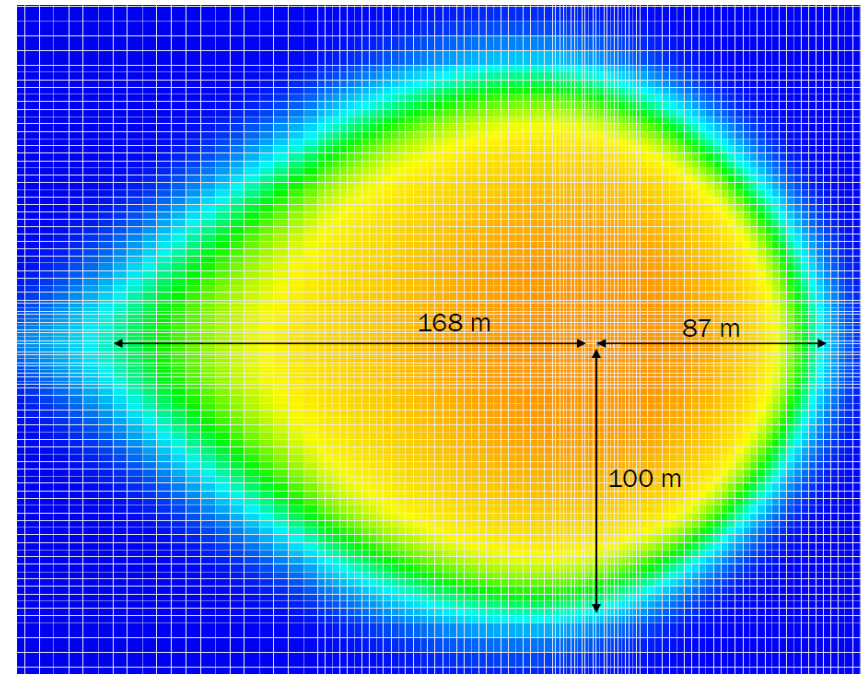
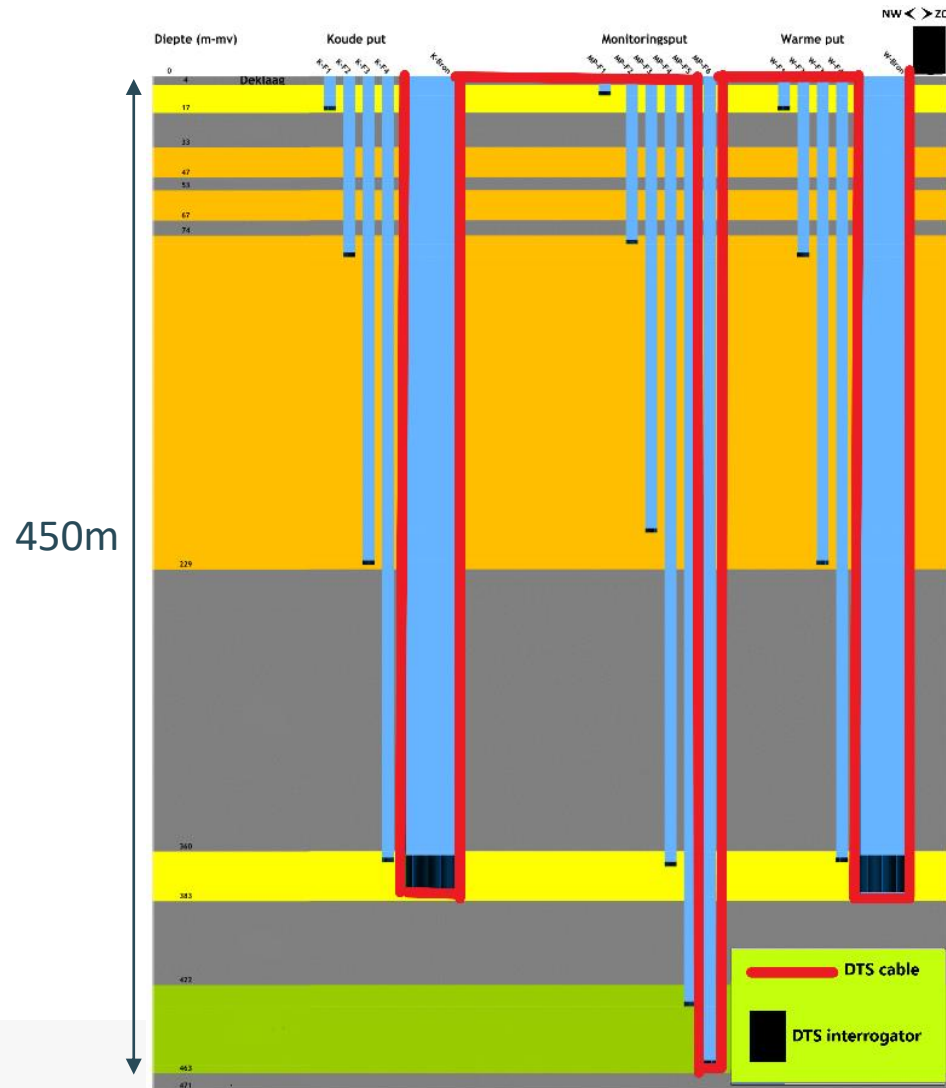




Innovaties en ontwikkelingen bij ECW Geoholding
GNL innovatie-bijeenkomst
13 April 2023

Wim Bos

HTO – Hoge Temperatuur Opslag



Put ontwerp – Productie i.c.m. GRE

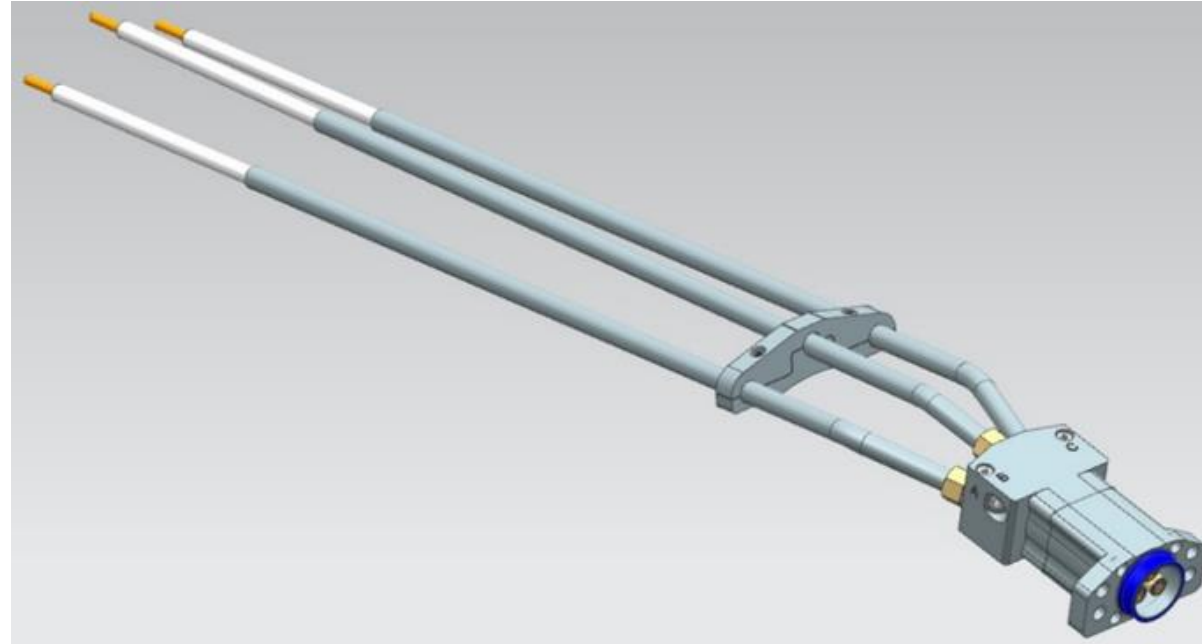
Nr.	Item Description	Wellhead and Xmastree MDM-GT-08 Producer	Depth	Depth	Hole ID	Pipe OD	Collar OD	Pipe ID	Drift ID		
			m tvd	m ah	in	in	in (nom)	in	in		
1	26" Conductor		100	100	-	26,000	welded	24,000	n/a		
	10.92" OD ESP on 8 5/8" 32# L80 tubing <i>OD incl ESP cable and accesories</i>		900	900		8,625	9,625	7,921	7,796		
2	16" x 9 5/8" liner hanger 16" 84lbs/ft, L80 CAL-II (premium)		1300	1323	Top of liner (50 m liner lap)		20,00	16,000	17,000	15,010	14,823
	Protective liner										
	13-3/8" 68 lbs/ft L80 GRE lined x 7 5/8" 33,7 lbs/ft L80 GRE lined					13,325	14,370	11,750	11,625		
						7,625	8,500	6,938	6,254		
	9 5/8" x 6 5/8" Liner Hanger + Packer <i>Top Slochteren Aquifer</i>										
3	9 5/8" 40 lbs/ft, L80 CAL-II (premium)		2318	2522	Top of liner (50 m liner lap)						
			2320	2525	12,250	9,625	10,626	8,835	8,679		
	<i>Base Slochteren Aquifer</i>		2535	2778							
4	6 5/8" 24 lbs/ft L80 13Cr Perforated liner + WWS (internally flush conn.)	2550	2796	8,500	6,625	7,413	5,921	5,796			

*Not in scale

Put ontwerp – bestaande put i.c.m. POD

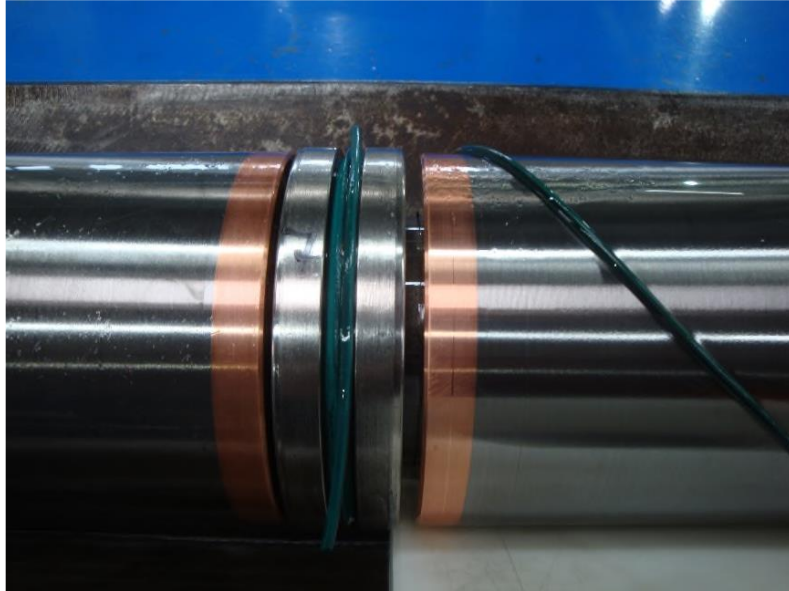
Nr.	Item Description	Wellhead and Xmastree MDM-GT-08 Producer	Depth	Depth	Hole ID	Pipe OD	Collar OD	Pipe ID	Drift ID
			m tvd	m ah	in	in	in (nom)	in	in
1	26" Conductor		100	100	-	26,000	welded	24,000	n/a
	10.25" OD ESP on 8 5/8" 32# L80 tubing					8,625	9,625	7,921	7,796
	13 3/8" 68# L80 ESP POD + Seal stem 13 3/8" x 16" LH + PBR (coated) (No top packer)		900	900					
2	16" x 9 5/8" liner hanger 16" 84lbs/ft, L80 CAL-II (premium)		1300	1323	20,00	16,000	17,000	15,010	14,823
	Protective liner								
	13-3/8" 68 lbs/ft L80 GRE lined x 7 5/8" 26,4 lbs/ft L80 GRE lined					13,325	14,370	11,750	11,625
						7,625	8,500	6,938	6,254
	9 5/8" x 6 5/8" Liner Hanger + Packer Top Slochteren Aquifer								
3	9 5/8" 40 lbs/ft, L80 CAL-II (premium)		2318	2522					
			2320	2525	12,250	9,625	10,626	8,835	8,679
	Base Slochteren Aquifer	2535	2778						
4	6 5/8" 24 lbs/ft L80 13Cr Perforated liner + WWS - (internally flush conn.)	2550	2796	8,500	6,625	7,413	5,921	5,796	
*Not in scale									

ESP betrouwbaarheid




Van delicate connectie naar solide constructie

ESP betrouwbaarheid



Van enkel lager naar dubbele lagering, inclusief anti rotatie spie

Diverse andere innovatie trajecten:

- Horizontal tree op nieuwe mijnbouwlocatie
- Dissolvable ball voor het pressuretesten van GRE en Coating
- TLS met versnellingsmeters aangesloten op KNMI
- Centrale controlekamer voor 4 productielocaties
- Monobore Geothermie (initiatie  Concept)



ecw  **energy**
solid solutions for a sustainable future

