

Effective Date: 3/1/2020

Skelly-Belvieu Pipeline Company, L.L.C.

**Skelly-Belvieu Pipeline
Natural Gas Liquids Specifications**

Current Publication Date: 1/20/2020

Previous Publication Date: 1/1/2016

Revision Notes:

Updated specifications to reflect latest Enterprise Mont Belvieu Caverns Specifications.

Various administrative changes throughout.

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Skelly-Belvieu Pipeline Company, L.L.C.

**Skelly-Belvieu Pipeline
Natural Gas Liquids Specifications**

Product Index

Product Name	Destination(s)	Trac66 Product Code(s)
NGL Products, Propane	Mont Belvieu, TX	NP1
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NGL Products, Propylene, Refinery Grade (RGP, or "P/P Mix")	Mont Belvieu, TX	PP
NGL, Demethanized NGL Mix (Y-1 Grade)	Mont Belvieu, TX	NY1

Trac66 Code(s):

NP1

Skelly-Belvieu Pipeline Natural Gas Liquids Specifications

NGL Products, Propane

Property	Test Method	Units	Min	Max	Specific	Note#
Composition, Propane	D2163	lv%	90.0			
Composition, Propylene	D2163	lv%		5.0		
Composition, Butane & heavier	D2163	lv%		2.5		
Copper Strip Corrosion	D1838	Rating		1	1A or 1B is pass	
Sulfide, Hydrogen (H ₂ S)	D2420			Neg		
Moisture Content- Free Water	Visual			None		
Residual Matter, Oil Stain	D2158		Pass			1
Residual Matter, Residue	D2158	ml		0.05		
Specific Gravity @ 60/60F	D1657		.500	.510		
Sulfur, Total Volatile	D6667	ppmw		123		2
Vapor Pressure @ 100F	D1267, D2598, D6897	psig		205		3
Volatile Res., 95% Evap	D1837	deg F		-37		
Other Deleterious Substances	Inspection		see note			4
Test Methods	See Note					5
Most Current Version	See Note					6

Notes:

1. An acceptable product shall not yield a persistent oil ring when 0.3 ml of solvent residue mix is added to a filter paper in 0.1 ml increments and examined in daylight after 2 minutes as described in Test Method D2158.
2. Other sulfur test methods may be suitable. ASTM D6667 includes LP gases in the scope of the test method.
3. The referee method will be ASTM D1267.
4. This specification defines only a basic purity for this product. This product is to be free of any contamination or impurities that might render the product unusable for its commonly used applications, or may be injurious to the pipeline's property or the property of 3rd parties, or may interfere with its transmission through the pipeline. Specific contaminants include (but are not limited to) dirt, rust, scale, and other types of solid contaminants, gum, gum-producing substances, oil, inhibitors, masking agents, scavengers, amines, caustics, chlorides, heavy metals, glycol, oxygenates, and inorganic gases or any compound added to enhance the ability to meet these specifications.
5. Test methods designated with the letter "D" are ASTM test methods. The most recent year revision shall be used.
6. The most current version of this specification can be found on the Phillips 66 Midstream website, www.phillips66midstream.com.

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Skelly-Belvieu Pipeline Company, L.L.C.

Destinations:
Mont Belvieu, TX

Trac66 Code(s):

NNB

**Skelly-Belvieu Pipeline
Natural Gas Liquids Specifications**

NGL Products, Butane, Normal
Butane

Property	Test Method	Units	Min	Max	Specific	Note#
Comp.- Normal Butane	D2163	lv%	94.0			
Comp.- Propylene, Propane & Lighter	D2163	lv%		.35		
Comp.- Iso-butane	D2163	lv%		6.0		
Comp.- Pentanes & Heavier	D2163	lv%		1.5		
Comp.- Hexanes & Heavier	D2163	lv%		.050		
Sulfide, Hydrogen (H2S)	D2420			Neg		
Comp.- Total Olefins	D2163	lv%		.35		
Comp.- Butadiene	D2163	lv%		.01		
Copper Strip Corrosion	D1838	Rating		1	1A or 1B is pass	
Fluorides	UOP 619	ppmw		1.0		1
Moisture Content- Free Water	Visual			None		
Oxygenates, Total	UOP-845	ppmw		50.0		
Oxygenates, Methanol	UOP-845	ppmw		50.0		
Oxygenates, IPA & Heavier Alcohols	UOP-845	ppmw		5.0		
Oxygenates, MTBE & other Ethers	UOP-845	ppmw		2.0		
Oxygenates, Other Oxygenates	UOP-845	ppmw		5.0		
Sulfur, Total Volatile	D6667	ppmw		140		2
Vapor Pressure @ 100°F	D1267, D2598, D6897	psig		50		3
Volatile Res., 95% Evap	D1837	deg F		+36		
Other Deleterious Substances	Inspection		see note			4
Test Methods	See Note					5
Most Current Version	See Note					6

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Skelly-Belvieu Pipeline Company, L.L.C.

Destinations:

Mont Belvieu, TX

Trac66 Code(s):

NNB

Skelly-Belvieu Pipeline Natural Gas Liquids Specifications

NGL Products, Butane, Normal
Butane

Notes:

1. UOP Method 619 should be used. However, an instrument with a properly calibrated Electrolytic Conductivity (Hall or ELCD) Detector can also be used.
2. Other sulfur test methods may be suitable. ASTM D6667 includes LP gases in the scope of the test method.
3. The referee method shall be ASTM D1267.
4. This specification defines only a basic purity for this product. This product is to be free of any contamination or impurities that might render the product unusable for its commonly used applications, or may be injurious to the pipeline's property or the property of 3rd parties, or may interfere with its transmission through the pipeline. Specific contaminants include (but are not limited to) dirt, rust, scale, and other types of solid contaminants, gum, gum-producing substances, oil, inhibitors, masking agents, scavengers, amines, caustics, chlorides, heavy metals, glycol, oxygenates, and inorganic gases or any compound added to enhance the ability to meet these specifications.
5. Test methods designated with the letter "D" are ASTM test methods. The most recent year revision shall be used.
6. The most current version of this specification can be found on the Phillips 66 Midstream website, www.phillips66midstream.com.

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Skelly-Belvieu Pipeline Company, L.L.C.

Destinations:
Mont Belvieu, TX

Trac66 Code(s):

NIB

Skelly-Belvieu Pipeline Natural Gas Liquids Specifications

NGL Products, Iso-Butane

Property	Test Method	Units	Min	Max	Specific	Note#
Comp.- Iso-butane	D2163	lv%	96.0			
Comp.- Propane & Lighter	D2163	lv%		3.0		
Comp.- Normal Butane & Heavier	D2163	lv%		4.0		
Copper Strip Corrosion	D1838	Rating		1	1A or 1B is pass	
Sulfide, Hydrogen (H2S)	D2420			Neg		
Moisture Content- Free Water	Visual			None		
Sulfur, Total Volatile	D6667	ppmw		140		1
Vapor Pressure @ 100°F	D1267, D2598, D6897	psig		70		2
Other Deleterious Substances	Inspection		see note			3
Test Methods	See Note					4
Most Current Version	See Note					5

Notes:

1. Other sulfur test methods may be suitable. ASTM D6667 includes LP gases in the scope of the test method.
2. The referee method shall be ASTM D1267.
3. This specification defines only a basic purity for this product. This product is to be free of any contamination or impurities that might render the product unusable for its commonly used applications, or may be injurious to the pipeline's property or the property of 3rd parties, or may interfere with its transmission through the pipeline. Specific contaminants include (but are not limited to) dirt, rust, scale, and other types of solid contaminants, gum, gum-producing substances, oil, inhibitors, masking agents, scavengers, amines, caustics, chlorides, heavy metals, glycol, oxygenates, and inorganic gases or any compound added to enhance the ability to meet these specifications.
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Skelly-Belvieu Pipeline Company, L.L.C.

Destinations:
Mont Belvieu, TX

Trac66 Code(s):

EP

Skelly-Belvieu Pipeline Natural Gas Liquids Specifications

NGL Products, Ethane/Propane Mix ("E/P Mix")

Property	Test Method	Units	Min	Max	Specific	Note#
Comp.- Methane & Lighter	D2163	lv%		1.5		
Comp.- Ethane	D2163	lv%	75.0	82.0		
Comp.- Ethylene	D2163	lv%		4.0		
Comp.- Propane	D2163	lv%		25.0		
Comp.- Propylene	D2163	lv%		1.0		
Sulfide, Hydrogen (H2S)	D2420			Neg		
Comp.- Butane & Heavier	D2163	lv%		.8		
Carbon Dioxide (CO2)	D2504	ppmw		1000		1
Copper Strip Corrosion	D1838	Rating		1	1A or 1B is pass	
Moisture Content- Free Water	Visual			None		
Sulfur, Total Volatile	D6667	ppmw		30		2
Other Deleterious Substances	Inspection		see note			3
Test Methods	See Note					4
Most Current Version	See Note					5

Notes:

1. D2504 does not include carbon dioxide in the scope of the method, but no other suitable test methods are currently available.
2. Other sulfur test methods may be suitable. ASTM D6667 includes LP gases in the scope of the test method.
3. This specification defines only a basic purity for this product. This product is to be free of any contamination or impurities that might render the product unusable for its commonly used applications, or may be injurious to the pipeline's property or the property of 3rd parties, or may interfere with its transmission through the pipeline. Specific contaminants include (but are not limited to) dirt, rust, scale, and other types of solid contaminants, gum, gum-producing substances, oil, inhibitors, masking agents, scavengers, amines, caustics, chlorides, heavy metals, glycol, oxygenates, and inorganic gases or any compound added to enhance the ability to meet these specifications.
4. Test methods designated with the letter "D" are ASTM test methods. The most recent year revision shall be used.
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Skelly-Belvieu Pipeline Company, L.L.C.

Destinations:
Mont Belvieu, TX

Trac66 Code(s):

PP

Skelly-Belvieu Pipeline Natural Gas Liquids Specifications

NGL Products, Propylene, Refinery Grade (RGP, or "P/P Mix")

Property	Test Method	Units	Min	Max	Specific	Note#
Arsine	UOP-834-82	ppbw		200		1
Comp.- Butane & Heavier	D2163	lv%		2.0		2
Comp.- Ethane & Lighter	D2163	lv%		2.0		2
Comp.- Ethylene	D2163	ppmw		500		
Comp.- Propane	D2163	lv%		35.0		
Comp.- Propylene	D2163	lv%	65.0			
Carbon Dioxide (CO ₂)	D2504	ppmw		5.0		3
Carbon Monoxide (CO)	D2504	ppmw		1.0		
Copper Strip Corrosion	D1838	Rating		1	1A or 1B is pass	
Methanol	UOP-845	ppmw		5.0		
Methyl Acetylene	D2712	ppmw		4.0		
Propadiene	D2712	ppmw		4.0		
Sulfur, Total Volatile	D6667	ppmw		25		4
Sulfide, Carbonyl (COS)	D5504	ppmw		7		
Sulfide, Hydrogen (H ₂ S)	D2420		Pass			
Moisture Content- Free Water	Visual			None		
Other Deleterious Substances	Inspection		see note			5
Test Methods	See Note					6
Most Current Version	See Note					7

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Skelly-Belvieu Pipeline Company, L.L.C.

Destinations:

Mont Belvieu, TX

Trac66 Code(s):

PP

Skelly-Belvieu Pipeline Natural Gas Liquids Specifications

NGL Products, Propylene, Refinery Grade (RGP, or "P/P Mix")

Notes:

1. Charcoal adsorption/atomic absorption (UOP method 834-82) or stain tubes may be used.
2. The end use customer(s) may have different requirements depending on the existing contract with the shipper, etc.
3. D2504 does not include carbon dioxide in the scope of the method, but no other suitable test methods are currently available.
4. Other sulfur test methods may be suitable. ASTM D6667 includes LP gases in the scope of the test method.
5. This specification defines only a basic purity for this product. This product is to be free of any contamination or impurities that might render the product unusable for its commonly used applications, or may be injurious to the pipeline's property or the property of 3rd parties, or may interfere with its transmission through the pipeline. Specific contaminants include (but are not limited to) dirt, rust, scale, and other types of solid contaminants, gum, gum-producing substances, oil, inhibitors, masking agents, scavengers, amines, caustics, chlorides, heavy metals, glycol, oxygenates, and inorganic gases or any compound added to enhance the ability to meet these specifications.
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Skelly-Belvieu Pipeline Company, L.L.C.

Destinations:
Mont Belvieu, TX

Trac66 Code(s):
NY1

**Skelly-Belvieu Pipeline
Natural Gas Liquids Specifications**

NGL, Demethanized NGL Mix (Y-1 Grade)

Property	Test Method	Units	Min	Max	Specific	Note#
Composition (Comp.)- See Below	GPA-2186	lv%				
Comp.- Carbon Dioxide, lv% of C ₂ lv%	GPA-2186	lv%		.35		
Comp.- Methane, lv% of Total lv%	GPA 2186	lv%		.50		1
Comp.- Methane, lv% of Ethane lv%	GPA-2186	lv%		1.50		1
Comp.- Ethane, lv% of Total lv%	GPA-2186	lv%	report			
Comp.- Aromatics, lv% of C ₅ + lv%	GPA-2186	lv%		10.0		
Comp.- Olefins, lv% of Total lv%	GPA-2186	lv%		1.0		2
Vapor Pressure	D1267 or D2598 @ 100°F	psig		600		3
Copper Strip Corrosion	D1838 @ 100°F for 1 hr	Rating		1		4
Sulfur, Total Volatile	D6667	ppmw		150		5
Sulfide, Hydrogen (H ₂ S)	D2420		pass (neg)			
Sulfide, Carbonyl (COS), in C ₃	D5623	ppmw		10		
Distillation- End Pt.	D2887 or D86	Deg F		375		6
Color, Saybolt	D6045 or D156		+27			7
Moisture Content- Free Water	Visual @ 34°F			None		
Halides (Including Fluorides) in nC ₄	D7359	ppmw		1		
Oxygenates- Methanol	D7423	ppmw		200		8
Product Temperature		Deg F	40	100	<65 mole%	
Product Temperature		Deg F	40	90	>65 mole%	
Other Deleterious Substances	Inspection		see note			8
Test Methods	See Note					9
Most Current Version	See Note					10

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Destinations:

Mont Belvieu, TX

Trac66 Code(s):

NY1

Skelly-Belvieu Pipeline Natural Gas Liquids Specifications

NGL, Demethanized NGL Mix (Y-1 Grade)

Notes:

1. Includes Nitrogen and Oxygen. Product must fail both methane specifications to be considered off-spec.
2. Propylene limited to 5.0 lv% max of contained propane, butylene limited to .35 lv% max of contained butanes, and butadiene limited to .01 lv% max of contained butanes.
3. The referee method for this property is ASTM D2598.
4. The use of corrosion masking agents (corrosion inhibitors) is strictly prohibited.
5. Other sulfur test methods may be suitable. ASTM D6667 includes LP gases in the scope of the test method.
6. This test is to be run on that portion of the mixture having a boiling point of 70F and greater at atmospheric pressure.
7. The referee method for this property is ASTM D156. This test is to be run on that portion of the mixture having a boiling point of 70F and greater at atmospheric pressure.
8. This specification defines only a basic purity for this product. This product is to be free of any contamination or impurities that might render the product unusable for its commonly used applications, or may be injurious to the pipeline's property or the property of 3rd parties, or may interfere with its transmission through the pipeline. Specific contaminants include (but are not limited to) dirt, rust, scale, and other types of solid contaminants, gum, gum-producing substances, oil, inhibitors, masking agents, scavengers, amines, caustics, chlorides, heavy metals, glycol, oxygenates, and inorganic gases or any compound added to enhance the ability to meet these specifications.
9. Test methods designated with the letter "D" are ASTM test methods. The most recent year revision shall be used.
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