The objective of this paper is to demonstrate to accountants the complexity of providing cost data for and about decisions in an area that has multi-disciplinary and public interest aspects; we present a model for the determination of costs for decisions concerning the choice among alternate technologies for the remediation of contaminated groundwater. We also address the manner in which such decisions are traditionally made and the resulting impact on the information available to regulators, the public and researchers. This paper is based on fifteen years of research and consulting experience with respect to environmental costing generally and remediation technology choice decisions specifically. We have collaborated with senior hydrogeologists and geochemists at the University of Waterloo and a major firm of ecological consultants. It is in the public interest that contaminated groundwater be remediated, and that it be remediated efficiently, at the least cost. Efficient remediation solutions require that the parties to remediation decisions – regulators, the responsible parties, the consultants, and the remediation industry – make decisions appropriate to the part they play in groundwater remediation. By nature, remediation decisions require a wide range of knowledge, expertise and information, and they are made under conditions of high levels of various kinds of uncertainty: scientific, legal, regulatory, technological, societal expectations, and future cost estimation (because of the length of time that can be involved). It would seem to be important in the public interest that a “good” and widely accepted measure of the cost of remediation efforts be available to forecast costs and to judge the efficiency of completed efforts. Unfortunately, the complexity of the matter has to this point left such a measure beyond our reach. Efforts to calculate the cost per site or the cost per unit of contaminant have resulted in the conclusion that the costs are so heavily influenced by the characteristics of the site – ‘site specific’ – that such per unit costs are not a viable solution. The motivation for the paper is to demonstrate the complexity of the matter which is founded in the high levels of uncertainty and the attendant need for the diverse sources of data and expertise needed to address a single decision properly.