Mitigation of Waxing in Oil and Gas Transport Pipelines

A Data Management Plan created using DMPonline

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Project abstract:

Wax formation and deposition in the production of waxy/paraffinic crude is a unique production issue observed in downhole operations as well as in surface operations: the wax crystals tend to cling (nucleate) to the walls of the Pipeline over long distances. The accumulation of wax deposits may also occur in other production equipment: well bore, tubing, transfer lines, storage vessels. Moreover, wax deposition is particularly problematic in low-rate wells; greater residence time of oil in the wellbore permits more heat loss and leads to lower oil temperatures.

This project focuses on review and improvement of the wax deposition processes and mitigation techniques.

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Copyright information:

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Data Collection

What data will you collect or create?

Experimental Data from Literature will be collected: 1-phase, 2-phase and 3-phase Wax deposition experiments.

Further Experiments would be done to validate previous literature and provide solutions in the form of quantitative and qualitative models.

Field data would be sourced later, from an agency or company to corroborate live simulations of the research problem. The solutions would be in the form of quantitative and qualitative models. Future restrictions would be applied to sourced data to create confidentiality.

How will the data be collected or created?

Experimental data would be collected via past and recent literature.

Field data would be collected from 'entity' (undecided) via personal cloud storage and restricted to encripted folder on my personal laptop.

Versions of my results and analysis would also be locked in my cloud space on the Z: Drive, in order to avoid having all information in one location. Versions would be named in keys of date and time. Access to the raw and processed data would only be limited to myself, my Supervisor and the chosen representative of the 'entity'.

Documentation and Metadata

What documentation and metadata will accompany the data?

I will ensure the documents containing raw data, results and analysis from literature and future 'entity' (undecided) would be recorded conforming to Cranfield's Management of Research Data Policy.

The raw data would be documented in the form of quantitative and qualitative trends of research focus: wax deposition.

Methodology of research and Analysis would be properly ordered to ease understanding.

Ethics and Legal Compliance

How will you manage any ethical issues?

For the Field Data, a non-disclosure agreement will be proposed to the future 'entity' (undecided) and signed.

The data and related software will be stored on my personal laptop. However the results and analysis would be stored on the secure University Z: Drive.

Cranfield University owns the software: OLGA & Multi-Flash

Access to data, results and analysis of the field would be restricted to my Supervisor, a Representative of the entity and I.

How will you manage copyright and Intellectual Property Rights (IPR) issues?

Data Sharing would be restricted based on the future non-disclosure agreement. The raw data would belong to the source. However, results and analysis of Field Data would belong to the future 'entity' (undecided) and I.

Storage and Backup

How will the data be stored and backed up during the research?

All the raw data (Experimental and Field) would be stored on my personal laptop, while the results and analysis would be stored on the University secure Z: Drive.

Routine Backups of academic literature would also be stored on the Z: Drive, my Laptop and on Mendeley.

How will you manage access and security?

My Supervisor and I would have access to any of the field related information.

My Z: Drive password would also be updated/changed yearly.

Selection and Preservation

Which data are of long-term value and should be retained, shared, and/or preserved?

All raw data of the future 'entity'(undecided) would be retained for as long as stated, per the non-disclosure agreement. No form of this raw data would be further processed without approval from the entity.

Simulations, results and analysis of the literature and field data would be retained quantitatively and qualitatively with anonymity in order to use for publication. Future uses of this information would entail application of different qualitative models (charts) to further represent the solution.

What is the long-term preservation plan for the dataset?

Long term storage of all data, results and analysis would be on a seperate secure cloud space (Microsoft OneDrive)

There will be no cost associated with this action.

Data Sharing

How will you share the data?

Data, results and analysis would only be shared with my Supervisor.

In the future raw data would be shared directly through cloud space with other participants after the conditons stipulated in the non-disclosure agreement have expired.

Are any restrictions on data sharing required?

No restrictions on data sharing would be required after the non-disclosure agreement.

Responsibilities and Resources

Who will be responsible for data management?

I will be primarily responsible for managing all information as relates to this project. My Supervisor would assume secondary ownership of the information.

What resources will you require to deliver your plan?

I have completed training in managing my Data Management Plan and in the use of DMPonline. I am also abreast the current data management policies of Cranfield University.