Docket No. RP16-___-000
Exhibit No. ANR-045

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

ANR Pipeline Company) Docket No. RP16 -___-000

Summary of Prepared Direct Testimony of James S. Taylor

Mr. Taylor is a consultant with the firm of Brown, Williams, Moorhead & Quinn, Inc. He is a registered professional engineer in the Commonwealth of Virginia. The purpose of Mr. Taylor's testimony is to present and support the appropriate terminal negative salvage ("TNS") estimates for ANR Pipeline Company's ("ANR") transmission and storage plant of $1,369,357,568 and $81,079,008, respectively, for use by ANR witness Crowley in this proceeding. The term "terminal negative salvage" refers to the cost to retire a property at the end of its service life and is equivalent to the term "final closure."

Mr. Taylor's testimony explains in detail his methodology for estimating ANR's transmission and storage plant TNS costs. The TNS estimate for ANR's transmission plant contains detailed estimates for pipelines, compressor stations, and meter stations. The TNS estimate for ANR's storage plant contains detailed estimates for well plugging and abandonment, pipelines, compressor stations, and meter stations. The transmission and storage TNS estimates include cost of removal estimates, gross salvage estimates, and a 10-percent contingency.

Mr. Taylor explains the process he used to prepare ANR's TNS estimates, including a review of various applicable regulations and reference materials, and a review of company plans, schematics, design drawings, and documentation describing and depicting ANR's system. Mr. Taylor developed a detailed set of parameters that define the tasks upon

which the TNS estimates are based. Mr. Taylor describes why various line items are included in the TNS estimates and the development of contractor crew rates used in the estimates.

Mr. Taylor explains that environmental costs are included in the TNS estimates for monitoring retirement activities and removing hazardous materials at compressor stations constructed prior to 1980. ROW damage costs are also included in the TNS estimates. Mr. Taylor also discusses the salvage allowances included in the TNS estimates for compressor station equipment; buildings, valves, and pipe; and recoverable line pack.

Mr. Taylor further explains that ANR's transmission and storage TNS estimates are reasonable because they are based on removing only two percent of ANR's transmission and storage pipelines and abandoning the rest of the pipelines in place; do not include hazardous waste disposal costs except at compressor stations constructed prior to 1980; and assume that ROW easement holders would accept future liability for pipelines abandoned in-place on their property.

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UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

ANR Pipeline Company	)	Docket No. RP16 -___-000

PREPARED DIRECT TESTIMONY OF JAMES S. TAYLOR ON BEHALF OF ANR PIPELINE COMPANY

January 29, 2016

Glossary of Terms

ANR	ANR Pipeline Company
BWMQ	Brown, Williams, Moorhead & Quinn, Inc.
Commission	Federal Energy Regulatory Commission
Corps	U.S. Army Corps of Engineers
FERC	Federal Energy Regulatory Commission
GTN	Gas Transmission Northwest Corporation
PHMSA	Pipeline and Hazardous Materials Safety Administration
psig	Pounds per square inch gage
ROW	Right of way
TNS	Terminal negative salvage
Viking	Viking Gas Transmission Company

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

ANR Pipeline Company) Docket No. RP16 -___-000

Prepared Direct Testimony of James S. Taylor

Q. Please state your name and business address.

A. My name is James S. Taylor. My business address is 1155 15th Street, N.W, Suite 1004, Washington, D.C. 20005.

Q. By whom are you employed and in what capacity?

A. I am an independent consulting engineer associated with the firm of Brown, Williams, Moorhead & Quinn, Inc. ("BWMQ"), an energy consulting firm with offices in Washington, D.C., and Houston, Texas.

Q. What is the nature of the work performed by your firm?

A. We offer technical, economic, and policy assistance to the various segments of the natural gas pipeline industry, oil pipeline industry, and electric utility industry on business and regulatory matters.

Q. Please describe your educational background and experience.

A. I received a Bachelor of Science degree in Civil Engineering from Virginia Polytechnic Institute in 1970 and a Master of Science degree in Public Works Engineering from George Washington University in 1981. I have also completed four courses in depreciation sponsored by Depreciation Programs, Inc.; a course in basic petroleum engineering and a course in natural gas reservoir engineering, both sponsored by Oil and

Gas Consultants International, Inc.; a course in natural gas underground storage sponsored by Continuing Engineering Education Corp.; and a course in construction cost estimating and bidding sponsored by George Mason University.

From September 2003 through the present, I have been associated with BWMQ. From March 1979 through September 2003, I was employed by the Federal Energy Regulatory Commission ("Commission"), initially as a civil engineer and later as a regulatory gas utility specialist. My responsibilities with the Commission included conducting depreciation studies and various types of salvage analyses (including final abandonment studies) of electric, gas pipeline, and oil pipeline companies. I also conducted various types of gas transmission and underground storage cost allocation studies. Prior to my employment with the Commission, I was employed from June 1970 through February 1979 by the District of Columbia Department of Transportation as a highway engineer in the Bureau of Design, Engineering, and Research. During that period, I was engaged in highway design, which involved the preparation of plans, specifications, and construction cost estimates. Highway construction cost estimates that I prepared were used for contractor bid evaluation purposes.

I am a registered professional engineer in the Commonwealth of Virginia (No. 0402008203) and a member of the American Society of Civil Engineers. I am also a member of the Society of Depreciation Professionals.

Q. Have you previously provided testimony in proceedings before the Commission?

A. Yes. A complete list of proceedings in which I testified before the Commission is included in Exhibit No. ANR-046.

Q. Briefly describe the purpose of your testimony in this proceeding.

A. My prepared direct testimony will address the costs of retiring the transmission and underground storage plant of ANR Pipeline Company ("ANR"). Subject to my direction, review, and approval, ANR prepared terminal negative salvage ("TNS") estimates of the cost to retire its transmission and storage plant. I provided my TNS estimates to ANR witness Crowley for his use in this proceeding.

Q. Are you sponsoring any exhibits in connection with your Prepared Direct Testimony?

A. Yes. I have prepared and am sponsoring the following exhibits in this proceeding:

Exhibit No. ANR-046	List of James S. Taylor's Testimonies Before the Commission
Exhibit No. ANR-047	ANR System Map
Exhibit No. ANR-048	ANR Schematic Diagram (CEII)
Exhibit No. ANR-049	ANR Abandonment Guidelines
Exhibit No. ANR-050	Transmission and Storage TNS Estimate Parameters
Exhibit No. ANR-051	Transmission TNS Estimate - Pipelines
Exhibit No. ANR-052	Transmission TNS Estimate - Compressor Stations
Exhibit No. ANR-053	Transmission TNS Estimate - Meter Stations
Exhibit No. ANR-054	Transmission TNS Estimate Supporting Documents
Exhibit No. ANR-055	Storage TNS Estimate
Exhibit No. ANR-056	Storage TNS Estimate Supporting Documents

I will describe and explain these exhibits in the course of my Prepared Direct Testimony.

Q. What conclusions have you reached with respect to the estimated TNS costs for ANR's transmission and storage plant?

A. I recommend that the TNS estimates for ANR's transmission and storage plant summarized in Table 1 below be adopted in this proceeding. These TNS estimates are in 2015 U.S. dollars.

Table 1

ANR Pipeline Company
TNS Estimates

Plant Function			TNS Estimate (2015 U.S.$)
I. Transmission			
A. Pipelines		$	992,751,509
B. Compressor stations		$	172,519,327
C. Meter stations		$	204,086,732
	Total:	$	1,369,357,568
II. Storage			
A. Well plug and abandonment		$	13,683,421
B. Pipelines		$	35,867,367
C. Compressor stations		$	28,490,952
D. Meter stations		$	3,037,268
	Total:	$	81,079,008

Q. Mr. Taylor, before you proceed any further, would you please explain what is meant by the term "terminal negative salvage"?

A. Terminal negative salvage refers to the retirement of a property at the end of its service life and is equivalent to the term "final closure." There are costs associated with the retirement to ensure that the property is safely and legally removed from service and not a future risk to the public. The TNS cost is the difference between the revenues realized

from the sale or disposal of the asset (referred to as the gross salvage) and the costs associated with the retirement (referred to as the cost of removal).

TNS Estimates - Overview

Q. Please briefly describe ANR's transmission facilities included in the transmission TNS estimate.

A. ANR owns and operates a natural gas pipeline system that extends across the States of Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Nebraska, Ohio, Oklahoma, Tennessee, Texas, and Wisconsin. Overall, ANR's transmission facilities include approximately 9,400 miles of pipeline; 45 compressor stations with a total certificated horsepower of approximately 885,000 at standard conditions; 670 meter stations; and numerous miscellaneous facilities required for operation of the system. Exhibit No. ANR-047 includes a map showing the location of ANR's major facilities and Exhibit No. ANR-048 is a copy of ANR's 2014 FERC Form No. 567 system schematic diagram (CEII). The transmission TNS estimate for pipelines, compressor stations, and meter stations are included in Exhibit Nos. ANR-051, ANR-052, and ANR-053, respectively. Support for the transmission TNS estimate is included in Exhibit No. ANR-054.

Q. Please briefly describe ANR's storage facilities included in the storage TNS estimate.

A. ANR owns and operates 5 natural gas storage fields and operates 5 leased storage fields in the State of Michigan. Please refer to Table 2 below for a listing of these fields. Overall, ANR's storage facilities include approximately 246 miles of pipeline; 9 compressor stations with a total certificated horsepower of approximately 124,000 at standard conditions; 9 meter stations; and numerous miscellaneous facilities required for operation

of the system. ANR owns five compressor stations at its wholly-owned storage fields and four at its leased fields.

Table 2

ANR Pipeline Company
Storage Fields

	Storage Field	State	Owned or Leased
1	Charlton	Michigan	Owned
2	Chester	Michigan	Owned
3	Cold Springs-1	Michigan	Owned
4	Muttonville	Michigan	Owned
5	Winfield	Michigan	Owned
6	Austin 1/ 2/	Michigan	Leased
7	Goodwell 1/	Michigan	Leased
8	Lincoln 1/	Michigan	Leased
9	Loreed 1/	Michigan	Leased
10	Reed City 1/ 3/	Michigan	Leased

1/ ANR-owned compressor station at leased field.
2/ Wolfolk compressor sta. associated with Austin field.
3/ Compressor station common w Loreed field.

A schematic of ANR's storage fields is included in Exhibit No. ANR-048, page 9. The storage TNS estimate is included in Exhibit No. ANR-055. Support for the storage TNS estimate is included in Exhibit No. ANR-056.

Q. What government regulations did you review during the development of the TNS estimates?

A. First, I reviewed United States Department of Transportation Pipeline and Hazardous Materials Safety Administration ("PHMSA") minimum safety regulations (49 CFR § 192.727), and pipeline class location guidelines (49 CFR § 192.5). PHMSA minimum safety regulations require pipelines abandoned in-place to be disconnected from all sources

and supplies of gas; purged of gas; and the pipelines sealed at the ends. PHMSA pipeline class location guidelines categorize the extent of development in the vicinity of gas pipelines as Classes 1 through 4, with Class 1 being the least developed area and Class 4 being the most highly developed area. Second, I reviewed regulations that give the U.S. Army Corps of Engineers ("the Corps") the authority to clear wrecks and other obstructions within the navigable waters of the United States (33 CFR Part 245) and issue permits for the discharge of dredged or fill material into the waters of the United States (33 CFR Part 323). Third, I reviewed the legal requirements to plug and abandon gas wells outlined in the regulations of the State of Michigan. Fourth and finally, I reviewed several Commission orders pertaining to the removal of pipelines under its jurisdiction from a pipeline company's right-of-way ("ROW") at the time of final closure.

Q. What other information did you rely on during the development of ANR's TNS estimates?

A. I relied on the following documents during the development of the TNS estimates: (1) ANR's preliminary TNS estimates for its pipelines, compressor stations, meter stations, and well plugging and abandonment; (2) ANR's maps, schematics, design drawings, and other documentation describing and depicting the system; (3) representative ANR property easement agreements; (4) ANR's facility abandonment guidelines included in Exhibit No. ANR-049; (5) equipment cost information published by the Corps; (6) labor rates and construction cost information in various issues of "Engineering News Record"; (7) per diem rates for the geographic area served by ANR published by the United States General Services Administration for FY 2015; (8) the "2015 National Heavy Construction Estimator" by Craftsman Book Company; (9) the reference book, Cost Estimating Manual

for Pipelines and Marine Structures, by John S. Page; and (10) the Caterpillar Performance Handbook, Edition 42, published by Caterpillar Inc.

Q. Did you develop overall detailed sets of parameters upon which your TNS estimates are based?

A. Yes. Exhibit No. ANR-050 includes a list of 36 parameters that describes the procedures and work necessary to retire ANR's pipelines, compressor stations, meter stations, and storage wells.

Q. What type of contractors would ANR employ to remove or abandon its transmission and storage facilities?

A. Because ANR's pipelines cross numerous rivers and creeks, and numerous utilities and facilities owned by others such as highways, railroads, communications lines, and pipelines, contractors skilled in pipeline retirement and demolition techniques would be used for removal and abandonment activities. Additionally, skilled well-service contractors would be used to plug and abandon ANR's storage wells.

Q. Please summarize the major estimate parameters that form the basis for ANR's transmission and storage estimates.

A. Major estimate parameters upon which the transmission and storage TNS estimates are based include the following: (1) pig and clean all pipelines; (2) abandon 98 percent of pipelines in-place; (3) remove 2 percent of pipelines from ANR's ROW; (4) grout pipelines located at highway crossings, railroad crossings, and water crossings; (5) remove all surface facilities to a minimum of three feet below the surface; (6) restore compressor station and meter station sites to an "agricultural" standard; and (7) plug and abandon all storage wells.

Q. How did ANR estimate that 2 percent of its transmission and storage pipelines would be removed from their ROW?

A. ANR conducted a summary review of its ROW documents and determined that 2 percent of the ROW documents have language requiring pipe to be removed upon abandonment. The percentage of pipe estimated to be removed in the TNS estimates was based on ANR's summary review.

Transmission and Storage TNS Estimates

Q. What contractor crew rates did ANR incorporate in its TNS estimates?

A. ANR developed 2015 contractor crew rates for each state in its service area.

Q. Mr. Taylor, did you review ANR's contractor crew rates to test their reasonableness?

A. Yes. I reviewed the contractor crew rates used by ANR in its TNS estimates and believe they are reasonable based on my comparison with similar estimates I have independently conducted or reviewed and on published labor and equipment rates.

Q. Why do the TNS estimates include provisions for cleaning and purging ANR's pipelines?

A. For environmental and safety reasons, it is standard industry practice to clean and purge pipe prior to abandoning it in-place. Significant cleaning of ANR's pipelines is necessary because, as mentioned above, all but 2 percent of ANR'S pipelines in the TNS estimates are estimated to be abandoned in place. Purging would be performed in a manner designed to maximize the recovery of line pack.

Q. Mr. Taylor, why do the TNS estimates include provisions for grouting pipelines at road and railroad crossings?

A. Generally speaking, grout consisting of a mixture of Portland cement and water is used to fill underground cavities. Grouting of pipelines at road and railroad crossings is necessary to insure that subsidence of road pavement and railroad track bed does not occur should

the retired pipelines corrode and lose their load-bearing capacity. The TNS estimates include provisions for grouting pipelines at all road and railroad crossings. The estimated length of a road or railroad crossing was estimated to be 100 feet for purposes of the TNS estimates.

Q. Similarly, why do the TNS estimates include provisions for grouting pipelines at water crossings?

A. Should the Corps believe that an abandoned ANR pipeline would pose a hazard to navigation on any water body, it would most likely mandate removal of the pipeline. Such removal would be an environmentally disruptive and expensive undertaking. Grouting pipelines at water crossings would increase the mass of the pipe and minimize the possibility of pipe movement, and, thus, reduce or eliminate the need to remove the pipe at these locations. Grouting would also insure that any residual hydrocarbons on the pipe wall do not enter the water body. The estimated length of a water crossing was estimated to be 100 feet for purposes of the TNS estimates.

Q. Does the inclusion of grouting costs at water crossings take into consideration situations where additional costs at these locations would likely be incurred?

A. Yes. At various water crossings, where scouring would most likely expose its pipelines, ANR may reasonably decide to remove these pipelines to avoid future liability. Generally speaking, it would be considerably more expensive for ANR to remove its pipelines at water crossings than to grout its pipelines in-place. Inclusion in the TNS estimates of the cost to grout all pipelines at water crossings takes into consideration a variety of potential costs at these locations that ANR will likely face when its pipelines reach the end of their service lives. ANR's estimate of the costs to retire all of its water crossings, based solely

on the costs of grouting 100 feet of pipeline at each crossing, is both reasonable and conservative.

Q. What are the site restoration standards in the TNS estimates for ANR's compressor and meter station sites?

A. The TNS estimates include provisions that after demolition work at ANR's compressor and meter station sites the developed portion of the site would be restored to an "agricultural" condition. An agricultural condition means that only topsoil and sod would remain at the site. It would likely be necessary to restore the compressor and meter station sites to an agricultural condition because private easement agreements and/or local and federal authorities require removal of unused buildings and site restoration. In addition, the removal of unused buildings would eliminate maintenance costs, taxes, and liability associated with them.

Q. Please explain the basis in the TNS estimates for the removal of ANR's compressor stations.

A. The TNS compressor station estimates are based on the premise that all buildings, piping, and equipment would be removed and all foundations would be removed to 3 feet below the ground surface. As discussed above, it would be necessary to remove compressor station facilities because of private easement agreements and/or local and federal requirements and the developed portion of the site would be restored to an agricultural condition. Individual unit costs were applied to the applicable quantities of material and equipment per station building. Finally, environmental costs and gross salvage were included in each compressor station estimate. The TNS estimates for ANR's transmission and storage compressor stations are included in Exhibit Nos. ANR-052 and ANR-055, respectively.

Q. Please explain the basis in the TNS estimates for the removal of ANR's meter stations.

A. ANR's meter stations were identified by state and categorized based on the type and size of gas measurement facilities. ANR estimated the cost to remove each meter station by the type and size category in each state. Environmental costs, land damages, and gross salvage were also included in the meter station cost estimates. Contractors selected for meter station removal would be trained by ANR to properly isolate, flange-off, and disconnect ANR's facilities from facilities owned by others. The TNS estimates for ANR's transmission and storage meter stations are included in Exhibit Nos. ANR-053 and ANR-055, respectively.

Q. Did ANR include ROW damages in its transmission and storage pipeline TNS estimates?

A. Yes. The pipeline TNS estimates include a ROW damage cost allowance of approximately $1,500 per dig at road crossings, water crossings, and valve sites. The number of digs is based on two digs per road crossing and water crossing, and one dig per valve site. The TNS estimates also include a ROW damage cost allowance of $12 per foot in the 2 percent of cases where pipe is removed from the ROW. Estimated ROW damage costs were based on the past experience of ANR's affiliated pipeline companies.

Q. Did ANR include the estimated costs for an environmental contractor to monitor ANR's transmission and storage pipeline retirement activities?

A. Yes. The pipeline components of the TNS estimates include a factor, based on 5 percent of demolition and land damage costs, to allow for the costs of hiring an environmental contractor to monitor the final abandonment activity, conduct tests for hazardous

materials, and write reports. The pipeline component of the TNS estimates includes only normal and routine environmental activities.

Q. Mr. Taylor, please describe the environmental costs included in the TNS estimates for compressor and meter stations.

A. A demolition contractor would not begin work at a compressor or meter station site until the site is certified to be free of hazardous materials. Estimated environmental costs at compressor stations based on 5 percent of demolition costs are included in the TNS estimates for hiring a contractor to monitor the retirement of each compressor station, conduct tests, and write reports. Estimated environmental costs of 10 percent of demolition costs to remove hazardous materials at compressor station buildings constructed prior to 1980 are also included in the TNS estimates. Finally, estimated environmental costs at meter stations varying from 1.5 to 2 percent of demolition costs are included in the TNS estimates.

Q. Do the TNS pipeline estimates include gross salvage allowances for pipe removed from ANR's ROW?

A. Yes. Gross salvage allowances of approximately $11,292,000 for transmission pipe and $100,500 for storage pipe are included in the TNS estimates. These pipe salvage allowances are based on an estimated salvage value of $195 per ton of pipe removed.

Q. Do the TNS pipeline estimates also include gross salvage value allowances for recoverable line pack?

A. Yes. Gross salvage value allowances for recoverable line pack of approximately $29,109,000 for transmission and $107,000 for storage were also included in the pipeline components of the TNS estimates. The estimated recoverable line pack salvage is based on the assumption that the amount of line pack at ANR's normal operating pressure of

approximately 850 psig less the amount of line pack at a reduced level of 200 psig would be recovered and credited as a gross salvage item. Recoverable line pack is conservatively priced at $4.40 per Mcf which was the approximate natural gas city gate price as of mid-2015. Although it is possible that line pack at atmospheric pressure below 200 psig could be recovered, it is not included as a gross salvage item in the TNS estimate because it is estimated that the cost to remove and salvage this gas from the pipeline would equal its gross salvage value.

Q. Do the TNS estimates include a gross salvage allowance for compressor station plant and equipment?

A. Yes. Gross salvage value allowances for equipment of $15,806,000 for transmission and $1,997,000 for storage are included in the compressor station components of the TNS estimates. Finally, gross salvage value allowances for scrap steel of $6,033,113 for transmission and $1,035,140 for storage are included in the compressor station components of the TNS estimates for valves, pipe, and the metal component of buildings.

Q. Do the TNS estimates include a gross salvage allowance for meter station plant and equipment?

A. Yes. A gross salvage value allowance of $4,283,000 for meter station plant and equipment is included in the meter station component of the TNS estimates based on allowances of $11,000 per large station and $5,000 per small station. Station size is based on the type of gas meter or the combined diameter of tubes at each station. Stations with electronic gas meters or with a combined tube diameter of 12 inches or less were considered to be small stations and stations with a combined tube diameter of greater than 12 inches were considered to be large stations. Meter and regulator stations generally have relatively low steel tonnage per site.

Q. What are the assumptions for the disposal of materials other than equipment, pipe, valves, and the metal component of buildings included in the TNS estimates?

A. The TNS estimates includes the assumption that salvage value for materials other than equipment, pipe, valves, and the metal component of buildings would be credited to the contractor, and the contractor on each individual project would consider the value of any scrap in its bid. The contractor's responsibilities would include the costs of hauling and disposing all materials to an appropriate landfill or other disposal facility. ANR's employees and inspectors would ensure that all materials would be disposed of according to applicable laws and regulations.

Storage Well Plug and Abandonment Costs

Q. What are the number and approximate depth and diameter of storage wells in each of ANR's wholly-owned storage fields?

A. The number of wells, approximate well depth, and range of casing diameters are listed in Table 3 below for each ANR wholly-owned storage field.

Table 3

ANR Pipeline Company
Storage Field Well Summary

	Storage field	No. of Wells	Approximate Well Depth (ft)	Approximate Casing Dia. (in)
1	Charlton	10	5,735	5 to 7
2	Chester	9	6,159	5 to 7
3	Cold Springs-1	7	6,727	5 to 7
4	Muttonville	17	2,915	5 to 7
5	Winfield	96	1,335	4 to 7

Q. **Mr. Taylor, how will ANR's storage wells be plugged and abandoned?**

A. The tasks necessary to plug and abandon storage wells vary with each individual well. Generally speaking, storage wells are retired by setting cement plug(s) across the production interval(s) of the reservoir so that gas is isolated in the reservoir. Intermediate cement intervals between the bottom of the well and surface are set as required to ensure that gas does not migrate to porous strata such as water-bearing strata. After the well-head equipment is removed, the surface casing will be cut approximately 4 feet below the ground surface, a cement plug set, and the well area restored. The State of Michigan's well plug and abandonment requirements are included in Exhibit No. ANR-056.

Q. How did you estimate the cost to plug and abandon ANR's storage wells?

A. ANR provided me with the estimated well-service contractor's costs to plug and abandon each of its storage wells in each ANR wholly-owned storage field. These costs are

included in Exhibit No. ANR-055. The estimated well-service contractor's costs to plug and abandon all storage wells in each wholly-owned field were then totaled to estimate the total direct cost to plug and abandon all wells in each field. Finally, indirect costs were added to the direct costs for each field to derive the total cost to plug and abandon all storage wells in each field. As shown in Exhibit No. ANR-055, indirect costs for company inspection, environmental work, management and overhead, and a 10-percent contingency were added to the direct costs to plug and abandon all wells in each field.

Q. Did you also include miscellaneous costs to plug and abandon 40 water and monitoring wells in several of ANR's leased storage fields?

A. Yes. During years 2016-2017 ANR plans to plug and abandon 40 water and monitoring wells in its leased storage fields based on an agreement with the Michigan Department of Environmental Quality. ANR provided me with a cost estimate of $2,258,300 to plug and abandon these wells. This estimated cost is included in my well plug and abandonment estimate in Exhibit No. JST-11. Supporting information with respect to this estimate is included in Exhibit No. JST-12.

Q. Please describe the work necessary to restore a well site.

A. After each well is plugged and abandoned, fencing and miscellaneous material will be removed, gravel at the well site and adjacent access road will be excavated, and the area restored to a condition acceptable to the ROW easement holder. These costs are included in the well plug and abandonment estimate and/or the storage pipeline TNS estimate.

Summary

Q. Mr. Taylor, how would you characterize ANR's transmission and storage TNS estimates?

A. ANR's TNS estimates are reasonable for the reasons listed below. First, ANR's estimates are based upon removing only above-ground facilities and abandoning all but 2 percent of its transmission and storage pipelines in-place. Estimated TNS costs based on this scope of work are significantly lower than if they included complete removal and disposal of all of ANR's pipelines. Second, hazardous waste disposal costs are included in the TNS estimates only for compressor stations built prior to 1980. Third and finally, estimated pipeline abandonment costs are based on the assumption that ROW easement holders will accept future liability for the pipeline abandoned in-place on their property without additional payment. However, should these ROW easement holders balk at accepting liability for pipeline abandoned in-place on their property, ANR would either have to negotiate additional ROW payments with these easement holders to absolve ANR of future liability or take steps to remove its transmission and storage pipelines from their ROW. Either way, this would raise the cost of final closure considerably.

Q. How do ANR's TNS estimates compare with other natural gas pipeline TNS estimates that you have independently conducted or reviewed?

A. ANR's TNS estimates are in general agreement with other natural gas pipeline TNS estimates that I have independently conducted or reviewed.

Q. Do ANR's TNS estimates include an allowance for future liability associated with pipelines abandoned in-place?

A. No. If future liabilities related to pipelines abandoned in-place should occur, there are no provisions in ANR's TNS estimates to recover these additional costs.

Q. Please comment on the 10 percent contingency used in ANR's transmission and storage TNS estimates.

A. The 10 percent contingency is at the low end of the range of contingencies used in similar TNS estimates. For example, in Commission Docket No. OR78-1, Trans-Alaska Pipeline System, both Alyeska and the Corps used 25-percent contingencies in their TNS estimates. More recently, in Commission Docket Nos. RP98-290-000, Viking Gas Transmission Corporation ("Viking") and RP06-407-000, Gas Transmission Northwest Corporation ("GTN"), Viking and GTN each used 15-percent contingencies in their TNS estimates.

Q. Mr. Taylor, does this conclude your prepared direct testimony?

A. Yes, it does.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

ANR Pipeline Company) Docket No. RP16-____-000

State of Florida)
) ss.
County of Lee)

AFFIDAVIT OF JAMES S. TAYLOR

James S. Taylor, being first duly sworn, on oath states that he is the witness whose testimony appears on the preceding pages entitled "Prepared Direct Testimony of James S. Taylor"; that, if asked the questions which appear in the text of said testimony, he would give the answers that are therein set forth; and that affiant adopts the aforesaid testimony as James S. Taylor's sworn testimony in this proceeding.

James S. Taylor

SWORN TO AND SUBSCRIBED BEFORE ME THIS 26th DAY OF January, 2016

Ivonne Zaiter
State of Florida
MY COMMISSION # EE 878557
Expires: February 26, 2017

Notary Public
My Commission Expires: