



U.S. Department
of Transportation

Pipeline and Hazardous
Materials Safety
Administration

OCT 23 2017

1200 New Jersey Avenue, SE
Washington, D.C. 20590

Ms. Ruth M. Porter
Tanks Program Manager
West Virginia Department of
Environmental Protection
601 57th Street SE
Charleston, WV 25304

Dear Ms. Porter:

In a letter to the Pipeline and Hazardous Materials Safety Administration (PHMSA) dated December 28, 2016, you requested an interpretation of the definition of *pipeline facility* under 49 CFR 192.3 in reference to certain aboveground storage tanks used for brine and other fluids.

You stated that the aboveground storage tanks in question are used by “TransCanada/ [Columbia Pipeline Group] to store brine and other fluids removed in the transportation of gas by pipeline by drip separators and to store oil used to lubricate equipment at TransCanada/ [Columbia Pipeline Group] compressor stations.” You stated that “[w]hile these [aboveground storage tanks] are located adjacent to a ‘pipeline facility’, they are not used to ‘transport gas in the pipeline’ or to ‘treat gas in the pipeline system during the course of transportation’”. In addition, you provided documentation and previous PHMSA interpretations to support your request for interpretation. You asked whether storage of brine and other fluids aboveground removed from gas can be considered part of a pipeline facility and, therefore, regulated and inspected under the Federal pipeline safety regulations.

Section 192.3 defines pipeline facility as:

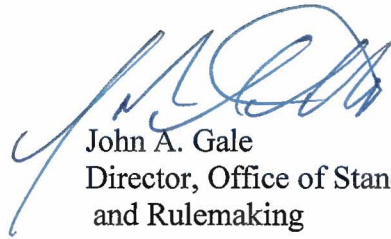
Pipeline facility means new and existing pipelines, rights-of-way, and any equipment, facility, or building used in the transportation of gas or in the treatment of gas during the course of transportation.

Equipment used for removal of water and other impurities as treatment of gas meets the definition of a *pipeline facility*. However, storage of the waste products (brine and other fluids) removed from gas is not considered a *pipeline facility* under § 192.3 because after removal, the storage of the fluids is not used in further transportation of the regulated product (gas). In addition, both Parts 192 and 195 do not regulate brine or other non-petroleum waste fluids even if they are transported by pipeline from the storage tanks. Equipment lubricating oil stored at the facility is not regulated by the Federal pipeline regulations if the oil storage tank is not connected to or the oil is not transported by a PHMSA regulated pipeline.

Therefore, PHMSA does not consider the TransCanada/ [Columbia Pipeline Group] storage tanks used to store brine or other waste fluids removed from gas as pipeline facilities, and such storage tanks are not regulated by the Federal pipeline safety regulations.

If we can be of further assistance, please contact Tewabe Asebe at 202-366-5523.

Sincerely,

A handwritten signature in blue ink, appearing to read "John A. Gale", is positioned above the printed name and title.

John A. Gale
Director, Office of Standards
and Rulemaking

JAN 03 2017



west virginia department of environmental protection

Environmental Enforcement
Aboveground & Underground Storage Tanks
601 57th Street SE
Charleston, WV 25304
Telephone: 304-926-0470; Fax: 304-926-0457

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

12/28/2016

Mr. Cameron H. Satterthwaite,
Acting Director, Office of Standards & Rulemaking
Office of Pipeline Safety (PHP-30)
Pipeline & Hazardous Materials Safety Administration
U.S. Department of Transportation
1200 New Jersey Ave. S.E.
Washington, D.C. 20590-0001

CERTIFIED RETURN RECEIPT REQUESTED

91 7199 9991 7037 1006 2626

Dear Mr. Satterthwaite:

This letter seeks input from the Office of Pipeline Safety (Office) regarding the definition of “pipeline facility” at 49 CFR 192.3 as it applies to certain aboveground storage tanks (ASTs) operated by TransCanada/Columbia Pipeline Group (TransCanada/CPG).

This request arises out of a determination by the West Virginia Department of Environmental Protection (WVDEP) that TransCanada/CPG’s ASTs meet the definition of “aboveground storage tank” as defined in the West Virginia Aboveground Storage Tank Act (AST Act - WV Code §§22-30-1 through 22-30-26) (2015) at WV Code §22-30-3(1). Consequently, WVDEP expects TransCanada/CPG to comply with regulatory requirements in the AST Act, including registration of the ASTs, secondary containment, leak detection, and inspection and maintenance requirements.

The AST definition also contains a list of categories of tanks or devices that are not subject to the AST Act, including “pipeline facilities” regulated under the Natural Gas Pipeline Safety Act of 1968 as provided at WV Code §22-30-3-(1)(J). Columbia Pipeline Group believes this exemption applies to the ASTs at issue here based on the federal definition of “pipeline facility.” The WVDEP believes TransCanada/CPG has misapplied that definition.

As you know, the pipeline safety regulations at 49 CFR 192.3 define “pipeline facility” in pertinent part as “. . . any equipment . . . used in the transportation of gas or in the treatment of gas during the course of transportation.”

Promoting a healthy environment.

The ASTs in question are used by TransCanada/CPG to store brine and other fluids removed from gas in the transportation pipeline by drip separators and to store oil used to lubricate equipment at TransCanada/CPG compressor stations. While these ASTs are located adjacent to a "pipeline facility," they are not used to "transport gas in the pipeline" or to "treat gas in the pipeline system during the course of transportation" as required by the federal definition to qualify as a "pipeline facility."

The WVDEP believes the ASTs here are analogous to anhydrous ammonia storage tanks analyzed by the Office in a letter dated June 1, 2001, to Sempra Energy. That letter along with Sempra's letter of May 1, 2001, requesting an opinion from the Office, is included as Attachment "A." The Office reasoned that while "Sempra's pipeline compressor assemblies, including the anhydrous ammonia storage tanks, are 'pipeline facilities,'" the anhydrous ammonia storage tanks cannot be considered "storage incident to transportation" in the sense of storage of product being transported by a pipeline" within the meaning of 49 CFR 192.3. Consequently, the Office concluded that the connection of Sempra's anhydrous ammonia storage tanks to a "pipeline facility" did not exempt it from complying with environmental regulations administered by U. S Environmental Agency.

The WVDEP believes the Office should reach the same conclusion regarding TransCanada/CPG's brine and oil storage tanks. In other words, the storage of brine and oil as part of TransCanada/CPG's transportation system and compressor stations does not fall within the definition of "pipeline facility" at 49 CFR 192.3 and, therefore, must comply with the requirements in the WVDEP AST Act.

To assist the Office, the WVDEP is also including correspondence pertaining to the WVDEP's determination that TransCanada/CPG's brine and oil storage tanks must comply with the WV AST Act regulatory requirements. Attachment "B" contains two letters dated October 4, 2016, and July 19, 2016, from the WVDEP supporting its determination. As noted in the July 19, 2016, letter, the WVDEP determined the ASTs were terminal points where material (condensate and produced water) was stored after removal from the gas transportation stream. The material is a liquid, not vapor gas, and does not reenter the gas stream. Instead, it is removed from the ASTs and transported by truck for disposal or recycling. Moreover, the ASTs are not used for the storage, transportation or treatment of gas. Also included is Attachment "C" which consists of schematics of the brine and oil storage tanks. Finally, Attachment "D" is correspondence dated August 26, 2016, from TransCanada/CPG analyzing its position.

If you need any further information regarding this matter, please let us know. I can be reached at (304) 926-0499 extension 1007.

Sincerely,



Ruth M. Porter
Tanks Program Manager

Enclosures:

cc: Scott G. Mandirola, Director, DWWM (via e-mail)
Patrick V. Campbell, Deputy Director, DWWM (via e-mail)
Jeremy W. Bandy, Chief Inspector, EE (via e-mail)
Joseph M. Sizemore, Assistant Chief Inspector, EE/HW-Tanks (via e-mail)

Attachment A

PI-01-0111

U.S. Department of Transportation
Research and Special Programs Administration
400 Seventh St., S.W.
Washington, D.C. 20590

June 1, 2001

Ms. Joyce A. Padleschat Attorney
Semptra Energy
101 Ash Street
San Diego, CA 92101-3017

Dear Ms. Padleschat:

This letter is in response to your letter of May 1, 2001, requesting clarification of the definition of "pipeline facilities" as used in federal gas pipeline safety regulations at 49 CFR Part 192.

Semptra was asked by the Certified Unified Program Agency (CUPA) for Kern County, California, to prepare a Risk Management Plan (RMP) for anhydrous ammonia storage and handling facilities, which are part of a selective catalytic reduction (SCR) system used for controlling NO emissions from a natural gas pipeline compressor station. Preparation of RMPs for certain stationary pollution sources is required by the regulations of the U.S. Environmental Protection Agency (EPA) at 40 CFR § 68.3. Because the SCR facilities are part of the compressor engine assembly, Semptra maintains that they are transportation-related "pipeline facilities" not subject to the RMP requirements.

The pipeline safety regulations at 49 CFR § 192.3 define "pipeline facility" as "new and existing pipelines, rights-of-way, and any equipment, facility, or building used in the transportation of gas or in the treatment of gas during the course of transportation." There is no question that Semptra's pipeline compressor assemblies, including the storage tanks for anhydrous ammonia, are "pipeline facilities." Although the term "transportation" is not defined, we believe that the anhydrous ammonia storage likely constitutes a "stationary source" within the meaning of the environmental regulations at 40 CFR § 68.3 (the RMP rule).

However, the gas pipeline safety regulations do not address NO control. Nor can the storage of anhydrous ammonia for the purpose of pollution control be considered "storage incident to transportation" in the sense of storage of a product being transported by a pipeline.

Therefore, the storage of anhydrous ammonia storage as part of an SCR system on a "pipeline facility" does not appear to exempt it from the EPA RMP requirements. Naturally, any determination of whether this facility is subject to RMP requirements is up to EPA and its state partners.

If you have any further questions, please contact me at (202) 366-4565.

Sincerely yours,
Richard D. Huriaux, P.E.
Manager, Regulations
Office of Pipeline Safety

Sempra Energy
101 Ash Street
San Diego, CA 92101-3017

May 1, 2001

Richard Huriaux
Director of Regulations
Office of Pipeline Safety
Research and Special Programs Administration
Department of Transportation
400 Seventh Street, S.W., Room 7128
Washington, D.C. 20590

Re: Definition of "Pipeline Facility"

Dear Mr. Huriaux:

Thank you for taking the time yesterday in our telephone conversation to respond to my question concerning facilities that constitute a "pipeline facility" and for offering to provide us with a written explanation. We would very much appreciate the written response.

As we discussed, the Company has been asked to prepare a RMP for emissions reduction equipment that is necessary for the operation of natural gas compressors along a transmission pipeline. Transportation facilities subject to oversight or regulation under 49 C.F.R. Part 192 are included in those facilities exempt from preparing a RMP.¹ I understand from our conversation that you participated in defining the parameters of this exemption.

The facilities at issue are part of a natural gas compressor station regulated pursuant to 49 C.F.R. Part 192. Each compressor is driven by a natural gas fired engine which, pursuant to the engine's air quality permit, is equipped with a Selective Catalytic reduction system ("SCR") to reduce air pollutant emissions (NO_x). SCR operates by injecting small amounts of ammonia into the emission stack, which changes the NO into nitrogen and water. Consequently, this facility handles and stores a certain volume of anhydrous ammonia for use solely in the SCR. Pursuant to the engines' air permits, the engines — and thus the compressors — would not be able to operate without the SCR, including ammonia.

The only purpose for the SCR, including the ammonia, is to allow operation of the compressors that move natural gas through the pipeline system. Based on their purpose and function, we believe that the emission reduction equipment that are part of the compressor engines are transportation related "pipeline facilities" as defined by 49 C.F.R. Part 192.

We greatly appreciate your providing us with your opinion in this matter.

Very truly yours,
Joyce A. Padleschat

¹ 49 C.F.R. §68.3, definition of "Stationary source".

Attachment B



west virginia department of environmental protection

Environmental Enforcement
Aboveground & Underground Storage Tanks
601 57th Street SE
Charleston, WV 25304
Telephone: 304-926-0470; Fax: 304-926-0457

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

7/19/2016

Heather A. Roberts
Environmental Compliance Manager
Columbia Pipeline Group
4360 W. Roy Furman Hwy
Waynesburg, PA 15370

CERTIFIED RETURN RECEIPT REQUESTED

Dear Ms. Roberts:

This correspondence is in response to your June 17, 2016 email. The West Virginia Department of Environmental Protection (WVDEP) appreciates Columbia Pipeline Group (Columbia) providing additional information to the Agency concerning the approximately four hundred and fifty (450) Aboveground Storage Tanks (ASTs) that Columbia has deregistered. We understand Columbia's position is that these ASTs are not subject to the AST Act because they are subject to the Natural Gas Pipeline Safety Act of 1968 and regulated under the Department of Transportation (DOT)/Pipeline and Hazardous Material Safety Administration (PHMSA). Specifically, Columbia asserts the tanks do not meet the statutory definition of an AST due to the provisions found in WV Code, Chapter 22, Article 30, Section 3(1)(J).

In support of this argument, Columbia noted that the definition of a pipeline facility under 49CFR 192.3 means "new and existing pipelines, rights-of-way, and any equipment, facility, or building used in the transportation of gas or in the treatment of gas during the course of transportation." Furthermore, Columbia noted that the transportation of gas means "the gathering, transmission, or distribution of gas by pipeline or the storage of gas, in or affecting interstate or foreign commerce."

WVDEP has reviewed documents previously submitted by Columbia and WVDEP inspectors met with Columbia's representatives and visited a number of Columbia's AST locations on May 25, 2016 in an attempt to gain a better understanding of Columbia's operations. WVDEP has determined the ASTs in question to be terminal points where the material (e.g. condensate and produced water) has been removed from the gas transportation stream. Furthermore, the material in the ASTs does not re-enter the gas transportation stream. The material in the ASTs is removed and transported by truck for disposal or recycling. The material stored in the ASTs are liquids not vapor gas, and the ASTs do not appear to be used in the storage of gas, the transportation of gas, or the treatment of gas. WVDEP believes the ASTs are storing various liquid wastes and potentially by-products prior to disposal or recycling. In summary, WVDEP believes that the ASTs are subject to the requirements of the AST Act

Promoting a healthy environment.

and its associated Legislative Rules. Therefore, WVDEP expects Columbia to fulfill its AST regulatory requirement including but not limited to the registration provisions found at WV Code §22-30-4.

However, if Columbia continues to believe that its tanks are exempt, it should provide any further documentation to support its position within thirty (30) days of receipt of this letter. If you have questions or would like to discuss further, please contact me at 304.926.0499 extension 1007. Thank you for your prompt attention to this matter.

Sincerely,

A handwritten signature in blue ink that reads "Ruth M. Porter". The signature is written in a cursive, flowing style.

Ruth M. Porter
Tanks Program Manager

cc: Scott G. Mandirola, Director, DWWWM (via e-mail)
Patrick V. Campbell, Deputy Director, DWWWM (via e-mail)
Jeremy W. Bandy, Chief Inspector, EE (via e-mail)
Joseph M. Sizemore, Assistant Chief Inspector, EE (via e-mail)
Eric Mauzy, Northern Inspector Supervisor, Tanks, (via e-mail)
Jason Liddle, Southern Inspector Supervisor, Tanks (via email)



west virginia department of environmental protection

Environmental Enforcement
Aboveground & Underground Storage Tanks
601 57th Street SE
Charleston, WV 25304
Telephone: 304-926-0470
Fax: 304-926-0457

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

October 4, 2016

Stephen Chung, Director
Environmental Law
U.S. Pipelines Law
Columbia Pipeline Group, Inc.
700 Louisiana, Ste. 700
Houston, TX 77002

Dear Mr. Chung:

This is in response to your letter of August 26, 2016, regarding your contention that a subset of Columbia Pipeline Group's (CPG's) aboveground storage tanks fall within the scope of the pipeline facility exemption found in the AST Act (WV Code 22-30-3 (1)(I)) and, therefore, are not subject to provisions of the Act and its Rules.

Simply put, we disagree with your plain reading of the AST Act and the definition of "pipeline facility." The definition clearly creates two categories of equipment, facilities, or buildings that qualify as a "pipeline facility." First, if the equipment, facility, or building is used in the "transportation of gas," then it is a "pipeline facility." Second, if the equipment, facility, or building is used in the "treatment of gas during the course of transportation," then it also is a "pipeline facility." Here, the CPG brine storage tanks fail to satisfy either category.

The brine tanks are plainly not used to "transport gas." Instead, as you acknowledge, they are used to store brine, generated from the treatment or removal process, to await transportation for disposal. Obviously, none of this involves the "transportation of gas."

Similarly, the brine tanks are not used in the "treatment of gas during the course of transportation." Rather, as the attached CPG diagram clearly indicates, "the treatment of gas," the removal of brine from the gas, occurs underground in a facility or equipment connected directly to the pipeline that transports the gas. That is the facility or equipment that qualifies under the second category, not the aboveground storage tanks used to store brine prior to disposal.

WVDEP acknowledges that there were duplicate entries pulled on the list of ASTs we provided you with our letter of July 22, 2016. These duplicates occur in the system based upon

Promoting a healthy environment.

how the tanks were initially registered. Attached is a revised list of all deregistered ASTs with duplicates removed.

Accordingly, it is the determination of the agency that the tanks in question are not a "pipeline facility" and must be registered pursuant to the Act. Continued operation or use of an aboveground storage tank that has not been properly registered is a violation of WV Code 22-30-4 (e). Continued violation of the statute will result in formal enforcement.

Within five days of receipt of this letter CPG must advise WVDEP of the actions it is taking to correct this violation(s). Thank you for your prompt attention to this matter.

Sincerely,

A handwritten signature in blue ink that reads "Ruth M. Porter". The signature is fluid and cursive, with the first name "Ruth" being more prominent.

Ruth M. Porter
Tanks Program Manager

Attachment

cc: Scott G. Mandirola, Director, DWWM (via e-mail)
Patrick V. Campbell, Deputy Director, DWWM (via e-mail)
Jeremy W. Bandy, Chief Inspector, EE (via e-mail)
Joseph M. Sizemore, Assistant Chief Inspector, EE, HW – AST / UST (via email)

Columbia Gas Transmission
Deregistered Tanks (submit date 6/15/15)

Owner	Ref. Id	Facility Name	County	Tank Label	CAS ID	Substance
COLUMBIA	2014-0003202	Horse Creek	Boone	003-00000397	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003202	Horse Creek	Boone	003-00000398	125643-61-0	Benzenepropanoic acid, 3,5-bis(1,1-
COLUMBIA	2014-0003202	Horse Creek	Boone	003-00000399	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003197	FRAMETOWN	Braxton	004-00000248	000122-39-4	Anilinobenzene
COLUMBIA	2014-0003197	FRAMETOWN	Braxton	004-00000249	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003197	FRAMETOWN	Braxton	004-00000250	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003197	FRAMETOWN	Braxton	004-00000251	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001249	GLENVILLE	Gilmer	011-00000224	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001249	GLENVILLE	Gilmer	011-00000225	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001249	GLENVILLE	Gilmer	011-00001262	000107-21-1	Ethylene glycol
COLUMBIA	2014-0001249	GLENVILLE	Gilmer	011-00001263	000107-21-1	Ethylene glycol
COLUMBIA	2014-0001250	Hardy	Hampshire	014-00000083	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001250	Hardy	Hampshire	014-00000084	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000002	007732-18-5	Water
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000003	007732-18-5	Water
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000004	125643-61-0	Benzenepropanoic acid, 3,5-bis(1,1-
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000005	125643-61-0	Benzenepropanoic acid, 3,5-bis(1,1-
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000006	000064-17-5	Ethanol
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000007	000064-17-5	Ethanol
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000008	000067-56-1	Methanol
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000009	000067-56-1	Methanol
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000010	000067-56-1	Methanol
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000011	000112-27-6	Triethylene glycol
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000012	000112-27-6	Triethylene glycol
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000013	OTHER	new lube oil
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000095	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000096	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000097	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000098	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000099	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000100	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000101	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000102	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001250	Hardy	Hardy	016-00000103	064741-48-6	Natural gas (petroleum), raw liq.

Columbia Gas Transmission
Deregistered Tanks (submit date 6/15/15)

Owner	Ref. Id	Facility Name	County	Tank Label	CAS ID	Substance
COLUMBIA	2014-0003192	Lost River	Hardy	016-00000020	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003192	Lost River	Hardy	016-00000021	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003192	Lost River	Hardy	016-00000022	007732-18-5	Water
COLUMBIA	2014-0003192	Lost River	Hardy	016-00000024	007732-18-5	Water
COLUMBIA	2014-0003192	Lost River	Hardy	016-00000025	000112-27-6	Triethylene glycol
COLUMBIA	2014-0003192	Lost River	Hardy	016-00000026	000107-21-1	Ethylene glycol
COLUMBIA	2014-0003192	Lost River	Hardy	016-00000027	000112-27-6	Triethylene glycol
COLUMBIA	2014-0003192	Lost River	Hardy	016-00000028	000107-21-1	Ethylene glycol
COLUMBIA	2014-0003217	Ripley	Jackson	018-00000749	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003217	Ripley	Jackson	018-00000750	OTHER	Lube Oil
COLUMBIA	2014-0003217	Ripley	Jackson	018-00000751	000067-56-1	Methanol
COLUMBIA	2014-0003217	Ripley	Jackson	018-00000752	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003217	Ripley	Jackson	018-00000753	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003217	Ripley	Jackson	018-00000754	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003217	Ripley	Jackson	018-00000756	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003217	Ripley	Jackson	018-00000747	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001253	Buff Lick	Kanawha	020-00000120	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001253	Buff Lick	Kanawha	020-00000121	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0001253	Buff Lick	Kanawha	020-00000122	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000714	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000715	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000716	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000717	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000718	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000719	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000720	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000721	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000722	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000723	000067-56-1	Methanol
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000724	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000725	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000726	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000727	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000728	064741-48-6	Natural gas (petroleum), raw liq.

Columbia Gas Transmission
Deregistered Tanks (submit date 6/15/15)

Owner	Ref. Id	Facility Name	County	Tank Label	CAS ID	Substance
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000729	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000730	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000731	000067-56-1	Methanol
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000732	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000733	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000734	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000735	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000737	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000738	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000739	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001545	Coco Storage Field	Kanawha	020-00000740	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003138	Hunt Compressor	Kanawha	020-00000527	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003138	Hunt Compressor	Kanawha	020-00000528	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003138	Hunt Compressor	Kanawha	020-00000529	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003138	Hunt Compressor	Kanawha	020-00002835	000107-21-1	Ethylene glycol
COLUMBIA	2014-0003139	Hunt Storage Field	Kanawha	020-00000530	7647-14-5	Brine
COLUMBIA	2014-0003139	Hunt Storage Field	Kanawha	020-00000531	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003139	Hunt Storage Field	Kanawha	020-00000532	7647-14-5	Brine
COLUMBIA	2014-0003139	Hunt Storage Field	Kanawha	020-00000533	7647-14-5	Brine
COLUMBIA	2014-0003139	Hunt Storage Field	Kanawha	020-00000534	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003139	Hunt Storage Field	Kanawha	020-00000535	7647-14-5	Brine
COLUMBIA	2014-0003139	Hunt Storage Field	Kanawha	020-00000536	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003139	Hunt Storage Field	Kanawha	020-00000537	7647-14-5	Brine
COLUMBIA	2014-0003139	Hunt Storage Field	Kanawha	020-00000539	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003139	Hunt Storage Field	Kanawha	020-00000540	7647-14-5	Brine
COLUMBIA	2014-0003139	Hunt Storage Field	Kanawha	020-00000542	7647-14-5	Brine
COLUMBIA	2014-0003139	Hunt Storage Field	Kanawha	020-00000544	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003139	Hunt Storage Field	Kanawha	020-00000545	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003139	Hunt Storage Field	Kanawha	020-00000546	7647-14-5	Brine
COLUMBIA	2014-0003140	WALGROVE	Kanawha	020-00000547	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003140	WALGROVE	Kanawha	020-00000548	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003142	COBB	Kanawha	020-00000549	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003142	COBB	Kanawha	020-00000551	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003142	COBB	Kanawha	020-00000552	064742-53-6	Distillates (petroleum),

Columbia Gas Transmission
Deregistered Tanks (submit date 6/15/15)

Owner	Ref. Id	Facility Name	County	Tank Label	CAS ID	Substance
COLUMBIA	2014-0003145	LANHAM	Kanawha	020-00000553	064742-53-6	Distillates (petroleum),
COLUMBIA	2014-0003145	LANHAM	Kanawha	020-00000556	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003145	LANHAM	Kanawha	020-00000557	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003145	LANHAM	Kanawha	020-00000559	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003145	LANHAM	Kanawha	020-00000560	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003145	LANHAM	Kanawha	020-00000561	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003145	LANHAM	Kanawha	020-00000562	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003145	LANHAM	Kanawha	020-00000563	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003145	LANHAM	Kanawha	020-00000564	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003158	CLENDENIN	Kanawha	020-00000565	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003158	CLENDENIN	Kanawha	020-00000567	064742-53-6	Distillates (petroleum),
COLUMBIA	2014-0003158	CLENDENIN	Kanawha	020-00000568	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003158	CLENDENIN	Kanawha	020-00002832	000107-21-1	Ethylene glycol
COLUMBIA	2014-0003158	CLENDENIN	Kanawha	020-00002833	000107-21-1	Ethylene glycol
COLUMBIA	2014-0003158	CLENDENIN	Kanawha	020-00002834	000107-21-1	Ethylene glycol
COLUMBIA	2014-0003178	COCO	Kanawha	020-00000591	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003178	COCO	Kanawha	020-00000592	OTHER	OSI GOLD H100
COLUMBIA	2014-0003178	COCO	Kanawha	020-00000594	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003178	COCO	Kanawha	020-00000595	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003178	COCO	Kanawha	020-00000596	OTHER	MOBIL PEGASUS 701
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000691	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000692	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000693	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000694	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000695	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000696	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000697	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000698	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000699	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000701	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000702	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000703	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000704	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000705	064741-48-6	Natural gas (petroleum), raw liq.

Columbia Gas Transmission
Deregistered Tanks (submit date 6/15/15)

Owner	Ref. Id	Facility Name	County	Tank Label	CAS ID	Substance
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000706	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000707	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000708	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000709	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000710	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000711	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003205	Coco Storage Field	Kanawha	020-00000712	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000599	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000600	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000601	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000602	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000603	000067-56-1	Methanol
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000604	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000606	000067-56-1	Methanol
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000607	000067-56-1	Methanol
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000608	000067-56-1	Methanol
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000609	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000610	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000611	000067-56-1	Methanol
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000612	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000613	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000614	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000615	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000616	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000617	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000618	000067-56-1	Methanol
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000619	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000620	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000621	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000622	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000623	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000624	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000625	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000626	007647-14-5	Sodium chloride (NaCl)

Columbia Gas Transmission
Deregistered Tanks (submit date 6/15/15)

Owner	Ref. Id	Facility Name	County	Tank Label	CAS ID	Substance
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000627	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000628	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000629	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000630	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000631	000067-56-1	Methanol
COLUMBIA	2014-0003210	Coco Storage Field	Kanawha	020-00000632	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003216	SAINT ALBANS	Kanawha	999-00000201	007732-18-5	Water
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000667	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000668	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000669	000067-56-1	Methanol
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000671	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000672	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000673	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000674	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000675	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000676	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000677	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000678	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000679	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000680	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000681	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000682	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000683	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000684	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000685	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000686	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000687	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000688	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000689	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003643	COCO STORAGE	Kanawha	020-00000690	000067-56-1	Methanol
COLUMBIA	2014-0003139	Hunt Storage Field	Kanawha	020-00000543	7647-14-5	Brine
COLUMBIA	2014-0003216	SAINT ALBANS	Kanawha	020-00000633	OTHER	EMPTY
COLUMBIA	2014-0001252	Hubball CS	Lincoln	022-00000010	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001252	Hubball CS	Lincoln	022-00000011	064741-48-6	Natural gas (petroleum), raw liq.

Columbia Gas Transmission
Deregistered Tanks (submit date 6/15/15)

Owner	Ref. Id	Facility Name	County	Tank Label	CAS ID	Substance
COLUMBIA	2014-0001252	Hubball CS	Lincoln	022-00000012	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001252	Hubball CS	Lincoln	022-00000013	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001252	Hubball CS	Lincoln	022-00000014	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001252	Hubball CS	Lincoln	022-00000015	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003149	Nye	Lincoln	022-00000307	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003190	Hamlin Compressor	Lincoln	022-00000310	125643-61-0	Benzenepropanoic acid, 3,5-bis(1,1-
COLUMBIA	2014-0003190	Hamlin Compressor	Lincoln	022-00000311	125643-61-0	Benzenepropanoic acid, 3,5-bis(1,1-
COLUMBIA	2014-0003190	Hamlin Compressor	Lincoln	022-00000312	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003190	Hamlin Compressor	Lincoln	022-00000313	000107-21-1	Glycol
COLUMBIA	2014-0003190	Hamlin Compressor	Lincoln	022-00000314	000107-21-1	Glycol
COLUMBIA	2014-0003202	Horse Creek	Lincoln	022-00000316	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003202	Horse Creek	Lincoln	022-00000317	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003213	Victory	Marshall	026-00000344	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003213	Victory	Marshall	026-00001208	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003213	Victory	Marshall	026-00001209	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003588	Adaline	Marshall	026-00000323	000111-46-6	Diethylene glycol
COLUMBIA	2014-0003588	Adaline	Marshall	026-00000324	000111-46-6	Diethylene glycol
COLUMBIA	2014-0003588	Adaline	Marshall	026-00000325	000064-17-5	Ethanol
COLUMBIA	2014-0003588	Adaline	Marshall	026-00000326	000067-56-1	Methanol
COLUMBIA	2014-0003588	Adaline	Marshall	026-00000327	007440-66-6	Zinc
COLUMBIA	2014-0003588	Adaline	Marshall	026-00000328	000075-08-1	Mercaptoethane
COLUMBIA	2014-0003588	Adaline	Marshall	026-00000329	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003588	Adaline	Marshall	026-00000330	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003588	Adaline	Marshall	026-00000331	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003588	Adaline	Marshall	026-00000332	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003588	Adaline	Marshall	026-00000333	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003588	Adaline	Marshall	026-00000334	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003651	Majorsville	Marshall	026-00000352	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003651	Majorsville	Marshall	026-00000353	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003651	Majorsville	Marshall	026-00000354	000075-08-1	Ethyl mercaptan
COLUMBIA	2014-0003213	Victory	Marshall	026-00000349	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003156	Grant	Mingo	030-00000463	064742-53-6	Distillates (petroleum),
COLUMBIA	2014-0003156	Grant	Mingo	030-00000464	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003156	Grant	Mingo	030-00000466	064742-53-6	Distillates (petroleum),

Columbia Gas Transmission
Deregistered Tanks (submit date 6/15/15)

Owner	Ref. Id	Facility Name	County	Tank Label	CAS ID	Substance
COLUMBIA	2014-0003156	Grant	Mingo	030-00000467	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003156	Grant	Mingo	030-00000468	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003211	SENECA	Pendleton	036-00000023	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003211	SENECA	Pendleton	036-00000025	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003211	SENECA	Pendleton	036-00000026	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003587	GLADY	Pocahontas	038-00000011	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003137	Bruceton Mills	Preston	039-00000117	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003137	Bruceton Mills	Preston	039-00000118	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003204	Terra Alta	Preston	039-00000119	000067-56-1	Methanol
COLUMBIA	2014-0003204	Terra Alta	Preston	039-00000120	000067-56-1	Methanol
COLUMBIA	2014-0003204	Terra Alta	Preston	039-00000121	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003204	Terra Alta	Preston	039-00000123	000067-56-1	Methanol
COLUMBIA	2014-0003204	Terra Alta	Preston	039-00000124	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003204	Terra Alta	Preston	039-00000126	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003204	Terra Alta	Preston	039-00000127	000067-56-1	Methanol
COLUMBIA	2014-0003204	Terra Alta	Preston	039-00000128	000067-56-1	Methanol
COLUMBIA	2014-0003204	Terra Alta	Preston	039-00000129	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003204	Terra Alta	Preston	039-00000130	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003204	Terra Alta	Preston	039-00000131	000067-56-1	Methanol
COLUMBIA	2014-0003204	Terra Alta	Preston	039-00000132	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001251	FILES CREEK	Randolph	042-00000014	OTHER	LUBE OIL
COLUMBIA	2014-0001251	FILES CREEK	Randolph	042-00000015	OTHER	LUBE OIL
COLUMBIA	2014-0001251	FILES CREEK	Randolph	042-00000017	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0001251	FILES CREEK	Randolph	042-00000018	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003587	GLADY	Randolph	042-00000181	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003587	GLADY	Randolph	042-00000182	000107-21-1	Ethylene glycol
COLUMBIA	2014-0003587	GLADY	Randolph	042-00000185	000067-56-1	Methanol
COLUMBIA	2014-0003587	GLADY	Randolph	042-00000186	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003587	GLADY	Randolph	042-00000187	000067-56-1	Methanol
COLUMBIA	2014-0003587	GLADY	Randolph	042-00000188	000067-56-1	Methanol
COLUMBIA	2014-0003587	GLADY	Randolph	042-00000189	000067-56-1	Methanol
COLUMBIA	2014-0003587	GLADY	Randolph	042-00000190	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003587	GLADY	Randolph	042-00000191	000067-56-1	Methanol
COLUMBIA	2014-0003587	GLADY	Randolph	042-00000192	000067-56-1	Methanol

Columbia Gas Transmission
Deregistered Tanks (submit date 6/15/15)

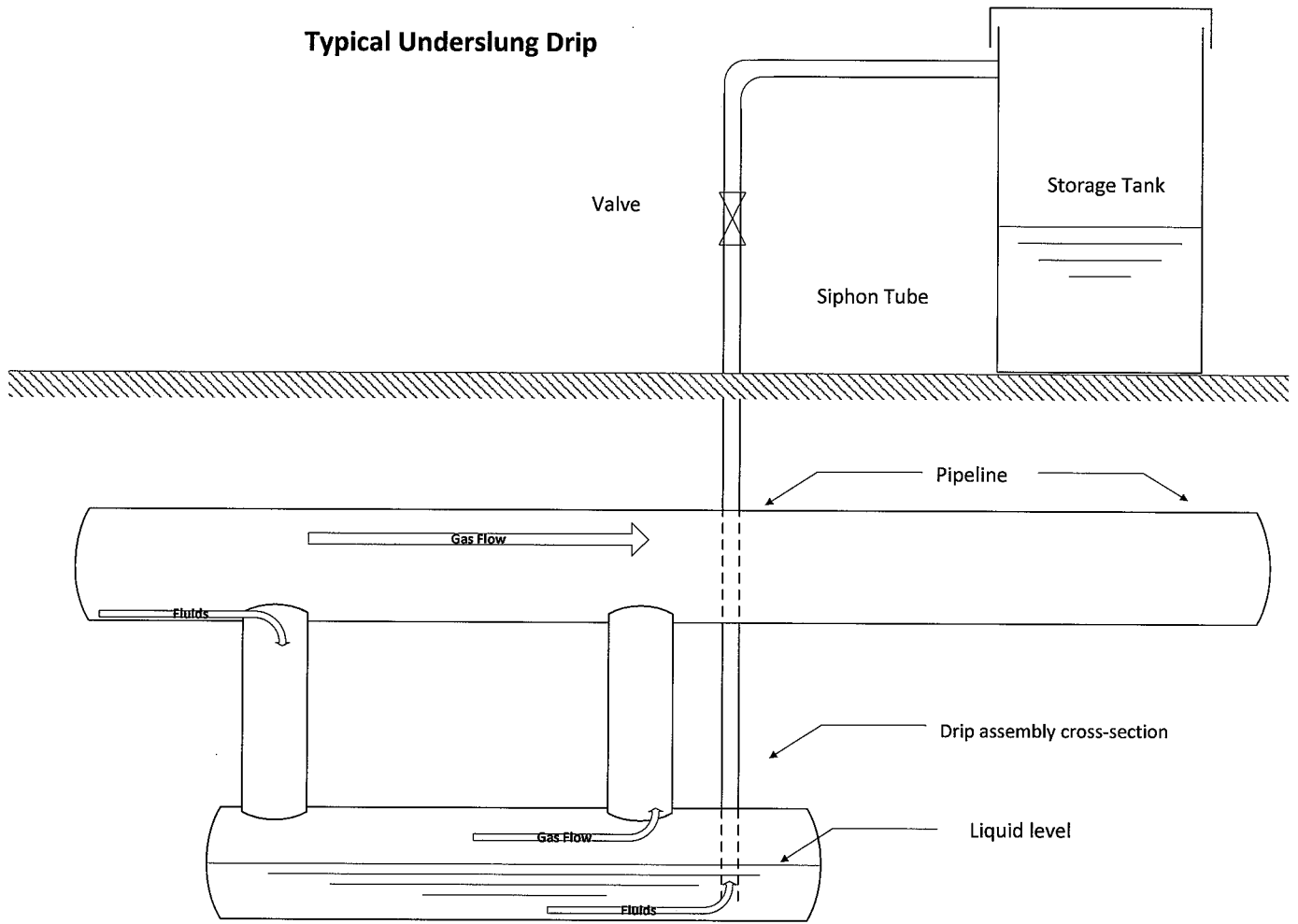
Owner	Ref. id	Facility Name	County	Tank Label	CAS ID	Substance
COLUMBIA	2014-0003587	GLADY	Randolph	042-00000193	000067-56-1	Methanol
COLUMBIA	2014-0003587	GLADY	Randolph	042-00000194	000112-27-6	Triethylene glycol
COLUMBIA	2014-0003587	GLADY	Randolph	042-00000197	OTHER	USED OIL
COLUMBIA	2014-0003587	GLADY	Randolph	042-00000198	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003587	GLADY	Randolph	999-00000202	000112-27-6	Triethylene glycol
COLUMBIA	2014-0003143	MARTIN YARD UIC	Roane	044-00000199	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003143	MARTIN YARD UIC	Roane	044-00000200	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003143	MARTIN YARD UIC	Roane	044-00000201	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003143	MARTIN YARD UIC	Roane	044-00000202	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003143	MARTIN YARD UIC	Roane	044-00000203	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003143	MARTIN YARD UIC	Roane	044-00000204	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003143	MARTIN YARD UIC	Roane	044-00000205	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003136	Flat Top	Summers	045-00000016	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003176	CLEVELAND	Upshur	049-00000642	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003176	CLEVELAND	Upshur	049-00000644	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003176	CLEVELAND	Upshur	049-00000646	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003176	CLEVELAND	Upshur	049-00000647	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003176	CLEVELAND	Upshur	049-00000648	OTHER	SCRUBBER OIL
COLUMBIA	2014-0003176	CLEVELAND	Upshur	049-00000649	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003176	CLEVELAND	Upshur	049-00000650	000107-21-1	Glycol
COLUMBIA	2014-0003176	CLEVELAND	Upshur	049-00000651	000107-21-1	Glycol
COLUMBIA	2014-0003191	Kenova	Wayne	050-00000081	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003191	Kenova	Wayne	050-00000083	000107-21-1	Glycol
COLUMBIA	2014-0003191	Kenova	Wayne	050-00000085	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003191	Kenova	Wayne	050-00000086	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003194	CEREDO	Wayne	050-00000087	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003194	CEREDO	Wayne	050-00000088	000107-21-1	Glycol
COLUMBIA	2014-0003194	CEREDO	Wayne	050-00000089	000107-21-1	Ethylene glycol
COLUMBIA	2014-0003194	CEREDO	Wayne	050-00000090	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003194	CEREDO	Wayne	050-00000091	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003194	CEREDO	Wayne	050-00000092	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003194	CEREDO	Wayne	050-00000093	OTHER	New Lube Oil
COLUMBIA	2014-0003194	CEREDO	Wayne	050-00000094	000107-21-1	Glycol
COLUMBIA	2014-0003194	CEREDO	Wayne	050-00000095	OTHER	new lube oil

Columbia Gas Transmission
Deregistered Tanks (submit date 6/15/15)

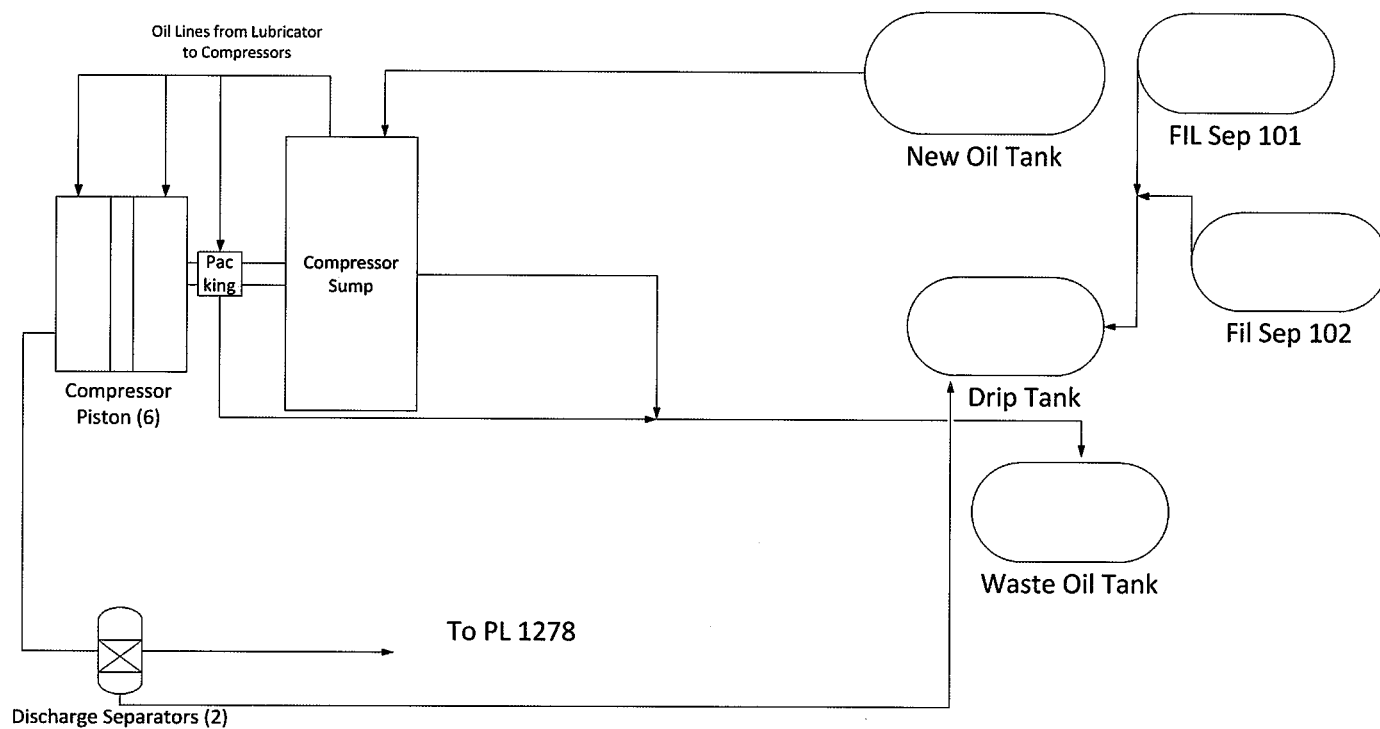
Owner	Ref. Id	Facility Name	County	Tank Label	CAS ID	Substance
COLUMBIA	2014-0003194	CEREDO	Wayne	050-00000096	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003194	CEREDO	Wayne	050-00000097	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003194	CEREDO	Wayne	050-00000098	000075-66-1	2-Propanethiol, 2-methyl-
COLUMBIA	2014-0003196	Smithfield	Wetzel	052-00000584	000107-21-1	Ethylene glycol
COLUMBIA	2014-0003196	Smithfield	Wetzel	052-00000585	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003196	Smithfield	Wetzel	052-00000586	000064-17-5	Alcohol
COLUMBIA	2014-0003196	Smithfield	Wetzel	052-00000587	007440-66-6	Zinc
COLUMBIA	2014-0003196	Smithfield	Wetzel	052-00000588	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003196	Smithfield	Wetzel	052-00000589	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003196	Smithfield	Wetzel	052-00000590	000064-17-5	Alcohol
COLUMBIA	2014-0003196	Smithfield	Wetzel	052-00000591	000064-17-5	Ethanol
COLUMBIA	2014-0003203	Rockport	Wood	054-00000259	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003203	Rockport	Wood	054-00000260	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003203	Rockport	Wood	054-00000261	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003203	Rockport	Wood	054-00000262	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003203	Rockport	Wood	054-00000263	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003203	Rockport	Wood	054-00000264	007647-14-5	Sodium chloride (NaCl)
COLUMBIA	2014-0003203	Rockport	Wood	054-00000265	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003203	Rockport	Wood	054-00000266	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003203	Rockport	Wood	054-00000267	000067-56-1	Methanol
COLUMBIA	2014-0003203	Rockport	Wood	054-00000268	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003203	Rockport	Wood	054-00000686	125643-61-0	Benzenepropanoic acid, 3,5-bis(1,1-
COLUMBIA	2014-0003203	Rockport	Wood	054-00000687	125643-61-0	Benzenepropanoic acid, 3,5-bis(1,1-
COLUMBIA	2014-0003203	Rockport	Wood	054-00000688	064741-48-6	Natural gas (petroleum), raw liq.
COLUMBIA	2014-0003203	Rockport	Wood	054-00000689	000107-21-1	Ethylene glycol
COLUMBIA	2014-0003203	Rockport	Wood	054-00000690	000107-21-1	Ethylene glycol
COLUMBIA	2014-0003195	Huff Creek	Wyoming	055-00001006	000107-21-1	Glycol
COLUMBIA	2014-0003195	Huff Creek	Wyoming	055-00001010	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003195	Huff Creek	Wyoming	055-00001015	000107-21-1	Glycol
COLUMBIA	2014-0003195	Huff Creek	Wyoming	055-00001016	068649-42-3	Phosphorodithioic acid, O,O-di-C1-
COLUMBIA	2014-0003195	Huff Creek	Wyoming	055-00001008	OTHER	empty

Attachment C

Typical Underslung Drip



Not to Scale



Downingtown Oil Circuit

Attachment D

Columbia Pipeline Group
700 Louisiana, Ste. 700, Houston, Texas, 77002
Tel: 832.320.5463 Fax: 832.320.6463
Stephen_chung@transcanada.com



August 26, 2016

Via CMRRR #7015 1520 0002 7290 9718

Ms. Ruth Porter
Tanks Program Manager
West Virginia Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304



Dear Ms. Porter:

Columbia Pipeline Group (CPG) appreciates the opportunity to respond to your letter we received via email on July 22, 2016 and via certified mail on July 29, 2016. We hope this response will correct any misunderstanding regarding the number, properties, locations or use of the de-registered CPG above ground storage tanks (ASTs) and will resolve this matter.

Incorrect number of ASTs referenced in your letter.

Your letter references four hundred and fifty (450) CPG above ground storage tanks (ASTs). This number is inaccurate. The West Virginia Department of Environmental Protection (DEP) inventory lists many duplicate entries. Please see Attachment 1, which highlights the duplicates in the DEP electronic system.

CPG originally registered 373 ASTs. After the passage of Senate Bill 423, CPG de-registered 339 ASTs. The DEP objected to de-registration of a subset totaling 220 ASTs. In total, CPG currently has 34 ASTs registered in the DEP system. Although arguably these 34 ASTs are also exempt, CPG has maintained registration because of a very conservative application of the exemption; while these ASTs are also part of a transmission pipeline facility, they are not physically connected to the pipeline. As discussed in more detail below, the remaining deregistered ASTs clearly fall into the enumerated exemptions under the West Virginia Aboveground Storage Tank Act (Act) as amended in 2015.

The de-registered ASTs are exempt under a plain reading of the Act.

The deregistration of a subset of our above ground storage tank (AST) inventory was a direct result of the regulatory changes made with the passage of Senate Bill 423, which amended the Act. Based on public comments at the time by West Virginia leaders, it was anticipated that tanks originally registered under the 2014 version would be deregistered if they fell under one of the new exemptions.

Ms. Porter
August 26, 2016

The plain reading of the Act exempts Columbia's pipeline facilities from the regulation.¹ Columbia relies on the law of statutory construction in West Virginia, which is well settled.² In applying a statute, "its words should be given their ordinary acceptance and significance and the meaning commonly attributed to them."³ The language of the statutory exemption is:

"Pipeline facilities, including gathering lines, regulated under the Natural Gas Pipeline Safety Act of 1968 or the Hazardous Liquid Pipeline Safety Act of 1979, or an intrastate pipeline facility regulated by the West Virginia Public Service Commission or otherwise regulated under any state law comparable to the provisions of either the Natural Gas Pipeline Safety Act of 1968 or the Hazardous Liquid Pipeline Safety Act of 1979."⁴

The common meaning and significance of the term "pipeline facilities ... regulated under the Natural Gas Pipeline Safety Act of 1968" is the definition stated in the Pipeline Safety Act itself. Any other definition would run afoul of the statutory construction rule. "Pipeline facilities" are specifically defined to include "new and existing pipelines, rights-of-way, and *any equipment, facility, or building used in the transportation of gas or in the treatment of gas during the course of transportation.*"[emphasis added]⁴ Accordingly, the plain reading of the West Virginia code exempts Columbia's facilities. In addition, the DEP guidance on which tanks must be registered also exempts pipeline facilities and provides no additional limitations on this exemption.⁵

It is a "fundamental canon of statutory construction" that, "unless otherwise defined, words will be interpreted as taking their ordinary, contemporary, common meaning."⁶ If the West Virginia legislature intended to change the ordinary, accepted meaning of "pipeline facilities" from the definition in the federal code under §192.3, it is Columbia's position that such a deviation would have been required to be explicitly clear in the Act.

Additionally, there is no language in the Act redefining "pipeline facilities" or limiting the exemption to hazardous liquid pipeline breakout tanks, as your letter suggests, and such an interpretation is contrary to the well-established definition in the Pipeline Safety Act. Because they are only applicable to hazardous liquids pipelines, breakout tanks are defined under 49 CFR §195.2, a breakout tank is defined as one "used to (a) relieve surges in a hazardous liquid pipeline system or (b) receive and store hazardous liquid transported by a pipeline for re-injection and continued transportation by pipeline." The

¹ WV Code § 22, Article 30 (2015).

² In *State of West Va. v. Cont'l Cas. Co.*, 130 W. Va. 147, 42 S.E. 2d 820 (1947), the Court held that when a statute is clear and unambiguous, and the legislative intent is plain, the statute should not be interpreted by the courts. 50 Am. Jur., Statutes, Section 225.

³ 50 Am. Jur., Section 225. See *Moran v. Leccony Smokeless Coal Co.*, 122 W. Va. 405, 10 S. E. 2d 578 (1940), 137 A.L.R. 1007.

⁴ "Pipeline facility" is a term defined specifically by 49 CFR §§ 192.3.

⁵ <https://apps.dep.wv.gov/ast/astsurvey.cfm>.

⁶ *Sandifer v. US Steel Corp.*, 134 S. Ct. 870 (2014).

Ms. Porter
August 26, 2016

U.S. Environmental Protection Agency (EPA) definition of a breakout tank under 40 CFR 112.2 is operationally identical; "a container used to relieve surges in an oil pipeline system or to receive and store oil transported by a pipeline for reinjection and continued transportation by pipeline." If the exemption in the Act had been intended to be limited to breakout tanks, it would have, by definition, also been limited to hazardous liquid pipelines. It was not, as it clearly includes natural gas pipeline facilities.

The Deregistered ASTs meet the definition and use requirements for exemption under the Act.

The de-registered CPG ASTs are physically connected to the transmission pipeline and are used in the transportation of natural gas and fall under the jurisdiction of the Federal Energy Regulatory Commission (FERC), and the Department of Transportation/ Pipeline and Hazardous Materials Safety Administration (DOT/PHMSA).

There appears to be a misunderstanding of the function of the exempt ASTs, which forms the basis of your objection to deregistration. You stated in your letter, "[t]he material stored in the ASTs are liquids not vapor gas, and the ASTs do not appear to be used in the storage of gas, the transportation of gas, or the treatment of gas." This is incorrect. For natural gas to be transported by pipeline, the storage withdrawal process involves removal of brine water from the gas. The water is then stored in ASTs until proper disposal. Natural gas cannot enter the pipeline without this critical process, because of the strict pipeline gas quality requirements under FERC tariffs. These ASTs are critical components of the transportation of natural gas, and vital equipment at pipeline facilities, and are therefore exempt.

Regulation under DOT/PHMSA and the EPA addresses legislative intent and environmental concerns.

All of the exemptions in the Act codify the legislative intent to focus regulatory attention on previously unregulated tanks in critical zones, which pose a significant risk to West Virginia public water supply intakes, while exempting safe tanks, which are already governed by state and federal regulations.

Category/Quantity	Location/Use	In Zone of Critical Concern	In Water Protection Area	Jurisdiction
14	Connected to the transmission pipeline between compressor stations. Store pipeline condensate.	4	0	FERC PHMSA EPA
68	Connected to the transmission pipeline at compressor stations. Store pipeline condensate.	10	2	FERC PHMSA EPA
131	Connected to the transmission pipeline at storage fields, store pipeline condensate and brine water.	0	0	FERC PHMSA EPA

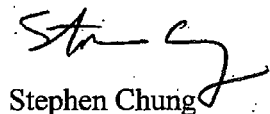
Ms. Porter
August 26, 2016

The ASTs at Columbia's facilities are subject to design, integrity and monitoring regulations under the jurisdiction of DOT/PHMSA, as well as EPA's Spill Prevention, Control, and Countermeasure (SPCC) rules under 40 CFR 112.

The fourteen (14) ASTs in the zone of critical concern and two (2) ASTs in the water protection area are managed under SPCC plans. The SPCC requirements include maintaining secondary containment, and testing or inspection for integrity on a regular schedule and whenever material repairs are made.⁷ In addition, routine visual inspection is performed of the outside of the container for any signs of deterioration or indications of discharges. This visual inspection includes the AST's supports and foundations, and is performed to verify the suitability of the AST for continued use until the next formal inspection. These measures effectively minimize and manage the risks associated with ASTs.

CPG is in compliance with the requirements of the Act, and remains committed to safe and environmentally sound practices for managing ASTs in accordance with all applicable requirements. If you have additional questions or would like to discuss further, please contact Heather Roberts at 724-627-2112, or myself at 832-320-5463.

Yours truly,



Stephen Chung
Director, Environmental Law
U.S. Pipelines Law
Columbia Pipeline Group, Inc.
a subsidiary of TransCanada Pipeline USA Ltd.

cc: H. Roberts

⁷ §§112.8(c)(6), 112.12(c)(6)(i).

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260	1261	1262	1263	1264	1265	1266	1267	1268	1269	1270	1271	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287	1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298	1299	1300	1301	1302	1303	1304	1305	1306	1307	1308	1309	1310	1311	1312	1313	1314	1315	1316	1317	1318	1319	1320	1321	1322	1323	1324	1325	1326	1327	1328	1329	1330	1331	1332	1333	1334	1335	1336	1337	1338	1339	1340	1341	1342	1343	1344	1345	1346	1347	1348	1349	1350	1351	1352	1353	1354	1355	1356	1357	1358	1359	1360	1361	1362	1363	1364	1365	1366	1367	1368	1369	1370	1371	1372	1373	1374	1375	1376	1377	1378	1379	1380	1381	1382	1383	1384	1385	1386	1387	1388	1389	1390	1391	1392	1393	1394	1395	1396	1397	1398	1399	1400	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410	1411	1412	1413	1414	1415	1416	1417	1418	1419	1420	1421	1422	1423	1424	1425	1426	1427	1428	1429	1430	1431	1432	1433	1434	1435	1436	1437	1438	1439	1440	1441	1442	1443	1444	1445	1446	1447	1448	1449	1450	1451	1452	1453	1454	1455	1456	1457	1458	1459	1460	1461	1462	1463	1464	1465	1466	1467	1468	1469	1470	1471	1472	1473	1474	1475	1476	1477	1478	1479	1480	1481	1482	1483	1484	1485	1486	1487	1488	1489	1490	1491	1492	1493	1494	1495	14
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	----

[illegible]