

## OVERVIEW:



**Soil separation is a key part of any ex-situ soil remediation scheme. The process entails segregation of impacted soils from non-impacted soils, and soils with differing levels or nature of impact from each other. This starts with the excavation process, identifying and separating the various strata 'at source'. Further separation can be used to remove boulders, concrete etc that might not need the same level or type of treatment as the impacted soil.**

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## OUR ADVANTAGES:



- Volumes of soil for treatment or disposal can be reduced
- Reduced remediation costs
- Reduced project timescales
- Contaminated material can be treated more readily if it is not cross-contaminated with other soil during excavation work and treatment.
- Non-contaminated material can be re-used for backfill without treatment, if it meets the re-use criteria.
- Soil segregation and separation, if undertaken correctly, can be classed as a treatment activity prior to off-site disposal.

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## TECHNIQUE:

Good ground investigation prior to excavation is important to help predict where the various types of impacted strata will be found. The ground investigation could be undertaken in advance of site works or remediation contract award, or as part of the main remediation works themselves. Boreholes – cable percussion or dynamically sampled – cause minimum disruption at the surface and provide good vertical profiling of strata. Trial pits and trenches can be very cost effective and provide good indicators for horizontal extent of contaminated strata.

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## TECHNIQUE:



Excavation requires a good operator with a steady hand (appropriate operator experience and qualifications are of course also essential). The operator is assisted by a banksman or geo-environmental professional (with suitable experience, training and qualifications), who identifies the layers and types of contamination and guides the excavator operator. Visual and olfactory assessment is used to make the on-site decisions as frequently as necessary – this can be as frequent as on a bucket by bucket basis if necessary. Other site tools such as PID testing, XRF testing and on-site lab analysis can be used.

Post excavation processing can be used to further reduce the mass and volume of material to be treated or disposed of. Screening can be used to remove oversized material such as concrete, rubble and stones of boulders. Smaller volumes can be treated with excavator mounted riddle or screening buckets. Although not strictly segregation, excavator mounted powered processing buckets (such as 'Allu' or 'Remu' buckets) break up lumps in segregated soils to improve treatability or as part of the treatment process.