

## PUBLISHED REPORTS - HYDROCARBONS EXPLORATION

[For overseas customers, please include an additional \$50 Australian to cover bank fees, postage and handling costs.]

<b>REPORT 3</b>	<b>ALEXANDER, R., KAGI, R. I. and ROWLAND, S, 1983. "Petroleum geochemistry of Canning and Bonaparte Basins".</b>	<b>MERIWA Project 3</b> [Fiche \$5.00, Hardcopy \$27.50]
	The results of Rock-Eval pyrolysis examination of Devonian sediments from the Canning Basin, and Devonian and Carboniferous from the Bonaparte Basin, are described and discussed. The percentage Total Organic Carbon in the rock was measured and gas chromatographic and gas chromatographic-mass spectrometric data were obtained for samples shown by Rock-Eval to be most representative of the most mature, organic-rich samples. <b>KEYWORDS:</b> Canning Basin/Bonaparte Basin/hydrocarbon potential/Rock-Eval pyrolysis/gas chromatography/GC-Mass spectrometry.	
<b>REPORT 9</b>	<b>ALEXANDER, R., CUMBERS, M. and KAGI, R. I, 1984. "Petroleum geochemistry of potential source rocks from the Canning Basin".</b>	<b>MERIWA Project 28</b> [Fiche Incorporated in Report 20, Hardcopy \$21.50]
	Seventy five Carboniferous, Devonian and Ordovician sediment samples were subjected to total organic carbon analysis and to ROCK-EVAL pyrolysis. The sediment fractions obtained from the sediment extracts, together with seven petroleum samples, were further analysed by capillary chromatography and by capillary gas chromatography-mass spectrometry. Information thus obtained demonstrated similarities between the crude oils and sediments in organic matter and depositional environment. <b>KEYWORDS:</b> Canning Basin/petroleum geochemistry/hydrocarbon potential/Rock-Eval pyrolysis/gas chromatography/GC-MS analysis.	
<b>REPORT 10</b>	<b>UREN, N. F. and EVANS, B. J, 1985. "The seismic performance of shaped charges".</b>	<b>MERIWA Project 39</b> [Fiche \$85.00, Hardcopy \$119.00]
	The quality of a seismic survey depends on the performance of the energy source. A series of tests in which explosive type, depth, shape and weight of the charge were controlled was carried out to obtain comparison between a shaped charge and a conventional charge, and their suitability for producing high quality seismic data. <b>KEYWORDS:</b> Explosive charge/seismic survey/shaped charge.	
<b>REPORT 12</b>	<b>KEARNS, C, 1985. "Petrology of Devonian and carboniferous carbonates of the Canning and Bonaparte Basins".</b>	<b>MERIWA Project 1/50</b> [Fiche \$20.00, Hardcopy \$55.50]
	The study concentrated particularly on petrologic aspects of depositional facies and diagenetic features. Characteristic lithologies are described of reef-complex carbonates on a scale that is useful for facies analysis of cores and cuttings as well as for field studies. Processes that control development of economically significant porosity, and the inter-relationship between diagenetic features and associated stages of platform development, have been examined, aimed at producing a combined depositional - diagenetic model for the reef complex development. <b>KEYWORDS:</b> Canning Basin W.A./carbonate cements/carbonate diagenesis/carbonate lithotopes/Devonian reef complexes.	
<b>REPORT 20 (incorporating Reports 3 and 9)</b>	<b>ALEXANDER, R., CUMBERS, K. M., HARTUNG, B and KAGI R. I, 1985. "Petroleum geochemistry of the Canning Basin".</b>	<b>MERIWA Project 44</b> [Fiche \$10.00, Hardcopy \$30.00]
	In this research, sediment and petroleum samples, mainly drill stem cuttings, were subjected to detailed geochemical analysis. ROCK-EVAL pyrolysis measurements showed that the sediments do contain potential petroleum source rocks, and relationships are suggested following correlation studies of crude oils and source rock extracts. <b>KEYWORDS:</b> Canning Basin/petroleum geochemistry/pyrolysis.	
<b>REPORT 41</b>	<b>EVANS, B. J. (Editor), 1989. "Multidimensional seismology - papers".</b>	<b>MERIWA Project 63</b> [Fiche \$15.00, Hardcopy \$79]
	This report details the technique of recording and processing a low cost land three dimensional seismic survey, known as the "LOFOLD3D" technique. LOFOLD3D offers substantial benefits to the exploration company which requires cost effective three dimensional seismic data over a marginally economic discovery. The method of planning the initial field work is discussed by the editor, followed by the criteria established to make the technique successful. Papers by researchers deal with the data processing software package developed during the project, and a case history is presented on the software's application. <b>KEYWORDS:</b> Data acquisition/data processing/LOFOLD3D/three dimensional seismic/velocity model.	
<b>REPORT 50</b>	<b>ALEXANDER, R., KAGI, R. I., CUMBERS, K. M., LEWIS, C. A., VAN BRONSWIJK, W. and ZUHAAR, A, 1989. "Petroleum geochemistry of the Canning Basin: thermal history".</b>	<b>MERIWA Project 60</b> [Fiche \$5.00, Hardcopy \$30.50]
	Sediment and crude oil samples from the Canning Basin and from other locations have been subjected to detailed chemical analysis for compounds which are potentially useful for reconstructing the thermal history of the sediments. Two compound classes, namely the alkyl biphenyls and the steranes, have been studied in detail to establish the extent to which sedimentary reactions have recurred. Together with the burial history of the samples this has been used to calculate the effective temperature history of the sediments. <b>KEYWORDS:</b> Canning Basin/geochemistry/thermal history/biphenyls/steranes.	
<b>REPORT 55</b>	<b>THOMPSON, N. B., HOCKING, R. M., COLLINS, L. B., VOON, J. W. K. and MIDDLETON, M. F, 1990. "Lower Cretaceous deposition in the southern North West Shelf".</b>	<b>MERIWA Project 84</b> [Fiche \$25.00, Hardcopy \$224.50, CD \$50.00]
	Based on seismic, core and log data, the depositional framework and major lithostratigraphic variations of the Barrow Group are investigated, followed by an integrated subsurface and outcrop study of the sedimentology, depositional history and stratigraphy of the basal Winning Group in the Northern Carnarvon Basin. Core outcrop and log data used in the succession are evaluated from both sequence stratigraphic and traditional stratigraphic viewpoints. Finally, available biostratigraphic control is integrated with regional electric-log and seismic correlation to present the palaeogeographic evolution of the Barrow Group and Lower Winning Group in terms of an empirically derived sequence-stratigraphic framework. <b>KEYWORDS:</b> Geology/stratigraphy/petroleum/North West Shelf/lithofacies.	

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**REPORT 58 HEAL, G. and EVANS, B, 1990. "The recognition and suppression of seismic multiples, offshore North-West Shelf, Australia".**

**MERIWA Project 88**

[Fiche \$20, Hardcopy \$89.50]

Conventional processing and analysis techniques applied to a seismic event had the appearance of not only a multiple, but also a "bright spot" believed to be a possible exploration target. Promising techniques were developed to more positively identify the "bright spot" and to attenuate the multiples.

**KEYWORDS:** Seismic/multiples/recognition/suppression.

**REPORT 69 COSHELL, L., SCOTT, J., KNIGHTS, A. M. and EVANS, B. J, 1991. "Evaluation and development of non-destructive core analysis using X-ray computed tomography".**

**MERIWA Project M112**

[Fiche \$5, Hardcopy \$42.00]

X-ray Computed Tomography (CT) is a non-destructive means by which the internal structure of an object may be viewed. It produces a digital image that is a map of X-ray attenuation in a slice through the object. In this preliminary study to evaluate the technique, X-ray CT has been successfully applied in the analysis of four-inch diameter cores from the petroleum industry.

**KEYWORDS:** X-ray CT/analysis/core/rock/non-destructive/digital image.

**REPORT 86 JUHLIN, C, 1992. "Seismic/Lithology".**

**MERIWA Project M125**

[Fiche \$5, Hardcopy \$34]

From studies on a wide spectrum of problems related to seismic methods of petroleum exploration, some worthwhile advances have been made in data processing and interpretation. Problems investigated included VSP data processing, anisotropy, multiples and AVO anomalies.

**KEYWORDS:** Petroleum/exploration/seismic/data-processing/lithology/interpretation.

**REPORT 114 MIDDLETON, M. F. and LENNANE, M, 1993. "Thermal properties of Western Australian sediments".**

**MERIWA Project M184**

[Fiche \$5, Hardcopy \$37]

This report presents experimental data for matrix thermal conductivity for the Carnarvon Basin. It also presents a method of relating the observed dry-bulk thermal conductivity and porosity of powdered aggregates, or drill cuttings, to their matrix thermal conductivity. This empirical relationship provided estimates of matrix thermal conductivity that were consistent with "theoretical mix" formulae for 50:50 mixtures of the minerals quartz, calcite and feldspar, and also a sample of Flag Sandstone from the North West Shelf, Australia.

**KEYWORDS:** Thermal conductivity/determination/bulk rock/drill cuttings/Carnarvon Basin/sedimentary rocks.

**REPORT 128 EDWARDS, T. J., TRENGOVE, R. D., BURGE, D., MURRAY, R and UNSTEAD, S, 1995. "Phase behaviour studies for optimising hydrocarbon liquid production from the North West Shelf gas condensate fields".**

**MERIWA Project M150**

[Fiche \$15, Hardcopy \$84]

A new, non-invasive laser-based technique for measuring condensate density at high temperature and pressure has been established and sophisticated digital imaging techniques have been developed to measure interphase surface tension, which will be employed in reservoir fluid phase behaviour studies. The PVT behaviour of fluid samples derived from the North Rankin reservoir were measured.

**KEYWORDS:** Oil/gas/condensate/phase behaviour/North West Shelf.

**REPORT 133 DENTITH, M., LONG, A., SCOTT, J and BRUNER, I, 1994. "The geometry and Phanerozoic history of the Darling Fault and associated structures in the Perth Basin".**

**MERIWA Project M181**

[Fiche \$15, Hardcopy \$59.50, CD-Rom \$50.00]

The Phanerozoic history of the Darling Fault and the adjacent Perth Basin has been established using geophysical data, including seismic reflection profiles, gravity data and magnetic data. The Phanerozoic structural evolution and the influence of basement structures and trends on basin evolution have been investigated.

**KEYWORDS:** Darling Fault/Perth Basin/geophysics/structural geology.

**REPORT 138 VAN AARSEN, B. G. K., ALEXANDER, R and KAGI, R. I, 1994. "A biomarker study to correlate oils and source rocks from the Carnarvon Basin".**

**MERIWA Project M220**

[Fiche \$5, Hardcopy 31.50]

A novel application of recently discovered aromatic biomarkers has been used to characterise crude oils and their source rocks in a manner that enables genetic relationships to be recognised. A detailed analysis of data from Upper Jurassic sediments from Koolinda-1 shows variations in the plant-type fingerprint that have been interpreted in terms of changes in the plant habitats associated with tectonic events and climatic change. The plant fingerprints of 20 crude oils were determined and compared with the sediments from Koolinda-1, and a remarkable correlation was observed.

**KEYWORDS:** Biomarkers/oil/source rock/principal component analysis/Carnarvon Basin.

**REPORT 152 OKOYE, P. N. and UREN, N. F, 1995. "Influence of anisotropy on depth conversion".**

**MERIWA Project M252**

[Fiche \$5, Hardcopy \$29]

The objective of this pilot study was to investigate the effects of velocity anisotropy on depth determination from seismic sections. The effects of the elastic parameter delta star ( $\delta^*$ ), reflector dip angle and anisotropic layering are described.

**KEYWORDS:** Seismic interpretation/anisotropy/depth determination.

**REPORT 159 EVANS, B. J, 1996. "Subtle faults/fractures and coal seams".**

**MERIWA Project M225**

[Fiche \$20, Hardcopy \$114.50, CD-Rom \$50.00]

New technologies to image coal seams using seismic methods in areas previously thought unsuitable for this method were established. Field studies were carried out in the Bowen, Sydney and Collie Basins, and in all areas tested, images of the coal seams were obtained.

**KEYWORDS:** Coal/seismic processing/faulting/gas/basalt.

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<b>REPORT 164</b>	<b>UREN, N. F. and HARTLEY, B. M., 1996. "Attenuation of seismic multiples".</b>	<b>MERIWA Project M221</b> [Fiche \$10, Hardcopy \$46.50]
<p>Two methods of wavefield transformation were developed to pre-condition pre-stack data to attenuate long period water bottom multiples. The first method is the radial trace transform which resamples data along curved trajectories such that surface multiples are periodic. The second method consists of two transforms applied in sequence. Initially, a multiple moveout transform makes multiples periodic, and then an iso-stretch radial transform resamples the data in such a way that the events become stationary (constant waveform). <b>KEYWORDS:</b> Seismic/multiples/wavefield transforms/radial trace/multiple moveout/autoconvolution.</p>		
<b>REPORT 170</b>	<b>DRISCOLL, N. and KARNER, G. D., 1996. "Tectonic and stratigraphic evolution of the Carnarvon Basin, Northwest Australia".</b>	<b>MERIWA Project M260</b> [Fiche \$15, Hardcopy \$102, CD-Rom \$50.00]
<p>An integrated basin analysis was undertaken in which the results of sequence-stratigraphic analysis and crustal thermal history were combined to explain and predict facies distribution, timing of trap formation, and maturation history in the offshore Carnarvon Basin of the NW Shelf of WA. Four extension events throughout the late Paleozoic - Mesozoic time that shaped the sub basins and created sediment accommodation space are described. <b>KEYWORDS:</b> Carnarvon Basin/basin analysis/thermal history/Paleozoic/Mesozoic.</p>		
<b>REPORT 188</b>	<b>VAN AARSSSEN, B G K., ALEXANDER, R and KAGI, R I, 1997. "Plant biomarker study for oil source rock correlation in the Carnarvon Basin".</b>	<b>MERIWA Project M251</b> [Fiche \$5.00, Hardcopy \$51.00]
<p>This project applied recently developed biomarker technology to correlate oils and source rocks from the Carnarvon Basin, and to explore new approaches to the use of biomarkers for characterising crude oils and source rocks. Results of a previous project had showed that higher plant derived biomarkers in sediments can provide a "fingerprint" characterising the time of deposition. Results of this study of the differences in distribution of aromatic biomarkers in crude oils and sediments resulted in several applications: oil source rock correlation, recognition of climate and sea-level changes over geological time, age correlation of sediments and accurate assessment of thermal maturities of crude oils in Jurassic sediments of the Barrow and Dampier Sub-basins. The recently developed higher plant fingerprint (HPF) and higher plant index (HPI) parameters give insight into the nature and abundance of terrestrial organic matter. Depth profiles of HPF from three different wells covering the same age range (Jurassic) correlate extremely well. This is evidence that HPF may be characteristic of the time of deposition, and hence useful to correlate sedimentary sequences from different areas. Several events marking significant changes in HPF and HPI profiles were identified that correlate well with proposed boundaries of geological megasequences in the Carnarvon Basin. <b>KEYWORDS:</b> Plant biomarkers/source rock correlation/sequence boundary/global sea-level change.</p>		
<b>REPORT 197</b>	<b>SHERLOCK, D and EVANS, B, 1998. "3-D seismic expressions of fault systems".</b>	<b>MERIWA Project M274</b> [Fiche \$10.00, Hardcopy \$44.50]
<p>The technology of using sandbox modelling, to imitate geological structures and thereby develop an understanding of such structures to assist exploration, was extended to link with the seismic physical modelling of geological structures. The linkage allows development of seismic images of sandbox structures, to benefit exploration by enhancing structural interpretations. This report is the first known to explain the development of the basic technology required to resolve this complex problem.</p> <p>The results make it possible to image four layers in a sandbox model under controlled conditions. A better understanding of wave propagation in unconsolidated sand was obtained, and new seismic data acquisition techniques for physical modelling have been developed that overcome numerous technological obstacles of the past. It is now feasible to develop an understanding of 3-D geological structure, watch the development of faulting and fracturing induced by applied changes in stress state, and examine the effects of fluid movement within reservoirs over time as a new time-lapse 3-D technology. <b>KEYWORDS:</b> Sandbox models/analogue modelling/seismic interpretation/structural interpretation/3-D modelling.</p>		
<b>REPORT 203</b>	<b>OKOYE, P N and UREN, N F, 1999. "Determination, interpretation and correction for seismic anisotropy"</b>	<b>MERIWA Project M275</b> [Fiche \$5.00, Hardcopy \$38.50]
<p>Most seismic processing techniques do not incorporate anisotropy in practise because of the difficulty in determining the degree of anisotropy of the underlying rocks and correcting for their effects. However, in sedimentary rock types of interest to exploration geophysicists there may be significant anisotropy, which must be taken into account to correctly position reflectors to their true geometrical position in space. Otherwise errors in depth estimation and lateral drilling will lead to poor reservoir volume estimation and drill target mis-location. This study developed accurate anisotropic inversion techniques for recovering average and interval elastic parameters in layered transversely isotropic media. These elastic parameters are needed to quantify the strength of the anisotropy and account for its effect when processing seismic data. A Kirchhoff anisotropic migration program was developed which produces an accurate image of reflectors in the presence of anisotropy. <b>KEYWORDS:</b> Anisotropy/migration/seismic processing.</p>		
<b>REPORT 213</b>	<b>HOWE, R W, 2000. "Jurassic calcareous nannofossil biostratigraphy of the North West Shelf and Timor Sea areas".</b>	<b>MERIWA Project M319</b> [Fiche \$20.00, Hardcopy \$78.50, CD-Rom \$50.00]
<p>In this first detailed study of Jurassic nannofossils from the Australian region, assemblages prove the presence of this microfauna over relatively large areas of the North West Shelf. The Northern Hemisphere zonation is readily applicable to the Australian succession, in which lower and middle Jurassic nanno-fossils are better preserved than the Upper Jurassic microfauna. <b>KEYWORDS:</b> Jurassic nannofossils/North West Shelf/biostratigraphy.</p>		
<b>REPORT 218</b>	<b>VAN AARSSSEN, B G K., ALEXANDER, R and KAGI, R I, 2000. "Oil-source correlation using molecular sequence stratigraphy".</b>	<b>MERIWA Project M306</b> [Fiche \$5.00, Hardcopy \$46.00]
<p>This study was based on the concept of molecular stratigraphy by which the distribution of compounds in sedimentary sequences is interpreted in terms of its geological and environmental factors. Focussing on nine Jurassic sequences from the Carnarvon Basin and one from the Vulcan Sub-basin, the study showed this concept allows recognition of changes in climate and sea level, anoxic variations, and the extent of maturation processes. <b>KEYWORDS:</b> Sequence stratigraphy/oil source rocks/molecular stratigraphy.</p>		

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<b>REPORT 219</b> OTTO, C., HENNIG, A., UNDERSCHULTZ, J., ROY, V and O'BRIEN, G, 2000. "Evaluating trap integrity on the northwest shelf of Australia using hydrodynamic analysis". MERIWA Project M297 [CD-Rom \$50.00]
This three-year study of the hydrodynamics of the regional North West Shelf used open-file pressure, temperature and salinity data in determining and analysing fluid migration pathways, pressure compartments, fault integrity and fluid flow mechanisms in the North West Shelf. <b>KEYWORDS:</b> Fluid migration/fault seals/basin analysis.
<b>REPORT 224</b> EVANS, B and MCKENNA, J, 2002. "Physical modelling study of Sleipner West CO <sub>2</sub> sequestration stage 1 – modelling the Sleipner West overburden". MERIWA Project M343 [Hardcopy \$30.50, CD-Rom \$50.00]
This project was the first in two stages to simulate the sequestration of CO <sub>2</sub> . It covers the scaled physical modelling of overburden in the North Sea Sleipner site and recording of 3-D seismic data over it to confirm the model's accuracy. The model was placed in a water tank, ultrasonic transducers were used to simulate the acquisition of 3-D marine data and the ultrasonic data then processed in a similar manner to field data, for comparison with numerically modelled and field data. <b>KEYWORDS:</b> CO <sub>2</sub> sequestration/physical modelling/3-D seismic simulation/Sleipner.
<b>REPORT 226</b> BACKHOUSE, J and BALME, B.E, 2002. "Late Triassic palynology of the Northern Carnarvon Basin". MERIWA Project M313 [CD-Rom \$50.00]
The report presents a revised regional palynological-zonal scheme for the Late Triassic, enhanced by studies of Northern Carnarvon Basin samples. Five major bioevents are recognised across the basin, offering a robust and high-resolution biostratigraphy that allows more detailed correlation than previously possible. <b>KEYWORDS:</b> Biostratigraphy/palynology/Late Triassic zonation/Northern Carnarvon.
<b>REPORT 229</b> BURNS, F E, 2002. "Middle Jurassic and lower cretaceous trace fossils, North West Shelf". MERIWA Project M335 [CD-Rom \$50.00]
The project was undertaken to characterize and document the diverse trace fossil assemblages within the deltaic, estuarine and shallow marine Jurassic and Cretaceous sediments in the Northern Carnarvon Lower Basin, to produce a comprehensive trace fossil Atlas. Brief text accompanies the Atlas on the value of trace fossils, their classification, and how their characteristics can be used to interpret stratal surfaces. <b>KEYWORDS:</b> Trace fossils/sequence stratigraphy/chronostratigraphic surface/trace fossil atlas.
<b>REPORT 232</b> EVANS, B and LUO, M, 2003. "Development of a new seismic fracture mapping technique". MERIWA Project M342 [Hardcopy \$183.00, CD-Rom \$50.00]
The new technique for 3-D imaging remotely of fractures using P-wave data was developed to use multi-azimuthal seismic data. Physical and numerical modelling were used to test the new method, on fractured/anisotropic media. The method was applied successfully to two land seismic data sets containing features of geologic interest. <b>KEYWORDS:</b> 3-D seismic/fractured rock/anisotropy/fracture mapping/multi-azimuthal.
<b>REPORT 234</b> van AARSEN, B G K., ALEXANDER, R and KAGI, R I, 2003. "Molecular stratigraphy research for oil-source rock correlation". MERIWA Project M336 [Hardcopy \$37.00, CD-Rom \$50.00]
Depth profiles in sediments of many organic compounds were evaluated to discover the reactions and conditions that determine composition. The study results show that these can be correlated with free hydrocarbon occurrences in sediments, making a useful exploration tool. <b>KEYWORDS:</b> Molecular stratigraphy/oil source rocks/organic geochemistry/Vulcan sub-basin.
<b>REPORT 236</b> EDWARDS, T J and MANN, A G, 2003. "Automated measurement of phase behaviour in north west shelf and natural gas fluids using advanced microwave technology". MERIWA Project M345 [Hardcopy \$35.00, CD-Rom \$50.00]
The outcome of this project was successful development and testing of a constant volume microwave resonator system (CVS), and a variable volume system (VVS). The CVS and VVS were each characterised by appropriate gases and liquids, and software was written to automate the operation of the entire system. Comparisons were then made of the CVS and VVS for laboratory PVT measurements. <b>KEYWORDS:</b> Microwave/resonator/PVT measurement/hydrocarbon recovery/gas condensate.
<b>REPORT 238</b> UROSEVIC, M, 2003. "Using seismic anisotropy to characterize seal and reservoir properties in the North West Shelf of WA". MERIWA Project M339 [Hardcopy \$42.00, CD-Rom \$50.00]
The objective of this study was to utilise seismic anisotropy for improved characterisation of the sealing shales and reservoir sands of the North West Shelf. The results underline the importance of taking into account seismic anisotropy when designing seismic data acquisition and conducting data processing in this area. <b>KEYWORDS:</b> Seismic anisotropy/seismic acquisition/elastic inversion/shear wave splitting.

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**REPORT 239** KEEP, M., CROWE, W., HARROWFIELD, M., PALMER, N (PROJECT M338) and KEEP, M., CROWE, W and WHITE, A (PROJECT M338A), 2003/2004. "Cretaceous and Neogene reactivation and inversion history of the Northern Carnarvon Basin and the role of basement highs in the distribution of cretaceous and Neogene strain in the Carnarvon Basin and Browse Basin/Timor Sea".

MERIWA Projects M338 and M338A

[CD-Rom \$50.00]

This project and its extension documented the nature, timing and distribution of Neogene deformation along the North West Shelf and attempted to relate them to basement architecture. From its numerous findings, a tectonic model is developed of the Australian plate behaving as an articulated body in the region of NW Cape, with the Pilbara and Kimberley blocks moving independently.

**KEYWORDS:** North West Shelf tectonics/Neogene deformation/Northern Carnarvon basin/Browse Basin/basin inversion history

**REPORT 241** BURNS, F and TAYLOR, K, 2005. "Trace fossils and their application to high-resolution sequence stratigraphy and associated cement distribution: Middle Jurassic to Lower Cretaceous Interval, North West Shelf".

MERIWA Project M347

[Hardcopy \$43, CD-Rom \$50.00]

Ichnofacies analyses and diagenetic studies were undertaken on Bathonian-Callonian shallow marine deposits in the Timor Sea and Lower Cretaceous sediments in the Northern Carnarvon Basin. Previously unrecognized sequence boundaries, flooding surfaces and other major stratal surfaces were identified, leading to a higher resolution sequence stratigraphic framework, and an ichno-fabrics atlas also was assembled.

**KEYWORDS:** Ichnofacies/ichnofabrics/carbonate diagenesis/greensand/sequence stratigraphy/Carnarvon Basin/Timor Sea.

**REPORT 262** GUREVICH, B., UROSEVIC, M, and EVANS, B, 2006. "The effect of seismic anisotropy on amplitude-based reservoir characterisation".

MERIWA Project M351

[CD-Rom \$50.00]

The project aimed to assess the degree of fracture-induced anisotropy in, and estimate the effects of that anisotropy on, evaluations of NWS reservoir formations. From the results of these studies different acquisition strategies could then be assessed along with their cost benefit ratios. A workflow design for prediction of petrophysical properties of these reservoirs was a further objective of the project.

**KEYWORDS:** Fractured reservoir/petrophysical properties/seismic data acquisition/seismic anisotropy.

**REPORT 284** PACK, D J, 2010. "Impact of low liquid hold-up levels within natural gas transmission pipelines and the influence on particle deposition".

MERIWA Project M397

[Hardcopy \$36, CD-Rom \$50.00]

To help ensure the reliability of natural gas supply to power generation facilities in Western Australia, this project addressed the problem of elemental sulphur deposition by construction of a flow loop, for experiments on fluid flow behaviour at pipe 'T' junctions. The result will assist pipeline designers and operators.

**KEYWORDS:** Elemental sulfur/sulphur/natural gas pipeline/fluid flow behaviour/pipeline 'T' junctions