

SO FAR, WE HAVE BEEN BRINGING NEWS WITH OUR DUTCH NEWSLETTER. IN ORDER TO INFORM OUR NON-DUTCH SPEAKING AUDIENCE, WE START NOW WITH AN ENGLISH NEWSLETTER IN WHICH WE AIM TO BRING YOU SOME NEWS ON OUR INNOVATIONS AND ACTIVITIES. IN THIS NEWSLETTER WE WILL SHOW TWO EXCAVATION PROJECTS FOR THE REMOVAL OF ASBESTOS AND A PETROLEUM CONTAMINATION. WE WILL ALSO PRESENT THE RESULTS OF AN INJECTION PILOT TEST IN WHICH WE HAVE SUCCESSFULLY USED PERMANGANATE AND WE SHOW THE LAB RESULTS FOR A NEW REACTOR FOR THE TREATMENT OF 1,4-DIOXANE.

WE WISH YOU A LOT OF COURAGE AND A GOOD HEALTH IN THESE UNCERTAIN TIMES!

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## SODECON

SODECON is an innovative, knowledge-driven company specialized in soil and groundwater remediation providing consultants, project developers, companies and private persons with sustainable, economic solutions to their soil issues.

## ASBESTOS DRIPPING AREAS

This year we already performed different remediation projects in which the dripping area of an asbestos roof needed to be removed. Dripping rainwater can cause the migration of asbestos particles from the roof to the underlying soil. Soil was excavated and transported to a treatment center. The remediation works were performed with the necessary personnel protection equipment. A decontamination unit was foreseen and air measurements were performed according to the legislation. An interesting observation we made, was that asbestos particles can penetrate to depths of 50 cm into the soil. In a lot of cases, the removal of the upper 20 cm is not sufficient to remove the contamination.

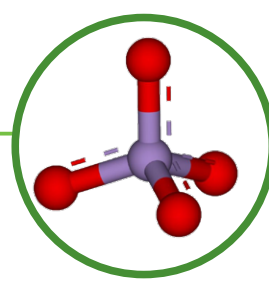


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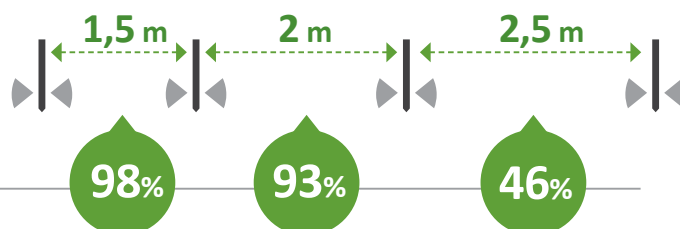
## OIL SPILL INCIDENT

As a result of an oil spill with an underground fuel oil tank, an excavation was performed in which the contamination and the tank were removed from a front yard. The excavation was complicated because of the presence of a lot of utilities. All utilities were uncovered previous to the excavation works. In order to be able to excavate between the utilities and to remove the smear zone below groundwater, the excavation was performed in segments that were filled with stabilized sand in order to guarantee the stability of the house.

## IN SITU CHEMICAL OXIDATION WITH PERMANGANATE FOR CHLORINATED SOLVENTS



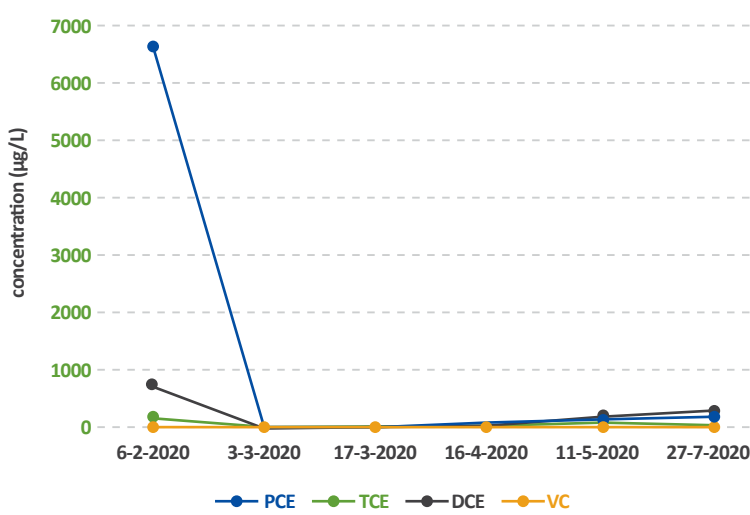
Based on lab tests with permanganate, the dosage was determined for the pilot test. The pilot test consisted of 7 Spin® injections performed by Injectis in which 3 different radii of influence were tested: 1,5 m, 2 m and 2,5 m. For every radius of influence, the concentrations were monitored in 4 monitoring wells. The concentrations of contamination declined rapidly and **5 months after injection the following average contaminant reductions were measured for the different radii of influence:**



Based on these results, a full scale remediation will be performed with a radius of influence of 2,0 m.

Below, the evolution is shown for a monitoring well in which the rapid contaminant reduction can be seen. Because of the successful pilot test, 238 injections will be performed in the full scale remediation. There are multiple advantages for the use of permanganate on the site:

- Rapid reduction in groundwater concentrations can be achieved
- The technology is independent of biological activity that is limited by the low pH on the site.
- By remediating rapidly, the nuisance for the redevelopment can remain limited in comparison to the injection of a carbon substrate because the injections can be finished before the redevelopment works.
- There is no formation of vinyl chloride (that has a much lower remediation target and is more mobile). In this way, the risk towards the downgradient houses and the future buildings on the site will be limited in comparison to the injection of a carbon substrate.



## RECUPERATION GROUNDWATER



BECAUSE OF THE DROUGHT THIS SUMMER, WE HAVE INSTALLED A SYSTEM ON A REVIVE SITE IN OUDENAARDE BY WHICH THE PUMPED GROUNDWATER CAN BE RECUPERATED BY LOCAL USERS AND BY THE CITY FOR THE IRRIGATION OF THE GREEN AREAS. THE SYSTEM WAS DECORATED BY A BEAUTIFUL GRAFFITI ART WORK OF A LOCAL ARTIST.



## 1,4-DIOXANE

Sodecon has developed a new reactor for the aboveground treatment of 1,4-dioxane in pumped groundwater. This reactor is an alternative for the energy intensive alternatives like a combination of UV with hydrogen peroxide. In the table below, the results of the lab tests are shown. It can be deduced that very high removal efficiencies can be achieved. In a next step, a pilot installation on a test site will be installed. We are looking for a project site to test the technology. If you have a potential site, let us know!

	Reduction after 45 min (%)
control	0
test 1	96,7
test 2	93,5
test 3	99,7

## CONTACT

DO YOU WANT TO KNOW WHAT SODECON CAN DO FOR YOU IN THE FUTURE? OR DO YOU HAVE A QUESTION ON A SPECIFIC PROJECT IN WHICH WE CAN HELP YOU WITH OUR EXPERTISE? DO NOT HESITATE TO CONTACT US.