

Section 3

Product Codes and Specifications

Effective Date [W] ~~April 14, 2022~~ (November 07, 2022)

Colonial Pipeline Company

PRODUCT CODES - SUMMARY	
Product Grouping	
A	CBOB - 87 Octane after blending with 10% denatured fuel Ethanol
D	CBOB - 93 Octane after blending with 10% denatured fuel Ethanol
F	RBOB - 87 Octane after blending with 10% denatured fuel Ethanol
H	RBOB - 93 Octane after blending with 10% denatured fuel Ethanol
L	Gasoline Blendstocks
M	Conventional - 87 Octane
V	Conventional - 93 Octane
BU	Butane
47	<u>SAF100 Sustainable Aviation Fuel</u>
48	R100 Renewable Diesel
49	B100 Bio-Diesel
51-58	Kerosene
59	Distillate Blendstock - Not Dyed by Colonial
61-67	Ultra Low Sulfur Diesel
69	Ultra Low Sulfur Diesel Blendstock
70-78	Fuel Oil, Diesel Fuel, Military DFM- Not Dyed by Colonial
72	Distillate Blendstock - Not Dyed by Colonial
79	Distillate Blendstock - Not Dyed by Colonial
[C]80-88	[C]Fuel Oil, Diesel Fuel – Dyed by Colonial
[C]89	[C]Distillate Blendstock – Dyed by Colonial
90-94, 96	Transmix

Colonial Pipeline Company

PRODUCT CODES - GASOLINE		
Fungible Product Code	Segregated Product Code	Description
		CBOB - 87 octane after blending with 10% denatured fuel ethanol
	1A	Summer 8.8 psi RVP
A2	2A	Summer 10.0 psi RVP
A3	3A	Winter 12.5 psi RVP
A4	4A	Winter 14.5 psi RVP
A5	5A	Winter 15.5 psi RVP
		CBOB - 93 octane after blending with 10% denatured fuel ethanol
D2	2D	Summer 10.0 psi RVP
D3	3D	Winter 12.5 psi RVP
D4	4D	Winter 14.5 psi RVP
D5	5D	Winter 15.5 psi RVP
		RBOB - 87 octane after blending with 10% denatured fuel ethanol
F1	1F	Summer 7.4 psi RVP
F3	3F	Winter 11.5 psi RVP
F4	4F	Winter 13.5 psi RVP
F5	5F	Winter 15.0 psi RVP
		RBOB - 93 octane after blending with 10% denatured fuel ethanol
H1	1H	Summer 7.4 psi RVP
H3	3H	Winter 11.5 psi RVP
H4	4H	Winter 13.5 psi RVP
H5	5H	Winter 15.0 psi RVP
Notes:		
1. Delivery of certain products may be limited by facilities and some grades may only be transported seasonally.		
2. See product specifications for detailed transfer document information.		

Colonial Pipeline Company

PRODUCT CODES - GASOLINE

Fungible Product Code	Segregated Product Code	Description
		Gasoline Blendstocks - Segregated Only
	1L	Low Octane (Octane R+M/2 <83)
	2L	Regular (83< Octane R+M/2 <87)
	3L	Mid-grade (87< Octane R+M/2 <93)
	4L	Premium (Octane R+M/2 >93)
		Conventional Gasoline - 87 Octane
M2	2M	Summer 9.0 psi RVP
M3	3M	Winter 11.5 psi RVP
M4	4M	Winter 13.5 psi RVP
M5	5M	Winter 15.0 psi RVP
		Conventional Gasoline - 93 Octane
V2	2V	Summer 9.0 psi RVP
V3	3V	Winter 11.5 psi RVP
V4	4V	Winter 13.5 psi RVP
V5	5V	Winter 15.0 psi RVP
BU		Butane
Notes:		
1. Delivery of certain products may be limited by facilities and some grades may only be transported seasonally.		
2. See product specifications for detailed transfer document information.		

Colonial Pipeline Company

PRODUCT CODES - DISTILLATE		
Fungible Product Code	Segregated Product Code	
47		Sustainable Aviation Fuel (SAF)
		SAF100 Sustainable Aviation Fuel
48		Renewable Diesel
		R100 Renewable Diesel
		Bio - Diesel
49		B100 Bio-Diesel
		Ultra Low Sulfur Kerosene
51		Undyed 15 ppm Sulfur #1 ULSD
		Kerosene
52		Military Jet JP-5
	53	Aviation Kerosene
54		Aviation Kerosene
55		Aviation Kerosene/K-1
56		Bonded Aviation Kerosene
	57	Aviation Kerosene
58		Military Jet JP-8
	59	Distillate Blendstock - Not Dyed by Colonial
		15 ppm Sulfur Diesel Fuel - Not Dyed by Colonial
61		15 ppm Sulfur Diesel Fuel
62		15 ppm Sulfur Diesel Fuel
63		15 ppm Sulfur Diesel Fuel
	65	15 ppm Sulfur Diesel Fuel
67		15 ppm Heating Oil - (Certified NTDF)
	69	15 ppm Sulfur Diesel Blendstock
		Fuel Oils, Diesel Fuels, Military DFM – Not Dyed by Colonial
70		Dyed Heating Oil - 2000 ppm - Intraharbor Only
	71	Undyed, Distillate Fuel for Export Only - 2000 ppm sulfur
	72	Distillate Blendstock 500 ppm sulfur
	73	Undyed 500 ppm Sulfur LM Diesel Fuel
75		Undyed, 420 ppm Sulfur Heating Oil
77		Undyed Heating Oil - 2000 ppm Sulfur
78		Undyed Military Diesel Fuel Marine
	79	Distillate Blendstock
		Fuel Oils, Diesel Fuels - Dyed by Colonial
[C]80		[C]Dyed 420 ppm Sulfur LM Diesel Fuel
[C]83		[C]Dyed 15 ppm Sulfur Diesel Fuel
	[C]84	[C]Segregated Dyed 420 ppm Sulfur LM Diesel Fuel
[C]85		[C]Dyed 420 ppm Sulfur Heating Oil
[C]87		[C]Dyed 15 ppm Heating Oil - (Certified NTDF)
[C]88		[C]Dyed Heating Oil - 2000 ppm sulfur
	[C]89	[C]Distillate Blendstock
		Transmix - Fungible Only
90		Distillate - Conventional Gasoline
91		Distillate - RFG
92		Distillate - RFG
93		Distillate - RBOB
94		Distillate - RBOB
96		Distillate - Distillate
		High Sulfur Kerosene - Ultra Low Sulfur Diesel
Notes:		
1. All products are not delivered to all locations, see product specifications for applicable limitations.		
2. See product specifications for detailed transfer document information.		

Colonial Pipeline Company

2.1

PRODUCT DESIGNATION AND PTD LANGUAGE - GASOLINE

PRODUCT GRADES	PRODUCT DESCRIPTION	PRODUCT DESIGNATION AND PTD LANGUAGE
Summer Grades		
1A	Summer 7.8 psi CBOB	Summer 7.8 psi CBOB. This product does not meet the requirements for summer reformulated gasoline. This gasoline requires 10 vol% ethanol. Non detergent additized gasoline. 8.8 psi after blending with 10% denatured fuel ethanol.
A2/2A & D2/2D	Summer 9.0 psi CBOB	Summer 9.0 psi CBOB. This product does not meet the requirements for summer reformulated gasoline. This gasoline requires 10 vol% ethanol. Non detergent additized gasoline. 10.0 psi after blending with 10% denatured fuel ethanol.
F1/1F & H1/1H	Summer RBOB	Summer RBOB. This product meets the requirements for summer reformulated or conventional gasoline. This gasoline requires 10 vol% ethanol. Non detergent additized gasoline. 7.4 psi RVP with 10% denatured fuel ethanol.
M2/2M & V2/2V	Summer Conventional Gasoline	Summer 9.0 psi CG. This product does not meet the requirements for summer reformulated gasoline. Non detergent additized gasoline." E0: Contains no ethanol.
Winter Grades		
A3/3A; A4/4A; A5/5A & D3/3D; D4/4D; D5/5D	Winter CBOB	Winter CBOB: This gasoline requires 10 vol% ethanol. Non detergent additized gasoline.
F3/3F; F4/4F; F5/5F & H3/3H; H4/4H; H5/5H	Winter RBOB	Winter RBOB: This gasoline requires 10 vol% ethanol. Non detergent additized gasoline.
M3/3M; M4/4M; M5/5M & V3/3V; V4/4V; V5/5V	Winter Conventional Gasoline	Winter CG: E0: Contains no ethanol. Non detergent additized gasoline.
Blendstock Grades		
1L; 2L; 3L; 4L	Gasoline blendstocks	New PTD Language Gasoline Blendstock. The Part 79, 80 & 1090 responsibilities (including any RVO) for any gasoline or BOB produced from this blendstock are the responsibility of the party producing the fuel.

Colonial Pipeline Company

2.2 PRODUCT DESIGNATION AND PRODUCT PTD LANGUAGE - KEROSENE

PRODUCT GRADES	PRODUCT DESCRIPTION	PRODUCT DESIGNATION AND PRODUCT PTD LANGUAGE
51	Undyed 15 ppm sulfur #1 ULSD	Undyed #1 MVNRLM 15 ppm (maximum) sulfur diesel fuel. "This volume of neat or blended biodiesel or renewable diesel is designated and intended for use as transportation fuel, heating oil or jet fuel in the 48 U.S. contiguous states and Hawaii. Any person exporting this fuel is subject to the requirements of 40 CFR 80.1430."
52	Jet Fuel (Military JP-5)	Jet Fuel. National Security Exempt Fuel. This fuel is for use in vehicles, engines, or equipment under an EPA-approved national security exemption only.
53	Kerosene	Kerosene. 3000 ppm sulfur maximum. Not for use in highway vehicles or engines or nonroad, locomotive or marine engines.
54	Jet Fuel	Jet Fuel. 3000 ppm sulfur maximum. Not for use in highway vehicles or engines or nonroad, locomotive or marine engines.
55	Jet Fuel	Jet Fuel. 400 ppm sulfur maximum. Not for use in highway vehicles or engines or nonroad, locomotive or marine engines.
56	Jet Fuel (Bonded Jet-A)	Jet Fuel. 3000 ppm sulfur maximum. Not for use in highway vehicles or engines or nonroad, locomotive or marine engines.
57	Kerosene	Jet Fuel. 500 ppm sulfur maximum. Not for use in highway vehicles or engines or nonroad, locomotive or marine engines.
58	Jet Fuel (Military JP-8)	Jet Fuel. National Security Exempt Fuel. This fuel is for use in vehicles, engines, or equipment under an EPA-approved national security exemption only.
59	Undyed Distillate (Kerosene) Blendstock	Distillate Blendstock. 3000 ppm Sulfur maximum. # 1 distillate. This product requires further processing and is not a finished diesel product. The Part 79, 80 & 1090 responsibilities (including any RVO) for any diesel fuel produced from this blendstock are the responsibility of the party producing the MVNRLM or ECA diesel fuel. Contains no known renewable content.

Colonial Pipeline Company

2.3.1 PRODUCT DESIGNATION AND PRODUCT TRANSFER PTD LANGUAGE- DIESEL

PRODUCT GRADES	PRODUCT DESCRIPTION	PRODUCT DESIGNATION AND PRODUCT PTD LANGUAGE
47	SAF	Synthetic paraffinic kerosine not for shipment. Grade is for blending only. This volume of neat renewable fuel is designated and intended to be blended into jet fuel in the 48 U.S. contiguous states and Hawaii. Any person exporting this fuel is subject to the requirements of 40 CFR 80.1430. This fuel is for aviation use only.
48	R100 Renewable Diesel	R100: 100% bio-mass based diesel fuel. MVNRLM 15 ppm (maximum) sulfur diesel fuel. Renewable diesel. "This volume of neat or blended renewable diesel is designated and intended for use as transportation fuel, heating oil or jet fuel in the 48 U.S. contiguous states and Hawaii. Any person exporting this fuel is subject to the requirements of 40 CFR 80.1430."
49	B100 BioDiesel	B100: 100% biodiesel. MVNRLM 15 ppm (maximum) sulfur diesel fuel. Biodiesel "This volume of neat or blended biodiesel is designated and intended for use as transportation fuel, heating oil or jet fuel in the 48 U.S. contiguous states and Hawaii. Any person exporting this fuel is subject to the requirements of 40 CFR 80.1430."
61/63	Undyed 15 ppm sulfur diesel fuel	Undyed #2 MVNRLM Diesel Fuel. 15 ppm sulfur (maximum) Diesel Fuel . This volume of neat or blended renewable diesel is designated and intended for use as transportation fuel, heating oil or jet fuel in the 48 U.S. contiguous states and Hawaii. Any person exporting this fuel is subject to the requirements of 40 CFR 80.1430. Contains up to 5% Renewable Diesel.
62	Undyed 15 ppm sulfur diesel fuel	Undyed #2 MVNRLM Diesel Fuel. 15 ppm sulfur (maximum) Diesel Fuel.
65/69	15 ppm sulfur distillate blendstock	Distillate blendstock. 15 ppm Sulfur maximum. #2 distillate. This product requires further processing and is not a finished diesel product. The Part 79, 80 & 1090 responsibilities (including any RVO) for any diesel fuel produced from this blendstock are the responsibility of the party producing the MVNRLM or ECA diesel fuel. Contains no known renewable content.
67	Certified NTDF - Heating Oil	15 ppm sulfur (maximum) certified NTDF - Heating Oil - This fuel is designated for non-transportation use.
70/77	Heating Oil	Heating Oil. 2000 ppm sulfur maximum.
71	Distillate for Export	Distillate blendstock. 2000 ppm sulfur maximum. This distillate is for export from the United States only.
72	500 ppm sulfur distillate blendstock	Distillate blendstock. 500 ppm Sulfur maximum. #2 distillate. This product requires further processing and is not a finished diesel product. The Part 79, 80 & 1090 responsibilities (including any RVO) for any diesel fuel produced from this blendstock are the responsibility of the party producing the MVNRLM or ECA diesel fuel. Contains no known renewable content.

Colonial Pipeline Company

2.3.2

PRODUCT DESIGNATION AND PRODUCT TRANSFER PTD LANGUAGE- DIESEL

PRODUCT GRADES	PRODUCT DESCRIPTION:	PRODUCT DESIGNATION AND PRODUCT PTD LANGUAGE
73	500 ppm LM Diesel Fuel	500 ppm sulfur (maximum) LM Diesel Fuel. For use only in accordance with a compliance plan under 40 CFR 1090.515(g). Not for use in highway vehicles or other nonroad vehicles and engines.
75	Heating Oil	Heating Oil. 500 ppm sulfur maximum. Not for use in highway vehicles or engines or nonroad, locomotive, or marine engines.
78	Military Diesel Fuel Marine	National Security Exempt Fuel. This fuel is for use in vehicles, engines, or equipment under an EPA-approved national security exemption only.
79	10,000 ppm sulfur distillate blendstock	Distillate blendstock. 10,000 ppm Sulfur maximum. #2 distillate. This product requires further processing and is not a finished diesel product. The Part 79, 80 & 1090 responsibilities (including any RVO) for any diesel fuel produced from this blendstock are the responsibility of the party producing the MVNRLM or ECA diesel fuel. Contains no known renewable content.
[C]80/84	Dyed 500 ppm LM Diesel Fuel	[C]500 ppm sulfur (maximum) LM Diesel. For use only in accordance with a compliance plan under 40 CFR 1090.515(g). Not for use in highway vehicles or other nonroad vehicles and engines. DYED DIESEL FUEL, NONTAXABLE USE ONLY, PENALTY FOR TAXABLE USE.
[C]83	Dyed 15 ppm sulfur diesel fuel	[C]MVNRLM Diesel Fuel. 15 ppm sulfur (maximum) Diesel Fuel. This volume of neat or blended renewable diesel is designated and intended for use as transportation fuel, heating oil or jet fuel in the 48 U.S. contiguous states and Hawaii. Any person exporting this fuel is subject to the requirements of 40 CFR 80.1430. DYED DIESEL FUEL, NONTAXABLE USE ONLY, PENALTY FOR TAXABLE USE.
[C]85	Dyed Heating Oil	[C]Heating Oil. 420 ppm sulfur maximum. Not for use in highway vehicles or engines or nonroad, locomotive, or marine engines. DYED DIESEL FUEL, NONTAXABLE USE ONLY, PENALTY FOR TAXABLE USE.
[C]87	Dyed Certified NTDF Heating Oil	[C]15 ppm sulfur (maximum) certified NTDF Heating Oil. This fuel is designated for non transportation use. DYED DIESEL FUEL, NONTAXABLE USE ONLY, PENALTY FOR TAXABLE USE.
[C]88	Dyed Heating Oil	[C]Heating Oil. 2000 ppm sulfur maximum. Not for use in highway vehicles or engines or nonroad, locomotive, or marine engines. DYED DIESEL FUEL, NONTAXABLE USE ONLY, PENALTY FOR TAXABLE USE.
[C]89	Dyed 10,000 ppm sulfur distillate blendstock	[C]Distillate blendstock. 10,000 ppm Sulfur maximum. #2 distillate. This product requires further processing and is not a finished diesel product. The Part 48, 79, 80, 1090 responsibilities (including any RVO) for any diesel fuel produced from this blendstock are the responsibility of the party producing the MVNRLM or ECA diesel fuel. Contains no known renewable content.

Colonial Pipeline Company

PRODUCT SPECIFICATIONS INDEX

3.1.1

Product Specifications

This section contains specifications for products that are handled on a segregated and fungible (common-stream) basis. A "fungible batch" is defined as a batch of petroleum product meeting carrier's established specifications that may be commingled with other quantities of petroleum product meeting the same specifications. A "segregated batch" is defined as a batch of petroleum product being the property of a single shipper and meeting carrier's established specifications.

Not all products are delivered to all locations. Please see each product specification for delivery restrictions. Additionally, some grades may only be transported seasonally. Seasonal restrictions are set forth in the RVP calendar, which is in Section 4 of the Shipper Manual.

For gasoline product codes the order of the letter and number designates whether the product is fungible or segregated. Gasoline product codes that begin with a letter are fungible and with a number are segregated.

Section

3.1	Index	
3.2	Additive Requirements/Restrictions	
3.3	A	grades (1-5) - CBOB 87 octane after blending with 10.0% denatured fuel ethanol
3.4	D	grades (2-5) - CBOB 93 octane after blending with 10.0% denatured fuel ethanol
3.5	F	grades (1-5) - RBOB 87 octane after blending with 10.0% denatured fuel ethanol
3.6	H	grades (1-5) - RBOB 93 octane after blending with 10.0% denatured fuel ethanol
3.7	L	grades (1-5) - Gasoline blendstocks
3.8	M	grades (2-5) - 87 octane non-oxygenated conventional gasoline
3.9	V	grades (2-5) - 93 octane non-oxygenated conventional gasoline
3.10	BU	Butane - For Blending purposes only

Colonial Pipeline Company

3.1.2	PRODUCT SPECIFICATION INDEX
Product Specification Section	Description
3.11	Grade 47 - Sustainable Aviation Fuel (SAF)
3.12	Grade 48 - Segregated Renewable Diesel
3.13	Grade 49 - Fungible B100 Bio-Diesel
3.14	Grade 51 - Fungible Undyed 15 ppm Sulfur #1 ULSD.
3.15	Grade 52 - Fungible military JP-5
3.16	Grade 53 - Segregated aviation kerosene
3.17	Grade 54 - Fungible aviation kerosene
3.18	Grade 55 - Fungible aviation kerosene/1-K
3.19	Grade 56 - Fungible bonded aviation kerosene.
3.2	Grade 57 - Segregated aviation kerosene - 500 ppm sulfur
3.21	Grade 58 - Fungible military JP-8
3.22	Grade 59 - Segregated undyed distillate blendstock
3.23	Grade 61 - Fungible 15 ppm sulfur diesel fuel (< 5% Renewable Hydrotreated Diesel)
3.24	Grade 62 - Fungible 15 ppm sulfur diesel fuel
3.25	Grade 63 - Fungible 15 ppm Sulfur diesel Fuel (< 5% Renewable Hydrotreated Diesel)
3.26	Grade 65 - Segregated 15 ppm Sulfur diesel (May Contain Renewable Hydrotreated Diesel)
3.27	Grade 67 - Fungible 15 ppm sulfur Heating Oil (Certified NTFD)
3.28	Grade 69 - Segregated 15 ppm Sulfur diesel blendstock
3.29	Grade 70 - Fungible dyed 2000 ppm heating oil – For Intraharbor movements only
3.3	Grade 71 - Segregated high sulfur distillate fuel for export only - 2000 ppm sulfur
3.31	Grade 72 - Segregated 500 ppm sulfur diesel blendstock
3.32	Grade 73 - Segregated undyed 500 ppm sulfur LM diesel fuel
3.33	Grade 75 - Fungible undyed, 420 ppm sulfur Heating Oil
3.34	Grade 77 - Fungible undyed 2000 ppm sulfur heating oil
3.35	Grade 78 - Segregated military marine diesel fuel
3.36	Grade 79 - Segregated distillate blendstock
[C]3.37	[C]Grade 80 - Fungible dyed 420 ppm sulfur LM diesel fuel
[C]3.38	[C]Grade 83 - Fungible dyed 15 ppm Sulfur diesel Fuel (< 5% Renewable Hydrotreated Diesel)
[C]3.39	[C]Grade 84 - Segregated dyed 500 ppm Sulfur LM Diesel Fuel
[C]3.40	[C]Grade 85 - Fungible dyed 420 ppm sulfur Heating Oil
[C]3.41	[C]Grade 87 - Fungible 15 ppm sulfur dyed Heating Oil (Certified NTFD)
[C]3.42	[C]Grade 88 - Fungible dyed 2000 ppm sulfur heating oil
[C]3.43	[C]Grade 89 - Segregated distillate blendstock
[W]3.4437	Grades 90-94, 96 - Transmix

For complete listing of all product codes, refer to individual product specifications.

Colonial Pipeline Company

PRODUCT SPECIFICATIONS

ADDITIVE REQUIREMENTS/RESTRICTIONS

3.2 Colonial will permit only the types and concentrations of additives detailed below; all other types and concentrations or additives are prohibited.

3.2.1 Gum Inhibitors and Metal Deactivators

Gasoline shipments may, but are not required to, contain the following:

N, N'di-secondary butyl para-phenylenediamine
N, N'di (1-ethyl-2-methylpentyl) para-phenylenediamine
N, N'di-isopropyl-para-phenylenediamine
N, N'bis-(1, 4-diamethylpentyl)-p-phenylenediamine
Ortho-tertiary butylphenol
2,4-di-tertiary butylphenol
N,secondary butyl, N' phenyl-para-phenylenediamine
Butylated ethyl,methyl and dimethyl phenols

N, N'disalicylidene-1, 2 propanediamine
2, 6-di-tertiary butyl 4 methyl phenol
n-Butyl para-aminophenol
2,4,6 - tritertiary butylphenol
2,4-diamethyl-6-tertiary-butylphenol
2,6-tertiary butylphenol
Mixed propylated and butylated phenols
2,4,6 tri-isopropylphenol

3.2.2 Corrosion Inhibitors

All products shipped on Colonial Pipeline, with the exception of all grades of Aviation Kerosine, are required to meet a minimum level of corrosion protection prior to shipment. The concentration of inhibitor dosage will be controlled to meet a minimum rating of B+ (less than 5% of test surface rusted) as determined by NACE Standard TM0172-2001, Test Method-Antirust Properties of Petroleum Products Pipeline Cargoes.

Diesel and gasolines shipped on Colonial Pipeline may contain only the following corrosion inhibitors:

Aqua Process	11CH77
Afton Chem.	HiTEC 6455,4875
Corexit	5267
Innospec	DCI-4A, DCI-6A, DCI-11 DCI-30.N
Ethyl HiTec	580
Lubrizol	8014, 8017,541
MidContinental	MCC5001
Mobil	C-605

Nalco	5403, 5405, 5406, EC5624A, EC5626A
SPEC-AID	8Q22, 8Q110ULS, 8Q112ULS, 8Q123ULS
Tolad	245, 249, 351, 3232, 3232D, 4410
Unichem	7500, 7501, 7510
UOP	Unicor, Unicor J, Unicor PL
Athlon	611

In addition to the above additives, the following may be used in diesel fuels and fuel oil transported by Colonial: Dupont AFA-1, Innospec DMA-4, Nalco 5400-A.

3.2.3 Static Dissipator Additives (Conductivity Improvers)

Product shipments may, but are not required to, contain static dissipator additive(SDA). The only approved SDAs for use on Colonial Pipeline is Innospec Stadis® 450 and AvGuard. SDA is prohibited from all aviation kerosine grades (grades 51, 53, 54, 55, 56, 57, and 59). The origin maximum concentration of Stadis® 450 and Avguard is 0.75 mg/l, and the origin maximum conductivity allowed is 250 pS/m at 21°C(70°F) by ASTM D2624.

3.2.4 Aviation Kerosene Additives

Product may only contain antioxidants and metal deactivators specified and within the concentration noted in *Table 2: Detailed Requirements for Additives in Aviation Turbine Fuels* of latest ASTM D-1655 with advance approval from Colonial prior to shipment. Use of these additives is expected to be short term at reasonable treat levels. All other additives are prohibited. Use of these additives must be clearly indicated on Certificate of Analysis. Colonial reserves the right to deny shipment of product containing these additives.

3.2.5 Cloud and Pour Point Depressant Additives

Product may only contain ethylene vinyl acetate copolymer based cloud and pour point depressant additives only upon advance approval from Colonial prior to shipment. Use of these additives is expected to be short term at reasonable treat levels. Colonial reserves the right to deny shipment of product containing cloud and pour point depressant additives.

3.2.6 Cetane Improver Additives

Product may only contain 2-ethyl hexyl nitrate or T-butyl peroxide based cetane improver additives only upon advance approval from Colonial prior to shipment. Use of these additives is expected to be short term at reasonable treat levels. Colonial reserves the right to deny shipment of product containing cetane improver additives.

3.2.7 Renewable Diesel

Renewable diesel is a liquid fuel derived from 100% hydrotreated bio-mass feedstocks that meets the registration requirements for fuels and fuel additives established by the EPA under section 211 of the Clean Air Act and the requirements of ASTM D975. Renewable diesel containing fatty acid esters (FAME, FAEE, or other esters) is prohibited for all distillate grades which allow up to 5% renewable (63,83). Product with >5% renewable diesel may be shipped as 65 or 69 grade.

Colonial assumes no responsibility as a blender and all RIN'S (Renewable Identification Number) must be separated before entering Colonial's system. The volume of Renewable Diesel must be disclosed on the COA (Certificate of Analysis).

3.2.8 Prohibited Additives

As stated in Section 3.2 above, Colonial only permits certain types and concentrations of additives and all other types and concentrations of additives are prohibited. Prohibited additives include, but are not limited to, the following:

Lubricity additives

Intake Valve Detergent Additives

Port Fuel Injector(PFI) additives

Additives containing Phosphorus

Biodiesel(See Section 3.2.10)

Marker Solvent Yellow 124

[N] 3.2.8.1 Hydrogen Sulfide

[N]Colonial does not accept for shipment product containing H₂S in the liquid or vapor phase. No H₂S is defined as <1 ppm H₂S in the liquid per ASTM D7621 or UOP 163 and <10 ppm H₂S in the vapor space per ASTM D5705. The use of H₂S scavengers must be approved by Colonial's QA group prior to use. Any products treated with H₂S scavenger must be resampled and tested post treatment and a certificate of analysis showing the H₂S has been successfully mitigated must be submitted and reviewed by the Colonial Pipeline QA coordinator prior to the product being lifted into the Colonial Pipeline system.

3.2.9 Additive Documentation Requirements

If present, the type and concentration of approved additives must be clearly indicated on Certificate of Analysis. Additive treat rates are acceptable for concentration reporting. Carrier may request review of volume reconciliation data to verify actual treat rates.

3.2.10 Bio-Diesel Injection

Up to 5% Bio-Diesel (Grade 49) may be injected into diesel on lines # 17, 22, 24, and Greensboro local lines.

Colonial assumes no responsibility as a blender and all RIN'S (Renewable Identification Number) must be separated before entering Colonial's system.

3.2.11 Butane

Segregated batches of butane may be transported and handled through Baton Rouge.

3.2.12 Sustainable Aviation Fuel (SAF)

SAF is defined as the portion of synthetic paraffinic kerosine (SPK) volume in a blend of fuel meeting ASTM D7566 Standard Specification for Aviation Turbine Fuels Containing Synthesized Hydrocarbons. ASTM D7566 provides the requirements for blends of crude based kerosine and SPK to be classified as fuel meeting the D1655 Standard Specification for Aviation Turbine Fuels. The specific SPK as Detailed in D7566 annexes - (A1) FISCHER TROPSCH SPK or (A2) HEFA SPK are the only allowable SPK that may be shipped on Colonial Pipeline. Grade 47 Specification for Sustainable Aviation Fuel is being created for purposes of tracking the SPK volume of the blended fuel for blending services provided by Colonial and is not for shipment.

Colonial Pipeline Company

3.3.1

PRODUCT SPECIFICATIONS

CONVENTIONAL REGULAR GASOLINE BLENDSTOCK (CBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY AS DEFINED IN ASTM D4806

Cancels Previous Issues of A grades

This CBOB may not be combined with any other CBOB except CBOB having the same requirement for oxygenate type and amount.
All parameters must be met after blending with denatured fuel ethanol unless noted.

ALL A GRADE REQUIREMENTS (SEGREGATED AND FUNGIBLE)

Product Property		ASTM Test	Test Results		Note
		Method	Minimum	Maximum	
Octane	RON	D2699	Report		
	MON	D2700	82.0		
	(R+M)/2		87.0		
Oxygen Content, weight %		D5599		0.1	1,2 6
RVP (psi)		D5191			3, 10
Grades				With Ethanol	Without Ethanol
1A				8.8	7.8
A2,2A				10.0	9.0
A3,3A				12.5	X
A4,4A				14.5	X
A5,5A				15.5	X

Gasoline designed for gasoline-ethanol blends in accordance with 40 CFR 1090 Subpart N.

Suitable for the special RVP provisions for ethanol blends that contain 9 and 10 vol % ethanol.

The use of this gasoline to manufacture a gasoline-ethanol blend containing anything other than between 9 and 10 volume percent ethanol may cause a summertime RVP violation.

NOTES (Apply to Fungible and Segregated)

Heavy Metals are not allowed to be present.
Additive requirements/restrictions - refer to section 3.2.
This is a base gasoline, not for sale to the ultimate consumer.
Any gasoline exhibiting an offensive odor and/or poses a personal health hazard will not be accepted for shipment.
Any gasoline containing more than 0.50 wt. % of dicyclopentadiene will not be accepted for shipment.
The referee method will be based on a gas chromatograph test.
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

Colonial Pipeline Company

3.3.2

PRODUCT SPECIFICATIONS

CONVENTIONAL REGULAR GASOLINE BLENDSTOCK (CBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY AS DEFINED IN ASTM D4806

Cancels Previous Issues of A grades

FUNGIBLE ONLY REQUIREMENTS:

Product Property	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Product Property	ASTM Test Method	Test Results		Notes
Product Property	Method	Minimum	Maximum	
Benzene (vol%)	[W]D3606, D5769		3.8	3
Color			Undyed	
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1	
Corrosion (Ag) 3 hrs @122°F (50°C)	D7671		1	
Doctor test	D4952	Negative (sweet)		4
Mercaptan sulfur, wt.%	D3227		0.002	
Solvent Washed Gum mg/100 ml	D381		4	
Gravity °API at 60°F	D4052	Report		6
Oxidation stability-minutes	D525	240		6
Phosphorous, gms/gal	D3231		0.004	
Sulfur (ppmw)	D2622		80	7, 6
Nace Corrosion	TM0172	B+ (Origin)		6
Volatility:				
Driveability Index	D4814		See Chart	
Distillation, [W]°C °F @ %Evap.	D86		See Chart	
Vapor/Liquid Ratio (V/L), [W] °C °F @ 20	D5188		See Chart	5

Chart

Grades	Driveability Index	10 vol%	50 vol%		90 vol%	End Pt.	V/L
		Max	Min	Max	Max	Max	Min
1A	1250.	[W]70158	[W] 66150.	[W]121250.	[W]190374	[W]221430.	[W]50122
A2	1250.	[W]70158	[W] 66150.	[W]121250.	[W]190374	[W]221430.	[W]50122
A3	1230.	[W]60140.	[W] 66150.	[W]116240.	[W]185365	[W]221430.	[W]47116
A4	1220.	[W]55131	[W] 66150.	[W]113235	[W]185365	[W]221430.	[W]42107
A5	1200.	[W]50122	[W] 66150.	[W]110230.	[W]185365	[W]221430.	[W]39102

Notes

1. All A grades may not contain oxygenates, such as ethers and alcohols. The use of non-hydrocarbon blending components in these grades is prohibited.
2. Refer to test methods published in 40 CFR 1090 Subpart N. Alternative oxygenates test methods, ASTM D 4815, may be used according to federal and state regulations.
3. For products blended to meet EPA tests must be performed in accordance with the procedures described in 40 CFR, 1090 Subpart N and Subpart C
4. Mercaptan Sulfur waived if fuel is negative by Doctor test.
5. Computer and Linear methods may be used to determine V/L value.
6. Specifications must be met before blending of denatured fuel ethanol.
7. Refer to 40 CFR 1090 Subpart N. Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.
8. Colonial will accept test methods results that are listed in ASTM D4814 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.
9. Use of these grades is controlled by the RVP calendar.
10. Summertime RVP MUST be checked using EPA formula as per 40 CFR 1090.1355

Colonial Pipeline Company

3.4.1

PRODUCT SPECIFICATIONS CONVENTIONAL PREMIUM GASOLINE BLENDSTOCK (CBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY AS DEFINED IN ASTM D4806

Cancels Previous Issues of D grades

**This CBOB may not be combined with any other CBOB except CBOB having the same requirement for oxygenate type and amount.
All parameters must be met after blending with denatured fuel ethanol unless noted.**

ALL D GRADE REQUIREMENTS (SEGREGATED AND FUNGIBLE)

Product Property		ASTM Test	Test Results		Note
		Method	Minimum	Maximum	
Octane	RON	D2699	Report		
	MON	D2700	Report		
	(R+M)/2		93.0		
Oxygen Content, weight %		D5599		0.1	1,2 6
RVP (psi)		D5191			3 10
Grades			With Ethanol	Without Ethanol	
D2,2D			10.0	9.0	
D3,3D			12.5	X	
D4,4D			14.5	X	
D5,5D			15.5	X	

Gasoline designed for gasoline-ethanol blends in accordance with 40 CFR 1090 Subpart N.

Suitable for the special RVP provisions for ethanol blends that contain 9 and 10 vol % ethanol.

The use of this gasoline to manufacture a gasoline-ethanol blend containing anything other than between 9 and 10 volume percent ethanol may cause a summertime RVP violation.

NOTES (Apply to Fungible and Segregated):

Heavy Metals are not allowed to be present.
Additive requirements/restrictions - refer to section 3.2.
This is a base gasoline, not for sale to the ultimate consumer.
Any gasoline exhibiting an offensive odor and/or poses a personal health hazard will not be accepted for shipment.
Any gasoline containing more than 0.50 wt. % of dicyclopentadiene will not be accepted for shipment.
The referee method will be based on a gas chromatograph test.
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

Colonial Pipeline Company

3.4.2

PRODUCT SPECIFICATIONS CONVENTIONAL PREMIUM GASOLINE BLENDSTOCK (CBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY AS DEFINED IN ASTM D4806

Cancels Previous Issues of D grades

FUNGIBLE ONLY REQUIREMENTS:

Product Property	ASTM Test	Test Results		Notes
	Method	Minimum	Maximum	
Benzene (vol%)	[W]D3606 D5769		3.8	3
Color			Undyed	
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1	
Corrosion (Ag) 3 hrs @122°F (50°C)	D7671		1	
Doctor test	D4952	Negative (sweet)		4
Mercaptan sulfur, wt.%	D3227		0.002	
Solvent Washed Gum mg/100 ml	D381		4	
Gravity °API at 60°F	D4052	Report		6
Oxidation stability-minutes	D525	240		6
Phosphorous, gms/gal	D3231		0.004	
Sulfur (ppmwt)	D2622		80	7, 6
Nace Corrosion	TM0172	B+ (Origin)		6

Volatility:

Driveability Index	D4814		See Chart	
Distillation, [W]°C °F @ %Evap.	D86		See Chart	
Vapor/Liquid Ratio (V/L), [W] °C °F @ 20	D5188		See Chart	5

Chart

Grades	Driveability	10 vol%	50 vol%		90 vol%	End Pt.	V/L
	Index	Max	Min	Max	Max	Max	Min
D2	1250.	[W]70158	[W] 66150.	[W]121250.	[W]190374	[W]221430.	[W]50122
D3	1230.	[W]60140.	[W] 66150.	[W]116240.	[W]185365	[W]221430.	[W]47116
D4	1220.	[W]55131	[W] 66150.	[W]113235	[W]185365	[W]221430.	[W]42107
D5	1200.	[W]50122	[W] 66150.	[W]110230.	[W]185365	[W]221430.	[W]39102

Notes

1. All D grades may not contain oxygenates, such as ethers and alcohols. The use of non-hydrocarbon blending components in these grades is prohibited.
2. Refer to test methods published in 40 CFR 1090 Subpart N. Alternative oxygenates test method ASTM D 4815, may be used according to federal and state regulations.
3. For products blended to meet EPA tests must be performed in accordance with the procedures described in 40 CFR 1090 Subpart N and Subpart C
4. Mercaptan Sulfur waived if fuel is negative by Doctor test.
5. Computer and Linear methods may be used to determine V/L value.
6. Specifications must be met before blending of denatured fuel ethanol.
7. Refer to 40 CFR 1090 Subpart N Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.
8. Colonial will accept test methods results that are listed in ASTM D4814 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.
9. Use of these grades is controlled by the RVP calendar.
10. Summertime RVP MUST be checked using EPA formula as per 40 CFR 1090.1355

Colonial Pipeline Company

3.5.1

PRODUCT SPECIFICATIONS

REFORMULATED REGULAR GASOLINE BLENDSTOCK (RBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY AS DEFINED IN ASTM D4806

Cancels Previous Issues of F grades

This RBOB may not be combined with any other RBOB except RBOB having the same requirement for oxygenate type and amount.

All parameters must be met after blending with denatured fuel ethanol unless noted.

ALL F GRADE REQUIREMENTS (SEGREGATED AND FUNGIBLE)

Product Property		ASTM Test	Test Results		Note
		Method	Minimum	Maximum	
Octane	RON	D2699	Report		
	MON	D2700	82.0		
	(R+M)/2		87.0		
Benzene (vol%)		[W]D3606, D5769	1.30		3
Oxygen Content, weight %		D5599		0.1	1,2, 6, 7
Sulfur (ppmw)		D2622		80	8, 6
RVP (psi)		D5191			3, 11
Grades					
F1,1F				7.4	
F3,3F				11.5	
F4,4F				13.5	
F5,5F				15.0	

FUNGIBLE ONLY REQUIREMENTS:

Color			Undyed	
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1	
Corrosion (Ag) 3 hrs @122°F (50°C)	D7671		1	
Doctor test	D4952	Negative (sweet)		4
Mercaptan sulfur, wt. %	D3227		0.002	
Solvent Washed Gum mg/100 ml	D381		4	
Gravity °API at 60°F	D4052	Report		6
Oxidation stability-minutes	D525	240		6
Phosphorous, gms/gal	D3231		0.004	
Nace Corrosion	TM0172	B+ (Origin)		6

Volatility:

Driveability Index	D4814	See Chart		
Distillation, [W]°C °F @ %Evap.	D86	See Chart		
Vapor/Liquid Ratio (V/L), [W] °C °F @ 20	D5188	See Chart		5

Chart

Grades	Driveability Index	10 vol%	50 vol%		90 vol%	End Pt.	V/L
		Max	Min	Max	Max	Max	Min
F1	1250.	[W]70158	[W] 66150.	[W]121250.	[W]190374	[W]221430.	[W]50122
F3	1230.	[W]60140.	[W] 66150.	[W]116240.	[W]185365	[W]221430.	[W]47116
F4	1220.	[W]55131	[W] 66150.	[W]113235	[W]185365	[W]221430.	[W]42107
F5	1200.	[W]50122	[W] 66150.	[W]110230.	[W]185365	[W]221430.	[W]39102

Colonial Pipeline Company

3.5.2

PRODUCT SPECIFICATIONS REFORMULATED REGULAR GASOLINE BLENDSTOCK (RBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY AS DEFINED IN ASTM D4806

Cancels Previous Issues of F grades

NOTES (Apply to Fungible and Segregated):

Heavy Metals are not allowed to be present.
Additive requirements/restrictions - refer to section 3.2.
This is a base gasoline, not for sale to the ultimate consumer.
Any gasoline exhibiting an offensive odor and/or poses a personal health hazard will not be accepted for shipment.
Any gasoline containing more than 0.50 wt. % of dicyclopentadiene will not be accepted for shipment.
The referee method will be based on a gas chromatograph test.
1. All F grades may not contain oxygenates, such as ethers and alcohols. The use of non-hydrocarbon blending components in these grades is prohibited.
2. Refer to test methods published in 40 CFR 1090 Subpart N. Alternative oxygenates test method ASTM D 4815, may be used according to federal and state regulations.
3. For products blended to meet EPA tests must be performed in accordance with the procedures described in 40 CFR 1090 Subpart N and Subpart C.
4. Mercaptan Sulfur waived if fuel is negative by Doctor test.
5. Computer and Linear methods may be used to determine V/L value.
6. Specifications must be met before blending of denatured fuel ethanol.
7. Oxygen content must meet a minimum of 1.7 wt.% and a maximum of 4.0 wt.% after blending of denatured fuel ethanol.
8. Refer to 40 CFR 1090 Subpart N. Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.
9. Colonial will accept test methods results that are listed in ASTM D4814 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.
10. Use of these grades is controlled by the RVP calendar.
11. Summertime RVP MUST be checked using EPA formula as per 40 CFR 1090.1355
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

Colonial Pipeline Company

3.6.1

PRODUCT SPECIFICATIONS FORMULATED PREMIUM GASOLINE BLENDSTOCK (RBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY AS DEFINED IN ASTM D4806

Cancels Previous Issues of H grades

This RBOB may not be combined with any other RBOB except RBOB having the same requirement for oxygenate type and amount.

All parameters must be met after blending with denatured fuel ethanol unless noted.

ALL H GRADE REQUIREMENTS (SEGREGATED AND FUNGIBLE)

Product Property		ASTM Test	Test Results		Notes
		Method	Minimum	Maximum	
Octane	RON	D2699	Report		
	MON	D2700	Report		
	(R+M)/2		93.0		
Benzene (vol%)		[W]D3606, D5769		1.30	3
Oxygen Content, weight %		D5599		0.1	1, 2, 6, 7
Sulfur (ppmwt)		D2622		80	8, 6
RVP (psi)		D5191			3, 11
Grades					
H1,1H				7.4	
H3,3H				11.5	
H4,4H				13.5	
H5,5H				15.0	

FUNGIBLE ONLY REQUIREMENTS:

Color			Undyed	
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1	
Corrosion (Ag) 3 hrs @122°F (50°C)	D7671		1	
Doctor test	D4952	Negative (sweet)		4
Mercaptan sulfur, wt.%	D3227		0.002	
Solvent Washed Gum mg/100 ml	D381		4	
Gravity °API at 60°F	D4052	Report		6
Oxidation stability-minutes	D525	240		6
Phosphorous, gms/gal	D3231		0.004	
Nace Corrosion	TM0172	B+ (Origin)		6

Volatility:

Driveability Index	D4814	See Chart		
Distillation, [W]°C °F @ %Evap.	D86	See Chart		
Vapor/Liquid Ratio (V/L), [W] °C °F @ 20	D5188	See Chart		5

Chart

Grades	Driveability Index	10 vol%	50 vol%		90 vol%	End Pt.	V/L
		Max	Min	Max	Max	Max	Min
H1	1250.	[W]70158	[W] 66150.	[W]121250.	[W]190374	[W]221430.	[W]50122
H3	1230.	[W]60140.	[W] 66150.	[W]116240.	[W]185365	[W]221430.	[W]47116
H4	1220.	[W]55131	[W] 66150.	[W]113235	[W]185365	[W]221430.	[W]42107
H5	1200.	[W]50122	[W] 66150.	[W]110230.	[W]185365	[W]221430.	[W]39102

Colonial Pipeline Company

3.6.2

PRODUCT SPECIFICATIONS REFORMULATED PREMIUM GASOLINE BLENDSTOCK (RBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY AS DEFINED IN ASTM D4806

Cancels Previous Issues of H grades

NOTES (Apply to Fungible and Segregated):

Heavy Metals are not allowed to be present.
Additive requirements/restrictions - refer to section 3.2.
This is a base gasoline, not for sale to the ultimate consumer.
Any gasoline exhibiting an offensive odor and/or poses a personal health hazard will not be accepted for shipment.
Any gasoline containing more than 0.50 wt. % of dicyclopentadiene will not be accepted for shipment.
The referee method will be based on a gas chromatograph test.
1. All H grades may not contain oxygenates, such as ethers and alcohols. The use of non-hydrocarbon blending components in these grades is prohibited.
2. Refer to test methods published in 40 CFR 1090 Subpart N Alternative oxygenates test method, ASTM D 4815, may be used according to federal and state regulations.
3. For products blended to meet EPA tests must be performed in accordance with the procedures described in 40 CFR 1090 Subpart N and Subpart C
4. Mercaptan Sulfur waived if fuel is negative by Doctor test.
5. Computer and Linear methods may be used to determine V/L value.
6. Specifications must be met before blending of denatured fuel ethanol.
7. Oxygen content must meet a minimum of 1.7 wt.% and a maximum of 4.0 wt.% after blending of denatured fuel ethanol.
8. Refer to 40 CFR 1090 Subpart N. Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.
9 Colonial will accept test methods results that are listed in ASTM D4814 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.
10 Use of these grades is controlled by the RVP calendar.
11. Summertime RVP MUST be checked using EPA formula as per 40 CFR 1090.1355
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

Colonial Pipeline Company

[W]3.7.1

PRODUCT SPECIFICATIONS BLENDSTOCKS

Cancels Previous Issues of L Grades

ALL L GRADE REQUIREMENTS (SEGREGATED ONLY)

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of their knowledge the following information:

Octane

Oxygen Content, weight %

RVP (psi)

[W] ~~Any other product property that does not meet Colonial's fungible specification for M grades.~~ All properties listed in next page

The Pre-shipment/Transfer Document must be received before shipment with the actual results.

TABLE A

1L	This product code is intended for the shipment of low octane (<83.0 R+M/2) gasoline blendstocks. Nomination and shipment of a buffer batch is required with the batch. All interfaces will be cut into the 1L product in order to protect other batches. The nomination volumes of the buffer batch and 1L product will be adjusted to reflect actual barrels delivered.
2L	This product code is intended for the shipment of >83.0 and <87.0 R+M/2 gasoline blendstocks. This product does not require a buffer batch and will be handled with normal procedures.
3L	This product code is intended for the shipment of >87.0 and <93.0 R+M/2 gasoline blendstocks. This product does not require a buffer batch and will be handled with normal procedures.
4L	This product code is intended for the shipment of >93.0 R+M/2 gasoline blendstocks. This product does not require a buffer batch and will be handled with normal procedures.
Notes	
1. Colonial will accept test methods results that are listed in ASTM D4814 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes	
2. Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.	
3. Additive requirements/restrictions - refer to section 3.2.	
4. Use of these grades is controlled by the RVP calendar.	
5. [N] L grades are intended for the shipment of Naphtha, Reformate, and Alcolate. Shipment of any other product as "L" Grade requires Colonial approval	

Colonial Pipeline Company

[N]3.7.2

PRODUCT SPECIFICATIONS BLENDSTOCKS

Cancels Previous Issues of L Grades

ALL L GRADE REQUIREMENTS (SEGREGATED ONLY)

Product Property		ASTM Test	Test Results		Note
		Method	Minimum	Maximum	
Mercaptan sulfur, wt.%		D3227		0.002	
Corrosion (Cu) 3 hrs @122°F (50°C)		D130	Report		
Corrosion (Ag) 3 hrs @122°F (50°C)		D7671	Report		
Sulfur (ppmw)		D2622	Report		
Phosphorous, gms/gal		D3231	Report		
Benzene (vol%)		D5769	Report	3.8	
Solvent Washed Gum mg/100 ml		D381	Report		
API Gravity @60F		D4052	48	90	
Drivability Index		D4814	Report		
Doctor Test		D4952	Negative		
Vapor/Liquid Ratio (V/L),[W] °C °F @ 20		D5188	Report		
RVP (psi)		D5191	Report		4
Oxidation Stability - Minutes		D525	Report		
Oxygen Content, weight %		D5599	Report		
Distillation, [W]°C °F @ %Evap.					
Distillation (IBP)		D86	Report		
Distillation (5%)			Report		
Distillation (10%)			Report		
Distillation (15%)			Report		
Distillation (20%)			Report		
Distillation (50%)			Report		
Distillation (90%)			Report		
Distillation (EBP)			Report		
Distillation Slope			Report		
Color		-	Undyed		
Octane	RON	D2699	Report		
	MON	D2700	Report		
	(R+M)/2				Table A
NACE Corrosion		TM0172	B ⁺		

Colonial Pipeline Company

3.8.1

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR 87 OCTANE INDEX CONVENTIONAL GASOLINE

Cancels Previous Issues of M Grades

This product does not meet requirements for reformulated gasoline, and may not be used in any reformulated gasoline covered area.

ALL M GRADE REQUIREMENTS (SEGREGATED AND FUNGIBLE)

Product Property		ASTM Test	Test Results		Notes
		Method	Minimum	Maximum	
Octane	RON	D2699	Report		
	MON	D2700	82.0		
	(R+M)/2		87.0		
Oxygen Content, weight %		D5599		0.1	1
RVP (psi)		D5191			2, 9
Grades				Without Ethanol	With Ethanol
M2,2M				9.0	X
M3,3M				11.5	X
M4,4M				13.5	X
M5,5M				15.0	X

NOTES (Apply to Fungible and Segregated)

Suitable for the special RVP provisions for ethanol blends that contain 9 and 10 vol % ethanol.
The use of this gasoline to manufacture a gasoline-ethanol blend containing anything other than between 9 and 10 volume percent ethanol may cause a summertime RVP violation.
Heavy Metals are not allowed to be present.
Additive requirements/restrictions - refer to section 3.2.
This is a base gasoline, not for sale to the ultimate consumer.
Any gasoline exhibiting an offensive odor and/or poses a personal health hazard will not be accepted for shipment.
Any gasoline containing more than 0.50 wt. % of dicyclopentadiene will not be accepted for shipment.
The referee method will be based on a gas chromatograph test.
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

Colonial Pipeline Company

3.8.2

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR 87 OCTANE INDEX CONVENTIONAL GASOLINE

Cancels Previous Issues of M Grades

FUNGIBLE ONLY REQUIREMENTS:

Product Property	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Benzene, vol.%	[W]D3606	D5769	3.8	2
Color			Undyed	
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1	
Corrosion (Ag) 3 hrs @122°F (50°C)	D7671		1	
Doctor test	D4952	Negative (sweet)		3
Mercaptan sulfur, wt.%	D3227		0.002	
Solvent Washed Gum mg/100 ml	D381		4	
Gravity °API at 60°F	D4052	Report		
Oxidation stability-minutes	D525	240		
Phosphorous, gms/gal	D3231		0.004	
Sulfur (ppmwt)	D2622		80	5
Nace Corrosion	TM0172	B+ (Origin)		

Volatility:

Driveability Index	D4814		See Chart	
Distillation, [W]°C °F @ %Evap.	D86		See Chart	
Vapor/Liquid Ratio (V/L), [W] °C °F @ 20	D5188		See Chart	4

Chart

Grades	Driveability Index	10 vol%	50 vol%		90 vol%	End Pt.	V/L
		Max	Min	Max	Max	Max	Min
M2	1250.	[W]70158	[W]77170.	[W]121250.	[W]190374	[W]221430.	[W]56133
M3	1230.	[W]60140.	[W]77170.	[W]116240.	[W]185365	[W]221430.	[W]51124
M4	1220.	[W]55131	[W]77170.	[W]113235	[W]185365	[W]221430.	[W]47116
M5	1200.	[W]50122	[W]77170.	[W]110230.	[W]185365	[W]221430.	[W]44105

NOTES (Apply to Fungible and Segregated):

1. Non-oxygenated is defined as having no more than 0.1 wt.% oxygen. The use of oxygenated and/or non-hydrocarbon blending components in these grades is prohibited.
2. For products blended to meet EPA tests must be performed in accordance with the procedures described in 40 CFR, 1090 Subpart N and Subpart C
3. Mercaptan Sulfur waived if fuel is negative by Doctor test.
4. Computer and Linear methods may be used to determine V/L value.
5. Refer to 40 CFR 1090 Subpart N. Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.
6. Colonial will accept test methods results that are listed in ASTM D4814 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.
7. Use of these grades is controlled by the RVP calendar.
8. Not available for delivery to Belton
9. Summertime RVP MUST be checked using EPA formula as per 40 CFR 1090.1355

Colonial Pipeline Company

3.9.1

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR 93 OCTANE INDEX CONVENTIONAL GASOLINE

Cancels Previous Issues of V Grades

This product does not meet requirements for reformulated gasoline, and may not be used in any reformulated gasoline covered area.

ALL V GRADE REQUIREMENTS (SEGREGATED AND FUNGIBLE)

Product Property		ASTM Test	Test Results		Note
		Method	Minimum	Maximum	
Octane	RON	D2699	Report		
	MON	D2700	Report		
	(R+M)/2		93.0		
Oxygen Content, weight %		D5599		0.1	1
RVP (psi)		D5191			2, 9
Grades				Without Ethanol	With Ethanol
V2,2V				9.0	X
V3,3V				11.5	X
V4,4V				13.5	X
V5,5V				15.0	X

NOTES (Apply to Fungible and Segregated)

Suitable for the special RVP provisions for ethanol blends that contain 9 and 10 vol % ethanol.
The use of this gasoline to manufacture a gasoline-ethanol blend containing anything other than between 9 and 10 volume percent ethanol may cause a summertime RVP violation.
Heavy Metals are not allowed to be present.
Additive requirements/restrictions - refer to section 3.2.
This is a base gasoline, not for sale to the ultimate consumer.
Any gasoline exhibiting an offensive odor and/or poses a personal health hazard will not be accepted for shipment.
Any gasoline containing more than 0.50 wt. % of dicyclopentadiene will not be accepted for shipment.
The referee method will be based on a gas chromatograph test.
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

Colonial Pipeline Company

3.9.2

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR 93 OCTANE INDEX CONVENTIONAL GASOLINE

Cancels Previous Issues of V Grades

FUNGIBLE ONLY REQUIREMENTS:

Product Property	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Benzene, vol.%	D3606	D5769	3.8	2
Color			Undyed	
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1	
Corrosion (Ag) 3 hrs @122°F (50°C)	D7671		1	
Doctor test	D4952	Negative (sweet)		3
Mercaptan sulfur, wt.%	D3227		0.002	
Solvent Washed Gum mg/100 ml	D381		4	
Gravity °API at 60°F	D4052	Report		
Oxidation stability-minutes	D525	240		
Phosphorous, gms/gal	D3231		0.004	
Sulfur (ppmw)	D2622		80	5
Nace Corrosion	TM0172	B+ (Origin)		
Volatility:				
Driveability Index	D4814		See Chart	
Distillation, [W] °C °F @ %Evap.	D86		See Chart	
Vapor/Liquid Ratio (V/L), [W] °C °F @ 20	D5188		See Chart	4

Chart

Grades	Driveability Index	10 vol%	50 vol%		90 vol%	End Pt.	V/L
		Max	Min	Max	Max	Max	Min
V2	1250.	[W]70158	[W]77170.	[W]121250.	[W]190374	[W]221430.	[W]56133
V3	1230.	[W]60140.	[W]77170.	[W]116240.	[W]185365	[W]221430.	[W]51124
V4	1220.	[W]55131	[W]77170.	[W]113235	[W]185365	[W]221430.	[W]47116
V5	1200.	[W]50122	[W]77170.	[W]110230.	[W]185365	[W]221430.	[W]41105

NOTES (Apply to Fungible and Segregated):

1. Non-oxygenated is defined as having no more than 0.1 wt.% oxygen. The use of oxygenated and/or non-hydrocarbon blending components in these grades is prohibited.
2. For products blended to meet EPA tests must be performed in accordance with the procedures described in 40 CFR, 1090 Subpart N and Subpart C
3. Mercaptan Sulfur waived if fuel is negative by Doctor test.
4. Computer and Linear methods may be used to determine V/L value.
5. Refer to 40 CFR 1090 Subpart N. Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.
6. Colonial will accept test methods results that are listed in ASTM D4814 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.
7. Use of these grades is controlled by the RVP calendar.
8. Deliveries to Belton will be downgraded to A grade or D grade
9. Summertime RVP MUST be checked using EPA formula as per 40 CFR 1090.1355

PRODUCT SPECIFICATIONS
SPECIFICATIONS FOR SEGREGATED BUTANE BU

This product is available to ship in segregated batches only.

NOTE: The shipper will supply Colonial with Certificate of Analysis (COA)
Only available for movement on the Baton Rouge Dock Lines.

-

Colonial Pipeline Company

PRODUCT SPECIFICATIONS

3.11

SPECIFICATIONS FOR SUSTAINABLE AVIATION FUEL GRADE 47

EPA Designation: Jet Fuel

Grade 47

The purpose of this grade is to allow Colonial during blending provided by Colonial to track the volume of synthetic paraffinic kerosine present in the blended product. This grade may not be shipped on Colonial Pipeline.

Colonial Pipeline Company

3.12

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR SEGREGATED R100 RENEWABLE DIESEL 100% Grade 48

This grade is for billing purposes only and is NOT AVAILABLE FOR SHIPMENT

Grade to be used to track renewable diesel injected in connection with renewable services provided by Colonial.

Colonial Pipeline Company

3.13.1

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE B99/B100 BIO-DIESEL Grade 49

EPA Designation: MVNRLM 15 PPM Sulfur
Cancels Previous Issues of Grade 49

Product Property	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
API Gravity	D1298	Report	Report	
Flash Point, °C (°F)	D93	93 (199.4)		
Distillation Temp °C @ 90% Rec.	D1160			
90%			360	
Color Visual		Undyed		
Appearance (HAZE)	D4176		2	
Viscosity, cSt @ 40°C (104°F)	D445	1.9	6.0	
Cloud Point °C (°F)	D2500			
Summer			10 (50)	
Winter			2 (35.6)	
Corrosion, 3 hrs. @ 50°C (122°F)	D130	1B		
Total Sulfur, ppmwt	D5453		11	
Cetane Number	D613	47		
Sulfated Ash, wt.%	D874		0.02	
Oxidation stability, (hours)	EN14112	3		
Methanol Content				
Methanol by Flash Point °C (°F)	D93	130 (266)		
OR				
Methanol (mass %)	EN14110		0.2	
Carbon Residue: (% by mass)	D4530		0.050	
BS&W, vol.%	D2709		0.050	
Group I Sodium & Potassium Combined	EN14538		5	
Group II Calcium & Magnesium Combined	EN14538		5	
Phosphorous	D4951		10	
Nace Corrosion	TM0172	B+		

Colonial Pipeline Company

3.13.2

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE B99/B100 BIO-DIESEL Grade 49

EPA Designation: MVNRLM 15 PPM Sulfur

Cancels Previous Issues of Grade 49

Product Property	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Acid Number (mg KOH/g)	D664		0.50	
Cold Soak Filterability (seconds)	D7501			
Summer			360	
Winter			200	
Free Glycerin (mass%)	D6584		0.020	
Total Glycerin (mass%)	D6584		0.24	
Monoglycerides (mass%)	D6584		0.40	
Summer			Report	
Winter			0.40	
Antioxidants (ppm)				3

NOTES:

1. Visually free of undissolved water, sediment and suspended water		
2. This schedule denotes the fluidity of the distillate at the time and place of origin.		
	Cloud Point – October 1st through April 30th	Maximum: 2°C (36.5°F).
	Cloud Point – May 1st through September 31st	Maximum: 10°C (50°F).
3. Antioxidants must be reported with name and concentration		
4. Must meet ASTM D6751, Table 1		
5. Supplier must be BQ 9000 accredited		
6. This grade is not available for shipping; it is intended for blending purposes only.		

Colonial Pipeline Company

3.14.1

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FUNGIBLE UNDYED 15 PPM SULFUR #1 ULSD GRADE 51

EPA Designation: MVNRLM, Motor Vehicle Diesel fuel 15 ppm Sulfur

Cancels Previous Issues of Grade 51

Product Property	ASTM Test	Test Results		
	Method	Minimum	Maximum	Note
Composition Properties				
Sulfur, ppmwt	D5453		11 (origin)	4
	D5453		[W]1415 (delivery)	
Doctor Test	D4952	Negative (Sweet)		5
Mercaptan Sulfur, wt.%	D3227		0.003	
Aromatics, vol.%	D1319		25	
	D6379		26.5	
Acidity total max, mg KOH/g	D3242		0.1	

Combustion				
Net Heat of combustion BTU/Pound	D3338	18,400		

Smoke point, mm	D1322	25		
OR				
Smoke point, mm AND	D1322	18		
Naphthalenes, vol.%	D1840		3.0	

Ash, wt%	D482		0.01	
Burning Quality	D187	Report		8
Carbon residue: Ramsbottom on 10% Bottom	D524		0.2	

Fluidity				
Freezing Point, °C	D5972		-40	
Viscosity, cSt @ 104°F (40°C)	D445	1.3	1.9	
Viscosity, cSt @ -4°F (-20°C)	D445		8.0	
Volatility and density				
Physical Distillation, [w] °C	D86			7
10% recovered			[W]205400.	
50% recovered		Report		
90% recovered			[W]288550.	
End Point			[W]300572	
Residue, %			1.5	
Loss, %			1.5	
Flash Point, °F	D56	123		
Gravity	D4052	37	51	
Density at 15°C, Kg/m ³	D4052	775	840	

Colonial Pipeline Company

3.14.2

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FUNGIBLE UNDYED 15 PPM SULFUR #1 ULSD GRADE 51

Cancels Previous Issues of Grade 51

Product Property	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Stability				
Thermal Oxidative Stability	D3241			
Test/Control Temperature		275°C (Origin)		
		260°C (Delivery)		
Pres. drop in mm/Hg			25	
Tube rating: one of the following requirement shall be met				
(1) Annex A1 VTR, VTR color code			<3	
No Peacock or abnormal color deposits				
(2) Annex A2 ITR or Annex 3 ETR nm			85	
average over area of 2.5 mm				
Cetane Number	D613	40		6
Contaminants				
Existent Gum, mg/100 ml	D381, IP540		7.0	
MSEP: Origin	D3948	85		
MSEP: Delivery	D7224	75		
Color : Origin	D6045	21		
Color :Delivery	D6045	18		
[C]Determination of Filtration Time or Volume	MIL-T-5624P,		Report	3
Filtration time and Volume	D5452			
Total Solids or Particulate	D5452		Report	
Corrosion				
Corrosion 2 hrs. @ 212°F (100°C)	D130		1	
Conductivity				
Electrical Conductivity pS/m @ 21°C(70°F)	D2624		Report	

NOTES:

1. Product shall be clear and bright and free of suspended matter.
2. Additive requirements/restrictions - refer to section 3.2.
3. At this time, the test limits described in MIL-T-5624P, Appendix A, parts 70.a(1) and 70.b will not be imposed
4. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (see CFR 1090 Subpart D).
5. Mercaptan Sulfur waived if fuel is negative by Doctor test.
6. Where cetane number by test method D613 is not available, test method D4737A can be used as an approximation.
7. Either physical or simulated distillation can be used, Simulated distillation MUST be correlated to D86
8. Typical results pass according to Paragraph 4.2 of ASTM D3699 Standard Specifications for kerosene.
9. On Lines # 17, 22, 24, and Greensboro local deliveries may contain trace amounts of Bio-Diesel and can't be used for aviation kerosene.
10. Colonial will accept test methods results that are listed in ASTM D1655 and ASTM D975 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any dispute.
11. Not available for delivery to Spartanburg or Explorer.

Colonial Pipeline Company

3.15

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE MILITARY JP-5

EPA Designation: Exempt distillate covered by national security exemption under 1090.605

Cancels Previous Issues of Grade 52.

Shipments of grade 52 must meet the latest military specification for JP-5.

Notes

1. Not available for delivery to Spartanburg, Explorer, Greensboro local lines or lines #17, and 24. Line 22 deliveries may contain up to 50 ppm of biodiesel.

Colonial Pipeline Company

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR SEGREGATED KEROSENE GRADE 53

3.16

EPA Designation: Kerosene

Cancels Previous Issues of Grade 53

Product Property	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Gravity	D4052	37	51	
Flash Point, °F	D56	100		
Sulfur, ppmwt	D4294		3000	3
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		Report	

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge any product property that does not meet our fungible specifications for 54 grade.

NOTES:

1. Product shall be clear and bright and free of suspended matter.
2. The pre-shipment documentation with the actual results must be received before shipment.
3. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).
4. Additive requirements/restrictions - refer to section 3.2.
5. Colonial will accept test methods results that are listed in ASTM D1655 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any dispute.
6. Not available for delivery to Spartanburg or Explorer.
7. Lines # 17, 22, 24, and Greensboro local deliveries may contain trace amounts of Bio-Diesel and can't be used for aviation kerosene.

Colonial Pipeline Company

3.17.1

PRODUCT SPECIFICATIONS
SPECIFICATIONS FOR FUNGIBLE AVIATION KEROSENE GRADE 54

EPA Designation: Jet Fuel

Cancels Previous Issues of Grade 54

Product Property	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Composition Properties				
Sulfur, ppmwt	D4294		3000	5
Doctor Test	D4952	Negative (Sweet)		4
Mercaptan Sulfur, wt.%	D3227		0.003	
Aromatics, vol.%	D1319		25	
	D6379		26.5	
Acidity total max, mg KOH/g	D3242		0.1	
Combustion				
Net Heat of combustion BTU/Pound	D3338	18,400		
Smoke point, mm	D1322	25		
OR				
Smoke point, mm AND	D1322	18		
Naphthalenes, vol.%	D1840		3.0	
Fluidity				
Freezing Point, °C	D5972		-40	
Viscosity, cSt @ -4°F (-20°C)	D445		8.0	
Volatility and density				
Physical Distillation,[w]-°C°F	D86			6
10% recovered			[W]205400.	
50% recovered		Report		
90% recovered		Report		
End Point			[W]300572	
Residue, %			1.5	
Loss, %			1.5	
Flash Point, °F	D56	105		
Gravity	D4052	37	51	
Density at 15°C, Kg/m ³	D4052	775	840	

Colonial Pipeline Company

3.17.2

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE AVIATION KEROSENE GRADE 54

Cancels Previous Issues of Grade 54

Product Property	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Stability				
Thermal Oxidative Stability	D3241			
Test/Control Temperature		275°C (Origin)		
		260°C (Delivery)		
Pres. drop in mm/Hg			25	
Tube rating: one of the following requirement				
(1) Annex A1 VTR, VTR color code			<3	
No Peacock or abnormal color deposits				
(2) Annex A2 ITR OR Annex 3 ETR nm			85	
average over area of 2.5 mm				

Contaminants				
Existent Gum, mg/100 ml	D381, IP540		7.0	
MSEP: Origin	D3948	85		8
MSEP: Delivery	D7224	75		

[C] Determination of Filtration Time or Volume	MIL-T-5624P,		Report	3
Filtration time and Volume	D5452			
Total Solids or Particulate	D5452		Report	

Corrosion				
Corrosion 2 hrs. @ 212°F (100°C)	D130		1	

Conductivity				
Electrical Conductivity pS/m @ 21°C(70°F)	D2624		Report	

NOTES:

1. Product shall be clear and bright and free of suspended matter.
2. Additive requirements/restrictions - refer to section 3.2.
3. At this time, the test limits described in MIL-T-5624P, Appendix A, parts 70.a(1) and 70.b will not be imposed.
4. Mercaptan Sulfur waived if fuel is negative by Doctor test.
5. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).
6. Either physical or simulated distillation can be used, Simulated distillation MUST be correlated to D86
7. Not allowed to be delivered down lines #17, 24, or Greensboro local lines. Line 22 deliveries may contain up to 50 ppm of biodiesel.
8. Colonial filters the product downstream before delivering to the airport at the following locations: Atlanta, Greensboro, Raleigh Durham, and Dorsey. The MSEP specification downstream the filtration system should be 85 minimum.
9. Colonial will accept test methods results that are listed in ASTM D1655 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any dispute.
10. Not available for delivery to Spartanburg.
11 This product may contain Sustainable Aviation Fuel (synthesized paraffinic kerosine) as defined and meeting the most recent version of ASTM D7566 Standard Specification for Aviation Turbine Fuels Containing Synthesized Hydrocarbons. The specific synthesized paraffinic kerosine (SPK) as Detailed in D7566 annexes - (A1) FISCHER TROPSCH SPK or (A2) HEFA SPK are the only SPK allowed to be present. If the product contains SPK, the supplier must report the type and volume percent.

Colonial Pipeline Company

3.18.1

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE AVIATION KEROSENE GRADE 55

EPA Designation: Kerosene

Cancels Previous Issues of Grade 55

Product Property	ASTM Test	Test Results		
	Method	Minimum	Maximum	Note
Composition Properties				
Sulfur, ppmwt	D5453		400	4
Doctor Test	D4952	Negative (Sweet)		5
Mercaptan Sulfur, wt.%	D3227		0.003	
Aromatics, vol.%	D1319		25	
	D6379		26.5	
Acidity total max, mg KOH/g	D3242		0.1	
Combustion				
Net Heat of combustion BTU/Pound	D3338	18,400		
Smoke point, mm				
	D1322	25		
OR				
Smoke point, mm AND	D1322	18		
Naphthalenes, vol.%	D1840		3	
Ash, wt%				
	D482		0.01	
Burning Quality	D187	Report		6
Cabon residue: Ramsbotton on 10% Bottom	D524		0.2	
Fluidity				
Freezing Point, °C	D5972		-40	
Viscosity, cSt @ 104°F (40°C)	D445	1.3	1.9	
Viscosity, cSt @ -4°F (-20°C)	D445		8.0	
Volatility and density				
Physical Distillation,[w]°C°F	D86			7
10% recovered			[W]205400.	
50% recovered		Report		
90% recovered			[W]288550.	
End Point			[W]300572	
Residue, %			1.5	
Loss, %			1.5	
Flash Point, °F	D56	123		
Gravity	D4052	37	51	
Density at 15°C, Kg/m³	D4052	775	840	

Colonial Pipeline Company

3.18.2

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FUNGIBLE AVIATION KEROSENE GRADE 55

Cancels Previous Issues of Grade 55

Product Property	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Stability				
Thermal Oxidative Stability	D3241			
Test/Control Temperature		275°C (Origin)		
		260°C (Delivery)		
Pres. drop in mm/Hg			25	
Tube rating: one of the following requirement				
(1) Annex A1 VTR, VTR color code			<3	
No Peacock or abnormal color deposits				
(2) Annex A2 ITR or Annex 3 ETR nm			85	
average over area of 2.5 mm				

Cetane Number	D613	40		8
---------------	------	----	--	---

Contaminants				
Existent Gum, mg/100 ml	D381, IP540		7.0	
MSEP: Origin	D3948	85		
MSEP: Delivery	D7224	75		
Color : Origin	D6045	21		
Color :Delivery	D6045	18		

[C]Determination of Filtration Time or Volume	MIL-T-5624P,		Report	3
Filtration time and Volume	D5452			
Total Solids or Particulate	D5452		Report	

Corrosion				
Corrosion 2 hrs. @ 212°F (100°C)	D130		1	

Conductivity				
Electrical Conductivity pS/m @ 21°C(70°F)	D2624		Report	

NOTES:

1. Product shall be clear and bright and free of suspended matter.
2. Additive requirements/restrictions - refer to section 3.2.
3. At this time, the test limits described in MIL-T-5624P, Appendix A, parts 70.a(1) and 70.b will not be imposed.
4. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).
5. Mercaptan Sulfur waived if fuel is negative by Doctor test.
6. Typical results pass according to Paragraph 4.2 of ASTM D3699 Standard Specifications for kerosene.
7. Either physical or simulated distillation can be used, Simulated distillation MUST be correlated to D86
8. Where cetane number by test method D613 is not available, test method D4737A can be used as an approximation.
9. Lines # 17, 22, 24, and Greensboro local deliveries may contain trace amounts of Bio-Diesel and can't be used for aviation kerosene.
10. Colonial will accept test methods results that are listed in ASTM D1655 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any dispute.
11. Not available for delivery to Spartanburg or Explorer.

Colonial Pipeline Company

3.19

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR BONDED AVIATION KEROSENE GRADE 56

EPA Designation: Jet Fuel

Cancels Previous Issues of Grade 56.

Shipments of Grade 56 must meet specifications for Fungible Aviation Kerosine Grade 54.

1. Not available for delivery to Spartanburg, Greensboro local lines or lines #17, 22 and 24.

Colonial Pipeline Company

3.20

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR SEGREGATED KEROSENE GRADE 57

EPA Designation: Kerosene

Cancels Previous Issues of Grade 57

Product Property	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Sulfur, ppmwt	D5453		500	1

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge the following information:

Gravity

Flash

WSIM

Electrical Conductivity

Any other product property that does not meet our fungible specifications for 54 grades.

The pre-shipment documentation with the actual results must be received before shipment.

Notes:

1. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).
2. Additive requirements/restrictions - refer to section 3.2.
3. Colonial will accept test methods results that are listed in ASTM D1655 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any dispute.
4. Not available for delivery to Spartanburg or Explorer.
5. Lines # 17, 22, 24 and Greensboro local deliveries may contain trace amounts of Bio-Diesel and can't be used for aviation kerosene.

Colonial Pipeline Company

3.21

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE MILITARY JP-8

EPA Designation: Except distillate covered by national security exemption under 1090.605
Cancels Previous Issues of Grade 58

Shipments of Grade 58 must meet the latest military specifications for JP-8.

1. Not available for delivery to Spartanburg, Explorer, Greensboro local lines or lines #17 and 24. Line 22 deliveries may contain up to 50 ppm of biodiesel.

Colonial Pipeline Company

3.22

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR SEGREGATED DISTILLATE BLENDSTOCK GRADE 59

EPA Designation: None Required (Product is an unfinished blendstock)

Cancels Previous Issues of Grade 59

Product Property	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Gravity	D4052	37	51	
Flash Point, °F	D56	100		
Sulfur, ppmwt	D4294		3000	3
Nace Corrosion	TM0172	B+ (origin)		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		Report	

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge any product property that does not meet our fungible specifications for 54 grade.

NOTES:

1. Product shall be clear and bright and free of suspended matter.
2. The pre-shipment documentation with the actual results must be received before shipment.
3. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).
4. Additives requirements/restrictions - refer to section 3.2.
5. Colonial will accept test methods results that are listed in ASTM D1655 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any dispute.
6. Not available for delivery to Spartanburg or Explorer.
7. Lines # 17, 22, 24, and Greensboro local deliveries may contain trace amounts of Bio-Diesel and can't be used for aviation kerosene.

Colonial Pipeline Company

3.23.1

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FUNGIBLE 15 ppm SULFUR DIESEL FUEL CONTAINING UP TO 5% RENEWABLE HYDROTREATED DIESEL FUEL GRADE 61

EPA Designation: MVNRLM, Motor vehicle diesel fuel, 15 ppm sulfur

Cancels Previous Issues of Grade 61

PRODUCT PROPERTY	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Renewable Fuel (volume %)	D7371		5	5
Gravity API	D4052	30		
Flash Point, °F	D93	130 (Origin)		
		125.8 (Delivery)		
Physical Distillation, [w]-°C	D86			4
50%			Report	
90%		[W]282540.	[W]338640.	
End Point			[W]371700.	
Color ASTM	D6045		2.5	
Color Visual		Undyed		
Viscosity, cSt @ 104°F (40°C)	D445	1.9	4.1	
Pour Point	D97			2
Cloud Point	D2500			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D5453		11 (Origin)	3
			[W]14 15(Delivery)	
Cetane Number	D613	40		6
And One of the following condition should be met 1. Aromatics (Volume %) , OR 2. Cetane Index				
	D1319		[W]31.7 35	
	D976	40		
Ash, wt. %	D482		0.01	
Carbon Residue: Ramsbottom on 10% Bottom	D524		0.35	
BS&W, vol. %	D2709		< 0.05	
[W]Thermal stability, 90 minutes, 150°C	D6468			
1. Pad rating (Dupont)			7	
2. Reflectance Y/Green		73%	-	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
OR				
[W]Thermal Stability, 90 minutes, 150°C Pad Rating	[W]DuPont F-21		7	
OR				
[W]Thermal Stability Reflectance				
[W]Y/Green OR	D6468	73%		
[W]W Unit		[W]68%		
Haze rating @ 25°C (77°F) Procedure 2	D4176		2	
Nace Corrosion	TM0172	B+ (Origin)		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Colonial Pipeline Company

3.23.2

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE 15 ppm SULFUR DIESEL FUEL CONTAINING UP TO 5% RENEWABLE HYDROTREATED DIESEL FUEL GRADE 61

Cancels Previous Issues of Grade 61

NOTES:

1. Additive requirements/restrictions - refer to section 3.2.	
2. This schedule denotes the fluidity of the distillate at the time and place of origin.	
Pour Point –August 1st through March 14th	Maximum:[W] -18°C (-0.4°F).
Pour Point – March 15th through July 31st	Maximum:[W] -12°C (10.4°F)
Cloud Point – August 1st through March 14th	Maximum: [W] -9°C (15.8°F)
Cloud Point – March 15th through July 31st	Maximum: [W] -7°C (19.4°F)
The referee method will be Pour point D97 and Cloud point D2500	
3. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).	
4. Either physical or simulated distillation can be used, Simulated distillation MUST be correlated to D86	
5. Downstream of Meridian Mississippi May contain up to 5% renewable diesel as defined in section 3.2.7	
Grade 61 is-designated for 5% renewable diesel fuel blending at Baton Rouge. 61 grade will only be allowed to originate as "clear", no renewable diesel fuel allowed, at Houston, Cedar Bayou, Hebert, Lake Charles, Krotz Springs and Baton Rouge. 61 grade will not be delivered out of the pipeline at any locations and will be regraded to 63 grade downstream of Baton Rouge.	
6. Colonial will accept test methods results that are listed in ASTM D975 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any dispute.	
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.	

Colonial Pipeline Company

3.24.1

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE 15 ppm SULFUR DIESEL FUEL GRADE 62

EPA Designation: MVNRLM, Motor vehicle diesel fuel, 15 ppm sulfur

Cancels Previous Issues of Grade 62

PRODUCT PROPERTY	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Gravity API	D4052	30		
Flash Point, °F	D93	130 (Origin)		
		125.8 (Delivery)		
Physical Distillation, [W] °C/°F	D86			4
50%			Report	
90%		[W] 282 540.	[W] 338 640.	
End Point			[W] 371 700.	
Color ASTM	D6045		2.5	
Color Visual		Undyed		
Viscosity, cSt @ 104°F (40°C)	D445	1.9	4.1	
Pour Point	D97			2
Cloud Point	D2500			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D5453		11 (Origin)	3
			[W] 14 15 (Delivery)	
Cetane Number	D613	40		6
And One of the following condition should be met				
1. Aromatics (Volume %) , OR	D1319		[W] 31.7 35	
2. Cetane Index	D976	40		
Ash, wt. %	D482		0.01	
Carbon Residue: Ramsbottom on 10% Bottom	D524		0.35	
BS&W, vol. %	D2709		< 0.05	
[W] Thermal stability, 90 minutes, 150°C	D6468			
1. Pad rating (Dupont)			7	
2. Reflectance Y/Green		73%	-	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
OR				
[W] Thermal Stability, 90 minutes, 150°C Pad Rating	[W] DuPont F-21		7	
OR				
[W] Thermal Stability Reflectance				
[W] Y/Green OR	D6468	73%		
[W] W Unit		[W] 68%		
Haze rating @ 25°C (77°F) Procedure 2	D4176		2	
Nace Corrosion	TM0172	B+ (Origin)		
Electrical Conductivity, pS/m @ 21°C (70°F)	D2624		250	

Colonial Pipeline Company

3.24.2

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FUNGIBLE 15 ppm SULFUR DIESEL FUEL GRADE 62

Cancels Previous Issues of Grade 62

NOTES:

1. Additive requirements/restrictions - refer to section 3.2.	
2. This schedule denotes the fluidity of the distillate at the time and place of origin.	
Pour Point – August 1st through March 14th	Maximum:[W] -18 ^{°C} (-0.4 ^{°F}).
Pour Point – March 15th through July 31st	Maximum:[W] -12 ^{°C} (10.4 ^{°F})
Cloud Point – August 1st through March 14th	Maximum:[W] -9 ^{°C} (15.8 ^{°F})
Cloud Point – March 15th through July 31st	Maximum:[W] -7 ^{°C} (19.4 ^{°F})
3. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).	
4. Either physical or simulated distillation can be used, Simulated distillation MUST be correlated to D86	
5. Deliveries of 62 grade that are serviced through Colonial's breakout tank farms south of Greensboro which include Pelham, Atlanta, Athens, Belton, Spartanburg, and Charlotte may contain up to 5% Renewable Diesel."	
6. Colonial will accept test methods results that are listed in ASTM D975 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any dispute.	
7. Deliveries of 62 grade on lines #17, 22, 24, and Greensboro local deliveries may contain up to 5% Bio-Diesel and 5% Renewable Diesel.	
<u>[N]8. [N]62 grade will only be allowed to originate as "clear", no renewable diesel fuel allowed. Product containing up to 5% renewable diesel may be shipped as 63 grade.</u>	
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.	

Colonial Pipeline Company

3.25.1

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FUNGIBLE 15 ppm SULFUR DIESEL FUEL CONTAINING UP TO 5% RENEWABLE HYDROTREATED DIESEL FUEL GRADE 63

EPA Designation: MVNRLM, Motor vehicle diesel fuel, 15 ppm sulfur

Cancels Previous Issues of Grade 63

PRODUCT PROPERTY	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Renewable Fuel (volume %)	D7371		5	5
Gravity API	D4052	30		
Flash Point, °F	D93	130 (Origin)		
		125.8 (Delivery)		
Physical Distillation, [w] °C	D86			4
50%			Report	
90%		[W]282540.	[W]338640.	
End Point			[W]371700.	
Color ASTM	D6045		2.5	
Color Visual			Undyed	
Viscosity, cSt @ 104°F (40°C)	D445	1.9	4.1	
Pour Point	D97			2
Cloud Point	D2500			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D5453		11 (Origin)	3
			[W]14 15(Delivery)	
Cetane Number	D613	40		7
And One of the following condition should be met				
1. Aromatics (Volume %) , OR	D1319		[W]31.7 35	
2. Cetane Index	D976	40		
Ash, wt.%	D482		0.01	
Carbon Residue: Ramsbottom on 10% Bottom	D524		0.35	
BS&W, vol.%	D2709		< 0.05	
[W]Thermal stability, 90 minutes, 150°C	D6468			
1. Pad rating (Dupont)			7	
2. Reflectance Y/Green		73%	-	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
OR				
[W]Thermal Stability, 90 minutes, 150°C Pad Rating	[W]DuPont F-21		7	
OR				
[W]Thermal Stability Reflectance				
[W]Y/Green OR	D6468	73%		
[W]W Unit		[W]68%		
Haze rating @ 25°C (77°F) Procedure 2	D4176		2	
Nace Corrosion	TM0172	B+ (Origin)		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Colonial Pipeline Company

3.25.2

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE 15 ppm SULFUR DIESEL FUEL CONTAINING UP TO 5% RENEWABLE HYDROTREATED DIESEL FUEL GRADE 63

Cancels Previous Issues of Grade 63

NOTES:

1. Additive requirements/restrictions - refer to section 3.2.	
2. This schedule denotes the fluidity of the distillate at the time and place of origin.	
Pour Point – August 1st through March 14th	Maximum: [W] -18°C (-0.4°F).
Pour Point – March 15th through July 31st	Maximum: [W] -12°C (10.4°F)
Cloud Point – August 1st through March 14th	Maximum: [W] -9°C (15.8°F)
Cloud Point – March 15th through July 31st	Maximum: [W] -7°C (19.4°F)
3. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).	
4. Either physical or simulated distillation can be used, Simulated distillation MUST be correlated to D86	
5. May contain up to 5% Renewable Diesel as defined in section 3.2.7	
6. Lines #17, 22, 24, and Greensboro local deliveries may contain up to 5% Bio-Disel (Colonial Grade 49)	
7. Colonial will accept test methods results that are listed in ASTM D975 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any dispute.	
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.	

Colonial Pipeline Company

3.26

PRODUCT SPECIFICATION

SPECIFICATIONS FOR SEGREGATED 15 ppm SULFUR DISTILLATE GRADE 65

EPA Designation: MVNRLM 15 ppm sulfur

Cancels Previous Issues of Grade 65

PRODUCT PROPERTY	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Gravity API	D4052	30		
Flash Point, °F	D93	100		
Nace Corrosion	TM0172	B+ (origin)		
Total Sulfur, ppmwt	D5453		15	1
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

In order to allow for the proper placement of the batch in our sequence, when nominating the

Gravity
Flash
Sulfur
volume % of Renewable Diesel

Any other product property that does not meet our fungible specifications for 63 gal

The pre-shipment documentation with the actual results must be received before shipment.

NOTES:
The pre-shipment documentation with the actual results must be received before shipment.
1. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).
2. Additive requirements/restrictions - refer to section 3.2.
3. May contain Renewable Diesel as defined in section 3.2.7
4. Colonial will accept test methods results that are listed in ASTM D975 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any dispute.
5. Interface may result in trace amounts of renewable and/or biodiesel in the product depending on delivery location.
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

Colonial Pipeline Company

3.27.1

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE CERTIFIED NON- TRANSPORTATION 15 ppm DISTILLATE FUEL (CERTIFIED NTDF) GRADE 67

EPA Designation: Heating Oil (Certified NTDF)

Cancels Previous Issues of Grade 67

PRODUCT PROPERTY	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Gravity API	D4052	30		
Flash Point, °F	D93	130 (Origin)		
		125.8 (Delivery)		
Physical Distillation, [W]—°C°F	D86			4
50%			Report	
90%		[W]282540.	[W]338640.	
End Point			[W]371700.	
Color ASTM	D6045		2.5	
Color Visual			Undyed	
Viscosity, cSt @ 104°F (40°C)	D445	1.9	4.1	
Pour Point	D97			2
Cloud Point	D2500			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D5453		11 (Origin)	3
			[W]14 15(Delivery)	
Cetane Number	D613	40		5
And One of the following condition should be met				
1. Aromatics (Volume %) , OR	D1319		[W]31.7 35	
2. Cetane Index	D976	40		
Ash, wt. %	D482		0.01	
Carbon Residue: Ramsbottom on 10% Bottom	D524		0.35	
BS&W, vol. %	D2709		< 0.05	
[W]Thermal stability, 90 minutes, 150°C	D6468			
1. Pad rating (Dupont)			7	
2. Reflectance Y/Green		73%	-	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
OR				
[W]Thermal Stability, 90 minutes, 150°C Pad Rating	[W]DuPont F-21		7	
OR				
[W]Thermal Stability Reflectance	D6468			
[W]Y/Green OR		73%		
[W]W Unit		[W]68%		
Haze rating @ 25°C (77°F) Procedure 2	D4176		2	
Nace Corrosion	TM0172	B+ (Origin)		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Colonial Pipeline Company

3.27.2

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FUNGIBLE CERTIFIED NON- TRANSPORTATION 15 ppm DISTILLATE FUEL (CERTIFIED NTDF) GRADE 67

EPA Designation: Heating Oil (certified NTDF)

Cancels Previous Issues of Grade 67

NOTES:

1. Additive requirements/restrictions - refer to section 3.2.	
2. This schedule denotes the fluidity of the distillate at the time and place of origin.	
Pour Point –August 1st through March 14th	Maximum:[W] -18°C (-0.4°F).
Pour Point – March 15th through July 31st	Maximum:[W] -12°C (10.4°F)
Cloud Point – August 1st through March 14th	Maximum: [W] -9°C (15.8°F)
Cloud Point – March 15th through July 31st	Maximum: [W] -7°C (19.4°F)
3. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).	
4. Either physical or simulated distillation can be used, Simulated distillation MUST be correlated to D86	
the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.	
6. Deliveries of 67 grade that are serviced through Colonial's breakout tank farms south of Greensboro which include Pelham, Atlanta, Athens, Belton, Spartanburg, and Charlotte may contain up to 5% Renewable Diesel.	
7. Deliveries of 67 grade on lines #17, 22, 24, and Greensboro local deliveries may contain up to 5% Bio-Diesel and 5% Renewable Diesel.	
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.	

Colonial Pipeline Company

3.28

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR SEGREGATED 15 ppm SULFUR DISTILLATE BLENDSTOCKS GRADE 69

EPA Designation: None Required (Product is an unfinished blendstock)

Cancels Previous Issues of Grade 69

PRODUCT PROPERTY	ASTM Test Method	Test Results		Note
		Minimum	Maximum	
Gravity API	D4052	30		
Flash Point, °F	D93	100		
Nace Corrosion	TM0172	B+ (origin)		
Total Sulfur, ppmwt	D5453		15	1
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge the following information:

Gravity

Flash

Sulfur

Volume % of Renewable Diesel

Any other product property that does not meet our fungible specifications for 63 grade.

The pre-shipment documentation with the actual results must be received before shipment.

NOTES:

The pre-shipment documentation with the actual results must be received before shipment.
1. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).
2. Additive requirements/restrictions - refer to section 3.2.
3. May contain Renewable Diesel as defined in section 3.2.7
4. Colonial will accept test methods results that are listed in ASTM D975 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.
5. Interface may result in trace amounts of renewable and/or biodiesel in the product depending on delivery
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

Colonial Pipeline Company

3.29

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR SEGREGATED DYED HEATING OIL GRADE 70 FOR INTRAHARBOR MOVEMENTS ONLY

EPA Designation: Heating Oil

Cancels Previous Issues of Grade 70

This product is for Intraharbor movements only.

PRODUCT PROPERTY	ASTM Test Method	Test Results		Note
		Minimum	Maximum	
Total Sulfur, ppmwt	D5453		2000	1
Nace Corrosion	TM0172	B+ (origin)		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Dye Requirement

This product must contain red dye at a minimum concentration, or spectral equivalence of 3.9 pounds of Solid Red #26 per 1,000 barrels.

Grade 70 Fuel Oil must meet all specifications for Grade [W]88 77 Heating Oil. [C]7-with the exception of the dye requirement above. Colonial will not add dye to Grade 70.

NOTES:

1. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).
2. Additive requirements/restrictions - refer to section 3.2.
3. Colonial will accept test methods results that are listed in ASTM D396 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.
4. Interface may result in trace amounts of renewable and/or biodiesel in the product depending on delivery location.
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

Colonial Pipeline Company

3.30

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR SEGREGATED HIGH SULFUR GRADE 71 DISTILLATE FUEL FOR EXPORT ONLY

EPA Designation:

Cancels Previous Issues of Grade 71

PRODUCT PROPERTY	ASTM Test Method	Test Results		Note
		Minimum	Maximum	
Total Sulfur, ppmwt	D5453		2000	1
Nace Corrosion	TM0172	B+ (origin)		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

This product is for export only and is not required to contain dye. It may not be used in the continental U.S. without the addition of dye to meet domestic fuel oil requirements.

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge the following information:

Gravity

Flash

Sulfur

Any other product property that does not meet our fungible specifications for 75 grade.

The pre-shipment documentation with the actual results must be received before shipment.

NOTES:

1. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).
2. Additive requirements/restrictions - refer to section 3.2.
3. Colonial will accept test methods results that are listed in ASTM D396 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.
4. Interface may result in trace amounts of renewable and/or biodiesel in the product depending on delivery location.
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

Colonial Pipeline Company

3.31

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR SEGREGATED DISTILLATE BLENDSTOCKS GRADE 72

EPA Designation: None Required (Product is an unfinished blendstock)

Cancels Previous Issues of Grade 72

PRODUCT PROPERTY	ASTM Test Method	Test Results		Note
		Minimum	Maximum	
Gravity API	D4052	25	42	
Flash Point, °F	D93	100		
Nace Corrosion	TM0172	B+ (origin)		
Total Sulfur, ppmwt	D5453		500	1
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

In order to allow for the proper placement of the batch in our sequence, when nominating the

Gravity

Flash

Sulfur

Any other product property that does not meet our fungible specifications for 62 grade.

The pre-shipment documentation with the actual results must be received before shipment.

NOTES:

1. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).
 2. Additive requirements/restrictions - refer to section 3.2.
 3. Colonial will accept test methods results that are listed in ASTM D396 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.
 4. Interface may result in trace amounts of renewable and/or biodiesel in the product depending on delivery location.
- Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

Colonial Pipeline Company

3.32

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR SEGREGATED 500 ppm LOCOMOTIVE FUEL GRADE 73

EPA Designation: LM 500 ppm sulfur diesel fuel

Cancels Previous Issues of Grade 73

PRODUCT PROPERTY	ASTM Test Method	Test Results		Note
		Minimum	Maximum	
Sulfur, ppmwt	D5453		500	1
Flash Point °F	D93	140		
Nace Corrosion	TM0172	B+ (origin)		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge the following information:

Gravity

Flash

Any other product property that does not meet our fungible specifications for 75

The Pre-shipment documentation with the actual results must be received before shipment

NOTES:

1. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).
 2. Additive requirements/restrictions - refer to section 3.2.
 3. Colonial will accept test methods results that are listed in ASTM D396 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.
 4. Interface may result in trace amounts of renewable and/or biodiesel in the product depending on delivery location.
- Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

Colonial Pipeline Company

3.33.1

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE 500 ppm SULFUR HEATING OIL GRADE 75

EPA Designation: Heating Oil

Cancels Previous Issues of Grade 75

PRODUCT PROPERTY	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Gravity API	D4052	30		
Flash Point, °F	D93	124 (Origin)		
		116 (Delivery)		
Physical Distillation, [w]—°C°F	D86			4
50%			Report	
90%		[W]282540.	[W]338640.	
End Point			[W]371700.	
Color ASTM	D6045		2.5	3
Color Visual		Undyed		
Viscosity, cSt @ 104°F (40°C)	D445	1.9	4.1	
Pour Point	D97			2
Cloud Point	D2500			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D5453		420 (Origin)	5
			500 (Delivery)	
Cetane Number	D613	40		7
And One of the following condition should be met				
1. Aromatics (Volume %) , OR	D1319		[W]31.7 35	
2. Cetane Index	D976	40		
Ash, wt. %	D482		0.01	
Carbon Residue: Ramsbottom on 10% Bottom	D524		0.35	
BS&W, vol. %	D2709		< 0.05	
Thermal stability, 90 minutes, 150°C	D6468			
1. Pad rating (Dupont)			7	
2. Reflectance Y/Green		73%	-	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
OR				
[W]Thermal Stability, 90 minutes, 150°C Pad Rating	[W]DuPont F-21		7	
OR				
[W]Thermal Stability Reflectance	D6468			
[W]Y/Green OR		73%		
[W]W Unit		[W]68%		
Haze rating @ 25°C (77°F) Procedure 2	D4176		2	
Nace Corrosion	TM0172	B+ (Origin)		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Colonial Pipeline Company

3.33.2

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FUNGIBLE 500 ppm SULFUR HEATING OIL GRADE 75

Cancels Previous Issues of Grade 75

NOTES:

1. Additive requirements/restrictions - refer to section 3.2.	
2. This schedule denotes the fluidity of the distillate at the time and place of origin.	
Pour Point –August 1st through March 14th	Maximum:[W] -18°C (-0.4°F).
Pour Point – March 15th through July 31st	Maximum:[W] -12°C (10.4°F)
Cloud Point – August 1st through March 14th	Maximum: [W] -9°C (15.8°F)
Cloud Point – March 15th through July 31st	Maximum: [W] -7°C (19.4°F)
3. ASTM color measurement before addition of dye.	
4. Either physical or simulated distillation can be used, Simulated distillation MUST be correlated to D86	
5. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).	
6. Interface may result in trace amounts of renewable and/or biodiesel in the product depending on delivery location.	
7. Colonial will accept test methods results that are listed in ASTM D396/D975 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.	
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery	

Colonial Pipeline Company

3.34.1

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FUNGIBLE HIGH SULFUR UNDYED HEATING OIL GRADE 77

EPA Designation: Heating Oil

Cancels Previous Issues of Grade 77

PRODUCT PROPERTY	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Gravity API	D4052	30		
Flash Point, °F	D93	124 (Origin)		
		116 (Delivery)		
Physical Distillation,[w]-°C°F	D86			5
50%			Report	
90%		[W]282540.	[W]338640.	
End Point			[W]371700.	
Color ASTM	D6045		2.5	3
Color Visual		Undyed		
Viscosity, cSt @ 104°F (40°C)	D445	1.9	4.1	
Pour Point	D97			2
Cloud Point	D2500			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D4294		2000	4
Cetane Number	D613	40		6
And One of the following condition should be met				
1. Aromatics (Volume %) , OR	D1319		[W]31.7 35	
2. Cetane Index	D976	40		
Ash, wt. %	D482		0.01	
Carbon Residue: Ramsbottom on 10% Bottom	D524		0.35	
BS&W, vol. %	D2709		< 0.05	
Thermal stability, 90 minutes, 150°C	D6468			
1. Pad rating (Dupont)			7	
2. Reflectance Y/Green		73%	-	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
OR				
[W]Thermal Stability, 90 minutes, 150°C Pad Rating	[W]DuPont F-21		7	
OR				
[W]Thermal Stability Reflectance	D6468			
[W]Y/Green OR		73%		
[W]W Unit		[W]68%		
Haze rating @ 25°C (77°F) Procedure 2	D4176		2	
Nace Corrosion	TM0172	B+ (Origin)		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Colonial Pipeline Company

3.34.2

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FUNGIBLE HIGH SULFUR UNDYED HEATING OIL GRADE 77

EPA Designation: Heating Oil

Cancels Previous Issues of Grade 77

NOTES:

1. Additive requirements/restrictions - refer to section 3.2.	
2. This schedule denotes the fluidity of the distillate at the time and place of origin.	
Pour Point – August 1st through March 14th	Maximum: [W] -18°C (-0.4°F).
Pour Point – March 15th through July 31st	Maximum: [W] -12°C (10.4°F)
Cloud Point – August 1st through March 14th	Maximum: [W] -9°C (15.8°F)
Cloud Point – March 15th through July 31st	Maximum: [W] -7°C (19.4°F)
3. ASTM color measurement before addition of dye	
4. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).	
5. Either physical or simulated distillation can be used, Simulated distillation MUST be correlated to D86	
6. Colonial will accept test methods results that are listed in ASTM D396/ D975 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes	
7. Interface may result in trace amounts of renewable and/or biodiesel in the product depending on delivery location.	
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.	

Colonial Pipeline Company

3.35

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FUNGIBLE MILITARY DIESEL FUEL MARINE GRADE 78

EPA Designation: Except distillate covered by national security exemption under 1090.605

Cancels Previous Issues of Grade 78

Shipments of Grade 78 must meet the latest military specification for DFM.

Notes:

1. Interface may result in trace amounts of renewable and/or biodiesel in the product depending on delivery location.

Colonial Pipeline Company

3.36

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR SEGREGATED DISTILLATE BLENDSTOCKS GRADE 79

EPA Designation: None Required (Product is an unfinished blendstock)

Cancels Previous Issues of Grade 79

PRODUCT PROPERTY	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Gravity API	D4052	25	42	
Flash Point, °F	D93	100		
Nace Corrosion	TM0172	B+ (origin)		
Total Sulfur, ppmwt	D7039		10000	1
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge the following information:

Gravity

Flash

Sulfur

Any other product property that does not meet our fungible specifications for 77 grade.

The pre-shipment documentation with the actual results must be received before shipment.

NOTES:

The pre-shipment documentation with the actual results must be received before shipment.
1. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).
2. Additive requirements/restrictions - refer to section 3.2.
3. Colonial will accept test methods results that are listed in ASTM D396 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.
4. Interface may result in trace amounts of renewable and/or biodiesel in the product depending on delivery location.
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

Colonial Pipeline Company

[C]3.37.1

[C]PRODUCT SPECIFICATIONS
SPECIFICATIONS FOR FUNGIBLE 500 ppm-SULFUR LOCOMOTIVE MARINE DIESEL
DYED BY CPC GRADE 80

EPA Designation: LM 500 ppm-sulfur diesel fuel
Cancels Previous Issues of Grade 80

PRODUCT PROPERTY	ASTM Test Method	Test Results		Note
		Minimum	Maximum	
Gravity API	D4052	30		
Flash Point, °F	D93	130 (Origin)		
-		125.8 (Delivery)		
Physical Distillation, °C(°F)	D86			6
50%			Report	
90%		282(540)	338(640)	
End Point			371(700)	
Color ASTM	D6045		2.5	3
Color Visual		Undyed		
Viscosity, cSt @ 104°F (40°C)	D445	1.9	4.1	
Pour Point	D97			2
Cloud Point	D2500			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	d5453		420 (Origin)	5
-	-		500 (Delivery)	
Cetane Number	D613	40		8
And One of the following condition should be met —				
1. Aromatics (Volume %), OR	D1319		31.7	
2. Cetane Index	D976	40		
Ash, wt. %	D482		0.01	
Carbon Residue: Ramsbottom on 10% Bottom	D524		0.35	
BS&W, vol. %	D2709		<0.05	
Thermal stability, 90 minutes, 150°C	D6468			
1. Pad rating (Dupont)			7	
2. Reflectance Y/Green		73%	-	
OR				
Oxidation stability, mg/100-ml	D2274		2.5	
OR				
The Dupont F21 @150°C – Pad Rating	-		7	
OR				
Thermal Stability @ 150°C, 90 minutes	D6468			
Y/Green OR		73%		
W Unit		68%		
Haze rating @ 25°C (77°F) Procedure 2	D4176		2	
Nace Corrosion	TM0172	B+ (Origin)		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Colonial Pipeline Company

[C]3.37.2

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE 500 ppm SULFUR LOCOMOTIVE MARINE DIESEL FUEL DYED BY CPC GRADE 80

Cancels Previous Issues of Grade 80

NOTES:

1. Additive requirements/restrictions – refer to section 3.2.	
2. This schedule denotes the fluidity of the distillate at the time and place of origin.	
Pour Point – August 1st through March 14th	Maximum: -18°C (-0.4°F)
Pour Point – March 15th through July 31st	Maximum: -12°C (10.4°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (15.8°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (19.4°F)
3. Dye Requirement	
— Delivery	This product will be dyed by CPC to meet a minimum dye concentration, or spectral equivalence, of 3.9 pounds of Solid Red #26 per 1,000 barrels.
4. ASTM color measurement before addition of dye	
5. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).	
6. Either physical or simulated distillation can be used, Simulated distillation MUST be correlated to D86	
7. Interface may result in trace amounts of renewable and/or biodiesel in the product depending on delivery location.	
8. Colonial will accept test methods results that are listed in ASTM D975 for all tests. Test methods listed in the table above are considered referee methods by colonial Pipeline. Referee methods apply for any disputes.	
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.	

Colonial Pipeline Company

[C]3-38.1-

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE 15ppm SULFUR DIESEL FUEL DYED BY CPC CONTAINING UP TO 5% RENEWABLE HYDROTREATED DIESEL FUEL NONROAD GRADE 83

EPA Designation: MVNRLM, Motor vehicle diesel fuel, 15 ppm sulfur-
Cancels Previous Issues of Grade 83

PRODUCT PROPERTY	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Renewable Fuel (volume %)	D7371		5	5
Gravity API	D4052	30		
Flash Point, °F	D93	130 (Origin)		
-		125.8 (Delivery)		
Physical Distillation, °C(°F)	D86			4
50%			Report	
90%		282(540)	338(640)	
End Point			371(700)	
Color ASTM	D6045		2.5	
Color Visual		Undyed		
Viscosity, cSt @ 104°F (40°C)	D445	1.9	4.1	
Pour Point	D97			2
Cloud Point	D2500			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D5453		11 (Origin)	3
			14 (Delivery)	
Cetane Number	D613	40		6
And One of the following condition should be met—				
1. Aromatics (Volume %), OR	D1319		31.7	
2. Cetane Index	D976	40		
Ash, wt.%	D482		0.01	
Carbon Residue: Ramsbottom on 10% Bottom	D524		0.35	
BS&W, vol.%	D2709		<0.05	
Thermal stability, 90 minutes, 150°C	D6468			
1. Pad rating (Dupont)			7	
2. Reflectance Y/Green		73%	-	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
OR				
The Dupont F21 @150°C—Pad Rating	-		7	
OR				
Thermal Stability @ 150°C, 90 minutes	D6468			
Y/Green OR		73%		
W-Unit		68%		
Haze rating @ 25°C (77°F) Procedure 2	D4176		2	
Nace Corrosion	TM0172	B+ (Origin)		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Colonial Pipeline Company

[C]3.38.2

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FUNGIBLE 15ppm SULFUR DIESEL FUEL DYED BY CPC CONTAINING UP TO 5% RENEWABLE HYDROTREATED DIESEL FUEL NONROAD GRADE 83

EPA Designation: MVNRLM, Motor vehicle diesel fuel, 15 ppm sulfur

NOTES:

Delivery:	This product will be dyed by CPC to meet a minimum dye concentration or spectral equivalence of 3.9 pounds of Solid Red #26 per 1,000 barrels.	
1. Additive requirements/restrictions – refer to section 3.2.		
2. This schedule denotes the fluidity of the distillate at the time and place of origin.		
Pour Point – August 1st through March 14th	Maximum: -18°C (-0.4°F).	
Pour Point – March 15th through July 31st	Maximum: -12°C (10.4°F)	
Cloud Point – August 1st through March 14th	Maximum: -9°C (15.8°F)	
Cloud Point – March 15th through July 31st	Maximum: -7°C (19.4°F)	
3. Origin laboratory certifying sulfur content must qualify the test method used per EPA performance based testing criteria (see CFR 1090 Subpart D).		
4. Either physical or simulated distillation can be used, Simulated distillation MUST be correlated to D86		
5. May contain up to 5% Renewable Diesel as defined in section 3.2.7		
6. Colonial will accept test methods results that are listed in ASTM D975 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.		
7. Deliveries of 83 grade on lines #17, 22, 24, and Greensboro local deliveries may contain up to 5% Bio-Diesel.		
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.		

Colonial Pipeline Company

[C]3.39

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR SEGREGATED 500 ppm LOCOMOTIVE FUEL DYED BY CPC GRADE 84

EPA Designation: LM 500 ppm sulfur diesel fuel

Cancels Previous Issues of Grade 84

PRODUCT PROPERTY	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Sulfur, ppmwt	D5453		500	1
Flash Point °F	D93	140		
Nace Corrosion	TM0172	B+ (origin)		
Electrical Conductivity, pS/m @ 21°C (70°F)	D2624		250	
Color			Undyed	

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge the following information:

Gravity

Flash

Any other product property that does not meet our fungible specifications for 73 grade.

The pre-shipment documentation with the actual results must be received before shipment.

NOTES:

1. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090 Subpart D).	
2. Additive requirements/restrictions – refer to section 3.2.	
4. Interface may result in trace amounts of renewable and/or biodiesel in the product depending on delivery location.	
4. Dye Requirement:	
—Delivery:	This product will be dyed by CPC to meet a minimum dye concentration, or spectral equivalence, of 3.9 pounds of solid Red # 26 per 1,000 bbls
5. Colonial will accept test methods results that are listed in ASTM D396 for all tests. Test method listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.	
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.	

Colonial Pipeline Company

[C]3.40.1

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FUNGIBLE 500 ppm SULFUR HEATING OIL DYED BY CPC GRADE 85

EPA Designation: Heating Oil

Cancels Previous Issues of Grade 85

PRODUCT PROPERTY	ASTM Test Method	Test Results		Note
		Minimum	Maximum	
Gravity API	D4052	30		
Flash Point, °F	D93	124 (Origin)		
-		116 (Delivery)		
Physical Distillation, °C(°F)	D86			6
50%			Report	
90%		282(540)	338(640)	
End Point			371(700)	
Color ASTM	D6045		2.5	5
Color Visual		Undyed		3
Viscosity, cSt @ 104°F (40°C)	D445	1.9	4.1	
Pour Point	D97			2
Cloud Point	D2500			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D5453		420 (Origin)	4
			500 (Delivery)	
Cetane Number	D613	40		8
And One of the following condition should be met —				
1. Aromatics (Volume %) , OR	D1319		31.7	
2. Cetane Index	D976	40		
Ash, wt. %	D482		0.01	
Carbon Residue: Ramsbottom on 10% Bottom	D524		0.35	
BS&W, vol. %	D2709		<0.05	
Thermal stability, 90 minutes, 150°C	D6468			
1. Pad rating (Dupont)			7	
2. Reflectance Y/Green		73%	-	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
OR				
The Dupont F21 @150°C – Pad Rating	-		7	
OR				
Thermal Stability @ 150°C, 90 minutes	D6468			
Y/Green OR		73%		
W Unit		68%		
Haze rating @ 25°C (77°F) Procedure 2	D4176		2	
Nace Corrosion	TM0172	B+ (Origin)		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Colonial Pipeline Company

[C]3.40.2

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FUNGIBLE 500-ppm SULFUR HEATING OIL DYED BY CPC GRADE 85

Cancels Previous Issues of Grade 85

NOTES:

1. Additive requirements/restrictions – refer to section 3.2.	
2. This schedule denotes the fluidity of the distillate at the time and place of origin.	
Pour Point – August 1st through March 14th	Maximum: -18°C (-0.4°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (10.4°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (15.8°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (19.4°F)
3. Dye Requirement	
—Delivery:	This product will be dyed by CPC to meet a minimum dye concentration, or spectral equivalence, of 3.9 pounds of Solid Red #26 per 1,000 barrels.
4. Certain States and localities North of Virginia have sulfur limits that are less than 0.50%. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (See 1090-Subpart D).	
5. ASTM color measurement before addition of dye	
6. Either physical or simulated distillation can be used, Simulated distillation MUST be correlated to D86	
7. Interface may result in trace amounts of renewable and/or biodiesel in the product depending on delivery location.	
8. Colonial will accept test methods results that are listed in ASTM D396/D975 for all tests. Test method listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any dispute.	
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.	

Colonial Pipeline Company

[C]3.41.1

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FULGIBLE (CERTIFIED NON-TRANSPORTATION 15 ppm DISTILLATE FUEL (CERTIFIED NTDF) DYED BY CPC GRADE 87

EPA Designation: Heating Oil (Certified NTDF)

Cancels Previous Issues of Grade 87

PRODUCT PROPERTY	ASTM Test Method	Test Results		Note
		Minimum	Maximum	
Gravity API	D4052	30		
Flash Point, °F	D93	130 (Origin)		
-		125.8 (Delivery)		
Physical Distillation, °C (°F)	D86			6
50%			Report	
90%		282(540)	338(640)	
End Point			371(700)	
Color ASTM	D6045		2.5	4
Color Visual		Undyed		3
Viscosity, cSt @ 104°F (40°C) —	D445	1.9	4.1	
Pour Point	D97			2
Cloud Point	D2500			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D5453		11 (Origin)	5
			14 (Delivery)	
Cetane Number	D613	40		7
And One of the following condition should be met				
1. Aromatics (Volume %) , OR	D1319		31.7	
2. Cetane Index	D976	40		
Ash, wt. %	D482		0.01	
Carbon Residue: Ramsbottom on 10% Bottom	D524		0.35	
BS&W, vol. %	D2709		<0.05	
Thermal stability, 90 minutes, 150°C	D6468			
1. Pad rating (Dupont)			7	
2. Reflectance Y/Green		73%	-	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
OR				
The Dupont F21 @ 150°C – Pad Rating	-		7	
OR				
Thermal Stability @ 150°C, 90 minutes	D6468			
Y/Green OR		73%		
W Unit		68%		
Haze rating @ 25°C (77°F) Procedure 2	D4176		2	
Nace Corrosion	TM0172	B+ (Origin)		
Electrical Conductivity, pS/m @ 21°C (70°F)	D2624		250	

Colonial Pipeline Company

[C]3.41.2

PRODUCT SPECIFICATIONS

~~SPECIFICATIONS FOR FUNGIBLE CERTIFIED NON-TRANSPORTATION 15 ppm DISTILLATE FUEL (CERTIFIED NTDF) DYED BY CPC GRADE 87~~

~~EPA Designation: Heating Oil (Certified NTDF)~~

~~Cancels Previous Issues of Grade 87~~

NOTES:

1. Additive requirements/restrictions – refer to section 3.2.	
2. This schedule denotes the fluidity of the distillate at the time and place of origin.	
Pour Point – August 1st through March 14th	Maximum: -18°C (-0.4°F)
Pour Point – March 15th through July 31st	Maximum: -12°C (10.4°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (15.8°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (19.4°F)
3. Dye Requirement	
— Delivery:	This product will be dyed by CPC to meet a minimum dye concentration, or spectral equivalence, of 3.9 pounds of Solid Red #26 per 1,000 barrels.
4. ASTM color measurement before addition of dye	
5. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 1090 Subpart D).	
6. Either physical or simulated distillation can be used, Simulated distillation MUST be correlated to D86	
7. Colonial will accept test methods results that are listed in ASTM D975 for all tests. Test method listed in in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.	
8. Deliveries of 87 grade on lines #17, 22, 24, and Greensboro local deliveries may contain up to 5% Bio-Diesel and 5% Renewable Diesel.	
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.	

Colonial Pipeline Company

[C]3.42.1

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE 2000 PPM SULFUR HEATING OIL DYED BY CPC GRADE 88

EPA Designation: Heating Oil

Cancels Previous Issues of Grade 88

PRODUCT PROPERTY	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Gravity-API	D4052	30		
Flash Point, °F	D93	124 (Origin)		
-		116 (Delivery)		
Physical Distillation, °C(°F)	D86			6
50%			Report	
90%		282(540)	338(640)	
End Point			371(700)	
Color-ASTM	D6045		2.5	4
Color-Visual		Undyed		3
Viscosity, cSt @ 104°F (40°C) —	D445	1.9	4.1	
Pour Point	D97			2
Cloud Point	D2500			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D4294		2000	5
Cetane Number	D613	40		7
And One of the following condition should be met				
1. Aromatics (Volume %), OR	D1319		31.7	
2. Cetane Index	D976	40		
Ash, wt. %	D482		0.01	
Carbon Residue: Ramsbottom on 10% Bottom	D524		0.35	
BS&W, vol. %	D2709		<0.05	
Thermal stability, 90 minutes, 150°C	D6468			
1. Pad rating (Dupont)			7	
2. Reflectance Y/Green		73%	-	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
OR				
The Dupont F21 @150°C - Pad Rating	-		7	
OR				
Thermal Stability @ 150°C, 90 minutes	D6468			
Y/Green OR		73%		
W Unit		68%		
Haze rating @ 25°C (77°F)-Procedure 2	D4176		2	
Nace Corrosion	TM0172	B+ (Origin)		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Colonial Pipeline Company

[C]3.42.2

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FUNGIBLE 2000 ppm SULFUR HEATING OIL DYED BY CPC GRADE 88

Cancels Previous Issues of Grade 88

NOTES:

1. Additive requirements/restrictions – refer to section 3.2.	
2. This schedule denotes the fluidity of the distillate at the time and place of origin.	
Pour Point – August 1st through March 14th	Maximum: -18°C (-0.4°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (10.4°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (15.8°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (19.4°F)
3. Dye Requirement	
—Delivery:	This product will be dyed by CPC to meet a minimum dye concentration, or spectral equivalence, of 3.9 pounds of Solid Red #26 per 1,000 barrels.
4. ASTM color measurement before addition of dye	
5. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 1090 Subpart D).	
6. Either physical or simulated distillation can be used, Simulated distillation MUST be correlated to D86	
7. Colonial will accept test methods results that are listed in ASTM D396/D975 for all tests. Test method listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.	
8. Interface may result in trace amounts of renewable and/or biodiesel in the product depending on delivery location.	
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.	

Colonial Pipeline Company

[C]3.43

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR SEGREGATED DISTILLATE BLENDSTOCKS DYED BY CPC GRADE 89

EPA Designation: None Required (Product is an unfinished blendstock)

Cancels Previous Issues of Grade 89

PRODUCT PROPERTY	ASTM Test	Test Results		Note
	Method	Minimum	Maximum	
Gravity API	D4052		25	42
Flash Point, °F	D93		100	
Nace Corrosion	TM0172		B+ (origin)	
Total Sulfur, ppmwt	D4294			10,000
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624			250

Dye Requirement

Delivery: This product will be dyed by CPC to meet a minimum dye concentration, or spectral equivalence, of 3.9 pounds of Solid Red #26 per 1,000 barrels.

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge the following information:

Gravity

Flash

Sulfur

Any other product property that does not meet our fungible specifications for 77 grade.

The pre-shipment documentation with the actual results must be received before shipment.

NOTES:

1. This schedule denotes the fluidity of the distillate at the time and place of origin.	
Pour Point – August 1st through March 14th	Maximum: -18°C (-0.4°F)
Pour Point – March 15th through July 31st	Maximum: -12°C (10.4°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (15.8°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (19.4°F)
The pre-shipment documentation with the actual results must be received before shipment.	
2. Origin laboratory certifying sulfur content can qualify the test method used per EPA performance based testing criteria (see CFR 1090 Subpart D).	
3. Additive requirements/restrictions – refer to section 3.2.	
4. Colonial will accept test methods results that are listed in ASTM D396 for all tests. Test methods listed in the table above are considered referee methods by Colonial Pipeline. Referee methods apply for any disputes.	
5. Interface may result in trace amounts of renewable and/or biodiesel in the product depending on delivery location.	
Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.	

Colonial Pipeline Company

[W]3.4437

PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE TRANSMIX

Cancels Previous Issues of Grade 90-94

Each grade can consist of varying concentrations of the following distillate and gasoline:

Grade	Distillate	Gasoline
90	Distillate	Conventional
91	Distillate	RFG
92	Distillate	RFG
93	Distillate	RBOB
94	Distillate	RBOB
96	Distillate	Distillate
	High Sulfur Kerosine	Ultra Low Sulfur Diesel (ULSD)

Explanation of Reference Marks

[N].....New
[W].....Change in Wording
[C].....Cancels