

Restoration of the Southern Storage Area



Background

The Southern Storage Area (SSA) was known locally as the 'bomb dump' as the site was originally used for munitions storage during the Second World War as part of RAF Harwell.

The seven-hectare area was taken over by UKAEA in 1946 and used for the storage and handling of chemical and low-level radioactive wastes produced during the nuclear research programme in which the site was then engaged. The SSA contained six small pits containing laboratory waste and five larger pits containing industrial wastes including beryllium contaminated materials. Low-level chemical groundwater pollution had also resulted from the smaller pits.

Earth-moving machinery in action during land restoration work



Objectives

To restore the SSA to a safe and clean condition. This was the last stage of a phased clean-up programme that began in the 1980s.



Key challenges

- To clear the site of chemical and radioactive pollutants, while remaining vigilant for an unknown quantity of military explosives throughout the project.
- To ensure that the operation was conducted to the most stringent safety standards as the SSA borders Chilton School.

Solution

The site was completely excavated in 300mm deep layers with intensive surveying to ensure any wastes were detected and removed. All of the pits were excavated inside double ventilated containment structures that prevented the release of dusts to the environment. Air sampling stations were established at nine locations around the perimeter and near the working zones to verify the effectiveness of the precautions.

A groundwater treatment plant was established to contain and remove very low levels of chemical pollution in the groundwater.

Procedures were agreed with RAF and Army Bomb Disposal teams to cover the discovery and safe disposal of munitions during the project. Munitions experts were included in the specialist project teams, which comprised staff from UKAEA and specialist contractors RWE Nukem and VHE Construction.

A transparent communications policy was adopted to keep the local community fully informed with all developments on the project.

Once the clean-up work was completed the area was landscaped for potential future recreational use.



TV personality John Craven (second from left) helped children from Chilton School to plant trees on the restored land

Outcome

- UKAEA successfully completed the biggest and most complex clean-up of its kind in the UK.
- From a situation in June 2000 when the SSA contained a unique mixture of pollutions and explosives, the area is now safe and clean.
- The levels of chlorinated solvents in the groundwater below the site were so low that the groundwater treatment plant was removed.
- Monitoring of local air, soils, road surfaces and groundwater confirmed that there was no harmful impact on the local environment.
- The transparent communications policy fostered an excellent relationship with the staff and pupils of Chilton School, culminating with the planting of a tree by every school pupil at a special ceremony on the newly landscaped site in September 2002.
- The unique nature of this decommissioning challenge required UKAEA to develop project teams with sub contractors that harnessed a wide range of experience and skills and which have subsequently set new standards in environmental restoration.

Key facts

- Timescales
- Total soil shifted
- Waste material removed

2 years planning and 2 years site implementation
Over 250,000m³
18,000m³ (including 230m³ of low level radioactive waste)

Wartime munitions uncovered

- 1,300 live practice bombs
- 7 German bomb casings
- 13,000 rounds of ammunition
- 30 land mines
- 30 flares
- 1 depth charge

Contact:

Nick Hance
Harwell Public Relations Manager
Tel: 01235 436909
Email: nick.hance@ukaea.org.uk