

Contaminated Land

STATS Consulting and Allied Technical Services for Contaminated Land

- Site investigation, monitoring and assessment of soils, groundwater and ground gas
- Risk assessment and derivation of site-specific remedial targets
- Remediation and waste management consents and licensing
- Specialist remediation contractor selection and contract administration
- Inspection and validation, and discharge of planning conditions

Site investigation and characterisation

Site characterisation is the first and most important step in contaminated land investigation. A comprehensive understanding of the ground conditions and contamination issues at a site is vital to the process of producing an accurate and cost-effective remedial strategy. This is typically best achieved by a phased approach to site characterisation, in line with recommended industry best practice guidance and British Standards. Hence, STATS' approach typically encompasses:

- A preliminary investigation, by means of desk studies, a site reconnaissance and non-intrusive site investigation techniques, including ground penetrating radar
- An intrusive site investigation, including integrated environmental and geotechnical techniques
- On-site and laboratory analysis of groundwater, surface watercourses and ground gases
- Qualitative and statistical analysis of contamination test data and spatial representations
- Development of a conceptual site contamination model (source-pathway-receptor methodology)



Risk assessment and derivation of site-specific remedial targets

STATS commences the risk assessment process with a qualitative screening exercise followed, if necessary, by a detailed, site-specific Quantitative Risk Assessment (QRA) in order to assess the actual level of risk posed by contamination at the site. The latter routinely involves the use of a range of assessment tools, including the following computer software packages:

- **CLEA UK** - Contaminated Land Exposure Assessment model
- **SNIFFER** - after the Scotland and Northern Ireland Forum for Environmental Research
- **RBCA** - the USA Risk Based Corrective Action model
- **ConSim** – developed on behalf of the Environment Agency for assessing the risk posed to groundwater by leaching contaminants



We liaise with the local authority's Contaminated Land Officer, the Environment Agency and other regulators throughout the QRA process to derive site-specific clean-up targets for soils and waters.

Design and value engineering

Once remediation objectives have been defined for a site, STATS undertakes an options appraisal, leading to the design of cost-effective remedial solutions, taking into consideration the need to minimise landfill disposal.



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Remediation design, management and verification

Recent changes to legislation, greater emphasis on risk-based remediation and rising landfill costs have all led to a move away from the traditional 'dig and dump' solution to contaminated sites and increasingly towards site-based remediation solutions using alternative technologies. STATS has the professional capability and experience to take remediation schemes through all their stages from initial site appraisal to final verification, including most critically:

- Derivation of site-specific remedial limits for human health and groundwater
- Remediation planning and designs for land and new structures, including gas protection measures
- Waste classification and obtaining Waste Management Licensing exemptions
- Identification of the most appropriate and cost effective remedial options for developers
- Preparing Remediation Method Statements / Action Plans
- Obtaining approvals from regulators such as the Environment Agency, Local Authorities and NHBC
- Project management for remediation schemes, including site attendance and monitoring services
- Gaining landfill tax exemption
- Assessment of specialist remediation contractors, tender preparation and appraisal
- Site works pollution control monitoring of dust, noise, vibration and water quality
- Validation testing including soil quality, ground gas, groundwater and watercourses
- Production of verification and validation reports

Remediation projects

STATS has built up an extensive track record of successful remediation schemes completed over the last fifteen years.

Sites: Closed landfill sites, gas works, industrial/manufacturing sites, transport depots, petrol filling stations, ordnance depots, defence sites, printworks, scrap yards, sewage treatment works, wharves, railway land.

Techniques: Controlled excavation and off-site disposal, accelerated attenuation by use of oxygen release compounds, dual phase vacuum extraction, on-site encapsulation, pump and treat.

