Bengal Pipeline Company

Section 3
Product Codes and Specifications
(Effective date April 10, 2010)

April 2010

Bengal Pipeline Company

PRODUCT CODES - SUMMARY

Product Groupings	
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
S	Atlanta/Birmingham CBOB - 87 Octane after blending with 10% denatured fuel Ethanol
T	Atlanta/Birmingham CBOB - 93 Octane after blending with 10% denatured fuel Ethanol
V	Conventional - 93 Octane
51-58	Kerosene
59	Distillate Blendstock
61-66	Ultra Low Sulfur Diesel
70-78	Fuel Oil, Diesel Fuel, Military DFM
79	Distillate Blendstock
80-88	Fuel Oil, Diesel Fuel
89	Distillate Blendstock
90-94	Transmix

Bengal Pipeline Company

PRODUCT CODES - GASOLINE

Fungible Product Code	Segregated Product Code	Description
		***CBOB - 87 octane after blending with 10% denatured fuel ethanol**
A1	1A	8.8 psi RVP
A2	2A	10.0 psi RVP
A3	3A	12.5 psi RVP
A4	4A	14.5 psi RVP
A5	5A	16.0 psi RVP
		***CBOB - 93 octane after blending with 10% denatured fuel ethanol**
D1	1D	8.8 psi RVP
D2	2D	10.0 psi RVP
D3	3D	12.5 psi RVP
D4	4D	14.5 psi RVP
D5	5D	16.0 psi RVP
		***RBOB - 87 octane after blending with 10% denatured fuel ethanol**
F1	1F	Region 1 VOC controlled RBOB for blending with 10% denatured fuel ethanol
F2	2F	Region 2 VOC controlled RBOB for blending with 10% denatured fuel ethanol
F3	3F	11.5 psi RVP RBOB for blending with 10% denatured fuel ethanol
F4	4F	13.5 psi RVP RBOB for blending with 10% denatured fuel ethanol
F5	5F	15.0 psi RVP RBOB for blending with 10% denatured fuel ethanol
		***RBOB - 93 octane after blending with 10% denatured fuel ethanol**
H1	1H	Region 1 VOC controlled RBOB for blending with 10% denatured fuel ethanol
H2	2H	Region 2 VOC controlled RBOB for blending with 10% denatured fuel ethanol
H3	3H	11.5 psi RVP RBOB for blending with 10% denatured fuel ethanol
H4	4H	13.5 psi RVP RBOB for blending with 10% denatured fuel ethanol
H5	5H	15.0 psi RVP RBOB for blending with 10% denatured fuel ethanol

Notes:
1. Delivery of certain products may be limited by facilities.
2. See product specifications for detailed transfer document information.

Bengal Pipeline Company

PRODUCT CODES - GASOLINE

Fungible Product Codes	Segregated Product Codes	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
M1	1M	7.8 psi RVP (Without Ethanol) 8.8 RVP (With Ethanol)
M2	2M	9.0 psi RVP
M3	3M	11.5 psi RVP
M4	4M	13.5 psi RVP
M5	5M	15.0 psi RVP
		*Atlanta/Birmingham CBOB - 87 octane after blending with 10% denatured fuel ethanol
S0	0S	8.0 psi RVP
S1	1S	8.8 psi RVP
S2	2S	10.0 psi RVP
S3	3S	12.5 psi RVP
S4	4S	14.5 psi RVP
		*Atlanta/Birmingham CBOB - 93 octane after blending with 10% denatured fuel ethanol
T0	0T	8.0 psi RVP
T1	1T	8.8 psi RVP
T2	2T	10.0 psi RVP
T3	3T	12.5 psi RVP
T4	4T	14.5 psi RVP
		***Conventional Gasoline - 93 Octane**
V1	1V	7.8 psi RVP (Without Ethanol) 8.8 RVP (With Ethanol)
V2	2V	9.0 psi RVP
V3	3V	11.5 psi RVP
V4	4V	13.5 psi RVP
V5	5V	15.0 psi RVP

Notes:
1. Delivery of certain products may be limited by facilities.
2. See product specifications for detailed transfer document information.

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PRODUCT CODES - DISTILLATE

Fungible Product Codes	Segregated Product Codes	Description
		Ultra Low Sulfur Kerosene
51		15 ppm Sulfur Kerosene
		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
		15 ppm Sulfur Diesel Fuel
61		15 ppm Sulfur Diesel Fuel
*66		15 ppm Sulfur Diesel -NR
		Fuel Oils, Diesel Fuels, Military DFM
	71	Undyed, Distillate Fuel for Export Only - 2000 ppm sulfur
	73	Undyed 500 ppm Sulfur LM Diesel Fuel
*74	See Note Below	Undyed 420 ppm Sulfur Highway Diesel Fuel
*75		Undyed, 420 ppm Sulfur NRLM Diesel Fuel - Credit Generated
*76		Undyed 420 ppm Sulfur LM Diesel Fuel
78		Undyed Military Diesel Fuel Marine
	79	Distillate Blendstock - Low Dyed unless waived by Q.A.
		Fuel Oils, Diesel Fuels
*80		Dyed 420 ppm Sulfur LM Diesel Fuel
84	See Note Below	Dyed 420 ppm Sulfur Diesel Fuel
*85		Dyed 420 ppm Sulfur NRLM Diesel Fuel - Credit Generated
*86		Dyed 15 ppm Sulfur Diesel - NR
88		Dyed Heating Oil - 2000 ppm sulfur
	89	Distillate Blendstock
		Transmix - Fungible Only
90		Distillate - Conventional Gasoline
91		Distillate RFG - VOC Controlled
92		Distillate RFG - Non-VOC Controlled
93		Distillate RBOB - VOC Controlled
94		Distillate RBOB - Non-VOC Controlled

Notes:
1. Delivery of certain products may be limited by facilities.
2. See product specifications for detailed transfer document information.
3.Nominations of 74 & 84 grades will not be accepted after June 1st and will transition out of our system as of August 1st .

Bengal Pipeline Company

*3.1.1 INDEX

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.

Delivery of batches may be limited by facilities.

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.

Bengal Pipeline Company

PRODUCT SPECIFICATIONS INDEX

*3.1.2

Product Specifications

Section	
3.12	Grade 51 - Fungible 15 ppm Sulfur Kerosene
3.13	Grade 52 - Fungible military JP-5
3.14	Grade 53 - Segregated aviation kerosene
3.15	Grade 54 - Fungible aviation kerosene
3.16	Grade 55 - Fungible aviation kerosene/1-K
3.17	Grade 56 - Fungible bonded aviation kerosene.
3.18	Grade 57 - Segregated aviation kerosene - 500 ppm sulfur
3.19	Grade 58 - Fungible military JP-8
3.20	Grade 59 - Segregated undyed distillate blendstock
3.21	Grade 61 - Fungible 15 ppm sulfur diesel fuel
3.22	Grade 63 - Reserved for future use
*3.23	Grade 66 - Fungible undyded 15 ppm Sulfur Diesel -NR
3.25	Grade 71 - Segregated high sulfur distillate fuel for export only - 2000 ppm sulfur
*3.26	Grade 72 - Reserved for future use
*3.27	Grade 73 - Segregated undyed 500 ppm sulfur LM diesel fuel
*3.28 - See Note Below	Grade 74 - Fungible undyed 420 ppm sulfur highway diesel fuel
*3.29	Grade 75 - Fungible undyed, 420 ppm sulfur NRLM diesel fuel - Credit Generated
*3.3	Grade 76 - Fungible undyed 420 ppm sulfur LM diesel fuel
3.31	Grade 77 - Reserved for future use
3.32	Grade 78 - Segregated military marine diesel fuel
3.33	Grade 79 - Segregated distillate blendstock - low dyed unless waived by Q.A.
3.34	Grade 80 - Fungible dyed 420 ppm sulfur LM diesel fuel
*3.35	Grade 82 - Reserved for future use
*3.36 - See Note Below	Grade 84 - Fungible dyed 420 ppm sulfur diesel fuel
*3.37	Grade 85 - Fungible dyed 420 ppm sulfur NRLM diesel fuel -Credit Generated
*3.38	Grade 86 - Fungible dyded 15 ppm Sulfur Diesel
3.39	Grade 88 - Fungible dyed 2000 ppm sulfur heating oil
3.40	Grade 89 - Segregated distillate blendstock
3.41	Grades 90-95 - Transmix

For complete listing of all product codes, refer to individual product specifications.
1. Nominations of 74 & 84 grades will not be accepted after June 1st and will transition out of our system as of August 1st .

3.2 Bengal 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 (I-ethyl-2-methylpentyl) para-phenylenediamine
N, N'di-isopropyl-para-phenylenediamine
N, N'bis-(I, 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-l, 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 Bengal 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.

Unleaded gasolines shipped on Bengal Pipeline may contain only the following corrosion inhibitors:

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

Nalco	5403, 5405, 5406, EC5624A, EC5626A
*SPEC-AID	8Q22, 8Q100, 8Q101, 8Q102, 8Q103, 8Q106, 8Q109, 8Q110,8Q112ULS,8Q123ULS
Tolad	245, 249, 351, 3232, 3232D, 4410
Unichem	7500, 7501, 7510
UOP	Unicor, Unicor J, Unicor PL

In addition to the above additives, the following may be used in diesel fuels and fuel oil transported by Bengal: 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 SDA for use on Bengal Pipeline is Innospec Stadis® 450. SDA is prohibited from all aviation kerosine grades (grades 51, 53, 54, 55, 56, 57, and 59). The origin maximum concentration of Stadis® 450 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 Bengal 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. Bengal 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 Bengal prior to shipment. Use of these additives is expected to be short term at reasonable treat levels. Bengal 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 Bengal prior to shipment. Use of these additives is expected to be short term at reasonable treat levels. Bengal reserves the right to deny shipment of product containing cetane improver additives.

3.2.7 Prohibited Additives
As stated in Section 3.2 above, Bengal 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	Port Fuel Injector(PFI) additives	Biodiesel
Intake Valve Detergent Additives	Additives containing Phosphorus	Marker Solvent Yellow 124

3.2.8 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.

Bengal Pipeline Company

PRODUCT SPECIFICATIONS

3.3.1 **CONVENTIONAL REGULAR GASOLINE BLENDSTOCK (CBOB)**
FOR BLENDING WITH 10% DENATURED FUEL ETHANOL

Cancels Previous Issues of A grades **(92% PURITY) AS DEFINED IN ASTM D4806**

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 Method	Minimum	Test Results Maximum	Note
Octane	RON	D2699	Report		
	MON	D2700	82.0		
	(R+M)/2		87.0		
Oxygen Content, weight %		D4815, D5599 GC-OFID		0.1	1,2,7
MTBE, vol.%		D4815, D5599 GC-OFID		Origin 0.25 Delivery 0.50	7
RVP (psi)		D5191			3
	Grades				
	A1,1A			8.8	
	A2,2A			10.0	
	A3,3A			12.5	
	A4,4A			14.5	
	A5,5A			16.0	

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.

Bengal Pipeline Company

PRODUCT SPECIFICATIONS

*3.3.2 **CONVENTIONAL REGULAR GASOLINE BLENDSTOCK (CBOB)**
FOR BLENDING WITH 10% DENATURED FUEL ETHANOL

Cancels Previous Issues of A grades **(92% PURITY) AS DEFINED IN ASTM D4806**

FUNGIBLE ONLY REQUIREMENTS:

Product Property	ASTM Test Method	Minimum	Test Results Maximum	Note
Benzene (vol%)	D3606		4.9	
Color			Undyed	
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1	
Corrosion (Ag) 3 hrs @122°F (50°C)	D4814-04b Annex A1		1	
Doctor test	D4952		Negative (sweet)	5
or				
Mercaptan sulfur, wt.%	D3227		0.002	
Existent Gum mg/100 ml	D381		4	
Gravity °API at 60°F	D287,D1298, D4052	Report		7
Oxidation stability-minutes	D525	240		
Phosphorous, gms/gal	D3231		0.004	
Sulfur (ppmwt)	D2622 or equivalent		80	8
Nace Corrosion	TM0172-2001	B+ (Origin)		7
Volatility:				
Driveability Index	D4814		See Chart	
Distillation, °C (°F) @ %Evap.	D86			
Vapor/Liquid Ratio (V/L), °C (°F) @ 20				6

Grades	Driveability Index	10 vol% Max	D5188 (See Note 6) 50 vol% Min	50 vol% Max	90 vol% Max	End Pt. Max	*V/L Min
A1,A2	1250	70(158)	66(150)	121(250)	190(374)	221(430)	49(120)
A3	1230	60(140)	66(150)	116(240)	185(365)	221(430)	47(116)
A4	1220	55(131)	66(150)	113(235)	185(365)	221(430)	42(107)
A5	1200	50(122)	66(150)	110(230)	185(365)	221(430)	39(102)

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 Chapter 1, Part 80.46. Alternative aromatics and oxygenates test methods, ASTM D1319 and ASTM D 4815, may be used according to federal and state regulations.

3. For products blended to meet EPA or state imposed summer VOC requirements, tests must be performed in accordance with the procedures described in 40 CFR, Part 80.

4. Reserved

5. Mercaptan Sulfur waived if fuel is negative by Doctor test.

6. Computer and Linear methods may be used to determine V/L value. D5188 will be the referee method

7. Specifications must be met before blending of denatured fuel ethanol.

8. Refer to 40 CFR Part 80.195 (d)(2). Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.

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PRODUCT SPECIFICATIONS

3.4.1 **CONVENTIONAL PREMIUM GASOLINE BLENDSTOCK (CBOB)**
FOR BLENDING WITH 10% DENATURED FUEL ETHANOL

Cancels Previous Issues of D grades **(92% PURITY) AS DEFINED IN ASTM D4806**

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 Method	Minimum	Test Results Maximum	Note
Octane	RON	D2699	Report		
	MON	D2700	Report		
	(R+M)/2		93.0		
Oxygen Content, weight %		D4815, D5599 GC-OFID		0.1	1,2,7
MTBE, vol.%		D4815, D5599 GC-OFID		Origin	7
				0.25	
				Delivery	
				0.50	
RVP (psi)		D5191			3
	Grades				
	D1,1D			8.8	
	D2,2D			10.0	
	D3,3D			12.5	
	D4,4D			14.5	
	D5,5D			16.0	

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.

Bengal Pipeline Company

PRODUCT SPECIFICATIONS

*3.4.2

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 Method	Minimum	Test Results Maximum	Note
Benzene (vol%)	D3606		4.9	
Color			Undyed	
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1	
Corrosion (Ag) 3 hrs @122°F (50°C)	D4814-04b Annex A1		1	
Doctor test	D4952		Negative (sweet)	5
or				
Mercaptan sulfur, wt.%	D3227		0.002	
Existent Gum mg/100 ml	D381		4	
Gravity °API at 60°F	D287,D1298, D4052	Report		7
Oxidation stability-minutes	D525	240		
Phosphorous, gms/gal	D3231		0.004	
Sulfur (ppmwt)	D2622 or equivalent		80	8
Nace Corrosion	TM0172-2001	B+ (Origin)		7
Volatility:				
Driveability Index	D4814		See Chart	
Distillation, °C (°F) @ %Evap.	D86			
Vapor/Liquid Ratio (V/L), °C (°F) @ 20				6

Grades	Driveability Index	10 vol% Max	50 vol% Min	50 vol% Max	90 vol% Max	End Pt. Max	*V/L Min
			D5188 (See Note 6)				
D1,D2	1250	70(158)	66(150)	121(250)	190(374)	221(430)	49(120)
D3	1230	60(140)	66(150)	116(240)	185(365)	221(430)	47(116)
D4	1220	55(131)	66(150)	113(235)	185(365)	221(430)	42(107)
D5	1200	50(122)	66(150)	110(230)	185(365)	221(430)	39(102)

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 Chapter 1, Part 80.46. Alternative aromatics and oxygenates test methods, ASTM D1319 and ASTM D 4815, may be used according to federal and state regulations.

3. For products blended to meet EPA or state imposed summer VOC requirements, tests must be performed in accordance with the procedures described in 40 CFR, Part 80.

4. Reserved.

5. Mercaptan Sulfur waived if fuel is negative by Doctor test.

6. Computer and Linear methods may be used to determine V/L value. D5188 will be the referee method

7. Specifications must be met before blending of denatured fuel ethanol.

8. Refer to 40 CFR Part 80.195 (d)(2). Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.

Bengal Pipeline Company

PRODUCT SPECIFICATIONS

*3.5.1 **REFORMULATED REGULAR GASOLINE BLENDSTOCK (RBOB)**
FOR BLENDING WITH 10% DENATURED FUEL ETHANOL

Cancels Previous Issues of F grades **(92% PURITY) AS DEFINED IN ASTM D4806**

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 Method	Minimum	Test Results Maximum	Note
Benzene (vol%)		D3606		1.30	
Octane	RON	D2699	Report		
	MON	D2700	82.0		
	(R+M)/2		87.0		
Oxygen Content, weight %		D5599, GC-OFID(See Note)			1,2,7,8
Aromatics (vol%)		D5769, D5599, GC-OFID (See Note)		50	2
E200 (vol%)		D86	30	70	
E300 (vol%)		D86	70	100	
Olefins (vol%)		D1319		25	
Sulfur (ppmwt)		D2622		80	9
Non-VOC Controlled Requirements					
RVP (psi)		D5191			3
	Grades				
	F3,3F (Non-VOC Controlled)			11.5	
	F4,4F (Non-VOC Controlled)			13.5	
	F5,5F (Non-VOC Controlled)			15.0	
VOC Controlled Requirements					
	(Grades F1,F2,1F,2F, only)				2
RVP (psi)		D5191		Report	3
*Emissions Performance Reductions (%)					4
	Region 1 (Grades F1,1F)	Origin:			
				-28.0% (cycles 14 through 18)	
				-27.0%	
		Delivery:		-25.0%	
	Region 2 (Grades F2,2F)	Origin:			
				-26.4% (cycles 14 through 18)	
				-25.4%	
		Delivery:		-23.4%	

Bengal Pipeline Company

PRODUCT SPECIFICATIONS

3.5.2 **REFORMULATED REGULAR GASOLINE BLENDSTOCK (RBOB)**
FOR BLENDING WITH 10% DENATURED FUEL ETHANOL
Cancels Previous Issues of F grades **(92% PURITY) AS DEFINED IN ASTM D4806**

FUNGIBLE ONLY REQUIREMENTS:

Product Property	ASTM Test Method	Minimum	Test Results Maximum	Note
Color			Undyed	
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1	
Corrosion (Ag) 3 hrs @122°F (50°C)	D4814-04b Annex A1		1	
Doctor test	D4952		Negative (sweet)	5
or				
Mercaptan sulfur, wt.%	D3227		0.002	
Existent Gum mg/100 ml	D381		4	
Gravity °API at 60°F	D287,D1298, D4052	Report		7
Oxidation stability-minutes	D525	240		
Phosphorous, gms/gal	D3231		0.004	
Nace Corrosion	TM0172-2001	B+ (Origin)		7
Volatility:				
Driveability Index	D4814		See Chart	
Distillation, °C (°F) @ %Evap.	D86			
Vapor/Liquid Ratio (V/L), °C (°F) @ 20				6

D5188 (See Note 6)

Grades	Driveability Index	10 vol% Max	50 vol% Min	50 vol% Max	90 vol% Max	End Pt. Max	V/L Min
F1,F2	1250	70(158)	77(170)	121(250)	190(374)	221(430)	56(133)
F3	1230	60(140)	77(170)	116(240)	185(365)	221(430)	51(124)
F4	1220	55(131)	66(150)	113(235)	185(365)	221(430)	47(116)
F5	1200	50(122)	66(150)	110(230)	185(365)	221(430)	41(105)

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.

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. Origin maximum MTBE .25 vol.%.
Delivery maximum MTBE .50 vol. %.

2. Refer to test methods published in 40 CFR Chapter 1, Part 80.46. Alternative aromatics and oxygenates test methods, ASTM D1319 and ASTM D 4815, may be used according to federal and state regulations.

3. For products blended to meet EPA or state imposed summer VOC requirements, tests must be performed in accordance with the procedures described in 40 CFR, Part 80.

3.5.3 **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):

4. Emissions reductions must be calculated using EPA guidelines.
5. Mercaptan Sulfur waived if fuel is negative by Doctor test.
6. Computer and Linear methods may be used to determine V/L value. D5188 will be the referee method
7. Specifications must be met before blending of denatured fuel ethanol.
8. Oxygen content must meet a minimum of 1.7 wt.% and a maximum of 4.0 wt.% after blending of denatured fuel ethanol.
9. Refer to 40 CFR Part 80.195 (d)(2). Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.
10. Woodbury and Linden facilities will only allow shipments of region 2 fuels. Any Region 1 fuels shipped downstream of Aberdeen will be comingled with region 2 fuels

Bengal Pipeline Company

PRODUCT SPECIFICATIONS

*3.6.1 **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

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 Method	Test Results Minimum	Maximum	Note
Benzene (vol%)		D3606		1.30	
Octane	RON	D2699	Report		
	MON	D2700	Report		
	(R+M)/2		93.0		
Oxygen Content, weight %		D5599, GC-OFID(See Note)			1,2,7,8
Aromatics (vol%)		D5769, D5599, GC-OFID (See Note)		50	2
E200 (vol%)		D86	30	70	
E300 (vol%)		D86	70	100	
Olefins (vol%)		D1319		25	
Sulfur (ppmwt)		D2622		80	9
Non-VOC Controlled Requirements					
RVP (psi)		D5191			3
	Grades				
	H3,3H (Non-VOC Controlled)			11.5	
	H4,4H (Non-VOC Controlled)			13.5	
	H5,5H (Non-VOC Controlled)			15.0	
VOC Controlled Requirements					
	(Grades H1,H2,1H,2H, only)				2
RVP (psi)		D5191		Report	3
*Emissions Performance Reductions (%)					4
	Region 1 (Grades H1,1H)	Origin:			
				-28.0% (cycles 13 through 18)	
				-27.0%	
		Delivery:		-25.0%	
	Region 2 (Grades H2,2H)	Origin:			
				-26.4% (cycles 13 through 18)	
				-25.4%	
		Delivery:		-23.4%	

FUNGIBLE ONLY REQUIREMENTS:

Product Property	ASTM Test Method	Minimum	Test Results Maximum	Note
Color			Undyed	
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1	
Corrosion (Ag) 3 hrs @122°F (50°C)	D4814-04b Annex A1		1	
Doctor test	D4952		Negative (sweet)	5
or				
Mercaptan sulfur, wt.%	D3227		0.002	
Existent Gum mg/100 ml	D381		4	
Gravity °API at 60°F	D287,D1298, D4052	Report		7
Oxidation stability-minutes	D525	240		
Phosphorous, gms/gal	D3231		0.004	
Nace Corrosion	TM0172-2001	B+ (Origin)		7
Volatility:				
Driveability Index	D4814		See Chart	
Distillation, °C (°F) @ %Evap.	D86			
Vapor/Liquid Ratio (V/L), °C (°F) @ 20	D5188 (See Note 6)			6

Grades	Driveability Index	10 vol% Max	50 vol% Min	50 vol% Max	90 vol% Max	End Pt. Max	V/L Min
H1,H2	1250	70(158)	77(170)	121(250)	190(374)	221(430)	56(133)
H3	1230	60(140)	77(170)	116(240)	185(365)	221(430)	51(124)
H4	1220	55(131)	66(150)	113(235)	185(365)	221(430)	47(116)
H5	1200	50(122)	66(150)	110(230)	185(365)	221(430)	41(105)

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.

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. Origin maximum MTBE .25 vol.%.
Delivery maximum MTBE .50 vol. %.

2. Refer to test methods published in 40 CFR Chapter 1, Part 80.46. Alternative aromatics and oxygenates test methods, ASTM D1319 and ASTM D 4815, may be used according to federal and state regulations.

3. For products blended to meet EPA or state imposed summer VOC requirements, tests must be performed in accordance with the procedures described in 40 CFR, Part 80.

3.6.3 **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):

4. Emissions reductions must be calculated using EPA guidelines.
5. Mercaptan Sulfur waived if fuel is negative by Doctor test.
6. Computer and Linear methods may be used to determine V/L value. D5188 will be the referee method
7. Specifications must be met before blending of denatured fuel ethanol.
8. Oxygen content must meet a minimum of 1.7 wt.% and a maximum of 4.0 wt.% after blending of denatured fuel ethanol.
9. Refer to 40 CFR Part 80.195 (d)(2). Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.
10. Woodbury and Linden facilities will only allow shipments of region 2 fuels. Any Region 1 fuels shipped downstream of Aberdeen will be comingled with Region 2 fuels

Bengal Pipeline Company

3.7 **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)
Any other product property that does not meet Bengal's fungible specification for M grades

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

Product Property	ASTM Test Method	Test Results Minimum	Maximum	Note
Gravity °API at 60°F	D287,D1298, D4052	48	80	
Benzene (vol%)	D3606		4.9	
Nace Corrosion	TM0172-2001	B+ (origin)		
Sulfur, (ppmwt)	D2622 or equivalent		Report	
RVP (psi)	D5191	4.0		

Grades

1L This product code is intended for the shipment of low octane (<83 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 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 and <87 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 and <93 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 R+M/2 gasoline blendstocks. This product does not require a buffer batch and will be handled with normal procedures.

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.

Additive requirements/restrictions - refer to section 3.2.

Bengal Pipeline Company

*3.8.1 **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 Method	Minimum	Test Results Maximum	Note
Octane	RON	D2699	Report		
	MON	D2700	82.0		
	(R+M)/2		87.0		
Oxygen Content, weight %		D4815, D5599 GC-OFID		0.1	1
MTBE, vol.%		D4815, D5599 GC-OFID		Origin 0.25 Delivery 0.50	
RVP (psi)		D5191			2

Grades	Without Ethanol	With Ethanol	
M1,1M	7.8	8.8	7
M2,2M	9.0	X	
M3,3M	11.5	X	
M4,4M	13.5	X	
M5,5M	15.0	X	

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.

Bengal Pipeline Company

*3.8.2 **SPECIFICATIONS FOR 87 OCTANE INDEX CONVENTIONAL GASOLINE**

Cancels Previous Issues of M Grades

FUNGIBLE ONLY REQUIREMENTS:

Product Property	ASTM Test Method	Minimum	Test Results Maximum	Note
Benzene, vol.%	D3606, D4053		4.9	
Color			Undyed	
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1	
Corrosion (Ag) 3 hrs @122°F (50°C)	D4814-04b Annex A1		1	
Doctor test	D4952		Negative (sweet)	4
or				
Mercaptan sulfur, wt.%	D3227		0.002	
Existent Gum mg/100 ml	D381		4	
Gravity °API at 60°F	D287,D1298, D4052	Report		
Oxidation stability-minutes	D525	240		
Phosphorous, gms/gal	D3231		0.004	
Sulfur (ppmwt)	D2622 or equivalent		80	6
Nace Corrosion	TM0172-2001	B+ (Origin)		
Volatility:				
Driveability Index	D4814		See Chart	
Distillation, °C (°F) @ %Evap.	D86			
Vapor/Liquid Ratio (V/L), °C (°F) @ 20	D5188 (See Note 5)			5

Grades	Driveability Index	10 vol% Max	50 vol% Min	50 vol% Max	90 vol% Max	End Pt. Max	V/L Min
M1,M2	1250	70(158)	77(170)	121(250)	190(374)	221(430)	56(133)
M3	1230	60(140)	77(170)	116(240)	185(365)	221(430)	51(124)
M4	1220	55(131)	77(170)	113(235)	185(365)	221(430)	47(116)
M5	1200	50(122)	77(170)	110(230)	185(365)	221(430)	41(105)

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 or state imposed summer VOC requirements, tests must be performed in accordance with the procedures described in 40 CFR, Part 80.
4. Mercaptan Sulfur waived if fuel is negative by Doctor test.
5. Computer and Linear methods may be used to determine V/L value. D5188 will be the referee method
6. Refer to 40 CFR Part 80.195 (d)(2). Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.
7. M1 is the only RVP volatility class that requires dual certification on certificate of analysis for RVP

Bengal Pipeline Company

PRODUCT SPECIFICATIONS

3.9.1 **CONVENTIONAL REGULAR GASOLINE BLENDSTOCK (CBOB)**
FOR BLENDING WITH 10% DENATURED FUEL ETHANOL
Cancels Previous Issues of S grades **(92% PURITY) AS DEFINED IN ASTM D4806**
ATLANTA/BIRMINGHAM GASOLINE

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 S GRADE REQUIREMENTS (SEGREGATED AND FUNGIBLE)

Product Property		ASTM Test Method	Minimum	Test Results Maximum	Note
Octane	RON	D2699	Report		
	MON	D2700	82.0		
	(R+M)/2		87.0		
Oxygen Content, weight %		D4815, D5599 GC-OFID		0.1	1,2,7
MTBE, vol.%		D4815, D5599 GC-OFID		Origin 0.25 Delivery 0.50	7
RVP (psi)		D5191			3
	Grades				
	S0,0S			8.0	
	S1,1S			8.8	
	S2,2S			10.0	
	S3,3S			12.5	
	S4,4S			14.5	

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.

Bengal Pipeline Company

PRODUCT SPECIFICATIONS

*3.9.2

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

Cancels Previous Issues of S grades

FUNGIBLE ONLY REQUIREMENTS:

Product Property	ASTM Test Method	Test Results Minimum	Maximum	Note
Benzene (vol%)	D3606		4.9	
Color			Undyed	
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1	
Corrosion (Ag) 3 hrs @122°F (50°C)	D4814-04b Annex A1		1	
Doctor test	D4952		Negative (sweet)	5
or				
Mercaptan sulfur, wt.%	D3227		0.002	
Existent Gum mg/100 ml	D381		4	
Gravity °API at 60°F	D287,D1298, D4052	Report		7
Oxidation stability-minutes	D525	240		
Phosphorous, gms/gal	D3231		0.004	
Sulfur (ppmwt)	D2622 or equivalent		80	8
Nace Corrosion	TM0172-2001	B+ (Origin)		7
Volatility:				
Driveability Index	D4814		See Chart	
Distillation, °C (°F) @ %Evap.	D86			
Vapor/Liquid Ratio (V/L), °C (°F) @ 20				6

Grades	Driveability Index	10 vol% Max	50 vol% Min	50 vol% Max	90 vol% Max	End Pt. Max	V/L Min
			D5188 (See Note 6)				
S0,S1,S2	1250	70(158)	66(150)	121(250)	190(374)	221(430)	49(120)
S3	1230	60(140)	66(150)	116(240)	185(365)	221(430)	45(113)
S4	1220	55(131)	66(150)	113(235)	185(365)	221(430)	42(107)

1. All S 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 Chapter 1, Part 80.46. Alternative aromatics and oxygenates test methods, ASTM D1319 and ASTM D 4815, may be used according to federal and state regulations.

3. For products blended to meet EPA or state imposed summer VOC requirements, tests must be performed in accordance with the procedures described in 40 CFR, Part 80.

4. Reserved

5. Mercaptan Sulfur waived if fuel is negative by Doctor test.

6. Computer and Linear methods may be used to determine V/L value. D5188 will be the referee method

7. Specifications must be met before blending of denatured fuel ethanol.

8. Refer to 40 CFR Part 80.195 (d)(2). Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.

Bengal Pipeline Company

PRODUCT SPECIFICATIONS

3.10.1 **CONVENTIONAL PREMIUM GASOLINE BLENDSTOCK (CBOB)**
FOR BLENDING WITH 10% DENATURED FUEL ETHANOL

Cancels Previous Issues of T grades **(92% PURITY) AS DEFINED IN ASTM D4806**
ATLANTA/BIRMINGHAM GASOLINE

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 T GRADE REQUIREMENTS (SEGREGATED AND FUNGIBLE)

Product Property		ASTM Test Method	Minimum	Test Results Maximum	Note
Octane	RON	D2699	Report		
	MON	D2700	Report		
	(R+M)/2		93.0		
Oxygen Content, weight %		D4815, D5599 GC-OFID		0.1	1,2,7
MTBE, vol.%		D4815, D5599 GC-OFID		Origin 0.25 Delivery 0.50	7
RVP (psi)		D5191			3
	Grades				
	T0,0T			8.0	
	T1,1T			8.8	
	T2,2T			10.0	
	T3,3T			12.5	
	T4,4T			14.5	

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.

Bengal Pipeline Company

PRODUCT SPECIFICATIONS

*3.10.2

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

Cancels Previous Issues of T grades

FUNGIBLE ONLY REQUIREMENTS:

Product Property	ASTM Test Method	Test Results Minimum	Maximum	Note
Benzene (vol%)	D3606		4.9	
Color			Undyed	
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1	
Corrosion (Ag) 3 hrs @122°F (50°C)	D4814-04b Annex A1		1	
Doctor test	D4952		Negative (sweet)	5
or				
Mercaptan sulfur, wt.%	D3227		0.002	
Existent Gum mg/100 ml	D381		4	
Gravity °API at 60°F	D287,D1298, D4052	Report		7
Oxidation stability-minutes	D525	240		
Phosphorous, gms/gal	D3231		0.004	
Sulfur (ppmwt)	D2622 or equivalent		80	8
Nace Corrosion	TM0172-2001	B+ (Origin)		7
Volatility:				
Driveability Index	D4814		See Chart	
Distillation, °C (°F) @ %Evap.	D86			
Vapor/Liquid Ratio (V/L), °C (°F) @ 20				6

D5188 (See Note 6)

Grades	Driveability Index	10 vol% Max	50 vol% Min	50 vol% Max	90 vol% Max	End Pt. Max	V/L Min
T0,T1,T2	1250	70(158)	66(150)	121(250)	190(374)	221(430)	49(120)
T3	1230	60(140)	66(150)	116(240)	185(365)	221(430)	45(113)
T4	1220	55(131)	66(150)	113(235)	185(365)	221(430)	42(107)

1. All T 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 Chapter 1, Part 80.46. Alternative aromatics and oxygenates test methods, ASTM D1319 and ASTM D 4815, may be used according to federal and state regulations.

3. For products blended to meet EPA or state imposed summer VOC requirements, tests must be performed in accordance with the procedures described in 40 CFR, Part 80.

4. Reserved.

5. Mercaptan Sulfur waived if fuel is negative by Doctor test.

6. Computer and Linear methods may be used to determine V/L value. D5188 will be the referee method

7. Specifications must be met before blending of denatured fuel ethanol.

8. Refer to 40 CFR Part 80.195 (d)(2). Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.

Bengal Pipeline Company

*3.11.1 **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 Method	Minimum	Test Results Maximum	Note
Octane	RON	D2699	Report		
	MON	D2700	Report		
	(R+M)/2		93.0		
Oxygen Content, weight %		D4815, D5599 GC-OFID		0.1	1
MTBE, vol.%		D4815, D5599 GC-OFID		Origin 0.25 Delivery 0.50	
RVP (psi)		D5191			2

Grades	Without Ethanol	With Ethanol	
V1,1V	7.8	8.8	7
V2,2V	9.0	X	
V3,3V	11.5	X	
V4,4V	13.5	X	
V5,5V	15.0	X	

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.

Cancels Previous Issues of V Grades

FUNGIBLE ONLY REQUIREMENTS:

Product Property	ASTM Test Method	Minimum	Test Results Maximum	Note
Benzene, vol.%	D3606, D4053		4.9	
Color			Undyed	
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1	
Corrosion (Ag) 3 hrs @122°F (50°C)	D4814-04b Annex A1		1	
Doctor test	D4952		Negative (sweet)	4
or				
Mercaptan sulfur, wt.%	D3227		0.002	
Existent Gum mg/100 ml	D381		4	
Gravity °API at 60°F	D287,D1298, D4052	Report		
Oxidation stability-minutes	D525	240		
Phosphorous, gms/gal	D3231		0.004	
Sulfur (ppmwt)	D2622 or equivalent		80	6
Nace Corrosion	TM0172-2001	B+ (Origin)		
Volatility:				
Driveability Index	D4814		See Chart	
Distillation, °C (°F) @ %Evap.	D86			
Vapor/Liquid Ratio (V/L), °C (°F) @ 20	D5188 (See Note 5)			5

Grades	Driveability Index	10 vol% Max	50 vol% Min	50 vol% Max	90 vol% Max	End Pt. Max	V/L Min
V1,V2	1250	70(158)	77(170)	121(250)	190(374)	221(430)	56(133)
V3	1230	60(140)	77(170)	116(240)	185(365)	221(430)	51(124)
V4	1220	55(131)	77(170)	113(235)	185(365)	221(430)	47(116)
V5	1200	50(122)	77(170)	110(230)	185(365)	221(430)	41(105)

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 or state imposed summer VOC requirements, tests must be performed in accordance with the procedures described in 40 CFR, Part 80.
4. Mercaptan Sulfur waived if fuel is negative by Doctor test.
5. Computer and Linear methods may be used to determine V/L value. D5188 will be the referee method
6. Refer to 40 CFR Part 80.195 (d)(2). Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.
7. V1 is the only RVP volatility class that requires dual certification on certificate of analysis for RVP

Bengal Pipeline Company

*3.12.1 **SPECIFICATIONS FOR FUNGIBLE 15 ppm SULFUR KEROSENE GRADE 51**

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

Cancels Previous Issues of Grade 51

Product Property	ASTM Test Method	Test Results Minimum	Maximum		Note
General Properties					
*Color: Origin	D156,D6045	21			
*Color: Delivery	D156,D6045	18			
General Properties					
Gravity	D287, D1298, D4052	37	51		
Net Heat of combustion BTU/Pound	D3338, D4529, D4809	18,400			
Corrosion 2 hrs. @ 212°F (100°C)	D130		1		
*Cetane Index	D613, D6890,D7170,D4737A	40			6
MSEP: Origin	D3948	85			
MSEP: Delivery	D3948	75			
Electrical					
Conductivity, pS/m @ 21°C(70°F)	D2624		Report		
Ash, wt.%	D482		0.01		
Determination of	MIL-T-5624P, D5452				
Filtration Time or Volume			Report		3
Total Solids or Particulate			Report		
Low Temperature Properties					
Freezing Point,°C	D2386, D5972, D7153, D7154		-40		7
Viscosity, cSt @ 104°F (40°C)	D445	1.3	1.9		
Viscosity, cSt @ -4°F (-20°C)	D445		8.0		
Volatility					
Flash Point, °F	D56, D3828	123			
Distillation, °C(°F)	D86				8
10% recovered			205(400)		
50% recovered		Report			
90% recovered			288(550)		
End Point			300(572)		
Residue, %			1.5		
Loss, %			1.5		
or Simulated Distillation, °C(°F)	D2887				8
10% recovered			185(365)		
50% recovered		Report			
90% recovered			304(579)		
End Point			340(644)		
Stability					
Existent Gum, mg/100 ml	D381,IP540		7.0		
Thermal Stability @ 275°C	D3241			Origin	
Pres. drop in mm/Hg			25		
Tube deposit less than code			Code 3		

No Peacock or Abnormal Color Deposits

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*3.12.2 **SPECIFICATIONS FOR FUNGIBLE 15 ppm SULFUR KEROSENE GRADE 51**

Cancels Previous Issues of Grade 51

Product Property	ASTM Test Method	Test Results Minimum	Maximum		Note
Stability (continued)					
Thermal Stability @ 260°C	D3241			Delivery	
Pres. drop in mm/Hg			25		
Tube deposit less than code			Code 3		
		No Peacock or Abnormal Color Deposits			
Carbon Residue: Ramsbottom	D524				
on 10% bottom			0.15		
Composition Properties					
Total Sulfur, ppmwt	D2622, D5453				4
	D7039, other		10	Origin	
			14	Delivery	
Aromatics, vol.%	D1319		25		
Mercaptan Sulfur, wt.%	D3227		0.003		5
OR					
Doctor test	D4952		Negative (sweet)		
Acidity total max, mg KOH/g	D3242		0.1		
Combustion Properties					
Smoke point, mm	D1322	25			
OR					
Smoke point, mm and	D1322	18			
Naphthalenes, vol.%	D1840		3.0		
*Burning Quality	D187	Report			9

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 80.584). The referee test method will be ASTM D5453.
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. The referee method will be D2386
8. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.
9 Typical results pass according to Paragraph 4.2 of ASTM D3699 Standard Specifications for kerosine.

Bengal Pipeline Company

3.13 **SPECIFICATIONS FOR FUNGIBLE MILITARY JP-5**

EPA Designation: Exempt distillate covered by national security exemption under 80.606

Cancels Previous Issues of Grade 52

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

Bengal Pipeline Company

3.14 **SPECIFICATIONS FOR SEGREGATED KEROSENE GRADE 53**

EPA Designation: Kerosene

Cancels Previous Issues of Grade 53

Product Property	ASTM Test Method	Test Results Minimum	Maximum	Note
Gravity	D287, D1298, D4052	37	51	
Flash Point, °F	D56, D3828	100		
Sulfur, ppmwt	D2622, D5453			3
	D1266, D4294		3000	
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 CFR 80.584). The referee test method will be ASTM D5453.
4. Additive requirements/restrictions - refer to section 3.2.

Bengal Pipeline Company

3.15.1 **SPECIFICATIONS FOR FUNGIBLE AVIATION KEROSENE GRADE 54**

EPA Designation: Jet Fuel

Cancels Previous Issues of Grade 54

Product Property	ASTM Test Method	Test Results Minimum	Maximum	Note
General Properties				
Gravity	D287, D1298, D4052	37	51	
Net Heat of combustion BTU/Pound	D3338, D4529, D4809	18,400		
Corrosion 2 hrs. @ 212°F (100°C)	D130		1	
MSEP: Origin	D3948	85		
MSEP: Delivery	D3948	75		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		Report	
Determination of	MIL-T-5624P, D5452			
Filtration Time or Volume			Report	3
Total Solids or Particulate			Report	
Low Temperature Properties				
Freezing Point,°C	D2386, D5972, D7153, D7154		-40	5
Viscosity, cSt @ -4°F (-20°C)	D445		8.0	
Volatility				
Flash Point, °F	D56, D3828	108		
Physical Distillation, °C(°F)	D86			7
10% recovered			205(400)	
50% recovered		Report		
90% recovered		Report		
End Point			300(572)	
Residue, %			1.5	
Loss, %			1.5	
or Simulated Distillation, °C(°F)	D2887			7
10% recovered			185(365)	
50% recovered		Report		
90% recovered		Report		
End Point			340(644)	
Stability				
Existent Gum, mg/100 ml	D381, IP540		7.0	
Thermal Stability @ 275°C	D3241		Origin	
Pres. drop in mm/Hg			25	
Tube deposit less than code			Code 3	
No Peacock or Abnormal Color Deposits				

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3.15.2 **SPECIFICATIONS FOR FUNGIBLE AVIATION KEROSENE GRADE 54**

Cancels Previous Issues of Grade 54

Product Property	ASTM Test Method	Test Results Minimum	Maximum	Note
Stability				
Thermal Stability @ 260°C	D3241		Delivery	
Pres. drop in mm/Hg			25	
Tube deposit less than code			Code 3	
		No Peacock or Abnormal Color Deposits		
Composition Properties				
Sulfur, ppmwt	D2622, D5453			6
	D1266, D4294		3000	
Mercaptan Sulfur, wt.%	D3227		0.003	4
OR				
Doctor test	D4952		Negative (sweet)	
Aromatics, vol.%	D1319		25	
Acidity total max, mg KOH/g	D3242		0.1	
Combustion Properties				
Smoke point, mm	D1322	25		
OR				
Smoke point, mm and	D1322	18		
Naphthalenes, vol.%	D1840		3.0	

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. The referee method will be D2386
6. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
7. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

3.16.1 **SPECIFICATIONS FOR FUNGIBLE AVIATION KEROSENE GRADE 55**

EPA Designation: Kerosene

Cancels Previous Issues of Grade 55

Product Property	ASTM Test Method	Test Results Minimum	Maximum		Note
General Properties					
Color: Origin	D156,D6045	21			
Color: Delivery	D156,D6045	18			
Gravity	D287, D1298, D4052	37	51		
Net Heat of combustion BTU/Pound	D3338, D4529, D4809	18,400			
Corrosion 2 hrs. @ 212°F (100°C)	D130		1		
Cetane Index	D613, D6890,D7170,D4737A	40			
MSEP: Origin	D3948	85			
MSEP: Delivery	D3948	75			
Electrical					
Conductivity, pS/m @ 21°C(70°F)	D2624		Report		
Ash, wt.%	D482		0.01		
Determination of	MIL-T-5624P, D5452				
Filtration Time or Volume			Report		3
Total Solids or Particulate			Report		
Low Temperature Properties					
Freezing Point,°C	D2386, D5972, D7153, D7154		-40		7
Viscosity, cSt @ 104°F (40°C)	D445	1.3	1.9		
Viscosity, cSt @ -4°F (-20°C)	D445		8.0		
Volatility					
Flash Point, °F	D56, D3828	123			
Distillation, °C(°F)	D86				8
10% recovered			205(400)		
50% recovered		Report			
90% recovered			288(550)		
End Point			300(572)		
Residue, %			1.5		
Loss, %			1.5		
or Simulated Distillation, °C(°F)	D2887				8
10% recovered			185(365)		
50% recovered		Report			
90% recovered			304(579)		
End Point			340(644)		
Stability					
Existent Gum, mg/100 ml	D381,IP540		7.0		
Thermal Stability @ 275°C	D3241			Origin	
Pres. drop in mm/Hg			25		
Tube deposit less than code			Code 3		

No Peacock or Abnormal Color Deposits

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Cancels Previous Issues of Grade 55

Product Property	ASTM Test Method	Test Results Minimum	Maximum	Note
Stability (continued)				
Thermal Stability @ 260°C	D3241		Delivery	
Pres. drop in mm/Hg			25	
Tube deposit less than code			Code 3	
		No Peacock or Abnormal Color Deposits		
Carbon Residue: Ramsbottom	D524			
on 10% bottom			0.15	
Composition Properties				
Sulfur, ppmwt	D2622, D5453			4
	D7039		400	
Aromatics, vol.%	D1319		25	
Mercaptan Sulfur, wt.%	D3227		0.003	5
OR				
Doctor test	D4952		Negative (sweet)	
Acidity total max, mg KOH/g	D3242		0.1	
Combustion Properties				
Smoke point, mm	D1322	25		
OR				
Smoke point, mm and	D1322	18		
Naphthalenes, vol.%	D1840		3.0	
Burning Quality	D187	Report		6

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 80.584). The referee test method will be ASTM D5453.
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 kerosine.
7. The referee method will be D2386
8. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

3.17 **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.

Bengal Pipeline Company

3.18 **SPECIFICATIONS FOR SEGREGATED KEROSENE GRADE 57**

EPA Designation: Kerosene

Cancels Previous Issues of Grade 57

Product Property	ASTM Test Method	Test Results Minimum	Maximum	Note
Sulfur, ppmwt	D2622, D5453 D1266, D4294		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 CFR 80.584). The referee test method will be ASTM D5453.
2. Additive requirements/restrictions - refer to section 3.2.

Bengal Pipeline Company

3.19 **SPECIFICATIONS FOR FUNGIBLE MILITARY JP-8**

EPA Designation: Except distillate covered by national security exemption under 80.606

Cancels Previous Issues of Grade 58

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

Bengal Pipeline Company

3.20 **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 Method	Test Results Minimum	Maximum	Note
Gravity	D287, D1298, D4052	37	51	
Flash Point, °F	D56, D3828	100		
Sulfur, ppmwt	D2622, D5453 D7039, D4294		3000	3
Nace Corrosion	TM0172-2001	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 CFR 80.584). The referee test method will be ASTM D5453.
4. Additives requirements/restrictions - refer to section 3.2.

*3.21.1

SPECIFICATIONS FOR FUNGIBLE 15 ppm SULFUR DIESEL FUEL - GRADE 61

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

Cancels Previous Issues of Grade 61

PRODUCT PROPERTY	ASTM Test Method	Test Results Minimum	Maximum		Note
Gravity API	D287, D1298, D4052	30			
Flash Point, °F					
Pensky-Martin	D93	130			
Physical Distillation, °C(°F)	D86				5
50%			Report		
90%		282(540)	338(640)		
End Point			366(690)		
or Simulated Distillation, °C(°F)	D2887				5
50% recovered			Report		
90% recovered		300(572)	356(673)		
End Point			421(790)		
Color ASTM	D1500,D6045		2.5		
Color Visual		Undyed			
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4		
Pour Point	D97, D5949, D5950, D5985				2
Cloud Point	D2500, D5771, D5772, D5773				2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1		
Total Sulfur, ppmwt	D2622, D5453				
	D7039, other		9	Origin	3
			14	Delivery	
Cetane Number	D613, D6890, D7170	40			4
Aromatics (Volume %)	D1319		31.7		
or Aromatics by Cetane Index	D976	40			
Ash, wt.%	D482		0.01		
Carbon Residue: Ramsbottom					
on 10% Bottom	D524		0.35		
BS&W, vol.%	D2709				
	or equivalent		< 0.05		
Thermal stability, 90 minutes					
150°CPad rating, DuPont scale			7		
OR					
*Thermal stability	D6468				
Y/Green		73%			
W Unit		65%			
OR					
Oxidation stability, mg/100 ml	D2274		2.5		
Haze rating @ 25°C (77°F)	D4176				
	Procedure 2		2		
Nace Corrosion	TM0172-2001	B+ (Origin)			
Electrical					
Conductivity, pS/m @ 21°C(70°F)	D2624		250		

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3.21.2

SPECIFICATIONS FOR FUNGIBLE 15 ppm SULFUR DIESEL FUEL - GRADE 61

Cancels Previous Issues of Grade 61

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.

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^{o}C (0^{o}F).
Pour Point – March 15th through July 31st	Maximum: -12^{o}C (+10^{o}F)
Cloud Point – August 1st through March 14th	Maximum: -9^{o}C (+15^{o}F)
Cloud Point – March 15th through July 31st	Maximum: -7^{o}C (+20^{o}F)

The referee method will be Pour point D97 and Cloud point D2500

3. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
4. Where cetane number by test method D613 is not available, test method D4737B can be used as an approximation.
5. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

*3.23.1 **SPECIFICATIONS FOR FUNGIBLE 15 ppm SULFUR DIESEL FUEL**
NONROAD GRADE 66

EPA Designation: MVNRLM,NRLM,NR 15 ppm sulfur diesel fuel

PRODUCT PROPERTY	ASTM Test Method	Test Results Minimum	Maximum		Note
Gravity API	D287, D1298, D4052	30			
Flash Point, °F					
Pensky-Martin	D93	130			
Physical Distillation, °C(°F)	D86				5
50%			Report		
90%		282(540)	338(640)		
End Point			366(690)		
or Simulated Distillation, °C(°F)	D2887				5
50% recovered			Report		
90% recovered		300(572)	356(673)		
End Point			421(790)		
Color ASTM	D1500,D6045		2.5		
Color Visual		Undyed			
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4		
Pour Point	D97, D5949, D5950, D5985				2
Cloud Point	D2500, D5771, D5772, D5773				2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1		
Total Sulfur, ppmwt	D2622, D5453				
	D7039, other		9	Origin	3
			10	Delivery	
Cetane Number	D613, D6890, D7170	40			4
Aromatics (Volume %)	D1319		31.7		
or Aromatics by Cetane Index	D976	40			
Ash, wt.%	D482		0.01		
Carbon Residue: Ramsbottom					
on 10% Bottom	D524		0.35		
BS&W, vol.%	D2709				
	or equivalent		< 0.05		
Thermal stability, 90 minutes					
150°CPad rating, DuPont scale			7		
OR					
*Thermal stability	D6468				
Y/Green		73%			
W Unit		65%			
OR					
Oxidation stability, mg/100 ml	D2274		2.5		
Haze rating @ 25°C (77°F)	D4176				
	Procedure 2		2		
Nace Corrosion	TM0172-2001	B+ (Origin)			
Electrical					
Conductivity, pS/m @ 21°C(70°F)	D2624		250		

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3.23.2 **SPECIFICATIONS FOR FUNGIBLE 15 ppm SULFUR DIESEL FUEL NONROAD - GRADE 66**

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.

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°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (+10°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (+15°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

3. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
4. Where cetane number by test method D613 is not available, test method D4737B can be used as an approximation.
5. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.
6. ASTM color measurment before addition of dye

Bengal Pipeline Company

3.25

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

EPA Designation: Distillate fuel for export only

Cancels Previous Issues of Grade 71

Product property	Method	Minimum	Maximum	Note
Total Sulfur, ppmwt	D2622, D5453 D7039		2000	1
Nace Corrosion	TM0172-2001	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 CFR 80.584). The referee test method will be ASTM D5453.
2. Additive requirements/restrictions - refer to section 3.2.

Bengal Pipeline Company

3.27

SPECIFICATIONS FOR SEGREGATED 500 ppm LOCOMOTIVE FUEL GRADE 73

EPA Designation: MVNRLM,NRLM, LM 500 ppm sulfur diesel fuel

Cancels Previous Issues of Grade 73

Product property	Method	Minimum	Maximum	Notes
Sulfur, ppmwt	D2622, D5453 D7039, D6920		500	1
Nace Corrosion	TM0172-2001	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 74 grade.

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

Notes:
1. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
2. Additive requirements/restrictions - refer to section 3.2.

Bengal Pipeline Company

*3.28.1

SPECIFICATIONS FOR FUNGIBLE LOW SULFUR HIGHWAY DIESEL FUEL GRADE 74

EPA Designation: MVNRLM, Motor vehicle diesel fuel, #2D, 500 ppm sulfur motor vehicle diesel fuel

Cancels Previous Issues of Grade 74

PRODUCT PROPERTY	ASTM Test Method	Test Results Minimum	Maximum		Note
Gravity API	D287, D1298, D4052	30			
Flash Point, °F					
Pensky-Martin	D93	130			
Physical Distillation, °C(°F)	D86				5
50%			Report		
90%		282(540)	338(640)		
End Point			366(690)		
or Simulated Distillation, °C(°F)	D2887				5
50% recovered			Report		
90% recovered		300(572)	356(673)		
End Point			421(790)		
Color ASTM	D1500,D6045		2.5		
Color Visual		Undyed			
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4		
Pour Point	D97, D5949, D5950, D5985				2
Cloud Point	D2500, D5771, D5772, D5773				2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1		
Total Sulfur, ppmwt	D2622, D5453 D7039, D6920		420	Origin	3
Cetane Number	D613, D6890, D7170	40			4
Aromatics (Volume %)	D1319		31.7		
or Aromatics by Cetane Index	D976	40			
Ash, wt.%	D482		0.01		
Carbon Residue: Ramsbottom on 10% Bottom	D524		0.35		
BS&W, vol.%	D2709 or equivalent		< 0.05		
Thermal stability, 90 minutes 150°CPad rating, DuPont scale			7		
OR					
*Thermal stability	D6468				
Y/Green		73%			
W Unit		65%			
OR					
Oxidation stability, mg/100 ml	D2274		2.5		
Haze rating @ 25°C (77°F)	D4176 Procedure 2		2		
Nace Corrosion	TM0172-2001	B+ (Origin)			
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250		

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.

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3.28.2 **SPECIFICATIONS FOR FUNGIBLE LOW SULFUR HIGHWAY DIESEL FUEL GRADE 74**

Cancels Previous Issues of Grade 74

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°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (+10°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (+15°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

3. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
4. Where cetane number by test method D613 is not available, test method D4737B can be used as an approximation.
5. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.
6. Nominations will not be accepted after June 1st and will transition out of our system as of August 1st

*3.29.1 **SPECIFICATIONS FOR FUNGIBLE 500 ppm SULFUR NONROAD, LOCOMOTIVE MARINE DIESEL FUEL GRADE 75 (Credit Generated)**

EPA Designation: MVNRLM, NRLM, NR 500 ppm diesel fuel

Cancels Previous Issues of Grade 75

PRODUCT PROPERTY	ASTM Test Method	Test Results Minimum	Maximum		Note
Gravity API	D287, D1298, D4052	30			
Flash Point, °F					
Pensky-Martin	D93	130			
Physical Distillation, °C(°F)	D86				7
50%			Report		
90%		282(540)	338(640)		
End Point			366(690)		
or Simulated Distillation, °C(°F)	D2887				7
50% recovered			Report		
90% recovered		300(572)	356(673)		
End Point			421(790)		
Color ASTM	D1500,D6045		2.5		5
Color Visual		Undyed			
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4		
Pour Point	D97, D5949, D5950, D5985				2
Cloud Point	D2500, D5771, D5772, D5773				2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1		
*Total Sulfur, ppmwt	D2622, D5453 D7039		420	Origin	
Cetane Number	D613, D6890 , D7170	40			6
Ash, wt.%	D482		0.01		
Carbon Residue: Ramsbottom on 10% Bottom	D524		0.35		
BS&W, vol.%	D2709 or equivalent		< 0.05		
Thermal stability, 90 minutes 150°CPad rating, DuPont scale			7		
OR					
*Thermal stability	D6468				
Y/Green		73%			
W Unit		65%			
OR					
Oxidation stability, mg/100 ml	D2274		2.5		
Haze rating @ 25°C (77°F)	D4176 Procedure 2		2		
Nace Corrosion	TM0172-2001	B+ (Origin)			
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250		

April 2010

3.29.2 **SPECIFICATIONS FOR FUNGIBLE 500 ppm SULFUR NONROAD, LOCOMOTIVE MARINE DIESEL FUEL GRADE 75 (Credit Generated)**

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: -18°C (0°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (+10°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (+15°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

5. ASTM color measurement before addition of dye.

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. The referee test method will be ASTM D 86.

Bengal Pipeline Company

*03.30.1

SPECIFICATIONS FOR FUNGIBLE 500 ppm SULFUR LOCOMOTIVE MARINE GRADE 76

EPA Designation: MVNRLM, NRLM, LM 500 ppm sulfur diesel fuel

Cancels Previous Issues of Grade 76

PRODUCT PROPERTY	ASTM Test Method	Test Results Minimum	Maximum		Note
Gravity API	D287, D1298, D4052	30			
Flash Point, °F					
Pensky-Martin	D93	130			
Physical Distillation, °C(°F)	D86				6
50%			Report		
90%		282(540)	338(640)		
End Point			366(690)		
or Simulated Distillation, °C(°F)	D2887				6
50% recovered			Report		
90% recovered		300(572)	356(673)		
End Point			421(790)		
Color ASTM	D1500,D6045		2.5		3
Color Visual		Undyed			
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4		
Pour Point	D97, D5949, D5950, D5985,				2
Cloud Point	D2500, D5771, D5772, D5773				2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1		
Total Sulfur, ppmwt	D2622, D5453				5
	D7039, D6920		420	Origin	
Cetane Number	D613, D6890, D7170	40			4
Aromatics (Volume %)	D1319		31.7		
or Aromatics by Cetane Index	D976	40			
Ash, wt.%	D482		0.01		
Carbon Residue: Ramsbottom					
on 10% Bottom	D524		0.35		
BS&W, vol.%	D2709				
	or equivalent		< 0.05		
Thermal stability, 90 minutes					
150°CPad rating, DuPont scale			7		
OR					
*Thermal stability	D6468				
Y/Green		73%			
W Unit		65%			
OR					
Oxidation stability, mg/100 ml	D2274		2.5		
Haze rating @ 25°C (77°F)	D4176				
	Procedure 2		2		
Nace Corrosion	TM0172-2001	B+ (Origin)			
Electrical					
Conductivity, pS/m @ 21°C(70°F)	D2624		250		

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.

April 2010

3.30.2 **SPECIFICATIONS FOR FUNGIBLE 500 ppm SULFUR LOCOMOTIVE MARINE GRADE 76**

Cancels Previous Issues of Grade 76

NOTES:
1. Additives 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°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (+10°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (+15°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

3. ASTM color measurement before addition of dye.

4. Where cetane number by test method D613 is not available, test method D4737B can be used as an approximation.

5. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.

6. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

Bengal Pipeline Company

3.32 SPECIFICATIONS FOR FUNGIBLE MILITARY DIESEL FUEL MARINE GRADE 78

EPA Designation: Except distillate covered by national security exemption under 80.606

Cancels Previous Issues of Grade 78

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

Bengal Pipeline Company

3.33 SPECIFICATIONS FOR SEGREGATED DISTILLATE BLENDSTOCKS GRADE 79

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

Cancels Previous Issues of Grade 79

Product property	Method	Minimum	Maximum	Note
Gravity API	D287, D1298, D4052	25	42	
Flash Point, °F				
Pensky-Martin	D93	100		
Nace Corrosion	TM0172-2001	B+ (origin)		
Total Sulfur, ppmwt	D2622,D5453 D7039		10000	2
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Dye Requirement

This product must exhibit visual evidence that red dye is present. The maximum allowable concentration, or spectral equivalence, is 0.75 pounds of Solid Red #26 per 1,000 barrels. This product does not meet IRS excise tax requirements for dye.

A waiver from Quality Assurance for the dye requirement will be given if the source and ultimate destination are refineries.

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:

NOTE:

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 80.584). The referee test method will be ASTM D5453.

3. Additive requirements/restrictions - refer to section 3.2.

Bengal Pipeline Company

*3.34.1 **SPECIFICATIONS FOR FUNGIBLE 500 ppm SULFUR LOCOMOTIVE MARINE DIESEL FUEL - DYED BY CPC - GRADE 80**

EPA Designation: MVNRLM, NRLM, LM 500 ppm sulfur diesel fuel

Cancels Previous Issues of Grade 80

PRODUCT PROPERTY	ASTM Test Method	Test Results Minimum	Maximum		Note
Gravity API	D287, D1298, D4052	30			
Flash Point, °F					
Pensky-Martin	D93	130			
Physical Distillation, °C(°F)	D86				7
50%			Report		
90%		282(540)	338(640)		
End Point			366(690)		
or Simulated Distillation, °C(°F)	D2887				7
50% recovered			Report		
90% recovered		300(572)	356(673)		
End Point			421(790)		
Color ASTM	D1500,D6045		2.5		4
Color Visual			Undyed		
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4		
Pour Point	D97, D5949, D5950, D5985				2
Cloud Point	D2500, D5771, D5772, D5773				2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1		
Total Sulfur, ppmwt	D2622, D5453				6
	D7039, D6920		420	Origin	
Cetane Number	D613, D6890, D7170	40			5
Aromatics (Volume %)	D1319		31.7		
or Aromatics by Cetane Index	D976	40			
Ash, wt.%	D482		0.01		
Carbon Residue: Ramsbottom					
on 10% Bottom	D524		0.35		
BS&W, vol.%	D2709				
	or equivalent		< 0.05		
Thermal stability, 90 minutes					
150°CPad rating, DuPont scale			7		
OR					
*Thermal stability	D6468				
Y/Green		73%			
W Unit		65%			
OR					
Oxidation stability, mg/100 ml	D2274		2.5		
Haze rating @ 25°C (77°F)	D4176				
	Procedure 2		2		
Nace Corrosion	TM0172-2001	B+ (Origin)			
Electrical					
Conductivity, pS/m @ 21°C(70°F)	D2624		250		

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.

April 2010

3.34.2 **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°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (+10°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (+15°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

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. Where cetane number by test method D613 is not available, test method D4737B can be used as an approximation.

6. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.

7. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

Bengal Pipeline Company

*3.36.1 **SPECIFICATIONS FOR FUNGIBLE DYED LOW SULFUR DIESEL FUEL GRADE 84**

EPA Designation: MVNRLM, Motor vehicle diesel fuel, #2D, 500 ppm sulfur motor vehicle diesel fuel

Cancels Previous Issues of Grade 84

PRODUCT PROPERTY	ASTM Test Method	Test Results Minimum	Maximum	Note
Gravity API	D287, D1298, D4052	30		
Flash Point, °F				
Pensky-Martin	D93	130		
Physical Distillation, °C(°F)	D86			6
50%			Report	
90%		282(540)	338(640)	
End Point			366(690)	
or Simulated Distillation, °C(°F)	D2887			6
50% recovered			Report	
90% recovered		300(572)	356(673)	
End Point			421(790)	
Color ASTM	D1500,D6045		2.5	
Color Visual		Undyed		
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4	
Pour Point	D97, D5949, D5950, D5985,			2
Cloud Point	D2500, D5771, D5772, D5773			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D2622, D5453 D7039, D6920		420 Origin	4
Cetane Number	D613, D6890, D7170	40		5
Aromatics (Volume %)	D1319		31.7	
or Aromatics by Cetane Index	D976	40		
Ash, wt.%	D482		0.01	
Carbon Residue: Ramsbottom on 10% Bottom	D524		0.35	
BS&W, vol.%	D2709 or equivalent		< 0.05	
Thermal stability, 90 minutes 150°CPad rating, DuPont scale			7	
OR				
*Thermal stability	D6468			
Y/Green		73%		
W Unit		65%		
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
Haze rating @ 25°C (77°F)	D4176 Procedure 2		2	
Nace Corrosion	TM0172-2001	B+ (Origin)		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

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.

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3.36.2 SPECIFICATIONS FOR FUNGIBLE DYED LOW SULFUR DIESEL FUEL GRADE 84

Cancels Previous Issues of Grade 84

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°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (+10°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (+15°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

3. Dye Content:

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. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.

5. Where cetane number by test method D613 is not available, test method D4737B can be used as an approximation.

6. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

7. Nominations will not be accepted after June 1st and will transition out of our system as of August 1st

Bengal Pipeline Company

*3.37.1 **SPECIFICATIONS FOR FUNGIBLE 500 ppm SULFUR NONROAD, LOCOMOTIVE MARINE DIESEL FUEL GRADE 75- DYDED BY CPC (Credit Generated)**

EPA Designation: MVNRLM, NRLM, NR 500 ppm sulfur diesel fuel

Cancels Previous Issues of Grade 85

PRODUCT PROPERTY	ASTM Test Method	Test Results Minimum	Maximum		Note
Gravity API	D287, D1298, D4052	30			
Flash Point, °F					
Pensky-Martin	D93	130			
Physical Distillation, °C(°F)	D86				7
50%			Report		
90%		282(540)	338(640)		
End Point			366(690)		
or Simulated Distillation, °C(°F)	D2887				7
50% recovered			Report		
90% recovered		300(572)	356(673)		
End Point			421(790)		
Color ASTM	D1500,D6045		2.5		5
Color Visual		Undyed			
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4		
Pour Point	D97, D5949, D5950, D5985				2
Cloud Point	D2500, D5771, D5772, D5773				2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1		
Total Sulfur, ppmwt	D2622, D5453 D7039		420	Origin	
Cetane Number	D613, D6890, D7170	40			6
Ash, wt.%	D482		0.01		
Carbon Residue: Ramsbottom on 10% Bottom	D524		0.35		
BS&W, vol.%	D2709 or equivalent		< 0.05		
Thermal stability, 90 minutes 150°CPad rating, DuPont scale			7		
OR					
*Thermal stability	D6468				
Y/Green		73%			
W Unit		65%			
OR					
Oxidation stability, mg/100 ml	D2274		2.5		
Haze rating @ 25°C (77°F)	D4176 Procedure 2		2		
Nace Corrosion	TM0172-2001	B+ (Origin)			
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250		

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.

April 2010

3.37.2 **SPECIFICATIONS FOR FUNGIBLE 500 ppm SULFUR NONROAD, LOCOMOTIVE MARINE DIESEL FUEL GRADE 75- DYDED BY CPC (Credit Generated)**

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°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (+10°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (+15°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

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 wt. %. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.

5. ASTM color measurement before addition of dye

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. The referee test method will be ASTM D 86.

Bengal Pipeline Company

*3.38.1 **SPECIFICATIONS FOR FUNGIBLE 15 ppm SULFUR DIESEL FUEL**
NONROAD GRADE 86 - DYDED BY CPC

EPA Designation: MVNRLM,NRLM,NR 15 ppm sulfur diesel fuel

PRODUCT PROPERTY	ASTM Test Method	Test Results Minimum	Maximum		Note
Gravity API	D287, D1298, D4052	30			
Flash Point, °F					
Pensky-Martin	D93	130			
Physical Distillation, °C(°F)	D86				5
50%			Report		
90%		282(540)	338(640)		
End Point			366(690)		
or Simulated Distillation, °C(°F)	D2887				5
50% recovered			Report		
90% recovered		300(572)	356(673)		
End Point			421(790)		
Color ASTM	D1500,D6045		2.5		
Color Visual		Undyed			
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4		
Pour Point	D97, D5949, D5950, D5985				2
Cloud Point	D2500, D5771, D5772, D5773				2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1		
Total Sulfur, ppmwt	D2622, D5453				
	D7039, other		9	Origin	3
			10	Delivery	
Cetane Number	D613, D6890, D7170	40			4
Aromatics (Volume %)	D1319		31.7		
or Aromatics by Cetane Index	D976	40			
Ash, wt.%	D482		0.01		
Carbon Residue: Ramsbottom					
on 10% Bottom	D524		0.35		
BS&W, vol.%	D2709				
	or equivalent		< 0.05		
Thermal stability, 90 minutes					
150°CPad rating, DuPont scale			7		
OR					
*Thermal stability	D6468				
Y/Green		73%			
W Unit		65%			
OR					
Oxidation stability, mg/100 ml	D2274		2.5		
Haze rating @ 25°C (77°F)	D4176				
	Procedure 2		2		
Nace Corrosion	TM0172-2001	B+ (Origin)			
Electrical					
Conductivity, pS/m @ 21°C(70°F)	D2624		250		

April 2010

3.38.2 **SPECIFICATIONS FOR FUNGIBLE 15 ppm SULFUR DIESEL FUEL NONROAD GRADE 86 - DYDED BY CPC**

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.

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°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (+10°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (+15°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

3. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
4. Where cetane number by test method D613 is not available, test method D4737B can be used as an approximation.
5. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.
6. ASTM color measurment before addition of dye
7. 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.

Bengal Pipeline Company

*3.39.1

PRODUCT SPECIFICATIONS

SPECIFICATIONS FOR FUNGIBLE 2000 ppm SULFUR HEATING OIL GRADE 88

EPA Designation: Heating Oil

Cancels Previous Issues of Grade 88

PRODUCT PROPERTY	ASTM Test Method	Test Results Minimum	Maximum	Note
Gravity API	D287, D1298, D4052	30		
Flash Point, °F				
Pensky-Martin	D93	130		
Physical Distillation, °C(°F)	D86			6
50%			Report	
90%		282(540)	338(640)	
End Point			366(690)	
or Simulated Distillation, °C(°F)	D2887			6
50% recovered			Report	
90% recovered		300(572)	356(673)	
End Point			421(790)	
Color ASTM	D1500,D6045		2.5	4
Color Visual		Dyed		3
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4	
Pour Point	D97, D5949, D5950, D5985			2
Cloud Point	D2500, D5771, D5772, D5773			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D2622, D5453 D7039, D4294		2000	5
Ash, wt.%	D482		0.01	
Carbon Residue: Ramsbottom				
on 10% Bottom	D524		0.35	
BS&W, vol.%	D2709 or equivalent		< 0.05	
Thermal stability, 90 minutes				
150°CPad rating, DuPont scale			7	
OR				
*Thermal stability	D6468			
Y/Green		73%		
W Unit		65%		
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
Haze rating @ 25°C (77°F)	D4176 Procedure 2		2	
Nace Corrosion	TM0172-2001	B+ (Origin)		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

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.

April 2010

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°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (+10°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (+15°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

3. Dye Requirement:

Origin: This product must exhibit visual evidence that red dye is present. The maximum allowable concentration, or spectral equivalence, is 0.75 pounds of Solid Red #26 per 1,000 barrels.

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 80.584). The referee test method will be ASTM D5453.

6. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

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3.40 SPECIFICATIONS FOR SEGREGATED DISTILLATE BLENDSTOCKS GRADE 89

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

Cancels Previous Issues of Grade 89

Product property	Method	Minimum	Maximum	Note
Gravity API	D287, D1298, D4052	25	42	
Flash Point, °F				
Pensky-Martin	D93	100		
Nace Corrosion	TM0172-2001	B+ (origin)		
Total Sulfur, ppmwt	D2622, D5453 D7039, D4294		10,000	2
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Dye Requirement

Origin: This product must exhibit visual evidence that red dye is present. The maximum allowable concentration, or spectral equivalence, is 0.75 pounds of Solid Red #26 per 1,000 barrels.

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.

A waiver from Quality Assurance for the dye requirement will be given if the source and ultimate destination are refineries.

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:

NOTE:

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°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (+10°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (+15°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (+20°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 80.584). The referee test method will be ASTM D5453.

3. Additive requirements/restrictions - refer to section 3.2.

April 2010

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3.41 **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 - VOC Controlled
92	Distillate	RFG - Non-VOC Controlled
93	Distillate	RBOB - VOC Controlled
94	Distillate	RBOB - Non-VOC Controlled