



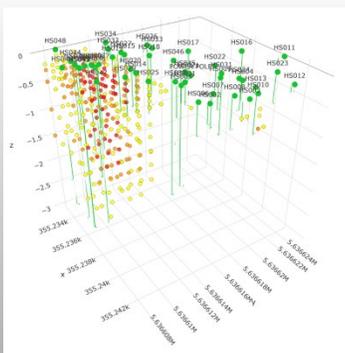
Remediation Excavation - Use Case

Background:

Excavation of soil is one of the most common techniques used during remediation operations. Typically, this is part of a process where clean soil is then used as backfill and the contaminated soil is taken to an appropriate disposal site.

Depending on the location of the site, and the type of contamination, the cost for removal of the contaminated soil can vary but as a general guideline \$135 per ton can be used. If the soil has to be trucked further, then these costs can increase substantially.

Typically, an excavation plan is based on the results from a Phase II Environmental Site Assessment. The anecdotal experience in practice is that the site often does not conform to the Phase II ESA plan and field changes take place. How far to excavate in a given direction to reach the limits of contamination is often a major field concern. Historical field screening tools, such as Petroflag and Eagle Sensor, have been shown repeatedly to not produce reliable results due to significant limitations in the technology. The alternative is to rely on traditional lab-based analytical for samples. While this can be done on a rapid turnaround, the minimum time is typically 24hrs for rushed samples and the number of samples sent for this process is still low in volume.



Impacts of Current Practice:

- Inability to actively monitor site conditions during operations
- Standby time for excavation crew and equipment “yellow iron”
- Excessive over-dig of site to “make sure”
- Remobilization if standby time is not approved

How Maapera Changes Things:

Using Maapera’s Rapid Soil Analysis System, you can now scan soil samples during operations in near real time. This can ensure that you are not over digging a site or chasing a seam of soil that you “feel” is contaminated. It can also mean that you can actively manage the changes in an excavation plan with supporting data.

Cost Savings:

Avoiding standby time = \$4,000 - \$20,000 depends on site

Avoiding over dig (20m x 20m x 6m site) = \$10,000

Smart Sample Selection for Lab = \$300

Avoiding Remobilization = \$5,000 - \$35,000 depends on site

Total Cost Savings:

\$19,300 - \$65,300

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