



→ **Facies analysis and diagenetic evolution of the Dinantian carbonates in the Dutch subsurface: data and analyses well KSL-DB123**

Report by SCAN

October 2019

Facies analysis and diagenetic evolution of the Dinantian carbonates in the Dutch subsurface: data and analyses well KSL-DB123

Written by:

Mahtab Mozafari¹, Peter Gutteridge²,
Alberto Riva³, Kees Geel⁴, Joanna
Garland² and Julie Dewit²

October 2019

1- Energie Beheer Nederland (EBN), Daalsesingel 1, 3511 SV Utrecht, the Netherlands

2- Cambridge Carbonates Ltd, No. 4 The Courtyard, 707 Warwick Road, Solihull, B91 3DA, UK

3- G.E.Plan Consulting srl, Via L. Ariosto 58, 44121 Ferrara, Italy

4- Geological Survey of the Netherlands (TNO), Princetonlaan 6, 3584 CB Utrecht, the Netherlands

*Dit rapport is een product van het SCAN-programma en wordt mogelijk
gemaakt door het Ministerie van Economische Zaken en Klimaat*

Table of contents

5.	Kastanjelaan-DB123 (KSL-DB123).....	1
5.1	Introduction.....	1
5.2	Available dataset.....	3
5.2.1	Logs	3
5.2.2	Cores, sidewall cores and cuttings	3
5.2.3	Thin sections	3
5.2.4	Additional analyses.....	3
5.3	Stratigraphy.....	3
5.3.1	Dinantian succession	4
5.4	Biostratigraphy	4
5.5	Sequence stratigraphy and diagenesis	4
5.6	General observations.....	5

5. Kastanjelaan-DB123 (KSL-DB123)

5.1 Introduction

The DB-123 well is located in the Maastricht area, SE Netherlands, very close to the KSL-02 well (Figures 5-1 and 5-2, Table 5-1). The Maastricht-Kastanjelaan borehole (=DB123) was drilled between 1927 and 1929 (Table 5-2).



Figure 5-1: Map showing all the wells penetrating the Dinantian carbonates. Location of the KSL-DB123 well is indicated by red dashed circle.

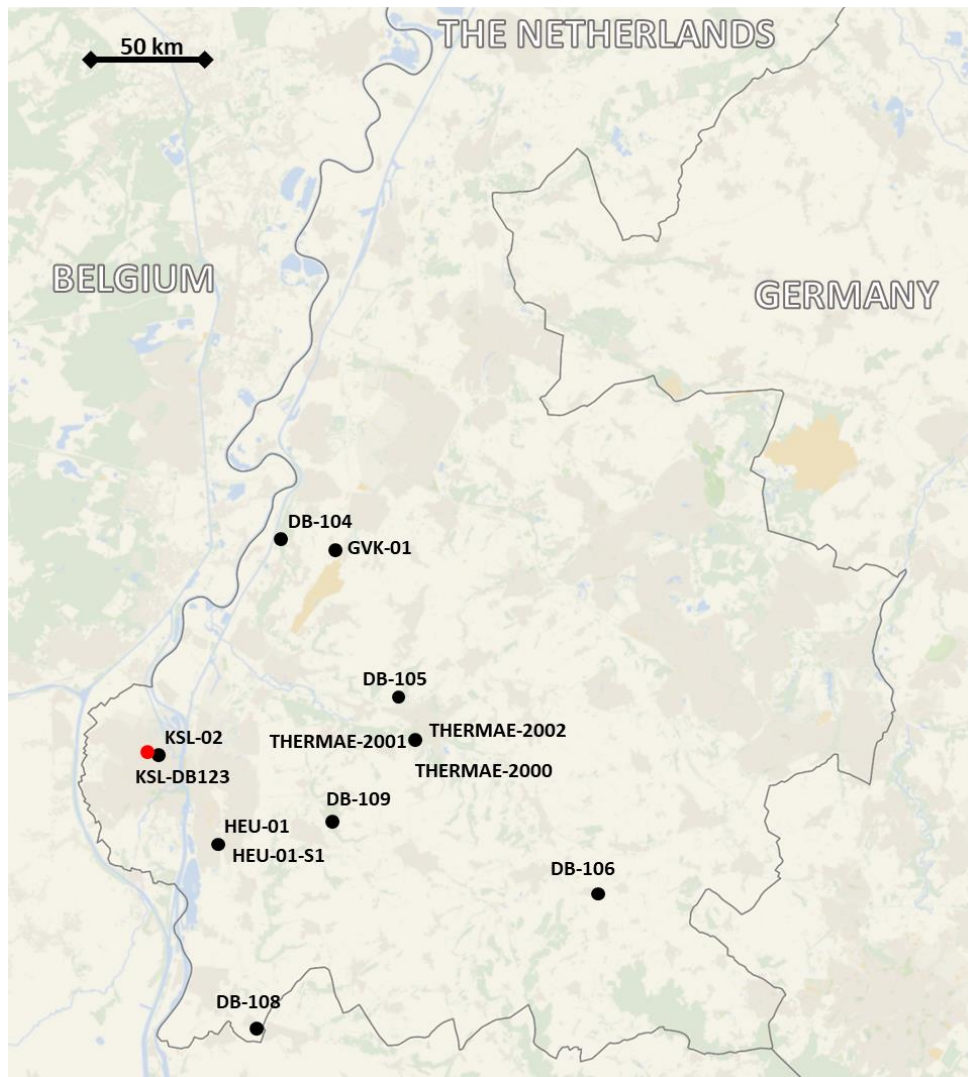


Figure 5-2: Map showing location of the KSL-DB123 well (red circle).

Table 5-1: Coordinates and depth of KSL-DB123 well (from www.nlog.nl).

Co-ordinates (x, y in utm31, ed50 format)	688666, 5637445
Lat/Long (°)	50.85684844, 5.68054336
Supplied co-ordinates	175570, 318508 (RD)
Depth in meters referred to :	Rotary Table
Total depth (m, along hole) :	329.8
Vertical position of Rotary Table :	46.9 meter a.s.l.
Trajectory shape :	Vertical
Deviation in X-direction :	0
Deviation in Y-direction :	0
True vertical depth (TVD) in m :	329.8

Table 5-2: Drilling data about KSL-DB123 well (from www.nlog.nl).

Client name :	Gem. Maastricht
Start date	28-nov-1927
End date	31-dec-1929
Drilling company :	Hennings, E., Berg aan de Maas
Type of well :	Exploration
Result :	unknown
Status :	unknown

5.2 Available dataset

Some documents, including scanned well logs are present on “www.nlog.nl” within the following link:

<https://www.nlog.nl/nlog/requestData/nlogp/allBor/metaData.jsp?tableName=BorLocation&id=106521376>

The most relevant publications/reports used in this study are as following:

Bless, M. J. M., Bouckaert, J., Bouzet, P., Conil, R., Cornet, P., Fairon-Demaret, M., Groessens, E., Longerstaey, P., Meesen, J. P. M. T., Paproth, E., Pirlet, H., Streel, M., Amerom, H. W. J. and Wolf, M. (1976). Dinantian rocks in the subsurface north of the Brabant and Ardenno- Rhenish massifs in Belgium, the Netherlands and the Federal Republic of Germany. Mededelingen Rijks Geologische Dienst, nieuwe serie, 27, 81-195.

Patijn, R. J. H. (1958). Onderzoek naar Uraanmineralen in Zuid Limburg, scientific report, Heerlen.

5.2.1 Logs

No wireline logs are available for this well.

5.2.2 Cores, sidewall cores and cuttings

No information regarding the core is available and thus it is not evaluated.

5.2.3 Thin sections

No thin sections are available for this well.

5.2.4 Additional analyses

Patijn (1958) reported one analysis for evaluating Uranium concentration in the interval 280-290 m, with a CL of 0.005 (unit unknown).

5.3 Stratigraphy

The stratigraphy is derived from www.nlog.nl (Table 5-3).

Table 5-3: Stratigraphy of the KSL-DB123 well.

Stratigraphic unit	Top interval (m)	Base interval (m)
Upper North Sea Group	0	0
Chalk Group	0	201
Carboniferous Limestone Group	201	329.8

5.3.1 Dinantian succession

The Dinantian interval is characterised by 127 meters of silicified limestones and shales, with locally silicified oolitic limestones. The description in the Bless et al. (1976) paper is not really detailed. The Dinantian limestones underlays immediately below the Cretaceous unconformity.

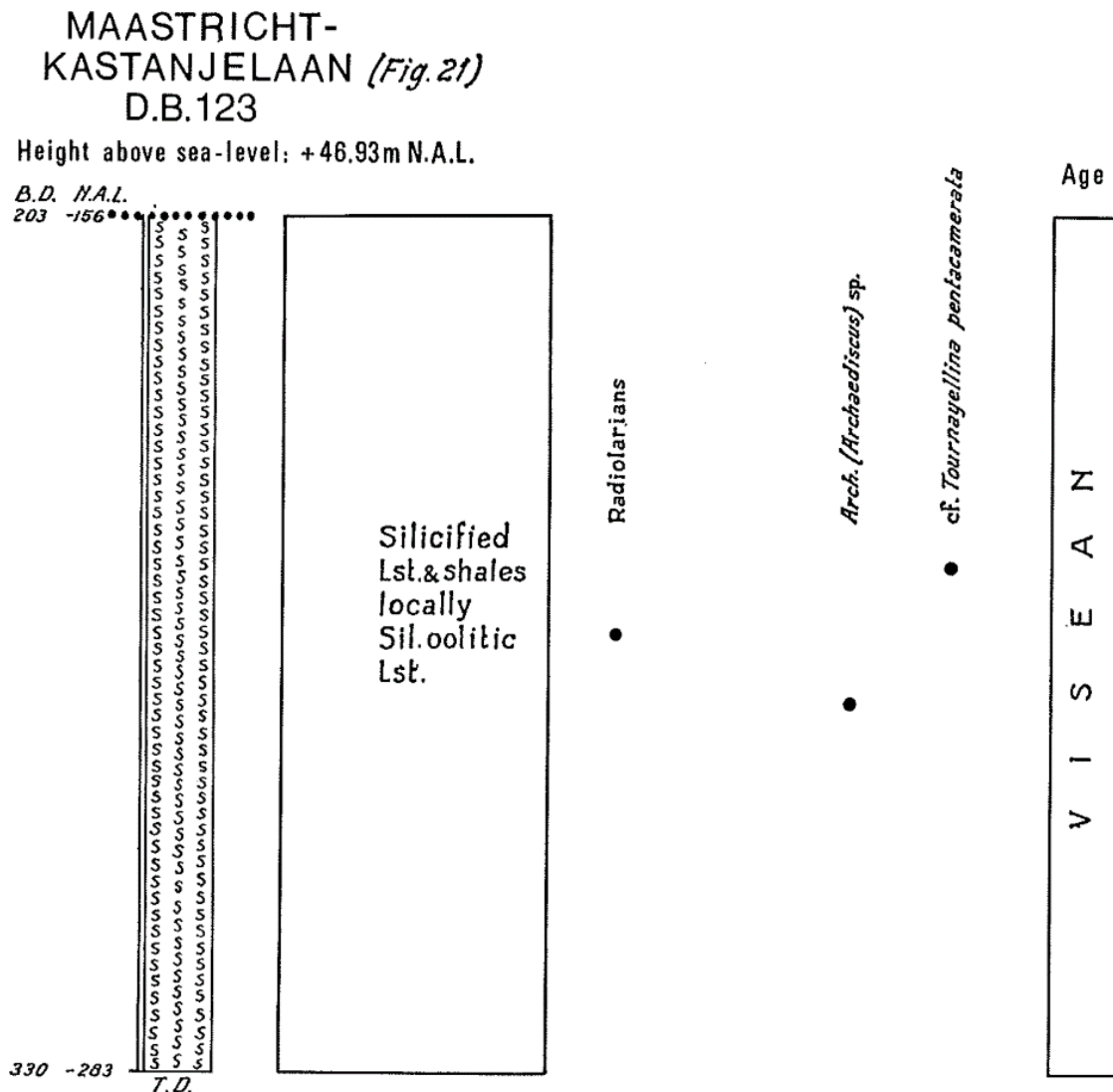


Figure 5-3: Stratigraphy of the KSL-DB123 well (from Bless et al., 1976).

5.4 Biostratigraphy

Bless et al. (1976) were the first reporting a Dinantian age for the KSL-DB123 succession below the Cretaceous unconformity. They identified one foraminifer from the 250-260 m level, a Chernyshinellinae similar to *Tournayellina pentacamerata* Bozorgnia, while the silicification prevented from defining clearly the well structure. The 260-270 m level sample is plenty of radiolaria. In the 270-280 m interval, a very badly preserved specimen of Archaediscus (Archaediscus) sp. was recovered, suggesting a quite generic Visean age for the whole sequence, not only V1/V2 as stated by Bless et al. (1976).

5.5 Sequence stratigraphy and diagenesis

The entire succession is silicified and there are no well logs available for any sequence stratigraphic interpretation and diagenesis.

5.6 General observations

The stratigraphic succession of this well is equivalent to the nearby KSL-02, but is completely silicified. Based on the correlations with the nearby wells, the depositional environment is most likely basinal.

This page intentionally left blank

Onderzoek in de ondergrond voor aardwarmte