



Project Profile

Sector: Contaminated Land

Project: Human Health Risk Assessment and Risk Management for Proposed Allotments

Client: Local Authority

Period: June to September 1999

Due to development opportunities on existing allotments, a Local Authority was seeking to relocate allotments on a new site. There was concern whether the proposed site was suitable due to elevated concentrations of arsenic detected in a limited site investigation.

LQM carried out a desk study, devised a sampling strategy, carried out the site investigation and produced a site specific risk assessment for human health on the site. This showed the site was safe under certain conditions. LQM assisted with devising a management plan to ensure it remained so.

The likely source of the elevated arsenic was past industrial uses in the vicinity of the site. The site investigation confirmed elevated concentrations of arsenic with respect to ICRCCL. The risk assessment indicated that the site in its current condition was safe. However, it was likely that the source would be modified to increase the naturally low pH; allotment gardeners were expected to lime the ground. An increase in pH could increase the bioavailability of arsenic resulting in increased uptake by plants. The risk assessment was carried out at several pHs and the results showed that at pH values less than pH 7.5, the site would be safe for its proposed use.

Consideration was then given to whether it was possible to control the pH so that it did not exceed pH 7.5. Soil/Agriculture Scientists were consulted; they indicated that the optimal pH range for allotment gardens was pH 6 to pH 6.5 and advised on optimal liming rates to achieve this.

Finally, it was necessary to ensure that the liming recommendations were carried out. LQM advised the Local Authority on risk management strategies to put in place. These included training individual allotment holders, supervision by the Allotments Officer, a testing program to monitor that the pH was actually being controlled and formal reviews of the results to ensure long term maintenance of the remediation strategy.