

Hatfield-4208: Identification of groundwater table to reduce potential issues during seismic activity

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Challenge

Challenge ID:	HCP-4208	Originator:	Onshore: Hatfield
Title:	Identification of groundwater table to reduce potential issues during seismic activity.		
Theme:	ON 4.2: Environmental monitoring - Continuous monitoring of changes throughout the lifecycle		
Consortium Lead:	RPS Group	Interviewed Company:	RPS Group
Geography:	ON.REG.03 - Canada		
Challenge Description			
What is not possible / not adequately addressed at present?			
Seismic survey can involve drilling holes for geophones and explosives. Need to understand likelihood of creating a "flowing hole" based probability of drill hole intersecting the groundwater table.			
What effect does this challenge have on operations?			
A flowing hole will cause some localized flooding.			
Thematic information requirements:	Lithology, structural geology, surficial geology Water quantity		
What do you currently do to address this challenge? How is this challenge conventionally addressed?			
Typically local knowledge is required, especially if the well is situated in or near a community. Holes are usually filled using bentonite (a highly water-absorbent clay) to prevent water flow within the well/drill hole. Flooding must be addressed if it does occur.			
What kind of solutions do you envisage could address this challenge?			
Use EO to help identify the level of the water table and combine with baseline information to assess prior impact.			
What is your view on the capability of technology to meet this need? Are you currently using EO tech? If not, why not?			
Change detection with high-resolution optical may be able to locate new flowing holes.			
Challenge Classification			
Impact on Lifecycle (0=none, 4=high):		Climate / Topography / Urgency:	
Pre-license:	0	Climate class:	Generic climate
Exploration:	3	Topographic class:	Not specific
Development:	2	Seasonal variations:	Any season
Production:	2	Impact area:	Environmental
Decommissioning:	2	Technology urgency:	3 - Immediately (0-2 years)
Challenge Information Requirements			
Update frequency:	Snapshot		
Data currently used:	Field data (GPS) and observation		
Spatial resolution:	License		

Thematic accuracy:	Not specific
Required formats:	Not specific
Timeliness (Vintage):	Reference data
Geographic extents:	License
Existing standards:	None

Relevant products

- [Product Sheet: Reservoir Compartmentalisation](#)
- [Product Sheet: Surface Deformation](#)
- [Product Sheet: Surface Deformation Monitoring](#)
- [Product Sheet: Water Catchment](#)