

US EPA ARCHIVE DOCUMENT

Pay for Performance: Does It Work? The Data

by Robert S. Cohen

Pay for Performance¹ (PFP) has produced remarkable results in many states with faster and less expensive cleanups. Yet, there has been a lack of comparative data to “prove” the case. I have experienced this frustration many times in the course of moderating over a dozen PFP workshops and two dozen training sessions. At each event the same questions were raised: Does it really work? Where’s the data? The questions come from regulators and consultants, both of whom are reasonably skeptical of change.

At the Florida Department of Environmental Protection’s (FDEP’s) 16th Annual Storage Tanks/Preapproval Program Meeting (August 2002, St. Petersburg), two papers were presented with unequivocal results comparing PFP with Time and Materials (T&M):

- *A Comparative Study of the Relative Success of Site Cleanups Under Preapproval and Pay for Performance Contracting*. Draft. August 2002 by Brian Dougherty and Ferda Yilmaz of the Florida DEP, and
- *Comparison of Price and Time in Pay for Performance and Time and Materials Cleanup Contracting*. (South Carolina and Florida) Draft. April 2002. By Dana Hayworth of U.S. EPA Region 4, with major contributions by William Fosskett of the U.S. EPA Office of Underground Storage Tanks.

What follows is a discussion of the results of these papers along with my own private-sector observations. In discussing the Florida program, I use the terms T&M and preapproval interchangeably. The Florida petroleum cleanup program currently operates under a variant of T&M in which costs are preapproved for a specific scope of work. The preapproved costs are paid in a lump sum, and the basis of the costs is traditional time and materials build-ups. In contrast, PFP is a market-based lifecycle cost to completion, which may be determined by bidding or negotiating. A key element to PFP is the fixed price—no change orders are allowed. After presenting the data, I’ll briefly discuss why PFP provides such dramatic results. A future article will explore the reasons for success in more detail.

The Data

As the data in Table 1 and Figures 1a and 1b demonstrate, PFP cleanups are considerably less expensive (28, or 64%) and remarkably faster (39, or 67%). That is, the environmental results are achieved faster, with a greater leveraging of the financial resources. These studies are significant in that they cover a large number of sites with a variety of geological settings. The factors that could affect the results were considered and normalized.

Discussion of Data

The Florida DEP study compared 57 preapproval sites with 57 PFP sites. The EPA study (Florida and South Carolina) compared 28 PFP sites with

35 T&M sites. Some of the differences in results between the studies may reflect the smaller sampling of the EPA study. In Florida, both preapproval and PFP are active programs. In South Carolina, PFP has fully replaced T&M, and therefore the South Carolina comparison includes two generations of data. The PFP data represents the more recent cleanup efforts.

The EPA study shows more dramatic differences between PFP and T&M than the DEP study; however, the Florida study, being of contemporaneous sites, may be a more accurate statement. Nevertheless both studies show the same trends at the same order of magnitude.

■ continued on page 26

¹ Pay for Performance is a contractual mechanism by which the cleanup consultant is paid upon achieving agreed-upon environmental milestones. The cleanups are typically faster and cheaper than the ordinary time and materials approach. PFP has been described in previous LUSTLine articles and more information is available at the EPA Web site: <http://www.epa.gov/swerust1/pfp/index.htm>

■ PFP from page 25

Data I collected on a recent Florida PFP bidding project (see LUSTLine #39) produced savings of a similar degree on 70 sites. Using PFP bidding techniques, an owner/operator was able to save at least \$3 million over the anticipated preapproval cleanup costs.

Florida has one of the nation's largest cleanup programs and has for many years studied the most effective measures for cleanup, based on cost and environmental results. The Florida study concluded that PFP cleanups consistently produce better results than those performed under preapproval when those results are measured by the amount of contamination removed, time for that removal, and cost.

The EPA study looked at similar T&M and PFP sites in Florida and South Carolina. The study concluded that PFP cleanups are significantly faster and less costly than the customary T&M cleanups in the study's sample of ordinary UST cleanups. By reviewing sites in both Florida and South Carolina, the EPA study covered a range of lithologies (e.g., coastal plain to bedrock), depths to water, and standards. The study concluded that the most significant factor for determining the speed and cost of cleanup is the contractual mechanism (i.e., PFP vs. T&M).

Factors Considered

The EPA study posed two key questions: Could other factors account for speed and low prices of PFP cleanups? Could the superiority of PFP over T&M in the cleanups studied be due to something other than PFP (e.g., lower baseline concentration levels, smaller plumes, less stringent goals, less difficult hydrogeological conditions)?

The study determined that none of these factors seems likely to account for the differences in PFP and T&M cleanup prices and time frames. PFP site baseline-concentration levels averaged 16 percent higher than those at the T&M sites to which they were compared. South Carolina PFP sites dealt with the same size plumes on average as did the T&M sites.

Within each state, goals for PFP and T&M cleanups were set follow-

Table 1 COMPARISON OF COST AND TIME OF PFP VS. T&M

	EPA South Carolina		EPA Florida		Florida DEP Study	
	Average Cost	Average Time (Yrs.)	Average Cost	Average Time (Yrs.)	Average Cost	Average Time (Yrs.)
PFP	\$78,351	2.3	\$176,021	4.1	\$215,427	2
T&M/ Preapproval	\$215,110	7	\$376,308	6.7	\$300,255	3.5
Difference Between T&M and PFP	64%	67%	53%	39%	28%	43%

Figure 1a

Time of Cleanup Comparison

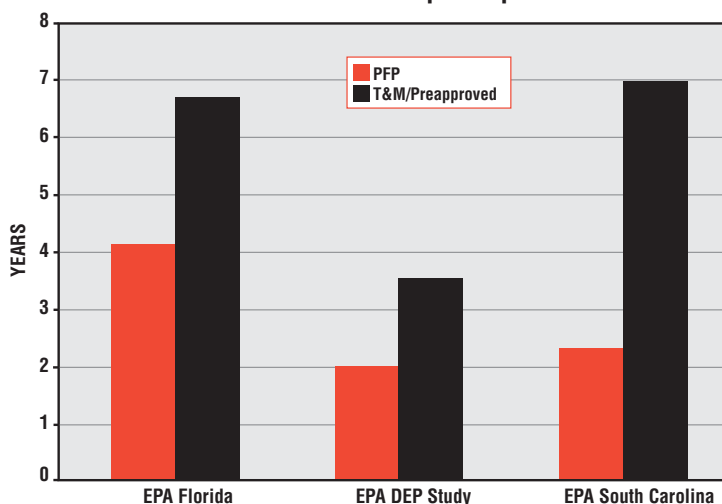
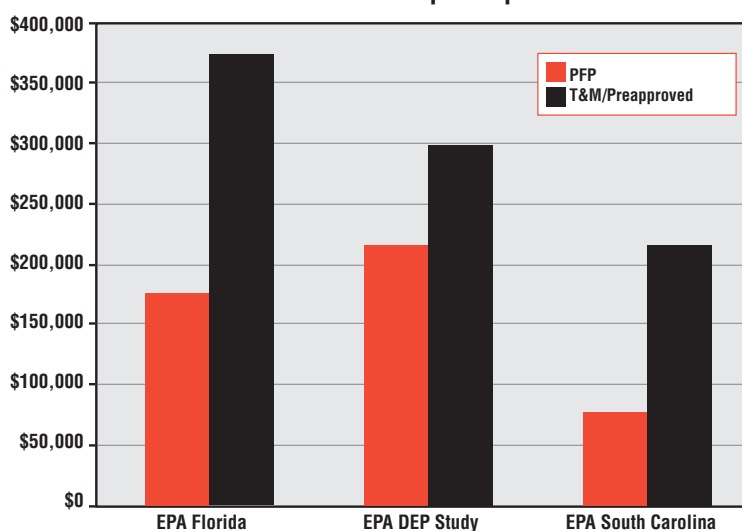


Figure 1b

Cost of Cleanup Comparison



ing similar procedures, essentially requiring that all key wells at PFP sites reach the goals set for the site. Within each state, the hydrogeological differences between individual sites varied somewhat, but overall, T&M and PFP sites in each state were hydrogeologically similar to each other and relatively ordinary.

Both studies analyzed the following factors:

- plume size
- hydrogeological conditions/soil type
- treatment technology
- cleanup standards

- plume concentration (BTEX)
- depth to groundwater
- size of consulting firm
- operating vs. nonoperating facility
- cleanup progress (most of the sites are work in progress)

Each of these items was examined and compared to assure that the distribution of PFP versus T&M sites were comparable in difficulty. The comparisons were demonstrated to be unbiased in any significant manner. The Florida study included extensive statistical analysis of the risk factors for time and cost, which is too voluminous to include herein.

Why Does PFP Work So Well?

The data in the Florida study clearly show that sites do get cleaned up under both PFP and preapproval. Therefore the knowledge and ability to do so is obviously present in the industry. The key difference between the two types of cleanup is incentive. Under a preapproval cleanup there is no incentive to succeed and no penalty for failure. A contractor is paid regardless of progress made toward meeting the cleanup goal. Under PFP, only success toward meeting the cleanup goal is rewarded, and therefore an incentive is provided to ensure the greatest possible success in the least amount of time. This study demonstrates that if the right incentive is provided, then the sites will be cleaned up faster and for a lower cost.

The Florida study also looked at a common question regarding PFP: Are some companies too small to take the risk associated with PFP? The study data suggests that a PFP cleanup is not as risky a venture as it is sometimes portrayed to be. The majority of the PFP sites (39, or 68%) in this study achieved the 90 percent contamination reduction milestone in a year or less, compared with only 10 sites (18%) under preapproval. This milestone corresponds to a 75 percent payment of the total cleanup price. Not all PFP cleanups proceed this well, and there are some PFP cleanups in this data set that are not going well, but overall it is possible to succeed under a PFP cleanup and to do so on a regular basis regardless of company size.

The studies both concluded that PFP motivates consultants to achieve results while simultaneously providing the latitude to do so. Successful PFP consultants understand the nature of risk and spread that risk over groups of sites. They also take advantage of the “volume discount” of LUST sites and reuse equipment, coordinate field events, template reports, and incorporate various other cost-saving devices that are not encouraged in the T&M approach.

Thumbs Up!

PFP cleanups are superior to those performed under T&M (or the preapproval variety of T&M). This was demonstrated by all reasonable criteria of concern—the time and the costs to achieve targets. Could other factors account for these phenomena? Based on the 175-plus sites reviewed in these studies, the results of PFP are genuine and are not due to sampling prejudice. ■

Robert S. Cohen, BS, MS, is a professional geologist specializing in LUST cost-containment issues. He is a consultant to both the public and private sectors. He has conducted over 30 PFP workshops and studies on behalf of the EPA and various states. For more information, contact Bob at bobcohen@ivs.edu

A PFP Toolbox Update

EPA's Office of Underground Storage Tanks (OUST) has developed an online resource for people interested in performance-based contracting for LUST cleanups. OUST's Pay for Performance (PFP) Toolbox contains valuable information provided by states and others using performance-based contracting. The PFP Toolbox is designed to assist state regulators in developing and maintaining a PFP program in their state. After six months online, OUST is now revising and editing some portions of the toolbox. In the coming weeks, OUST will be interviewing states currently using PFP to include their experiences in a “Making Your Opportunity” section of the toolbox. In addition, an online user questionnaire has been posted so that OUST can receive feedback on the usefulness of this tool. The PFP Toolbox can be seen at www.epa.gov/oust/pfp/toolbox.htm.