# **ESK**

## Wellbore Software Solutions

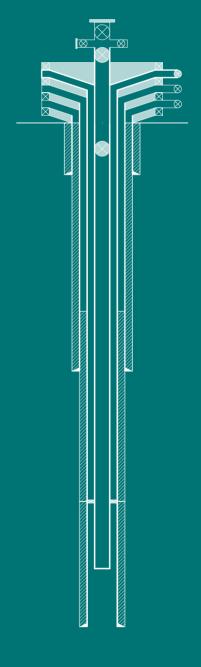
## bohris

bohris.cloud is an ESK developed software tool that allows standardized visualization and documentation of the required well data (casings, well completion, well head and well barriers) regardless of the well's spud date and the quality of available documents.

Technical details are usefully linked to the geological characteristics encountered during drilling (e.g. layer boundaries).

The bohris.cloud software comes with a MAASP calculator that fully complies with the latest industry standards.





Asset integrity management plays an important role for all plant owners and operators as it considers the impacts on and by the operated facility and focuses on the balance between the interests of all stakeholders. For oil and gas production facilities as well as for gas storage facilities, production and injection wells represent an essential link in the operational chain. All wells are subjected to environmental processes and mechanical stresses from storage operations lasting several decades.

Recent industry standards, such as API RP 90, 1170 and 1171 as well as ISO 16530 and NORSOK D-010, give guidance on how well operators should assess and monitor the integrity, safety and reliability of their entire well inventory.

### Key elements of the valid industry standards:

- Risk assessment in association with well integrity hazards
- Well barrier identification and verification
- Well monitoring and surveillance
- Reporting and documentation

#### **Key features**

- Comprehensive well data management
- Standardized visualization of schematics including well barrier schematics
- Precise calculation of safe well operating pressures for specific well completion
- Options to consider casing pressure derating through specified wall thickness reductions

#### **Benefits**

- Minimize risks by monitoring well operating limits
- Strengthen your competitive edge by optimum record management
- Benefit from our experienced multi-disciplinary teams
- Tailor your own solution with customer-specific product developments

The system contains a comprehensive repository for all necessary well data and provides access to data and documents to all relevant users.

Based on the implemented data a full well barrier schematic can be easily generated which clearly differentiates between primary and secondary barriers and provides a tabulated listing of identified well barrier elements with respective verification results.

Monitoring of defined well operating limits is an essential part of the well integrity management. In this context the surveillance of maximum allowable annulus surface pressures (MAASP) is of particular importance. bohris.cloud can manage the deterioration of any well barrier element and reflects this in its MAASP calculation algorithm.

		nnulus B: 127,83 bar	
	Pos	Barrier elements	
$\overline{\otimes}$		Primary barrier	
	-11 01	9 %" Casing (below packer)	
09-8-8	02	9 %" Casing cement (below packer)	
	-10 03	9 %" Production packer	
	04	7" Tubing	
	05	SSSV	
05			
4 1 4			
		Secondary barrier	
		9 %" Casing (above packer)	
		9 %" Casing cement (above packer)	
	08	9 %" Casing hanger seals	
	10	9 %" Casing hanger spool - side outlet valv	
	10	<ul> <li>value of the second seco</li></ul>	
06			
04			
		Remarks	
03			
02			
01			