

ScotAsh Limited

Salford Gasworks Soil Remediation



QUEEN'S AWARD FOR ENTERPRISE WINNER 2008

Tar tank clean-up uses ScotAsh stabilisers



Tar treatment: Contractors excavate the tar tank at the Salford Gasworks before the tar-impacted fill is stabilised and solidified (above) using ScotAsh products. All pictures courtesy of Eneotech Environment Ltd



ScotAsh's stabilisation products have helped deliver a specialist soil treatment project at the site of a disused gasworks in Salford, Greater Manchester.

Our PFA-based environmental binders were chosen to remediate 1500 cubic metres of grossly coal tar impacted fill.

The contaminated fill was excavated from a tar tank at the Salford Gasworks and successfully remediated ex-situ.

ScotAsh's cementitious binders harness the unique characteristics of Pulverised Fuel Ash.

PFA has a glassy structure, with spherical particles – the result of pulverised ash being burned at extreme temperatures – that can immobilise contaminants within a solid matrix.

Our stabilisation and solidification products have been used for many soil and sludge treatment projects throughout the UK.

Industrial waste management specialist Eneotech Environment Ltd (EEL) sourced 200 tonnes of a cement-PFA blend supplied pre-mixed by ScotAsh from their Fife base.

EEL was subcontracted by BAM Nuttall Ltd who was carrying out the gasworks site clean-up on behalf of the property arm of a major UK utility company.

The remediation of the historic site, which closed in the 1990s, began in July 2011.

A key project was the statutory remediation of the tar tank which, over time, had deteriorated, allowing coal tar derived chemicals to contaminate an aquifer 70m below ground.

The soil treatment carried out comprised bioremediation of approximately 800m³ of moderately contaminated soils and the cement stabilisation of 1000m³ of grossly coal tar impacted fill.

Prior to commissioning the ex-situ stabilisation process, EEL produced a concise report on pilot phase stabilisation testing.

Soil samples were excavated during a trial

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To contact ScotAsh please telephone, fax or visit our website

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A Lafarge ScottishPower Joint Venture

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> COST BENEFITS

ScotAsh environmental binders are a sustainable alternative to conventional “dig and dump” remediation. Benefits include:

- Reducing materials to landfill (and landfill tax savings)
- Considerable reduction in lorry movements to remove spoil and bring in new materials
- Reduced environmental and safety impacts from heavy vehicles, including lower emissions of CO₂ and NO_x, reduced fuel usage and enhanced road safety.

pitting exercise and a variety of cement-PFA mix ratios were tried and evaluated.

The preferred mixing ratio then had to be checked to ensure it could demonstrate durability over time and meet leaching protocols.

The soil treatment was carried out in two phases. First, a low cement/high PFA mix was added directly to the grossly-impacted tar tank fill. This stabilised and solidified the high volume of free-phase tar within the fill that, otherwise, would have made it impossible to excavate and screen.

The second phase involved the ex-situ treatment of the fill using a specific blend of EnviroCheM 50, batched at 20% to a known mass of soil, in line with the successful pilot phase mix.

Validation samples proved a successful mix had been completed and EEL produced a detailed verification report detailing all works and summarising laboratory testing.

Project Manager Peter Howland explained that EEL had used the ScotAsh product for the first time for the technically-challenging project at Salford.

Mr Howland said: “The product was blended offsite and delivered ready for us to use. It meant we did not have to worry about dealing with separate PFA and cement.

“The cement and PFA mix forms a pozzolan crystal that is an important feature for immobilising the contamination, meaning that it is not available to be leached. In this case, it means the tar tank chemicals no longer form a risk to the groundwater.

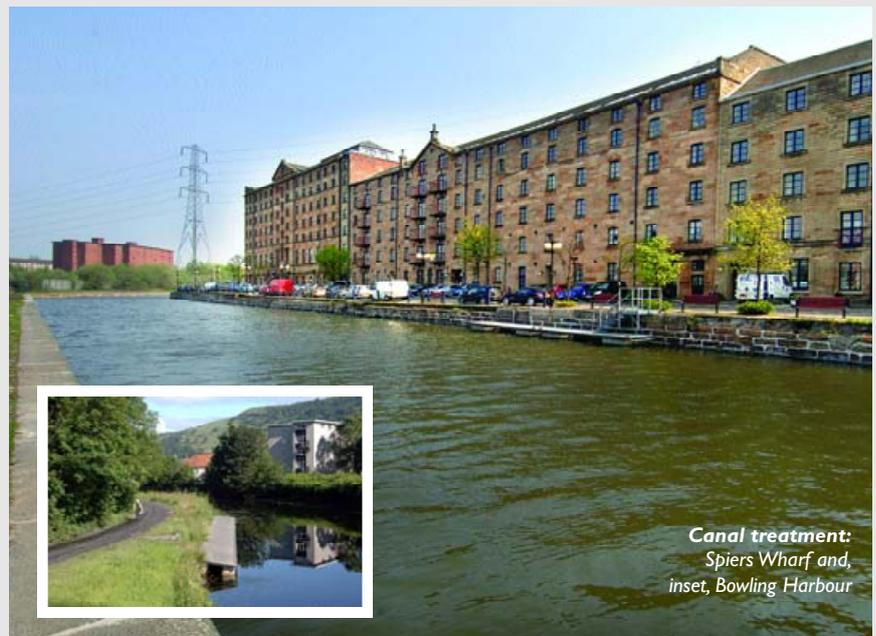
“PFA is also cheaper than cement – it’s better to use as much PFA as possible. There is a cost saving by not disposing of the material to landfill at £100 a tonne – this saved £200,000 at Salford.”

EEL provides a wide range of remediation techniques to enable the redevelopment of contaminated land and has worked on several similar reclamation projects.



Perfect blend: the ScotAsh PFA-cement blend arrived on site at Salford pre-mixed and ready to be used

> SOME OF OUR OTHER STABILISATION PROJECTS



Canal treatment:
Spiers Wharf and
inset, Bowling Harbour

ScotAsh has worked with Strathclyde University to develop a solution for stabilising tributyl tin in harbour sludges on Tyneside and has contributed to work by the Contaminated Land Assessment and Remediation Research Centre (CLARRC) on the treatment of mercury and other Persistent Bioaccumulative Toxic pollution.

Digit Site Services Ltd were contracted by British Waterways to carry out dredging works in an unused section of the Forth & Clyde Canal between Spiers Wharf and Port Dundas, Glasgow. The project involved

de-watering the canal and excavating around 7,000 m³ of sludges that were contaminated with diesel and heavy metals. The sludge was stabilised using 747 tonnes of EnviroCheM C25, a blend of cement and PFA

ScotAsh products were used by Land and Water Scotland on a Balfour Beatty Construction Ltd project for British Waterways. Nearly 4,000 tonnes of canal dredgings containing chromium, lead, zinc and TPH on a section of the Forth & Clyde Canal at Bowling Harbour, Dunbartonshire, were stabilised using Trojan cement.

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