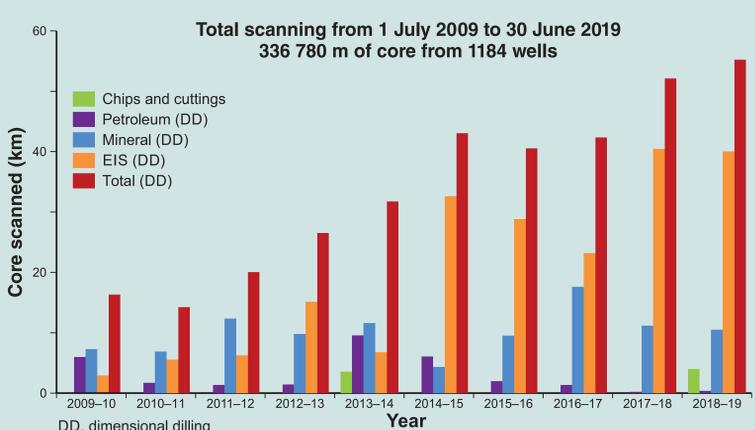


HYLOGGER 3 NATIONAL VIRTUAL CORE LIBRARY

HYLOGGER STUDIES ON PETROLEUM CORE

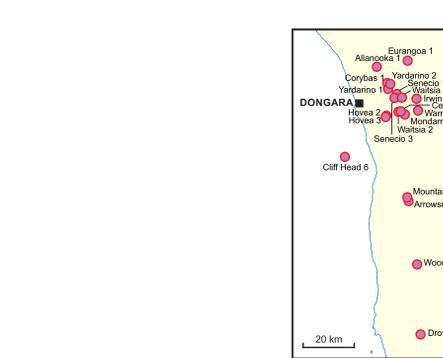
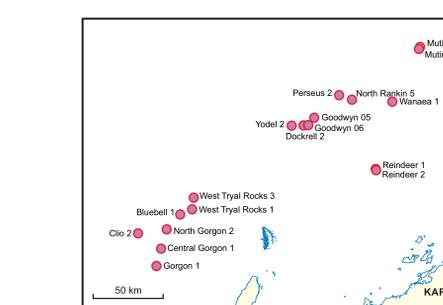
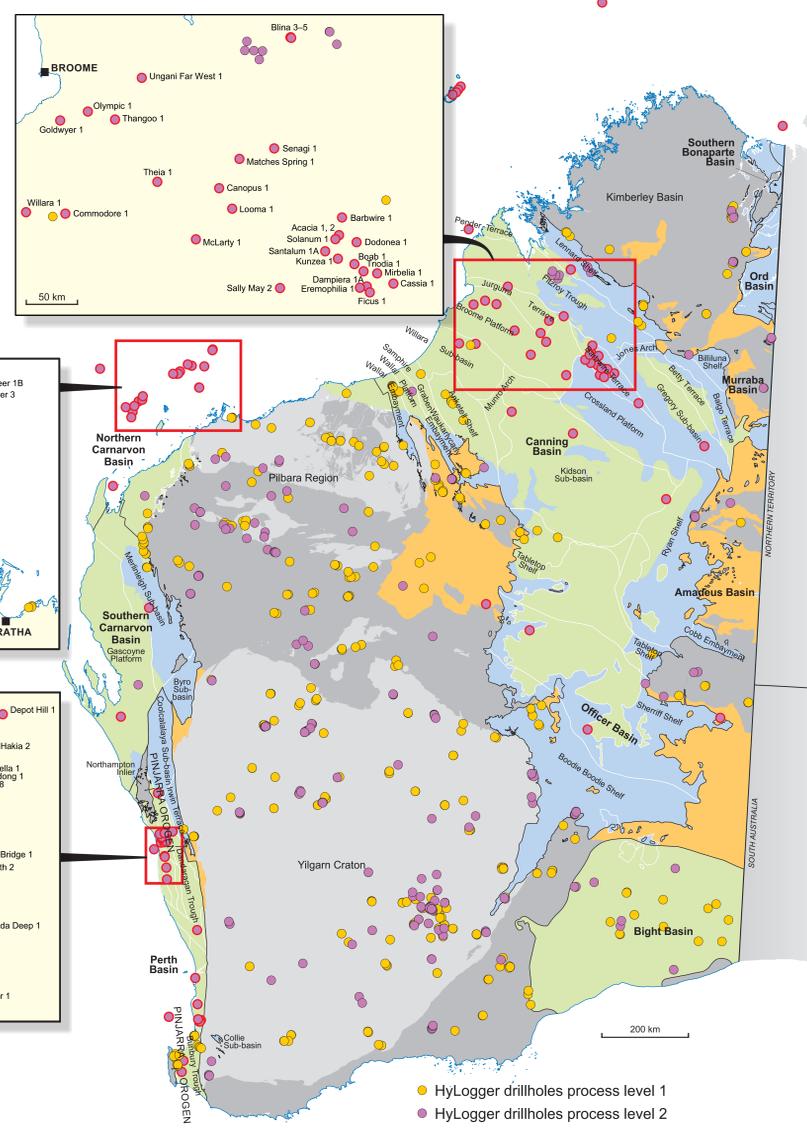
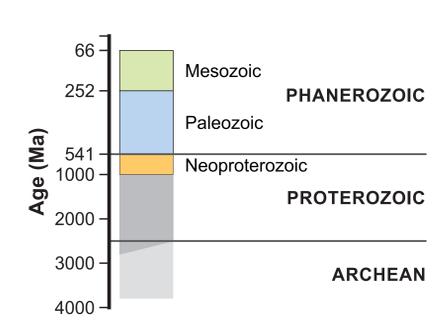
The HyLogging system is a suite of spectroscopic and imaging tools developed by CSIRO as part of its Mineral Down Under Flagship program for logging rock-forming and alteration mineralogy in drillcore and rock chips. It uses rapid reflectance spectroscopy in the visible near-infrared (VNIR), short-wave infrared (SWIR), and thermal infrared (TIR) wavelength ranges to identify a broad suite of hydrous and anhydrous minerals.

HyLogging can provide objective information regarding host rock and alteration mineralogy, vectors to mineralization, characterization of lithostratigraphic units, and the boundaries and location of structures. It is being increasingly applied to petroleum drillcore.



36 771 m of core from 109 petroleum wells scanned from 1 July 2009 to 30 June 2019

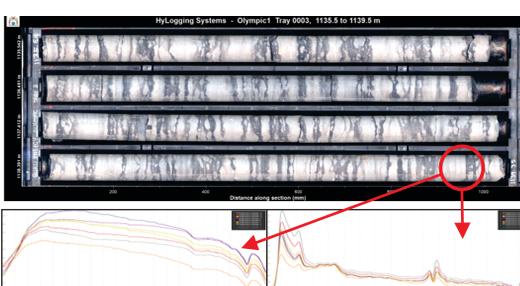
Well name	Location	Core (m)	Total (m)	Rescan
Acacia 1	Canning Basin, Barbwire Terrace	1169.7		
Acacia 2	Canning Basin, Barbwire Terrace	66.4	318.5	
Allanooka 1	Perth Basin, Dongara Saddle	5.8		
Arrowsmith 2	Perth Basin	100.7		
Barbwire 1	Canning Basin, Barbwire Terrace	8.3		
Blina 3	Canning Basin, Lennard Shelf	64.4		
Blina 4	Canning Basin, Lennard Shelf	15.5		
Blina 5	Canning Basin, Lennard Shelf	23.5		
Bluebell 1	Northern Camarvon Basin	20.0		
Boab 1	Canning Basin, Barbwire Terrace	901.6		
Canopus 1	Canning Basin, Mowla Terrace	8.4		
Cassia 1	Canning Basin, Barbwire Terrace	1445.1		
Centella 1	Perth Basin	27.9	111.0	
Central Gorgon 1	Northern Camarvon Basin	105.0		
Chandon 2	Northern Camarvon Basin	216.8		
Cliff Head 6	Perth Basin, Abrolhos Sub-basin	34.0		
Clio 2	Northern Camarvon Basin	109.0		
Coburn 1	Southern Camarvon Basin	1049.5		
Cockburn 1	Perth Basin, Mandurah Terrace	80.0	80.0	
Cody 1	Camarvon Basin	37.1		
Commodore 1	Canning Basin	347.5		
Corybas 1	Perth Basin	49.0		
CRC-3	Otway Basin	201.7		
Dampiera 1A	Canning Basin	1722.1		
Depot Hill 1	Perth Basin, Dandaragan Trough		255.0	
DMP Harvey 2	Perth Basin	1143.5		
DMP Harvey 3	Perth Basin	152.8		
DMP Harvey 3	Perth Basin	881.8		
DMP Harvey 4	Perth Basin	12.1		
Dockrell 2	Northern Camarvon Basin	114.6		
Dodonea 1	Canning Basin	27.7		
Drover 1	Perth Basin	22.0		
Eremophila 1	Canning Basin, Barbwire Terrace	1135.3		
Eurango 1	Perth Basin, Dandaragan Trough	10.7	170.7	
Ficus 1	Canning Basin, Barbwire Terrace	1006.6		
Gibb-Maitland 1	Canning Basin		2900.0	
Gingin 1	Perth Basin	81.5		
Goldwyer 1	Canning Basin	49.7		
Goodwyn 05	Northern Camarvon Basin	120.0		
Goodwyn 06	Northern Camarvon Basin	100.0		
Gorgon 1	Northern Camarvon Basin	60.0		
GSWA Empress 1/1A	Officer Basin	1414.1		
GSWA Harvey 1	Perth Basin	216.4		
GSWA Lancer 1	Officer Basin	1397.2		
GSWA Trainer 1	Officer Basin	703.2		
GSWA Vines 1	Officer Basin	1973.0		
Hakia 2	Perth Basin		120.0	
Hovea 2	Perth Basin, Dandaragan Trough		100.0	81.3
Hovea 3	Perth Basin, Dandaragan Trough	81.3		
Irwin 1	Perth Basin, Dandaragan Trough		490.0	
Kennedy Range 1	Southern Camarvon Basin	72.0		
Kunzea 1	Canning Basin, Broome Platform	441.5		441.5
Laminaria East 1	Northern Bonaparte Basin	64.2		
Looma 1	Canning Basin, Broome Platform	171.0		171.0
Matches Spring 1	Canning Basin	3.0		
McLarty 1	Canning Basin	22.0		
Mirabella 1	Canning Basin	44.0		
Mondarra 8	Perth Basin	28.6	92.0	
Mountain Bridge 1	Perth Basin, Dandaragan Trough	17.4	102.0	
Mutineer 1B	Northern Camarvon Basin	26.4		
Mutineer 3	Northern Camarvon Basin	31.0		
Nicolay 1	Canning Basin	414.7		
North Gorgon 2	Northern Camarvon Basin	64.0		
North Rankin 5	Northern Camarvon Basin	553.6		
Olympic 1	Canning Basin	325.0		
Percival 1	Canning Basin	52.5		
Perindi 1	Canning Basin, Pender Terrace	7.6		7.6
Perseus 2	Northern Camarvon Basin	207.2		
Pinjarra 1	Perth Basin	72.0		
Rainier 1	Bonaparte Basin	17.6		
Reindeer 1	Northern Camarvon Basin	8.0		
Reindeer 2	Northern Camarvon Basin	108.8		
Roc 2	Roebuck Basin	121.1		
Sally May 2	Canning Basin, Broome Platform	494.0	494.0	
Santalum 1A	Canning Basin, Broome Platform	376.4	376.4	
Senagi 1	Canning Basin	285.9		
Senecio 1	Perth Basin	21.6	135.0	
Senecio 3	Perth Basin	43.1	145.0	
Solanum 1	Canning Basin, Barbwire Terrace	781.2		781.2
Sue 1	Perth Basin, Bunbury Trough	61.2		
Sugarloaf 1	Perth Basin, Vlamingh Sub-Basin	7.8	121.9	
Sunrise 2	Bonaparte Basin	84.1		
Sunset 1	Bonaparte Basin	126.0		
Sunset West 1	Bonaparte Basin	101.7		
Thangoo 1	Canning Basin	5.8		
Thebe 2	Northern Camarvon Basin	85.8		
Theia 1	Canning Basin	779.9		
Torosa 1	Browse Basin	20.0		
Torosa 4	Browse Basin	152.6		
Torosa 5	Browse Basin	212.0		
Torosa 6	Browse Basin	201.5		
Triodia 1	Canning Basin, Barbwire Terrace	492.0	492.0	
Turtle 1	Northern Bonaparte Basin	101.7	101.7	
Ungani Far West 1	Canning Basin	75.2		
Walsia 1	Perth Basin	49.4	285.0	
Walsia 2	Perth Basin, Dandaragan Trough	173.3		
Walsia 3	Perth Basin, Dandaragan Trough		105.0	
Wanaea 1	Northern Camarvon Basin	28.8		
Warradong 1	Perth Basin	5.4	245.0	
Wendy 1	Southern Camarvon Basin	944.6		
West Trawl Rocks 1	Northern Camarvon Basin	7.9		
West Trawl Rocks 3	Northern Camarvon Basin	75.0		
Whicher Range 1	Perth Basin, Bunbury Trough	87.0		
White Hills 1	Canning Basin	8.5		
Willara 1	Canning Basin	32.0		
Wilson Cliffs 1	Canning Basin, Kidson Sub-basin	28.9		
Woodada Deep 1	Perth Basin	79.0		
Yardaino 1	Perth Basin	53.2		
Yardaino 2	Perth Basin	60.9	182.9	
Yodel 2	Northern Camarvon Basin	107.5		



HyLogging data in GeoVIEW.WA

867 scanned non-confidential drillholes are shown in the GeoVIEW.WA HyLogger layer using colour codes for different levels of interpretation:

- Yellow – Level 1 – core scanned and processed. Currently there are 203 datasets available for downloading
- Purple – Level 2 – core scanned, processed, and interpreted to basic level. Data are available to download. Currently there are 380 datasets



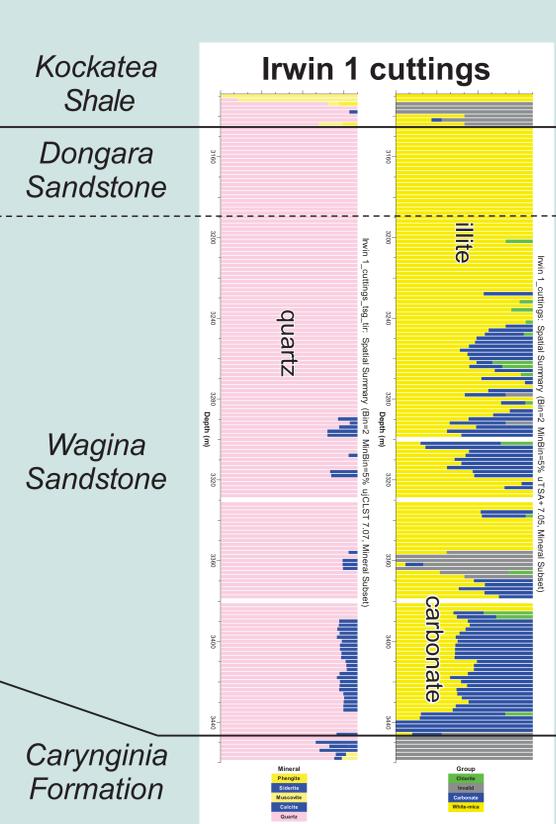
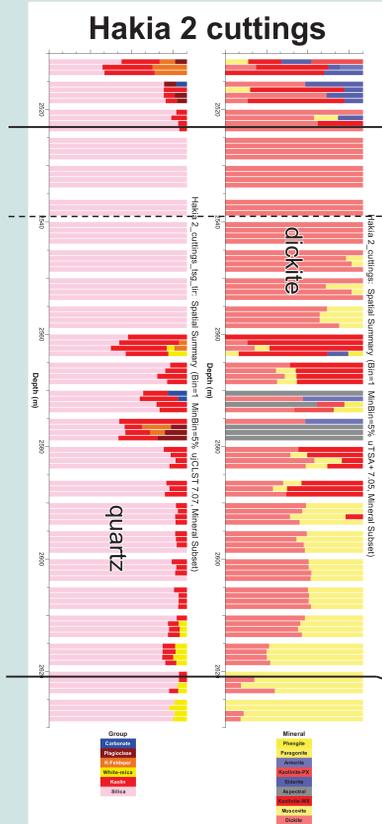
The Spectral Geologist (TSG) core tray image, VNIR-SWIR and TIR spectra of Fe-rich calcite and dolomite with a small contribution of phengitic illite. 1139.37 m of core, tray 3, Olympic 1 well, Canning Basin

HyLogging data for all petroleum wells are processed to Level 2, and non-confidential datasets are uploaded to GeoVIEW.WA

GSWA petroleum project Hyperspectral analysis of cores and cuttings for assessing reservoir trends in northern Perth Basin Permian sandstones



A primary aim of this project is to develop a rapid method to analyse cuttings using the HyLogger. This will help assess the regional stratigraphic and spatial variability of diagenetic clays and cements that influence porosity and permeability distribution in the gas- and oil-bearing Dongara, Wagina, High Cliff and Kingia Sandstones.



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