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Hyattsville, MD 20782
February 28, 2001

Mr. Norman Meade
NOAA Damage Assessment Center (N/ORR32)
1305 East-West Highway
Silver Spring, MD 20910

Dear Mr. Meade:

This letter reviews the cooperative damage assessment entitled "Chalk Point Oil Spill: Lost Recreational Use Valuation Report". The Chalk Point trustees, including the Federal Government and the state of Maryland, together with the responsible parties to the spill, jointly authored this assessment. Details of the spill, given in the damage assessment, are widely known and not contested. The purpose of the letter is to address the question of whether the Chalk Point recreational use damage assessment uses an appropriate approach to estimating these damages, based on what is known about the magnitude and effects of the spill.

The oil spill released 126,000 gallons of oil into wetlands contiguous to the Patuxent River. The assessment of recreational losses undertaken in response to the spill combines empirical analysis using secondary and some primary data to estimate the number of recreational trips affected, with benefits transfer, which uses existing studies to estimate the value of a recreational trip.

I conclude that the assessment is appropriate in focusing on the economic costs of foregone recreational activity, that the time span over which the damages are estimated seems reasonable, and that the empirical and analytical efforts expended on this research conform with the scale of the oil spill. Further, I believe that the research has been conducted carefully, with sufficient attention to the details of data gathering and empirical analysis. I will address each of these issues in greater depth. Finally, the estimate of damages of \$453,499 is a reasonable estimate, considering all of the circumstances of the spill.

Total damages from oil spills can be divided into lost passive use values and lost active use values. The research on the Chalk Point oil spill is limited to the lost active use values, where losses are incurred by people who directly use the site. With good reason, the Chalk Point damage assessment was not undertaken to measure passive use damages. In a natural resource damage case, passive use damages occur when services that are enjoyed for their existence are not available in their pre-spill condition. In the case of the Chalk Point spill, any possible passive use losses appear to be negligible. Apparently there are no serious chronic or acute injuries to the kinds of highly visible species that would induce passive use losses. The case for including passive use damages in the assessment is further weakened by the requirement that the costs of the damage assessment research not be grossly disproportional compared with the damages that could potentially be recovered. When the effects of the oil spill are not highly visible, have little long-term impact on the most prominent flora and fauna, and are limited geographically, the lost passive use values will be negligible. Under these circumstances, the survey research costs required to document interim lost passive use values most likely substantially exceed the damages.

Leaving the interim passive use damages as not relevant in this case, we can concentrate on the lost active use value. In the case of the Patuxent spill, compensable public damages appear to occur exclusively for losses of water-based recreation. This is what the damage assessment has

attempted to measure. In principle, there are two avenues for measuring the diminished value of water-based recreational services: through effects on housing prices and valuing the recreation directly. The oil spill physically impaired the service flow from the natural resources of this stretch of the Patuxent. In an ideally functioning housing market, the impaired natural resources would be partially reflected in hedonic prices of houses adjacent to the Patuxent. But the real housing market lags greatly behind the ideal world, and these housing price adjustments would take a long period of time to sort out in the market, so long in fact that other random events would surely obscure any impact from the oil spill. The more direct avenue for valuation of the lost use is to look specifically at the value of recreational services. If this damage assessment were to be based entirely on original research, with the attendant large budget, one could use some variant of the travel cost method or contingent valuation. Given the size, duration, and location of the spill, however, it is sensible that the research be based on some combination of benefits transfer and a mix of primary and secondary data.

The data relied upon in the report are car counts from the Golden Beach community along the Patuxent, and helicopter overflights that establish the relation between Golden Beach use and the level of recreational use throughout the spill impact zone. These data sources are the best for the problem at hand. Other relevant sources of data are two ongoing survey research efforts that relate to outdoor recreational activity: the National Marine Fisheries Service conducts the Marine Recreational Fishing Statistical Survey on a bi-monthly basis, and the Fish and Wildlife Service conducts the National Hunting and Fishing Survey every five years. However, both of these surveys are designed for statistical inference over large geographical areas—for example the state level—and for longer periods of time, typically an annual basis. They would not be useful for inferring changes in recreational activity for one part of the Patuxent over a relatively short period of time.

The empirical analysis relies on the following critical assumptions and calculations.

1. Recreational use in the oil spill area would change from 1999 to 2000 for two reasons only: weather and the oil spill. The difference between the year-2000 weather-adjusted use and the actual use in 2000 is attributed to the oil spill. The weather-adjusted use for 2000 is based on an empirical analysis of daily use in 1999. The adjustments in use due to the weather are applied on a monthly basis. The monthly adjustments seem a reasonable approach.

2. The use in the oil spill area is proportional to the car counts developed from Golden Beach, with the factor of proportionality estimated by comparing Golden Beach activity with concurrent helicopter overflights of the spill area on the Patuxent. This is the best data available, and given the circumstances appears to be a reasonable approach. The chief source of potential bias lies in the application of the Golden Beach response to all parts of the Patuxent affected by the spill. Because Golden Beach is closer to the spill than other parts of the damage area, it is possible that the reaction there is greater. There is no evidence one way or the other on this conjecture.

3. Recreational losses are incurred from the time of the spill until September 2000. The duration is determined by casual interviews and conversations with scientists and local users. Given the absence of evidence of oil, and the comments of individual users that their use had returned to normal, this seems to be a reasonable assumption about the duration of recreational losses. Further, moving the end of the damage period a few weeks one way or the other would not have much effect on the magnitude of damages. Most of the damages are calculated to occur in the first three months.

4. The damages are calculated from trips that are affected for a 15-mile stretch of the Patuxent below the spill. This geographical extent is based on informal interviews, and appears to be a reasonable and conservative assumption.

(Chalk Point spill review: page 3)

5. The value of lost recreational activity is \$27 per trip. This estimate comes from the benefits transfer tradition of damage assessment. There is a wide range of estimates that might be applied to lost boating and fishing recreation. Random utility models would typically give lower values than the \$27 per trip adopted in this assessment for sites of this size. The damage area is so small that other sites are readily available. The choice is complicated, however, by the fact that much of the recreational activity often originates in the backyards of homes along the Patuxent. Thus, while the appropriate sources for benefit transfer have been consulted, it is less clear that there are good sources for benefit transfer for backyard recreational activity. Backyard activity may well have higher values, even though substitutes are close, because the transactions costs of using another site, further away, might be quite high for residents along the river. For households using boats moored along the Patuxent, this might entail taking their boat out of the water and trailering it to another site (without the presence of the oil) compared with simply pushing off from their docks when the river is clean.

6. The diminished value of trips that were not lost is modeled on damage assessment for oil spills in California. While there is no empirical basis for the rate of decline in lost value per trip or the initial loss per trip, the selected values are intuitively reasonable and conservative.

In summary, this report uses reasonable methods to reach a plausible estimate of the extent of recreational use damages from the Chalk Point oil spill. I would be glad to answer additional questions, based on my review of the damage assessment.

Sincerely,



Kenneth E. McConnell
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