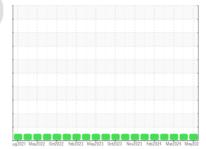


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 920077-205331

Diesel Engine

PETRO CANADA DURON SHP 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.

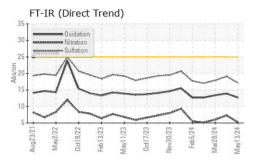
Fluid Condition

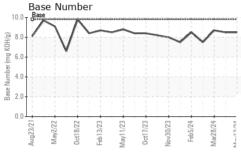
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

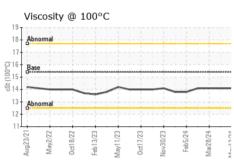
SAMPLE INFORMATION method limit/base current history1 history2	āAL)		ug2021 May20	22 Oct2022 Feb2023 May2	023 Oct2023 Nov2023 Feb2024 M:	ar2024 May202	
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Date	Sample Number		Client Info		GFL0118240	GFL0118235	GFL0109127
Machine Age hrs Client Info 11820 11714 11398 Oil Age hrs Client Info 150 700 150 Oil Changed Client Info Not Changd			Client Info		13 May 2024	27 Apr 2024	28 Mar 2024
Oil Age hrs Client Info 150 700 150 Oil Changed Sample Status Client Info Not Changd		hrs	Client Info			11714	11398
NORMAL NORMAL NORMAL	•	hrs	Client Info		150	700	150
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imitivase Current history1 history2 Iron ppm ASTM D5185m >100 3 9 4 Chromium ppm ASTM D5185m >100 3 9 4 Chromium ppm ASTM D5185m >4 <1 0 0 Nickel ppm ASTM D5185m >4 <1 0 0 Silver ppm ASTM D5185m >4 <1 0 0 Silver ppm ASTM D5185m >20 1 2 <1 Lead ppm ASTM D5185m >330 1 1 <1 <1 Copper ppm ASTM D5185m >15 <1 <1 0 <th>Oil Changed</th> <th></th> <th>Client Info</th> <th></th> <th>Not Changd</th> <th>Not Changd</th> <th>Not Changd</th>	Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 3 9 4 Chromium ppm ASTM D5185m >20 <1 <1 0 Nickel ppm ASTM D5185m >4 <1 0 0 Sliver ppm ASTM D5185m >4 <1 0 0 Sliver ppm ASTM D5185m >40 <1 0 0 Aluminum ppm ASTM D5185m >20 1 2 <1 Lead ppm ASTM D5185m >40 <1 0 0 Copper ppm ASTM D5185m >15 <1 <1 0 Vanadium ppm ASTM D5185m >15 <1 <1 0 Cadmium ppm ASTM D5185m 0 <1 1	CONTAMINAT	ION	method	limit/base	current	history1	history2
Second WC Method NEG NEG NEG	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1 <1 0 Nickel ppm ASTM D5185m >4 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	3	9	4
Titanium ppm ASTM D5185m <1 0 0 Silver ppm ASTM D5185m >3 1 0 0 Aluminum ppm ASTM D5185m >20 1 2 <1	Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Silver	Nickel	ppm	ASTM D5185m	>4	<1	0	0
Aluminum	Titanium	ppm	ASTM D5185m		<1	0	0
Lead	Silver	ppm	ASTM D5185m	>3	1	0	0
Copper ppm ASTM D5185m >330 1 1 <1 <1 Tin ppm ASTM D5185m >15 <1	Aluminum	ppm	ASTM D5185m	>20	1	2	<1
Tin ppm ASTM D5185m >15 <1 <1 0 Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1	Lead	ppm			<1	0	0
Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1 1 0 Barium ppm ASTM D5185m 0 <1 0 0 Molybdenum ppm ASTM D5185m 0 <1 <1 0 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 924 944 997 Calcium ppm ASTM D5185m 1070 1038 1096 1108 Phosphorus ppm ASTM D5185m 1270 1201 1271 1313 Sulfur ppm ASTM D5185m 2260 3239 3484 3812 CONTAMINANTS method limit/base current history1	Copper	ppm	ASTM D5185m	>330	1	1	<1
Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1	Tin	ppm	ASTM D5185m	>15	<1	<1	0
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	0	<1
Boron	Cadmium	ppm	ASTM D5185m		<1	0	0
Barium ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 57 59 61 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 924 944 997 Calcium ppm ASTM D5185m 1070 1038 1096 1108 Phosphorus ppm ASTM D5185m 1150 998 1093 1074 Zinc ppm ASTM D5185m 1270 1201 1271 1313 Sulfur ppm ASTM D5185m 2060 3239 3484 3812 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 2 2 Sodium ppm ASTM D5185m >20 3 1 <1 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 >3<	Boron	ppm					0
Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 924 944 997 Calcium ppm ASTM D5185m 1070 1038 1096 1108 Phosphorus ppm ASTM D5185m 1150 998 1093 1074 Zinc ppm ASTM D5185m 1270 1201 1271 1313 Sulfur ppm ASTM D5185m 2060 3239 3484 3812 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 2 2 Sodium ppm ASTM D5185m >20 3 1 <1	Barium	ppm					0
Magnesium ppm ASTM D5185m 1010 924 944 997 Calcium ppm ASTM D5185m 1070 1038 1096 1108 Phosphorus ppm ASTM D5185m 1150 998 1093 1074 Zinc ppm ASTM D5185m 1270 1201 1271 1313 Sulfur ppm ASTM D5185m 2060 3239 3484 3812 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 2 2 Sodium ppm ASTM D5185m >20 3 4 2 Potassium ppm ASTM D5185m >20 3 1 <1	•	ppm					
Calcium ppm ASTM D5185m 1070 1038 1096 1108 Phosphorus ppm ASTM D5185m 1150 998 1093 1074 Zinc ppm ASTM D5185m 1270 1201 1271 1313 Sulfur ppm ASTM D5185m 2060 3239 3484 3812 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 2 2 Sodium ppm ASTM D5185m >20 3 1 <1	-	ppm	ASTM D5185m				
Phosphorus ppm ASTM D5185m 1150 998 1093 1074 Zinc ppm ASTM D5185m 1270 1201 1271 1313 Sulfur ppm ASTM D5185m 2060 3239 3484 3812 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 2 2 Sodium ppm ASTM D5185m >20 3 1 <1	0	ppm			-		
Zinc ppm ASTM D5185m 1270 1201 1271 1313 Sulfur ppm ASTM D5185m 2060 3239 3484 3812 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 2 2 Sodium ppm ASTM D5185m >20 3 4 2 Potassium ppm ASTM D5185m >20 3 1 <1		ppm					
Sulfur ppm ASTM D5185m 2060 3239 3484 3812 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 2 2 Sodium ppm ASTM D5185m >20 3 4 2 Potassium ppm ASTM D5185m >20 3 1 <1							
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 2 2 Sodium ppm ASTM D5185m 3 4 2 Potassium ppm ASTM D5185m >20 3 1 <1							
Silicon ppm ASTM D5185m >25 4 2 2 Sodium ppm ASTM D5185m 3 4 2 Potassium ppm ASTM D5185m >20 3 1 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.7 0.4 Nitration Abs/cm *ASTM D7624 >20 5.2 7.3 6.0 Sulfation Abs/.1mm *ASTM D7415 >30 17.1 19.1 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.7 13.9 13.4			ASTM D5185m	2060	3239	3484	3812
Sodium ppm ASTM D5185m 3 4 2 Potassium ppm ASTM D5185m >20 3 1 <1		ITS	method	limit/base	current	· ·	history2
Potassium ppm ASTM D5185m >20 3 1 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.7 0.4 Nitration Abs/cm *ASTM D7624 >20 5.2 7.3 6.0 Sulfation Abs/.1mm *ASTM D7415 >30 17.1 19.1 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.7 13.9 13.4				>25			
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.7 0.4 Nitration Abs/cm *ASTM D7624 >20 5.2 7.3 6.0 Sulfation Abs/.1mm *ASTM D7415 >30 17.1 19.1 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.7 13.9 13.4		ppm					
Soot % % *ASTM D7844 >3 0.2 0.7 0.4 Nitration Abs/cm *ASTM D7624 >20 5.2 7.3 6.0 Sulfation Abs/.1mm *ASTM D7415 >30 17.1 19.1 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.7 13.9 13.4		ppm	ASTM D5185m	>20	3	1	<1
Nitration Abs/cm *ASTM D7624 >20 5.2 7.3 6.0 Sulfation Abs/.1mm *ASTM D7415 >30 17.1 19.1 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.7 13.9 13.4	INFRA-RED		method	limit/base		history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.1 19.1 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.7 13.9 13.4				>3			
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.7 13.9 13.4	Nitration	Abs/cm	*ASTM D7624	>20	5.2		
Oxidation Abs/.1mm *ASTM D7414 >25 12.7 13.9 13.4	Sulfation	Abs/.1mm	*ASTM D7415	>30	17.1	19.1	17.9
	FLUID DEGRAI	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.5 8.5 8.7	Oxidation	Abs/.1mm	*ASTM D7414	>25	12.7	13.9	13.4
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.5	8.5	8.7



OIL ANALYSIS REPORT





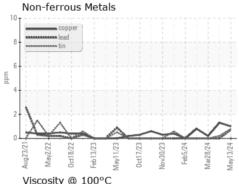


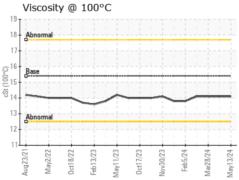
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

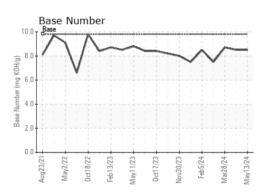
FLUID PROPI	ERIIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	14.1	14.1

GRAPHS

Ferrous Alloys











Laboratory Sample No.

: GFL0118240 Lab Number : 06191831 Unique Number : 11048583

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 28 May 2024 **Tested**

: 29 May 2024 Diagnosed : 29 May 2024 - Wes Davis

GFL Environmental - 822 - Springfield Hauling

2120 West Bennett Street Springfield, MO US 65807

Contact: Dennis Moore dennis.moore@gflenv.com T: (417)403-3641

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)

Report Id: GFL822 [WUSCAR] 06191831 (Generated: 05/29/2024 10:35:20) Rev: 1

Submitted By: Dennis Moore