



RESUME

Nick Fitzgerald

(Nicholas Anthony Fitzgerald)

PROFILE

Nick Fitzgerald is an independent Consulting Geophysicist with over 30 years Australasian and International experience in the oil and gas industry.

6 years seismic contractor experience

13 years with Delhi/Santos Ltd

14 years with Woodside Energy

Experience in most Australian basins, GOM, PNG, Taranaki & Southland basins, North, West, & East Africa, especially Sirte & Murzuq basins.

4 years Manager Geophysics, Woodside Energy Nth Africa Ltd, resident in Libya building a geophysics team and executing extensive land and marine exploration programs.

4 Years Chief Geophysicist Woodside Energy Ltd Perth. Responsible for all of Woodside Energy Ltd geophysical activities.

Obtained BSc and MSc degrees at University of Auckland, Geology Department Thesis: *Application of Geophysical prospecting to the Huntly coal basin.*

Member of SEG, ASEG, EAGE.

Dual British/Australian Nationality

EXPERIENCE

Early Activities Manager, Browse LNG Project, Woodside Energy Ltd, Perth WA — April-Dec 2011

Responsible for the scope definition, execution, data and interpretation delivery of the geotechnical investigation programs to the FEED contractors.

The program was conducted at the proposed LNG precinct, the integrated marine facility, pipeline shore approach, the deep water pipeline routes, and the central production facility, of the Browse LNG Project.

The program included high resolution reflection seismic, refraction seismic, Multichannel Analysis of Surface Waves, Refracted Micro-tremor analysis, electromagnetic methods, an extensive geotechnical drilling grid, and the supporting environmental studies and clearances as well as supporting the heritage surveys.



Chief Geophysicist, Woodside Energy Ltd, Perth WA — July 2007 - March 2011

Leading a team with a head count of up to 35, made up of specialist geophysicists and support staff. Divided into the groups –

- Acquisition
- Processing and Imaging
- Reservoir Geophysics / Quantitative Interpretation
- Interpretation Support/Data loading/Data management

Responsibility for all Woodside Geophysical activity carried out in Australia and internationally with funds under management of more than AU\$400M.

Team activities include -

Proprietary seismic acquisition including towed streamer 2D & 3D, 4D baseline, 4D monitor surveys, 2D OBC and transition zone. Speculative or Multi Client seismic data purchases.

Signal and noise suppression processing and reprocessing using mainly external contractors of a large volume of data over most permits held by Woodside. Good gains in multiple suppression and amplitude stability were made during my tenure in the role.

Depth and Time imaging using mainly external contractors of a large volume of data over most permits held by Woodside. Significant improvements in imaging especially in the depth domain were made during my tenure.

Amplitude and AVO analysis, 4D interpretation and analysis, performed in house by the Reservoir Geophysics team as a service and advice to the Exploration and the field Development teams.

Interpretation support in form of work flows and general advice provided. Data loading to OW/ Landmark, data volume and tape management provided as service to Exploration and Development teams.

Manager Geophysics, Woodside Energy(NA) Ltd, Tripoli, Libya — Nov 2003 - June 2007

Responsible for all geophysical activities in North Africa, and later (2006/2007) Mauritania.

Was one of the country entry team of 3 Woodside staff who moved into Tripoli immediately after the award of the six onshore EPSA3 concessions in the Sirte and Murzuq basins.

Focus was initially on data recovery, seismic, well logs and geologic and other reports, quickly moving to the reprocessing of the data and new seismic acquisition.



The first 2D seismic field crew was mobilised into the Murzuq basin in October 2004, only 11 months after the EPSA3 award, a record for commencing field activities in Libya. A further seismic crew recording 3D data in the Sirte basin was mobilised in late November and onshore activity continued to build such that from mid 2005 to late 2006 there were 4 land seismic crews active.

In early 2005 Woodside was also awarded 4 offshore concessions, totaling 40,000 km², under an EP- SA4 agreement. A large 2D marine seismic survey was conducted as was a 1970 km² marine 3D survey during late 2005 and early 2006.

From late 2003 to mid 2007 when I exited the project the Libya office geophysics capability had built from a single consultant and myself to a team of 15, including 2 Woodside expatriates, 3 expatriate consultants and 8 local geophysicists. This total excludes the field crew seismic QC, survey and safety representatives.

In total the projected recorded 3630 km² of Land 3D, 8590 Km of Land 2D, 1950 km² of Marine 3D and 7740 Km of Marine 2D. There was concurrent with the processing of this data an extensive program of 2D reprocessing.

Coordinator Project Management, Woodside Energy Ltd, Perth WA — Nov 2002 - Oct 2003

Team Leader Seismic Project management across all geophysics teams.

Senior Geophysicist, Woodside Energy Ltd, Perth WA — Apr 1999 - Oct 2002

Quantitative Interpretation and Reservoir Geophysics.

Technical advice to International, GOM and Australian exploration and development teams on amplitude and AVO studies. Performing amplitude and AVO studies and Inversions, both deterministic and probabilistic.

Senior Geophysicist, Woodside Energy Ltd, Perth WA — Nov 1997 - Mar 1999

Seismic processing contractor supervision and QC also active on internal processing projects.

Staff Geophysicist, Santos Ltd, Adelaide SA — 1992 - Oct 1997

Interpretative processing and Quantitative Interpretation => Seismic Inversion, Amplitude & AVO analysis, Depth migration.

Technical advice, seismic acquisition, including survey design for the first onshore 3D surveys conducted in Australia.

Staff Geophysicist, Santos Ltd, Adelaide SA — 1989 -1992

Seismic processing contractor supervision and QC, and "interpretive processing. Technical



advice, seismic acquisition, processing & Imaging and amplitude and inversion studies.

Senior Geophysicist, Santos Ltd, Adelaide SA — 1987 - 1989

Field crew coordination and supervision, parameter selection and survey design. Seismic processing contractor supervision and QC. Technical advice, seismic acquisition, processing and Imaging.

Senior Geophysicist, Delhi International Petroleum Ltd, Adelaide SA — 1984 - 1987

Seismic processing contractor supervision and QC. Senior geophysicist, processing, technical advice to seismic acquisition team.

Team Lead, Land Processing, Geco Ltd, Wellington, NZ — 1983 - 1984

Team Leader of a group of 3-4 processing geophysicists working on mainly Taranaki basin land seismic but also some marine seismic and other New Zealand basins.

Team Lead, Processing, Seismograph Service Ltd, Adelaide, SA — 1982 - 1983

Team Leader of a group of 4-6 processing geophysicists.

Seismologist, Seismograph Service Ltd, Adelaide, SA — 1981 - 1982

Processing Geophysicist working on data from various petroleum basins around Australia but also including shallow coal and minerals exploration surveys.

Field seismologist, Seismograph Service Ltd, Seismic field crew, NZ — 1980 - 1981

Based on seismic field crew, working in the Taranaki basin, Westland basin, East coast basin. Focused on low velocity layer computations (statics) using up holes and refraction mini-spreads.

SKILLS

Project Management

Hands on leading and managing of multidisciplinary teams, providing an integrated seismic solution for exploration, field development, or reservoir monitoring purposes.

Seismic acquisition

Design - Planning - Execution, Marine – Land – Transition Zone, 2D - 3D - Reservoir monitor (4D). Cost estimates - Preparation of Tender Invites - Bid evaluation - Negotiation & award recommendations.



Seismic data processing

Sequence design - testing & parameter selection - external contractors - internal hands on.

Advanced Seismic data analysis

Deterministic & stochastic inversion - integration of well data with seismic AVO analysis of reflectivity data - AVO inversion for V_p/V_s & Poisson's ratio.

EDUCATION

B.Sc. University of Auckland
Department of Geology (Applied Geophysics)

M.Sc. University of Auckland
Department of Geology (Applied Geophysics)

Thesis The application of geophysical prospecting to the Huntly coal basin.



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