



ISBN 978-1-74168-826-9

2018



The Digital Core Atlas for petroleum well Theia 1 provides a detailed view of 779.90 m (867.00 – 1646.90 m) of HQ-sized core (63 mm diameter) drilled by Finder Exploration on the Broome Platform, Canning Basin in July 2015. This Digital Core Atlas project is a collaboration between the Geological Survey of Western Australia (GSWA) and Finder Exploration and combines core photographs with the raw datasets in one fully integrated package. The GSWA portion of the study was funded by the State Government's Exploration Incentive Scheme (EIS).

This well has been divided into three sections based on depth and geological formation. These Sections are presented as three separate flip-books that comprise the Theia 1 Core Atlas.

	<b>Depth range (m)</b>	<b>Tray numbers</b>	<b>Formations identified in the core</b>
Section 3	867.00 – 1188.00	1–85 and cuttings	Carribudy Group, Bongabinni Formation and Nita Formation
Section 2	1188.00 – 1466.41	85–158	Goldwyer Formation
Section 1	1466.41 – 1646.90	158–205	Lower Goldwyer Formation and Willara Formation

Each Section has an identical structure and is presented in an electronic flip-book design with interactive links that enable the user to view the results of multiple datasets in one convenient and user-friendly location. Each tray of core has two photos: a field photo with depths marked and a HyLogger photo with the core rotated 180° to show the other side. The photos are annotated with icons that link to the results of analyses conducted on core samples. Each page indicates the location of the core tray being displayed and contains a link to a detailed stratigraphic log for the interval containing that core tray. A schematic stratigraphic log is located on each page to indicate the stratigraphic location for the core tray being displayed. Each of the three Sections contains a summary list of all samples collected in that Section. Section 3 also contains results of analyses from cuttings (10–860 m) for some inorganic and organic geochemistry datasets.

Datasets presented in the Theia 1 Digital Core Atlas include:

**1. Biostratigraphy**

- Conodonts
- Graptolites
- Miscellaneous fossils
- Palynomorphs
- Trilobites

**2. Geochronology**

- Chemical abrasion isotope dilution thermal ionization mass spectrometry

**3. Inorganic geochemistry**

- Fourier transform infrared spectroscopy
- Inductively coupled plasma mass spectrometry
- Multi-element geochemistry
- Stable isotopes
- X-ray diffraction
- X-ray fluorescence

**4. Organic geochemistry**

- Desorption gas
- Extractable organic matter
- Fluid inclusion stratigraphy
- Gas chromatography mass spectrometry
- Headspace gas
- Kerogen kinetics
- Total organic carbon and Rock-Eval

**5. Petrography**

- Argon-ion milled scanning electron microscopy
- Cathodoluminescence
- Organic matter reflectance
- Scanning electron microscopy
- Thin sections

**6. Petrophysics**

- Adsorption isotherm
- Computer tomography, full core
- Computer tomography, core plug
- Desorption capacity
- Porosity and permeability
- Rock mechanics
- Shale rock properties
- Tight rock analysis
- Tight rock analysis — liquids

Data within the Digital Core Atlas are presented in a format that has been slightly modified from the original raw data and reports. The original documents can be accessed via the Access Data tab.

**Theia 1, Canning Basin — Digital Core Atlas Series**

Free (online): <<https://wapims.dmp.wa.gov.au/WAPIMS/Search/CoreAtlas>>.

Enquiries to Email: [bookshop@dmirs.wa.gov.au](mailto:bookshop@dmirs.wa.gov.au); Phone: +61 8 9222 3459; Fax: +61 8 9222 3444.

Cost: \$55 [inc. GST]