NOV 0 2 2015

HUNTON& WILLIAMS

HUNTON & WILLIAMS LLP
BANK OF AMERICA PLAZA
SUITE 4100
600 PEACHTREE STREET, N.E.
ATLANTA, GEORGIA 30308-2216

TEL 404 • 888 • 4000
FAX 404 • 888 • 4190

CATHERINE D. LITTLE
DIRECT DIAL: 404-888-4047
EMAIL: clittle@hunton.com

FILE NO: 78027.000010

October 27, 2015

By Regular Mail

Mr. Jeffrey D. Wiese
Associate Administrator
U.S. Department of Transportation, PHMSA
1200 New Jersey Avenue, S.E.
East Building, 2nd Floor (PH)
Washington, D.C. 20590

Re: Petition for Reconsideration
In the Matter of ExxonMobil Pipeline Company, CPF No. 4-2013-5027

Dear Jeff:

In connection with the above referenced matter, please find enclosed a copy of Exhibit 82, the Supplemental Affidavit of John F. Kiefner. This exhibit was included in the original filing that was submitted to PHMSA electronically on October 21, 2015, but the courtesy hard copy set of exhibits inadvertently contained the original affidavit of Mr. Kiefner. Accordingly, we ask that you replace the original affidavit at tab 82 in your courtesy set with the enclosed Supplemental Affidavit. Thank you for your cooperation.

Sincerely,

Catherine D. Little

CDL/gm
Enclosure
cc: Vasiliki Tsaganos
Benjamin Fred
Lawrence White
Rodrick Seeley
Richard Byrne
Johnnie Randolph
Robert Hogfoss

Before the
U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration
Office of Pipeline Safety

In the Matter of	)	
ExxonMobil Pipeline Company,	)	CPF No. 4-2013-5027
	)	Notice of Probable Violation
Respondent.	)	

SUPPLEMENTAL AFFIDAVIT OF JOHN F. KIEFNER

1. My name is John F. Kiefner. I am a resident of the State of Ohio and am over eighteen years of age. I am in all respects competent and qualified to give this Affidavit. I have personal knowledge of the facts in this Affidavit, all of which are true and correct.

2. This Affidavit supplements the Affidavit that I provided on May 22, 2014, with respect to issues related to analysis of low frequency electric resistance welded (LF-ERW) pipeline integrity and, in particular, that analysis as applied to ExxonMobil Pipeline Company's (EMPCo or the Company) Pegasus Pipeline.

3. My professional qualifications and employment history are detailed in the May 22, 2014 Affidavit. I have spent my professional career working on pipeline issues nationally, including the investigation and analysis of numerous pipeline failure incidents to understand the cause of the incident and, where possible, recommending methods to inspect for similar causal conditions on other pipe.

tree process for operators to follow to determine if a particular pipeline segment is susceptible to seam failure in the context of federal regulations.

7. With regard to analyzing the susceptibility of LF-ERW pipe to longitudinal seam failure, seam related in-service failures and/or hydrostatic test breaks or leaks by themselves do not indicate that a pipeline is susceptible to seam failure. The Baker Report, and specifically Figure 4.1, provide that an operator should analyze the cause of those seam failures for evidence of pressure-cycle-induced fatigue or selective (grooving) corrosion of the bond line. No other causes were mentioned in the guidance, because, in my experience, pressure-cycle-induced fatigue and selective (grooving) corrosion of the bond line are the primary causes of ERW seam failures. As noted in the Baker Report, where those conditions were not the known causes of prior hydrotest or service failures (as indicated by the "No" and "Unknown" arrows on the decision tree), in the absence of aggressive to very aggressive pressure cycling, it was reasonable to conclude that the pipeline segment was "not susceptible to Seam Failure" at that time in the context of the Part 195 IMP regulations.

8. Based upon my knowledge of the in-service and hydrostatic test failure history of the Pegasus Pipeline, including the 2006 Hurst metallurgical reports, there were no failures that were known to have been caused by time dependent defects. Further, there was no evidence of aggressive pressure cycling.

9. I have reviewed PHMSA's Final Order, CPF 4-2013-5027, dated October 1, 2015 ("Final Order"). The Final Order misinterprets the process outlined in the Baker Report and my 2002 report, and quotes certain passages out of context. For example, the following statement from the Final Report, as presented by PHMSA, is

susceptible under federal regulations was reasonable and supported by the facts available to EMPCo prior to March 29, 2013.

11. The Baker Report assumes that all LF-ERW materials possess bond line regions that are prone to low toughness and brittle-fracture behavior. As a result, LF-ERW pipe will often exhibit brittleness on the bond line in conjunction with a failure that initiates from a small flaw or cold weld. These types of defects, however, rarely fail in-service because they are not big enough to grow. Further, any large defects associated with the bond line are typically discovered through hydrostatic tests because those defects fail at high pressures. As a result, there was no suggestion in the Baker Report that the proposed seam failure susceptibility analysis process in Section 4.3 or Figure 4.1 Flowchart should not be used for low toughness or brittle pipe.

12. Hydrostatic test failures that exhibit brittle cracking on LF-ERW pipe are not atypical or an indication that a pipe is susceptible to longitudinal seam failure. As outlined in the Baker Report, LF-ERW pipe that exhibits this type of cracking should be analyzed for evidence of fatigue or grooving corrosion, and whether there is evidence of aggressive pressure cycling fatigue. Where there is no such evidence, the pipe is not susceptible to longitudinal seam failure in the context of the Part 195 IMP regulations.

13. The toughness of the pipe seam is simply not relevant to this part of the analysis.

14. The PHMSA Final Order's discussion of brittleness is misleading. Pressure-cycle-induced fatigue failures have not been found to initiate in the bond line. Fatigue cracks near LF-ERW seams are found to initiate from hook cracks, mismatched plate edges, or other defects in the heat-affected base metal near the bond line in

17. In contrast to PHMSA's conclusions, the relevant consideration for a LF-ERW pipeline's fatigue life is not the toughness of the bond line region. Rather, toughness of the base metal is relevant to fatigue, but only to establish an initial defect size for the Pipelife analysis. In the Pipelife manual, I recommended that operators using Pipelife software, include actual representative values of a pipeline's toughness, where that information is available. In conducting its Pipelife pressure cycle fatigue analysis modeling of the Pegasus Pipeline, EMPCo included representative toughness values from the metallurgical studies of the 2006 hydrostatic test failures.

18. Based upon my review of the long seam failure susceptibility and fatigue analyses for the failed section of pipe performed by the Company prior to the Mayflower incident on March 29, 2013, the Company correctly followed the guidance described in the Baker Report. This analyses would not have resulted in a finding that the failed segment was "susceptible to seam failure in the context of the Part 195 IMP regulations."

19. In addition, the Company appropriately performed a fatigue analysis, based upon all relevant known factors associated with the pipeline, and the failed section of pipe appeared to have a theoretical fatigue life in excess of the conservative reassessment interval implemented by EMPCo.

20. There is no evidence in EMPCo's historical seam failure records for the Pegasus Pipeline that suggests that the absence of fatigue in the metallurgical analysis was a result of the low toughness of the pipe. Based upon the results of the 2006 metallurgical analysis associated with the hydrostatic test failures, EMPCo was