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- BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH -

APPLICATION OF QUESTAR GAS)	Docket No. 16-057-T06
COMPANY TO MODIFY ITS TARIFF)	
TO INCLUDE GAS QUALITY)	ADDITIONAL COMMENTS OF
SPECIFICATIONS AND PROVISIONS)	QUESTAR GAS COMPANY
PERTAINING TO BIOMETHANE)	

Pursuant to the Scheduling Order and Notice of Technical Conference issued January 24, 2017, Questar Gas Company (Questar Gas or Company) respectfully submits these Additional Comments.

I. Purpose of Proposed Tariff Changes

Questar Gas proposes the changes articulated in the Application for several reasons. First, Questar Gas Company (Questar Gas or Company) has not historically had gas quality standards set forth in its Utah Natural Gas Tariff (Tariff). The vast majority of gas entering Questar Gas' system comes from interstate pipelines that are regulated by the Federal Energy Regulatory Commission (FERC). These interstate pipelines have robust gas quality standards and, thus, the gas flowing from these pipelines meets identifiable standards. There are a few locations where natural gas enters Questar Gas' system from gathering lines, or other sources that do not have such gas quality standards. While Questar Gas has historically worked with parties to ensure that gas entering its system meets appropriate standards, Questar Gas believed it appropriate to include gas quality standards

in its own Tariff to provide clarity and transparency to any who would like to interconnect with Questar Gas' system and deliver supplies directly into its system in the future.

II. Generally Applicable Gas Quality Standards

The Proposed Tariff language contains Gas Quality Specifications that are both consistent with Questar Gas' historic practice, and with the specifications applicable to those interstate pipelines that make deliveries to Questar Gas' system. Questar Gas reviewed the gas quality specifications for Questar Pipeline LLC, Kern River Gas Transmission Company and Northwest Pipeline. Questar Gas' internal subject matter experts also evaluated the specifications. This review and analysis resulted in the gas quality specifications detailed in the proposed Tariff.

The proposed gas quality standards would not require any FERC-regulated pipeline to modify its practices. As the Applicability section of the proposed Tariff section states, this gas must conform to either FERC-approved tariff specs or the other requirements outlined in the tariff section. Questar Gas will continue to accept natural gas from any FERC-regulated interstate pipeline that meet the gas quality standards imposed by and approved by the FERC. The standards set forth in the proposed Tariff will apply in circumstances where supplies would enter Questar Gas' system directly, not through an interstate pipeline interconnect.

III. Biomethane Provisions

Biomethane is a supply source that could conceivably be offered for transportation on Questar Gas' system. In fact, Questar Gas has been approached by a biomethane producer who would like to deliver biomethane directly to Questar Gas' system for transportation to an end-use customer. Questar Gas believed it appropriate to modify its Tariff to provide clear information to parties like this biomethane producer about

requirements necessary for such supply to be delivered to the Questar Gas system.

Questar Gas conducted substantial due diligence prior to developing the proposed Tariff language. First, the Company created a multi-disciplinary team of subject matter experts to study the issue. This team included representatives from the environmental health and safety, engineering, integrity management, gas control, gas supply, regulatory, legal, and marketing departments. The team conducted research in order to evaluate the possibility of allowing biomethane into its system, to identify health and safety concerns, and to address any such concerns.

Questar Gas also retained an outside expert to aid in conducting the research and developing the proposed Tariff language. The Company retained third party consultant Charles Benson of Energy Technology Advancements (ETA) Partners to provide guidance on interchangeability and testing parameters. Mr. Benson is a nationally-recognized expert on gas reliability and has experience in other jurisdictions with biomethane tariffs. Mr. Benson reviewed and evaluated the constituents found in biomethane and the potential impact of such constituents on customers' appliances. With Mr. Benson's guidance, Questar Gas submitted a survey to its industrial customers requesting information related to their equipment and Mr. Benson conducted analysis relating to the appropriate gas quality specifications for gas burned in that equipment.

Finally, the Company studied other projects across North America and identified a number of utilities across the United States and Canada who allow biomethane onto their system. While the Company's survey was not exhaustive, it found more than 200 closed system projects (projects where the biomethane is produced and then used onsite for energy production like power generation). In addition, the Company interviewed 12 Companies throughout the United States and Canada with open system projects (projects

where the biomethane is produced, delivered to a distribution system, and transported to another part of the system). The open-system projects are similar to the projects Questar Gas anticipates will occur in its service territory.

In the course of this due diligence, the Company discovered three primary concerns that arise when natural gas pipelines transport biomethane. First, unless properly treated, biomethane can release constituents that pose a safety hazard. Second, some constituents in biomethane can create pipeline integrity risk. Finally, some constituents in biomethane can harm customers' appliances.

The Company learned, in its research, that it could mitigate these risks by requiring (a) that any biomethane delivered into the system meet certain specifications, (b) that the supplier providing the biomethane producer periodically test the biomethane to ensure that it continues to provide biomethane that meets the minimum specifications, and (c) that the Company install certain equipment to ensure that biomethane that does not meet such criteria not be allowed onto the system. The other companies identified in Questar Gas' research employed a similar approach and Mr. Benson indicated such an approach was reasonable.

The Company proposes to include the biomethane-specific specifications, testing requirements, and equipment requirements in a contract between Questar Gas and the biomethane producer, rather than memorializing those requirements in the proposed Tariff language. As the industry evolves and technology advances, specifications and equipment requirements may change. As more utilities participate in more biomethane projects, the body of information will grow. The proposed Tariff preserves the Company's ability to modify requirements as these changes occur. Additionally, specifications may vary from project to project, and may change depending upon the feed stock for the biomethane. For

example, landfill biomethane will contain different constituents than biomethane derived from a dairy farm. The proposed Tariff permits the Company to employ project-specific requirements where appropriate. The proposed Tariff language provides Questar Gas with the flexibility to develop and impose specifications appropriate for each project, and allows Questar Gas' requirements to evolve with the industry.

The Company developed the specifications set forth in Exhibit A for the project currently under consideration. In doing so, the Company reviewed research studies, tariffs gas specification requirements from other utilities, interviewed representatives of twelve (12) other utilities who have open-system biomethane projects, and utilized Mr. Benson's expertise. The Company believes that if the project under current consideration complies with these specifications, it will not cause any of the health, safety, pipeline integrity or appliance concerns referenced earlier. The Company would employ a similar approach to develop specifications for any future projects.

In addition to the specifications, the Company will require each Biomethane producer to pay for additional facilities to ensure that the delivered gas does, and continues to, meet the specifications. The "Additional Facilities" section of the proposed Tariff outlines the types of equipment that the Company may require. Again, the equipment requirements may change as the industry and technology develop. For example, the project under consideration now, the Company will require, among other things, the installation of an online gas monitoring devices and automatic shut off valves that will shut the biomethane in if high levels of water or hydrogen Sulphide are detected. In addition, the producer will be required to install on site chromatographs so that periodic

testing can be performed. If the biomethane does not meet the required specifications, it will not be delivered into Questar Gas' system.

In addition to the specifications and the additional equipment requirements, the Company will require initial and periodic testing to ensure that the biomethane delivered into its system does not create risks for the Company or its other customers. The other utilities the Company interviewed performed frequent testing at the startup phase to ensure that the gas met the correct standards. The gas was not introduced onto the utility system until the gas could meet the applicable specifications. The utilities then continued to perform periodic testing to ensure that the gas continues to meet the applicable standards. Questar Gas proposes to employ the same approach. The proposed Tariff states that the producer will pay for any initial and ongoing testing and/or monitoring of the biomethane supplies delivered into Questar Gas system.

The proposed Tariff language will allow Questar Gas to protect its customers and its system, while still accepting deliveries of renewable biomethane. Accordingly, Questar Gas respectfully requests that the Commission, in accordance with its rules and procedures, and the Company's Tariff, enter an Order authorizing Questar Gas to implement the proposed Tariff Section 7.07.

DATED this 27th day of January 2017.

Respectfully submitted,

QUESTAR GAS COMPANY

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CERTIFICATE OF SERVICE

I hereby certify that on the 27th day of January 2017, a true and correct copy of the foregoing Additional Comments of Questar Gas Company was served upon the following by electronic mail:

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EXHIBIT A

Biomethane Injection Constituents ¹			Required Testing by Biomethane Source Type		
Trigger Level	Lower Action Level	Upper Action Level	Landfill	Dairy	WTP ²

Health Protective Constituents – Carcinogenic

Arsenic	0.006 ppmv	0.06 ppmv	0.15 ppmv	X		
p-Dichlorobenzene	0.95 ppmv	9.5 ppmv	24 ppmv	X		X
Ethylbenzene	6.0 ppmv	60 ppmv	150 ppmv	X	X	X
n-Nitroso-di-n-propylamine	0.006 ppmv	0.06 ppmv	0.15 ppmv	X	X	
Vinyl Chloride	0.33 ppmv	3.3 ppmv	8.3 ppmv	X		X

Health Protective Constituents - Non-Carcinogenic

Antimony	0.12 ppmv	1.2 ppmv	6.1 ppmv	X		
Copper	0.02 ppmv	0.23 ppmv	1.2 ppmv	X		
Hydrogen Sulfide	22 ppmv	NA	NA	X	X	X
Lead	0.009 ppmv	0.09 ppmv	0.44 ppmv	X		
Mercaptans (Alkyl Thiols)	12 ppmv	120 ppmv	610 ppmv	X	X	X
Methacrolein	0.37 ppmv	3.7 ppmv	18 ppmv	X		
Toluene	240 ppmv	2,400 ppmv	12,000 ppmv	X	X	X

(continued)

Biomethane Injection Constituents ¹			Required Testing by Biomethane Source Type		
Trigger Level	Lower Action Level	Upper Action Level	Landfill	Dairy	WTP ²

Pipeline Integrity Protective Constituents

Ammonia	2.5 ppmv	5 ppmv	10 ppmv	X	X	X
Biologicals ⁴	1 x 10 ⁴ / scf (qPCR per APB, SRB, IOB5 group) and commercially free of bacteria of > 0.2 microns	2 x 10 ⁴ / scf (qPCR per APB, SRB, IOB5 group) and commercially free of bacteria of > 0.2 microns	4 x 10 ⁴ / scf (qPCR per APB, SRB, IOB5 group) and commercially free of bacteria of > 0.2 microns	X	X	X
Hydrogen	0.0075 vol%	.015 vol%	.03 vol%	X	X	X
Mercury	0.0025 µg/m ³	.005 µg/m ³	.01 µg/m ³	X	X	X
Siloxanes (as Si)	0.02 ppmv	0.04 ppmv	0.08 ppmv	X	X	X
Halocarbons - (Bromine, Flourine, Chlorine as Cl)	0.69 ppmv	1.38 ppmv	2.76 ppmv	X	X	X

Notes:

ppmv = parts per million by volume
µg/m³ = micrograms per cubic meter
scf = standard cubic feet
Si = Silicon
Cl = Chlorine
NA = not applicable

1. These action levels do not replace the general tariff limits. They are used to calculate health protective risk levels.
2. WTP means "Wastewater Treatment Plant" or sewage treatment plant, and includes all Biomethane sources other than landfill and dairy manure.
3. Trigger level for hydrogen sulfide may be used in the calculation of the Hazard Quotient Calculation. Hydrogen sulfide will be continuously monitored and subject to the limits defined above in the Gas Quality Specifications for Geologic Gas.
4. "APB" means Acid-producing Bacteria, "SRB" means Sulfate-reducing Bacteria, and "IOB" means Iron-oxidizing Bacteria.