

Dear Madam or Sir,

We hope this email finds you well. In August we participated in the **KONTEC Congress** (Dresden – nuclear waste and wastewater treatment), where we consolidated our network and initiated several cooperations towards piloting and implementing Alpha Cleantec’s technology for the treatment of nuclear wastewaters. In September we exhibited at the **AquaConSoil Conference** (Prague - soil remediation and groundwater decontamination), where we updated with several clients and equally initiated some new business partnerships. Furthermore, we pushed ahead several ongoing commercial offers and updated our website.

From our R&D department, we are happy to provide you with a new update regarding customer projects.

Alpha Cleantec AG

Newsletter September 2023

Successful feasibility Pilot test with a large Italian environmental services provider.

The Problem: The Pilot test was carried out with an Italian environmental company providing a wide range of decontamination services and owner of part of the contaminated sites. One of the unsolved issues is DDT and PCB pollution in soil. This pollution is very dangerous and the required decontamination levels are very low (ppb's). The target of the Pilot was an assessment of the SOA-AFA technology's efficiency for **PCB** and **DDT** decontamination in the **contaminated soil** and to meet the requirements of the Italian regulation.

The Objective It is the objective of the customer to rapidly, simply, and cost-effectively decontaminate the **soil** from **DDT and PCB leftovers** to meet regulatory threshold values.

The Solution: We have implemented our SOA-AFA solution as on-site batch treatment agent- on hundreds of kg's of contaminated soil. Results demonstrate that the process can be successfully applied and meets almost all regulatory requirements after one single treatment (see table below), and met all requirements after a second treatment, with low quantities of active solution and a short contact time (60 min).



Results:

After one single treatment

<i>Contamination</i>	<i>Before treatment</i>	<i>After treatment</i>	<i>Conv. (%)</i>	<i>Target value</i>	<i>Target met</i>
<i>ppm</i>					
DDD	58.5	0.4	99.3	0.1	X
DDE	83.7	14.1	83	0.1	X
DDT	104	0.03	99.9	0.1	√
Xylene	50	<20	>60	50	√
Ethylbenzene	50	<20	>60	50	√
Toluene	234	<20	<91	50	√
Benzene	77	<2	<74	2	√
Aromatic polycyclic hydrocarbons	150	<10	>94	5-100	√
Naphthalene	102	<10	>90	10	√
Polychlorinated hydrocarbons	900	<10	>99	10	√
Bromoform	178	<10	>95	10	√
Chlorobenzene	399	70	81.7	10	X
1,2-Dichlorobenzene	105	<20	>81	50	√
1,4-Dichlorobenzene	89	<10	>89	10	√
1,3-Dichlorobenzene	60	<20	>70	2-100	√
Aromatic hydrocarbons	<20	<20	100	100	√
Amino Aromatic hydrocarbons	<1	<1	100	25	√
<i>ppb</i>					
PCB28	19.4	<0.1	>99	5	√
PCB52	1	<0.1	>90	5	√
PCB101	10.4	<0.1	>99	5	√
PCB118	3.6	<0.1	>98	5	√
PCB138	24.6	7	72	5	X
PCB153	28	5	83	5	√
PCB180	23.8	4	83	5	√

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Maybe you face similar challenges in your business. Then please feel free to contact us.

<https://www.linkedin.com/company/alpha-cleantec-ag/>



About Alpha Cleantec AG

We believe that our eco-system requires looking after so we have a world worth living in to pass to our next generations. Decontamination of soil and water from hazardous contaminants plays a major role in this regard, in our view. This is why we established Alpha Cleantec AG as an environmental technology company in 2016 with the vision to provide safe, green, rapid, efficient and cost-effective technologies to resolve environmental harms and hazards caused by inadequate human and industrial activities.

For Decontamination of a wide range of contaminants (see table below), we provide two technologies, AFA and SOA, achieving decontamination ratios of up to 97% in just hours (such as for Hydrocarbons, BTEX, Petroleum leftovers, Aromatics, PAHS, Chlorinated Solvents, PCBs, Dioxins as well as Pesticides and Herbicides) to be applied in soil, groundwater, wastewater and railway ballast treatment.

For wastewater facilities we have developed, based on our proprietary technology, a process allowing to pretreat sludge before the digester, thereby significantly increasing biogas generation (up to 50%) and decreasing dry sludge disposal at the end of the process (up to 20%).

For Vegetation control we have developed a process based on an environmentally friendly mixture of inorganic salts that generates concentrated (non-Glyphosate) herbicide absorbing water from the plants and drying the plant including the roots, without changing the salinity of the soil.

Table of contaminants treatable by our technologies

CONTAMINANTS	IN-SITU		ON SITE	
	SOA	AFA	SOA	AFA
BTEX				
Benzene	*	*	*	*
Toluene	*	*	*	*
Ethylbenzene	*	*	*	*
Xylene	*	*	*	*
PETROLEUM HYDROCARBONS				
Gasoline Range Organics (GRO)	*	*	*	*
Diesel Range Organics (DRO)	*	*	*	*
Oil Range Organics (ORO)	*	*	*	*
AROMATICS				
Chlorobenzene	*	*	*	*
Bromobenzene	*	*	*	*
Dichlorobenzene	*	*	*	*
Nitrobenzene	*		*	
Phenol	*		*	
Styrene	*	*	*	*
Naphthalene	*	*	*	*
Trichlorobenzene	*		*	
Trimethylbenzene	*	*	*	*
PAHS				
Phenathrene	*	*	*	*
Naphthalene	*		*	
Acenaphthylene	*		*	
CHLORINATED SOLVENTS				
Tetrachloroethylene	*		*	
Trichloroethene	*	*	*	*
Dichloroethene	*	*	*	*
Vinyl chloride	*		*	
Tetrachloroethane	*	*	*	*
Trichloroethane	*		*	
Dichloroethane	*	*	*	*
Dibromochloroethane	*	*	*	*
Bromodichloromethane	*		*	
Carbon tetrachloride	*	*	*	*
Chloroethane	*	*	*	*
Chloroform	*	*	*	*
Chloromethane	*	*	*	*
Chlorotoluene	*	*	*	*
Methylene chloride	*		*	
PCBS	*	*	*	*
DIOXINS	*	*	*	*
PESTICIDES AND HERBICIDES				
Glyphosate	*		*	
Goal	*		*	

We plan to inform you in the future about newly accomplished projects, pilots or case studies. Please let us know if you do not wish to get our company news.

Kind regards/ Mit freundlichem Gruß

Raymond Hernandez
Senior Business Development Manager

Alpha Cleantec AG

Phone: +49 (0) 6221 64 924 66

E-Mails:

hernandez@alphacleantec.com

info@alphacleantec.com

www.alphacleantec.com