DETECTIVII APEI PIERDUTE

In this issue:

Leakage Water Detectives

Leakage Water Detections

We have recently decided to edit a supplement issue dedicated to "Leakage Water Detections Challenge", contest which has the quality of gathering together specialist practitioners of wasted water detections.

The event organized by ARA through the Centre of Formation and Professional Training in the domain of water is at its IV-th edition this year and gathered for a start 17 teams from all over the country which fought for the winning title.

The role of this event is to gather teams from all over the country, to create a debates environment of the problems frequently met by the wasted water detections practitioners, to exchange experience and last but not least to know new equipment on the market. Specialists know where and when to ask for assistance from their colleagues from other towns in case they have any problems.

Professor engineer Alexandru Manescu, the president of the jury, presented the problem of leakage water from different angles, both from the consumers' points of view and the point of view of the water companies: " Water is not wasted –water goes back in its natural circuit by infiltrating in the soil ".

The aim of this issue is to meet every team, to find out their opinions about the development of this challenge and to inform other water companies about the importance of such a meeting.

We must thank those who made it possible for this contest to be organized, the teams, the jury, the people from ARA, the sponsors-SEBA DYNATRONIC whom I would like to congratulate on this occasion and wish them "Many Happy Returns of the Day" on their 60th anniversary.

Enjoy your reading and may you find it useful!

Eng. Alin Anchidin
Leakage Water Detections
SC AQUATIM SA Timisoara

2011

"Leakage Water Detections Challenge" Calimanesti, 2011

The IVth edition

At the IVth edition, the Contest "Leakage Water Detections" took place in Calimanesti Caciulata, in the period 17-19th May 2011. The event was organized by ARA through the Centre of Formation and Professional Training in the Domain of Water (CFPPDA) and was hosted by the regional operator of water supplying and sewage SC APAVIL SA as well as by the support of the companies SEBA DYNATRONIC and Grundfos. At this edition participated 17 teams (Gorj, Sibiu, Neamt, Tulcea, Dolj, Olt, Constanta, Bucuresti, Severin, Cluj, Tg. Mures, Timis, Alba , Galati, Deva, Maramures, Satu Mare) and the observers were the companies Aquabis and Water Company Donau(Bulgaria).

Dedicated firstly to practitioners, this event is made of two sections: a practical part (evaluation in the field) and a theoretical one (in the seminar which takes place inside). This year the competitors had to evaluate four routes with the lengths between 36 and 85 meters, with various particularities. The simulation of an intense working day in the activity of detection of leakage was successful. On the day of the contest, the organizers and especially the competitors had to face various challenge: the noise specific to an European way (close to the route), the interest created in the vicinity of the established routes and the explanations asked from the people in the neighborhood or the high number of damage (3) on a section.

In the same way as in the previous editions, every participant himself is a winner thanks to the exchange of information and experience during this period. The trophy went to the team from The Water Company Olt which was awarded by the organizers with a Hydrolux equipment and a pressure control panel for a pumping station.

The special efforts of the hosts for a good organization of the event, the participation of ANRSC through Mr. Cristian Piroasca- Regional coordinator, the message of expert Andy Bowden, the involvement of the scientific environment through professor PhD Alexandru Manescu, president of CFPPDA and Sorin Perju and Daniel cornea(UTCB), the presence of professor Sergiu Calos as well as the contributions of the companies Seba KMT and Grundfos confirm the fact that this event added value to the water companies in Romania especially because of the fact that, year by year, it becomes a more and more compelling and attractive event in the field of water in the region.

Silviu Lacatusu
Executive director
CFPPDA

Article from ROMAQUA magazine

A few things about the IVth edition of "Leakage Water Detections Challenge" Calimanesti, 2011

The aim of the annual meeting is an honorable one: **water leakage is in fact, the most faithful client (NRW) of water companies** and in a way, it must be honored even for the fact it is the most constant water nonpayer.

The meeting is important because, on this occasion, it brings together people with the same professional preoccupation; what is remarkable is the fact that girls also joined it.

I think that the contest itself which, apparently, is the basic element in the organization of the meeting, needs improvement; it needs to provide more experience exchange, to be let loose

Using the bilateral connections between teams is the main advantage of this meeting and I truly hope it will help to the spread of good experience.

There are too many forces not to produce a qualitative leap in the approach of the problem.

The teams should debate specific aspects frequently met in their practice: cases that they have met, what they looked like when they were detected, what they really looked like, how they can appreciate the situation wrongly, what should be done for the result of detection to be the maximum one, which is the most helpful equipment in detections, how the cost of improvement is appreciated, which is the dynamics of water leakage, new ideas from every team, etc.

The contest should be more interactive and more instructive so that the teams which have low performances could become better, thus making higher the standard of the contest **; after all a high standard contest is what matters** and not the fact that there is a winner.

The rules of the contest should also be revised, so that the competitors could be content with it. The raise of the quality is the most important thing, thus every team should say their opinion about the development of the contest which should be friendly and fair.

The organizers and the sponsors should also be praised for all their efforts in the organization of the event.

Last but not least, we have to thank God for the good weather during the two days.

Finally, I must express my hope that this kind of events will be in the general preoccupations of IWA concerning water leakage. For example, a presentation of the activities in Romania would have been a remarkable fact at the Conference which will take place in London at the end of this month. This is important mainly for opening a window to new experiences and for sharing them with other people. The general financial value of water leakage is so big that it is worth a continuous preoccupation.

Mat 2011
Professor Ph D engineer Alexandru Manescu

Leakage Challenge 2011

For me it was a priviledge to be able to attend this years Leakage Challenge whilst on my recent visit to Romania. The event was well organised and as usual combined just the right mix of knowledge transfer and practical application. I was very impressed by level of enthusiasm demonstrated by the teams taking part, in that respect you were all winners.

Leakage location is a very inexact science that requires special skills that needs to be supported by new technology. Both were clearly evidenced during the event so well done to you all. The event also provided the opportunity for networking which is an added bonus. Having established the contacts, with the use of the internet and mobile phones, it will be so easy for you all to now keep in contact.

The importance of Non Revenue Water is now well recognised and forms one of the criteria used in supporting applications for investment funding. In this repect Romanian Water Companies have set an impressive standard for neighbouring countries to follow, so keep up the good work.

I look forward to joining you all again next year in Slatina.

Multumesc

Andy Bowden

Discussion proposed by director Sava.
Components in water balance

System Input Volume	Authorised Consumption	Billed Authorised Consumption	Billed Metered Consumption	Revenue Water
			Billed Un-metered Consumption	
		Unbilled Authorised Consumption	Un-billed Metered Consumption	Non-Revenue Water
			Un-billed Un-metered Consumption	
	Water Losses	Apparent Losses	Unauthorised Consumption	
			Metering Inaccuracies and data Handling Errors	
		Real Losses	Leakage on Transmission and/or Distribution Mains	
			Leakage and overflows at Utility Storage Facilities	
			Leakage on Service Connectionsup to Point of Customer Metering	

Real leakage

Real leakage is of two types: that which can not be avoided and that which is potentially recoverable. The last category is affected by:
-the speed and quality of the repairs;
-the management of pressure;

Authorized non invoiced consumption

This part from the NRW represents the water which is daily provided to authorized clients but non invoiced.As a result, this amount of water is not reflected in the system. The authorized non invoiced consumption can be found at the clients who have a counter but they do not pay for the water they consumed. This thing happens following an agreement with the water utility and can include certain public buildings, certain wells from parks or churches.

The authorized non invoiced consumption is represented by the water used by the water utility itself, for washing networks, the water used by the firemen fro putting out fires and the water used for cleaning the streets. The installation of counters for these destinations is not viable, thus the amount of water can only be estimated.

Apparent leakage

Apparent leakage refers to the authorized non invoiced consumption, the measurement errors and the processing of the data. The authorized non invoiced consumption is difficult to evaluate but it can be minimized with the help of enough people and with a pro-active approach. Checking teams will be named in order to identify the illegal or unknown branches and those who extract water from the network in an unauthorized way. The measurement errors can be evaluated by checking the counters according to criteria regarding the determination of size, the age and the type of the counters which will lead to the creation of a policy and program of countering. The level of errors coming from the processing of the data can be determined through the audition of the processes and the remedial of damage through revising the procedures and training the personnel, if there is the case.

- the management of infrastructure;
-the active control of leakage
These are the four criteria of success in a leakage strategy.

The index of leakage in the infrastructure

The most recent index of real leakage, developed by IWA represents the index of leakage in the infrastructure (ILI). In technical terms it is a procedure related with the management of the network for the control of real leakage at the current work pressure.
Leakage in the network on km(LKM)
It is also necessary to take into consideration the technical state of the network, expressed in waste on the network kilometer. This is established according to the following formula:
LKN=QRL/Ln (m3//an/km)

The economic leakage index (ELI)
It is extremely important that the operator should evaluate the economical value of acceptable water leakage. This thing is done on the basis of the relation between the Economic Index (EI) and the Leakage Index through the following formula by the following formula**:**
ELI= EI x LI

EI- is given a certain value on the basis of the network configuration, thus:

- 1,5- water from the system is treated in two steps and is pumped into the network at a minimum pressure of 50 metres
- 1,0- the water from the system is treated in two steps and it is distributed gravitationally or it needs only disinfection but ist is pumped into the system
- 0,5-the water from the system needs only disinfection and is distributed gravitationally into the network.

LI is established in the following way: LI= LKN/3600
On the basis of the performance index referring to leakage and which were established , a methodology can be established which will evaluate the performance of the infrastructure, thus the needs of rehabilitation of the network can be a priority. The indicators which will be used are the following:

- water which does not bring any profit(NRW)
- leakage on the network kilometer (LKN)
- the index of leaking in the infrastructure (ILI)
- the economic index of leaking (ELI)

On the basis of the evaluated values of the performance index, the water network can be classified from the point of view of its state, from very good to inacceptable. In order to make a comparison, five categories are recommended as follows:

- Category 1: C1-(very good)- optimal state according to the relevant indicator. Special measures are not necessary to improve the indicator
- Category 2: C2-(good) - risk level according to the relevant indicator. Special measures are not necessary to improve the indicator.
- Category 3: C3-(medium)-medium value of the relevant indicator. Special measures are not necessary to improve the indicator, only planning in order to identify possible damage
- Category 4: C4-(critical)-critical value of the relevant indicator. This is a starter to initiate correcting actions in order to improve the indicator.
- Category 5: C5-(inacceptable) - inacceptable state which requires immediate action to improve the performance of the relevant indicator. This is a clue that measures should have been taken before.

Eng. Gabriela Lupancescu
Project Implementation Unit – Cohesion Funds
Oltenia Water Company

SEBA KMT

The fact that loggers can send information at a big distance by assembling some reporting relays, can be another advantage. The new Hydrolux H2, which, among the classical noise microphones, both newly projected and improved, can be improved with a hydrogen drill attached to it, in order to discover the leaks with the use of hydrogen after introducing in the pipe a gas composed of 95% azoth and 5% hydrogen.

The method is really effective especially in conditions of permanent traffic or in the case where the leaks created caves and there is little noise and where the correlator is not so efficient anymore. The new pressure logger **sebalogP** was also presented, being projected especially to be assembled directly on the hydrant. This new product has a much reduced size and it is really effective where there is no possibility of fitting classical pressure drills.

Finally we have to underline the fact that the winner team from Slatina used Seba equipment, products from an older generation and we are very proud of this thing. We also congratulate the winners and we wish them success in organizing the V th edition which will take place next year.

Until then, we invite you to visit our site www.sebakmt.com and for any kind of information or problem you can contact us by phone or directly, at our address.

All the best,
Team Seba KMT
Bogdan Ardeleanu

All the participants won!

The IV th edition of the Symposium –Contest on the theme of water leakage has recently finished in Calimanesti, location chosen by the winners of the previous edition, the team from Apavil Ramnicu Valcea. The hosts took care that everything sould be right and they mostly succeeded; therefore they deserve congratulations for this.

In what concerns the contest itself, it was something new, the task of the participants being a difficult one, namely listening to leakage with Hydrolux for one day, in an area with intense traffic. This task was the one which helped to decide over the winner team, the other leakage being relatively easy to discover by most of the teams. Certainly there was a little dose of subjectivism in establishing the winner, but in these situations there is no other way. There both happy and unhappy competitors, as in any kind of competition, however everybody won something. Firstly, the participants had the pleasure to meet again for the fourth year in a row, they exchanged experience and made friends both in the case of competitors and in the case of the specialists or equipment producers, as was our case, the people from Seba Dynatronic. We had the occasion to have a talk with the competitors, most of them working with Seba Dynatronic equipment, we heard about both the good things and the problems they confront with when using the equipment, all these aspects being extremely useful for the producer with a view to improving the work parameters of the future products.

In the last part of the Symposium, the director of the firm, Mr. Bogdan Ardeleanu presented the newest products of Seba Dynatronic, which is the corelator **Corelux P2**, a new product which obtained very good results in the tests made even on the plastic pipes, the new system of loggers of noise **Sebalog N3,** a new product, completely improved. When using it there is no need of a laptop, making both the programming and the interpretation of the data directly with the commander, the loggers having the possibility to work both vertically and horizontally, which is also a huge advantage.

APAVIL RM. VALCEA
ORGANISERS

Between the3-5th of November2010, the III rd edition of the Symposium –Contest **"Leakage Water Detections Challenge"** took place in Drobeta Turnu Severin, contest which was organized by SECOM SA Drobeta Turnu Severin and The Romanian Association of Water(ARA). The last year competition brought together 17 Romanian teams and two teams from Hungary and Serbia. " It is a good thing to get together so many teams in a year of economic crisis", remarked Mr. Gheorghe Sava, the director of the water company from Satu Mare, an initiator of this national contest, three more teams joining for the Seminar sections. The competitors were representatives of water operators from Timisoara, Resita, tulcea, targu Mures, Serbia, Hungary, Alba, Galati, Constanta, Satu Mare, Buzau, Ramnicu Valcea, Cluj, Gorj, Bucharest, Iasi ,Botosani. The winners were the team from Ramnicu Valcea, our hosts in 2011. Let us meet the team:

AA: Introduce yourselves, please.

For the beginning we would like to thank the organizers The Association of Romanian Water and the colleagues from SECOM SA Drobeta Turnu Severin for organization and invitation. At present, the team from Ramnicu Valcea is made of two members namely engineer Apostol Gheorghe and operator of leak detection Szabo Daniel Adrian.

AA: How long have you been working in this domain?

Because of the fact we didn't make a purpose out of winning this contest, we were very relaxed, our aim was to participate and communicate with the other teams in order to improve and acquire new methods and location techniques as well as the new equipment in the field.

AA: Which of the parts did you find the most difficult?

Our daily activity is the same with the specific of the tests in the competition and we consider there was not even one very difficult to pass or to approach.

AA: What did you learn from this contest?

We learnt that perseverance and the correct use of the equipment leads to amazing results.

AA: The Seba KMT company offered you a prize. What does it contain and how can you use it in your activity?

The prize form Seba KMT company consists of a professional, miniature but very flexible locator of leakage water, with a optical indication and acoustics of leakage water, with radio transmission. The advantages of this device consist in the possibility to transport and use it easily.

AA: Engineer Anton Anton, a professor at the Technical University of Constructions in Bucharest, also a member in the jury commission of the competition, expressed his hope to have a surprise winner, this year, too.Were you surprised when they announced your team was the winner?

Yes, we were surprised and we realized any of the teams can win.

AA: Which do you think that was your advantage in comparison with other teams? The advantage made the difference.

We can't say we had some advantages, the equipment and the preparation of the competitors were the same, maybe we were a little more relaxed.

AA: This year, 2011, you are the hosts of this contest. Do you have any surprises?

This year the contest will take place between 18-20 th May, in Calimanesti-Caciulata.

AA: What is your daily activity?

Generally, on Fridays, we set a program for the next week together with the District Water Networks, Sewage District and the Dispatch Service(which undertakes the problems of the clients and monitors the pressure in the system of water supplying). We establish the areas with problems: the low pressure in installations, a great flow of water in the sewage system, flooded area nearby the water networks. Together with GIS office we make the maps with the networks in those areas, then the sewage networks where the quantity of water is much bigger than usual. In order to restrict the area where hidden water leakage happens, the inspection laboratory visualizes these areas, then we listen to the branching, the hydrants, if there are any in the area as well as the water network in the affected area, then we locate the existent problems which will be located and sent to the District Water Networks in order to be fixed. There where the water leakage is at the surface, we establish the route of the water network and we listen with the microphones in order to locate the damaged area.

AA: Which are the greatest problems which you have in your activity?

The problems that we have when we try to locate the water leakage, are with the nonmetallic pipes which are inactive to sounds and send a bad signal. We also meet problems at the non-metallic routes where improvements have been made and the wire tracer was not completed and at locating the old routes of cement which are inactive to sounds when they are damaged.

AA: Which team do you think will win and why?

Any of the participants can win, we suppose the competition will be tight. We wish good luck to all the teams.

THE WATER COMPANY OLT-SLATINA. THE WINNERS IN 2011

S.C. COMPANIA DE APA OLT S.A. SLATINA

We had a team made of:

- Engineer Rata Florea (Manager of the Secondary Office Slatina)
- Technician Trache Nicolae(coordinator of the water leakage team)
- Plumber Ene Vasile (chief of the intervention water networks team)

In the period 16-18th May 2011, the IVth editionof the Contest "Leakage Water Detections" took place in Calimanesti- Caciulata. This year 17 teams participated. There were proposed 4 routes: some had a lower difficulty(the water leakage was visible) and others were more complex(on a traffic road).

At route number 4, which was the most difficult in the contest, we found a branch with a consumer. In the same area we could hear the strongest noise on the route. We opened the water meter, we turned off the tap in front of it, the noise was still there so we realized that the tap could not be turned of completely. On the same route, there was the second tap, after we turned it off, the noise stopped so we concluded there was no damage in the area.

We approached the four routes in the following way: after listening, we made the measurements and we established the distance of wasted water to the start point. We used the devices Seba Dynatronic-Pamw- one microphone and headphones.

At the seminar we found new things about the program demand Driven Distribution from Gronfos. The new Hidrolux HL 500/5000 H2 with tracer gas. Mr. Sava proposed an exercise which we thought was very useful because we found out news about the non-invoiced water.

The difference between the winners and the other teams lies in the huge wish to win and also the little piece of good luck.

We would like that next year a greater number of teams will participate and we also want that the routes to be measured and the routes to be indicated every five meters.

We wish you "Good luck" for 2012, in Slatina.

S.C. VITAL S.A. BAIA MARE

SC VITAL SA BAIA MARE

We had a team made of:
-Pasca Zoltan –engineer
-Halosta Norbert-detector
-Kovacs Alexandru- detector

In the period 16-18th May 2011, the IV th edition of the Contest “Leakage Water Detections” took place in Calimanesti-Caciulata. This year 17 teams participated. There were proposed 4 routes: some had a lower difficulty (the water leakage was visible) and others were more complex(on a traffic road).

In order to find the damage we used a device Palmer Xmic (soil microphone) with which we followed the route then, we put a sign on the possible damaged areas and make a report.

However, we encountered a problem: as we have only one of these devices, the time needed to locate the leakage was too short in comparison with other teams which have two of these devices as well as operators.

At the seminar we found out the latest news about the devices used as well as things related to discovering leakage. The difference between the winners and the other teams consists of more practical work, the devices used and a little bit of luck.

We would like that the next editions will have more participants and a different kind of approach in order to point to the detection of leakage, perhaps a GPS measurement of the damaged area made by only one representative from every team, thing which will exclude the different measurements made with different tape lines, having different results according to temperature or relief.

SC APA CTTA ALBA

SC APA CTTA ALBA

In the period 16-18th May 2011, we participated at th edition of the Contest “Leakage Water Detections” which took in Calimanesti- Caciulata.

We had a team made of:
-Eng. Lazoreanu Ioan
-Eng. Soaita Ioan
-tehn. Pastiu Liviu

Eng. Pasca Zoltan

APA NOVA BUCUREȘTI

APA NOVA BUCURESTI

In the period 16-18th May 2011, the IVth editionof the Contest "Leakage Water Detections" took place in Calimanesti- Caciulata. 17 teams participated, teams from: Timisoara, Tulcea, Targu Mures,Satu Mare, Craiova,Slatina, Drobeta Turnu Severin, Deva, Medias, Baia Mare, Galati, Constanta, Cluj, Gorj, and SC APA NOVA,Bucharest.

Our team was made of:

- Sologu Gheorghe
- Mihai Iulian
- Ionita Lucian
- Dragan Ionut

They approached the four tests using the acoustic equipment " Hidrolux HL 5000"

We hope that more teams will participate in 2012 and the routes will be more complex.

Dr.eng. Florin Vasilache

COMPANIA DE APĂ SOMEȘ CLUJ NAPOCA

THE WATER COMPANY SOMES. CLUJ NAPOCA

In the period 16-18th May 2011, the IVth edition Contest "Leakage Water Detections" took place in Calimanesti- Caciulata. Our team was made of:

-Eng. Balica Marinel

-Plumber Trif Mihai

THE WATER COMPANY OLTENIA.CRAIOVA

Compania de Apă Oltenia—Craiova

Thanks to the invitation of ARA, the team of THE WATER COMPANY OLTENIA.CRAIOVA participated at the IV th edition of the Contest "Leakage Water Detections" which took place in Calimanesti- Caciulata, in the period 16-18th May 2011. Due to the fact it was our first participation, the team was made of four members: Gabriela Lupancescu, Catalin Negrea, Daniel Savoiu and Adrian Gaman. During the competition we used an acoustic locating device (soil microphone) Hydrolux HL 5000.

The organizers proposed four routes of various degrees of difficulty, having various ways of approach for every one of them;

- Route 1: Str. Nicolae Balcescu- medium difficulty, with two visible defects located by our team. The only impediment of this route was the exact estimation of the distance from the starting point, thus the differences between the media of two measurements made by our team and the distance appreciated by the organizers was of 70 centimeters. This fact led to our estimating the distance up to the second damaged area by taking the distance from the damaged area to the stop line out of the total length of the route(estimated at 85 meters).

- Route 2: Str. Mihai Viteazul, route of a medium difficulty with lots of possible surprises due to th inclination of the street. The team visually inspected the route as well as the possibility of water emergence in the yards of the consumers. After that, the next step was inspecting the home sewage. Theoretically, we could say that the damage was nearby the sewage pipe, as water was dripping both through the walls of the home sewage and under the sewage pipe. As a result of listening to the area with the detection device Hydrolux HL 5000, we located the damaged area nearby the home sewage. The inclination of the street made us believe that the exact place of the damage was higher than the maximum located signal, considering that in that place there was a cavity which distorted the noise perceived by the device, thus going to the limit of signal determined higher. It was a mistake which led to a decrease in our points, however the decision was taken after discussing with all our colleagues.

-Route 3: Str Dobrogeanu Gherea: The route was of reduced difficulty but many questions rose. There was visible damage, water sprang from the ground in two cases and the third damage was difficult to detect, being located between two spring wells. A possible damage was close to the stop line, where we wasted some time listening, being accompanied by the cute barking of two beautiful but stressing dogs which were disturbing our" electronic ear".

-Route 4 : Str. " Trajan's Road"- a route 4 meters short, of a high difficulty from our point of view, due to the intense traffic. After inspecting the sewage canals and the communication canals, we noticed a big amount of water. Moreover, to the end of the route, there is an area in front of a branching which could have been caused by damage in the branching. Maybe our luck was that e had the test at a certain moment of the day (5:00 p.m.) when the traffic was relatively not so busy(we sometimes had 20-30 seconds of silence), in comparison with other teams which were not that lucky.

At this seminar, we participated at the presentation of Professor Manescu and the representatives of Grundfos company, presentation which approached the management of water distribution and the advantages resulting from using this type of technology (reduced use of energy, a longer life for the pipes).

The representatives of Seba KMT company presented the advantages of using the correlator Correlux, device we own and use to detect water leakage.

As a result of this edition, we can say that we are winners thanks to the acquired knowledge, the exchange of experience with other experienced colleagues from similar water companies. We also want to congratulate the representatives of The Water Company Olt-the winners of the IV th edition of the Contest "Leakage Water Detections" as well as the organizers.

For the future, we would like to have routes marked every 10 meters for a more accurate approximation. We are looking forward to seeing all in 2012, in Slatina!

Oltenia Water Company, Craiova

SC RAJA SA CONSTANȚA

SC RAJA SA CONSTANTA

Popescu Ovidiu-Liviu: Technician

Florica George:Tehnician

Mirsu Catalin: Detector- Plumber

In the period 16-18th May 2011, the IV th edition of the Contest "Leakage Water Detections" took place in Calimanesti- Caciulata. This year 17 teams participated, among which SC RAJA SA CONSTANTA.

There were proposed 4 routes: some had a lower difficulty (the water leakage was visible) and others were more complex(on a traffic road).

We approached the 4 routes as follows: listening to pipes and branching with the soil microphone of Hydrolux devices.

We used Hydrolux devices 5000 and 3000.We met some difficulties at Route 4 because of the heavy traffic. At the seminar we found out new things about the detection leakage devices and Grundfos pumps.

Mr. Sava proposed an exercise which we thought it was extremely useful, namely a discussion about the report of every team.

The difference between the winners and the other teams consists of the jury's decision at Route 3, there were 4 holes in only one digging and the way of measuring the distances(the difference between the measuring devices of distances).

For the future editions we would like to have more complex routes where we could use all our leakage detecting devices. Moreover, we would like them to modify the display of the results that the jury validates and the measuring of the distance should be made with the same device for all the teams.

We are looking forward to seeing you all in 2012, in Slatina!

AQUASERV TULCEA

AQUASERV TULCEA

Rus Gbriel Marius-engineer detections leakage

Nita Daniel- Plumber

The improvements which could be made for the detection competition (raported to the last Caciulata):The situation plans should be more exact;

- If point 1 cannot be fulfilled, time should be longer;
- No more than two damage point on the route;
- Another proposal would be introducing a test with the portable flow meter.

As a principle, a flow meter should be introduced in a survey, al the watches from the flow meters should be synchronized with the one already fixed and make measurements for 15 minutes every 5 seconds. Then , the data should be downloaded, make the arithmetic media of the measurements and compare it with a flow meter for the same interval of time.

Another type of measurement which could be made out of the competition, could be the one for the calibration of the hydraulic model, with flow meters synchronized simultaneously in 15 points. This final measurement would be the only solution for calibration because the competition is the only occasion when you can make use of 15 flow meters simultaneously.

Respectfully,

Eng. Rus Gabriel

SC APAPROD SA DEVA

SC APAPROD SA DEVA

Our team was made of: -Paiusan Bogdan-engineer, -Junea Stefan-plumber, -Stefan Daniel-plumber, -Balog Gheorghe-plumber

In the period 16-18th May 2011, the IV th edition of the Contest "Leakage Water Detections" took place in Calimanesti- Caciulata. This year 17 teams participated.

There were proposed 4 routes: some had a lower difficulty (the water leakage was visible) and others were more complex(on a traffic road). On one of the routes on which the leaking was visible (Str. Nicolae Balcescu), the noise produced by breaking was quite low, thus one could not accurately indicate the break. We consider that the most complex test was the one on Trajan's Road, not because of the traffic but because of that concession, which, in my opinion was semi-closed or blocked, thing which mislead us(thinking that there was damage). I consider the other two tests were usual (everyday tasks in our activity).

We approached the four routes as follows: -visual inspection of the route, -inspection or the home phones, home sewage and home watermetres (where there was the case), -listening to the route with the electronic ear. We used devices such as: Hidrolux Hle 5000. We had some problems with the way of measuring the sections.

At the seminar we found new things about the program Demand Driven Distribution from Grunfos which proposes a new type of pumps, as well as about the newest devices from SEBA KMT(The new corelator **Corelux** and also Hidrolux HL 500/5000 H2 with tracer gas).

Mr. Sava proposed an exercise which we thought it was extremely useful, namely a discussion about the non-invoiced water.

The difference between the winners and the other teams consists of the fact that they were more attentive and I congratulate them for this.

For the future editions we would like to have a drawn route on which the same tape line should be used (all the teams should use the same route), thus nobody would be unsatisfied.

We also congratulate the hosts for the conditions provided during the competition. We will see eachother again in2012, in Slatina.

SECOM DR.TR. SEVERIN

SECOM DR.TR.SEVERIN

In the period 16-18th May 2011, the IV th edition of the Contest "Leakage Water Detections" took place in Calimanesti- Caciulata. This year 17 teams participated.

Our team was made of:

- eng. Neagoe Tanasie
- plumber Morosanu Marian
- plumber Ursoniu Valeriu
- driver Buzgure Ionel

SC APA CANAL SA GALATI

Our team was made of: -eng. Mircea Manea-coordinator, -ref. Vandoros Antonio, -Vasiliu Mircea

I, the undersigned, engineer Mircea Manea, have been in charge with the detection of water leakage since 1998, using equipment produced by Sewerin Company(the aquaphone, the stethophone and the ferrophone) and JRC company (the correlator). However, I have never participated in any kind of practical or theoretical training, I have learnt to "listen" to the noise produced by water leakage in hydroetilitary networks (cold water, hot water and heating) in Galati by means of exercises on the "work field".

A few opinions about the competition: the boards with the routes to be detected should be divided on the day of the contest(it is not necessary for the competitors to be familiar with them on day before the contest); the routes should be marked in order to make a correct measurement of the damage point (for example, at the competition in Calimanesti, they made the measurement along the pavement or following the approximate trace of the cold water pipe). Moreover, I believe that the point of view of every participant is extremely useful after the contest, in a short debate about the way in which every team used the equipment of detecting the water leakage. This thing can help us correct our own mistakes or errors which appeared for the evaluation of the leakage point. My opinion is that every team can gain something from this kind of competitions and the hierarchy itself on a piece of paper has no relevance at all.

During a public debate, I think we could find out if any of us has been trained with the representatives of Seba KMT company, from Germany, which is very important. It would also be interesting to find out about the daily activity of our colleagues in their Water Companies. In my case, for example, I also deal with the inspection of sewage pipes using an exploration equipment with a video camera type Rover 900.

Thank you for your time and I hope we will keep in touch.

Eng. Mircea Manea

SC Aparegio Groj SA- Water and sewage

In the period 17-19th May 2011, our team, made of two persons, participated at the Contest "Leakage Water Detections "which took place in Ramnicu Valcea, hosted by SC APAVIL SA.

The two persons who participated were:

-Dina Augustin- engineer in charge with the detection ot water leakage and hydraulic modeling
-Micioi Gabriel- plumber in the same institution.

My opinion is that the selection of the best participants was not made in the most correct way, as it was limited to the exact measurement of the distance. I mentioned this thing because there are some differences at the indications of the various measurement wheels.

Taking into consideration that the main aim of the competition was the exchange of experience, there were also discussions with the participants regarding the methods, the devices used to detect certain water leakage inside the network and regarding the daily program of the other teams.

Eng. Dina Augustin

S.C. APA TÂRNAVEI MARI S.A.
OPERATOR REGIONAL DE APĂ ŞI APĂ UZATĂ
Mediaş, Jud. Sibiu

SC APA TARNAVEI MARI SA
REGIONAL OPERATOR OF WATER AND WASTEWATER

In the period 16-18th May 2011, the IV th edition of the Contest "Leakage Water Detections" took place in Calimanesti- Caciulata. This year 17 teams participated.

THE TWO MEMBERS OF OUR TEAM WERE: -Ilie Laurentiu- engineer, -Nicolae Bogdan Ionut- electronic engineer

At this contest we used the devices the Acoustic Locator for leakage type Hidrolux HL 5000 PRO produced by SEBA KMT.

There were proposed 4 routes: some had a lower difficulty (the water leakage was visible) and others were more complex (on a traffic road).

-Route 4 was of a high difficulty as it was situated on a traffic road and we could use only the soil microphone.

- Route 1 was of a high difficulty as the route/road had a composition which made difficult the use of the microphone with wind protection SEBA PAM W-2 and also the use of the microphone for soft ground.

At the seminar we found new things about the program Demand Driven Distribution from Grunfos which proposes a new type of pumps. With reference to the organization of the contest I have some observations to make:

a. In case that at the future editions the participants will be able to use only soil microphones, my proposal is that the routes should be situated in areas with little traffic;

b. A break of 10-15 minutes should be introduced between two consecutive assessments, in order to avoid overlaps which can lead to misunderstandings or the competitors could watch their opponents during the assessment.

c. With reference to the measurement devices used for measuring distances: my proposal is that all the competitors' wheels should be checked to see if they are accurate taking into consideration the fact that there existed small differences between certain positions in the classification in comparison with the length of the route. Another choice is that all competitors should use only one measurement device which can be handed to every competitor before beginning an assessment by the person responsible for the respective route (the responsible person is nominated by the host).

d. My proposal is that for the next editions the organizers should choose routes/assessments where other equipment can be used (for example the correlate, the locator of multifrequence for metallic pipes or even the detector of buried lids)

We are looking forward to meeting again in 2012, in Slatina.

CJ APA SERV SA NEAMT
ApaServ

The team representing CJ APASERV SA NEAMT was formed of :
-Postavaru Alexandru- chief of distribution sector, detector, driver;
-Hanganu Constantin-plumber,
-Spiru Costel- plumber

The activity which took place in the period 16-18th May 2011, on the occasion of the IVth edition of the Contest "Leakage Water Detections" in Calimanesti- Caciulata, represented a good omen for our team from the point of view of gaining experience and professional training. However, even we were not among the winners, we hope that in the future, we will be the organizers.

Our team's opinion is that, for the next editions, certain assessments should be introduced such as detecting water pipes.

The complexity of the routes proposed at this edition was welcome given the fact that we have been used to listen in good conditions (low traffic), thus becoming prepared for detections.

We also propose that ,at the next editions, should exist routes of different materials to discover (OL, cast iron, PHD, azbocement,)thus making the routes more complex and emphasizing the professional training of the competitors.

Our team used only the Hydrolux device with a bell sensor and a hammer.

The seminars were also prosperous through the fact that new devices were presented, fact which determined us to buy a new hydrolux device.

The difference between the winners, the other teams and our team consists of the fact that the team which makes leakage detections also deals with the inventory and the engineer responsible with detections is the chief of the water distribution section, exploitation and maintenance, and sometimes, he is also the driver. Because of all these things, there is a huge lack of time to concentrate only on detections. Hopefully, this thing will change soon.

We hope that we will keep in touch, at least by e-mail, regarding the latest innovations and change of experience.

The team CJ APASERV SA NEAMT

AQUASERV TG. MURES

AQUASERV TG MURES

In the period 16-18th May 2011, the IV th edition of the Contest "Leakage Water Detections" took place in Calimanesti- Caciulata. This year 17 teams participated.

Our team was made of:
- Pap Stefan-engineer
- Magos Sandor Zoltan –chief of the team for leakage detection
- Pap Vasile Dorin- chief of the team for leakage detection
- Feier Nicusor- locator leakage water network

We used the following devices:
- Routes locator FM9800XT
- Noise corellator LOG 300, WAGAMET
- Electronic ear LOG 1

We hope to see each other again in 2012, in Slatina
Papa Vasile
Water detection leakage Team
Tel 0758020160

SC Apaserv Satu Mare

SC APASERV Satu Mare

In the period 16-18th May 2011,we participated at the IV th edition of the Contest "Leakage Water Detections" which took place in Calimanesti- Caciulata.

Our team was made of:
- Manager: Gheorghe Sava
- Levente Karpinski
- Buth Flore
- Cuibus Calin
- Tanase Nicolae

S.C. AQUATIM S.A.TIMIŞOARA

AQUATIM

SC AQUATIM SA Timisoara

In the period 16-18th May 2011,we participated at the IV th edition of the Contest "Leakage Water Detections" which took place in Calimanesti-Caciulata and was organized by SC APAVIL SA Rm Valcea and The Romanian Water Assoand one from ciation(ARA).

The competition this year brought together 17 teams from Romania and for the seminar, there were two more other teams (one from Bulgaria and one from Bistrita). There were representatives of water operators from Timisoara, Tulcea, Targu Mures,Satu Mare, Craiova,Slatina, Drobeta Turnu Severin, Deva, Medias, Baia Mare, Galati, Constanta, Cluj, Gorj. The team Aquatim was represented by Augustin Blaga, Ion Kiss, Marin Stefan and Alin Anchidin.

The competition took place between 8:00 and 18:00, in normal work conditions,, every team having 4 tasks to fulfill, two of them being easier because the water leakage was visible and the other two were more difficult because the water went to the sewage system and to the telephones. For all the tasks in the contest the detection of the leakage was made only with the help of soil microphones-electronic ear, some of the routes being very difficult because of the fact they were located on a very busy road, with 1,2 or 3 sections of pipes and others having several defects on the indicated part.

The distances between the start and the finish points were of approximately 100metres, the period of time allowed was of 10 minutes and the indication of the place where the damaged area was. All the participant teams had impartial supervisors and the following aspects were taken into consideration: the road signs, protection equipment, organization in the field, reading the plans, the identification of the route and the indication of the hidden leakage. The selection of the best team was made through some questionnaires, according to the length indicated by the teams and the measurement was made between the start point and the damaged area.

The members of the commission had much more to deliver in comparison with the previous editions, because of the big number of teams, the similar results of many of the teams and especially because of the similar numbers of point of some of the teams.

After taking the questionnaires and measuring the indicated distance, the team from the Water Company, Olt was designated the winner, the distances between the teams being of a few centimeters.

The contest-seminar represented a real relp, a relevant experience for professional experience. The Aquatim employees proved they have a very good coordination in the field and that they are real professionals. After this contest, the detection team confirmed the ability and the experience of the Water Company in Timis when trying to detect the hidden leakage in the water network. The knowledge and the information gathered along the period of the contest but also the presentations from the seminar represented valuable resources of professional information which we hope will bring good results in practice as well as the reduction of water leakage.

The seminar had the role of showing strategies of reducing the water leakage and the sponsor of the competition, SEBA KMT company presented modern equipment for water leakage detection- a soil microphone, a correlator and a new type improved by the loggers.

Proposals for the next meetings:

- For the singular points indicated as being with losses (not those indicated by most of competitors), a separate commission should be formed from members of the host team, the representative of Seba KMT and one of the teams chosen by ballot, this commission having the role to establish if there are any clues that there is any leakage in the indicated place.
- There should be established routes where all the available equipment should be used and, in case a certain route is established, where there is no possibility of telling the route of the pipe, the hosts should mark the trace of the pipe and the branching, on the road.
- The distance between the start and the finish point should not be over 80 meters, the breaks between the teams should be of 10-15 minutes.
- For every section only one wheel should be used, this wheel should also be used when measuring the results by the commission- the route of the pipe being indicated by the device or being marked on the road
- Our proposal is that a route should be created, route on which the detection of the leakage should be done only with the help of the soil microphone by a representative from every team, thus creating the title of the best individual detector
- We should create an interactive part in which more teams form a work group dealing with a certain problem, a discussion theme.
- Every team should present the way of working of their daily activities, the organization of leakage detection activities
- Emphasis should be put on respecting the standards of work safety, the use of protection equipment, signal, etc.

SC AQUABIS SA BISTRITA

- **OBSERVERS -**

Representing our company as observers, engineer Molnar Iosif and detector Chivu Eugen participated for the first time at this type of competition. As we did not have the necessary equipment to be allowed to join the contest, we asked the team from Satu Mare that we should accompany them, with a view to reach the aim for which we were there. The fact we were happily accepted to join the team is a real proof of the moral and professional quality of the whole team.

During the seminar, professor Manescu presented a very effective way of organizing a Dispatch Department of Interventions, section which is presently being reorganized according to the given model.

It is obvious that the world formula referring to leakage on branching does not fit the Romanian reality. Only specialists like professor Manescu can bring the necessary arguments for making changes in this direction and for our reports to be closer to reality.

However, as professor Manescu mentioned, water companies have to seriously approach all the activities which, together, can make the water leakage lower and lower.

The quality of an observer and not being a competitor at this competition allowed me to watch relatively relaxed its organization and development. I could not help myself from noticing the enthusiasm of the participants, their ambition and the real spirit of competition between them all. The seriousness and professionalism were shown both in the declarations between teams and during the assessments. Moreover, I was pleasantly surprised when, on the last day of the competition, the teams from Timisoara and Satu Mare went on the field to check a common hypothesis. All these people are really passionate with their work and I strongly believe that their activities and their results in the water companies they come from, are examples to follow.

The difference between the winners of this edition and the other teams consisted mainly in my appreciation, the rules of evaluation and last but not least, in the luck of the team from Olt. What pushed them was the desire to win, doubled by the wish to organize the next year's event of this kind. Iwould also like to congratulate all the participants for their seriousness and fair play all over the period of the competition.

The colleagues from Olt will surely surprise us at the next edition in Slatina, in 2012. The quality and beauty of such an event undoubtedly, lie in the quality of the **ORGANIZATION REGULATIONS** and the technical difficulties that the competitors encounter during the competition. Mr. Sava proposed an interesting and useful exercise, from the point of view of knowing and understanding the phenomenon: **WATER LEAKAGE**.

WATER COMPANY DONAU BULGARIA
-OBSERVATORI-

The first one could be similar to the one of this year and the second one could be as **"A SOLIDARITY COMPETITION".** In this type of competition**,** the first 10 best teams from the "ability competition" could accept the invitation of a team which had lower results in the domain of water leakage detection. The criteria and the fixed rules of organization would help very much in every operator's activity, but the experience of the teams with the best results and best equipment in the field of a team with lower results would be benefic and encouraging nowadays. The most experienced ones surely understand what such help really means and appreciate it.

Respectfully,
Engineer Molnar iosif

SC APAVITAL SA IASI

OTHER WATER COMPANIES

SC APAVIATL SA IASI

The team of this company is made of two persons, an engineer and a technician.

The year of establishment: 1997,when a Micro Corr5 device, a flow metre UDM 100 and an electronic ear were acquired from SEBA DYNATRONIC.

Nowadays, we belong to the section Water Distribution, Iasi but we also answer the calls from other colleagues in the field. We also work for the clients who require help in water leakage detection.

Current activities:

-water leakage detection

- location of pipes and other metallic routes

-flow and pressure measurements-instant or log-lasting as well as data analysis and interpretation

-location of homes lids, valves and hydrants

-establishment of micro sectors the delimitation of water networks and identification of clients

There has recently been an equipment auction for us, thus, in the future we will have the following new devices:

-two acoustic correlators, corelux p1 and p2 with two hydrophones

-an electronic ear SEBA

- 5 ultrasonic flow metres and 5 pressure loggers for simultaneous measurements in different points of a micro sector

-a lid locator and two locators for metallic pipes

- a Fiat doblo Panorama

In the future, a department of water and sewage networks will be created as on the acquisition list there is also a auto laboratory fully equipped for video inspections for sewage, the auction for this one being programmed for the beginning of next year.

In order to reduce leakage, my suggestion is to find out how much water flows through the main knots on the magisterial pipes, after which a map can be made in order to see the distributions of the flows, the consumption is not justified. We also check the flows during the night in the same time with maneuvers on line valves. According to the results, we decide how to continue the detection and remedies, total replacement, annulment or another choice. We have been doing this for a month, starting with the treatment station Chirita which caters for half of the town.

Engineer Sorin Murariu

S.C. COMPANIA DE APĂ ARAD S.A.

ARAD WATER COMPANY

The office of water leakage and canal inspections was established in the company in 2000 when we also received two correlators Microcor 6, two analogical devices Hydrolux LH-395F-600FM and a route detector Metrotech.

Since then I have been working in this office and I have overtook it since 2006. In 2006 we also received an auto laboratory for canal inspections.

The members of our office are:

- Lucaci Gheorghe- engineer, head office(41 years old)
- Omota Iosif- engineer(62 years old)
- Cadar Dorin –plumber(58 years old)
- Papp Anderi-plumber(45 years old)
- Muntean Ioan -locksmith(58 years old)

We mentioned the age of our colleagues because it is a quite old office and it seems that our superiors do not care about it at all.

Unfortunately, we have the chance to have very little detection. We are constantly asked all kinds of inventories of branching that we hardly have time for anything else. Besides, we haven't had the chance to work with Hydrolux until now. However, Microcor did its job but being really old, it stopped functioning which means that no matter the operation, it shows null correlation.

Engineer head office
Lucaci Gheorghe

S.C. COMPANIA DE APĂ ORADEA S.A.

ORADEA WATER COMPANY

The water leakage team from Oradea is made of:

- Cristian Sfarlea- Engineer
- Adrian Popescu –Detector
- Vasile Purda – Plumber

In this activity, we are a young team and we own the following devices:

- Corelux P1
- Hydrolux HL 5000
- Feromagnetic Locator FM 800
- Cosmos –Data-Logger CDL -4U

We are organized as a department belonging to Water Company Oradea and generally, we are sent to look for damage in networks, the sewage sector, we also have a plan to detect hidden water leakage. Every day we listen to branching, valves, hydrants and transport networks where pressure is lower and leakage is difficult to detect.

Unfortunately we haven't had the chance to participate to any training courses, we learnt everything through practice or in the case of Seba devices and their representatives showed us how it works.

Head office
Engineer Cristian Sfarlea

Do you want to promote your activity, your products or bring any contribution to the domain of water leakage?

We offer you the possibility to make your business well known, the products and innovations in the domain of water leakage detections.

The persons who have experience in this domain are kindly asked to share aspects of monitoring activities, control, detections, location or any other aspect related to water leakage, by writing an article and sending it to us. The proposed article has to be typed in WORD (OFFICE)with Times New Roman, 12.

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