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IN THE MATTER OF THE APPLICATION OF		DPU EXHIBIT 1.0 DIR
QUESTAR GAS COMPANY FOR APPROVAL	)	
OF THE VERMILLION ACQUISITION AS A	)	DOCKET No. 17-057-01
WEXPRO II PROPERTY	)	
	)	

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1 **Q: Please state your name, title, and business address.**

2 A: My name is Douglas D. Wheelwright. I am a Technical Consultant with the Division of
3 Public Utilities (Division). My business address is 160 East 300 South, Salt Lake City, Utah
4 84114.

5 **Q: On whose behalf are you testifying?**

6 A: I am testifying on the Division's behalf.

7 **Q: Please describe your position and duties with the Division.**

8 A: As a Technical Consultant, I examine public utility financial data and review and analyze
9 filings for compliance with existing programs as well as applications for rate increases. I
10 research, analyze, document, and establish regulatory positions on a variety of regulatory
11 matters. I review and analyze operational reports and evaluate compliance with laws and
12 regulations. I provide written and sworn testimony in hearings before the Public Service
13 Commission of Utah (Commission) and assist in case preparation and analysis of testimony.

14 **Q: Did you participate in the analysis and recommendation for approval of the Wexpro II**
15 **Agreement in Docket No. 12-057-13 (Wexpro II Docket)?**

16 A: Yes. I was the Division witness in the Wexpro II Docket and recommended approval of the
17 Wexpro II Agreement. The Commission's order, issued March 28, 2013, approved the
18 Wexpro II Agreement as filed. That docket created a mechanism or a framework allowing
19 Questar Gas Company (Questar Gas or Company), through subsequent filings, to present
20 specific properties¹ to the Commission for consideration and possible inclusion as Cost-of-
21 Service (COS) gas production under the Wexpro II Agreement. Under the terms of the
22 Wexpro II Agreement, before any property may be presented for consideration, Wexpro must
23 have already completed its analysis and purchased the property.

¹ I am not an attorney, and am not using the term "property," "properties," or "Vermillion" in the technical "real property" legal sense.

Q: Was the application in this docket (Application) filed pursuant to the Wexpro II Agreement?

A. Yes. Questar Gas filed this Application for approval to include the Vermillion Acquisition in the Cost-of-Service gas production that would be purchased by Questar Gas pursuant to the Wexpro II Agreement.

Q: Is the information filed in this docket consistent with what the Company represented would be submitted in future filings?

A: Yes. As part of the approval of the Wexpro II Agreement, the Company identified the supporting documentation that would be included with future specific property applications.² Exhibits A through P of the Application provide the details of the assumptions used in the current analysis and similar models have been used to evaluate the previous Wexpro II filings for the Trail and Canyon Creek Acquisitions.

Q: Can you provide a brief summary of the Vermillion Acquisition?

Yes. I believe the Application as originally filed is a bit confusing with multiple properties and varying ownership interests. Let me try to summarize my understanding of this Application in order to help with the analysis. There are four separate properties included in the application, and the Company has prepared separate cost-of-service analysis (Exhibit L) for each of the properties in the following order.

Trail (L-1) – On December 15, 2015, Wexpro Development³ purchased a [REDACTED] working interest and [REDACTED] net revenue interest in [REDACTED]. Prior to the acquisition, Wexpro I & II had an [REDACTED] working interest and a [REDACTED] net revenue interest in the same wells. If approved, Wexpro would have a [REDACTED] working interest and a [REDACTED] net revenue interest in the existing and future development wells. The

² Wexpro II Agreement, Section IV.

³ Wexpro Development Company is a separate entity created to purchase and hold properties outside of the Wexpro Agreement. Properties may be purchased and held at Wexpro Development's own risk and are allocated a proportional share of overhead cost. If properties are later approved for inclusion under the Wexpro II Agreement, ownership of the properties are then transferred from Wexpro Development Company to Wexpro.

47 purchase price for this portion of the transaction was [REDACTED]. The Trail Unit interest is
48 located within the defined Wexpro development drilling area, which according to the terms
49 of the Wexpro II Agreement is required to be presented to the Commission for approval.

50 **Whiskey Canyon (L-2)** - On December 15, 2015, Wexpro Development purchased a [REDACTED]
51 [REDACTED]
52 [REDACTED] Wexpro had no prior ownership interest in these wells. The purchase
53 price for this portion of the transaction was [REDACTED]. Whiskey Canyon is adjacent to the
54 Canyon Creek property and the Company believes it could provide future drilling
55 opportunities. This property is outside the defined Wexpro development drilling area and is
56 being voluntarily presented for approval.

57 **Canyon Creek (L-3)** - On December 15, 2015, Wexpro Development acquired two different
58 types of interest in the Canyon Creek field. The first was a [REDACTED]
59 [REDACTED]
60 [REDACTED]
61 [REDACTED] for the existing and future
62 development wells.

63 In addition to the [REDACTED]
64 [REDACTED]
65 [REDACTED]
66 [REDACTED]
67 [REDACTED]
68 [REDACTED]

69 **Kinney (L-4)** - On April 16, 2015, Wexpro Development acquired an additional [REDACTED]
70 [REDACTED]
71 [REDACTED] Prior to this
72 acquisition, Wexpro already owned [REDACTED]
73 [REDACTED]

74 [REDACTED]
75 [REDACTED]
76 [REDACTED]. Kinney is located to the east of the Trail Field and Wexpro
77 believes it could provide future drilling opportunities. This property is outside the defined
78 Wexpro development drilling area and is being voluntarily presented for approval.

79 **Combined (L-5)** – This analysis combines the results of all four of the proposed properties
80 into one exhibit.

81 **Q: Can you provide some additional information concerning the [REDACTED] transaction**
82 **that is not included in this application?**

83 A: This portion of the transaction is explained in Mr. Rasmussen's testimony⁴ along with
84 calculations identified in Exhibit 3.3. As I understand it, due to a peculiar set of conditions in
85 the Canyon Creek field, [REDACTED]

86 [REDACTED]
87 [REDACTED]
88 [REDACTED]
89 [REDACTED]
90 [REDACTED]
91 [REDACTED]
92 [REDACTED]

93 **Q: Do you agree that there was a potential [REDACTED] impact to Wexpro?**

94 A: While there was a risk to Wexpro, I believe that the amount of any potential impact was
95 [REDACTED] in Exhibit 3.3. In response to a data request, the Company
96 calculated that in order to realize the full [REDACTED]

97 [REDACTED]⁵ [REDACTED]
98 By contrast, had [REDACTED]

⁴ Brady B. Rasmussen, page 4, line 89.

⁵ DPU data request 2.01.

99 [REDACTED]⁶ [REDACTED]
100 [REDACTED]
101 [REDACTED]
102 [REDACTED]
103 [REDACTED] As mentioned
104 above, this portion of the transaction is identified only for clarification but is not included for
105 approval in this application. The payment of the [REDACTED]
106 [REDACTED]⁷ The Division will review this
107 transaction in the course of reviewing future 191 Account filings and through future audits of
108 the 191 account. Wexpro has suggested, and the Division would support the creation of a
109 guideline letter that clearly explains this transaction and addresses other related participating
110 area expansion issues.

111 **Q: Are you aware of any other Wexpro properties that may have similar** [REDACTED]
112 [REDACTED]

113 A: Yes. The Division is concerned about the potential cost and risk [REDACTED]
114 [REDACTED]
115 [REDACTED] In response to DPU Data request 2.04 the Company
116 provided the following response;

117 [REDACTED]
118 [REDACTED]
119 [REDACTED]
120 [REDACTED]
121 [REDACTED]
122 [REDACTED]
123 [REDACTED]
124 [REDACTED]

⁶ DPU data request 2.03.

⁷ DPU data request 2.12.

A guideline letter would be very helpful to address the specific [REDACTED]
[REDACTED] for other properties in the
future.

Q: Has the Hydrocarbon Monitor provided an analysis of the Vermillion Acquisition?

A: Yes. According to the terms of the Wexpro II Agreement, the Hydrocarbon Monitor is to review the underlying assumptions including the proved producing reserves, production, geology, undeveloped reserves, developments costs and operating costs.⁸ Mr. David Evans, the Hydrocarbon Monitor has completed an independent analysis of the assumptions used by the Company to evaluate the property. Consistent with the Wexpro II Agreement, Mr. Evans does not provide a recommendation regarding the inclusion of the proposed property.⁹ It is my understanding that Wexpro employees have worked closely with Mr. Evans and have provided access to information to aid in his evaluation process. On January 18, 2017, Mr. Evans filed a report with the Division outlining his findings for the Vermillion Acquisition.

Q: What have you been able to determine from Mr. Evans' report and analysis?

A: In the Risk Analysis section of his report Mr. Evans stated the following;

[REDACTED]

[REDACTED]

[REDACTED]

⁸ Wexpro II Agreement, Section IV-4.

⁹ Wexpro II Agreement, IV-4, pages 14-15.

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¹⁰

160 Based on this independent review of the acquisition, the information presented by the
161 Company and the assumptions used in the analysis appear to be reasonable.

162 **Q: Did Mr. Evans have any concerns or recommendations related to the application and**
163 **analysis?**

164 A: Yes, Mr. Evans expressed some concern with the number of successful wells that were
165 identified as “proved” wells that the applicant projected to be drilled in the future. As
166 additional wells are drilled further and further from the existing well locations, the risk of
167 drilling a marginal well and the probability of reaching the edge of the formation will
168 increase. A potential well-site that is one step away from a current well is generally
169 considered “proved” while a location two steps away from an existing well would generally
170 be considered “probable.” As requested by Mr. Evans, the Company prepared a more
171 conservative (Low Case) cost-of-service estimate. This low case estimate does not include
172 any of the “probable” locations and therefore excludes 38 Trail locations, 3 Whiskey Canyon
173 locations, the Canyon Creek horizontal drilling location, and the Kinney location.

174 The results of this analysis and the impact to cost-of-service are provided as QGC Exhibit
175 3.7.2 LC (Low Case) and represent a more conservative look at future development. The low
176 case analysis shows [REDACTED] and the Division believes that it
177 represents a more conservative view of possible outcomes. For that reason, I have used the
178 values from the more conservative analysis in my review of the proposed properties. If

¹⁰ Evans Consulting Company, Evaluation of Acquisition of Vermillion and Kinney properties, Wyoming, January 18, 2017, p. 7.

future development proves to be [REDACTED]

Q: Do you have any additional concerns about the information included in the Application?

A: Yes. As I have mentioned in the two previous applications, a review of only this Application in isolation could potentially lead to the wrong conclusions. The majority of the analysis in this Application looks at the initial acquisition cost and future drilling potential for this specific set of properties. While this type of analysis is critical to review the risks and possible benefits of the acquisition, this set of properties represent only a small portion of the total cost-of-service gas production from Wexpro. If approved, the production from this property will be included with production from other existing and future wells to calculate the total cost-of-service gas production for Questar Gas. In addition to looking at the individual aspects of this particular acquisition, the analysis must examine the potential impact to the total Wexpro production and the weighted average cost of gas from all fields. Since the natural gas from these properties represent only a small fraction of the total cost-of-service production, it is important to look at how this acquisition and future drilling could impact the total cost-of-service price that will be paid by Questar Gas customers. The overall impact to the cost of service price has been included in Mr. Rasmussen's exhibit 3.7.2 LC (Low Case) and will be addressed later in my testimony.

Furthermore, the properties were acquired quite some time ago in April and December of 2015. The properties were purchased by Wexpro Development Company but were not presented to the Commission for inclusion in the Wexpro II agreement until January 2017. From the acquisition date until the decision date by both the Utah and Wyoming Commissions, the gas flowing from these wells, has and will continue to be sold at the current market price. Given the lengthy delay between the acquisition date and the possible inclusion date, the accurate calculation of the purchase price adjustment for gas sold becomes even more important. A preliminary adjustment calculation is include as Exhibit 3.2.

Q: Do you know how much of the Questar Gas total gas supply could potentially be provided from the proposed Vermillion Acquisition?

A: Exhibit M of the Application is a chart of the historical and projected IRP natural gas supply for Questar Gas. The projected volume requirements for the years 2017 through 2021 have been taken from the most recent Questar IRP forecast. The information included in the chart also assumes that the future drilling schedule outlined in Exhibit O of the Application will be completed along with the associated increase in future gas volumes. Based on these assumptions, the proposed Vermillion properties will provide approximately [REDACTED] of the total forecast gas supply in 2017 and will increase to [REDACTED] of the forecast gas supply by 2021.

Exhibit M also shows how the production from the existing wells is being depleted over time. The projected volume from the existing Wexpro I & Wexpro II wells represent [REDACTED] of the total supply in 2017 and decrease to [REDACTED] by 2021. The reduction in volumes coming from the existing wells follows the normal production decline curves but demonstrates how future development and additional wells will be needed if the objective is to replace the decreasing resources.

Q: How does the projected price of the cost-of-service gas from the Vermillion Acquisition compare with the forecasted market price for natural gas?

A: The cost of gas produced from the Vermillion properties has been identified in Exhibit L-1 through L-5 of the Application. Each of these Exhibits include 16 pages of information with four separate cost projections for each property. In order to avoid confusion, I will be referring to the prices identified in Exhibit L-5.1S (Combined Vermillion Properties), Annual Cost-of-Service Projections with (Incremental G&A), pages 14 – 16. This is the same forecast used by Mr. Rasmussen in QGC Exhibit 3.7.1S in the total cost-of-service calculation for all Wexpro production for years 2017 through 2022.

In 2017, gas from the existing Vermillion wells have a cost-of-service (COS) price of [REDACTED]. Exhibit O identifies [REDACTED] new wells that are projected to be completed in 2017 with an estimated COS price of [REDACTED]. The combination of the production from the existing

wells plus the additional production from new wells reduces the cost slightly and is projected to have an all-in (existing and new production) COS price of [REDACTED] for 2017.

The projected COS price of [REDACTED] from the Vermillion properties is [REDACTED] than the forecast average market price of [REDACTED]¹¹ for calendar year 2017. As additional drilling occurs in future years, the all-in price for only the Vermillion properties is projected [REDACTED] [REDACTED] in 2018, [REDACTED] in 2019, [REDACTED] in 2020 and [REDACTED] in 2021. To be very clear, the forecast all-in COS price from the Vermillion properties is projected to be [REDACTED]

Q: If the forecast all-in COS price from the Vermillion properties is [REDACTED]

[REDACTED] under the Wexpro II agreement?

A: This acquisition represents the purchase of a long-term physical asset that has potential benefits for many years. The Division recognizes the benefit of including additional long-term assets to replace production that is being depleted over time, however the analysis and recommendation must conclude the acquisition is in the public interest. The original application assumes that [REDACTED] [REDACTED] on a more conservative low case projection.

Q: What does the more conservative analysis estimate for the projected price of the cost-of-service gas from the Vermillion Acquisition?

A: The more conservative analysis calculates the COS gas price from the Vermillion wells [REDACTED] As additional drilling occurs in future years, the all-in price for only the Vermillion properties is projected [REDACTED] in 2018, [REDACTED] in 2019, [REDACTED] in 2020 and [REDACTED] in 2021. In this forecast, the all-in COS price from

¹¹ Exhibit A-1, Column D, Average price for 2017.

the combined Vermillion properties is projected to be [REDACTED]

[REDACTED]. The Company has estimated that the more conservative low case scenario will result in [REDACTED]

¹²

Q: How does the cost-of-service gas from the Vermillion acquisition properties compare to the COS gas from the other existing Wexpro I and Wexpro II wells?

A: QGC Exhibit 3.7.1S and Exhibit 3.7.2 LC provide a comparison of the cost for the existing Wexpro I and Wexpro II wells with the cost of the Vermillion properties. [REDACTED]

Q: How does the proposed cost-of-service gas from the Vermillion acquisition properties compare to the market price that Wexpro Development has been receiving since the acquisition date?

A: In response to DPU data request 2.05, the Company provided the following monthly prices that Wexpro Development has received for the volumes of natural gas sold from these properties.

[REDACTED]

[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

¹² Utah Technical Conference, February 2, 2017, page 55.

[illegible]

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284 **Q:** Since the Vermillion properties represent [REDACTED] of the total Wexpro
285 cost-of-service production, have you been able to determine how the approval of this
286 Application will affect the total price of the cost-of-service gas from Wexpro?

287 A: Yes, Mr. Rasmussen's exhibit 3.7.1S and 3.7.2 LC provide a summary of the total COS
288 production for 2017 through 2022 with and without the Vermillion acquisition. Wexpro does
289 not provide a forecast beyond five years since a drilling schedule has not been determined
290 more than five years in advance.

Exhibit 3.7.2 LC (Low Case) includes [REDACTED] and represents a more conservative analysis. Table 2 below includes some of the same information that was provided in Exhibit 3.7.2 LC and Exhibit A-1 for the forecast market prices. Column A represents the current COS forecast from the existing Wexpro properties without the

Vermillion acquisition. Column B represents the cost-of-service for only the Vermillion properties under the low case scenario and represents the cost-of-service price from the existing and future wells. Column C represents the projected cost-of-service price for the combined production from all existing and proposed new wells including Vermillion. Column D is the forecast average market price for natural gas provided in Exhibit A-1 and has been provided for comparison.

[REDACTED]

[REDACTED]				
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

A comparison of the projected cost-of-service for the Vermillion properties (Column B) with the forecast market price (Column D) shows that [REDACTED]

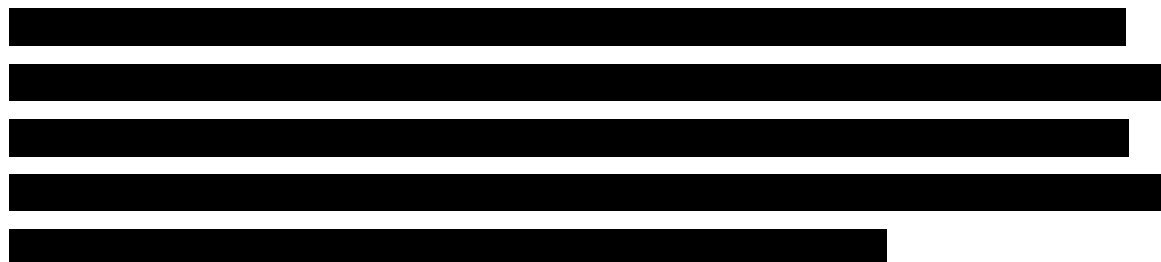
[REDACTED] A comparison of the projected total cost-of-service price for all Wexpro properties (Column C) and the forecast market price (Column D) shows that [REDACTED]

[REDACTED] Wexpro's production of cost-of-service gas that is [REDACTED] total accumulated savings experienced by customers from the Wexpro Agreement in previous years.

Chart 1 below provides the same information as Table 2 but provides a visual comparison of the low case cost-of-service price (Exhibit 3.7.2 LC) and the market price for the next five

years. The top two lines of this chart compare the total cost-of-service price with and without the Vermillion properties. [REDACTED]

[REDACTED] The bottom two lines compare the cost-of-service gas from the Vermillion property to the forecast market price provided in Exhibit A-1.



Comparing the forecast price of the Vermillion gas to the average annual market price may be an incorrect comparison because Wexpro production [REDACTED]



334

[REDACTED]

[REDACTED]

335

336

[REDACTED]

337

[REDACTED]

338

[REDACTED]

339 **Q: You mentioned the accumulated savings that has been attributed to the Wexpro**
340 **Agreement. Have you been able to determine** [REDACTED]

341

[REDACTED]

342

[REDACTED]

343 A: Yes. In response to the Wyoming data request 1.01, the Company provided an update to the
344 Cumulative Savings from Cost-of-Service Gas “green mountain” chart and the Purchase Gas
345 vs Cost-of-Service chart. Both of these charts have been provided in previous filings and
346 have been included as DPU Exhibits 1.01 and 1.02 DIR for reference. In DPU Exhibit 1.01
347 the “green mountain” chart, accumulated savings continued to build for [REDACTED]

348

[REDACTED] With the drop in the market price of gas, [REDACTED]

349

[REDACTED]

350

[REDACTED]¹³

351 The difference in the COS price and the actual market price is clearly identified at the bottom
352 of the Purchase Gas vs Cost-of-Service Gas chart DPU Exhibit 1.02. For the 11 months

¹³ OCA Data Request 1.01, Cumulative Customer Savings.

ending November 30, 2016, the price of purchased gas for calendar year 2016 was [REDACTED]

¹⁴

Q: If there is [REDACTED], why should the Commission consider approving additional properties to be included in the Wexpro II cost-of-service gas production?

A: Based on the Company projections, the COS gas from the new wells can be produced at prices that are in some cases [REDACTED] Production from new wells identified in the Trail analysis for example have a COS of [REDACTED]

¹⁵

Q: The Application indicates that the Vermillion acquisition is being presented as a package and includes four individual properties. Do you believe that all of the properties represent a similar risk and should be considered together?

A: No. Each property should be able to stand on its own and could individually be approved or rejected by the Commission.

Q: Do you have concerns with any of the individual properties?

A: Yes. I am concerned with the Kinney property and to a lesser degree the Canyon Creek property. The Kinney property as proposed [REDACTED]

According to Mr.

Rasmussen's testimony, [REDACTED]¹⁶ In addition

¹⁴ DPU Exhibit 1.02, Purchased Gas vs Cost-of-Service Gas Line Chart.

¹⁵ Exhibit L-1.1S, page 14, Annual COS Incremental G&A.

¹⁶ Brady B. Rasmussen. Page 4, Line 69.

377 to the [REDACTED]
378 [REDACTED]
379 [REDACTED]¹⁷

380 My concern with Canyon Creek has to do with the [REDACTED]
381 [REDACTED]
382 [REDACTED] The estimated cost of a vertical well in Trail or Whiskey Canyon are both
383 projected to be [REDACTED]¹⁸ and a vertical well in Canyon Creek is estimated to cost [REDACTED]
384 [REDACTED].¹⁹ In comparison, the single horizontal well in Canyon Creek is projected to cost
385 [REDACTED]²⁰ [REDACTED]
386 [REDACTED]
387 [REDACTED] Since Wexpro already has a significant interest in Canyon Creek, [REDACTED]
388 [REDACTED]
389 [REDACTED]
390 [REDACTED]
391 [REDACTED]

392 **Q: Has the Company provided an analysis that would include the Division's recommended**
393 **changes to the Application?**

394 A: The Division has requested a revised cost-of-service analysis that would [REDACTED]
395 [REDACTED]
396 [REDACTED]
397 [REDACTED] which include the Division's recommended changes. Portions of this analysis were
398 provided to the Division on February 17, 2017 and February 21, 2017 and have not been
399 reviewed or included with this testimony but could be addressed after a review has been
400 completed.

¹⁷ Utah Technical Conference, February 2, 2017, page 53.

¹⁸ Exhibit F-1 & F-2.

¹⁹ Exhibit F-3.1.

²⁰ Exhibit F-3.2.

Q: Do you feel that approving the Vermillion Acquisition under the Wexpro II Agreement is in the public interest?

A: Yes, with the exclusion of the Kinney property and satisfactory additional analysis for Canyon Creek, I believe that the inclusion of the other properties under Wexpro II is in the public interest. The existing portfolio of gas producing properties available to Questar Gas through Wexpro I and the existing Wexpro II properties will deplete over time and at some point will need to be replaced with new Wexpro production or with market purchases. Approving the Trail, Canyon Creek and Whiskey Canyon portions of the application represents the inclusion of a long-term resource that could be advantageous to ratepayers for many years. If Wexpro waits until the demand and the price for natural gas increases, the opportunities to purchase these types of properties may not be available, or may be available only at a much higher price. While the future is unknown, it seems likely the probability that prices will increase over time is greater than the probability that prices will decrease. Further, these fields represent a nearby physical source of supply in areas with known production. With the added protection of limiting Wexpro volumes to 55% of the forecasted IRP supply beginning in 2020 and the current limitation that future drilling must be lower than the 5 year forward price curve, the properties have limited downside risk relative to their long-term benefit.

Q: Does that conclude your prepared direct testimony?

A: Yes it does.