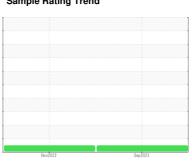


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id **820038-253**

Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- L

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

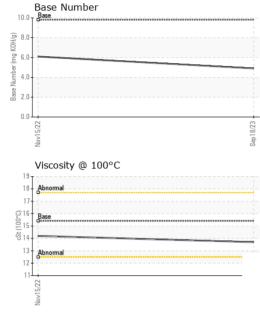
Fluid Condition

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

Sample Date Client Info 18 Sep 2023 15 Nov 2022 Machine Age hrs Client Info 0 500 Client Info 0 500 Client Info 0 500 Changed Sample Status Imit Info N/A NORMAL NORMAL CONTAMINATION method Imit Info NORMAL NORMAL MISTORY NORMAL NORMAL MISTORY NEG NEG MISTORY MIS	TR)			Nov2022	Sep2023		
Sample Date	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 500	Sample Number		Client Info		GFL0066073	GFL0055725	
Oil Age	Sample Date		Client Info		18 Sep 2023	15 Nov 2022	
Colic Changed Colic Changed Colic Changed Colic Contamination Contamination	Machine Age	hrs	Client Info		0	500	
CONTAMINATION method met	Oil Age	hrs	Client Info		0	500	
CONTAMINATION method militibase current history1 history2	Oil Changed		Client Info		N/A	Changed	
Wear	Sample Status				NORMAL	_	
WEAR METALS	CONTAMINAT	TION	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 28 32	Fuel		WC Method	>6.0	<1.0	<1.0	
Chromium	Glycol		WC Method		NEG	NEG	
Chromium	WEAR METAL	_S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	28	32	
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	1	
Silver	Nickel	ppm	ASTM D5185m	>2	0	<1	
Silver	Titanium	ppm	ASTM D5185m		0	0	
Aluminum	Silver		ASTM D5185m	>2	0	0	
Lead	Aluminum		ASTM D5185m	>25	6	4	
Copper ppm ASTM D5185m >330 10 6 Tin ppm ASTM D5185m >15 <1	Lead				-	1	
Tin							
Vanadium ppm ASTM D5185m 0 0 Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 6 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 60 62 64 Manganese ppm ASTM D5185m 0 <1 <1 Magnesium ppm ASTM D5185m 1010 886 869 Calcium ppm ASTM D5185m 1070 1068 1240 Phosphorus ppm ASTM D5185m 1270 1200 1267 Sulfur ppm ASTM D5185m 2060 2696 2656 CONTAMINANTS method limit/base current					-		
ADDITIVES				710			
Boron ppm ASTM D5185m 0 2 6							
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 62 64 Manganese ppm ASTM D5185m 0 <1	Boron	ppm	ASTM D5185m	0	2	6	
Manganese ppm ASTM D5185m 0 <1 <1 Magnesium ppm ASTM D5185m 1010 886 869 Calcium ppm ASTM D5185m 1070 1068 1240 Phosphorus ppm ASTM D5185m 1150 927 956 Zinc ppm ASTM D5185m 1270 1200 1267 Sulfur ppm ASTM D5185m 2060 2696 2656 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 Sodium ppm ASTM D5185m >20 9 6 Potassium ppm ASTM D5185m >20 9 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 <	Barium	ppm	ASTM D5185m	0	0	0	
Manganese ppm ASTM D5185m 0 <1 <1 Magnesium ppm ASTM D5185m 1010 886 869 Calcium ppm ASTM D5185m 1070 1068 1240 Phosphorus ppm ASTM D5185m 1150 927 956 Zinc ppm ASTM D5185m 1270 1200 1267 Sulfur ppm ASTM D5185m 2060 2696 2656 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 Sodium ppm ASTM D5185m >20 9 6 Potassium ppm ASTM D5185m >20 9 6 INFRA-RED method limit/base current history1 history2 Soot % %	Molybdenum		ASTM D5185m	60		64	
Magnesium ppm ASTM D5185m 1010 886 869 Calcium ppm ASTM D5185m 1070 1068 1240 Phosphorus ppm ASTM D5185m 1150 927 956 Zinc ppm ASTM D5185m 1270 1200 1267 Sulfur ppm ASTM D5185m 2060 2696 2656 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 Sodium ppm ASTM D5185m 6 6 Potassium ppm ASTM D5185m >20 9 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.9 Nitration Abs/cm *ASTM D7415	-		ASTM D5185m	0	<1	<1	
Calcium ppm ASTM D5185m 1 070 1068 1240 Phosphorus ppm ASTM D5185m 1 150 927 956 Zinc ppm ASTM D5185m 1270 1200 1267 Sulfur ppm ASTM D5185m 2060 2696 2656 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 Sodium ppm ASTM D5185m >20 9 6 Potassium ppm ASTM D5185m >20 9 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.9 Nitration Abs/.1mm *ASTM D7415 >30 22.7 25.1 FLUID DEGRADATION	-				886		
Phosphorus ppm ASTM D5185m 1150 927 956 Zinc ppm ASTM D5185m 1270 1200 1267 Sulfur ppm ASTM D5185m 2060 2696 2656 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 Sodium ppm ASTM D5185m 6 6 Potassium ppm ASTM D5185m >20 9 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.9 Nitration Abs/cm *ASTM D7415 >30 22.7 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D74	-						
Zinc						956	
Sulfur ppm ASTM D5185m 2060 2696 2656 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 Sodium ppm ASTM D5185m 6 6 Potassium ppm ASTM D5185m >20 9 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.9 Nitration Abs/.1mm *ASTM D7624 >20 9.5 11.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.7 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.5 21.6							
Silicon ppm ASTM D5185m >25 4 5							
Solicon ppm ASTM D5185m >25 4 5	CONTAMINAN	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 9 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.9 Nitration Abs/cm *ASTM D7624 >20 9.5 11.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.7 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.5 21.6					4		
INFRA-RED	Sodium	ppm	ASTM D5185m		6	6	
Soot % % *ASTM D7844 >3 0.9 0.9 Nitration Abs/cm *ASTM D7624 >20 9.5 11.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.7 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.5 21.6	Potassium	ppm	ASTM D5185m	>20	9	6	
Nitration Abs/cm *ASTM D7624 >20 9.5 11.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.7 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.5 21.6	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 9.5 11.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.7 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.5 21.6	Soot %	%	*ASTM D7844	>3	0.9	0.9	
Sulfation Abs/.1mm *ASTM D7415 >30 22.7 25.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.5 21.6							
Oxidation							
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	19.5	21.6	
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	4.9	6.1	



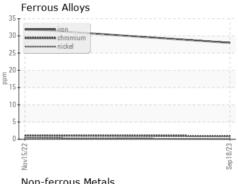
OIL ANALYSIS REPORT



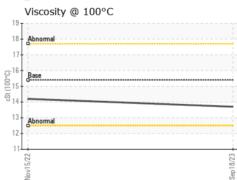
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Odor	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	

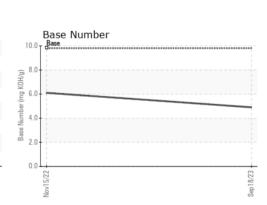
FLUID FROF		memod			HISTORY	HISTOLYZ
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	14.2	

GRAPHS



10 T :	
copper seasons lead	
6-	
4	
2	
Nov15/22 -	Sep18/23 -
Viscosity @ 100%	









Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10670960 Test Package : FLEET

: GFL0066073 : 05964409

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 29 Sep 2023 Diagnosed Diagnostician : Wes Davis

: 29 Sep 2023

GFL Environmental - 904 - Chippewa Falls HC

11888 & 11863 30th Avenue Chippewa Falls, WI US 54729

Contact: Andy Kane

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

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