

World of Royal Eijkkelkamp magazine #2



 **Eijkkelkamp**
Meet the difference

Groundwater problems in Sri Lanka

The bright future for Drill'n CPT

Safe levees through groundwater data

Tricks of the blacksmith





Content World of Royal Eijkelkamp



Better quality samples in a shorter time



A safe Grebbedijk by Eijkelkamp



Meet the difference!

The world of Royal Eijkelkamp is in full motion! Because we are still proud of the five-year millions project in Sri Lanka we secured earlier this year. Under contract to the Sri Lanka Ministry of Irrigation and Water Resources Management we have since commenced working on the creation of a groundwater monitoring network in different regions of this South Asian country. We will be telling you more about this in this latest issue of The World of Royal Eijkelkamp.

In addition, you will read about many other projects in which Royal Eijkelkamp is involved, including the groundwater and source water monitoring network for Europe's largest producer of soft drinks and fruit beverages, Refresco Group. Or our Swiss customer Fretus, which has been making full use of the new Drill'n CPT for a tunnel construction project in Bern.

Aside from interesting projects, many other good things have happened. For example, the Royal Honour bestowed on Fons Eijkelkamp. We were nominated for the family business of the year title and are still in the running for the Water Alliance Innovation and Stimulating Price 2018. And if you always wanted to know what the tricks of the blacksmith's trade are, read about it here in The World of Royal Eijkelkamp.

Enjoy reading!

Huug Eijkelkamp



The tricks of the blacksmith's trade



Sonisch boren, strong and compact



Eijkelkamp SonicSampDrill partner in European Smart mining project

Colophon

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Royal Eijkelpkamp helps manage groundwater problems in Sri Lanka



Anuradhapura, in the catchment area Malwathu Oya, is part of the monitoring network.

Smart Sensing by Royal Eijkelpkamp

Eijkelpkamp Smart Sensing has the resources, technology and services to produce relevant soil and water related data for you. Data from which you can obtain valuable information.

Request the brochure

Send an email to info@eijkelpkamp.com for a copy of the Smart Sensing brochure. It contains a complete overview of modems, sensors and web portal solutions.

Elsa Mulder-van Heijst
Senior Project Manager



A similar MRS Truck Mounted Rig will soon be shipped to Sri Lanka.

Royal Eijkelpkamp has been awarded a five-year multi-million project in Sri Lanka. By order of the Sri Lankan Ministry of Irrigation and Water Resources Management, Royal Eijkelpkamp will realise a groundwater monitoring network in various regions of the South Asian country.

‘Like many other countries, Sri Lanka also faces a variety of groundwater-related problems,’ says Senior Project Manager Elsa Mulder-van Heijst. ‘Groundwater is becoming scarcer, the demand for groundwater increases due to population growth and a large variety of users causes fluctuations in level, quality and composition of the groundwater. In addition, there are different climate zones in Sri Lanka. In the dry zone, where residents are often affected by chronic kidney disease, a very high arsenic and mercury content is found in most drinking water samples.’

‘The groundwater monitoring network to be realised, consisting of 150 monitoring sites, will soon provide the decision-makers of the Ministry with timely, reliable and accurate data, based on which groundwater-related problems can be monitored and managed.’ Royal Eijkelpkamp carries out the project in Sri Lanka on behalf of the Ministry of Irrigation and Water Resources Management (MIWRM). The MIWRM has the executive responsibility for the administration and management of water sources. In other words, the MIWRM regulates the water sources and the extraction of groundwater. The MIWRM provides drinking water for domestic use, protection against flooding, development of land and water sources for energy from hydro power and development of aquaculture. Thereby, the Ministry gives priority to the environmental-related activities.

The MIWRM is directly responsible for the groundwater supply and management of irrigation in the country. During the project, the MIWRM will supervise that it is carried out within the applicable (environmental) legislation and regulations in Sri Lanka. The Ministry has given Royal Eijkelpkamp the assignment to install the groundwater monitoring network, which will be managed from the capital Colombo, in three catchment areas.

‘The monitoring network will provide the Ministry with timely, reliable and accurate groundwater data.’

To determine the location of the monitoring sites and the hydro-

geological profiles, Royal Eijkelpkamp will start with a detailed field study in the three catchment areas. Once the locations have been determined, Royal Eijkelpkamp will carry out all drilling work with sonic drills. This is followed by the installation of sensors, data transport and validation. In the Data Management Centre of the Water Resources Board in Colombo, a control room will be realised where all data is received, monitored and managed.

All project activities are supported both from the Netherlands and from

Sri Lanka with project management and extensive and versatile training. Director Huug Eijkelpkamp and commissioners Fons Eijkelpkamp, Joop Hylkema and Ron Willems are proud of this mission in Sri Lanka. ‘This project is a great example of the turnkey solutions that Royal Eijkelpkamp offers nowadays. In addition to the equipment, we take care of all activities within the project, from research, design, development, financial structuring, planning, management, implementation and training to the functional delivery of the entire project.’



'We expect a bright future for the Drill'n CPT'



Fretus AG, a Swiss-based building contractor uses the Drill'n CPT from Eijkelkamp SonicSampDrill at a project in Bern, Switzerland. Co-owner and CEO Johan de Ruiter explains why.

'We were already familiar with the sonic drilling equipment from Eijkelkamp SonicSampDrill. The advantages of sonic drilling rigs are the perfect core samples we get in difficult conditions, fast drilling, and because of the truck-mounted rig we can relocate quickly from borehole to borehole at any place in Switzerland.'

'The Swiss market for CPTu testing is relatively small because of its geological situation, so there are fewer contractors for CPTu testing. For us as a drilling contractor we would normally work with one of the Swiss-

based CPTu testing companies. When we heard about the development of the Drill'n CPT from Eijkelkamp SonicSampDrill we were immediately enthusiastic. We immediately saw the innovation of this product. With this equipment we can utilise our own CPTu without buying a complete new rig, by combining it with our own rigs. Moreover, we are able to combine drilling and CPT on the same borehole, which is the biggest innovation of this product.'

'We did not want to bring a new product on the Swiss market without having the appropriate contracts to utilise it. As I said, the market is small. As soon as we were awarded the contract in Wankdorf Bern, we ordered the Drill'n CPT. Now we can combine

the drilling and CPT in one big project. At the same time we used the project for teaching the drilling operators how to work with this new tool, as well as to start up the marketing for Drill'n CPT.'

'The system works fast and is easy to handle.' Johan de Ruiter – Fretus AG, co-owner and CEO for the Swiss market 'The system works fast and is easy to handle.'

'The system works fast and is easy to handle.'

For this project in Bern we do a total of 1,400 metres of CPT testing. The feedback from our customers is very good. Because of the good response to the Drill'n CPT unit, the innovation that it brings to the market and the overall good situation in the Swiss market, we expect a bright future for the Drill'n CPT.'



Fretus AG

Fretus AG is a Swiss-based building contractor, specialised in soil investigation, foundation drilling, tunnel renovation and injections. Fretus AG focuses on specialised work which requires expert knowledge

and experience. Fretus AG obtained this knowledge together with the employees over more than 25 years. For carrying out the work Fretus AG has proven and highly specialised equipment available such as a truck-

based Sonic XL-Max drilling rig, which is used for soil investigations and well drilling.

More information at
www.fretus.ch



Groundwater data essential for safety Dutch flood protection works



The Grebbedijk is a levee located between the municipalities of Wageningen and Rhenen in the Netherlands and protects 250,000 residents in the Gelderse Valley adjacent to the waters of the Lower Rhine (Nederrijn). The Grebbedijk does not comply with the latest strict safety standards. In 2023 the more-than-5-kilometre-long levee will be reinforced as part of the Flood Protection Programme, to ensure that the hinterland will remain safe if the water flowing through the Rhine in the future increases due to climate change. The Water Board is extensively monitoring the levee to collect as much groundwater data as possible for this purpose.



'Due to fast and effective action on the part of Eijkelpkamp Soil & Water, we were able to continue measuring during high water conditions.'

Reindert Stellingwerff – Vallei and Veluwe Water Board

Reindert Stellingwerff, Policy Advisor Water Defences at the Vallei and Veluwe Water Board, is involved in the Grebbedijk reinforcement project. 'We want to prepare an optimal design for the Grebbedijk. This requires data. The installation of the measuring network on the levee ultimately enables us to better predict the required strength of the newly to be designed levee in the event of peak discharge.'

'As a Water Board, we manually measured groundwater levels near the levee for 20 years, but at a much lower frequency. The new measuring system Eijkelpkamp Soil & Water installed, will provide us with much more

data. During the installation of the measuring array, we experienced peak discharge of the Rhine River in January 2018. Due to fast and effective action on the part of Eijkelpkamp Soil & Water, the measuring points outside the dike were extended, enabling us to continue measuring during the high water conditions. It is not always possible to take elaborate measurements in the start-up phase of a project. But that happened here. We were lucky to be able to conduct measurements under high water conditions right from the start.'

'Levee managers want to know as much as possible about a levee. That makes measuring and monitoring an essential activity. Even in areas that do not immediately require reinforcement. All levee maintenance managers in the Netherlands are busy with the periodic Safety Assessment. By performing calculations we assess the strength of our levees. This requires data about the groundwater levels below the levee and in sand layers located at greater depths. And preferably for the entire year. This helps us understand how a dike behaves during high water conditions. We aim to translate this data into extreme scenarios to test the levee and monitor it in case that situation actually occurs.'

'Our measuring array has been configured by Eijkelpkamp Soil & Water for continue measuring and monitoring over the coming years. After all, as maintenance manager, my goal is to have data series spanning several decades. The data we acquire is transmitted to the Dike Data Service Centre, a platform for storing dynamic measurement data within and around dikes. This platform enables us to store, analyse and review large quantities of dynamic measurement data, geographically as well as in the form of tables and graphs. We developed the Dike Data Service Centre together with five water boards and the Directorate-General for Public Works and Water Management (Rijkswaterstaat). We are hoping that increasingly more dike managers will join this platform so that we will end up with safe, future-proof dikes throughout the Netherlands.'



Flood Protection Programme

Working together to restore levees that during the safety assessment were declared non-compliant. That is the essence of the Flood Protection Programme: a programme in which the national and regional water authorities collaborate intensively to protect the Netherlands from flooding. The Programme is updated annually and developed for a period of six years at a time, with a longer-term twelve-year perspective. The Flood Protection Programme forms part of the Delta Programme.

For more information:

www.hoogwaterbeschermingsprogramma.nl

Vallei en Veluwe Water Board

The Vallei en Veluwe Water Board is responsible for providing safe levees, clean and sufficient surface water and treated wastewater in the region bordered by the IJssel River, the Lower Rhine River, the Utrecht Hill Ridge and the Bordering Lakes. As such the Water Board oversees an area of 245,644 hectares and serves 1.1 million residents.



‘With sonic we get better quality samples in a shorter time’

Ulrich Geotechnik is a German engineering office for geotechnics. Luis Ulrich is the Co Managing Director, studied civil engineering and geotechnics and manages all operational processes now. The company started with a well drilling company, founded by the grandfather of Luis. His father build up the engineering office in 1975 and integrated the well drilling company five years later, in 1980.

‘We first came across sonic in 2004; my father and my brother went to a demonstration in Canada. However we started drilling with sonic six months ago. We also use the SingleWall Core Barrel on the site here. It is planned to build a deep excavation, next to a railway, for a three-level underground car park that is all part of a hospital. But we also use the AquaLock and DoubleWall Core Barrel for softer formations or alluvial formations. We carry out CPTs as well with the rig.’

‘We are drilling glacial formations mainly in moraine clay with stones and boulders. This is one of our projects with higher demands on the soil sample quality, as the excavation pit

and also the foundations are depending on that. We go down to 18 metres and if we need more information about the subsoil we advise going deeper. We drill nine boreholes to get an overview of the whole subsoil area.’

‘With sonic we get the better quality samples in a shorter time. And the rigs are smaller and lighter compared to conventional drilling rigs, with the same depth performance. Eijkkamp SonicSampDrill is a very good support for all our challenges.’



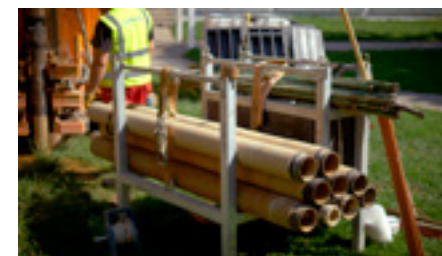
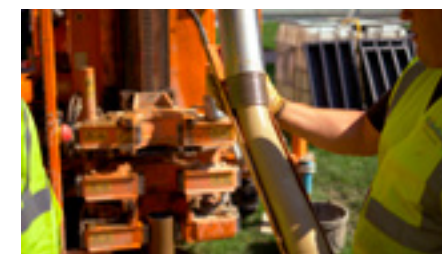
For the video, view our official Youtube channel: youtube.com/royaleijkkamp



The SmallRotoSonic ML in action.

‘The sonic rigs are smaller and lighter compared to conventional drilling rigs, with the same depth performance’

Luis Ulrich – Managing Director



'Monitoring water is monitoring the very foundation of our business'

Refresco Group, Europe's largest manufacturer of soft drinks and fruit juices, monitors the groundwater and spring water levels at its site in Hoensbroek via Smart Sensoring developed by Eijkelkamp Soil & Water. 'Every 10 minutes, we receive the groundwater data we need via telemetry,' says QESH Manager Marcel Suntjens. 'This is essential for us, because we want to minimise the water factor.'



'We need to be sure that nothing potentially harmful is occurring, such as a threat from above or below to the integrity of our springs.'

'Refresco Group's position as a leading company in our industry places a huge responsibility on us in terms of our products, employees and environment. We take this responsibility very seriously. That's one reason why we established a QESH (Quality, Environment, Safety and Health) department consisting of 8 people which I manage.'

Marcel Suntjens
QESH Manager at Refresco



'At our site in Hoensbroek, we have six springs, with depths varying from 100 to 130 metres below ground level, four of which are recognised as spring water, or natural mineral water, wells. We are obviously very protective of these springs. After all, water is the very foundation of our business. Officially recognised springs must be protected from above, below and from the side against extraneous water intrusion. For this reason we constantly monitor the water level in the spring and analyse the water quality. We need to be sure that nothing potentially harmful is occurring, such as a threat from above or

below to the integrity of our springs.' 'In the past, we used to gauge the water level of the springs with a sounding device, actually a tape, and record the readings manually. Now we take a more professional approach by employing telemetry monitoring. Each spring is equipped with its own Diver Water Level Logger and GDT-S Prime modem. One spring even has multiple Divers and a GDT-M for monitoring different layers. These enable us to monitor spring water as well as groundwater.'

'Ultimately, our goal is to extract as little water as possible from the soil. This makes the so-called water factor, or the volume of water needed to make one litre of lemonade, an important KPI for us. We aim to minimise this water factor. One of the key factors in this regard is the way in which we operate springs. So, ensuring we don't open a spring too soon or close it too late, and that no tanks overflow. Another important consideration is how best to extract water from the spring with the aid of a pump: frequency controlled or not? We are currently in the process of implementing

frequency-controlled pumps, but monitoring with Diver Water Level Loggers will give us a better picture of what is happening underground, which will ultimately enable us to make optimum use of the available water. Why did we choose Eijkelkamp Soil & Water?' I think there is only one firm with the experience and expertise to do this effectively. In the past, we've used equipment supplied by Eijkelkamp. But the introduction of new technologies,

such as the GDT-S Prime modem, for example, has made everything a lot easier nowadays. This feeds all the required data on what is happening directly to the desktop.

'Besides saving several man hours per spring per month, we now have access to far more data and that really is key for us. The data we previously received just once a fortnight is now fed to us every ten minutes. This allows us to see

immediately what happens in the spring when a pump is switched on or off and whether there is interaction between different springs. Fortunately, the latter is not the case.'

'We now have access to far more data, and that really is key for us.'

Refresco Group

Refresco Group is Europe's largest manufacturer of soft drinks and fruit juices. The business unit Refresco Benelux manufactures products for leading retailers in the Netherlands and Belgium and for national and international A-brands. Refresco Benelux additionally produces a diverse range of drinks under its own brand for the export markets of Africa, Asia and the Middle East.

The head office of Refresco Benelux is located in Maarheeze, the Netherlands. Refresco Benelux has four manufacturing sites: Maarheeze, Bodegraven, Hoensbroek and Ninove (Belgium). Across these four locations, Refresco Benelux fills more than one billion litres of product per year in 2.2 billion different types of packaging. Refresco Benelux employs more than 650 staff.



“Soil monitoring as obligation to future generations”

The Danube region is a major international hydrological basin and ecological corridor. This requires a regional approach to nature conservation, spatial planning and water management. That is why the Institute of Field and Vegetable Crops in the Republic of Serbia and Croatian Agricultural Land Agency initiated the CHAIN project.

The development of intensive agricultural production occurred in the examined area of Podunavlje thanks to fertile ground, abundance of water, favourable climate conditions and long tradition. The examined area is extremely sensitive to intensive agricultural production as the diffuse pollution source, having been situated in the protected area with natural resources of international importance (special nature reserve „Gornje Podunavlje” in Serbia and „Kopački rit” in

Croatia). Given the existence of two opposite interests in one area, maintaining balance between the nature and human activity is essential. Agricultural inputs– agrochemicals cause groundwater pollution all over the world, nitrate and phosphate in particular as a result of excessive fertilizer use or inadequate disposal of manure.

Cross-border cooperation

Overall objectives of the cross-border CHAIN cooperation is to contribute to development and environment protection by managing risks of pollution caused by agricultural production and improvement of soil and ground water pollution control on agricultural surfaces in the Danube region. The CHAIN project is financed by INTERREG Europe because of the cross-border cooperation.

Given that proper assessment of the effect of agricultural activities on environment quality can be done only through monitoring of soil and water quality, one aim of this project was to establish a system for continuous monitoring of soil and groundwater quality within the programme area.

The CHAIN project members concluded: ‘With respect to the obtained results, soil quality monitoring is our obligation to the future generations, thus the continuation of soil monitoring is necessary in order to identify the patterns of soil quality changes and establish control over soil contamination.’

Eijkelkamp Soil & Water’s partner in the Republic of Serbia, Megra, was closely involved in the CHAIN project. They supplied the Eijkelkamp Soil & Water equipment and trained and assisted the CHAIN project team.



‘We are very satisfied with the Eijkelkamp Soil & Water equipment which served us well during the CHAIN project.’

Tijana Zeremski - Research Associate Institute of Field and Vegetable Crops



Eijkelkamp SonicSampDrill partner in European Smart Mining project

SOLSA stands for Sonic Online Sampling and Analysing and is a new way of mining exploration. With the SOLSA Expert System, drilled soil cores are analysed chemically and physically directly in the field. A perfect example of Smart Mining. Eijkelkamp SonicSampDrill forms part of the international SOLSA consortium.

‘Previously, a soil core was sent to a laboratory and analysed there. It could take up to three months before a miner knew the composition and mechanical characteristics of that core. Thanks to SOLSA, this information is already available within a day, allowing the miner to make much faster decisions such as the location of the next borehole. How to drill and in which direction further exploration will take place. In addition, it provides information about the economic viability of the project. For example, there may be enough material you want to mine, but there may also be another element that makes the mining process very expensive and ultimately makes you decide not to continue. Such elements are also known as ‘penalty elements’, says Harm Nolte,



SOLSA team visits Royal Eijkelkamp
Royal Eijkelkamp hosted the last SOLSA Project Team meeting in June. For two days, the SOLSA Project Team participated in various presentations and workshops in and around the Royal Eijkelkamp head office in the Netherlands.

who is part of the SOLSA project team as the Project Engineer Earth Sciences from Eijkelkamp SonicSampDrill.

Project Manager Peter Koert: ‘In short, SOLSA consists of three components that together form the SOLSA Expert System. There is the SOLSA Drill, the drill part which simultaneously takes samples and measures different parameters. Then there is the SOLSA ID, the laboratory in the field that analyses the composition of the soil

core on the spot. And the final part is the SOLSA Software in which all available data come together in one database. This is the end result and that must eventually be integrated into the 3D models that are already being used in mining.’

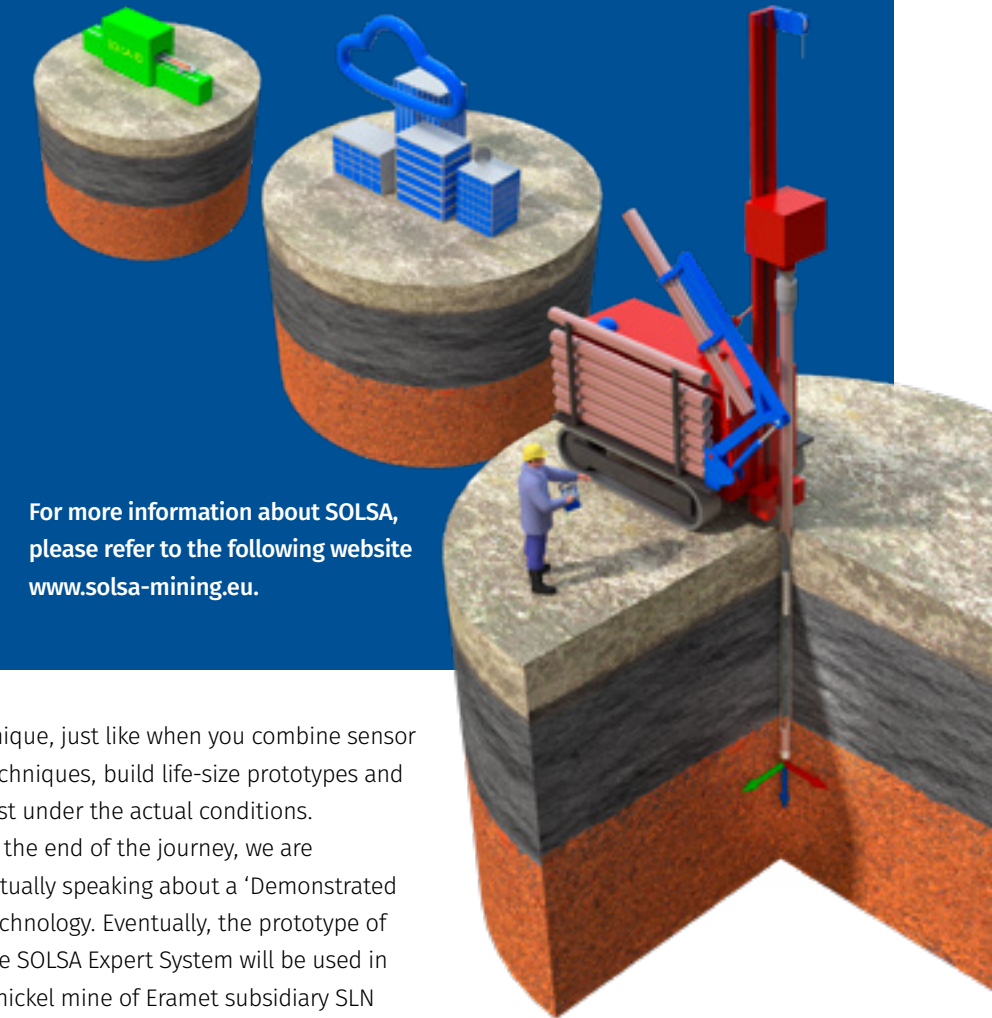
The role of Eijkelkamp SonicSampDrill

‘Within the SOLSA project, Eijkelkamp SonicSampDrill is engaged in the further development of existing Sonic drills equipped with the so-called SonicWireLine

FUNDING FROM HORIZON2020

The SOLSA consortium receives funding from the European Horizon2020 programme. The goal of Horizon2020 is to improve the global competitiveness of Europe, and this involves more than 70 billion euros in subsidies.

The SOLSA consortium consists of the following European companies and knowledge institutions: Eramet (France), BRGM (France), Thermo Fisher Inel (France), Vilnius University (Lithuania), CRISMAT ENSICAEN and IUT-Caen (France), University of Trento (Italy), University of Verona (Italy), TU Delft and Eijkelkamp SonicSampDrill.



For more information about SOLSA, please refer to the following website www.solsa-mining.eu.

System, which can quickly and efficiently probe samples up to large depths, interpret the sensor data and determine which sensors should be connected to the drill in order to ultimately analyse the correct mechanical properties of the soil.’

‘French miner Eramet coordinates the entire project and ultimately wants to have something that works, even under difficult conditions, anywhere in the world. This is

unique, just like when you combine sensor techniques, build life-size prototypes and test under the actual conditions. At the end of the journey, we are actually speaking about a ‘Demonstrated Technology. Eventually, the prototype of the SOLSA Expert System will be used in a nickel mine of Eramet subsidiary SLN in New Caledonia.’



The tricks of the blacksmith's trade

The Edelman auger: where craftsmanship and innovation come together

The world-famous Edelman auger first made its appearance in 1948. At the time, StiBoKa, the Dutch Soil Mapping Foundation, was looking for an auger for taking soil samples and came knocking on the door of H.J. Eijkelkamp en Zn. An important detail was that the auger was not to disturb the soil sample. A development process followed during which H.J. Eijkelkamp en Zn and StiBoKa closely collaborated and ultimately created an auger that met all requirements. From that point onward, H.J. Eijkelkamp en Zn had put its name on the map as the auger factory.

Seventy years later the Edelman auger continues to be a key concept in the world of soil research. "Yet, this oldest product in the extensive Eijkelkamp product portfolio also is a symbol of the continuous drive for innovation.

Because there is no other product for which the production process has been optimised to such an extent over the past decades," says Production Team Leader René van Emden.

"We offer our customers a large variety of auger bodies and extension rods. We have now developed a system that can be used to weld any type of auger onto any desired extension rod. In fact, over the years it has increasingly become custom work. And the beauty is that the employees themselves have accomplished this. They conceived of a unique planning method that enables them to assess at a single glance what additional augers and extension rods need to be manufactured. This has improved service levels and there is more calm in the department. In addition, considerable advances have been made in the time required to

set up the press used to make the components for the auger. The set-up time went down from 15 minutes to 1 minute, which obviously has a positive effect on the lead time. Ultimately, because of all of the improvements, we are now able to tell the customer: "if you order an auger today, you will have it on-site tomorrow."

"Naturally, we also keep a careful eye on the well-being of our employees. Forging is tough work and is hard on the body. This is why ergonomics are very important and we assess how to keep loads on the blacksmiths as low as possible. For example, is it possible to use air pressure to compress the pincers with which the blacksmiths grip the auger body? The blacksmith then would not have to constantly squeeze the pincers."



'If a customer calls today, they will have their auger on-site tomorrow.'

René van Emden – Production Team Leader

They are no doubt the most often photographed Eijkelkamp employees: the blacksmiths Ap Hupkes, Marek Nowak and Wim Putman. True tradesmen and craftsmen that for decades have made sure that the Eijkelkamp auger is unrivalled. During every guided tour of Eijkelkamp Soil & Water's production facilities, people stop to watch and make photos of the blacksmiths that punish the anvil with their hammer blows.

Wim Putman: "Jan Eijkelkamp (father of Fons and grandfather of Huug Eijkelkamp, Ed.) some 30 years ago taught me how to forge augers. A lot has changed over the years since then. As a department we continue to assess how to improve

things. That's how it should be, because in the past we made at most 25 augers per day. Today we make 100." "I am curious to see whether there will continue to be any good blacksmiths in the future who are willing to make augers in our blacksmith's shop. Many young people attending trade school opt for a profession such as jewellery smith. While making an auger like this is such beautiful work. Especially when you see that because of your work an auger disappears into the ground like a warm knife cuts through butter."

Blacksmiths in action

If you would like to see the blacksmiths in action, view the video about the drilling process on our YouTube channel at youtube.com/royaleijkelkamp.

The auger of all augers

The Edelman auger is most often used for soil research. The typical shape of the Edelman auger creates minimum friction while the auger is screwed into and extracted from the soil and that translates into less physical effort. To achieve an optimal result, depending on the expected type of soil, one of the following 4 auger types is selected: clay, sand, coarse sand or the combi auger for a combination of these soil types. In addition, there are other types of augers as well, such as the spiral auger, the gouge auger, the stone catcher and the riverside auger.

For a detailed overview visit www.eijkelkamp.com.



Benefits Grundfos MP 1 submersible pump set

- Full stainless steel/teflon pump for both purging and sampling of all parameters
- Maximum lift 90 m of water
- Supplied with different lengths of teflonized cable, suspension cable and tubing
- Speed (flow) regulated
- Various warnings guard pump safety
- Converter to convert 110 or 240 Volts single phase to three phase 400 Volt 0-400Hz
- Can be fitted with Teflon or PE tubing (various sizes)
- Operated from mains or electronically regulated 110 or 240 Volt power generator
- Field replaceable impellers

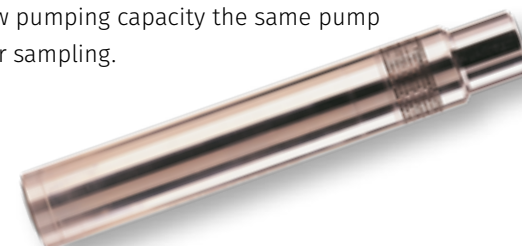
Order quickly and easily

Order the Grundfos MP 1 submersible pump easily and quickly via eijkelkamp.com or contact the Sales Department of Eijkelkamp Soil & Water via +31 313 880 200 or sales@eijkelkamp.com.

The Grundfos MP 1 is back in business

Since 2 years, the Grundfos MP 1 is back on the market, and it is still the most widely used 2" environmental pump for water monitoring worldwide. You can collect groundwater samples for analysis from depths down to 90 m to establish the precise type and degree of contamination.

The Grundfos MP 1 submersible pump is specially designed for purging and sampling of monitoring wells with a diameter of at least 50 mm or bigger. The high capacity of this pump allows for quick purging of the measuring point. By setting a low pumping capacity the same pump can be used for sampling.



Exclusively available at Eijkelkamp Soil & Water!

The importance of a construction site with sufficient load-bearing capacity

Poor construction sites can be a problem worldwide. This has been an ongoing issue for many years in the United Kingdom. This is why the Federation of Piling Specialists (FPS) decided to develop the Working Platform Certificate (WPC) several years ago.



Based on the Working Platform Certificate, the Construction Site Certificate Netherlands was launched in late 2016 by the Dutch Association of Foundation Contractors (NVAF). This construction site certificate and the guideline 'Trafficability of construction sites for foundation machines', was released in 2017 and is the most recent and highest standard worldwide.

Want to know more about the Working Platform Certificate? Request for this handy and free booklet of Eijkelkamp Soil & Water. Send an email to info@eijkelkamp.com. You will find more information about the Working Platform Certificate, parts of the guideline on Trafficability of construction sites for foundation machines to help you determine whether a construction site is trafficable.



Groundwater monitoring network for protected Engbertsdijkerven

Engbertsdijkerven Planning Project

The key issue within the Engbertsdijkerven Planning Project is how to effect the rewetting required to achieve the nature objectives set out for this area. Together with other experts, including hydrologists and ecologists, a Core Team is working on further detailing and elaborating the regional analysis for the purpose of ultimately coming up with a proposal for the measures to be implemented and a well-supported development plan. The development plan will be adopted by the Project's Management Advisory Committee and submitted to the Province of Overijssel.



Engbertsdijkerven is a Natura 2000 nature preserve in the Province of Overijssel in the Netherlands. Remedial actions were prepared for this special and protected 1,000 hectare nature preserve on the basis of European regulations, to maintain and restore the existing raised bogs, among other things. To monitor the effects of the remedial actions, the Engbertsdijkerven groundwater monitoring network was established. 59 monitoring wells were installed for this purpose within a 1.5-kilometre radius all around the nature preserve. The fact that residents and land owners are closely involved in configuring the network makes the project all the more special.

Marcel Clewits, Technical Manager of the Engbertsdijkerven Planning Project speaks enthusiastically about the protected nature preserve. "The Engbertsdijkerven are part of a former high raised bog region and still contains a small core with living raised bog. This region of living raised bog has retained the original 5-metre thickness. Apart from the living raised bog, there is more than approximately 600 hectares of recovering raised bog left to admire in the Engbertsdijkerven region."

Wet versus dry

"However, the nature preserve is battling drought. Due to land reclamation, for example for agricultural purposes,

the groundwater level has dropped. At the present time, a development plan is being prepared that includes the formulation and implementation of remediation measures. This includes compartmentalising and filling in ditches and trenches, for example. All intended to raise groundwater levels in this nature preserve and to as much as possible retain the rainwater in this region so that the recovering raised bogs become sufficiently moist."

"Rewetting is essential for restoring the raised bogs. However, the surrounding area has to stay as dry as possible."


"The measures are not only confined to the nature preserve, but beyond it as well. The LTO Noord, an interest group of and for agricultural farmers in the 9 Dutch provinces above the Meuse River, has been asked to prepare a development plan for this purpose. Rewetting is essential for restoring the living raised bogs in this nature preserve. However, the surrounding area must stay as dry as possible. The measures we are proposing must have as little impact on the surrounding environment as possible. This is why we want to gain proper insight into the groundwater levels at the present time as well."



Local residents contribute their ideas

"To map out the groundwater levels, we installed a groundwater monitoring network. We now have 59 monitoring sites. The monitoring network was developed together with local residents and landowners. They contributed ideas about where best to install the monitoring wells because they are directly involved and naturally have very specific knowledge of the area. After we developed our own proposal, we explained it during a number of discussion rounds. Local residents had ideas about relocating several monitoring wells and adding others. We have respected these ideas. Ultimately, at the suggestion of local residents we relocated various monitoring wells."

"Over the coming years a great deal of measuring and monitoring will occur all around this nature preserve. We are building up a measurement series so as to have a clear picture of the effects of the implemented measures later on, so that we can respond to this on a timely basis."

 For the video, view our official Youtube channel: [youtube.com/royaleijkelkamp](https://www.youtube.com/royaleijkelkamp)

'Sonic drilling is compact, really strong and superfast'

Ground Research, a Dutch drilling company, has used sonic for a long time. Why? Director Pim Groot talks about it.

'I run Ground Research together with my brother and his brother-in-law. We have been drilling for 20 years now; it started by hand and after 10 years the customers asked us, can you drill a little deeper? That's why we bought our first sonic machine from Royal Eijkkamp. Twenty years later we now have three

sonic drilling machines up and running. 'We are now working in Noord-Scharwoude (the northern part of the Netherlands) for a project. We are situated next to a church; together with my family, I am going to live in this church. We are drilling holes for geothermal energy. We drill eight holes to a depth of 50 metres, with a diameter of 88 mm. 'We do a few things with sonic rigs, like environmental research, monitoring

wells for plants that have a lot of pollution; we make well systems around the plant. We also drill through concrete for monitoring wells to build a new basement. 'The main benefits of sonic drilling are that it is compact, really, really strong and superfast. So we can offer a good price for the customers. Why we use sonic? Because it is a clean way of drilling. We only need one rig, a few pipes and then we can make a beautiful system.'

The world around you is your living environment. Logical that you would treat it with due care!

Ground Research incorporates this same care into the activities it carries out for its customers. Whether this involves taking manual soil samples or mechanical drilling for Geo-energy systems, the right

results are always obtained through sound preparation and excellent knowledge of the business at hand.

Together with the customer we formulate the required end-result (undisturbed samples at depth, monitoring wells, installation of closed heating systems, etc.) and

carry out the required activities. Contact with the customer is very important to us. Working together makes a job easier and more enjoyable!

For more information visit www.groundresearch.nl



'With sonic we can offer a good price for the customer'

Pim Groot – Director, Ground Research





Royal Distinction for Fons Eijkelkamp

Fons Eijkelkamp has been appointed Knight of the Order of Orange-Nassau by His Majesty the King because of special merits for society.

This year, a total of 2906 Royal distinctions were granted within the Kingdom of the Netherlands. The following applied to Fons Eijkelkamp: 'Mr Eijkelkamp made an important contribution to the environment in a socially responsible manner. He contributed to the development of a less environmentally harmful drilling technique, as well as in setting up a partnership for sustainable water management in the mining industry. In addition, he made a noteworthy contribution in the area of drinking water supply for rural areas in developing countries. The decorandus has worked for the benefit of society for a long time and stimulated others. He has performed activities that have a special value for society.'

Does our WAP win?

Our Water Access Point (WAP) has been nominated for the Water Alliance Innovation Stimulation Award 2018.

This prestigious award was initiated by the Water Alliance to promote innovative Dutch water technologies. The annual competition celebrates its fifth anniversary during the European Water Technology Week 2018 in Leeuwarden, this September. Ten candidates are nominated by the Water

Alliance to battle for first place and the €10,000 marketing and promotion support. All candidates will pitch their technology on the main stage.

Water Access Point

The Water Access Point (WAP) is an off-the-grid water solution that enables the provision of safe drinking water in remote rural areas. The WAP is equipped with four solar panels that power the



submersive Grundfos pump. Right now 13 WAPs are being installed in Benin for Eijkelkamp Foundation's project, The Water Entrepreneur.



Family Business Award 2018

Earlier this year Royal Eijkelkamp was also one of the nominees for the Family Business Award 2018. This year, 500 Dutch family companies registered for this prestigious award. Ten of these companies were ultimately nominated; Royal Eijkelkamp was one of them.



Where can we meet each other?

Royal Eijkelpamp participates in events such as exhibitions, conferences and seminars throughout the world. For an up-to-date overview, visit royaleijkelpamp.com.

Event	When	Where	Info
European Water Tech Week	24 - 27 September	Leeuwarden, The Netherlands	watercampus.nl/ewtw2018
21st ISTRO	24 - 27 September	Paris, France	istro2018.webistem.com
WEFTEC 2018	29 September - 3 October	New Orleans, Louisiana, USA	weftec.org
Geofluid 2018	3 - 6 Oktober	Piazenza, Italy	geofluid.it
Soiltec China 2018	29 - 30 November	Shanghai, China	soil-china.com
Groundwater Week 2018	3 - 6 December	Las Vegas, Nevada, USA	groundwaterweek.com

Royal Eijkelpamp

Personal attention and a unique range of solutions: for more than 100 years, this has been our trademark at Royal Eijkelpamp. Royal Eijkelpamp has been devising, developing, producing and delivering smart solutions for soil and water projects worldwide since 1911.

These innovative solutions, together with the existing knowledge and expertise of our soil and water specialists, have served to raise projects to a higher level. From field measurement equipment to smart sensing & sampling and from Edelman augers to sonic drilling machines, Royal Eijkelpamp has quite the product range on offer.

Royal Eijkelpamp is involved in the following themes: Land Degradation, Food Security, Natural Resources, Land Development, Urbanisation and Pollution.



Volg Royal Eijkelpamp

Royal Eijkelpamp is active on the following social media.



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