

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Machine Id **PETERBILT 567 DT39** Component

Diesel Engine Fluid SHELL ROTELLA T4 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

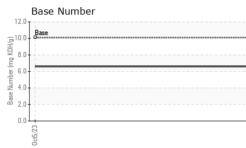
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

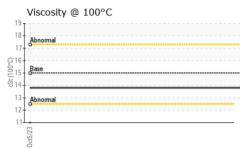
SAMPLE INFORM	/IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PE0002263		
Sample Date		Client Info		05 Oct 2023		
Machine Age	hrs	Client Info		6385		
Oil Age	hrs	Client Info		470		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	14		
Chromium	ppm		>4	<1		
Nickel	ppm	ASTM D5185m	>2	<1		
Titanium	ppm	ASTM D5185m	_	<1		
Silver	ppm	ASTM D5185m	>2	0		
Aluminum	ppm		>25	6		
Lead	ppm	ASTM D5185m	>45	1		
Copper	ppm		>85	2		
Tin	ppm	ASTM D5185m	>4	_ <1		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		<1		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	maa	method ASTM D5185m	limit/base		history1	history2
	ppm		limit/base	current 36 3		· · · · · ·
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	36 3		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	36 3 30		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	36 3 30 <1		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	36 3 30 <1 171		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	36 3 30 <1 171 1887		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	36 3 30 <1 171	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	36 3 30 <1 171 1887 888	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	36 3 30 <1 171 1887 888 1057		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	36 3 30 <1 171 1887 888 1057 3073		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	36 3 30 <1 171 1887 888 1057 3073 Current		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	limit/base >30	36 3 30 <1 171 1887 888 1057 3073 current 6	 history1 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	limit/base >30	36 3 30 <1 171 1887 888 1057 3073 <u>current</u> 6 2	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >30 >20	36 3 30 <1 171 1887 888 1057 3073 current 6 2 10	 history1 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >30 >20 limit/base	36 3 30 <1 171 1887 888 1057 3073 current 6 2 10 current	 history1 	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >30 >20 limit/base >3 >20	36 3 30 <1 171 1887 888 1057 3073 <u>current</u> 6 2 10 <u>current</u> 0.4	 history1 history1 	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >30 >20 limit/base >3 >20	36 3 30 <1 171 1887 888 1057 3073 <i>current</i> 6 2 10 <i>current</i> 0.4 8.2	 history1 history1 history1	history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >30 >20 limit/base >3 >20 >30 >30 >30 >30	36 3 30 <1 171 1887 888 1057 3073 <i>current</i> 6 2 10 <i>current</i> 0.4 8.2 18.8	 history1 history1 history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >30 >20 limit/base >3 >20 s30 >30 limit/base >25	36 3 30 <1 171 1887 888 1057 3073 current 6 2 10 current 0.4 8.2 18.8	 history1 history1 history1	



OIL ANALYSIS REPORT

VISUAL





	VISUAL		methoa	iimii/base	current	riistory i	riistoryz
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE		
	Precipitate	scalar	*Visual	NONE	NONE		
	Silt	scalar	*Visual	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE		
	Sand/Dirt	scalar	*Visual	NONE	NONE		
0ct5/23 -	Appearance	scalar	*Visual	NORML	NORML		
Octf	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water	scalar	*Visual		NEG		
	FLUID PROPERT	IES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15	13.8		
	GRAPHS						
1	Ferrous Alloys						
	¹⁴ L			-			
	12 - chromium						
	10						
	8						
	4						
	2						
				/23			
	0ct5/23			0ct5/23			
	Non-ferrous Metal	5					
	0						
	0ct5/23			0ct5/23			
	õ			00			
	Viscosity @ 100°C				Base Number		
	19 10			12.0			
	Abnormal			10.0-	Base		000000000000000000000000000000000000000
	17-			(B/HOX 8.0			
	0 16 15 8 Base			BE			
	5 15 C			a 6.0-			
				(0,H0) 6.0 - 9.0 - 8 - 0.9 8 - 0.9 8 - 0.9			
	Abnormal			2.0-			
	12			0.0			
					0ct5/23 +		
	0ct5/23				10		

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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