February 4, 2022

Gregory A. Ochs
Director – Central Region OPS
PHMSA
901 Locust Street, Suite 480
Kansas City, MO 64160

VIA: Email to nkauj.her.ctr@dot.gov and gregory.ochs@dot.gov.

RE: **Notice of Probable Violation, Proposed Civil Penalty and Proposed Compliance Order**
CPF 3-2021-051-NOPV, Second Response
BOE Pipeline, LLC

Mr. Ochs:

Pursuant to the provisions of 49 CFR 190, Subpart B, BOE Pipeline, LLC submits the following in response to *Notice of Probable Violation* (NOPV) CPF 3-2021-051-NOPV, issued November 10, 2021, and as a follow up and second response to BOE's initial response dated December 10, 2021.

There were 8 probable violations identified in the NOPV. BOE provided a response on December 10, 2021. BOE is providing this response as an update to its previous response for the following items:

2. *BOE Midstream failed to measure bottom-line results as required by API RP 1162, and did not provide a justification in its program or procedural manual as to why compliance with this aspect of API RP 1162 was not practicable, and not necessary for safety.*

   Specifically, BOE failed to follow Section 8.4.4, of API RP 1162, which requires operators to determine if the implementation of the Public Awareness Program is impacting bottom-line results (such as reduction in the number of incidents caused by third-party damage).

Response: **BOE engages Paradigm to perform its effectiveness evaluation. Paradigm completed the "Four Year Effectiveness Evaluation". The evaluation begins on page numbered 8 of the PDF document in Attachment 1, *Paradigm Four Year Effectiveness Evaluation 2021*. On the page numbered 13 of the document, "Outcome", measures bottom line results required by API 1162 Section 8.4.4. This evaluation is required at a four-year frequency. As BOE assumed operation of the pipeline in 2017 the completion of the evaluation in 2021 was within the required timeframe.**

4. B*OE failed to implement and follow its Integrity Management Program (IMP) requirements for annual calculation of specified performance measures. Specifically, BOE's IMP requires the below performance measures, as set forth in Element 7 of its IMP plan. Missing records are noted in the table below.*

Note: Items identified below are extracted from table as contained in NOPV noted as missing from 2020 IMP performance measures documentation. All other deficiencies noted from years 2017-2019 were corrected with the documentation of 2020 performance measures.

5 Measure root cause failure analysis program for systematic problems to ensure processes are *monitored, completed, and IM program improvements are implemented*.
10 Measure number of reportable leaks (i.e., leaks greater than 5 bbl to land) to ensure processes are monitored, completed, and IM program improvements are implemented.
11 Measure number of leaks due to corrosion to ensure processes are monitored, completed, and IM program improvements are implemented.
12 Measure number of leaks due to third party damage to ensure processes are monitored, completed, and IM program improvements are implemented.
15 Leaks due to equipment failure.

Response: **As a follow up to its previous response, BOE completed another review of its Performance Measures for years 2017-2020. For measures 10, 11, 12, and 15 there were no reportable leaks or non-reportable leaks on the pipelines in question since 2017, therefore all these measures would be "0" for 2017-2020. For measure #5, the Root Cause Failure Analysis program is only activated in the event of failure as described in Section 7.7 of the BOE IMP. As there were no failures, the Root Cause Analysis Failure program was not activated from 2017-2020 and therefore this measure would also be "0" for those years. The pertinent IMP Performance Measures can be found in Attachment 2, *IMP Performance Measures*.**

6. *BOE Midstream failed to maintain records that demonstrate compliance with subpart F. Specifically, BOE violated the regulation as follows:*
(A) BOE failed to document the basis of its decision for a reassessment interval of five years, as noted on the November 4, 2020 ILI Validation Report checklist form covering both the 16-inch segment and 20-inch segment ILI runs of the BOE Express pipeline. Section 195.452(f)(5) requires that an operator include in its IMP a "continual process of assessment and evaluation . . . ." Under the regulation cited, operators are required to maintain for the useful life of a pipeline records demonstrating how reassessment intervals were determined. BOE's records failed to demonstrate that any of the factors identified in its IMP plan (and set forth below), or any other criteria not specified in its IMP, were considered as the basis for a 5 year reassessment interval for the 16 inch and 20 inch segments of the BOE Express pipeline. BOE's IMP plan specifies considerations for establishing a reassessment interval, such as:

1. Populated areas, unusually sensitive environmental areas, National Fish Hatcheries, commercially navigable waters, areas where people congregate;
2. Results from previous assessments, testing/inspection;
3. Leak history;
4. Known corrosion or condition of pipeline;
5. Cathodic protection history.;
6. Type and quality of pipe coating (disbonded coating results in corrosion);
7. Age of pipe (older pipe shows more corrosion–may be uncoated or have an ineffective coating) and type of pipe seam;
8. Product transported (highly volatile, highly flammable and toxic liquids present a greater threat for both people and the environment);
9. Pipe wall thickness (thicker walls give a better safety margin);
10. Size of pipe (higher volume release if the pipe ruptures);
11. Local environmental factors that could affect the pipeline such as: geo-technical/seismic faults; landslides; subsidence, and soil condition; climactic condition/permafrost, etc.; and corrosivity of soil;
12. Security of throughput (effects on customers if there is failure requiring shutdown);
13. Time since the last internal inspection/pressure testing;
14. Previously discovered defects/anomalies, including type, growth rate, and size;
15. Operating stress levels in the pipeline;
16. Location of the pipeline segment as it relates to the ability of the operator to detect and respond to a leak. (e.g., pipelines deep underground, or in locations that make leak detection difficult without specific sectional monitoring and/or significantly impede access for spill response or any other purpose);

17. Physical support of the segment such as by a cable suspension bridge;
18. Non-standard or other than recognized industry practice on pipeline installation (e.g., horizontal directional drilling); and
19. Other regulatory interval requirements.

Response: **BOE completed its pipeline risk analysis and assessment interval determination.**

In Attachment 3, *Risk Analysis*, a blank sample of the risk analysis shows the threats under consideration by BOE. The column titled "Potential Mitigative Activity and Risk Factors" shows the individual threats considered for each pipeline. In the list below BOE has identified where each reassessment interval consideration factor listed above is included under the risk analysis. Reassessment interval consideration factors may be included under more than one threat. These factors are identified with a number system which corresponds to a BOE risk consideration.

The results of the risk analysis are then used as an input into the "Risk Rank & Schedule" tab. This tab and the input factors are used to determine the assessment interval. Therefore, all the factors are included in the assessment interval analysis by way of risk results. BOE has determined that the five-year assessment interval is adequate and appropriate for the threats on the pipelines in question. This interval determination can be found under the "Comments and Validation" column under the "Risk Rank & Schedule" tab.

1. ***Populated areas, unusually sensitive environmental areas, National Fish Hatcheries, commercially navigable waters, areas where people congregate;***
    a. ***Included under 9-1, 10-1, 11-1***
2. ***Results from previous assessments, testing/inspection;***
    a. ***Included under 1-1, 2-1, 4-1, 5-1***
3. ***Leak history;***
    a. ***Included under 1-2, 2-2, 4-2, 5-2, 7-1,***
4. ***Known corrosion or condition of pipeline;***
    a. ***Included under 1-3, 7-2***
5. ***Cathodic protection history.;***
    a. ***Included under 1-3, 7-2***
6. ***Type and quality of pipe coating (disbonded coating results in corrosion);***
    a. ***Included under 1-4, 4-3, 5-3,***
7. ***Age of pipe (older pipe shows more corrosion–may be uncoated or have an ineffective coating) and type of pipe seam;***
    a. ***Included under 1-5, 2-3, 4-4,***
8. ***Product transported (highly volatile, highly flammable and toxic liquids present a greater threat for both people and the environment);***
    a. ***Included under 2-7, 4-5, 9-2, 10-2, 11-2,***
9. ***Pipe wall thickness (thicker walls give a better safety margin);***
    a. ***Included under 1-6, 2-4, 4-6, 5-4,***
10. ***Size of pipe (higher volume release if the pipe ruptures);***
    a. ***Included under 5-5, 9-3, 10-3, 11-3,***
11. ***Local environmental factors that could affect the pipeline such as: geo-technical/seismic faults; landslides; subsidence, and soil condition; climactic condition/permafrost, etc.; and corrosivity of soil;***
    a. ***Included under 1-12, 4-7,***
12. ***Security of throughput (effects on customers if there is failure requiring shutdown);***
13. ***Time since the last internal inspection/pressure testing;***
    a. ***Included under 1-7, 2-5, 4-8, 5-6,***
14. ***Previously discovered defects/anomalies, including type, growth rate, and size;***
    a. ***Included under 1-8, 2-6, 4-9, 5-7,***
15. ***Operating stress levels in the pipeline;***
    a. ***Included under 4-10, 7-3, 8-1, 9-4, 10-4, 11-4, 12-1***

16. ***Location of the pipeline segment as it relates to the ability of the operator to detect and respond to a leak. (e.g., pipelines deep underground, or in locations that make leak detection difficult without specific sectional monitoring and/or significantly impede access for spill response or any other purpose);***
    a. ***Included under 9-5, 10-5, 11-5***
17. ***Physical support of the segment such as by a cable suspension bridge;***
    a. ***Included under 4-11, 7-4,***
18. ***Non-standard or other than recognized industry practice on pipeline installation (e.g., horizontal directional drilling); and***
    a. ***Included under 4-12, 7-5,***
19. ***Other regulatory interval requirements.***
    a. ***Not Applicable***

(B) BOE failed to adequately document, in its joint risk analysis of line pipe and facilities, the consideration of facility threats and facility preventative and mitigative measures. This is noted by the absence of facility specific threats in its analysis records. The key facility threats identified include corrosion and equipment failure, as noted during the virtual records inspection. Section 195.452(f)(3) requires that an IMP include an "analysis that integrates all available information about the integrity of the entire pipeline and the consequences of a failure . . . ." BOE Midstream failed to comply with the regulation by not maintaining documents to support the decisions and analyses, including any modifications, justifications, deviations and determinations made, variances, and actions taken, to implement and evaluate each element of the integrity management program listed in paragraph (f) of this § 195.452; and

Response: **BOE has completed a separate Facility Risk Assessment (FRA) specifically for the facilities associated with the pipeline. This FRA considers the likelihood and consequence of failure specifically for pumps, station piping, valves, launchers and receivers, and tanks. The FRA considers facility-specific threats for the asset types which include corrosion and equipment failure. The FRA integrates available information about the integrity of the facility and associated asset types as well as the consequences of failure. The FRA also identifies Preventive & Mitigative Measures (P&MMs) currently employed at these facilities. A copy of the FRA can be found in Attachment 4, *Facility Risk Assessment*.**

(C) BOE failed to provide adequate documentation of its EFRD determination, as required by § 195.452(i)(4). Specifically, a summary, conclusions, or recommendations were missing from the data provided to PHMSA. The regulation requires operators to make a determination if additional ERFDs are needed. BOE submitted raw data to PHMSA, but failed to provide any documentation of conclusions or recommendations to address if additional EFRDs are needed, or not.

Response: **BOE completed an EFRD determination documented in the Microsoft Excel document titled "Copy of LD & EFRD Review – 2020 review" completed on 12/8/2020 and that included all the factors required under 195.452(i)(4). However, BOE has since updated this analysis to include more procedural detail and completed an additional review. The EFRD Review found that, based on the factors required under 195.452(i)(4), the current BOE EFRD configuration for the pipelines in question was sufficient to protect the integrity of the pipeline. The updated EFRD analysis form and results of the analysis can be found in Attachment 5, *EFRD Analysis.***

If you have any questions regarding this response, please do not hesitate to contact me at bmcdowell@boemidstream.com or by phone at (303) 887.8005.

Sincerely,

Brandon McDowell
Director – Operations and Corporate Regulatory Compliance