

MINUTES

IADC Geothermal Committee Meeting, 13 February 2024

Present at the meeting were

Scott Farmer, H&P; Fredrik Meyer-Lampe, Odfjell Tech; Kevin Gray, Black Reiver; Daria Ivakhnenko, Black Reiver; Allen McIntosh, NOV; Darren Moure, TSC; Eric Gonzalez, Thermaprime; John Beswick, Marriott Drilling; Ashok Santra, Aramco Americas; Shaun Toralde, Weatherford; Bruce Gatherer, Iceland Drilling; Tamas Csrefko, Nabors; Michael Strauss, Ensign; Oumer Tahir, Hunting; Haas Malik, Akute Drilling, Rene Kachyna, MND, Toney Deer, Well Control School; Stephen Pink, NOV; Francisco Porturas, Archer Drilling; Riaz Israel, BP; Rafael Wagner, OMV, Alexander Heger, OMV; Régis Studer, H&P; Damien Sarda, Geofluid; Florian Mercier, H&P; Lars Nydahl Jørgensen, IADC (minutes).

1. Minutes of January 2024 Meeting

There were no comments to the minutes.

2. Introduction of new members

New members joining the committee were Alexander Heger and Rafael Wagner, both of OMV, Toney Deer of the Well Control School, Daniel Drader of Iceland Drilling and Brett Dalgety of BP. Owing to IT difficulties, Brett did not manage to join the meeting.

3. Clarification – Publication and Guidelines

Lars mentioned that a clarification had taken place since last meeting when there was a discussion on the issue of potential lack of alignment between an IADC book (Elsevier sponsored) on geothermal drilling and the Geothermal Guideline.

To avoid that any recommendations made in the two spheres were directly contradictory, an arrangement had been made whereby the writers of our geothermal drilling guideline would undertake to have regular contact with the author of the Elsevier book. The author of the book cannot sit on an IADC committee, as he is not representing an IADC member company.

4. APPG Feedback from attendees

Kevin explained what had happened at the recent APPG meeting. The bottom line was that there was not much news. This view was supported by John and Bruce. Apparently one of the issues is that there is a need for government funding for a geothermal project. However, such funding is not currently available.

5. IADC World Drilling Conference, dedicated IADC Geothermal Conference & Drilling Contractor Magazine

A session entitled Geothermal Focused Sustainability will be held at the IADC **World Drilling Conference** in Madrid 18 – 19 June of this year. Scott will give a presentation on our “Geothermal Well Classification”.

Lars explained that informal discussions had taken place to investigate whether IADC should hold a **dedicated geothermal conference**. He mentioned that the matter had been discussed earlier in the day in the course of the work on Geothermal Well Classification and that there was a lot of support. He asked the monthly meeting audience of their view, which was also very positive. He further mentioned that the winter 2024-25 had been discussed as a possible timing and that Vienna had been suggested as a possible location for the conference.

The **Drilling Contractor magazine** is preparing to issue an article about the work in the Geothermal Committee to be released to align with the World Drilling conference.

6. IADC Onshore Drilling Conference - Panelist

At the Onshore Drilling conference to be held at the Hyatt Regency Hotel in Houston in May, there will be a panel on geothermal drilling. Participation from our group is sought. Four individuals volunteered to play a role in this event.

7. IADC Geothermal Well Classification

Scott gave an overview of the discussions that had taken place earlier in the day as part of the work on the Geothermal Well Classification. He recaptured the overall purpose, i.e.

Providing an international coding system for Geothermal Well construction that shall reflect the practicalities of “putting a hole in the ground” and the risk/difficulty associated with the initial construction and long-term operation of the well

Classification will inform a risk/difficulty rating to facilitate communication with non-drilling professionals – Finance, Geology, Regulators etc

Endorsement will be sought from other geothermal associations – IGA, GGA, EGEN, etc

He then summarised the classes that had been agreed upon earlier in the day. These were:

- Reservoir dependent/independent
- Purpose – heat, power, mineral extraction
- Design class and operating envelop
- Weight class
- Well Control class
- Drilling class
- Environment class

He emphasised that all this was subject to changes and editions in the process during the coming months. Once the outputs of the working session have been tidied and captured in a dedicated document, it will be shared with the wider committee to provide comments.

He then went through the expected way forward, which was:



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- First draft of classification in Q1 2024;
- Q2 refine classification, documentation and begin endorsement;
- End Q3 deliver IADC Classification;
- Q4 – Launch first of remaining sections of IADC Geothermal Well Drilling Guideline.

8. AOB

There being no further business, the meeting was adjourned.

/ Lars Nydahl Jørgensen



Geothermal Committee
General Meeting – 13/02/24

Agenda

- Validation of MoM of the previous meeting
- New Members
- Clarification
- AAPG Feedback
- IADC World Drilling Conference & IADC Drilling Contractor Magazine
- IADC Onshore Drilling Conference (Panel)
- IADC Classification – Working Session (**LIVE**)
- AOB

New Members

- Brett Dalgety – BP
- Daniel Drader – Iceland Drilling
- Alexander Heger – OMV
- Rafael Wagner – OMV
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Clarification

- IADC Geothermal Well Drilling Guideline – IADC Drilling Manual
- IADC Publication

AAPG

- General feedback from attendees

IADC World Drilling Conference & Drilling Contractor Magazine

- Abstract submitted and accepted to present IADC Geothermal Well Classification
 - Madrid, Spain on 18 – 19th of June 2024
 - 18th of June 11:00 – 12:00 during a session on “Geothermal Focused Sustainability”
- IADC Drilling Contractor Article
 - Dedicated article about the committee and our projects
 - To be released in June 2024 to align with World Drilling Conference

IADC Onshore Drilling Conference

- Looking to put together a geothermal panel
 - 16th May 2024 – Hyatt Regency – Houston, USA
 - Thad Dunham

IADC Geothermal Well Classification

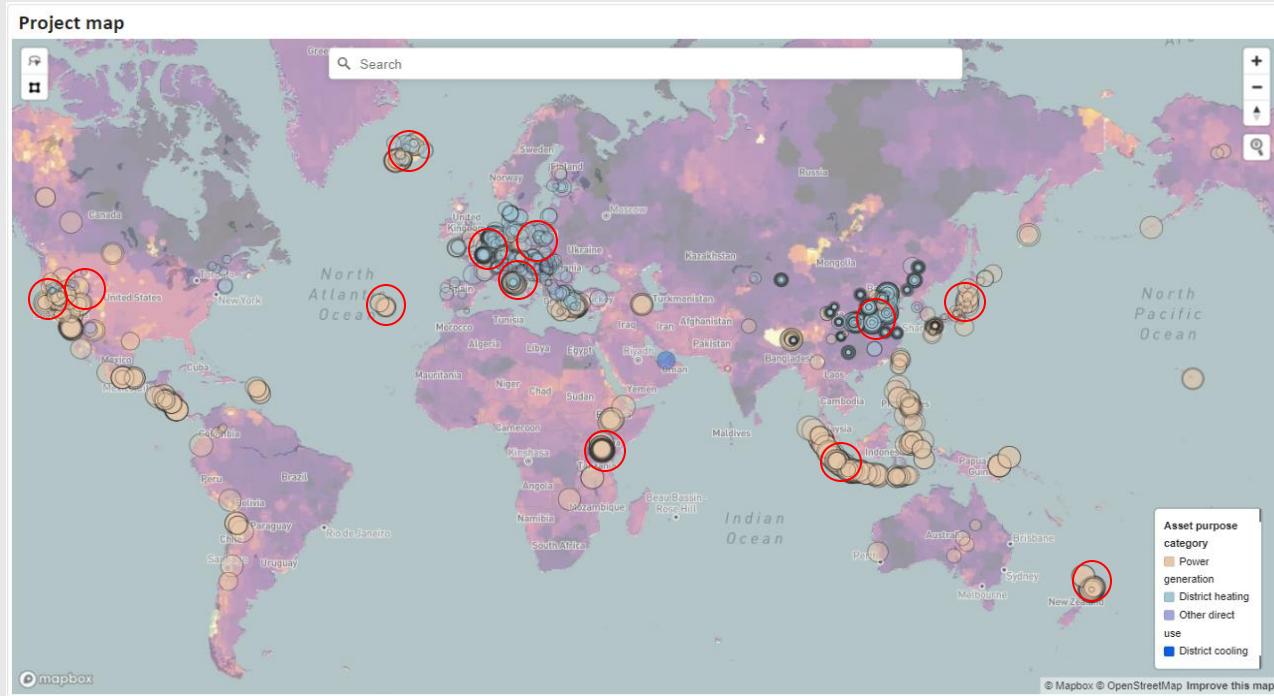
- Purpose: Provide an international coding system for Geothermal Well construction that shall reflect the practicalities of “putting a hole in the ground” and the risk/difficulty associated with the initial construction and long-term operation of the well
- Classification will inform a risk/difficulty rating to facilitate communication with non-drilling professionals – Finance, Geology, Regulators etc
- Endorsement will be sought from other geothermal associations – IGA, GGA, EGEC, etc

IADC Geothermal Well Classification

- Initial classification proposal has been developed further:
 - Temperature Class
 - Geometry Class
 - Integrity/Corrosion Class
 - Rock/Drilling Class
 - Well Control Class
 - ...others?
- Expanded upon in dedicated file

IADC Geothermal Well Classification

- Classification to be tested against prominent areas/types of wells



1. California – Geysers
2. Nevada – Fervo?
3. Azures
4. Iceland
5. France, Paris – Dogger
6. France, Upper Rhine Graben
7. Italy
8. Germany – Eavor Loop
9. Kenya
10. China
11. Indonesia
12. Japan
13. New Zealand
14. ...

Proposed Way Forward

- Aim to define the first draft of classification in Q1 2024
- Q2 2024 refine classification, documentation and begin endorsement (meeting during IADC Galveston?)
- End Q3 deliver IADC Classification
- Q4 – Launch other section of IADC Geothermal Well Drilling Guideline