

OTM-002: Tracking fluid migration in the subsurface

Tracking fluid migration in the subsurface

Challenge

| | | | | | |
|---|--|-----------------------|------------------------------|-------|--------|
| Challenge ID | OTM:002 | | | | |
| 1 Title | Tracking fluid migration in the subsurface | | | | |
| 2 Theme ID | ON 3.3: Subsidence monitoring - Reservoir management | | | | |
| 3 Originator of Challenge | Onshore: OTM | | | | |
| 4 Challenge Reviewer / initiator | PEMEX, Statoil, Exxon | | | | |
| General description | | Overview of Challenge | | | |
| 5 What is the nature of the challenge? (What is not adequately addressed at present?) | It is often challenging to track injected fluids such as those used for EOR/ IOR. Data that can give information to identify where fluid migration has gone to can be very valuable. | | | | |
| 6 Thematic information requirements | 1. Obtain detailed topographic information, | | 13. Monitor ground movement, | | |
| 7 Nature of the challenge - What effect does this challenge have on operations? | Costs related to the loss of injection fluids in the reservoir can be large. | | | | |
| 8 What do you currently do to address this challenge?/ How is this challenge conventionally addressed? | subsurface sensors, including acoustic, electrical and gravity sensors can be used | | | | |
| 9 What kind of solution do you envisage could address this challenge? | Ground movement satellite imagery could indicate sub-surface pressure build up due to injected fluid migration from observed surface movement | | | | |
| 10 What is your view on the capability of technology to meet this need? – are you currently using EO tech? If not, why not? | EO could be a useful complimentary technology | | | | |
| Challenge classification | | | | | |
| 11 Lifecycle stage | Pre license | Exp. | Dev. | Prod. | Decom. |
| Score from impact quantification [1] | 0 | 0 | 1 | 3 | 1 |
| 12 Climate classification | NOT CLIMATE SPECIFIC | | | | |
| 13 Geographic context/restrictions | Generic onshore (Unspecified) | | | | |
| 14 Topographic classification / Offshore classification | Generic onshore (Unspecified) | | | | |
| 15 Seasonal variations | Any season | | | | |
| 16 Impact Area | Operational cost reduction | | | | |
| 17 Technology Urgency (How quickly does the user need the solution) | Immediately (0-2 years) | | | | |
| Information requirements | | | | | |
| 18 Update frequency | daily / weekly /annually (application dependent) | | | | |
| 19 Data Currently used | Downhole tools | | | | |
| 20 Spatial resolution | Downhole tools | | | | |
| 21 Thematic accuracy | | | | | |
| 22 Example formats | GIS Shape file | | | | |
| 23 Timeliness | Within a month | | | | |
| 24 Geographic Extent | Reservoir footprint | | | | |
| 25 Existing standards | No industry standards. TRE have their own internal INSAR standards | | | | |

[1] Impact quantification scores: 4 – Critical/ enabling; 3 – Significant/ competitive advantage; 2 – Important but non-essential; 1 – Nice to have; 0 – No impact, need satisfied with existing technology

Relevant Products

Content by label



There is no content with the specified labels

