



7 Responses to Soil Contamination

Contamination of environment progresses unawares at first and, when it becomes apparent, a severe damage may have been inflicted already. One such example is oil contamination, in which a toxic substance flows into soil or underground water to contaminate the environment.

In Europe, the industry started to tackle this problem more than 10 years ago, and the Royal Dutch Shell group has developed various technologies to cope with the problem.

Showa Shell Sekiyu introduced a soil contamination risk assessment system (NERA, as described later) developed by the Shell group, in 2000, a few years before the enforcement of the Soil Contamination Countermeasures Law in February 2003, and has promptly responded to soil contamination.

Since 2001, Showa Shell Sekiyu has conducted a study in cooperation with the Petroleum Energy Center to contribute to developing a new examination method, and conducted a research and submitted a report on the status of soil contamination at the lot of the demolished Niigata Refinery, which caught fire in an earthquake that occurred in Niigata in 1964.

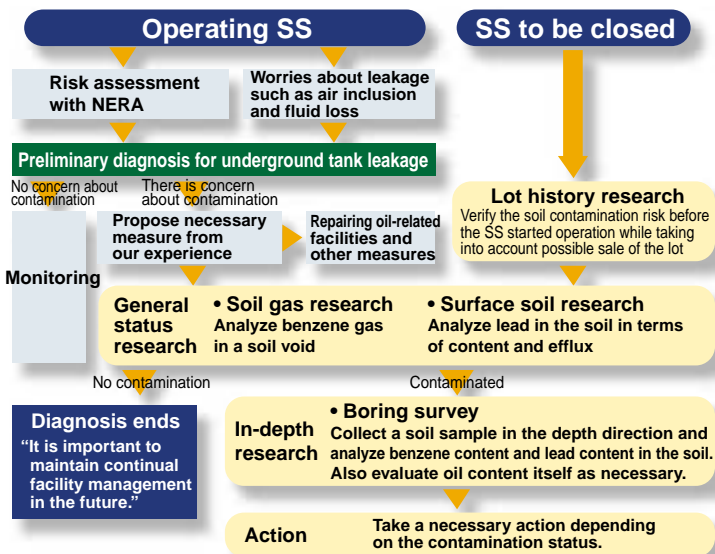
① Establishment of a Site Solution Group

In the end of fiscal 2004, Showa Shell Sekiyu established an organization (Site Solution Group) that will collectively address internal and external actions against the problem of soil contamination in order to cope with the problem more efficiently and systematically.

Once this group is in place, it will define company-wide, unified standards and procedures concerning soil contamination, and implement measures to reduce soil contamination risk at our approx. 1,200 service stations and other company-owned facilities.

In addition, based on NERA assessment, we have established a consistent risk management structure against leakage risk with underground tanks at service stations (SS), and been continually performing aggressive activities such as field research and purification.

Flow of Responses to Soil Contamination



② Management of Soil Contamination Risk with the NERA (Network Environmental Risk Analysis) System

During inspection of service stations contamination of soil with oil is sometimes found. In 2000, Showa Shell Sekiyu analyzed the risk of soil contamination at about 5,000 spots in its own service stations applying NERA (Network Environmental Risk Analysis), which was developed by Thornton Laboratory of the Shell Group, and notified the service station owners of the results of NERA analysis and provided them with pertinent advice. Thereafter, we have regularly updated risk analyses performed with NERA and carefully taken appropriate actions.

Not only do we use NERA for our own benefits, but also we provide this system to those companies who share the common issues with us, allowing them to use it.

While Showa Shell Sekiyu effectively manages the risk of soil contamination using NERA results, by 2003 we conducted field research at a total of more than 500 service stations out of those assessed to have high risk of soil contamination.

③ Field Research and Improvement Measures

In addition to risk assessment with NERA, Showa Shell Sekiyu conducts "leakage preliminary diagnosis" designed to find out soil contamination around service stations by collecting and analyzing water from leakage detection pipes buried around underground tanks of service stations. For those lots that may have been contaminated and those facilities to be closed, we also conduct "surface soil research" and "detail soil research."

In 2003 alone, we performed field research at more than 200 service stations and took improvement measures. For some of the contaminated lots, we hold explanatory meetings for residents in the communities after consultation with the local authorities to provide explanations of the contamination statuses and other circumstances.

In addition, as a preventive measure against soil contamination, Showa Shell Sekiyu replaces asphalt-coated tanks that have been used for more than certain periods.

In taking measures against soil contamination, Showa Shell Sekiyu not only implements them alone, but also effectively develops solutions in collaboration with associated companies. Specifically, Showa Engineering Co., Ltd. provides research and measures, and K.K. SVC Tokyo provides unique technologies for environmental analysis.

We provide our experience and know how that we have accumulated in the manner indicated above to those companies who have similar problems via our associated companies.

<Detail soil research:>
 Shoseki Engineering Co., Ltd.
 Designated Survey Institute
 Designation No. Env. 2003-1-502

<Soil contamination analysis:>
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 Registered Environmental Assessment Organization
 Registration No. Kanagawa Prefecture Governor No. 155