

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

1524200 Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

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.

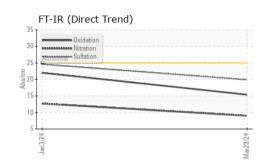
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0119233	PCA0111387	
Sample Date		Client Info		29 Mar 2024	03 Jan 2024	
Machine Age	mls	Client Info		0	144994	
Oil Age	mls	Client Info		0	0	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
		ASTM D5185m	>100		20	
Iron Chromium	ppm	ASTM D5185m ASTM D5185m	>100	15 <1	<1	
Nickel	ppm	ASTM D5185m	>20	<1 <1	< 1 0	
Titanium	ppm	ASTM D5185m ASTM D5185m	>4	<1	<1	
Silver	ppm	ASTM D5185m	>3	<1	< 1 0	
Aluminum	ppm	ASTM D5185m	>20	2	2	
Lead	ppm	ASTM D5185m	>20	2 <1	0	
	ppm			1		
Copper Tin	ppm	ASTM D5185m	>330 >15	-	<1 0	
Vanadium	ppm	ASTM D5185m	>10	<1 <1	<1	
Cadmium	ppm ppm	ASTM D5185m		0	0	
	pp			0	0	
ADDITIVES	bb	method	limit/base	current	history1	history2
	ppm		limit/base 2			history2
ADDITIVES		method		current	history1	· · · · ·
ADDITIVES Boron	ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 37	history1 97 0 18	
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm	method ASTM D5185m ASTM D5185m	2 0	current 37 0	history1 97 0 18 0	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 37 0 63 <1 798	history1 97 0 18 0 222	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current 37 0 63 <1 798 1178	history1 97 0 18 0 222 1783	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	current 37 0 63 <1 798 1178 979	history1 97 0 18 0 222 1783 835	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180	current 37 0 63 <1 798 1178	history1 97 0 18 0 222 1783 835 1088	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	current 37 0 63 <1 798 1178 979	history1 97 0 18 0 222 1783 835	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180	current 37 0 63 <1 798 1178 979 1227 3318 current	history1 97 0 18 0 222 1783 835 1088 3142 history1	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 950 1050 995 1180 2600	current 37 0 63 <1 798 1178 979 1227 3318 current 5	history1 97 0 18 0 222 1783 835 1088 3142 history1 5	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	current 37 0 63 <1 798 1178 979 1227 3318 current 5 <1	history1 97 0 18 0 222 1783 835 1088 3142 history1	 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	current 37 0 63 <1 798 1178 979 1227 3318 current 5	history1 97 0 18 0 222 1783 835 1088 3142 history1 5	 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25	current 37 0 63 <1 798 1178 979 1227 3318 current 5 <1	history1 97 0 18 0 222 1783 835 1088 3142 history1 5 1	 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20	current 37 0 63 <1 798 1178 979 1227 3318 current 5 <1 3	history1 97 0 18 0 222 1783 835 1088 3142 history1 5 1	 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 -20 imit/base	current 37 0 63 <1 798 1178 979 1227 3318 current 5 <1 3 current	history1 97 0 18 0 222 1783 835 1088 3142 history1 5 1 1 history1	 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base	current 37 0 63 <1 798 1178 979 1227 3318 current 5 <1 3 current 0 0.9	history1 97 0 18 0 222 1783 835 1088 3142 history1 5 1 history1 1 history1 1.1	 history2 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20	current 37 0 63 <1 798 1178 979 1227 3318 current 5 <1 3 current 0 9 0 9 0.9 9.0	history1 97 0 18 0 222 1783 835 1088 3142 history1 5 1 history1 1.1 12.7	 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	method ASTM D5185m ASTM D7185m ASTM D7624 *ASTM D7624 *ASTM D7415	2 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20 >30	current 37 0 63 <1 798 1178 979 1227 3318 current 5 <1 3 current 0.9 9.0 19.9 current	history1 97 0 18 0 222 1783 835 1088 3142 history1 5 1 history1 1.1 12.7 24.6 history1	 history2 history2 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20 >30	current 37 0 63 <1 798 1178 979 1227 3318 current 5 <1 3 current 0.9 9.0 19.9	history1 97 0 18 0 222 1783 835 1088 3142 history1 5 1 history1 1.1 12.7 24.6	 history2 history2 history2 history2

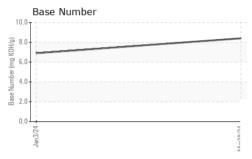


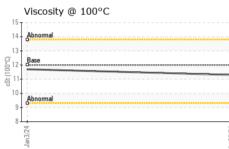
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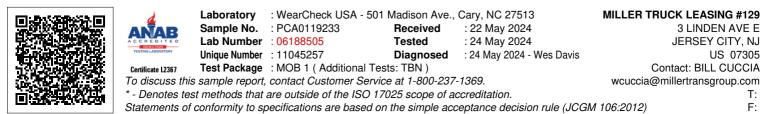
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VISUAL		method	limit/ba	ase	current	history1	history2
White Metal sca	alar	*Visual	NONE		NONE	NONE	
Yellow Metal sca	alar	*Visual	NONE		NONE	NONE	
Precipitate sca	alar	*Visual	NONE		NONE	NONE	
Silt sca	alar	*Visual	NONE		NONE	NONE	
Debris sca	alar	*Visual	NONE		NONE	NONE	
Sand/Dirt sca	alar	*Visual	NONE		NONE	NONE	
Appearance sca	alar	*Visual	NORM	-	NORML	NORML	
	alar	*Visual	NORM	-	NORML	NORML	
Emulsified Water sca	alar	*Visual	>0.2		NEG	NEG	
Free Water sca	alar	*Visual			NEG	NEG	
FLUID PROPERTI	IES	method	limit/ba	ase	current	history1	history2
Visc @ 100°C cSi	t	ASTM D445	12.00		11.3	11.7	
GRAPHS							
Iron (ppm)				100-	Lead (ppm)		
0				80	Severe		
50				ud 60			
0 - Abnormal				40	Abnormal		-
0				20			
Jan 3/24 +			9/24	0	Jan 3/24		9/24
Jan			Mar29/24		Jan		Mar29/24
Aluminum (ppm)				50	Chromium (p	pm)	
Severe				50- 40-	Severe		
0 - Abnormal				ط ³⁰	Abnormal	*****	
0				10			
0				0			
Jan3/24			Mar29/24		Jan3/24		Mar29/24
			W				W
Copper (ppm)				80	Silicon (ppm)		
V Severe Autoromnal				60			
10 -				읍 40			
					Abnormal		
10				20			
0 4 2 7			24	0	24		24 +
Jan 3/24			Mar29/24		Jan 3/24		Mar29/24
Viscosity @ 100°C			2		Base Number		2
¹⁶]				10.0			
4 Abnormal				0.8 0.9 0.9 0.1 0.2 0.2			
2 - Base		****		6.0 gu	- J		
	-			9qun 4.0-	1		
Abnormal				age 2.0			
8 Abnormal				0.0	54		14
8 + 27 20 10			Mar29/24	0.0	Jan3/24		Mar29/24



Contact/Location: BILL CUCCIA - MILJER Page 2 of 2