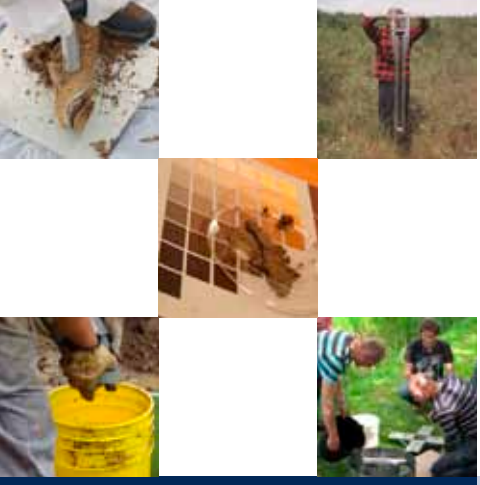


GeijktNieuws

Topicalities 37
Eijkelkamp Agrisearch Equipment, Autumn 2010

Soil

All it takes for **environmental** research

Eijkelkamp
Agrisearch Equipment

Distributors' seminar very successful

Eijkelkamp Agrisearch Equipment has a worldwide distributor network. Our distributors are companies that we have specially selected and trained to represent our interests in some 60 countries. As part of the collaboration, they are invited to the Netherlands every two years for the major distributors' seminar.

During this seminar the distributors are briefed thoroughly about current developments in Eijkelkamp. For example, new laboratory instruments for soil surveys were discussed in detail during the seminar which was held from 31 May to 3 June last.

In-depth coverage was also given to the services of the Maintenance and Service and Eijkelkamp Training & Consultancy Departments. Needless to say plenty of time was also scheduled for commercial discussions with Eijkelkamp employees and fellow distributors. The programme for the evenings provided plenty of opportunities for personal chats and enjoyable activities.

Eijkelkamp looks back on the latest seminar with a great deal of satisfaction. The record for attendees was broken (47 attendees from 27 countries) and the distributors were also particularly enthusiastic about the schedule that had been arranged. We would therefore like to thank everyone who helped make the seminar so very successful.

See www.eijkelkamp.com for a complete overview of our distributor network.

The story behind the new improved soil sampling set for volatile substances

This issue of Geijkt Nieuws looks at a number of the primary threats to soils. Soil pollution is also a part of this. It goes without saying that Eijkelkamp has products in its range that can be used to take samples during an environmental soil survey. One of these is the core sampler for soil containing volatile substances. It was recently completely updated.

Background

During the KfK-TNO Conference in Karlsruhe in 1993 scientists demonstrated that the losses of volatile substances when sampling soil with open soil augers were unacceptably high. At that time Eijkelkamp already had a gouge auger set in its range that could prevent this. The researchers then and many researchers since have shown that the loss can be significantly reduced by immediately putting the sample in a sample container, cooling it and transporting it to the laboratory.

Not long afterwards the NEN 5743 standard described the sample container/cooling method as the method for the Netherlands. This method also caused a stir abroad. It was the simplest because of the short transport distances – analysis was necessary within 48 hours. This method also became popular in the United States, although there much smaller sample containers were used that were filled up above ground.

An alternative method was, and is, to take the sample out of the sample container immediately while still in the field, put it in a small bottle with methanol and then take it to the laboratory. The methanol method became popular in all other countries, many of which have slower logistics. ISO permitted both methods in various standards.

The sample container method that we have already been using for years in the Netherlands is well proven. However, inconsistent enforcement has resulted in the method being used in far too few of the applicable cases. The Netherlands Standardisation Institute (NEN) pointed this out last year to the Ministry of Housing, Spatial Planning and the Environment (VROM), in response to which VROM announced measures. There were also a few valid disadvantages, such as the sample containers that were too vulnerable to stones and rubble and therefore too expensive in everyday use. Furthermore, recycling the used sample containers and filling blocks between laboratories and surveyors is inconvenient.

Development by Eijkelkamp

In 2007 Eijkelkamp therefore started researching the possibilities of developing a set without all these disadvantages that would also be suitable for taking samples in compliance with both methods (and therefore be usable all over the world). The US EPA method 5035A, which describes both methods in detail, was referred to frequently. Intensive contact was also maintained with the Dutch members of the ISO committees and NEN with regard to this discipline.

Meanwhile ISO has streamlined the soil sampling standards for this subject, as a result of which both methods are usable with this new set. NEN is considering adopting this ISO standard and then letting the existing standard 5743 lapse. SIKB – the Foundation Infrastructure for Quality Assurance of Soil Management – (2001) is already familiar with the new set but has not yet broadened the protocol so that the new method is also described. However this appears to be just a matter of time. In any event the sample container/cooling method does not specify a minimum volume, so the new method is perfectly usable by Dutch surveyors, also in accordance with the present NEN 5743.

Advantages of new sampling set

So what are the advantages of the new sampling set? Just as in other countries you do not fill the sample container until it is above ground (from a larger core sampler, earth drill or auger) instead of in situ in the borehole. The sample container is much smaller than before, 16 ml compared with the previous sample container of 225 ml. It moreover weighs less, produces less waste, cools down quicker, needs no filling blocks and is cheaper.

After sampling, the sample container is removed and scraped off to a mass of approximately 30 grams. You put a cheap cap on the sample container that is nevertheless completely diffusion and leak proof. You can agree with your laboratory about whether you want the sample containers (also cheap) back after cleaning or whether you use new sample containers for new samples (cleaning and returning is possibly more expensive than a new sample container). The specialists of Alcontrol and Eurofins-Analytico can already process your samples in accordance with this system. Other laboratories will without doubt follow suit or have already done so in the meantime. Feel free to ask them about it. Just as before, in addition to the sample container you also give the laboratory a larger sample for the other analyses and determining the weight percentage of water. The laboratories can moreover provide you with barcode stickers.

Please contact our sales department if you would like to have more information about this compact, multifunctional core sampler or to order one.

School students go into depth at Eijkelkamp

A national initiative started recently in the Netherlands to introduce geoscience to school students aged from 10 to 15. This is being done by organising the annual Geoweek. Under the auspices of Geoweek 2010 thirty students from the Montessori school in Westervoort visited Eijkelkamp, where they had a lesson on soil science.

After a brief explanation about soil, the students soon started their own survey. Outside there were earth drills that they could use to take soil samples. After drilling for half an hour the students had reached quite a depth. Some of them had even reached groundwater level and needed extension rods in order to go deeper. The soil samples gave the students a good picture of the different layers in the soil and their compositions.

The students and teachers were all very enthusiastic about the visit and would like to come back during Geoweek 2011.

Trade Fair News

Eijkelkamp is participating in the following trade fairs, seminars and conferences in the autumn of 2010 and the spring of 2011:

Name:	When:	Where:
ASA Exhibition*	31 October – 4 November	USA
Sachsisches Altlasten Colloqiuium	2 - 3 November	Dresden, Germany
Aqua Ukraine	9 - 12 November	Kiev, Ukraine
Eco Agrisearch Exhibition*	22 - 24 November	Romania
Pollutec 2010*	30 November - 3 December	Lyon, France
TerraTec	25 - 27 January	Leipzig, Germany
Wasser Berlin International	2 - 5 May	Berlin, Germany
Water Expo	17 - 19 May	Beijing, China

Eijkelkamp will be represented by one of the distributors at the events marked with an *.

SOIL DEGRADATION
SPECIAL

Soil degradation – a problem with progressively deeper roots

Soils are being affected by more and more problems that cause soil degradation. Erosion, drying out, water repellency and subsidence are just a few examples. The upshot is that fertile topsoil disappears, water infiltration deteriorates and runoff increases. This ongoing decline in soil fertility, productivity and cultural and recreational values has many negative effects, particularly on vulnerable ecosystems.

The European Union has identified a number of major threats to soil: erosion, contamination, loss of the inventory of organic material, decrease in biodiversity, salinization, compaction, floods, landslides and coverage.

Ultimately measures will be formulated and taken on the basis of ongoing research into the underlying causes, the processes responsible for them, and the interrelationships. This is all aimed at using the soil in a more sustainable way in the future. Eijkelkamp wants to contribute to this by continuously extending, innovating and improving the product range.

Photograph: L.Stroosnijder

The theme of erosion was covered extensively in Geijkt Nieuws 34 (this issue can be downloaded from www.eijkelkamp.com). This time we go into the subjects of compaction and biodiversity in greater depth.

2010 International Year of Biodiversity

2010: International Year of Biodiversity

The United Nations has declared 2010 as the International Year of Biodiversity. Priority for this subject is sorely needed because biodiversity is being seriously threatened. Plant and animal species are disappearing and ecosystems are being disrupted. Ultimately damage to biodiversity and the depletion of natural resources are a threat to the existence of all people. Much has been done to combat this in recent years, but it has not proved to be enough.

It has been demonstrated, for example, that by protecting nature (national parks, nature reserves, marine reserves, and also breeding programmes in zoos), species that were on the brink of extinction can still be saved. Furthermore, experts know very well how we can restore ecosystems provided that the species have not become extinct. After restoration a desert, for instance, can become rich in nature again and sustainable agricultural can even be supported. This has been demonstrated with projects in the Sahel. Finally we can also change the way we make our products and make sure that we do not consume too many raw materials in doing so.

Governments all over the world have made agreements with each other to use their best efforts to maintain biodiversity and also to utilise it in a sustainable way.

What is biodiversity?

Biodiversity covers all life on earth. From ants to elephants, and from tulips to cacti – everything is part of it. To give you an idea, the number of known life forms is made up of about four million different species. However, biologists estimate that the total number of species is ten times higher. Besides being impressive, this enormous diversity of living organisms is also necessary. Biodiversity ensures clean water and fertile soil among other things. It moreover provides nutrition and the raw materials for housing, fuels and items like medicines and clothing.

SOIL DEGRADATION
SPECIAL

What is Compaction?

Soil compaction occurs in instances when the soil is too weak to withstand the external forces applied for example due to (high) wheel loads from cars or lorries or tilling machinery. It is estimated that in Europe alone more than 32 million hectares of soil has been degraded irreversibly as a result too heavy machinery and a not site adjusted site management during the year. As consequences root growth and root penetration, nutrient and water uptake but also water logging and reduced aeration as well as anoxic gas emission like N_2O and CH4 have to be considered as a consequence of soil compaction.

Previous editions of Geijkt Nieuws have already discussed our new laboratory equipment for research in soil mechanics. This equipment was developed in close collaboration with Kiel University in Germany, a leading institution in soil compaction research, so it is high time for an interview with Prof. Horn, project leader and vice dean at the Agricultural and Nutritional Sciences faculty of the university.

To begin, Prof. Horn introduces the university: "Kiel University, Christian-Albrechts-Universität (CAU) was founded in 1665 and currently has about 22,000 students. It has a variety of educational fields, spread over eight faculties. The Faculty of Agricultural and Nutritional Sciences is one of the smaller faculties. In this field, students can choose from four specialisations at both the bachelor's and master's level: plants, animals, agricultural economics and environmental sciences. There are 28 professors in total, as well as 70 research assistants and 90 non-academic staff members (such as technical assistants) working in the faculty. Every year between 40 and 50 students graduate with a PHD Thesis in this field, which the German assessment standard has rated very highly for both educational and scientific activities."

Photograph: L.Stroosnijder

"Personally, I work as a professor of soil sciences. Together with three research assistants I teach classes in all relevant soil sciences related subjects. In 1988 I was appointed professor of soil protection and since 1998 I have also been a dean at the CAU. Before I joined the university, I worked in Bayreuth for five years as a professor of soil sciences."

Prof. Horn then explains why soil deformation is such a hot topic these days. "It's a growing problem. The deformation causes irreversible degradation of the soil. In agriculture, for example, an increase in the use of tilling machines also means that the wheel load increases (from a tractor wheel which in additional repeatedly drives over the same ground). These still increasing machine masses and increasing wheel loads create even at the same contact area pressure but increasing contact area changes in the physical, physicochemical and biological properties of the soil. In addition, these changes expand ever deeper into the soil and there are hardly any natural processes that work to counter this."

"The storage capacity for air and water changes, there is less root growth, the flux density of nutrients, gas and water change, and there is an increasing chance of degradation due to water erosion. These are all visible and observable consequences of maladjusted land use and soil management. Add to that the increasing N_2O emissions and a decrease in carbon storage in the soil and you can see that it is of the utmost importance to take soil deformation seriously. Ongoing research into this complex subject is therefore critical because, as I said before, there are now more than 32 million hectares of European soil permanently degraded."

"When I was still a PhD student with Prof. Hartge, we started to develop special soil mechanics research equipment. We did this simply because this kind of equipment was either not available, far too expensive or it could only partly be used for our research objectives. Because the identification and analysis of soil deformation processes (compaction/slipping) and their consequences required more extensive determination of solidity parameters, we focused on this during development. Actually, even if I had had the financial resources to buy suitable equipment, I still would have had to add important aspects (distortion stress and other stress-related changes in hydraulic and pneumatic aspects) in order to get an answer for our research questions."

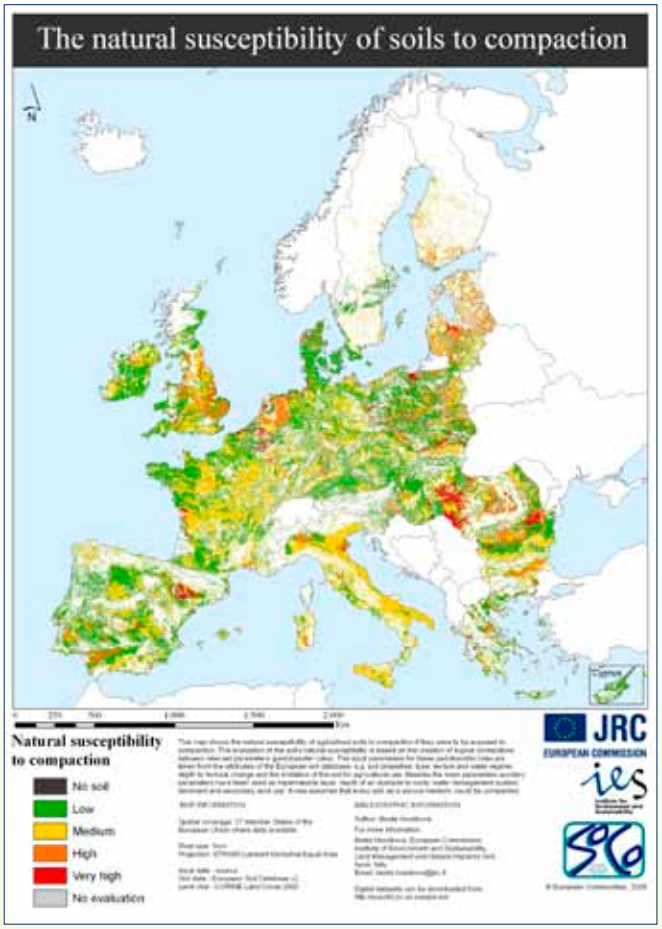
Together with Eijkelkamp Agrisearch Equipment, new soil mechanics equipment was developed. Prof. Horn explains how this came about: "My collaboration with Eijkelkamp Agrisearch Equipment has existed for about 30 years already. That's why I approached Eijkelkamp about further optimising our existing soil mechanics equipment and distributing it worldwide. In our eyes, the unique properties of the products deserve attention and I am also convinced that there is a large market for them. We, the university, are still sometimes reproached for being able to use special research technology. Though, we always were happy to contribute to projects, for example for the European Union, where our equipment was required. But from now on, anyone can buy the equipment."

"For universities (those with agricultural, forestry, geological and environmental departments), research institutes, consultants and engineering firms, the equipment will absolutely come in handy. Questions about the physical and physicochemical properties of a soil can all be answered with these instruments."

"The collaboration with Eijkelkamp was very effective. We provided the scientific knowledge and background and Eijkelkamp handled the technical aspects and development.

The new designs were tested, analysed and adjusted as necessary in both Kiel and Giesbeek. The final testing rounds took place in Germany. The results attained could then be optimally compared with the results given by the 'old' machines. The different machines each have their own specific properties. However, they are all very user friendly, have an excellent price/quality ratio, meet the relevant ISO standards and are durable."

The professor can definitely see new partnerships in the future: "At our university there are always ideas for equipment to be developed. And I am convinced that we will work with Eijkelkamp again someday, which will result in excellent equipment, just like it did this time."



The different laboratory equipment is described in detail in our brochure Laboratory Equipment for Soil Mechanical Measurements, which is in English. You can download it from www.eijkelkamp.com or request a copy via info@eijkelkamp.com or +31 313 88 02 00.

SOIL DEGRADATION
SPECIAL

ProductInfo

Core samplers (04.01 en 04.02)

A hand auger can be used for soil surveys at a depth of 5 to 10 metres. We spotlight two core samplers, also known as gouge augers. This is because of the more or less semi-cylindrical auger body with parallel cutting edges running from top to bottom. The length and diameter of this part can vary. The most suitable length depends on the penetration resistance, the nature of the soil and the drilling depth. The choice of the right diameter is determined by the composition and structure of the soil and also the purpose of the survey.

Single core sampler (04.01)
As the name implies, the single core sampler cannot be extended. They are available in a range of diameters and lengths.

Bi-partite core sampler (04.02)
Using extensions, the bi-partite core sampler can be used to make borings to greater depth in a short space of time.

Because of the limited disturbance to the sample, these gouge augers are often used for profile surveys for:
- mapping purposes;
- soil suitability assessments;
- teaching;
- soil development research;
- fertilisation research;
- clay inventories;
- palaeontological research.

Soil colour book (08.11)

A subgroup in the soil classification system can be identified on the basis of colour differences. The colour of the sample is compared with an internationally standardised colour series (according to Munsell). The soil colour book is available in a Japanese (12 colour charts) and an American (10 colour charts) version.

Peat profile sampler, type Wardenaar (05.09)

Sampling undisturbed humus profiles in peaty soils is always a difficult job. It can happen that a profile pit fills up with groundwater during excavation and sampling. But research into the ecology of peat areas and humus profile development calls for undisturbed samples. This is particularly true for the top layers, where most of the biological activity is concentrated. This is possible with the peat profile sampler, type Wardenaar.
In fact, one person can sample a profile one metre long (dimensions 10x10 cm) in under 10 minutes. This means that the profile can be sampled and investigated immediately.

The profile can be used for:
- root development studies;
- pollen analysis;
- macrofossil studies;
- making monoliths.

SonicSampDrill goes for gold

The Zaragoza Project in Colombia is a fine example of how depletion of the earth can be combated by using new technology. The American company Minatura Gold called on the products and services of SonicSampDrill for this project.

The project

A huge quantity of mining waste was dumped along the River Nechi basin in northern Colombia in the nineteen-fifties. These residues came from a gold mine that was developed at that time. Minatura has made an assessment based on historical information about the area, how mining was done in those days, and currently available technologies. The company estimates that at the time only 50% of the total quantity of gold was extracted.

It is necessary to take thousands of samples in order to map the area properly and develop an efficient mining plan. This is because the area involved is 717 hectares and it is expected that no less than 50,000,000 m^3 of waste can be mined again. In order to proceed with this project as quickly as possible Minatura has used CompactRotoSonics crawlers (CRS crawlers) from SonicSampDrill. The CRS crawlers can sample over 30 metres a day without problems, whereas normal machines only sample 6 to 8 metres a day.

Procedure

Each CRS crawler has its own team of five people: a driller from GlobalSonicSampling (GSS, SonicSampDrill operational organisation), a geologist and three local persons, of whom one has been trained and is also permitted to drill. Each of the two CRS crawlers has a trailer with 7" and 4" casing and a CoreBarrel coring device. The advantage of a CoreBarrel is that there is no limit to the sample diameter. Whereas an AquaLock has a maximum diameter of 70 mm, in Colombia a diameter of 112.5 mm is being used. The samples are taken by using casing when drilling. This is to ensure that the boreholes do not collapse and to avoid contamination from layers higher up (such as minerals or impurities).

On average 34 metres a day are sampled down to a depth of about 24 metres.

As soon as the CoreBarrel has been filled with a sample, the material is shaken out into buckets. The buckets are taken to a laboratory. Here the samples are screened in a shaker to remove coarse gravel, which represents about 60% of the sample. After that old-fashioned panning is used. The gold is separated from the other material using a pan with water.

Project progress

SonicSampDrill equipment is used on all continents and in all weather conditions. The project in Colombia is going well, despite temperatures than can easily reach 45˚C and humidity that is normally between 95% and 99%.

The project started in May 2010 and has therefore been going on for a few months. The production of information using the current sampling technology is significantly higher than with the technology employed previously. Instead of one complete profile description per week, now no fewer than five to seven per week can be made. This substantial increase means that the productivity of the geologist in the team is also higher. As you can imagine, both Minatura and SonicSampDrill are very pleased with this result.

Seeing is believing

Would you like to see a CompactRotoSonic crawler at work? There are videos to view and download on www.sonicsampdrill.com. SonicSampDrill also regularly organises demo days. If you would like to know the dates please contact: E info@sonicsampdrill.com or T +31 313 880 201.

Eijkelkamp Training & Consultancy training programme extended again

Eijkelkamp Training & Consultancy (ETC) has extended its training programme again for the new season. The programme contains two new training courses and ETC now offers you the option to do courses in modules.

The two new courses are 'Recognising asbestos in the soil' and 'Soil quality assessment'. There is more information about both these courses on our website. Incidentally, in consultation any course can be given on an In-Company basis at any desired location.

Modules are new to the ETC programme. A module has a training duration of 2 to 4 hours and is given at our own location in Giesbeek by appointment. It is possible to combine different modules or parts of modules. Feel free to ask us about the possibilities.

Would you like to know about the ETC programme? You can now view or download the Eijkelkamp Training & Consultancy 2010-2011 programme on our website. You can also register for training courses on the website. If you would prefer to receive the brochure by post, please send an e-mail to etc@eijkelkamp.com or call +31 313 880 262.

Eijkelkamp
Training & Consultancy

New: ETC brochure in English

There is now an ETC brochure in English in addition to the one in Dutch. You can download it from www.eijkelkamp.com or request a copy by sending an e-mail to etc@eijkelkamp.com.

Product catalogue now also available in French

Recently the versions of van Eijkelkamp's product catalogue in Dutch, English and German were joined by a version in French. Just like the other three, it contains an overview of our extensive product range together with background information, plenty of pictures, product details, illustrations of applications, parts lists and article numbers. The equipment is conveniently presented in four product groups, so that you can find the product you are looking for quickly.

Would you like to receive one or more versions of the catalogue? If so please send an e-mail to info@eijkelkamp.com or call +31 313 88 02 00.

Would you like to receive e-mailings?

Do you want to be the first to know about new products or our current product range, to know where and at which trade fairs Eijkelkamp is represented, and to receive the programme of Geijkt Nieuws training courses digitally? If so, register to receive e-mails now on the homepage of www.eijkelkamp.com. You can also register there to receive digital information from SonicSampDrill.

Hint: add info@eijkelkamp.dmdelivery.com to your address book. In this way you can ensure that our digital information comes to your inbox and that you will continue to receive e-mails.

Eijkelkamp representative for Nivus flow meters

For semi-filled and filled pipes and open channels

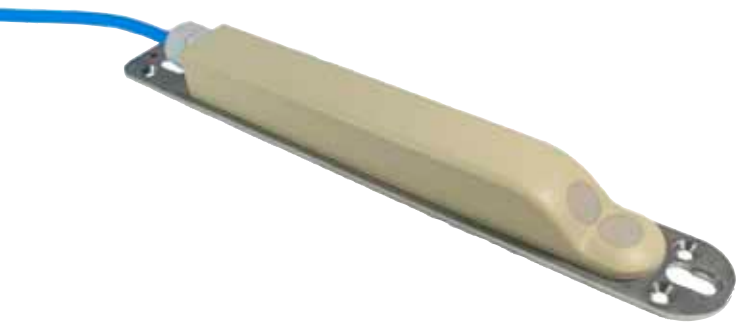
Eijkelkamp Agrisearch Equipment has represented Nivus flow meters on the Dutch market since January 2010. Nivus flow meters are suitable for measuring water flow rates in sewers, waste water treating applications and open water courses.

There are the following categories of flow meters:
- ultrasonic sensors based on the Doppler measuring principle;
- ultrasonic sensors based on the transit time measuring principle;
- ultrasonic sensors based on cross correlation technology.

An accurate flow rate can be measured by means of an intelligent combination of the ultrasonic velocity sensors and hydrostatic or ultrasonic level measurements. The flow rate can be measured directly in the most diverse applications because the measuring equipment has a library with the geometries of different pipes and water courses.

Excellent test results

For years customers have wanted to measure water flow rates in semi-filled pipes and sewers and water courses. However, existing technology is often found to be inadequate and consequently measurement questions remain unanswered. Nivus has been demonstrating its performance in Germany for some time. The Foundation for Applied Water Research (STOWA) recently financed research where this type of sensor was put through its paces at the test unit of Breda City Council. This unit was developed to test flow meters for the sewer market, and in particular for semi-filled pipes. Tests in this unit show that the Nivus cross correlation sensor is substantially more accurate and reliable under the conditions of the tests than the products of other suppliers. Even when the measurement conditions were deliberately disrupted the performance was clearly superior. The article describing these STOWA-financed tests can be obtained by downloading it from www.eijkelkamp.com or by asking the contacts referred to below.



WUS: Cross correlation sensor for measuring velocity profiles and water level.

PCM4: PCM4 portable flow meter based on cross correlation. For making flow measurements with a mobile measuring unit.

Different designs

The flow meters can be supplied as a portable measurement set for users who want to make measurements for a brief period. The portable cross correlation measurement set is versatile, quick to install and easy to use. The measurements are stored on a Compact Flash Card and can be processed further back at the office. Communication using a GPRS modem is also possible. A range of display units for permanent systems is available with 4 to 20 mA output signals and switching relays. Ways to communicate with these units include MODBUS TCP, TCP/IP via Ethernet and modems (analogue, ISDN, GPRS). Permanent measuring units can be equipped with multiple velocity and level sensors.

Professional advice and expertly installed

The performance of the flow meters depends on the sensors and also to a significant extent on the measurement location. When this measuring equipment is sold it is therefore accompanied by professional advice about the measurement location. Prior to the sale of Nivus flow meters the relevant data are collected and the location is visited so that we can offer the best solution. In collaboration with a certified partner we can supply the complete installation and do all manner of sewer and civil engineering work.

If you would like to know more or make an appointment, please contact Jaap Slaager (0031 6 5321 3918, j.slaager@eijkelkamp.com) or Ruben Pot (0031 6 4629 3111, r.pot@eijkelkamp.com).

Divers used in Baltic bog project in Poland

As the name suggests, Baltic bogs are bogs around the Baltic Sea. These natural bogs depend completely on precipitation for their nutrition, have high acidity and contain few or no nutrients. The result of this is that they are covered by a large quantity of rare and threatened plant species. These natural habitats are very uncommon in Europe.

However, they occur in Poland. A total of 80 Baltic bogs are registered in the north of the country. Currently 30 are being actively conserved and 23 of these are in Pomerania. These 23 bogs are all part of the Conservation of Baltic Raised Bogs in Pomerania Project. Unfortunately this project is necessary because the continued existence of the bogs is being threatened by human activity, with degradation as the result. Boggy soil is decomposing and conifers and birches are starting to grow, which causes evaporation of the bog water. Plant species such as cloudberry, sundew and sphagnum are also disappearing.

The main goal of the project is to find the right way to restore the bogs as well as possible and then to conserve them in order to prevent further degradation. A number of sub-goals have moreover been defined, for example:

- to stop the current drainage process and the subsequent drying out of peat bogs;
- to create awareness among the local population about the value of the bogs and the need to conserve them;
- to obtain knowledge that is lacking about the natural values, ecology and hydrology of all the individual bogs.

As a result it will be possible to make targeted plans for the effective conservation of the bogs.

The project started in 2003 with support from various (European) funds. Measurements of water levels in different parts of the bogs are necessary for a number of project components. Initially this was done manually by local rangers.

However, from the point of view of costs and because they produce reliable data, the first Divers® were purchased from Schlumberger Water Services to do this job in 2007. Since then over 250 Mini-Divers® and a large number of e+ WATER L® instruments have been used.

Geomor-Technik, Eijkelkamp's Polish distributor, saw to the supply and installation of the equipment. The instruments were put in direct wells (piezometers, ready for immediate use) that were driven into the peaty soil using a slide hammer. In some places, where the peat layer was too shallow, bailer boring equipment was used. The Divers are covered with peat in order to prevent vandalism. A small piece of metal is attached to the cover so that they can be found. It is easy for authorised personnel to locate the piezometers using simple metal detectors and GPS equipment.

The project is still underway. The results that have already been achieved are on www.kp.org.pl/plbaltbogs (in Polish and English). It is expected that even more Divers will be used in a later stage of the project. This is a very clear sign that people are very pleased with the equipment that has been used.

COLOPHON

Geijkt Nieuws is compiled with the greatest possible care. However, it is possible that information has changed or become outdated by the time of publication. Therefore no legal liability can be accepted in relation to the content of Geijkt Nieuws.

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