

SOUND SCIENCE + DEFENSIBLE SOLUTION = CLIENT + SOCIETAL BENEFITS

Our team of experts has an unenviable reputation for delivering value through the application of cutting-edge science and innovation. The pen pictures below illustrate how we can save money, increase asset value, improve regulatory confidence, resolve contractual and common law conflict, help prevent miscarriages of justice, ensure public health protection, reassure stakeholders and help our business partners by sharing our knowledge.



Sound science:
Defensible decisions

LQM can:

- **Deliver better risk assessment**
 - money saved
 - unnecessary remediation avoided
- **Resolve contractual & common law conflict**
- **Reduce liability and increase inherent asset value**
- **Deploy better qualified staff and advanced analytical approaches**
- **Deploy better methods to reduce uncertainty**
- **Increase regulator acceptance and deliver public acceptance**
- **Develop site-specific soil screening values to minimise remediation requirements while increasing regulatory confidence**
- **Ensure public health protection and prevent miscarriage of justice**

What was the problem? Former filling station adjacent to sensitive controlled waters receptor with the underlying un/saturated zones impacted by historical hydrocarbon leakage. Several consultants had provided commentary, specialist services and opinions on conditions with no resolution to regulatory approval and ongoing legal conflict.

What did LQM do? Acting as an independent consultant, LQM provided a thorough review of the relevant information to develop detailed Conceptual Site Models, re-assessed conditions at the Site and advised whether remediation measures were needed. Specifically the potential risks to people and groundwater from the presence of any hydrocarbons were assessed. The legislative regime (Ireland) was outside of the UK context, but we successfully applied current UK good practice.

What benefits did LQM deliver? LQM demonstrated negligible or minimal risk to human health, showed river quality was not affected, identified the main chemical and physical hazards to construction workers and provided recommendations to mitigate residual risks. Additional remediation or legal conflict was not required allowing the site to be sold and developed for a commercial use to benefit the local community.

Learning Outcome? Independent communication of your data gains confidence and resolves legal conflict.



What was the problem? A large international industrial complex was required to implement a closure programme taking due regard of potential environmental issues, for an area of ~40 hectares that had been used for the disposal of ~1.5million tonnes of solid and liquid residues and oils. The greatest risk was groundwater contamination impacting nearby surface waters.

What did LQM do? Our independent and impartial appraisal of the financial risk assessment considered whether international scientific and engineering good practice had been employed in the environmental risk assessment.

What benefits did LQM deliver? Our findings supported the company's management in selecting the most appropriate management option in a much more timely manner thus saving money. Our work also increased regulatory confidence in the overall approach adopted.

You can learn more about what we do by visiting our website: www.lqm.co.uk. If you would like to find out more about how LQM can benefit your organisation please email Dr Paul Nathanail at paul@lqm.co.uk or call us on 0115 7484080.

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What was the problem? A flagship gas works regeneration had encountered a series of regulatory issues. There were multiple reports for different areas but no overall understanding of the area as a whole.

What did LQM do? LQM evaluated the data on a GIS platform and created conceptual site models for each area. A review of the logs revealed a fundamental misinterpretation of the subsurface strata, which was the basis for regulatory resistance to the proposed remedial solutions. A review of groundwater data also revealed other inconsistencies. LQM advised on the actions needed to address these inconsistencies, and developed a strategy for further works. All activities were anchored back into the relevant legislation for that part of the UK.

What benefit did LQM deliver? The conceptual models allowed all parties to have a clear understanding risk in each area. LQM's work addressed the uncertainties and ultimately allowed agreement with regulators regarding the remediation requirements for each area.



What was the problem? A residential development on reclaimed land was suspected of being contaminated land under Part 2A of the Environmental Protection Act 1990. Site investigation works were undertaken on behalf of the council.

What did LQM do? Following a review of past work that recommended multi-million pound remediation, LQM commissioned extensive bioaccessibility testing that informed site specific soil screening values that were used to show the site was not a danger to public health and so no remediation was needed.

What benefits did LQM deliver? LQM demonstrated remediation was unnecessary, saving an estimated £7-30 million. Mortgage lender confidence was restored and the local housing market restarted.

What was the problem? A former landfill (now a works depot) potentially contained buried chemical drums, including formaldehyde and pesticides, and may pose risks to a nearby river. There was limited subsurface information due to difficult drilling conditions and existing groundwater and gas monitoring data was of poor quality.

What did LQM do? LQM reanalysed existing reports to produce a conceptual site model. A carefully designed site investigation including installation of new boreholes that targeted the relevant strata using advanced drilling techniques suited to the geology. This allowed defensible and consistent monitoring data to be collected. This demonstrated that only one groundwater contaminant exceeded relevant water quality standards and further risk assessment demonstrated that it did not pose an unacceptable risk to the river.



What benefit did LQM deliver? LQM's understanding of the problem and good site investigation design allowed robust decision to be made with confidence. LQM also took the lead in a successful meeting to communicate the issues with local stakeholders.

Our Capabilities:

- **Full-range of land contamination services including:**
 - **Phase 1 historical review**
 - **Phase 2 Site investigation and risk assessment**
 - **Phase 3 options appraisal**
- **Peer review services**
- **Undertake sustainable remediation assessment**
- **Audit projects claiming to represent sustainable remediation**
- **Contribute to value engineering of proposed, or ongoing, remediation**
- **Expert witness services**
- **Contract research**

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