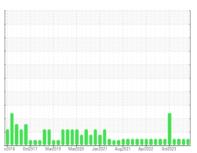


OIL ANALYSIS REPORT

Sample Rating Trend









Area
(MH9305)
2404
Component
Diesel Engine

PETRO CANADA DURON SHP 15W40 (10 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

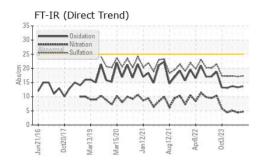
Fluid Condition

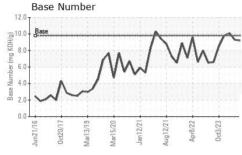
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

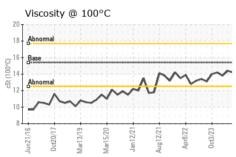
Sample Date Client Info 02 Jul 2024 21 May 2024 06 Feb 2024 Machine Age mls Client Info 292115 29211	SAMPLE INFORM	ATION	method	limit/base	current	history1	history2	
Machine Age mls Client Info 292115 292	Sample Number		Client Info		GFL0125788	GFL0118409	GFL0088526	
Oil Age mls Client Info 50 50 50 Oil Changed Client Info N/A N/A N/A N/A Sample Status NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 client Wear WC Method 9-0.1 NEG NEG NEG Wear WC Method 9-0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 3 3 3 Iron ppm ASTM D5185m >80 3 3 3 Iron ppm ASTM D5185m >2 -1 0 0 Iron ppm ASTM D5185m >2 -1 0 0 Iron ppm ASTM D5185m >9 -1 -1 0 Ilead ppm <td>Sample Date</td> <td></td> <td>Client Info</td> <td></td> <th>02 Jul 2024</th> <td>21 May 2024</td> <td>06 Feb 2024</td>	Sample Date		Client Info		02 Jul 2024	21 May 2024	06 Feb 2024	
Oil Changed Client Info N/A N/A N/A NORMAL	Machine Age r	mls	Client Info		292115	292115	292115	
Oil Changed Sample Status Client Info N/A NAG NAG <t< td=""><td>Oil Age r</td><td>nls</td><td>Client Info</td><td></td><th>50</th><td>50</td><td>50</td></t<>	Oil Age r	nls	Client Info		50	50	50	
NORMAL NORMAL NORMAL NORMAL CONTAMINATION method imit/base current history1 history2 history2 variety history2 history2 variety vari	-		Client Info		N/A	N/A	N/A	
Fuel	Sample Status							
Water WC Method >0.1 NEG NEG NEG Glycol WC Method Imitibase Current history1 history2 WEAR METALS method limitibase current history1 history2 Iron ppm ASTM D5185m >80 3 3 3 Chromium ppm ASTM D5185m >2 <1	CONTAMINATIO	N	method	limit/base	current	history1	history2	
WEAR METALS	Fuel		WC Method	>4.0	<1.0	<1.0	<1.0	
WEAR METALS	Water		WC Method	>0.1	NEG	NEG	NEG	
Irron	Glycol		WC Method		NEG	NEG	NEG	
Chromium ppm ASTM D5185m >6 <1 0 <1 Nickel ppm ASTM D5185m >2 <1	WEAR METALS		method	limit/base	current	history1	history2	
Chromium ppm ASTM D5185m >6 <1 0 <1 Nickel ppm ASTM D5185m >2 <1	Iron p	opm	ASTM D5185m	>80	3	3	3	
Nickel			ASTM D5185m	>6		0	<1	
Titanium								
Silver								
Aluminum								
Lead	'							
Copper ppm ASTM D5185m >85 1 0 <1 Tin ppm ASTM D5185m >9 <1								
Tin								
Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 4 8 Barium ppm ASTM D5185m 0 <1 0 0 Molybdenum ppm ASTM D5185m 0 <1 0 0 Manganese ppm ASTM D5185m 0 <1 <1 <1 <1 Magnesium ppm ASTM D5185m 1070 1068 1038 956 Phosphorus ppm ASTM D5185m 1070 1068 1038 956 Phosphorus ppm ASTM D5185m 1270 1170 1233 1214 Sulfur ppm ASTM D5185m 2060 2762 3575 3035 CONTAMINANTS method limit/base current								
Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 4 8 Barium ppm ASTM D5185m 0 <1				>9				
ADDITIVES								
Boron	'	opm	ASTM D5185m		<1			
Barium ppm ASTM D5185m 0 <1 0 0 Molybdenum ppm ASTM D5185m 60 59 59 56 Manganese ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum ppm ASTM D5185m 60 59 59 56 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 894 938 889 Calcium ppm ASTM D5185m 1070 1068 1038 956 Phosphorus ppm ASTM D5185m 1150 963 1044 1054 Zinc ppm ASTM D5185m 1270 1170 1233 1214 Sulfur ppm ASTM D5185m 2060 2762 3575 3035 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 5 2 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 <		opm						
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 894 938 889 Calcium ppm ASTM D5185m 1070 1068 1038 956 Phosphorus ppm ASTM D5185m 1150 963 1044 1054 Zinc ppm ASTM D5185m 1270 1170 1233 1214 Sulfur ppm ASTM D5185m 2060 2762 3575 3035 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 5 2 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7845		opm	ASTM D5185m	0			0	
Magnesium ppm ASTM D5185m 1010 894 938 889 Calcium ppm ASTM D5185m 1070 1068 1038 956 Phosphorus ppm ASTM D5185m 1150 963 1044 1054 Zinc ppm ASTM D5185m 1270 1170 1233 1214 Sulfur ppm ASTM D5185m 2060 2762 3575 3035 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 5 2 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 4.7 4.4 5.1 Sulfation Abs/.1mm *ASTM D7415 >30 17.3 17.1 17.3 FLUID DEGRADATION *ASTM D7414	Molybdenum p	opm			59	59	56	
Calcium ppm ASTM D5185m 1070 1068 1038 956 Phosphorus ppm ASTM D5185m 1150 963 1044 1054 Zinc ppm ASTM D5185m 1270 1170 1233 1214 Sulfur ppm ASTM D5185m 2060 2762 3575 3035 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 5 2 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 4.7 4.4 5.1 Sulfation Abs/.1mm *ASTM D7415 >30 17.3 17.1 17.3 FLUID DEGRADATION *ASTM	Manganese p	opm	ASTM D5185m	0	<1	<1	<1	
Phosphorus ppm ASTM D5185m 1150 963 1044 1054 Zinc ppm ASTM D5185m 1270 1170 1233 1214 Sulfur ppm ASTM D5185m 2060 2762 3575 3035 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 5 2 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 4.7 4.4 5.1 Sulfation Abs/.1mm *ASTM D7415 >30 17.3 17.1 17.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D741	Magnesium p	pm	ASTM D5185m	1010	894	938	889	
Zinc ppm ASTM D5185m 1270 1170 1233 1214 Sulfur ppm ASTM D5185m 2060 2762 3575 3035 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 5 2 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 4.7 4.4 5.1 Sulfation Abs/.1mm *ASTM D7415 >30 17.3 17.1 17.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.6 13.3 13.7	Calcium	opm	ASTM D5185m	1070	1068	1038	956	
Sulfur ppm ASTM D5185m 2060 2762 3575 3035 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m 1 1 3 Potassium ppm ASTM D5185m >20 5 2 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 4.7 4.4 5.1 Sulfation Abs/.1mm *ASTM D7415 >30 17.3 17.1 17.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.6 13.3 13.7	Phosphorus p	opm	ASTM D5185m	1150	963	1044	1054	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m 1 1 3 Potassium ppm ASTM D5185m >20 5 2 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 4.7 4.4 5.1 Sulfation Abs/.1mm *ASTM D7415 >30 17.3 17.1 17.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.6 13.3 13.7	Zinc	opm	ASTM D5185m	1270	1170	1233	1214	
Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m 1 1 3 Potassium ppm ASTM D5185m >20 5 2 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 4.7 4.4 5.1 Sulfation Abs/.1mm *ASTM D7415 >30 17.3 17.1 17.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.6 13.3 13.7	Sulfur p	opm	ASTM D5185m	2060	2762	3575	3035	
Sodium ppm ASTM D5185m 1 1 3 Potassium ppm ASTM D5185m >20 5 2 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 4.7 4.4 5.1 Sulfation Abs/.1mm *ASTM D7415 >30 17.3 17.1 17.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.6 13.3 13.7	CONTAMINANT	S	method	limit/base	current	history1	history2	
Potassium ppm ASTM D5185m >20 5 2 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 4.7 4.4 5.1 Sulfation Abs/.1mm *ASTM D7415 >30 17.3 17.1 17.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.6 13.3 13.7	Silicon p	opm	ASTM D5185m	>25	4	4	5	
INFRA-RED	Sodium p	opm	ASTM D5185m		1	1	3	
Soot % *ASTM D7844 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 4.7 4.4 5.1 Sulfation Abs/.1mm *ASTM D7415 >30 17.3 17.1 17.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.6 13.3 13.7	Potassium p	opm	ASTM D5185m	>20	5	2	7	
Nitration Abs/cm *ASTM D7624 >20 4.7 4.4 5.1 Sulfation Abs/.1mm *ASTM D7415 >30 17.3 17.1 17.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.6 13.3 13.7	INFRA-RED		method	limit/base	current	history1	history2	
Nitration Abs/cm *ASTM D7624 >20 4.7 4.4 5.1 Sulfation Abs/.1mm *ASTM D7415 >30 17.3 17.1 17.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.6 13.3 13.7	Soot %	%	*ASTM D7844		0.1	0.1	0.1	
Sulfation Abs/.1mm *ASTM D7415 >30 17.3 17.1 17.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.6 13.3 13.7		Abs/cm		>20				
Oxidation Abs/.1mm *ASTM D7414 >25 13.6 13.3 13.7								
	FLUID DEGRADATION method limit/base current history1 history2							
	Oxidation A	Abs/.1mm	*ASTM D7414	>25	13.6	13.3	13.7	
				. = -				



OIL ANALYSIS REPORT



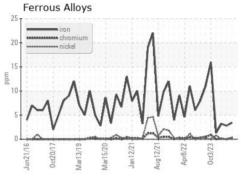


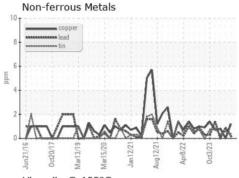


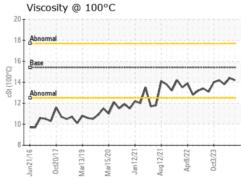
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

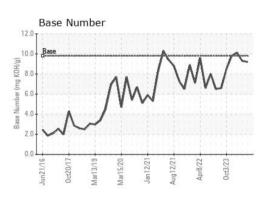
FLUID PROPERTIES		method				history2	
Visc @ 100°C	cSt	ASTM D445	15.4	14.2	14.4	13.8	

GRAPHS













Laboratory Sample No.

: GFL0125788 Lab Number : 06225806 Unique Number : 11109299

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 02 Jul 2024 **Tested**

: 03 Jul 2024 Diagnosed : 03 Jul 2024 - Wes Davis

GFL Environmental - 017 - Durham

148 Stone Park Court Durham, NC

bill.waring@wearcheck.com

US 27703 Contact:

T: (919)596-1363

F: (919)598-1852

Test Package : FLEET Certificate 12367 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)