JUPITER PRIME
Consulting • Training • Advisory
جوبيتر برايم للاستشارات والتدريب

COURSE BROCHURE

Source Rock Screening and Oil-Source Correlation Training Course

12 – 16 April 2027
Madrid

Source Rock Screening and Oil-Source Correlation Training Course

Ref: 2865_109593 **Date:** 12 – 16 April 2027 **Location:** Madrid **Fees:** 6200 GBP

Source Rock Screening and Oil-Source Correlation is a 1-week training course for exploration geologists and geochemists who test cuttings and core for richness, kerogen type and maturity and tie oils to their source, building a source rock evaluation summary for a prospect. Charge risk remains one of the commonest reasons dry holes are drilled, so screening data must be read quickly and correctly. Jupiter Prime Training offers this source rock screening course.

Why Source Rock Screening Matters Now

Three pressures shape source rock screening today. Exploration portfolios are smaller and every prospect must show a credible charge story before a well is funded. Unconventional plays have made the source rock itself a reservoir, so total organic carbon and pyrolysis results now feed completion and acreage choices as well as play maps. Laboratory budgets are tight, so geoscientists must choose which samples to analyse and which contaminated or caved samples to reject. Teams that screen well cut charge risk early; teams that misread contaminated cuttings or oil-based mud signals can condemn a good prospect or fund a poor one.

Who Gains Most from Source Rock Screening

- Geologists who build play and prospect charge assessments for exploration portfolios
- Geochemists who design sampling plans and quality-check laboratory results
- Well-site specialists who collect, label and preserve cuttings and core for analysis
- Petroleum systems analysts who correlate produced or seeped oils with candidate source intervals
- Unconventional play specialists who rank organic-rich shale intervals for appraisal

An exploration asset group that sends its prospect geologists and its geochemist together gains most, because charge risk is argued between those desks.

Source Rock Screening Capabilities

Participants leave able to turn a sheet of laboratory numbers into a defensible statement about whether a rock has generated, and where its oil went.

- Assess organic richness from total organic carbon and pyrolysis yields — sample selection for further analysis
- Classify kerogen type using hydrogen and oxygen indices and visual kerogen description — expected oil or gas proneness
- Calculate maturity from Tmax, vitrinite reflectance and production index — generation window placement
- Test samples for caving, mud additive and migrated oil contamination — data acceptance decisions
- Apply biomarker and isotope fingerprints to match oils with candidate sources — petroleum system definition
- Communicate charge risk with clear confidence levels — prospect ranking committee

Key Source Rock Screening Terms

- Total organic carbon — the weight percentage of organic carbon in a rock sample, the first measure of source richness.
- Kerogen — insoluble organic matter in sedimentary rock that generates oil and gas when heated over geological time.
- Hydrogen index — the remaining hydrocarbon potential normalised to organic carbon, used to infer kerogen type.
- Tmax — the pyrolysis temperature at which the largest hydrocarbon yield is released, a common maturity indicator.
- Biomarker — a molecular fossil in oil or rock extract that records the organisms, depositional setting and maturity of its source.
- Oil-source correlation — the comparison of oil and rock extract fingerprints to show which interval generated an accumulation.

Source Rock Screening Day by Day

Day 1: Organic Matter and Depositional Settings

- Organic Facies Concepts — Marine, Lacustrine and Terrestrial Source Expectations
- Preservation and Anoxia Indicators — Predicting Richness Before Drilling
- Sample Types and Handling — Cuttings, Sidewall Cores and Conventional Core
- Sampling Plan Design — Interval Spacing and Laboratory Budget Choices
- Contamination Sources — Caving, Mud Additives and Migrated Hydrocarbons

Day 2: Richness and Kerogen Typing

- Total Organic Carbon Measurement — Screening Thresholds for Further Work
- Pyrolysis Peaks S1, S2 and S3 — Free Oil and Remaining Potential
- Hydrogen and Oxygen Index Plots — Kerogen Type Assignment
- Visual Kerogen Description — Confirming Pyrolysis-Based Typing
- Log-Based Richness Estimates — Extending Laboratory Points Through Uncored Sections

Day 3: Maturity Indicators

- Tmax and Production Index — Pyrolysis Maturity Reading and Pitfalls
- Vitrinite Reflectance Profiles — Calibrating Depth Against Generation Windows
- Spore Colour and Alternative Indices — Maturity Where Vitrinite Is Absent
- Suppressed and Recycled Signals — Spotting Misleading Maturity Values
- Transformation Ratio Estimates — Expelled Versus Retained Hydrocarbons

Day 4: Oil-Source Correlation

- Gas Chromatography Fingerprints — Whole Oil and Extract Comparison
- Biomarker Ratios — Source Facies, Lithology and Age Clues
- Stable Carbon Isotopes — Family Grouping of Oils and Extracts
- Biodegradation and Mixing Effects — Correcting Altered Oil Signatures
- Oil Family Maps — Linking Accumulations to Kitchen Areas

Day 5: Practising the Prospect Source Evaluation

- Case Well Data Quality Screen — Applying Contamination Checks
- Richness and Type Interpretation — Applying Pyrolysis and Index Plots
- Maturity Profile Build — Applying Reflectance and Tmax Calibration
- Correlation Exercise — Applying Biomarker and Isotope Matching
- Source Rock Evaluation Summary for a Prospect — Charge Risk Statement

Applying Source Rock Screening After the Course

- Re-screen an existing well's pyrolysis and organic carbon results for contamination.
- Build an oil family map for the licence area from available oil fingerprints.

Source Rock Screening Questions FAQ

What is source rock screening and oil-source correlation and why does it matter now?

It is the measurement of richness, kerogen type and maturity in rock samples, and the matching of oils to their source. It matters now because fewer wells are funded and each prospect needs a credible charge case.

Which roles gain most from source rock screening and oil-source correlation?

Exploration geologists and geochemists gain most. Well-site specialists and petroleum systems analysts also benefit, because sample quality decides how much charge evidence counts.

How does source rock screening differ from a basin modelling course?

It works from measured samples rather than simulated burial histories. A basin modelling course predicts generation timing with software; this course interprets laboratory data from cuttings, core and oils, and supplies the calibration points such models depend on.

What do you bring back from source rock screening and oil-source correlation?

You bring back a screening routine and a worked prospect example. It covers contamination checks, kerogen typing plots, a maturity profile and an oil family comparison you can repeat on your own wells.

Source Rock Screening: The Way Forward

The source rock evaluation summary for a prospect sets out richness, kerogen type, maturity and correlation evidence on one page with a stated charge risk. Its first use is the prospect ranking meeting, where geologists and portfolio leads weigh charge against trap and reservoir. After the next well, its predictions are worth checking against fresh sample results.