Aellia FORMERLY INTERO THE SNIFFERS

ExxonMobil

PIPELINE MANAGEMENT

CASE STUDY

ExxonMobil Asia Pacific Pte Ltd

Leak detection with sniffing dogs for underground road crossings

Sniffing dog Meki and dog handler Luc went to Singapore for a unique leak detection project on underground road crossings at ExxonMobil. How did this project come along and what was the impression of the ExxonMobil team?

The first encounter between ExxonMobil Asia Pacific Pte Ltd (EMAPPL) in Singapore and Aellia (Formerly Intero - The Sniffers) dates back to earlier this year when Flanders Investment And Trade had set up an introduction meeting. During the discussions with ExxonMobil, we learned that they are dealing with some specific challenges for which we were able to present a unique approach with our sniffing dogs.

"Leak detection on underground pipelines with sniffing dogs is the reason Aellia was founded back in 1991. When this opportunity for EMAPPL in Singapore came along, our team was looking forward to work on such a unique project." reports Kristof Verwaest, Pipeline Division Operations Director of Aellia.

Locating leaks accurately in underground road crossings was a challenge

"It was challenging for us to find an accurate and efficient way to evaluate the integrity of pipelines that are only very locally underground, for example at road crossings. Measurement equipment had too many limitations so we had to look for another method." says Dr. Tiow Wee Teck at ExxonMobil Asia Pacific.

"When we heard about the possibility of using sniffing dogs to detect leaks , we were surprised about this alternative leak detection method. After several discussions with Aellia, we signed the contract and the project began."

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The ExxonMobil team with Luc and Meki.



Sniffing dog Meki in action.

Challenging conditions

Dog Handler Luc and sniffing dog Meki were off to Singapore to help EMAPPL make this project successful.

“It was quite a challenge to transport Meki to Singapore, but thanks to the drive and enthusiasm of everyone involved in this project we made this a success. Also in Singapore we were confronted with very high temperatures of the asphalt, so the team provided Meki with socks to protect his paws.”

Limitations of measurement equipment and excavations

Eugene Lee of ExxonMobil Asia Pacific Pte Ltd reports: “We could have tried to locate the leaks with measurement equipment but that would not have been as efficient and accurate as with the sniffing dog. Moreover, we wanted Meki to evaluate more than 10 different product compositions and that would definitely have been time consuming and challenging with measurement equipment."

“We also need to be certain of the location of possible leaks before starting expensive excavation. The PPB detection level capability of Meki was the ideal solution.”

Environmental impact

“The high sensitivity of the nose of sniffing dogs is unmatched compared to available measurement instruments. The parts per million detection level of equipment limits the detection of small leaks on underground pipelines. Dogs’ sniffing ability of up to parts per billion, however, makes it possible to identify tiny gas or oil leaks in a pipeline.”

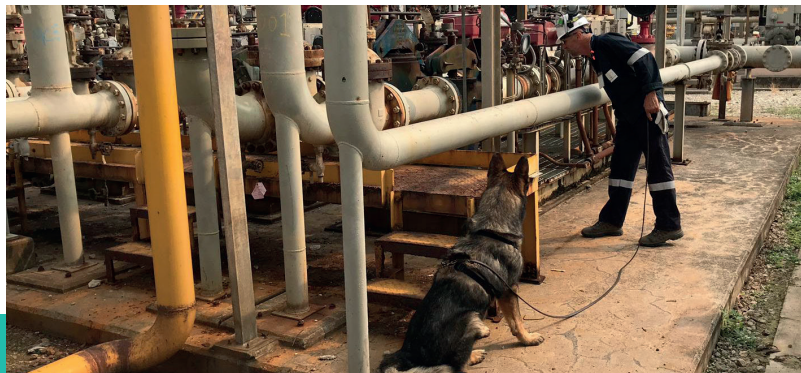
“In practice, months before a propagating leak is detected with industrial leak survey equipment, a dog sniffing survey would already have identified the leak. Pipeline managers can immediately repair small leaks before soil contamination or serious safety exposure would take place.”

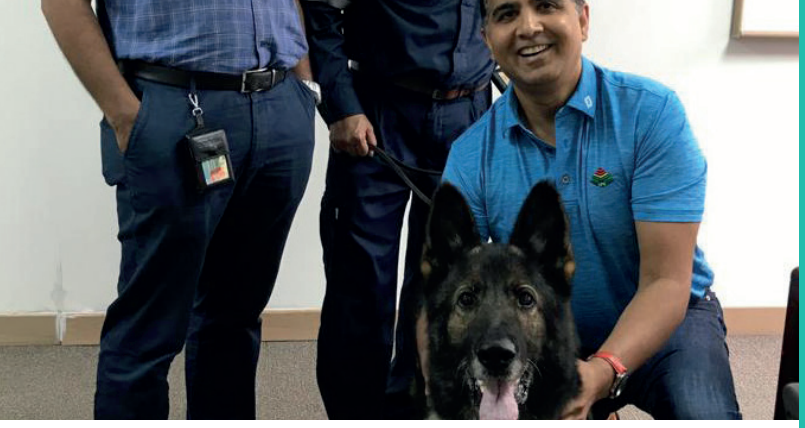
“Almost all underground pipelines are accessible for sniffing dogs. A dog’s mobility brings its nose above pipelines in rural areas, through woods, crossing mountains, through fields with dense vegetation and in complex petrochemical sites. Many measurement equipments cannot be used in these circumstances at an acceptable pace.” says Kristof.

Pioneering

As far as we know, it’s the first time ever that dogs have been used in Singapore within large petrochemical plants.

“It is great to see that an oil and gas major like ExxonMobil is not afraid to think outside the box and is willing to pioneer with dogs to achieve their integrity ambitions. It is even better when this leads to a great success. We are proud to have been able to work with ExxonMobil Asia Pacific Pte Ltd on such a unique project and to help them with their challenge.” Kristof reports.





Aellia has definitely proven their capabilities with their sniffing dogs. The results of the 4-week survey are positive.

Project extension

Initially, we signed a contract for a 1-week survey with one optional extra week. During the project, extra sites were added to the scope. Eventually the project was prolonged to a total of 4 weeks due to the positive collaboration and results.

Positive results

“Aellia has definitely proven their capabilities with their sniffing dogs. Luc and Meki were a pleasure to work with and the results of the 4-week survey are positive.”

“The fast planning and setup of the project, the accuracy of the leak indications and the efficiency made this a success. Of course, our ExxonMobil team was delighted with the high cuddle factor of Meki. We look forward to a possible future collaboration with Aellia.” says Arun S of EMAPPL.

Introducing dog handler Luc Derboven

Luc has more than 18 years of experience with training and handling sniffing dogs. He has executed surveys in Iraq, the US, Malta, Cameroon, Italy, France, Belgium, Germany and The Netherlands. He is specialized in working with explosives, gases, liquids and hydrocarbons such as ethylene, propylene, butane, diesel, benzine, kerosene, crude oil and many others.

Introducing sniffing dog Meki

Meki is a German Shepherd and is experienced with detecting gases, liquids and hydrocarbons such as ethylene, propylene, butane, diesel, benzine, kerosene, crude oil and many substances.



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