

## The Process of Contaminated Land Investigation

### Phase One:

#### Desk Study and Site Walkover

- *Appraisal of documentary material in line with BS10175:2015 and CLR11:*
- *Previous history of the site*
- *Adjacent land and features*
- *Geology, Coal Mining History, Hydrogeology and Hydrology*
- *Environmental sensitivity*
- *Development of Conceptual Site (and Exposure Model)*

### Phase Two: Intrusive Site Investigation

- Formulation of a suitable intrusive investigation strategy to:
- Selection of appropriate equipment and techniques for suitable retrieval of ground information and environmental samples
- Installation of ground gas and groundwater monitoring points
- Window Sampling, Shell & Auger, Rotary Techniques
- Additional investigation as appropriate

### Laboratory Testing and Analysis

- Appropriate chemical suites for soils and ground waters
- Additional and specific chemical analyses for environmental assessment and waste classification
- Composition of ground gases
- Geotechnical testing and Foundation Recommendation Report (where required)
- Initial Assessment for the suitability of Water Pipes
- Where applicable: suitable testing with regard to re-use of materials on site

### Detailed Quantitative Risk Assessments:

A range of risk assessment models can be run to assess the likelihood and magnitude of contamination and the impact posed to sensitive receptors, the assessments can include:

- Statistical Analysis
- Human Health Risk Assessment
- Groundwater Risk Assessment
- Hazardous Waste Assessment
- Refinement of Conceptual Model

### Other Investigation Types and Environmental Monitoring

There may be a requirement for other investigation types in poor ground, for example an investigation to determine if coal workings are present or indeed investigations to determine



the depth of good founding strata or the influence of groundwater levels with regard to particular foundation designs.

Some complex sites may also require assessments for the concentrations and flow rates of ground gases or groundwater level monitoring.

- Carbon Dioxide and Methane Monitoring
- Gas Concentrations and Flow Rates
- Groundwater Level Monitoring
- Assessments for the impacts onto concrete types (e.g. Sulfate levels)

Options Appraisal and Remediation Verification/Validation

Remediation statements, validation sampling, testing and reporting including overall validation report for the specified remedial action taken on the site. Further refinement of the Conceptual Model as required.

### Peer Review

Review, assessment and second opinion of existing reports on complicated sites given.