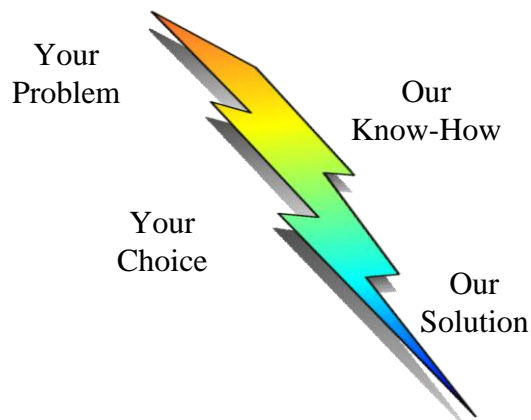
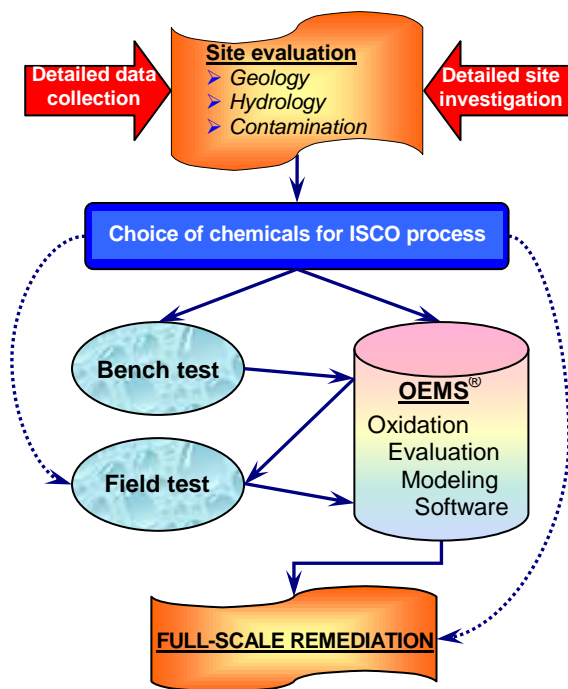


# HISTORY

The appliance of chemicals to solve environmental problems is not a new idea. Since over 100 years oxidants has been added to waters and wastewaters to reduce the contaminants. The further development of this branch of applications has brought to the appliance of chemicals to reduce the contamination in the soil using them on site and in site.

Our technique is based on the injection of a properly developed receipt of chemical compounds, which oxidize the organic contaminants. The treatment is obtained through the delivery of the chemicals in wells. The target is to obtain the desired cleansing rate by reducing significantly the costs, the lasting and the hindrance of the application.

## Process Flow Diagram



**PROBLEM SOLVED**

**A. S. T. C.**

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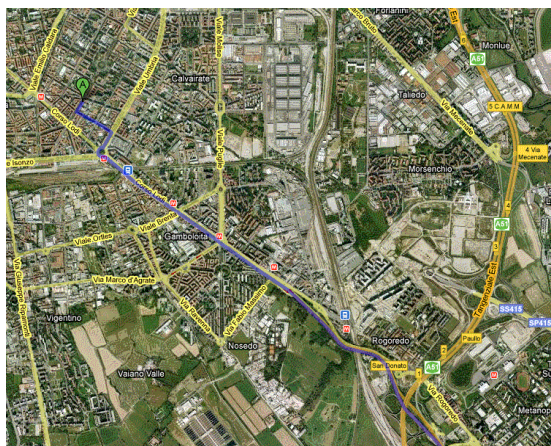


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**A.S.T.C.**  
**REMEDIATION SRL**



*Quick guide to a  
successful evaluation  
of an ISCO project*



## The Problem

To define if the an ISCO process is applicable, it is important to make some preliminary evaluations:

- Geology of the site;
- Hydrology and hydrogeology of the site and the surrounding;
- Type of contaminants, concentrations, depth and extension of the polluted area.

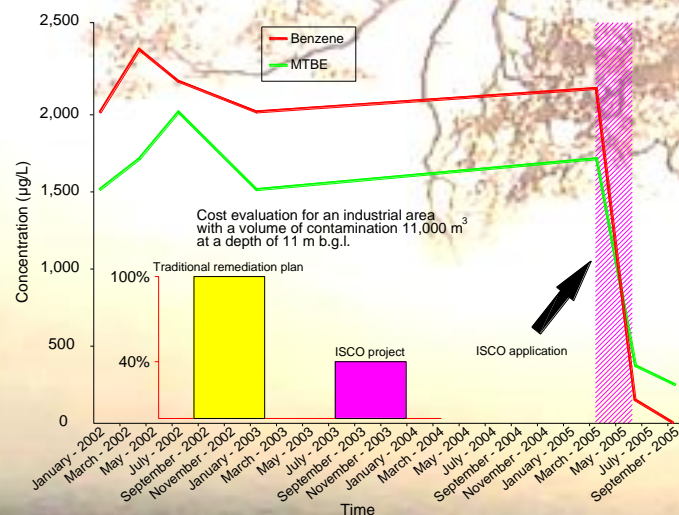
ISCO process is applicable mainly on organic contaminants and chlorinated solvents.

We are developing new applications for the remediation of contaminations of metals.

Soil matrix might be a complication for the injection activities due to a low permeability.

The plume extension, the thickness of the contamination and the concentrations of the pollutants, have to be evaluated carefully in order to determine the proper amount of chemicals and the best methodology to apply.

Time and costs of the project are more convenient compared to conventional reclamations systems like pump and treat or excavation and disposal, due to the fact that this method does not require any stop or delocalisation of the activities of the site.



## The Solution

A.S.T.C. REMEDIATION together with our American partner, MEC<sup>X</sup> LP, applies a safe and low-priced ISCO technique since over 15 years. In Italy this process for soil remediation is relatively new and we operate with successful results since 2006.

As our team is engaged in solving problems related to environmental aspects, we are able to assist you in developing the project, in handling with the local Authorities to obtain the project approval and in dealing with the reagents in all ISCO aspects, from the bench scale treatability testing to the full scale implementation.

## How we operate

After a first step of characterisation, to determine the concentrations and the position of the contamination, A.S.T.C. REMEDIATION and its team are able to give you a global overview of the different solution to apply.

After your approval, we start the bench tests and in the same time we develop the project and work together with you to find the best solution to present to the Authorities.

Of priority importance is a detailed knowledge of the geology and hydrogeology of the site. Moreover it is also important to determine the concentration and a 3D model of the contamination. This might seem to be only a cost, but to strike the target you need to find and define it.

Field activities are then very short and normally do not create any impediment to the common activities don on site.

## The targets

A.S.T.C. REMEDIATION provides the expertise required to assure that your reclamation will achieve the site-specific ranges in a timely and cost-effective manner.

We can operate at any depth with any weather condition and on almost every organic compound.

Our power is our transparency in what we do! You can look at all the activities done in office, in the laboratories or on the field, because we trust in our know-how and in the ISCO process we design. We have experience and we manage the works with suitably trained people. For this reasons, since we design and apply the ISCO, we've always achieved our aims.

Environmental remediation is a problem of time and of money. We don't want you to lose them and we don't want to lose them either.

