

# APPENDIX 5

## Sampling Procedures



## Appendix 5 Confirmation Sampling Procedures

Arcadis U.S., Inc. (Arcadis), formerly Malcolm Pirnie, Inc. (Malcolm Pirnie), implemented confirmation sample collection and handling procedures in accordance with its letter to the Texas Commission on Environmental Quality (TCEQ) dated December 7, 2012 regarding East Borrow Source Environmental Sampling Procedures for Interim Channel Backfill and East Category I Landfill Removal Plan (Malcolm Pirnie 2012) and its letter to TCEQ dated April 9, 2012 regarding x-ray florescence (XRF) Analysis for Metals Soil Samples (Malcolm Pirnie 2012).

Composite confirmation samples were prepared from samples taken within a 50 ft by 50 ft grid overlay. Within each grid square, Arcadis collected soil from five equally spaced locations (one at the grid center and four taken at the midpoint of a diagonal line drawn to each corner). Arcadis transported this sample material to the project trailer. In the project trailer, Arcadis dried the samples, if necessary, and combined the samples to make one composite sample for each grid square. Arcadis used a No. 10 sieve to optimize sample homogeneity. Arcadis then returned the sieved soil to the Ziploc bag.

Arcadis placed the Ziploc bag on the stationary XRF analyzer stand with the sample surface flat against the detector window. For each sample, three XRF measurements were performed, with each measurement directed at different areas within the Ziploc sample bag. The three measurements were averaged to take into account sample variability. Arcadis recorded the results for target analytes (usually arsenic and lead) in the log book.

Arcadis then stored the Ziploc bags of soil samples in a refrigerator in the field trailer until ready for shipment to the analytical laboratory, perhaps that day but typically within a week depending on the number of samples collected during a given time period. Then Arcadis would complete the chain-of-custody form, package the samples in a cooler for shipment, and the transport the cooler to FedEx for overnight shipment to the analytical laboratory and analysis and Methods 6020B and 7471A.

Arcadis collected field duplicates of the confirmation soil samples during preparation for shipment to the laboratory. An aliquot of the parent sample would be collected and placed in a separate Ziploc bag and assigned a sample identification code that included that day's date (rather than the sample collection date).

Upon receipt of laboratory results, field staff compared these results to Texas Risk Reduction Program protective concentration levels for direct contact with residential soils ( $T^{ot}Soil_{Comb}$ ) in accordance with TCEQ's letter dated April 18, 2014 regarding proposed screening levels for East Property Category I, II, and III Material Excavations and Removals, dated February 19, 2014 to verify that metal concentrations in soils within the grid square met the respective PCLs.