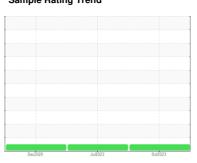


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id **922004 - 9921**

Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- LTR)

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.

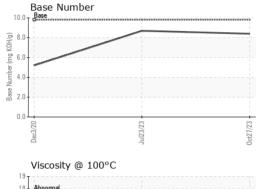
Fluid Condition

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

Machine Age hrs Client Info 28611 0 264516 Oil Age hrs Client Info 28611 0 0 Oil Changed Client Info Not Changd N/A Changed Sample Status NORMAL NORMAL NORMAL NORMAL CONTAMINATION method Imitibase current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 8 18 14 Chromium ppm ASTM D5185m >20 <1 <1 <1 64 Silver ppm ASTM D5185m >20 <1 3 2 Iron ppm ASTM D5185m 20 <1 3 2 Iron <th>-TR)</th> <th></th> <th>Dec</th> <th>2020</th> <th>Jul2023 Oct20</th> <th>23</th> <th></th>	-TR)		Dec	2020	Jul2023 Oct20	23	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Date Client Info 27 Oct 2023 23 Jul 2023 03 Dec 2020 Machine Age hrs Client Info 28611 0 264516 Oil Age hrs Client Info 28611 0 0 Oil Changed Client Info Not Changed N/A Changed Sample Status Client Info NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	Sample Number		Client Info		GFL0091795	GFL0086612	GFL0014986
Oil Age hrs Client Info 28611 Not Changd N/A Changed NORMAL NO Changed NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL 1.0 4.0 4.0 4.0 4.0 4.1	Sample Date		Client Info		27 Oct 2023	23 Jul 2023	03 Dec 2020
Cilient Info Not Changed NORMAL NORMAL NORMAL NORMAL NORMAL	Machine Age	hrs	Client Info		28611	0	264516
NORMAL NORMAL NORMAL	Oil Age	hrs	Client Info		28611	0	0
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Oil Changed		Client Info		Not Changd	N/A	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 8 18 14 Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >4 1 3 2 Titanium ppm ASTM D5185m 3 0 0 0 Alluminum ppm ASTM D5185m >3 0 0 0 Alluminum ppm ASTM D5185m >40 0 <1 0 Alluminum ppm ASTM D5185m >40 0 <1 0 Lead ppm ASTM D5185m >40 0 <1 0 Copper ppm ASTM D5185m >15 1 <1 0 Vanadium ppm ASTM D5185m 0 <1 0 0 Cadmium ppm ASTM D5185m 0 2 <1 <th>Fuel</th> <th></th> <th>WC Method</th> <th>>5</th> <th><1.0</th> <th><1.0</th> <th><1.0</th>	Fuel		WC Method	>5	<1.0	<1.0	<1.0
Irron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	8	18	14
Titanium ppm ASTM D5185m <1	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>4	1	3	2
Aluminum	Titanium	ppm	ASTM D5185m		<1	<1	64
Lead	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m 330 <1	Aluminum	ppm	ASTM D5185m	>20	<1	3	2
Tin ppm ASTM D5185m >15 1 <1 0 Antimony ppm ASTM D5185m	Lead	ppm	ASTM D5185m	>40	0	<1	0
Antimony	Copper	ppm	ASTM D5185m	>330	<1	1	1
Vanadium ppm ASTM D5185m 0 <1		ppm	ASTM D5185m	>15	1	<1	0
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 <1 10 Barium ppm ASTM D5185m 0 19 0 0 Molybdenum ppm ASTM D5185m 60 56 63 13 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 853 993 495 Calcium ppm ASTM D5185m 1070 919 1132 1593 Phosphorus ppm ASTM D5185m 1270 1104 1275 1114 Sulfur ppm ASTM D5185m 2060 3920 3635 2699 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 <1<	Antimony	ppm	ASTM D5185m				0
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 <1 10 Barium ppm ASTM D5185m 0 19 0 0 Molybdenum ppm ASTM D5185m 60 56 63 13 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 853 993 495 Calcium ppm ASTM D5185m 1070 919 1132 1593 Phosphorus ppm ASTM D5185m 1270 1104 1275 1114 Sulfur ppm ASTM D5185m 2060 3920 3635 2699 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20<	Vanadium	ppm			0		
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 19 0 0 Molybdenum ppm ASTM D5185m 60 56 63 13 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 853 993 495 Calcium ppm ASTM D5185m 1070 919 1132 1593 Phosphorus ppm ASTM D5185m 1150 929 1071 948 Zinc ppm ASTM D5185m 1270 1104 1275 1114 Sulfur ppm ASTM D5185m 2060 3920 3635 2699 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 <1 0 0 INFRA-RED method limit/base<	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 56 63 13 Manganese ppm ASTM D5185m 0 <1	Boron	ppm	ASTM D5185m	0	2	<1	10
Manganese ppm ASTM D5185m 0 <1	Barium	ppm	ASTM D5185m	0	19	0	0
Magnesium ppm ASTM D5185m 1010 853 993 495 Calcium ppm ASTM D5185m 1070 919 1132 1593 Phosphorus ppm ASTM D5185m 1150 929 1071 948 Zinc ppm ASTM D5185m 1270 1104 1275 1114 Sulfur ppm ASTM D5185m 2060 3920 3635 2699 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 <1 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.3 0.5 Nitration Abs/cm *ASTM D7624 >20 6.6 9.2 11.7 Sulfation Abs/.1mm *ASTM D741	Molybdenum	ppm	ASTM D5185m	60	56	63	13
Calcium ppm ASTM D5185m 1070 919 1132 1593 Phosphorus ppm ASTM D5185m 1150 929 1071 948 Zinc ppm ASTM D5185m 1270 1104 1275 1114 Sulfur ppm ASTM D5185m 2060 3920 3635 2699 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 <1 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.3 0.5 Nitration Abs/cm *ASTM D7624 >20 6.6 9.2 11.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 22.0 27.4 FLUID DEGRADATION *ASTM D7414	Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 1150 929 1071 948 Zinc ppm ASTM D5185m 1270 1104 1275 1114 Sulfur ppm ASTM D5185m 2060 3920 3635 2699 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 <1 0 0 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 >3 0.2 0.3 0.5 Nitration Abs/cm "ASTM D7624 >20 6.6 9.2 11.7 Sulfation Abs/.1mm "ASTM D7415 >30 17.7 22.0 27.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm	Magnesium	ppm	ASTM D5185m	1010	853	993	495
Zinc ppm ASTM D5185m 1270 1104 1275 1114 Sulfur ppm ASTM D5185m 2060 3920 3635 2699 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 <1 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.3 0.5 Nitration Abs/cm *ASTM D7624 >20 6.6 9.2 11.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 22.0 27.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.9 21.1 21.1	Calcium	ppm	ASTM D5185m	1070	919	1132	1593
Sulfur ppm ASTM D5185m 2060 3920 3635 2699 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 <1 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.3 0.5 Nitration Abs/cm *ASTM D7624 >20 6.6 9.2 11.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 22.0 27.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.9 21.1 21.1	Phosphorus	ppm		1150	929		948
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m 4 2 12 Potassium ppm ASTM D5185m >20 <1 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.3 0.5 Nitration Abs/cm *ASTM D7624 >20 6.6 9.2 11.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 22.0 27.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.9 21.1 21.1	-	ppm			-		
Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m 4 2 12 Potassium ppm ASTM D5185m >20 <1		• •	ASTM D5185m	2060	3920	3635	2699
Sodium ppm ASTM D5185m 4 2 12 Potassium ppm ASTM D5185m >20 <1	CONTAMINAN	TS		limit/base	current	history1	
Potassium ppm ASTM D5185m >20 <1		• • • • • • • • • • • • • • • • • • • •		>25			
INFRA-RED		ppm					
Soot % % *ASTM D7844 >3 0.2 0.3 0.5 Nitration Abs/cm *ASTM D7624 >20 6.6 9.2 11.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 22.0 27.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.9 21.1 21.1	Potassium	ppm	ASTM D5185m	>20	<1	0	0
Nitration Abs/cm *ASTM D7624 >20 6.6 9.2 11.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 22.0 27.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.9 21.1 21.1	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.7 22.0 27.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.9 21.1 21.1	Soot %	%	*ASTM D7844	>3	0.2	0.3	0.5
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.9 21.1 21.1	Nitration	Abs/cm	*ASTM D7624	>20	6.6	9.2	11.7
Oxidation Abs/.1mm *ASTM D7414 >25 13.9 21.1 21.1	Sulfation	Abs/.1mm	*ASTM D7415	>30	17.7	22.0	27.4
	FLUID DEGRAD	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.4 8.7 5.2	Oxidation	Abs/.1mm	*ASTM D7414	>25	13.9	21.1	21.1
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.4	8.7	5.2



OIL ANALYSIS REPORT



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

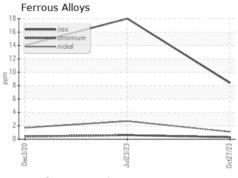
13.4

13.2

13.6

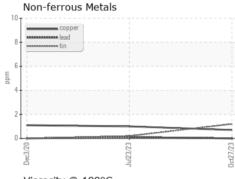
19		
18 - Abnormal		
17-	 	
Base	 	 -
Base 15	 	
Abnormal	 	
11	 	
/20	/23	
Dec3	Jul23/	

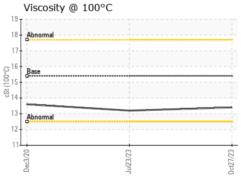
Visc @ 100°C **GRAPHS**

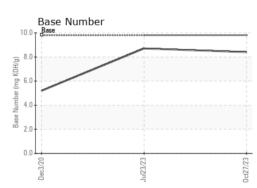


cSt

ASTM D445 15.4









Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10722354 Test Package : FLEET

: GFL0091795 : 05993994

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 31 Oct 2023 Diagnosed : 31 Oct 2023

Diagnostician : Wes Davis

GFL Environmental - 654 - Richmond Hauling

11800 Lewis Road Chester, VA US 23831 Contact: Jimmy Mayes

jmayes@gflenv.com

T:

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)

F: