PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
SPECIAL PERMIT

FINAL ENVIRONMENTAL ASSESSMENT and
FINDING OF NO SIGNIFICANT IMPACT (FONSI)

Docket Number:	PHMSA-2016-0007
Requested By:	El Paso Natural Gas Company, L.L.C.
Operator ID#:	4280
Date Requested:	January 11, 2016
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Effective Dates:	September 1, 2016 to September 1, 2021
Code Section(s):	49 CFR §§ 192.611(a) and (d), 192.619(a), and 192.5

I. Background

The National Environmental Policy Act (NEPA), 42 USC §§ 4321 – 4375, Council on Environmental Quality regulations, 40 CFR §§ 1500-1508, and DOT Order 5610.1C, require that PHMSA analyze a proposed action to determine whether the action will have a significant impact on the human environment. PHMSA analyzes special permit requests for potential risks to public safety and the environment that could result from our decision to grant or deny the request. As part of this analysis, PHMSA evaluates whether a special permit would impact the likelihood or consequence of a pipeline failure when compared to operation of the pipeline in full compliance with the Pipeline Safety Regulations.

PHMSA may grant the special permit request with additional conditions or deny the request. PHMSA developed this assessment to determine the effects of our decision, if any, on the environment.

Pursuant to 49 USC § 60118(c) and 49 CFR § 190.341, PHMSA may only grant special permit requests that are not inconsistent with pipeline safety. PHMSA will impose conditions in the special permit if we conclude they are necessary for safety, environmental protection, or are otherwise in the public interest. If PHMSA determines that a special permit would be inconsistent with pipeline safety or is not justified, the application will be denied.

II. Purpose and Need

- *Describe the purpose of the requested special permit. What will it allow the operator to do that it could not do under the existing regulations?*

Pursuant to 49 CFR §190.341, El Paso Natural Gas Company, L.L.C. (EPNG)[1] requests a special permit seeking relief from 49 CFR §§ 192.611(a) and (d), 192.619(a), and 192.5 for pipeline segments where the class location of the segment had been changed in accordance with 192.5(c), cluster rule, and where additional dwellings for human occupancy have been built within the sliding mile for class location changes outside of the cluster area. EPNG found a regulatory compliance issue with past EPNG procedure methodology for the determination of class location boundaries using the clustering and sliding mile criteria in 49 CFR § 192.5(c) and has updated operating procedures for usage of 49 CFR § 192.5(c), cluster rule, and the sliding mile for confirmation of maximum allowable operating pressure (MAOP).

Following the purchase of EPNG, Kinder Morgan, notified PHMSA of code violation issues it discovered in the EPNG procedures for evaluating class locations, where pipe had been previously updated to meet class location changes from Class 1 to 3 locations in accordance with § 192.5. EPNG had misapplied the usage of the sliding mile and cluster rule portions of § 192.5. EPNG had properly conducted pipe upgrades to meet the cluster provisions in § 192.5, but had not later upgraded the pipe when a single or more dwelling were added in the sliding mile area outside the cluster area.

This special permit is requested by EPNG in order to postpone in some cases and waive in others cases compliance with certain regulations for the determination of class location boundaries using the clustering criteria in 49 CFR § 192.5(c). This change in clustering methodology due to misapplication of 49 CFR § 192.5(c) in EPNG procedures resulted in a number of new class location units, and more specifically class 3 locations, for which pressure testing or pipe replacements are now required. This misapplication impacted 29 special permit segments[2] and 6.56 miles of EPNG mainline piping located in the states of Arizona, New Mexico, and Texas as detailed in Attachment A for Type A[3] and B special permit segments. These clustered class location units are identified as "Special Permit Segments." The proposed special permit would: 1) require the pressure testing of

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[1] El Paso Natural Gas Company, L.L.C. is owned by Kinder Morgan, Inc.

[2] In the 29 segments EPNG has 0.0 miles of Type A segment pipe to replace or pressure test and other segments including special permit inspection areas will implement special permit conditions and integrity management procedures during the entire 5-year special permit period. Type A special permit segments must be replaced or pressure tested so that the MAOP is commensurate with the present class location within three (3) years of issuance of this special permit.

[3] Type A special permit segments include those special permit segments where there is a cluster, as described in 49 CFR § 192.5(c), of more than 10 buildings intended for human occupancy in a "class location unit" and for which the maximum allowable operating pressure (MAOP) has not been confirmed in accordance with 49 CFR § 192.611(a). Type A special permit segments must be replaced so that the MAOP is commensurate with the present class location within five (5) years of issuance of this special permit. There are no Type A special permit segments listed on Attachment A.

approximately 1.38 miles of natural gas transmission pipe (Type B[4]) and provides a schedule for this pressure testing work and 2) establish enhanced integrity management procedures to maintain pipe integrity and protect both the public and the environment for the class location units in which the Special Permit Segments are located for the other 6.56 miles of pipe that are not replaced (Type B). All of the proposed Special Permit Segments, even those not replaced or pressure tested would be treated as high consequence areas (HCAs) with the implementation of integrity management (IM) practices. In addition, EPNG would comply with Conditions as provided in the terms of the special permit for all the impacted Special Permit Segments and the designated "Special Permit Inspection Area" in the proposed special permit. The Special Permit Inspection Area is defined as a one (1) mile continuous segment on both sides of the Special Permit Segment (Type A and Type B) plus the footage in the Special Permit Segment and extending 220 yards on each side of the centerline. In the instance that the pipeline does not extend a full mile either upstream from the beginning of the Special Permit Segment or downstream from the end of the Special Permit Segment, the Special Permit Inspection Area will not extend beyond the pipeline initiation or termination points. The Special Permit Inspection Area will total 63.70 miles of pipe as detailed in Attachment A. In those cases where the proposed special permit would allow for the current pipeline segments to remain in place, the Conditions as prescribed in the proposed special permit would provide an additional level of safety without the impacts of excavation to remove existing pipe and install the replacement pipe. Due to the significant number of new class location segments that will require replacement or pressure testing, a special permit with IM based conditions would allow EPNG a more reasonable time interval to schedule the required pipeline outages. The pressure testing of pipe will be in accordance with the applicable sections of 49 CFR §§ 192.105, 192.611, 192.619, and Subpart J for the current class location.

PHMSA found in reviewing EPNG's response that a misapplication of § 192.5 had been used after installing upgraded pipe in a cluster area (under procedures in use before the Kinder Morgan acquisition of EPNG). Attachment A shows the segment locations with the number of dwellings outside of the cluster area but inside the sliding mile area. PHMSA considered both a Consent Agreement and Safety Order in reviewing the issues of the EPNG request. Since the operator notified PHMSA of the violation, PHMSA considered a special permit with integrity management concepts in a special permit with conditions an appropriate mechanism for this situation to maintain safety. Also, the special permit conditions would ensure the special permit segments were maintained while the segments could be upgraded with pipe replacements or pressure tests. With

[4] Type B special permit segments include those special permit segments where there is a cluster, as described in 49 CFR § 192.5(c), of 10 or fewer buildings intended for human occupancy in a "class location unit" and for which the MAOP has not been confirmed in accordance with 49 CFR § 192.611. There are 6.56 miles of Type B special permit segments and 1.38 miles of this total must be pressure tested as listed on Attachment A.

integrity management procedures being effective in other safety situations, PHMSA considers this to be an effective approach for the sliding mile areas with 10 or fewer dwellings or structures for human occupancy, which is the case for EPNG 29 special permit segments. Special permit conditions are measures to assess, evaluate, and implement measures to manage and eliminate threats to pipe integrity and public safety in areas of high consequence such as these sliding mile special permit segments.

- *List the regulation(s) for which the operator seeks the permit.*

  The special permit would address the requirements of 49 CFR §§ 192.5, 192.611(a) and (d), and 192.619(a).

- *Describe the need for the requested special permit. How would a special permit benefit the operator? Would a special permit benefit the public? If so, please explain how.*

  Implementation of the special permit conditions would allow EPNG to avoid the replacement of 6.56 miles of pipeline. Instead, the special permit would require implementation of the special permit conditions, including enhanced integrity management procedures. The special permit would benefit the public by reducing any disruptions due to construction activities near their homes in the Special Permit Segments.

- *Indicate whether this is an existing or proposed pipeline.*

  This special permit impacts only existing pipeline facilities as outlined in Attachment A.

- *Describe pipeline, the materials transported in the pipeline, and specify the counties and states where the affected segments of the pipeline are or would be located.*

  The EPNG pipeline transports natural gas in the pipeline segments included in the special permit that are located in the states of Arizona, New Mexico, and Texas. The pipeline Special Permit Segments are generally short in length, not contiguous and are located in multiple States and counties/parishes within those states. Attachment A (Pipeline Segments and Map) outlines the specific locations – state and county – of the Special Permit Segments.

III. Alternatives

- **Alternative 1: Granting the Special Permit Request With Conditions**
  - **Describe Alternative:** *Describe what PHMSA would do under this alternative. i.e. grant a permit that allows operator to schedule the*

replacement or pressure testing of certain pipeline segments and leave certain pipeline segment in place under added integrity measures defined in the Conditions of the special permit and while also treating all of the identified pipeline segments as high consequence areas.

EPNG proposes a special permit with conditions that includes two types of class location units (special permit segments) with clusters that impact approximately 6.56 miles of pipe. These units would be designated as either Type A or Type B special permit segments.

The Type A special permit segments are those with more than 10 dwellings intended for human occupancy and for which the MAOP has not been confirmed in accordance with 49 CFR § 192.611. A special permit would provide a schedule for the completion of the required pipe replacements and/or pressure testing for the Type A special permit segments.

Type B special permit segments that have 10 or fewer dwellings would also be subject to the Conditions of the special permit for its term. All of these special permit segments would be treated as high consequence areas (HCAs) under an integrity management (IM) program (49 CFR Part 192, Subpart O) as a requirement of the special permit.

The special permit would incorporate conditions (enhanced integrity management activities) to maintain pipeline integrity. All of the permit conditions are attributes of a robust IM program (49 CFR Part 192, Subpart O). These proposed Conditions include conducting periodic: close interval surveys, cathodic protection reliability improvements, stress corrosion cracking direct assessment, running inline inspection (ILI) assessments (smart pigs), interference current control surveys, remediating ILI findings through anomaly evaluation and repairs, pipe seam evaluations, pipe properties records review and documentation, and maintaining line-of-sight markers. Many of these proposed integrity activities are currently required in 49 CFR Part 192, Subpart O for an IM program to manage high consequence areas (HCAs) at specified reassessment intervals. The assessment and reassessment intervals, the level of remediation and the maintenance activities in a proposed special permit would be more stringent to maintain pipe integrity and protect both the public and the environment for the class location units in which the Special Permit Segments are located.

The enhanced integrity management activities that EPNG would implement as proposed special permit conditions for the pipeline segments include:

1. EPNG would incorporate the pipeline segments into its written integrity management program (IMP) as a "covered segment" in a "HCA" in accordance with 49 CFR §192.903.
2. EPNG would perform a close interval survey (CIS) along the entire length of pipeline segments and remediate any areas of inadequate cathodic protection no later than three (3) years after the issuance of this special permit. EPNG will perform periodic CIS of the pipeline segments with a reassessment interval not to exceed seven (7) years.
3. EPNG would implement a plan to improve cathodic protection reliability and perform inspections for stress corrosion cracking (SCC) during all excavations.
4. EPNG would perform Stress Corrosion Direct Assessments to evaluate pipeline segments where the risk of SCC is present.
5. EPNG would perform integrity assessments along the pipeline segments using appropriate assessment methods based on threats identified during the risk assessment process including both high resolution magnetic flux leakage (HR-MFL) and either HR-geometry or HR-deformation tools. EPNG would reassess the pipeline segments at an interval not to exceed seven (7) years from the last assessment in accordance with 49 CFR § 192.939.
6. EPNG would not let this special permit be a basis for deferring any of its assessments for HCAs in accordance with 49 CFR Part 192, Subpart O.
7. EPNG would address induced alternating current (AC) from parallel electric transmission lines and other interference issues such as direct current (DC) along the pipeline segments that may affect the pipeline.
8. EPNG would identify any pipeline segment that may be susceptible to pipe seam issues because of the vintage of the pipe, the manufacturing process of the pipe, or other issues.
9. EPNG would install and maintain line-of-sight pipeline markers on the pipeline segments except in agricultural areas or large water crossings such as lakes where line-of-sight signage is not practical.
10. EPNG would maintain data integration of all integrity findings and remediation along the pipeline segments.
11. For long term pipeline system flow reversals occurring after the effective date of the Special Permit and exceeding 90 days, EPNG would prepare a written plan in accordance with ***Advisory Bulletin (ADB-2014-04)*** prior to implementing the pipeline system flow reversal through the Special Permit Segment.
12. EPNG would maintain the following records for each pipeline segment: documentation showing that each Special Permit Segment has received a 49 CFR § 192.505, Subpart J, hydrostatic test for eight (8) continuous hours and at a minimum pressure of 1.25 times MAOP, documentation of mechanical and chemical properties including pipe toughness (mill test reports) showing that the pipe in each Special Permit Segment meets the wall thickness, yield strength, tensile

strength and chemical composition of either the API Standard 5L, 5LX, or 5LS in usage at the time of manufacturing.

- **Alternative 2: Denial of the Request**

  - **Describe Alternative:**
    Denial of the special permit would require the replacement and pressure testing of all the pipeline segments associated with this special permit request, which includes approximately 6.56 miles of mainline pipe. If EPNG opted not to replace or pressure test the relevant segments of pipeline, 49 CFR § 192.611 requires a reduction in the pipeline maximum allowable operating pressure (MAOP).[5]

- **Summary**
  - A special permit allows EPNG to continue to operate the pipeline segments at their current maximum allowable operating pressure (MAOP) until either replaced, hydrostatically tested, or operated in accordance with the special permit conditions. The Federal pipeline safety regulations in 49 CFR § 192.611(a) require natural gas pipeline operators to confirm or revise the MAOP of a pipeline segment after a change in class location. A special permit would allow EPNG to continue to operate each of the 26 special permit segments at their existing MAOP's despite a change in class location for the special permit specified time interval.
  - A special permit would require EPNG to replace or pressure test all segments that have over 10 dwelling in the sliding mile area that are outside the Cluster area to meet § 192.611. Segments within the sliding mile and outside the Cluster area will be allowed to implement the special permit conditions and integrity management procedures with the sliding mile and one-mile on either side of the segment. This would be similar to requiring a Class 1 location to implement integrity management procedures (49 CFR Part 192, Subpart O) for all mileage, whether it is a high consequence are or not.
  - Background on Class Location Special Permits: On June 29, 2004, PHMSA published in the Federal Register (69 FR 38948) the criteria it uses for the consideration of class location change waivers, now being granted through special permits. First, certain threshold requirements must be met for a pipeline section to be further evaluated for a class location change special permit. Second, the age and manufacturing process of the pipe; system design and construction; environmental, operating and maintenance histories; and integrity management program elements are evaluated as significant criteria. These significant criteria are presented in matrix form and can be reviewed in the FDMS, Docket Number PHMSA–RSPA-2004-17401. Third, such special permits will

[5] These regulatory options are specified in 49 CFR § 192.611 Change in class location: Confirmation or revision of maximum allowable operating pressure.

only then be granted when pipe conditions and the operator's integrity management program provides a level of safety equal to a pipe replacement or pressure reduction.

IV. Site Description

- *Describe the environment in the vicinity of the portions of pipeline that would be subject to the special permit.*

The pipeline segments are generally short in length, not contiguous and are located in multiple States and counties/parishes within those states. Attachment A outlines the specific locations – state and county – of the proposed Special Permit Segments. Due to the number of Special Permit Segments and the multiple locations and topography of each proposed location varies.[6] The pipeline segments identified as part of this special permit that include approximately 6.56 miles of mainline pipe.

EPNG proposes a special permit that includes two types of class location units (units) with clusters that impact approximately 6.56 miles of pipe. These units would be designated as either Type A or Type B special permit segments.

The Type A special permit segments are those with more than 10 dwellings intended for human occupancy and for which the MAOP has not been confirmed in accordance with 49 CFR § 192.611. Approximately 0.0 miles of pipeline would be Type A special permit segments. EPNG did not identify any pipe located in these units that would need to be replaced or pressure tested. A special permit would have provided a schedule for the completion of the required pipe replacements and/or pressure testing for the Type A special permit segments.

Type B special permit segments that have 10 or fewer dwellings would also be subject to the Conditions of the special permit for its term. Approximately 6.56 miles of pipeline would be Type B special permit segments. All of these special permit segments would be treated as high consequence areas (HCAs) under an integrity management (IM) program (49 CFR Part 192, Subpart O) as a requirement of the special permit.

V. Environmental Impacts of Each Alternative

In this section, you must describe the different alternatives for agency action on your special permit request. Describe at least two alternatives.

[6] The EPNG pipeline facilities described in Attachment A, which include the Special Permit Segments, are regulated by the Federal Energy Regulatory Commission (FERC). Prior to approving natural gas pipeline siting, FERC analyzes the environmental impacts of siting, construction, and operation along the proposed pipeline routes.

- **Alternative 1: Granting the Special Permit Request With Conditions**
  - **Describe Alternative:** *Describe what PHMSA would do under this alternative. i.e. grant a permit that allows operator to schedule the replacement or pressure testing of certain pipeline segments and leave certain pipeline segment in place under added integrity measures defined in the Conditions of the special permit and while also treating all of the identified pipeline segments as high consequence areas..*

    The special permit includes two types of class location units (special permit segments) with clusters that impact approximately 6.56 miles of pipe. These units would be designated as either Type A or Type B special permit segments. The Type A special permit segments are those with more than 10 dwellings intended for human occupancy and for which the MAOP has not been confirmed in accordance with 49 CFR § 192.611. EPNG did not identify any Type A special permit segment pipe that would need to be replaced or pressure tested. The special permit provides for a schedule for the completion of the required pipe replacements and/or pressure testing for the Type A special permit segments. Type B special permit segments that have 10 or fewer dwellings would also be subject to the Conditions of the special permit for its term. All of these special permit segments would be treated as high consequence areas (HCAs) under an integrity management (IM) program (49 CFR Part 192, Subpart O) as a requirement of the special permit.

    The special permit would incorporate a minimum of 12 enhanced integrity management activities described above. All of the proposed special permit conditions are attributes of a robust IM program. These Conditions include conducting periodic: close interval surveys, cathodic protection reliability improvements, stress corrosion cracking direct assessment, running inline inspection (ILI) assessments (smart pigs), interference current control surveys, remediating ILI findings through anomaly evaluation and repairs, pipe seam evaluations, pipe properties records review and documentation, and maintaining line-of-sight markers. All of these integrity activities are currently required in 49 CFR Part 192 for either normal operational activities or within an IM program at some reassessment intervals. The assessment and reassessment intervals, the level of remediation and the maintenance activities in the special permit are more stringent to maintain pipe integrity and protect both the public and the environment for the class location units in which the pipe segments are located.

  - **Safety Risks**: *Describe what, if any, safety risks would result if the regulation were waived as compared to the safety risks in the absence of a special permit.*

Sections 192.5, 192.611(a) and (d), and 192.619(a) are in the gas pipeline regulations to maintain the safety of the pipeline based upon maximum allowable operating pressure (MAOP), population (Class locations) and population growth along the pipeline. Class locations are based upon the population (dwellings for human occupancy) within a "class location unit" which is defined as an onshore area that extends 220 yards on either side of the centerline of any continuous 1-mile of pipeline. These locations are determined by surveying the pipeline for population growth. The more conservative safety factors are required as dwellings for human occupancy (population growth) increases near the pipeline. Pipeline operators must conduct surveys and document population growth within 220 yards on either side of the pipeline. A higher population along the pipeline may trigger any of the following for the pipeline segment with the higher population: a reduced MAOP, a new pressure test at a higher pressure, or new pipe with either or both heavier walled or higher grade pipe to protect against integrity risks to occupants along the pipeline segment.

The proposed special permit enhanced integrity management conditions would be designed to identify and mitigate integrity issues that could threaten the pipeline segment and cause failure. The effect of the monitoring and maintenance requirements in the proposed special permit conditions will ensure the integrity of the pipe and protection of the population living near the pipeline segment to a similar degree of a lower MAOP, new pressure test, or a thicker walled or higher grade pipe without the enhanced IM protections.

If PHMSA were to deny the special permit request, EPNG would be required to reduce the pressure in the affected pipeline segments. In this situation, the consequences, and the PIR (a separate question and response) would be less than if the permit is granted because the pipeline would operate at a higher operating pressure under the special permit. In most cases a pressure reduction would be approximately 20 percent of current operating pressures. This reduction would be the difference in a Class 1 versus Class 2 location design safety factor (0.72 versus 0.60). A pressure reduction would reduce gas flow volumes to customers.

The safety risk with respect to this request for a special permit focuses on maintaining the integrity of the pipeline and on the risk it poses to the increased population to mitigate a failure of this pipeline. Granting this special permit does not increase the potential impact radius (PIR (the radius of a circle within which the potential failure of a pipeline could have significant impact on people or property)) of the pipeline. However, the risk from the increased human population around the pipeline would be mitigated through IM procedures.

PIR is the radius of a circle within which the potential failure of a pipeline could have significant impact on people or property. The current PIR's for these pipeline segments are calculated using Section 3 of ASME B31.8S-2004, "Managing System Integrity of Gas Pipelines, incorporated by reference by 49 CFR §192.903. The formula and resulting calculation are as follows:

r = radius of the circular area in feet surrounding the point of failure, otherwise known as the PIR
d = nominal diameter of the pipeline in inches;
p = pipeline segment's maximum allowable operating pressure (MAOP), psig
Note: the coefficient for natural gas is 0.69. This number will vary for other gases depending on their heat of combustion.

$$r = 0.69 * d * \sqrt{p}$$

EPNG proposes to increase integrity management inspections for pipeline segments adjacent to the Special Permit Segments, which would lower the risk in areas beyond the special permit. EPNG proposes to conduct IM type procedures (proposed Conditions in the Special Permit) on the Special Permit Inspection Areas (63.70 miles) as defined in the Special Permit. EPNG would implement the proposed condition in Type B Special Permit Inspection Areas for the duration of the special permit, and in Type A Special Permit Inspection Areas until the Special Permit Segment has been replaced with new pipe.

Special permit conditions would include the enhanced IM protections in Section III – Alternative , Items 1 through 12, which would require conducting periodic: close interval surveys, cathodic protection reliability improvements, stress corrosion cracking direct assessment, running inline inspection (ILI) assessments (smart pigs), interference current control surveys, remediating ILI findings through anomaly evaluation and repairs, pipe seam evaluations, pipe properties records review and documentation, and maintaining line-of-sight markers to identify, assess, and mitigate threats to the integrity of the pipeline both for Special Permit Segments and the larger Special Permit Inspection Area.

The special permit conditions will require EPNG to conduct hydrostatic pressure tests on any Type B special permit segments that have not been pressure tested to 1.25 times MAOP or greater to be pressure tested. None of the special permit segments have MAOPs established using 192.619(c) Grandfather Clause based upon operating above 72 percent pipe design factor. Seven (7) Type B special permit segments will require a pressure test for a Class 1 location (KM 21, 23, 25, 26, 29, 175, and 176) as shown on Attachment A.

Requiring most of the special permit conditions to be applicable to the Special Permit Inspection Areas, which extends a mile out from either side of the special permit segments, larger areas of the pipeline will be assessed and remediated for threats to the integrity of the pipeline than a PIR that is used to establish a high consequence area (HCA). Attachment A gives the integrity management PIR for each EPNG pipeline segment, which in all cases is less 730 feet or less and is much less than the 1-mile length used to establish the Special Permit Inspection Area.

Performance of the Conditions in the special permit provides an equivalent or greater level of safety for the public and environment; and imposes no additional safety risks as a result of the waived regulation. As already noted, all of the pipeline segments included under the special permit would be treated as HCAs with the additional risk analysis and remedial activities associated with this designation. The special permit also includes a number of conditions that address potential safety risks. Among these are incorporation of these segments into the Kinder Morgan Integrity Management Program, additional close interval corrosion surveys, implementation of a cathodic protection reliability improvement plan, a more comprehensive stress corrosion cracking direct assessment program, an in-line inspection (ILI) program with intervals not to exceed seven years, anomaly evaluation and repair meeting more stringent criteria, additional testing and remediation of interference currents caused by induced alternating current sources, pipe seam evaluations, criteria for the identification of pipe properties, installation of line-of-sight markers and the integration of all inspection and remediation data. This comprehensive list of additional risk related Conditions incorporated in the special permit is intended to provide for a significant added level of safety for the existing pipeline segments.

- *Would operation under a special permit change the risk of rupture or failure?*

  Operation under the special permit would not be expected to have an impact on the risk of failure or rupture as the operating conditions of the pipeline segments have not changed. Segments in the special permit would have inspections at intervals similar to IM program intervals, which would maintain the integrity of the pipe segments over the life of the special permit.

- *If a failure occurred, would consequences and spill or release volumes be different if PHMSA granted the permit? Increase risk, decrease risk, no change?*

  The consequences of any spill or release would not be impacted as a result of the special permit and the potential for such an event is

expected to be less likely with the added safety programs noted above.

- *Would the Potential Impact Radius (PIR) of a rupture change under the special permit? Would more people be affected by a failure if we granted the permit?*

  The Potential Impact Radius (PIR) as calculated in accordance with 49 CFR § 192.903 would not change under the special permit since maximum operating pressure and pipe diameter will not change, thus there would be no additional impact on the public.

- *Would operation under the special permit have an effect on pipeline longevity or reliability? Would there be any life cycle or maintenance issues?*

  Operation under the Special Permit Conditions that provide an additional level of safety is expected to have a positive impact on pipeline longevity and reliability. EPNG does not anticipate any deleterious life cycle or maintenance issues related to operation of the pipeline with the special permit and conditions based upon IM type procedures.

Implementation of the proposed conditions in the special permit provides an equivalent level of safety for the public and environment; and imposes no additional safety risks as a result of the waived regulation.

As already noted, all of the pipeline segments included under the special permit would be replaced with new pipe (Type A) or treated as HCAs with the additional risk analysis and remedial activities associated with this designation (Type B). The special permit also includes a number of proposed Special Permit Conditions that would address potential safety risks. Among these are incorporation of these segments into the Kinder Morgan Integrity Management Program, additional close interval corrosion surveys, implementation of a cathodic protection reliability improvement plan, a more comprehensive stress corrosion cracking direct assessment program, an in-line inspection (ILI) program with intervals not to exceed seven years, anomaly evaluation and repair meeting more stringent criteria, additional testing and remediation of interference currents caused by induced alternating current sources, pipe seam evaluations, criteria for the identification of pipe properties, installation of line-of-sight markers and the integration of all inspection and remediation data. This comprehensive list of additional risk related conditions incorporated in the special permit is intended to provide for a significant added level of safety for the existing pipeline segments.

- **Environmental Impacts:** *Explain how operation under the special permit would impact the environment as compared to the status quo in the absence of a special permit, either positively, negatively, or not at all.*

  Approval of the special permit would have a positive impact for those units that do not require pressure testing or replacement, since EPNG's activities would have negligible, if any, environmental impact. EPNG would avoid disturbing the right of way of property owners except for the additional inspections that may be required to satisfy the conditions of the special permit such those related to the Integrity Management Program for HCAs, additional SCCDA verification digs, and potential anomaly evaluations/repairs.

  While the special permit would avoid the full replacement of affected pipe, the proposed special permit conditions require monitoring and maintenance that could lead to excavations and repair or replacement of some pipe. EPNG will evaluate the potential environmental consequences and affected resources of land disturbances and water body crossings caused by construction activities (including adding, modifying, replacing or removing any facility) for the related environmental permits associated with any EPNG activity. This evaluation is outlined in Kinder Morgan's Operating and Maintenance Procedure (O&M) 1205: Land Disturbance, Construction, and Environmental Permits, and referenced forms and procedures, which requires obtaining the required permits prior to conducting any construction activity. These procedures ensure that all activities resulting in land disturbances or construction of new or modified facilities comply with the requirement to obtain all applicable environmental permits and other applicable environmental authorizations. These procedures contain information required to identify activities subject to Federal, State, and Local environmental authorizations related to the work and to obtain those authorizations. The procedures require a review by EPNG Environmental Services staff prior to the start of work, incorporation of environmental requirements into the project implementation, and ensuring outstanding (environmental) requirements are incorporated into facility operation.

  If the activities do not qualify under the requirements of the Federal Energy Regulatory Commission (FERC) "General Rules and Regulations" Section 2.55(a) or 2.55(b) facilities or the blanket certificate, EPNG will pursue authorization in accordance with Section 7 of the Natural Gas Act.

  - *Explain whether and how operation under the special permit would impact each of the environmental resources set out in the Site Description portion of this document: land use planning, surface waters (including wetlands), drinking water, soils and vegetation, wildlife habitats (including fisheries), cultural*

resources, socioeconomics, Native Americans, etc. ? Focus on environmental aspects that are impacted. Are there any geologic hazards? Would any of these impacts be significant?

As already noted, this special permit involves pipeline facilities at various locations. Each of the environmental resources potentially impacted that are listed would be addressed in accordance with the applicable Kinder Morgan procedures and FERC requirements. Although the environmental impacts are not expected to be significant it must be kept in mind that for those units requiring pressure testing or pipe replacements (Type A) there will be excavation related activities, along with water sourcing and water disposal issues at a minimum. These impacts will occur whether or not the Special Permit is granted. For the Type B segments, approval of the special permit request would avoid disturbance to the environment, public roadways, businesses and homes since pipe replacement would not be required at this time. PHMSA may require pipe replacement at a later date if integrity issues are found with the pipe or if the segment grows to over 10 dwellings for human occupancy in the sliding mile length that is outside the upgraded Cluster area.

- *Discuss direct, indirect and cumulative impacts.*

  The majority of the pipeline segments addressed by this special permit have been buried and undisturbed for many years. The current pipeline cover has therefore returned to its original state in most cases. Any activity related to pressure testing or pipe replacement will be temporary in nature and the pipeline right of way would be restored in accordance with required environmental regulations. Direct, indirect, or cumulative impacts associated with activities related to the special permit would not be significant.

- *Briefly summarize environmental aspects that will not be impacted. Explain why these resources won't be impacted.*

  As already noted, those pipeline segments that do not require pressure testing or pipe replacements will be operated in nearly the same manner as they are currently. The special permit would allow approximately 6.56 miles of Type B[7] Special Permit Segments to remain in their current state and not require excavation or disruption of landowner activities. Unless localized excavations are needed, right of way activities (such as additional pipeline markers) may increase in frequency due to the special

[7] Type B special permit segments total 6.56 miles of pipe of which 1.38 miles will require pressure testing.

permit conditions, but it is anticipated that there would be a very minimal added environmental impact related to those activities. All ILI Tool inspections to determine any pipeline integrity issues due to corrosion or third party damage would be propelled down the pipeline by gas flow volumes pushing ILI tools through the pipeline segment. Other IM inspections would be performed along the pipeline segment right of way.

- **Special Permit Conditions**: *[Describe the additional safety measures you propose to implement in lieu of compliance with the regulations. You may reference information already provided in your special permit request, as relevant.]*

  The Conditions related to this special permit are described in detail in the special permit.

  - *[Explain whether and how each of these safety measures addresses the safety risks and environmental impacts, if any, of granting the permit.]*

    Each of the special permit conditions have been included and designed to address the anticipated safety risks and environmental impacts of the EPNG pipeline segments covered by the proposed special permit.

  - *[Explain whether, even with the safety measures you propose, there would be any safety risks or environmental impacts beyond those that would exist in the absence of a special permit.]*

    There are currently no known safety risks or environmental impacts that are not addressed by the special permit conditions. The pipeline segments included in the proposed special permit are currently operating safely and are expected to continue to perform in that same manner.

  - *[Would implementation of the safety measures themselves have any environmental impacts? If so, would they be significant? Discuss direct, indirect and cumulative impacts.]*

    The additional safety measures provided by the proposed special permit conditions are not expected to have any significant environmental impacts other than the potential issues already noted that are related to the required pressure tests and/or pipe replacements. Please see Section III, Site Description, which outlines the environmental review process followed by EPNG prior to any excavation being implemented. EPNG follows a rigorous

procedural process as dictated by federal, state and local entities to assure compliance with all environmental regulations and requirements as outlined in this prior section.

PHMSA has reviewed the Part 192 requirements for replacing the pipeline and the conditions of the special permit including integrity management practices and considers both to have similar environmental and right-of-way impacts. These impacts will be mitigated by following the FERC procedures outlined in Section V.

- **Alternative 2: Denying the Special Permit Request and Requiring Full Compliance with 49 CFR Part 192.**

  - **Describe Alternative:** Applicant would be required to comply with 49 CFR §§ 192.5, 192.611(a) and (d), and 192.619(a). EPNG would be required to either replace existing pipe with heavier walled pipe, pressure test, or lower the maximum allowable operating pressure (MAOP).

    Denial of the permit and full adherence to the Code would afford the protections described above that are associated with either: a lower MAOP, new pressure test, or heavier walled or higher grade pipe. Denial of the special permit would mean for most of these pipeline segments that the enhanced integrity management portions of a special permit conditions would probably not be implemented.

    Denial of the special permit would require excavation to remove existing pipe, acquiring environmental permits where necessary, and pressure testing of the replacement pipeline segments. This action would create an impact to vegetation, soils and possibly waterways due to the excavation, use of public roadways, and the impacted right of way during construction.

    EPNG will evaluate the potential environmental consequences and affected resources of land disturbances and water body crossings caused by construction activities (including adding, modifying, replacing or removing any facility) for the related environmental permits associated with any EPNG activity. This evaluation is outlined in Kinder Morgan's Operating and Maintenance Procedure (O&M) 1205: Land Disturbance, Construction, and Environmental Permits, and referenced forms and procedures, which requires obtaining the required permits prior to conducting any construction activity. These procedures ensure that all activities resulting in land disturbances or construction of new or modified facilities comply with the requirement to obtain all applicable environmental permits and other applicable environmental authorizations. These procedures contain information required to identify activities

subject to Federal, State, and Local environmental authorizations related to the work and to obtain those authorizations. The procedures require a review by EPNG Environmental Services staff prior to the start of work, incorporation of environmental requirements into the project implementation, and ensuring outstanding (environmental) requirements are incorporated into facility operation.

If the activities do not qualify under the requirements of 2.55(a) or 2.55(b) facilities or the blanket certificate, EPNG will pursue authorization in accordance with Section 7 of the Natural Gas Act.

VI. Public Comments

In this section, PHMSA is summarizing public comments received for this proposed special permit.

- PHMSA received one public comment letter in response to the draft EA from "Pipeline Safety Trust" dated March 24, 2016, concerning this proposed special permit. Questions asked by Pipeline Safety Trust are answered throughout this document and the letter can be reviewed on the docket (PHMSA-2016-0007) at www.regulations.gov. A summary of the questions asked by Pipeline Safety Trust are below:
  - Only PHMSA announcement of the permit noted the fact that the operator's previous class locations had been in error. (FONSI Review: Section II)
  - The 5-year waiver to accomplish this seems unreasonably long. (FONSI Review: Section II, Footnote 2)
  - The Pipeline Safety Trust had several concerns with the information presented in the application and the environmental assessment.
    - Claimed environmental and safety benefit of the permit would occur from the elimination of the methane emissions from pipeline blowdowns; (FONSI Review: Section VIII)
    - Application fails in a couple of cases to provide a complete comparison of the effects of granting or denying the permit including the impact on adjacent right-of-way owners by allowing the existing pipe to remain in-service; (FONSI Review: Section V)
    - In the section of Safety Risks the operator indicates that the consequence of a failure would be no different if the permit is granted or is denied, without an indication of whether denying the permit would result in a reduction of pressure or pipe replacement; (FONSI Review: Section V)
  - There appears to be many segments included in the application which have never been tested in that their MAOP was determined by the Grandfather Clause (§ 192.619(c)). (FONSI Review: The special permit conditions would require as a minimum pressure tests for any segments that had not been pressure tested.)

- The application fails to give a complete useful response to § 190.341(c)(4). (FONSI Review: Section II)
- Rather than use the special permit process in a situation like this, PHMSA should consider entering a consent agreement with the operator with both acknowledging the operator is out of compliance. PHMSA risks regulating many individual operators by special permit, without any justification for why the regulations should not be met, in effect negating the safety factors in place under § 192.611 or other regulations. (FONSI Review: Section II - The special permit requires replacement or pressure testing of segments with over 10 dwelling. The special permit has conditions and integrity management procedures for the special permit inspection area, 63.70 miles of pipeline.)

VII. Reporting

In this section, you must describe the different reporting activities to other agencies and reporting basis (such as quarterly or annually) of right-of-way activities that require permits for this proposed special permit.

- EPNG will submit an annual report to the FERC pursuant to Section 2.55(b) concerning replacement activities performed in the prior calendar year that were exempt from the advance notification requirements as specified in Section 2.55(b)(2). The following items are provided to FERC:
  - (i) A brief description of the pipeline facilities to be replaced (including pipeline size and length, compression horsepower, design capacity, and cost of construction);
  - (ii) Current U.S. Geological Survey 7.5-minute series topographic maps showing the location of the facilities to be replaced; and
  - (iii) A description of the procedures to be used for erosion control, revegetation and maintenance, and stream and wetland crossings.

- EPNG will submit an annual report of Blanket Certificate Activities performed pursuant to Sections 157.208, and 385.2011 of the FERC regulations. The following information will be provided pursuant to the applicable blanket certificate regulation:
  - Section 157.208 (Construction, acquisition, operation, replacement, and miscellaneous rearrangement of facilities):
    - (1) A description of the facilities installed pursuant to this section, including a description of the length and size of pipelines, compressor horsepower, metering facilities, taps, valves, and any other facilities constructed;
    - (2) The specific purpose, location, and beginning and completion date of construction of the facilities installed, the date service commenced, and, if applicable, a statement indicating the extent to which the facilities were jointly constructed;

- (3) The actual installed cost of each facility item listed pursuant to paragraph (e)(1), separately stating the cost of materials and labor as well as other costs allocable to the facilities;
- (4)(i) A description of the contacts made, reports produced, and results of consultations which took place to ensure compliance with the Endangered Species Act, the National Historic Preservation Act and the Coastal Zone Management Act;
- (ii) Documentation, including images, that restoration of work areas is progressing appropriately;
- (iii) A discussion of problems or unusual construction issues, including those identified by affected landowners, and corrective actions taken or planned; and
- (5) For acquisitions of facilities:
- (i) A statement referencing the date of issuance, docket number and title of the proceeding for any certificate issued by the Commission authorizing the facilities acquired; and
- (ii) The amounts recorded in the accounts of the vendor (seller or lessor) that apply to the facilities acquired and the accumulated provisions for depreciation, depletion, and amortization.

VIII. Finding of No Significant Impact (FONSI)

PHMSA has carefully analyzed the safety and environmental risks associated with the above alternatives.

PHMSA believes there are minimal differences in environmental benefits from Alternative 1 (Granting the Special Permit Request With Conditions) or Alternative 2 (Denial) in eliminating methane emissions. Some methane emissions will occur from blowdowns in anticipation of hydrotesting or pipe replacement for either alternative. EPNG must use operating practices to minimize gas volumes in the pipe prior to segment blowdown for either Alternative 1 or 2.

PHMSA will require Type A special permit segments[8] to be replaced with new upgraded pipe in accordance with 49 CFR §§ 192.611(a) and 192.619(a) requirements for a Class 3 location or pressure tested so that the MAOP is commensurate with the present class location. Type B special permit segments[9] will be required to implement IM procedures and the conditions in the special permit.

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[8] Type A special permit segments include those special permit segments where there is a cluster, as described in 49 CFR § 192.5(c), of more than 10 buildings intended for human occupancy in a "class location unit" and for which the MAOP has not been confirmed in accordance with 49 CFR § 192.611(a).

[9] Type B special permit segments include those special permit segments where there is a cluster, as described in 49 CFR § 192.5(c), of 10 or fewer buildings intended for human occupancy in a "class location unit" and for which the MAOP has not been confirmed in accordance with 49 CFR § 192.611.

PHMSA will grant EPNG a special permit with conditions as outlined in Alternative 1 and reporting sections above. EPNG will implement additional special permit conditions to maintain safety and will follow the FERC regulations for evaluating the potential environmental consequences and affected resources of land disturbances and water body crossings caused by construction activities (including adding, modifying, replacing or removing any facility) for the related environmental permits associated with any EPNG activity.

PHMSA has imposed conditions on this special permit designed to protect the public, property, and the environment from the risk of a pipeline spill or failure. These conditions are designed to ensure that the likelihood of a spill or failure is not greater than it would be in the absence of the special permit. Therefore, we believe there are no significant environmental impacts associated with the issuance of a special permit to EPNG.

IX. List of Preparers

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X. Agencies and Persons Consulted

No other agencies were consulted, but PHMSA considered environmental information, special permit conditions, and documents submitted by EPNG.

Attachments:

Attachment A – Listing of EPNG Special Permit Segments

Attachment B – Guidance of Repairs to Interstate Natural Gas Pipelines Pursuant to FERC Regulations (July 2005)

Location Map: A map showing the geographic location of the Special Permit Segments can be reviewed at: regulations.gov at Docket: PHMSA-2016-0007.

keep the public informed about their integrity management efforts. This plan shall provide information to be communicated to each stakeholder about the integrity plan and the results achieved. Paragraph 10 provides further information about communications plans.

2.4.4 Management of Change Plan. Pipeline systems and the environment in which they operate are seldom static. A systematic process shall be used to ensure that, prior to implementation, changes to the pipeline system design, operation, or maintenance are evaluated for their potential risk impacts, and to ensure that changes to the environment in which the pipeline operates are evaluated. After these changes are made, they shall be incorporated, as appropriate, into future risk assessments to ensure that the risk assessment process addresses the systems as currently configured, operated, and maintained. The results of the plan's mitigative activities should be used as a feedback for systems and facilities design and operation. Paragraph 11 discusses the important aspects of managing changes as they relate to integrity management.

2.4.5 Quality Control Plan. Paragraph 12 discusses the evaluation of the integrity management program for quality control purposes. That paragraph outlines the necessary documentation for the integrity management program. The paragraph also discusses auditing of the program, including the processes, inspections, mitigation activities, and prevention activities.

3 CONSEQUENCES

3.1 General

Risk is the mathematical product of the likelihood (probability) and the consequences of events that result from a failure. Risk may be decreased by reducing either the likelihood or the consequences of a failure, or both. This paragraph specifically addresses the consequence portion of the risk equation. The operator shall consider consequences of a potential failure when prioritizing inspections and mitigation activities.

The B31.8 Code manages risk to pipeline integrity by adjusting design and safety factors, and inspection and maintenance frequencies, as the potential consequences of a failure increase. This has been done on an empirical basis without quantifying the consequences of a failure.

Paragraph 3.2 describes how to determine the area that is affected by a pipeline failure (potential impact area) in order to evaluate the potential consequences of such an event. The area impacted is a function of the pipeline diameter and pressure.

3.2 Potential Impact Area

The refined radius of impact for natural gas is calculated using the formula

$$r = 0.69 \cdot d \sqrt{p} \qquad (1)$$

where

d = outside diameter of the pipeline, in.
p = pipeline segment's maximum allowable operating pressure (MAOP), psig
r = radius of the impact circle, ft

EXAMPLE: A 30 in. diameter pipe with a maximum allowable operating pressure of 1,000 psig has a potential impact radius of approximately 660 ft.

$$\begin{aligned} r &= 0.69 \cdot d \sqrt{p} \\ &= 0.69\,(30\text{ in.})\sqrt{1{,}000\text{ lb/in.}^2} \\ &= 654.6\text{ ft} \approx 660\text{ ft} \end{aligned}$$

Use of this equation shows that failure of a smaller diameter, lower pressure pipeline will affect a smaller area than a larger diameter, higher pressure pipeline. (See GRI-00/0189.)

NOTE: 0.69 is the factor for natural gas. Other gases or rich natural gas shall use different factors.

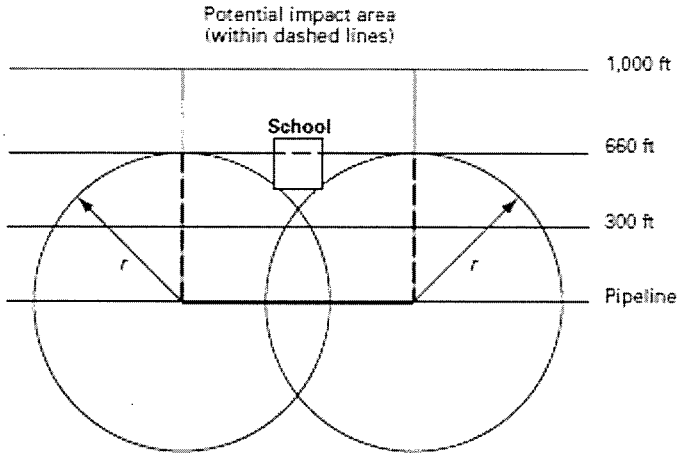
Equation (1) is derived from

$$r = \sqrt{\frac{115{,}920}{8} \cdot \mu \cdot k_f \cdot \lambda \cdot C_d \cdot H_c \cdot \frac{Q}{\bar{a}_o} \cdot \frac{pd^2}{I_{ot}}}$$

where

C_d = discharge coefficient
H_c = heat of combustion
I_{ot} = threshold heat flux
Q = flow factor $= \gamma \left(\frac{2}{\gamma + 1} \right)^{\frac{\gamma + 1}{2(\gamma - 1)}}$
R = gas constant
T = gas temperature
a_o = sonic velocity of gas $= \sqrt{\frac{\gamma RT}{m}}$
d = line diameter
m = gas molecular weight
p = line pressure
r = refined radius of impact
γ = specific heat ratio of gas
λ = release rate decay factor
μ = combustion efficiency factor
χ_f = emissivity factor

In a performance-based program, the operator may consider alternate models that calculate impact areas and consider additional factors, such as depth of burial, that may reduce impact areas. The operator shall count the number of houses and individual units in buildings within the potential impact area. The potential impact area extends from the center of the first affected circle to the center of the last affected circle (see Fig. 3). This housing unit count can then be used to help determine the relative consequences of a rupture of the pipeline segment.



GENERAL NOTE: This diagram represents the results for a 30 in. pipe with an MAOP of 1,000 psig.

Fig. 3 Potential Impact Area

The ranking of these areas is an important element of risk assessment. Determining the likelihood of failure is the other important element of risk assessment (see paras. 4 and 5).

3.3 Consequence Factors to Consider

When evaluating the consequences of a failure within the impact zone, the operator shall consider at least the following:

(*a*) population density

(*b*) proximity of the population to the pipeline (including consideration of manmade or natural barriers that may provide some level of protection)

(*c*) proximity of populations with limited or impaired mobility (e.g., hospitals, schools, child-care centers, retirement communities, prisons, recreation areas), particularly in unprotected outside areas

(*d*) property damage

(*e*) environmental damage

(*f*) effects of unignited gas releases

(*g*) security of gas supply (e.g., impacts resulting from interruption of service)

(*h*) public convenience and necessity

(*i*) potential for secondary failures

Note that the consequences may vary based on the richness of the gas transported and as a result of how the gas decompresses. The richer the gas, the more important defects and material properties are in modeling the characteristics of the failure.

4 GATHERING, REVIEWING, AND INTEGRATING DATA

4.1 General

This paragraph provides a systematic process for pipeline operators to collect and effectively utilize the data elements necessary for risk assessment. Comprehensive pipeline and facility knowledge is an essential component of a performance-based integrity management program. In addition, information on operational history, the environment around the pipeline, mitigation techniques employed, and process/procedure reviews is also necessary. Data are a key element in the decision-making process required for program implementation. When the operator lacks sufficient data or where data quality is below requirements, the operator shall follow the prescriptive-based processes as shown in Nonmandatory Appendix A.

Pipeline operator procedures, operation and maintenance plans, incident information, and other pipeline operator documents specify and require collection of data that are suitable for integrity/risk assessment. Integration of the data elements is essential in order to obtain complete and accurate information needed for an integrity management program.

4.2 Data Requirements

The operator shall have a comprehensive plan for collecting all data sets. The operator must first collect the data required to perform a risk assessment (see para.

PHMSA REGION	PHMSA No.	KM No.	State	County	Line Name	Special Permit Segment Stationing (Beginning) MP - Station	Special Permit Segment Stationing (Ending) MP - Station	Special Permit Segment Type	Special Permit Inspection Area Stationing (Beginning) MP - Station	Special Permit Inspection Area Stationing (Ending) MP - Station	Class (present)	Class (pipe)	HCA	Latest HCA Assessment and Date	Special Permit Inspection Area Length (ft)	Special Permit Segment Length not meeting present Class (ft)	Replace Length (ft)	Pressure Test Length (ft)	Dwellings in length not meeting present Class	Pipe Diameter (in)	MAOP (psig)
WESTERN	1	11	AZ	COCHISE	1100	0428 - 5065	0429 - 1197	B	0427 - 5049	0430 - 786	3	1	NO	N/A	11972.75	1412.75	1412.75	0	1	26	837
WESTERN	2	12	AZ	COCHISE	1100	0430 - 1109	0430 - 4491	B	0429 - 1520	0431 - 4892	3	1	NO	N/A	13941.29	3381.29	3381.29	0	8	26	837
WESTERN	3	13	AZ	COCHISE	1100	0445 - 4824	0446 - 1047	B	0444 - 4626	0447 - 350	3	1	NO	N/A	12016.14	1456.14	1456.14	0	8	26	837
WESTERN	4	15	AZ	PIMA	1100	0471 - 4897	0471 - 5199	B	0470 - 4962	0472 - 5211	3	1	NO	N/A	10861.74	301.74	301.74	0	2	26	809
WESTERN	5	17	AZ	COCHISE	1103	0445 - 4670	0446 - 1038	B	0444 - 4886	0447 - 373	3	1	NO	N/A	12008.51	1448.51	1448.51	0	6	30	837
WESTERN	6	21	AZ	COCONINO	1200	0212 - 3171	0212 - 4534	B	0211 - 3171	0213 - 4531	3	1	NO	N/A	11923.19	1363.19	999.1	364.09	2	24	845
WESTERN	7	22	AZ	COCONINO	1200	0254 - 1614	0254 - 3231	B	0253 - 1702	0255 - 3219	3	1	NO	N/A	12177.06	1617.06	1617.06	0	8	24	845
WESTERN	8	23	AZ	MOHAVE	1200	0380 - 3037	0380 - 4089	B	0379 - 3127	0381 - 4066	2	1	NO	N/A	11612.01	1052.01	0	1052.01	1	24	845
WESTERN	9	24	AZ	COCONINO	1201	0212 - 3143	0212 - 4480	B	0211 - 3143	0213 - 4493	3	1	NO	N/A	11897.01	1337.01	1337.01	0	2	30	845
WESTERN	10	25	AZ	MOHAVE	1201	0380 - 3158	0380 - 4068	B	0379 - 3275	0381 - 4077	2	1	NO	N/A	11470.16	910.16	0	910.16	1	30	845
WESTERN	11	26	AZ	YAVAPAI	1203	0084 - 560	0084 - 1312	B	0083 - 589	0085 - 1334	3	2	NO	N/A	11311.91	751.91	0	751.91	4	20	877
WESTERN	12	27	AZ	COCONINO	1204	0212 - 3472	0212 - 4534	B	0211 - 3472	0213 - 4531	3	1	NO	N/A	11622.1	1062.1	902.1	160	2	34	894
WESTERN	13	28	AZ	COCONINO	1204	0254 - 241	0254 - 2696	B	0253 - 248	0255 - 2885	3	1	NO	N/A	13014.82	2454.82	2454.82	0	6	34	894
WESTERN	14	29	AZ	MOHAVE	1204	0380 - 3074	0380 - 4098	B	0379 - 3177	0381 - 4061	2	1	NO	N/A	11584.02	1024.02	0	1024.02	1	34	894
WESTERN	15	30	AZ	COCONINO	1208	0212 - 3133	0212 - 4540	B	0211 - 3127	0213 - 4531	3	1	NO	N/A	11967.05	1407.05	1094.7	312.35	2	30	845
WESTERN	16	31	AZ	COCONINO	1208	0254 - 1272	0254 - 2644	B	0253 - 1377	0255 - 2974	3	1	NO	N/A	11931.77	1371.77	1371.77	0	4	36	845
SOUTHWEST	17	169	NM	SAN JUAN	1200	0000 - 5193	0001 - 313	B	0000 - 0	0001 - 5593	3	1	NO	N/A	10873.48	400.52	361.54	38.98	2	24	845
SOUTHWEST	18	170	NM	SAN JUAN	1200	0002 - 3859	0002 - 4479	B	0001 - 4270	0004 - 430	3	1	NO	N/A	11180.54	620.54	620.54	0	8	24	845
SOUTHWEST	19	171	NM	SAN JUAN	1201	0002 - 1677	0002 - 4256	B	0001 - 2082	0004 - 206	3	2	NO	N/A	13138.37	2571.93	0	2571.93	9	24	845
SOUTHWEST	20	172	NM	SAN JUAN	1202	0000 - 790	0000 - 835	B	0000 - 0	0001 - 40	3	1	NO	N/A	6115.4	45.7	45.7	0	5	34	894
SOUTHWEST	21	173	NM	MCKINLEY	1300	0386 - 3866	0386 - 4956	B	0385 - 3934	0387 - 4968	3	1	NO	N/A	11649.8	1089.8	1089.8	0	1	30	836
SOUTHWEST	22	174	NM	MCKINLEY	1301	0386 - 3851	0386 - 4958	B	0385 - 3934	0387 - 4960	3	1	NO	N/A	11666.87	1106.87	1106.87	0	1	30	836
SOUTHWEST	23	175	NM	SAN JUAN	3201	0012 - 2973	0012 - 2991	B	0011 - 2973	0013 - 2991	3	2	NO	N/A	10578.3	18.3	0	18.3	5	20	894
SOUTHWEST	24	176	NM	SAN JUAN	3201	0012 - 3231	0012 - 3313	B	0011 - 3231	0013 - 3313	3	2	NO	N/A	10642.15	82.15	0	82.15	4	20	894
SOUTHWEST	25	281	TX	EL PASO	1100	0204 - 3749	0205 - 648	B	0203 - 3740	0206 - 645	3	1	YES	ILI & Caliper - 2010	12740.94	2180.94	2180.94	0	2	26	809
SOUTHWEST	26	282	TX	EL PASO	1103	0204 - 3758	0204 - 4469	B	0203 - 3792	0205 - 4472	3	1	YES	ILI & Caliper - 2010	11270.25	710.25	710.25	0	1	30	809
SOUTHWEST	27	283	TX	EL PASO	1103	0204 - 5009	0205 - 657	B	0203 - 5043	0206 - 549	3	1	YES	ILI & Caliper - 2010	11484.93	924.93	924.93	0	1	30	809
SOUTHWEST	28	284	TX	EL PASO	2000	0816 - 2998	0816 - 4180	B	0815 - 3072	0817 - 4346	3	1	YES	ILI & Caliper - 2009	11742.64	1182.64	1182.64	0	2	30	944
SOUTHWEST	29	285	TX	EL PASO	2000	0816 - 4218	0817 - 468	B	0815 - 4293	0818 - 542	3	1	YES	ILI & Caliper - 2009	11923.23	1363.23	1363.23	0	3	30	944

336,318.43	34,649.33	27,363.43	7,285.90	FOOTAGE
63.70	6.56	5.18	1.38	MILEAGE

LEGEND

ERW - Electric Resistance Weld
FW - Flash Weld
DSAW - Double Submerged Arc Weld
SMLS - Seamless
NLP - Not Like Pipe
NSLP - Non-Susceptible Location or Pipe for SCC
PIR - Potential Impact Radius
MAOP - Maximum Allowable Operating Pressure
MLV - Mainline Valve
HCA - High Consequence Area
SCC[1] - Stress Corrosion Cracking - Bellhole Inspection
SCC[2] - Stress Corrosion Cracking - Hydrotest Failure
SCC[3] - Stress Corrosion Cracking - In-Service Failure
SCC[4] - Stress Corrosion Cracking - Special Permit segment located in upstream compressor segment from SCC indication (within 20 miles), Segment deemed not susceptible to SCC
SSWC - Selective Seam Weld Corrosion
MP5 - Maximum Pressure in 5 Years Preceding 7/1/1970

NOTES

1. When a segment has multiple pipe attributes (test pressure, seam, coating, etc.), the attributes for the weakest pipe element is displayed
2. The actual length of the special permit segment from begin station to end station may be greater than the length not meeting present class due to compliant pipe in the segment.
3. Pipeline stationing subject to change due to station equations, centerline changes, etc.

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PHMSA No.	KM No.	Test Pressure (psig)	Pipe Design Pressure @ 0.72 (psig)	Pipe Wall Thickness (in)	PIR (ft)	Pipe Grade (psig)	Pipe Seam Type	Pipe Coating	Pipe Installation Date	Distance to MLV Upstream/ Downstream (mi)	Compressor Station Spacing (mi)	MAOP Established per 192.619	Aerial Photography	Material/ Pressure Test Documents	Leak/SCC/SSWC (w/i 20 mi of segment)	Segment Pressure Tested after Leak/SCC/SSWC	In-Line Inspected	MP5 only or MP5 record (to back up 'test')
1	11	1245	872.64	0.303	519	52000	SMLS	COAL TAR ENAMEL	1947	4.6 / 2.1	47	(a)(3)	2012	Y / Y	Leak (8/30/2009)	NO	YES	N/A
2	12	1245	872.64	0.303	519	52000	SMLS	COAL TAR ENAMEL	1947	5.9 / 0.4	47	(a)(3)	2012	Y / Y	Leak (8/30/2009)	NO	YES	N/A
3	13	1179	872.64	0.303	519	52000	SMLS	COAL TAR ENAMEL	1947	4.3 / 0.9	47	(a)(3)	2012	Y / Y		N/A	YES	N/A
4	15	1076	809.28	0.281	510	52000	FW	COAL TAR ENAMEL	1947	24.8 / 7.0	37.8	(a)(3)	2012	Y / Y	Leak (10/17/1981)	YES	YES	N/A
5	17	1196	836.16	0.335	599	52000	DSAW	COAL TAR ENAMEL	1950	4.3 / 0.9	47	(a)(3)	2012	Y / Y	Leak (2/1/2006)	NO	YES	N/A
6	21	MP5	845.52	0.271	481	52000	DSAW	COAL TAR ENAMEL	1950	1.3 / 5.8	50.4	(c)	2012	Y / MP5	Leak (6/30/1995)	NO	YES	YES
7	22	1095	845.52	0.271	481	52000	DSAW	COAL TAR ENAMEL	1950	0.3 / 8.0	36.1	(a)(3)	2012	Y / MP5	Leak (7/10/2003)	YES	YES	YES
8	23	MP5	845.52	0.271	481	52000	DSAW	COAL TAR ENAMEL	1951	5.4 / 4.0	78.5	(c)	2012	Y / MP5	Leak (2/15/2007)	NO	YES	YES
9	24	1120	846.14	0.339	602	52000	DSAW	COAL TAR ENAMEL	1953	1.3 / 5.6	50.4	(a)(3)	2012	Y / Y		N/A	YES	N/A
10	25	MP5	846.14	0.339	602	52000	DSAW	COAL TAR ENAMEL	1953	5.4 / 4.0	78.5	(c)	2012	Y / MP5	Leak (2/17/2005)	NO	YES	YES
11	26	MP5	1052.06	0.281	409	52000	ERW	COAL TAR ENAMEL	1956	3.7 / 2.5	196.3	(c)	2012	Y / MP5		N/A	YES	YES
12	27	1239	894.16	0.406	701	52000	DSAW	COAL TAR ENAMEL	1957	1.3 / 5.6	50.4	(a)(3)	2012	Y / Y		N/A	YES	N/A
13	28	1135	894.16	0.406	701	52000	DSAW	COAL TAR ENAMEL	1956	0.0 / 21.2	36.1	(a)(3)	2012	Y / Y	SCC[1]	NO	YES	N/A
14	29	MP5	894.16	0.406	701	52000	DSAW	COAL TAR ENAMEL	1957	5.4 / 4.0	78.5	(c)	2012	Y / MP5	Leak (2/14/2005)	NO	YES	YES
15	30	1219	836.16	0.335	602	52000	DSAW	COAL TAR ENAMEL	1966	10.4 / 5.6	50.4	(a)(1)	2012	Y / Y		N/A	YES	N/A
16	31	1254	845.6	0.302	722	70000	DSAW	FUSION BONDED EPOXY	1992	0.2 / 17.5	36.1	(a)(1)	2012	Y / Y		N/A	YES	N/A
17	169	1233	845.52	0.271	481	52000	DSAW	COAL TAR ENAMEL	1950	1.0 / 3.9	81.7	(a)(1)	2012	Y / Y	Leak (6/7/2007)	NO	YES	N/A
18	170	1227	845.52	0.271	481	52000	DSAW	COAL TAR ENAMEL	1950	2.8 / 2.1	81.7	(a)(1)	2012	Y / Y	Leak (6/7/2007)	NO	YES	N/A
19	171	1218	1073.28	0.344	481	52000	DSAW	COAL TAR ENAMEL	1966	2.4 / 2.1	81.7	(a)(1)	2012	Y / Y	Leak (4/3/2007) / SCC[1]	NLP / NSLP	YES	N/A
20	172	1158	1032.9	0.469	701	52000	DSAW	COAL TAR ENAMEL	1992	0.1 / 0.0	81.7	(a)(2)	2012	Y / Y	SCC[1]	YES	NO	N/A
21	173	1181	836.16	0.335	599	52000	FW	COAL TAR ENAMEL	1954	4.6 / 4.7	48.8	(a)(3)	2012	Y / Y		N/A	YES	N/A
22	174	1180	836.16	0.335	599	52000	DSAW	COAL TAR ENAMEL	1963	0.0 / 4.7	48.8	(a)(3)	2012	Y / Y		N/A	YES	N/A
23	175	MP5	1168.13	0.312	413	52000	DSAW	FUSION BONDED EPOXY	1953	5.9 / 0.9	28.8	(c)	2012	Y / MP5	Leak (10/11/1983)	NO	YES	YES
24	176	MP5	1168.13	0.312	413	52000	DSAW	FUSION BONDED EPOXY	1953	6.0 / 0.9	28.8	(c)	2012	Y / MP5	Leak (10/11/1983)	NO	YES	YES
25	281	1054	809.28	0.281	510	52000	FW	COAL TAR ENAMEL	1947	13.2 / 2.3	39	(a)(3)	2012	Y / Y	SCC[4]	NSLP	YES	N/A
26	282	1120	808.7	0.324	589	52000	DSAW	COAL TAR ENAMEL	1950	13.2 / 2.6	39	(a)(3)	2012	Y / Y	Leak (9/9/2011) / SCC[4]	NO / NSLP	YES	N/A
27	283	1120	808.7	0.324	589	52000	DSAW	COAL TAR ENAMEL	1950	13.4 / 2.3	39	(a)(3)	2012	Y / Y	Leak (9/9/2011) / SCC[4]	NO / NSLP	YES	N/A
28	284	1221	1073.28	0.344	636	65000	DSAW	FUSION BONDED EPOXY	2003	0.3 / 19.0	39	(a)(2)	2012	Y / Y		N/A	YES	N/A
29	285	1221	1073.28	0.344	636	65000	DSAW	FUSION BONDED EPOXY	2003	0.0 / 19.0	39	(a)(2)	2012	Y / Y		N/A	YES	N/A