

# Using the Contingent Value Approach for Natural Resource and Environmental Damage Applications

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**Contingent valuation, a technique to estimate value, has been used by natural resource and agricultural economists for the last 30 years. When Congress passed the Oil Pollution Act of 1990, trustees were authorized to estimate damages for natural resources, and the Secretary of Commerce for Oceans and Atmosphere (NOAA) was given the responsibility to develop appropriate damage assessment techniques. One technique that the NOAA has promulgated is contingent valuation. This article discusses CV, NOAA's recommendations for its use, and a complementary survey technique called "conjoint measurement." In addition, a case study shows the results of several independent methods for estimating damages.**

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**O**ne of the strengths of the appraisal process is the three approaches generally used in valuing real estate. When independent data is used in the three approaches, the reliability and validity of the final estimate of value is substantially more defensible and believable than if only one or two approaches, or if interdependent data is used. Therefore, it would seem only reasonable that if a fourth independent valuation approach could be developed, the reliability and validity of value estimates would be even further enhanced.<sup>1</sup>

Often, one profession (i.e., the appraisal profession) can obtain substantial benefits

from processes used by another profession, such as quantitative methods (multiple regression, for example) from the statistics profession, or survey research (questionnaires) from the market research profession.

In the market research profession are various stages to the research process that are very much like the various steps in the appraisal process. First, one formulates the problem, and then determines the research design; next, the professional designs the data collection method and forms before designing the sample and collecting the data. Finally, he or she analyzes and interprets the data, and then prepares the research report.<sup>2</sup>

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1. Bill Mundy, "The Scientific Method and the Appraisal Process," *The Appraisal Journal* (October 1992): 493-499.

2. Gilbert A. Churchill, Jr., *Marketing Research: Methodological Foundations* (Chicago, Illinois: Dryden Press, 1991), 69.

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The various methods the appraiser might use in valuing a property would be part of the research design phase. Obviously, there are circumstances when a particular valuation approach is not appropriate. For example, using the income approach is not appropriate in valuing nonincome-producing property. There are also situations where more than one of the standard appraisal approaches (or even all) may not be appropriate. An example is when passive use value or non-use values (benefits) must be estimated.

Passive or non-use values (benefits) are the utility that people realize "from an amenity for various reasons other than their expected personal use."<sup>3</sup> For example, a person does not have to visit a recreational site or a unique tourist attraction (such as an archaeological site) for that site to have utility. In contrast, use values indicate that people are physically affected by the property in some way, such as if they stayed at a lodging facility or paid an entry fee to an event.

Passive use or non-use value is the utility that a person realizes from the awareness that a good or service exists and his or her significant others (for example, grandchildren) have the opportunity to use it. Often the good is scarce, such as an endangered species habitat. The relative degree of utility and scarcity of a good or service can usually be measured by transactional data. When the data is limited or nonexistent, other measures that reflect value are often used by appraisers to estimate what the good or service would sell for (its value). Estimating the depreciated value of improvements as a part of the cost approach is an example of an appraiser's use of a nontransactional method to help him or her estimate value.

Numerous methods are used to estimate value. Real estate appraisers use the cost, sales comparison, and income approaches. Economists rely on the hedonic,<sup>4</sup> travel cost,<sup>5</sup> and contingent value methods. Market re-

searchers often use conjoint measurement to estimate value.

Many types of value can be estimated, including the standard types familiar to real estate appraisers: market, investment, and insurable. Those that do not appear in the appraiser's lexicon, that is, *The Dictionary of Real Estate Appraisal*,<sup>6</sup> include the following values: passive use and non-use, option, bequest, and existence.<sup>7</sup> It is important that the appraiser define and explain the type of value being estimated.

Contingent valuation, which relies on survey research techniques, has been developed by economists, most notably agricultural and natural resource economists, to value goods that have no, or a limited, market. Today firms use conjoint measurement, a form of tradeoff analysis,<sup>8</sup> in conjunction with contingent valuation.

## CONTINGENT VALUATION METHOD

The *Federal Register* defines contingent valuation method (CV or CVM) as:

A survey-based approach to the valuation of non-market goods and services, that relies on a questionnaire for the direct elicitation of information about the value of the good or service in question. The value obtained for the good or service is said to be contingent upon the nature of the constructed (hypothetical or simulated) market and the good or service described in the survey scenario.<sup>9</sup>

Contingent valuation and conjoint measurement are, therefore, truly independent valuation methods. They rely on the survey research process to estimate values rather than transaction- and market-based data, as is typically found in the traditional three approaches. In the *Exxon Valdez* oil spill in Prince William Sound, Alaska, it was necessary to estimate the impact that the oil had on natural resources. Some of those natural resources were owned by the State of Alaska (principally the intertidal area). The State of Alaska applied CV to assist in quantifying

*Contingent valuation has been developed by economists to value goods that have no, or a limited, market.*

3. Robert Cameron Mitchell and Richard T. Carson, "Using Surveys to Value Public Goods: The Contingent Valuation Method," *Resources for the Future* (1989): 63.

4. The hedonic method assumes that the price of a good or service is a function of its different characteristics. Multiple regression is a hedonic method.

5. The travel cost method in its simplest form measures the access cost of users to a specific site (i.e., parks). More complex forms include the value of aesthetics (i.e., water quality and scenery) and ecosystems (naturalness and diverse wildlife habitat).

6. Appraisal Institute, *The Dictionary of Real Estate Appraisal*, 3d ed. (Chicago, Illinois: Appraisal Institute, 1993).

7. See Mitchell and Carson and a subsequent section in this article for a discussion of option, bequest, and existence values.

8. Churchill, 464-481.

9. *Federal Register*, v. 59, no. 5 (January 7, 1994) Proposed Rules: 1142.

*Firms have used contingent valuation and tradeoff analysis to value wildlife habitat, parks, sites with significant archaeological merit, and real estate affected by various types of contamination.*

damages incurred by the natural resources.<sup>10</sup> CV has also been applied in measuring the nonmarket value of agricultural lands,<sup>11</sup> environmental damage,<sup>12</sup> and the impact of distance on value from disposal sites.<sup>13</sup>

Firms have used contingent valuation and tradeoff analysis to value wildlife habitat, parks, sites with significant archaeological and paleontological merit, and real estate affected by various types of contamination. The type of value estimated can vary, such as market value or passive use value.

CV has been used for about 35 years. It was originally employed by economist Robert K. Davis to estimate the benefits of outdoor recreation in the Maine backwoods. Davis interviewed a sample of 121 hunters and recreationalists to quantify the benefits of a particular recreational area. In 1967, economist Ronald Ridker used CV to estimate how much people would pay to avoid "dirt and soot" from air pollution in the Philadelphia and Syracuse areas.<sup>14</sup>

#### BASIS FOR CV

CV is but one of numerous survey methods. A second survey research method, conjoint measurement, can also be used to quantify real property values. Surveys such as demographic and socioeconomic polls have been used since the beginning of the U.S. Census in 1790 to quantify value. The *Oil Pollution Act of 1990* (OPA)<sup>15</sup> required then-President George Bush, acting through the Undersecretary of Commerce for Oceans and Atmosphere (NOAA), to promulgate regulations for the assessment of natural resource damages resulting from oil discharges. The OPA allows trustees to assess damages incurred

by natural resources and/or services from oil leaks or spills. The assessments are intended to provide a process for determining proper compensation to the public for injury to natural resources.<sup>16</sup>

David Bromley lists six issues that must be addressed in any good CV study:<sup>17</sup>

1. Who is the population whose values will be studied?
2. How will the product to be valued be defined?
3. What payment vehicle will be used?
4. How will CV questions be posed (in a bidding game format, or using some other technique)?
5. How will the data be analyzed?
6. What kind of supplemental data will be obtained?

Many of these issues are addressed in two critical reviews of the CV method by a panel of leading economists organized by NOAA and co-chaired by two Nobel laureates, Kenneth Arrow and Robert Solow. The panel's evaluation of CV appeared in the January 15, 1993, *Federal Register* and January 7, 1994, *Federal Register*. The final rule, published in January 1996, stated, "A variety of valuation procedures are available for calculating gains or losses to natural resources, including the travel cost method, factor income approach, hedonic price models, models of market supply and demand, contingent valuation and conjoint analysis."<sup>18</sup>

Some of the advantages of CV are discussed by Carl Samples, Marcia Gowen, and John Dickson.<sup>19</sup> According to the authors, CV is useful, first in researching value situations where the non-use components of societal

10. The State of Alaska and the U.S. Government jointly settled with Exxon for \$1 billion. See George Frost, "Judge Okays Oil Spill Settlement," *Anchorage Daily News* (October 1, 1981): A10.

11. John M. Halstead, "Measuring the Nonmarket Value of Massachusetts Agricultural Land: A Case Study," *Northeast Journal of Agriculture and Resource Economics*, v. 14 (1984): 12-19.

12. Alan Randall, Berry C. Ives, and Clyde Eastman, "Bidding Games for Valuation of Aesthetic Environmental Improvements," *Journal of Environmental Economics and Management*, v. 1 (1974): 132-149; Mark A. Thayer, "Contingent Valuation Techniques for Assessing Environmental Impacts: Further Evidence," *Journal of Environmental Economics and Management*, v. 8 (1981): 27-44.

13. V. Kerry Smith and William H. Desvousges, "The Value of Avoiding a LULU: Hazardous Waste Disposal Sites," *Review of Economics and Statistics*, v. 78, no. 2 (1986): 293-299.

14. Mitchell and Carson, 9-11.

15. *Oil Pollution Act of 1990*, 33 U.S.C. 2701.

16. *Federal Register* (January 7, 1994): 1062

17. David W. Bromley, ed., *Natural Resource Economics: Policy Problems and Contemporary Analysis* (Boston, Massachusetts: Kluwer Academic Publishers Group, 1986), 117.

18. *Federal Register*, v. 61, no. 4 (January 5, 1996): 453.

19. Carl C. Samples, Marcia M. Gowen, and John A. Dickson, The Validity of the Contingent Valuation Method for Estimating Non-Use Components of Preservation Values for Unique Natural Resources. Paper presented at the 1986 annual meetings of the American Agricultural Economics Association, Reno, Nevada, July 27-30, 1986.

value are hypothesized to be large in relation to direct and indirect use value components. An example is a Native American burial ground with a significant archaeological component and acquired by the federal government to be maintained in its existing state for the public's benefit. In this case, the resource would be retained for ethical reasons (existence value) as a resource for future generations (bequest value).

Existence value is synonymous with non-use value. People obtain utility from an amenity for reasons other than their personal use of it. An example is knowing that the centuries-old Native American rock art panel in Arches National Park, Utah, will be forever preserved from human damage. Bequest value exists when someone obtains utility knowing that a good or service will be held for the benefit of others (family and friends) in the future. Option value is the amount that people will pay for a contract that guarantees them the opportunity to purchase a good for a specified price at a specific point in the future.<sup>20</sup>

CV is also useful in situations in which the direct and indirect uses of resources, for both consumptive and nonconsumptive purposes, are severely restricted. A good example here is wildlife habitat, principally bird nesting areas, acquired by the federal government in the Pribilof Islands of Alaska. It would be very difficult to measure this habitat using direct comparables or surrogates for market methods such as travel cost or hedonic pricing because of access and accommodation restrictions on St. Paul Island.

## CRITICISMS

As with any relatively new valuation technique that is not completely understood and where a solid foundation and associated guidelines for using the technique have not been established, it is open to criticism. This is especially true since CV has been used to estimate damages in some very large litigations such as the *Exxon Valdez* oil spill. A report prepared by Rebecca W. Thompson lists eight common criticisms of CV.<sup>21</sup>

**Monopoly money.** The reported willingness to pay to improve or protect natural resources is significantly greater than actual

willingness to pay. It has been found that expressed willingness to pay is higher in a hypothetical situation than when willingness to pay meant an immediate cash payment. Since there is no real downside (i.e., paying the money), the hypothetical "willingness to pay" often results in overestimation.

**Extreme hypothetical nature of the questions.** Most people are unfamiliar with natural resources, how natural systems work, the effects of oil and other spills on natural systems and wildlife, and valuing natural resources.

**Embedding.** CV produces results inconsistent with assumptions of rational thought. Research has found that the value given for part of a resource was essentially the same as for the entire resource. In other words, 2,000 oily ducks have the same value as 200,000 oily ducks.

**So many spills—so little money.** Responses to CV studies seem unrealistically large in view of the many problems for which individuals might be asked to contribute money. Also, few CV studies remind respondents of the budget constraints under which they must live. While it might be conceivable that a household would be willing to pay \$5 or even \$50 to mitigate a spill's impact on their own or surrounding properties, it is not reasonable to assume that the same household would pay this amount to mitigate the number of spills that affect natural resources. Respondents also failed to consider how much disposable income they have to allocate to such public and private problems. For example, when respondents are asked about the spending they would forgo to fund natural resource mitigation, their willingness to pay is promptly adjusted downward.

**Respondents' pre-existing bias.** CV studies rarely provide sufficient information to respondents and cannot adequately control the respondents' acceptance of the hypothetical "facts" as given. For CV to elicit useful information, the respondents must be told enough about the scenario (such as, what are the long- and short-term effects on natural systems), and must accept the scenario as given rather than relying on their own preconceptions (for example, "the government does not know what it's doing," "big busi-

20. Mitchell and Carson, 70.

21. Rebecca W. Thompson, Expert Testimony on "New Age" Numbers, the Use of Contingent Valuation Methodology to Assess Natural Resource Damages. Working Paper, Corwell & Moring, Washington, D.C.

ness should pay,” or “environmentalists always exaggerate harm”). If respondents have such preconceptions, they are perceiving the question differently from the study’s intention.

**Funny money.** CV studies may improperly determine the extent of the “market” when generating aggregate estimates of damage. What is the appropriate multiplier, all households in the United States or those in the immediate area? When the respondents’ individual willingness to pay \$20 or \$50 is multiplied by the 100 million households in the United States, the outcome is frequently up to \$1 billion. These figures do not appear to be logical.

**Warm glow.** The respondents in the studies may be expressing their own public support for (or the “warm glow”) associated with charitable giving rather than indicating their willingness to pay for the program in question.

**Cost and difficulty of a good CV study.** Both NOAA’s CV panel and NOAA’s discussion of CV in its proposed method for establishing rules established standards for reliable CV studies to avoid such criticism. However, the standards may require more money and expertise than trustees are willing to use.

Another document providing a much more exhaustive analysis and criticism of contingent valuation is an edited collection of papers presented at a conference organized by Cambridge Economics, Inc., and held in Washington, D.C., in April 1992. This conference and the papers were made possible through the financial support of Exxon Company, USA, as part of that company’s effort in the *Exxon Valdez* case.<sup>22</sup>

## NOAA RECOMMENDATION

Over the last three years, NOAA has overseen an extensive review of the contingent value method. The CV criticisms noted by Thompson and by Hausman are discussed exhaustively by the NOAA panel. In the panel’s review of this approach, two important benefits are noted, flexibility and passive use values. The approach allows the valuation “of a wider variety of nonmarket

goods and services than is possible with any of the other aforementioned techniques (site-specific valuation methods such as travel cost, factor income approach, or hedonic pricing models),” and “is the only method currently available for the express purpose of estimating passive use values.”<sup>23</sup>

Comments on the CV method were elicited by the NOAA panel, and were reviewed and discussed in the *Federal Register*. The NOAA panel concluded:

The trustee(s) should have the discretion to include passive use values as a component within the natural resource damage assessment determination of compensable values...Reliable estimates of lost passive use value due to discharges of oil can be estimated using CV as long as a CV study follows the standards provided in the proposed regulations.<sup>24</sup>

As with any high-quality survey, three recommended components should be present, according to the NOAA:

1. The survey’s instrument design and development must be sound. For instance, how value (damage) information might be elicited from the respondent is determined by the survey’s design. For example, research has shown that the “willingness to pay” format is generally more conservative than the “willingness to accept compensation” format. Also, one-time lump-sum payments produce more conservative results than monthly payment programs.
2. Survey administration must be handled thoughtfully. Understanding appropriate response rates, the statistical confidence of the survey results, and the use of face-to-face versus phone or paper-and-pencil interviews are important.
3. The nature of the results must be examined. For example, what are the standards for evaluating the survey results? Is the appraiser using a single or a split survey, and should a discount be applied to the indicated damage? How the results are reported, such as showing values (damages) by income levels, attitudes toward the environment, etc., are important considerations.

22. Jerry A. Hausman, ed., *Contingent Valuation: A Critical Assessment* (New York, New York: North-Holland, 1993).

23. *Federal Register* (January 7, 1994): 1142.

24. *Ibid.*, 1143. It should be noted that the NOAA concerned itself with the *Oil Pollution Act*. As was pointed out earlier, CV has been used to value a wide variety of goods and services.

A recent analysis of almost 100 published studies where CV was one of several methods used to estimate value was conducted by Richard Carson et al.<sup>25</sup> The purpose of the analysis was to test the validity and reliability of contingent valuation. CV estimates were compared with other value estimates collectively called revealed preferences (RP). The analysis compared 616 contingent valuation to revealed preferences. The authors found that “contingent valuation estimates are smaller, but not grossly smaller, than their RP counterparts.”<sup>26</sup> Statistically, they found that the Pearson correlation coefficient ranged between 0.60 to 0.98, depending on the sample. The Spearman rank correlation coefficient varied between 0.72 and 0.92. In every case, the correlation coefficient estimates are significant at  $p < 0.001$ .<sup>27</sup>

### NORTH TACOMA CASE STUDY

This case study<sup>28</sup> is based on work for the plaintiffs in a class action lawsuit against American Smelting and Refining Company (ASARCO). The plaintiffs contended that airborne emissions from the ASARCO smelter, which contained arsenic, lead, and other heavy metals, had contaminated class members real property that adversely affects health and property values.

An intriguing aspect of the case, which had a major impact on the valuation analysis, was the plaintiffs' contention that information about the nature and extent of the contamination had not been adequately communicated to area property owners. In addition, on January 1, 1995, the State of Washington implemented a residential sales disclosure requirement mandating all real estate sellers to disclose in detail any and all contamination associated with the property, and, by inference, the neighborhood. This became a requirement in most other states also. It was assumed that this January 1995 disclosure requirement and the trial, which was scheduled for early 1995, would substantially alter the nature of the real estate market in proximity to the ASARCO site.

A grave valuation problem existed because the standard techniques for valuing residential real estate (the cost and market approaches) are essentially based on historical and existing market information and do not reflect market behavior that might be dramatically altered by future events, such as the trial and the disclosure act.

A survey research process applying CV and conjoint measurement was used to quantify value impacts and involved several steps:<sup>29</sup>

1. Informal focus groups were held with residents from the class area and other residents from several control areas to explore their attitudes and beliefs regarding their knowledge about the contamination and property values.
2. Based on the focus groups, a survey (interview) instrument was developed and pretested. Appropriate changes to the survey were made based on the pretests. This principally involved making sure that respondents understood the questions being asked of them and could provide meaningful answers.
3. Approximately 350 face-to-face interviews were conducted.
4. The respondent data was coded, tabulated, and analyzed.

The survey consisted of several distinct parts: The first section elicited information regarding the respondents' level of awareness of the contamination problem. The respondents were then shown factual information produced by the Environmental Protection Agency (EPA) on the nature and extent of contamination in the North Tacoma neighborhood. Next, the respondents were asked to express their feelings about how the contamination might affect the market value of housing and their willingness to pay to remediate the neighborhood. The questions addressed tradeoffs such as, would you prefer that the property be cleaned to Washington State Standards (arsenic levels not exceeding 20 parts per million or ppm) and pay \$10 per month, or that the property be cleaned to EPA standards (350 ppm of ar-

*In the state of Washington, real estate sellers must disclose in detail any and all contamination associated with the property and, by inference, the neighborhood.*

25. Richard Carson, Nicholas E. Flores, Kerry M. Martin, and Jennifer L. Wright, “Contingent Valuation and Revealed Preference Methodologies: Comparing the Estimates for Quasi-Public Goods,” *Land Economics*, v. 72, no. 1 (1996): 80–99.

26. *Ibid.*

27. *Ibid.*

28. Bill Mundy, Valuation Analysis of 6,344 Properties. Appraisal Report, Tacoma Washington, October 25, 1994.

29. A solid basis for the use of survey research in establishing value, in particular, damages due to environmental problems, can be found in *City of Santa Fe v. Komis*, 20 N.M. Supreme Court 325 (1992).

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senic) and pay nothing per month? Finally, various demographic (age and educational level) and socioeconomic (home value and household income) questions were asked.

An analysis of historical selling prices of housing, both within the class area and within several control areas, was done. This information served as a basis to estimate damages by several independent analytical methods. The results of the analysis follows.

#### Historical Data

**Appraisal of class representatives' homes.** Eleven properties, representing a cross-section of housing in the class area, were appraised using standard Fannie Mae/Freddie Mac appraisal techniques to estimate market value. The homes were appraised twice, using comparable sales data from the class (contaminated) area first and then using comparable sales data from control areas (similar neighborhoods that were uncontaminated). Three control neighborhoods were used. A statistical procedure, correlation analysis, was used involving 1990 census tract data to compare class neighborhood attributes with socioeconomic attributes of the subject and an adjacent county. The three neighborhoods with the highest correlation coefficient were selected, making sure no externalities affected the control areas. This analysis indicated a loss in market value for the class neighborhood of \$5,085 per standard \$116,000 home.

All of the value data was calibrated to a standard \$116,000 value home, which was the average value of housing in the North Tacoma neighborhood, in 1994. The value of the 11 separate properties varied from the \$116,000 standard. For example, one of the homes might have an unimpaired value of \$90,000, and an impaired value of \$86,000, for a value loss of \$4,000. The value loss was calibrated to the \$116,000 standard through the proportional relationship: \$116,000 is to X as \$90,000 is to \$4,000, or  $\$90,000X = \$464$  million for a \$5,155 loss for the \$116,000 home.

**Matched pairs.** Sales of a broad cross-section of homes in the class neighborhood were selected. Sales of similar properties from control areas were also collected. The selling prices of these two groups of homes were compared. Homes in the North Tacoma neighborhood were selling, on average, for \$9,473 per dwelling unit less.

#### Prospective Data

**Contingent value.** The CV and conjoint approaches are prospective. They provide evidence of how people may behave due to new information. The survey results were disaggregated into several different categories: people who had recently sold housing, people who had recently purchased housing, and homeowners in general. The survey indicated the following respondents' perceptions about lowered market values because of the class area contamination: sellers, \$17,200; buyers, \$11,600; and homeowners, \$10,700.

**Conjoint measurement (summation of individual attributes).** Conjoint measurement can measure the value of discrete variables (individual attributes) that together form the market value of something, such as amount of contamination. Variables analyzed in the North Tacoma survey and the value loss attributed to each are shown in the table:

Neighborhood disruption due to cleanup	\$4,346
Degree a site and adjacent sites are remediated	\$5,697
Distance from contamination source	\$7,132
Cleanup duration	\$4,473
Comprehensiveness of the cleanup program (interior cleaning of homes)	\$2,152
Total damage due to contamination	\$23,800

These losses are averages for the 6,344 homes analyzed. Individual home losses varied based on the distance from the source, the value of the home, and the nature of the cleanup program for each block in the contaminated area. Care must be exercised in selecting variables to ensure that they are independent of one another. The conjoint model assumes variable independence. In the questionnaire, the variables are presented independently. In this case, the conjoint measurement method is used to determine the overall impact on market value.

**Conjoint measurement (clean versus contaminated).** In this case the method is also used to measure the overall impact on market value. This tradeoff gave the respondents the choice to own property that was clean or that was contaminated, and dealt with benefits versus costs per month (as with monthly debt service) to quantify differences in values. The damage indication was \$24,300.<sup>30</sup>

30. For an example of the type of questions used, scaling, and nature of results, see Churchill, 464-481.

**Income approach.** This approach involved valuing residential property on the assumption that it was an income-producing property and quantifying the differences between a contaminated and uncontaminated property in terms of rent, occupancy, operating expenses, and capitalization rate and gross rent multiplier. This method indicated a damage of \$27,900.

### CONCLUSION

The research using prospective data suggested that the trial and disclosure requirement would influence buyer behavior. While historical market evidence indicated a decline in market value of \$5,100–\$9,500 per dwelling unit, the prospective survey data alluded to declines of \$11,000–\$24,000. The income approach was even higher, at \$27,900.

It was therefore concluded that, as of the date of trial (January 1995), the loss in market value would be approximately \$20,000 for the typical residence. This assumed a knowledgeable seller (aware that disclosure of the contamination must be made) and a knowledgeable buyer (aware of the contamination, cleanup program, and all of its implications such as disruption and incomplete cleanup). Based on historical evidence (where buyers and sellers were not fully informed), the loss was estimated at \$7,300 for the typical residence.

Despite legitimate criticisms about CV, it can be a powerful valuation tool when typical appraisal methods are limited by lack of market evidence (resulting in passive use value) or by the presence of untested, that is, prospective, market conditions.