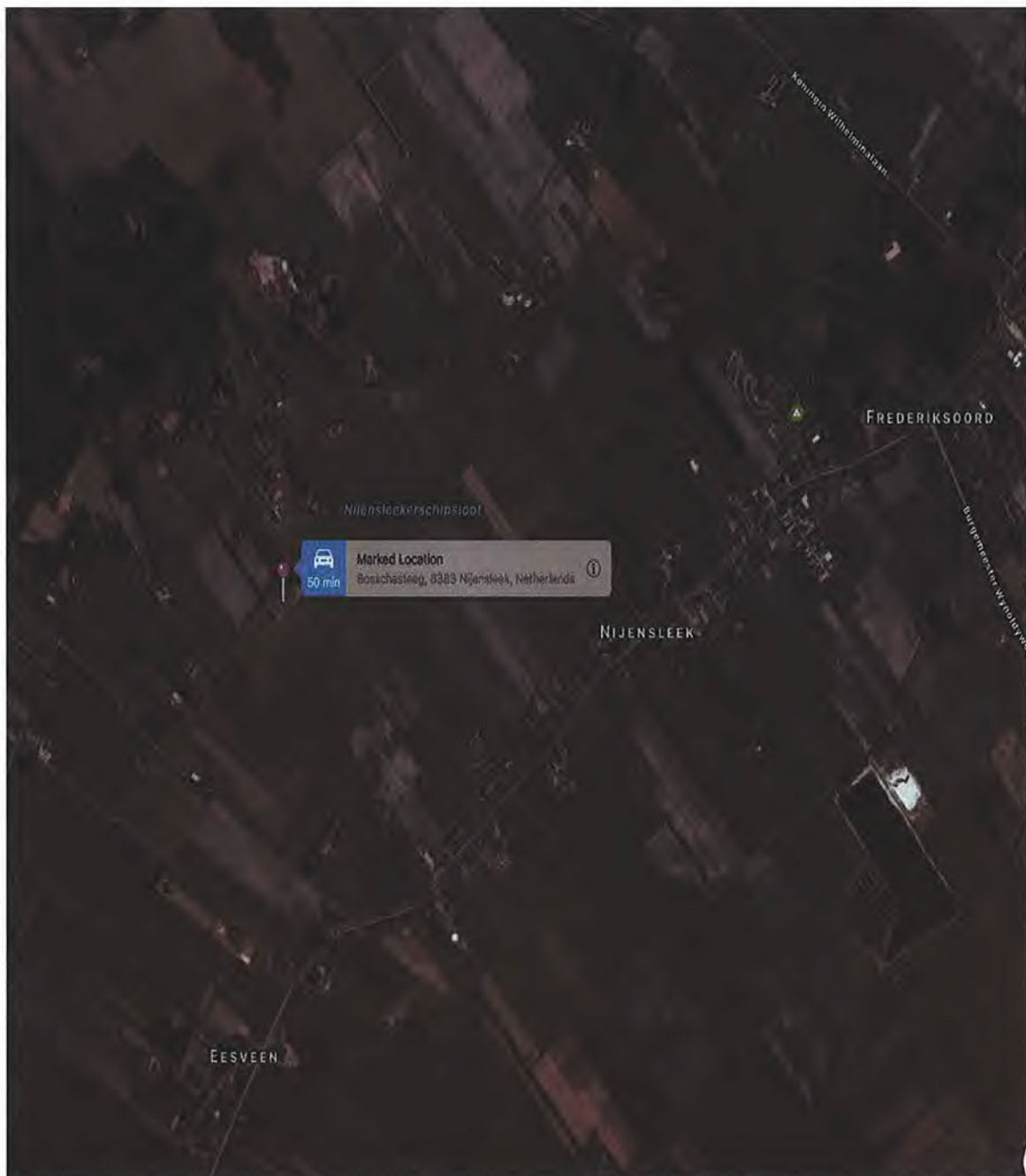
5. X-MAS TREE DIAGRAM



6. P&ID



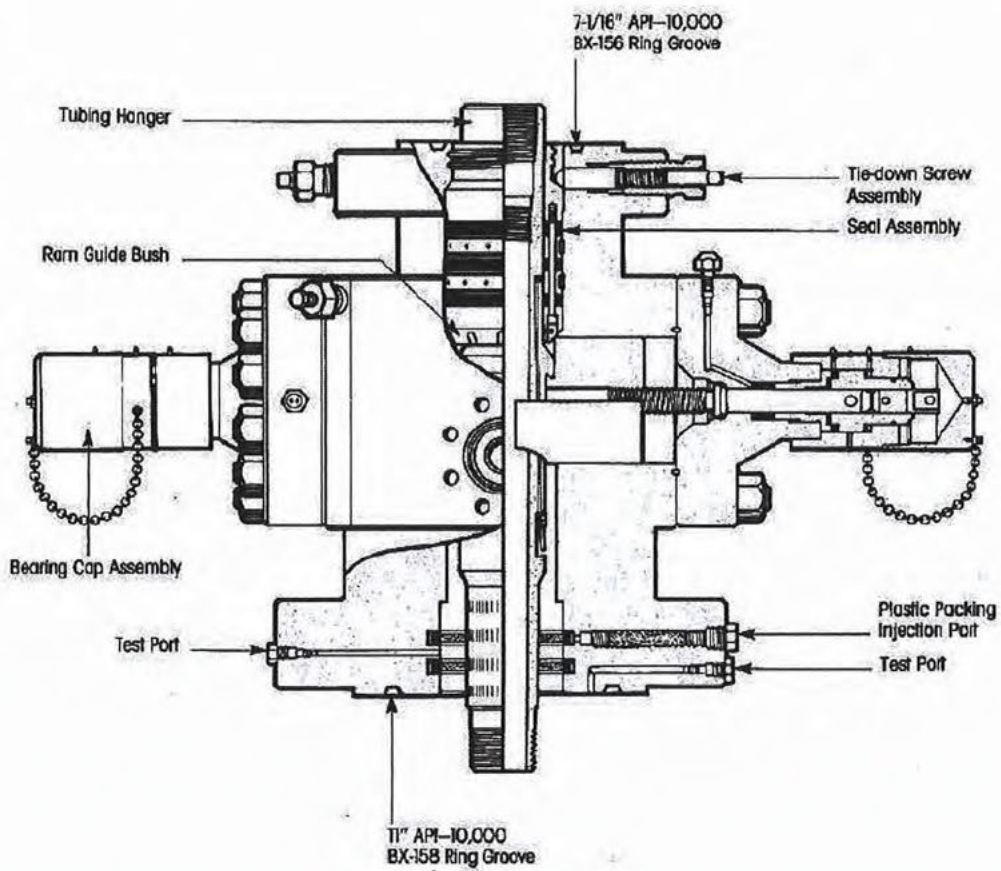
7. LOCATION



8. SRT Tubing head.

IRON WORKS LTD
LEEDS ENGLAND

TUBING HEAD, TYPE 'SRT' ASSEMBLY



9. Well Handover Sheet

Well Handover Sheet																																																																																				
Field Platform	Well No	Well Type	Producer Injector	Handover Date Handover Time																																																																																
Reason For Handover																																																																																				
Production Data																																																																																				
FTHP		bar	CITHP	bar																																																																																
Downhole Well Status																																																																																				
Wellhead Connection and Size																																																																																				
				<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: left; padding: 2px;">Tree Status</th> </tr> </thead> <tbody> <tr> <td style="padding: 2px;">Tree Cap Tested</td> <td style="padding: 2px;">Yes</td> <td style="padding: 2px;">No</td> </tr> <tr> <td style="padding: 2px;">Pressure Tested to</td> <td colspan="2" style="padding: 2px;">bar</td> </tr> <tr> <td colspan="3" style="padding: 2px;">Tree Cap Needle Valve</td> </tr> <tr> <td style="padding: 2px;">Open</td> <td colspan="2" style="padding: 2px;">Closed</td> </tr> <tr> <td colspan="3" style="padding: 2px;">Swab Valve</td> </tr> <tr> <td style="padding: 2px;">Open</td> <td colspan="2" style="padding: 2px;">Closed</td> </tr> <tr> <td colspan="3" style="padding: 2px;">Kill Wing Valve</td> </tr> <tr> <td style="padding: 2px;">Open</td> <td colspan="2" style="padding: 2px;">Closed</td> </tr> <tr> <td colspan="3" style="padding: 2px;">Kill Wing Check Valve - Inflow Tested</td> </tr> <tr> <td style="padding: 2px;">Yes</td> <td style="padding: 2px;">No</td> <td style="padding: 2px;">Pressure</td> </tr> <tr> <td colspan="3" style="padding: 2px;">Manual Flow Wing Valve</td> </tr> <tr> <td style="padding: 2px;">Open</td> <td colspan="2" style="padding: 2px;">Closed</td> </tr> <tr> <td colspan="3" style="padding: 2px;">Hydraulic Flow Wing Valve</td> </tr> <tr> <td style="padding: 2px;">Open</td> <td colspan="2" style="padding: 2px;">Closed</td> </tr> <tr> <td colspan="3" style="padding: 2px;">Hydraulic Upper Master Valve</td> </tr> <tr> <td style="padding: 2px;">Open</td> <td colspan="2" style="padding: 2px;">Closed</td> </tr> <tr> <td colspan="2" style="padding: 2px;">Production Control</td> <td style="padding: 2px;">Well Service Control</td> </tr> <tr> <td colspan="3" style="padding: 2px;">Platform Actuator Hydraulic Lines</td> </tr> <tr> <td style="padding: 2px;">Connected</td> <td colspan="2" style="padding: 2px;">Disconnected</td> </tr> <tr> <td colspan="3" style="padding: 2px;">Lower Master Valve</td> </tr> <tr> <td style="padding: 2px;">Open</td> <td colspan="2" style="padding: 2px;">Closed</td> </tr> <tr> <td colspan="3" style="padding: 2px;">Chemical Injection (into kill side of tree)</td> </tr> <tr> <td style="padding: 2px;">On</td> <td colspan="2" style="padding: 2px;">Off</td> </tr> <tr> <td colspan="3" style="padding: 2px;">Chemical Injection needle valves</td> </tr> <tr> <td style="padding: 2px;">Open</td> <td colspan="2" style="padding: 2px;">Closed</td> </tr> </tbody> </table>			Tree Status			Tree Cap Tested	Yes	No	Pressure Tested to	bar		Tree Cap Needle Valve			Open	Closed		Swab Valve			Open	Closed		Kill Wing Valve			Open	Closed		Kill Wing Check Valve - Inflow Tested			Yes	No	Pressure	Manual Flow Wing Valve			Open	Closed		Hydraulic Flow Wing Valve			Open	Closed		Hydraulic Upper Master Valve			Open	Closed		Production Control		Well Service Control	Platform Actuator Hydraulic Lines			Connected	Disconnected		Lower Master Valve			Open	Closed		Chemical Injection (into kill side of tree)			On	Off		Chemical Injection needle valves			Open	Closed	
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Manual Flow Wing Valve																																																																																				
Open	Closed																																																																																			
Hydraulic Flow Wing Valve																																																																																				
Open	Closed																																																																																			
Hydraulic Upper Master Valve																																																																																				
Open	Closed																																																																																			
Production Control		Well Service Control																																																																																		
Platform Actuator Hydraulic Lines																																																																																				
Connected	Disconnected																																																																																			
Lower Master Valve																																																																																				
Open	Closed																																																																																			
Chemical Injection (into kill side of tree)																																																																																				
On	Off																																																																																			
Chemical Injection needle valves																																																																																				
Open	Closed																																																																																			
ScSSV Status																																																																																				
Open	Production Control	ScSSV Needle Valves		Platform Hydraulic Lines		Hydraulic Line Pressure																																																																														
Closed	Well Service Control	Open	Closed	Connected	Disconnected	bar																																																																														
CIL Status																																																																																				
In Operation	Yes	Needle Valves	Open	Injection Pressure	Type Injection Fluid	<i>If not in Operation</i>																																																																														
	No		Closed	bar		Accumulator Pressure																																																																														
Wellhead Status																																																																																				
A-Annulus	Pressure	Inner Valves		Outer Valves		VR Plug Installed																																																																														
	bar	Open	Closed	Open	Closed	Yes No Unknown																																																																														
B-Annulus	Pressure	Inner Valve				VR Plug Installed																																																																														
	bar	Open	Closed			Yes No Unknown																																																																														
Comments / Notes																																																																																				
Responsible Persons																																																																																				
	Name	Position	Signature	Date																																																																																
Released																																																																																				
Accepted																																																																																				