There are also various links:
- ThermO2IS, geothermal information system
- GeoRocks, containing geological places of interest
- Soil data, Alterra’s soil information system
- Minerals Online
- Telemetry of current groundwater levels in North Brabant
- Telemetry of current groundwater levels in Friesland
- Telemetry of current groundwater levels in Utrecht
- Wateratlas Gelderland

WANT TO LEARN MORE?
More and more users are finding their way to DINOloket. Still, only a small portion of the parties who could benefit from such a database are actually using the website. This is a huge missed opportunity, given that the added value is so great and there are no costs.

The Geological Survey of the Netherlands, TNO also hosts an open house once a year, where users can gather to exchange ideas about DINOloket. The government has decided to the Dutch Key Register of the Subsurface, BRO. The BRO is a continuation of the existing registers DINO and the Soil Information System of Alterra Wageningen University & Research Centre.

ACCESS TO DINOLOKET
Everyone using the data may apply for a free subscription. No charge is made for the data itself. Send an email with your name and address to dinoloket@tno.nl. You will be sent a username and password for access to the services.

DINO SERVICE DESK
E info@dinoloket.nl
T +31 88 866 4690
Visit our website: dinoloket.nl

NL OIL AND GAS PORTAL – NLOG

NLOG is the Dutch Ministry of Economic Affairs’ information portal for oil and gas exploration and production. It provides access to information on legislation and regulations, production figures, licences and production plans, and data on the subsurface of the Netherlands.

OIL, GAS AND SALT
Besides oil and gas data, information will be provided on salt mining, natural gas and CO2 storage, and geothermal resources. In the process of extracting oil, gas and salt, mining companies and oil companies use exploratory drilling and seismics to study the deep subsurface.

Under the Dutch Mining Act, exploratory data collected after 1 January 2003 (reports and logs, seismic signal data) are released into the public domain after five years. Data from before that date are released after ten years. Under the Dutch Mining Act, a different set of rules applies to mining information in terms of confidentiality and subscription forms. So follow the link to the NLLOG.nl website, which is especially designed for mining issues.

ACCESS TO NLOG
NLOG is fairly accessible. Many borehole measurements can already be downloaded for free. Data that have not yet been scanned and analogue 2D seismics are provided for a fee to cover the reproduction costs. Digital seismic data are supplied on USB, DVD or via FTP server, for a marginal fee. To order mining data, you only need to supply us with your name and address or company name and VAT number, as the case may be. There are no costs associated with this. The data will be provided for a fee to cover the reproduction costs. Please also consult the applicable terms and conditions.

DINOLOKET
DINOloket is the central point of access for Data and Information of the Dutch Subsurface and contributes to the sustainable management and use of the subsurface and its natural resources.

With increasing pressure on space above ground, more and more sectors are literally coming into contact with the subsurface. So it is essential for there to be a central location in the Netherlands where the subsurface data is efficiently and permanently stored, updated and disseminated. By establishing many cooperative links with other parties, DINO has become the largest database of the Dutch subsurface. DINO can be accessed via the DINOloket portal. DINO is on route to the Key Register of the Subsurface (BRO).
The following data are available via DINOLoket:
- Drillings
- Borehole measurements
- Grain sizes
- Cone penetration tests
- Groundwater quantity/quality
- Geolectric measurements

**DINODATA**

**CONE PENETRATION TESTS**
DINOLoket contains the data of ten thousand cone penetration tests of the Dutch subsurface.

These cone penetration tests provide information on the stratification and bearing capacity of the subsurface.

**GROUNDWATER LEVELS / GROUNDWATER QUALITY**
DINOLoket contains the data of tens of millions of groundwater levels and data about the groundwater composition. These data are also constantly updated and their quality controlled.

The Digital Geological Model (DGM) is a large-scale nationwide strata model in which the geometry of geological entities (formations) is shown at a depth of up to around 500 meters.

Approximately 16,500 drillings in the DINO drilling database, which contain a lithostratigraphic interpretation, enabled the strata surfaces of the undersides of these formations to be constructed.

The depth location of the base of the geological entities forms the framework of the DGM. Through thickness and depth grids, the DGM provides information about the Quaternary and Upper-Tertiary series of strata and makes clear the spatial coherence of the entities in map images and profiles.

**DINOMAP**

The Regional Geohydrological Information System REGIS-II is a set of digital files containing geohydrological information. REGIS-II gives the user online access to a geohydrological model of the Netherlands. REGIS-II is thus the basis for compiling regional groundwater models.

Supplemented with local (drilling) information REGIS-II is also a basis for local groundwater models.

REGIS-II details layers of good and poor permeability within the geological entities distinguished in the DGM. The depth location of the top and underside as well as the thickness of each geohydrological entity are recorded in grid units of 100 x 100 metres. In addition to these geometric data, the geohydrological model contains the hydraulic characteristics for each entity.

**DINOSERVICES**

A web service can be described as an interface of an application component that is accessible via standard web protocols. Communication is effected via XML between two applications, one at the user end and one at the DINO end. A web service enables a service to be requested remotely to a server, for instance to make a calculation, supply data or perform a task.

**WHY WEB SERVICES?**
Using web services has several advantages. For instance, web services can be modified to a large number of platforms using a whole range of programming languages. This is because web service specifications are developed separate from a specific platform or technology.

Given that web services are independent of platform and technology and use standards like XML and HTTP, it is much more simple to reuse the services and integrate applications.

**DINOLOKET, THE BRO AND WEB SERVICES**
DINOLoket is on route to the BRO where all subsurface data – collected through government funding – will be available for everyone from 2015 onwards, with the data being supplied and requested via web services.

**WHAT IS ALREADY AVAILABLE?**
Currently several elements are available via services:
- WMS services: some 200 maps as services, for instance for use in ArcGIS.
- 3D model data: an add-in has been developed for MS Excel to have permanent model data to hand.