



Oil verses oil comparison

The correlation of oils to one another and their source rocks is an essential component in defining a basin's petroleum system.

Oil verses oil correlations seek to determine whether oils were generated and expelled from the same source rock. Because the original composition of an oil can be changed by secondary processes (e.g. thermal maturation, migration, and reservoir alteration such as biodegradation, thermochemical sulfate reduction and phase separation), oils with very different bulk, molecular, and isotopic compositions still may be genetically related.

These hydrocarbon and biomarker studies will increase the effectiveness of the explorative process and minimize the risk of dry wells.

Objectives of correlation studies include the following:

- Addressing problems of reservoir continuity
- Detecting alteration effects such as evaporative fractionation, maturation, water washing, and biodegradation
- Classifying oils into genetic families

Exploration applications of correlation studies include the following:

- Proposing migration pathways from kitchen areas to new prospects or plays
- Providing input data for volumetric calculations
- Providing data for development geology
- Determining how many effective source rocks exist in a given area

What data is collected to obtain this information?

A Zedi Whole Oil Analysis is primarily used as a tool to get an in depth look at a specific oil. This information can then be interpreted and compared with other oils in a wide range of applications. The main components of a whole oil analysis are the hydrocarbon fingerprint, biomarker analysis, and light hydrocarbon analysis.

Whole oil analysis vs C10 hydrocarbon analysis:

The most common liquid hydrocarbon analysis that Zedi performs is a C10 BTEX analysis. This test provides you with compositions for C1-C10 hydrocarbons including BTEX components. In these reports, compounds that are not of interest are lumped into groups and not identified individually. For example, the heptanes group contains compounds like 3,3-Dimethylpentane and 2,3-Dimethylpentane lumped together.

In a Zedi Whole Oil Analysis, our team of in-house Chemists select groups that are then separated and each compound is displayed individually. While this kind of detail isn't required for most permitting or general analysis, it can be used as a powerful tool to determine various properties of the oil. Some of these properties can include: maturity, depositional environment, and similarities between oils. On top of this the Zedi Whole Oil Analysis covers a wider range of hydrocarbons, C1-C41, and it includes an analysis of isoprenoid biomarkers in the oil.

Components of Whole Oil Analysis

To make sense of the hydrocarbon fingerprint, biomarkers, and light hydrocarbon analysis Zedi will provide you with various parameters based on the composition of the oil. These parameters include: Thompson, Mango, Halpern, and other various parameters.



Hydrocarbon Fingerprints

An integral part of a whole oil analysis the hydrocarbon fingerprint. The "fingerprint" term refers to the unique C1-C41 profile that oil from different genetic sources will have. However, fingerprint shape alone is not enough to make assumptions about similarities between oils. Oils may have similar C10-C41 portions, but closer examination of biomarkers and light hydrocarbons may unearth fundamental differences between the oils.



Biomarkers

Biomarkers refer to a wide range of compounds in crude oil, but the whole oil analysis focuses specifically on isoprenoid category. Biomarkers will appear in naturally in all oil, and by analyzing biomarkers based on well researched methods the depositional environment can be determined.



Light Hydrocarbon Analysis (heptanes)

Based on the work of Dr. Frank D. Mango, light hydrocarbon analysis has become essential in oil to oil comparisons. As crude oil degrades, a unique profile of heptanes arises, which can be used to compare oils. In our light hydrocarbon analysis portion of the whole oil report we provide you with a detailed report of the heptanes composition.

To make sense of the hydrocarbon fingerprint, light hydrocarbon, and biomarkers analysis, Zedi will provide you with various parameters based on the composition of the oil.

Zedi is a leading technology and services company in the field of production operations.

Through technology backed by expert consultation and services, we help our customers realize their production potential. Our unique combination of award-winning software, automation, measurement, labs, artificial lift and field services offer complete solutions for the challenges our customers encounter.



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- Reduce operating cost
- Improve accuracy and timeliness
- Optimize Production



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- Solution to deliver results
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- Backed by technology
- On and Off-shore Expertise
- Integrated Lab Data



Lab Solutions

Fast & accurate, on-site lab services backed by technology

- We do it all, everywhere & fast
- On-site abilities with 9 Labs
- Backed by technology
- Expert Project Management



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Get the most from your reserves with well site intelligence

- Best in class Service
- Accelerated production
- Optimized performance
- Wellhead intelligence



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- Cost Flexibility
- Best in Class Ops
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