

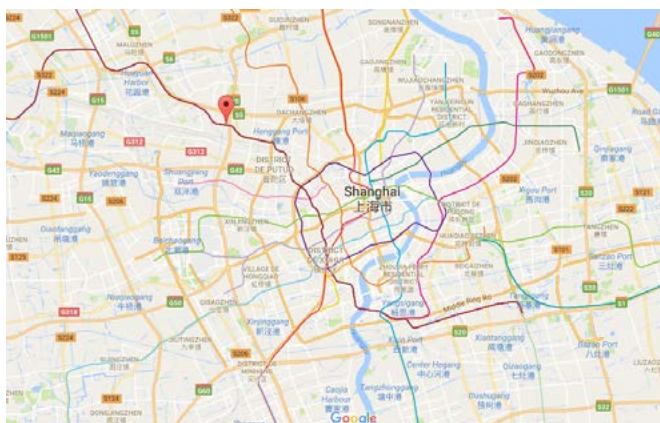
ISTD/ I-17-04

WUWEI - SHANGAI

Context

The site is in QiLianShan Road 145, Shanghai, China in a 90 000m² field in the city. The location was once occupied by a dying company which spilled various contaminants in the ground.

The project is a pilot test on a 25m² at 14m depth (heating zone) with 11 gas burners (V3/V4), a vapor treatment unit and a liquid treatment unit.



Project Description

The treatment area is impacted with various solvent described in the table below.

COC (units)	Average	Maximum	Treatment Goal
	mg/kg	mg/kg	mg/kg
Saturated area			
Chlorobenzene	150	363	353
1,2-Dichlorobenzene	800	2160	1795
1,3-Dichlorobenzene	80	212	39,3
1,4-Dichlorobenzene	500	1400	29,4
Nitrobenzene	100	370	40
Aniline	200	781	5,75

Construction of the watertight wall

In order to isolate the treatment zone from the ground water a wall was built in the ground around the treatment area. The wall is 1m thick and 14m deep. During the treatment the results showed that at the outskirts of the heating zone, the concentrations were well above the objective. However, inside the heating area, the values were well beneath the target concentrations. One of the hypothesis to explain this difference is that the wall which retain the water is too porous or cracked which resupplies the treatment zone with water and contaminants.

Key words

Contaminants

Chlorobenzène

1-2 DiChlorobenzène

1-3 DiChlorobenzène

1-4 DiChlorobenzène

Nitrobenzène

Aniline

Max. concentration

5286 mg/kg DM

Volume

340 m³

Tonnage

609

Nb of heating tubes

11 (L: 14m)

Temperature Target

150°C

Heating duration

34 days

Treatment targets

<100 mg/kg DM

Location

Shangai - China

Future Use

Industrial

Client

Greenment

Partner

Greenment

Consultant

Greenment

Date

2017



Polluted area



Analytical results

The following table summarize the concentrations of each contaminant of concern in the two sampling points.

Contaminant concentration in the soil (mg/kg)								
Contaminants	Target	Depth (m)						
		2	4	6	8	10	12	14
Chlorobenzene	353	0.16	<0.05	0.13	0.05	0.13	<0.05	<0.05
1.2-Dichlorobenzene	1795	2.09	<0.10	<0.10	<0.10	0.36	<0.10	<0.10
1.3-Dichlorobenzene	39,3	0.16	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1.4-Dichlorobenzene	29,4	1.23	<0.10	<0.10	<0.10	0.27	<0.10	<0.10
Nitrobenzene	40	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Aniline	5,75	<0.10	<0.10	<0.10	<0.10	<0.10	0.11	<0.10

Planning

- Installation: 2 weeks
- Treatment: 8 weeks
- Analyses & reports: 1 week
- Demobilization: 2 weeks

Conclusion

Wuwei project has been a challenging project due to:

- The first project in China
- A new partner: shared preparation and work in an intercultural context
- New technics and methods
- Contaminants and concentrations which caused corrosion issues
- The use of water retaining walls without water pumping during the treatment

The project ends as a success (targets completed): temperatures were not able to go above 100°C in most of the monitoring points but the stripping process decontaminated the soil. The blower from the vapor treatment unit was not appropriate for the project but the vapors were well condensed and treated.

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