SKY HUNTER

Predicting the presence of oil and natural gas

Case Study

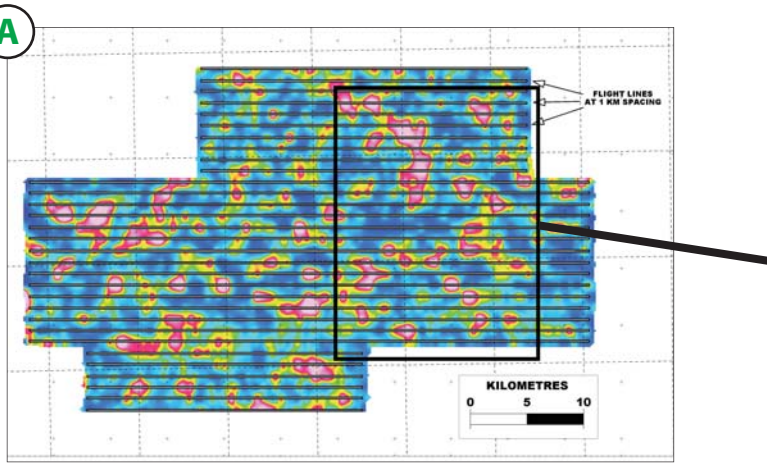
Combining Exploration Techniques

Airborne and Ground-based Geochemistry with Seismic

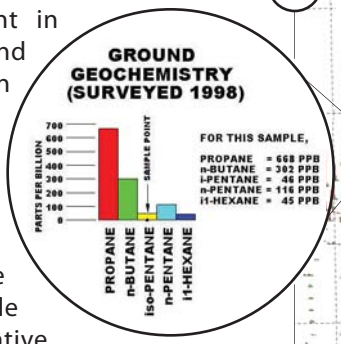
NEW SOUTH WALES, AUSTRALIA

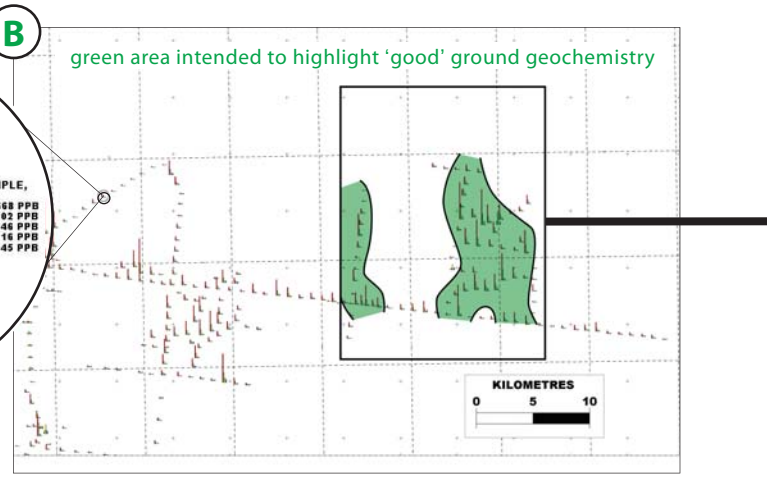
USING MULTI-DISCIPLINARY EXPLORATION TECHNIQUES TO DETERMINE DRILLING LOCATIONS IN NEW SOUTH WALES, AUSTRALIA

Airborne Geochemistry (A): Sky Hunter uses an airplane to fly a gridded survey while employing an air sampling device to record hydrocarbon microseep intensities. These data are summarized on this map, which documents the strongest hydrocarbon readings in pink. The map on the facing page highlights these most intense hydrocarbon anomalies in green, with weaker signals masked by the white background.

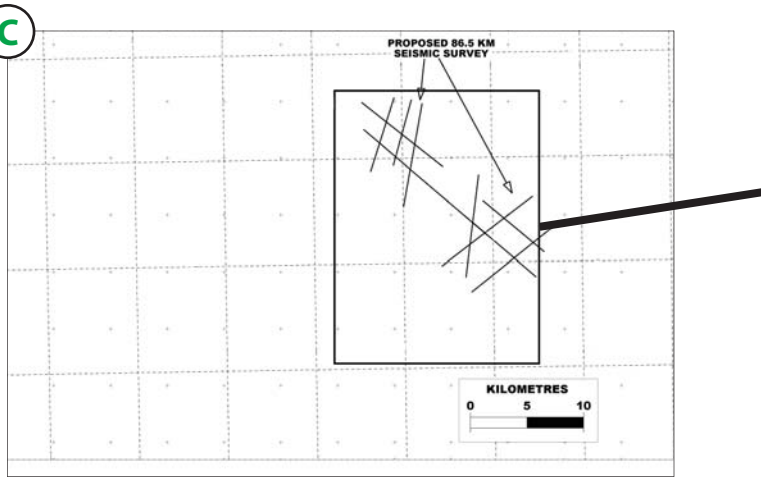


Ground-based Geochemistry (B): The circled index represents a typical gas chromatographic analysis of eluted hydrocarbons recovered from a given point-sourced ground station. The bar graph displayed shows the intensity of various hydrocarbons in "parts per billion." The lightest and most abundant hydrocarbon shown is PROPANE (in red), and the heavier ISOHEXANE (in dark blue) is usually present in smaller quantities. The ground stations record hydrocarbon microseeps emanating vertically above oil or gas traps at depth. Hydrocarbons migrating along geological faults will also be detected if a ground station coincides with the surface expression of a fault. Strong single readings may well be indicative of such faults. These are "noise" from a hydrocarbon prospecting point of view, but can often be identified from the dense data grid provided by the Airborne Geochemical surveys. A true hydrocarbon trap will have a defined areal extent, and will not be limited to point sourced, or linear anomalies.

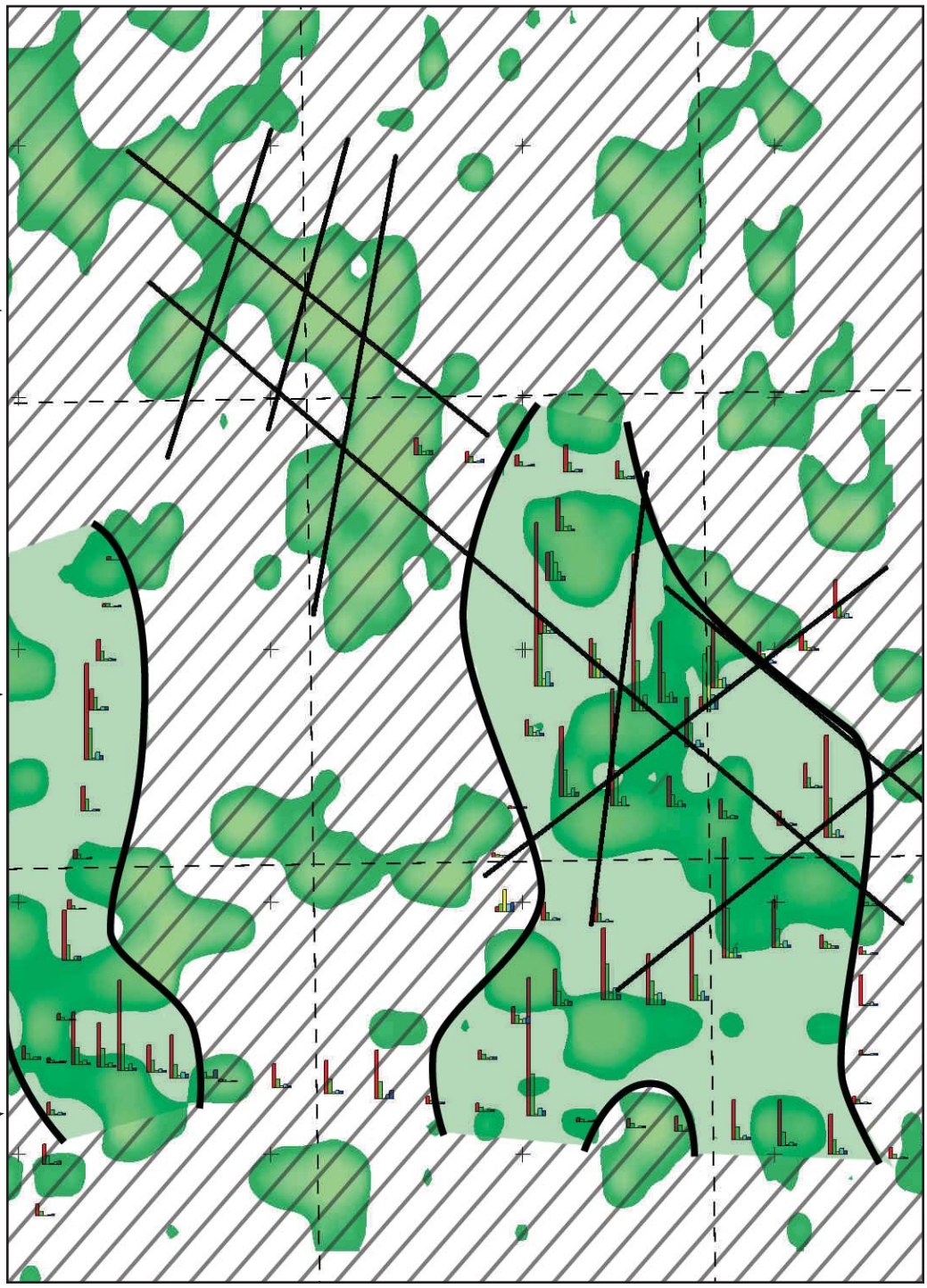




Seismic (C): Two-dimensional seismic is an effective and proven tool in locating subsurface geological structures. While seismic can determine the best structural place to drill, it normally cannot predict whether or not the structure is charged with oil or gas. Seismic is a very costly method but its use can be made more cost-effective by using it in combination with geochemical surveys completed over large areas. Two-dimensional seismic surveys can be limited to those areas displaying large and multiple geochemical anomalies. Three-dimensional seismic detailing may be warranted as a follow-up step.



A + B + C TO SELECT DRILL LOCATION



The image above combines the three exploration methods of airborne geochemical surveys, ground sampling and two-dimensional seismic. We have zoomed in on the area of highest interest from the images at left and included the highlighted areas of the airborne survey. The three methods yield results that can focus geologists' efforts in pinpointing potential drill sites for hydrocarbon prospects.

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Sky Hunter Exploration is a Calgary, Canada-based company that provides a valuable exploration tool to oil and gas companies worldwide. Sky Hunter uses proprietary technology to conduct airborne surveys that map microseep data. In turn, this data predicts the presence of pressurized hydrocarbon reservoirs for further exploration, development and production by traditional methods.

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