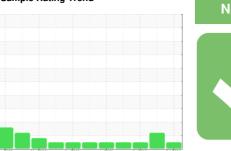


OIL ANALYSIS REPORT

Sample Rating Trend







713017
Component
Diesel Engine
Fluid

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

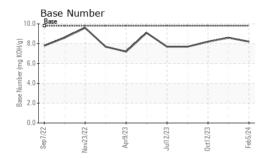
Fluid Condition

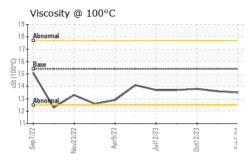
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Date Client Info 05 Feb 2024 28 Dec 2023 12 Oct 2023 Machine Age hrs Client Info 4473 4157 3691 Oil Age hrs Client Info 700 700 141 Oil Changed Client Info Not Changd Changed N/A Sample Status NORMAL ABNORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG	<u> </u>	′	Sep 2022	Nov2022 Apr2023	Jul2023 Oct2023	Feb 2024	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 4473 4157 3691	Sample Number		Client Info		GFL0109221	GFL0098365	GFL0098374
Oil Age hrs Client Info 700 700 141 Oil Changed Sample Status Client Info Not Changd NoRMAL NEG	Sample Date		Client Info		05 Feb 2024	28 Dec 2023	12 Oct 2023
Oil Changed Sample Status Client Info Not Changd NORMAL Changed ABNORMAL N/A ABNORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history2 NEG NEG NEG Iron ppm ASTM D5185m >12.0 8 2.7 4 4 1.0 <1 1.1 1.0 <1 1.1 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	Machine Age	hrs	Client Info		4473	4157	3691
CONTAMINATION	Oil Age	hrs	Client Info		700	700	141
Fuel	Oil Changed		Client Info		Not Changd	Changed	N/A
Fuel WC Method S3.0 <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 <1.0 <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 <1.0 <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 <1.0 <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 <1.0 <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 <1.0 <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 <1.0 <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 <1.0 <1.0 <1	Sample Status				NORMAL	ABNORMAL	NORMAL
Water WC Method >0.2 NEG A Interestion of The Color of The Co	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<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	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	8	27	4
Titanium ppm ASTM D5185m >2 0 0 <1 Silver ppm ASTM D5185m >2 0 0 <1	Chromium	ppm	ASTM D5185m	>20	<1	2	<1
Titanium ppm ASTM D5185m >2 0 0 <1 Silver ppm ASTM D5185m >2 0 0 <1 Aluminum ppm ASTM D5185m >20 2 4 2 Lead ppm ASTM D5185m >40 <1 <1 0 Copper ppm ASTM D5185m >330 <1 <1 <1 0 Vanadium ppm ASTM D5185m >15 0 <1 0 <1 0 Vanadium ppm ASTM D5185m >15 0 <1 0 <1 0 Vanadium ppm ASTM D5185m >15 0 <1 0 <1 1 0 <1 1 0 <1 1 <td>Nickel</td> <td></td> <td>ASTM D5185m</td> <td>>5</td> <th><1</th> <td>0</td> <td><1</td>	Nickel		ASTM D5185m	>5	<1	0	<1
Silver ppm ASTM D5185m >2 0 0 <1 Aluminum ppm ASTM D5185m >20 2 4 2 Lead ppm ASTM D5185m >40 <1 <1 0 Copper ppm ASTM D5185m >330 <1 <1 <1 0 Vanadium ppm ASTM D5185m >15 0 <1 0 <1 0 Vanadium ppm ASTM D5185m <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 0 <1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 4 4 1 1 1 1 2 2 4<	Titanium		ASTM D5185m	>2	0	0	<1
Lead ppm ASTM D5185m >40 <1 <1 0 Copper ppm ASTM D5185m >330 <1 <1 <1 <1 Tin ppm ASTM D5185m >15 0 <1 0 Vanadium ppm ASTM D5185m <1 0 <1 0 Cadmium ppm ASTM D5185m 0 0 0 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 <1 <1 1 Barium ppm ASTM D5185m 0 0 0 <1 1 1 1 1 <1 1 1 1 0 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0	Silver				0	0	<1
Lead ppm ASTM D5185m >40 <1 <1 0 Copper ppm ASTM D5185m >330 <1 <1 <1 <1 Tin ppm ASTM D5185m >15 0 <1 0 Vanadium ppm ASTM D5185m <1 0 <1 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 <1 <1 Barium ppm ASTM D5185m 0 0 0 <1 1 Barium ppm ASTM D5185m 0 0 0 <1 0 Molybdenum ppm ASTM D5185m 0 0 <1 0 0 Manganese ppm ASTM D5185m 0 0 <1 0 0 Calcium	Aluminum	• •	ASTM D5185m	>20	2	4	2
Copper ppm ASTM D5185m >330 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <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 <0 <0 <0 <0 <0 <0 <1 <0 <0 <1 <0 <0 <1 <0 <0 <0 <1 <0 <0 <0 <1 <0 <0 <0 <1 <0 <0 <0 <1 <0 <0 <0 <1 <0 <0 <0 <0 <1 <0 <0 <0 <0 <0 <0 <0 <0 <0 <0 <0 <0	Lead				<1	<1	
Tin ppm ASTM D5185m >15 0 <1 0 Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 <1 <1 Barium ppm ASTM D5185m 0 0 0 <1 Molybdenum ppm ASTM D5185m 0 0 0 <1 0 Molybdenum ppm ASTM D5185m 0 0 <1 0 Mangaesium ppm ASTM D5185m 0 0 <1 0 Magnesium ppm ASTM D5185m 1010 985 935 888 Calcium ppm ASTM D5185m 1070 1089 1035 1006 Phosphorus ppm ASTM D5185m 1270 1263	Copper		ASTM D5185m	>330	<1	<1	<1
Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 <1 <1 Barium ppm ASTM D5185m 0 0 0 <1 0 Molybdenum ppm ASTM D5185m 60 52 69 58 Manganese ppm ASTM D5185m 0 0 <1 0 Magnesium ppm ASTM D5185m 1010 985 935 888 Calcium ppm ASTM D5185m 1070 1089 1035 1006 Phosphorus ppm ASTM D5185m 1150 1053 1075 971 Zinc ppm ASTM D5185m 2060 3138 3022 3209 CONTAMINANTS method limit/base current							
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 <1	Vanadium	• •					<1
Boron ppm ASTM D5185m 0 4 <1 <1 Barium ppm ASTM D5185m 0 0 0 <1 Molybdenum ppm ASTM D5185m 60 52 69 58 Manganese ppm ASTM D5185m 0 0 <1 0 Magnesium ppm ASTM D5185m 1010 985 935 888 Calcium ppm ASTM D5185m 1070 1089 1035 1006 Phosphorus ppm ASTM D5185m 1150 1053 1075 971 Zinc ppm ASTM D5185m 1270 1263 1210 1202 Sulfur ppm ASTM D5185m 2060 3138 3022 3209 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m	Cadmium		ASTM D5185m		0		0
Barium ppm ASTM D5185m 0 0 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 52 69 58 Manganese ppm ASTM D5185m 0 0 <1 0 Magnesium ppm ASTM D5185m 1010 985 935 888 Calcium ppm ASTM D5185m 1070 1089 1035 1006 Phosphorus ppm ASTM D5185m 1150 1053 1075 971 Zinc ppm ASTM D5185m 1270 1263 1210 1202 Sulfur ppm ASTM D5185m 2060 3138 3022 3209 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m 20 <1 8 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th>4</th> <td><1</td> <td><1</td>	Boron	ppm	ASTM D5185m	0	4	<1	<1
Manganese ppm ASTM D5185m 0 0 <1 0 Magnesium ppm ASTM D5185m 1010 985 935 888 Calcium ppm ASTM D5185m 1070 1089 1035 1006 Phosphorus ppm ASTM D5185m 1150 1053 1075 971 Zinc ppm ASTM D5185m 1270 1263 1210 1202 Sulfur ppm ASTM D5185m 2060 3138 3022 3209 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m >20 <1 8 2 Potassium ppm ASTM D5185m >20 <1 8 2 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7624 >20<	Barium	ppm	ASTM D5185m	0	0	0	<1
Magnesium ppm ASTM D5185m 1010 985 935 888 Calcium ppm ASTM D5185m 1070 1089 1035 1006 Phosphorus ppm ASTM D5185m 1150 1053 1075 971 Zinc ppm ASTM D5185m 1270 1263 1210 1202 Sulfur ppm ASTM D5185m 2060 3138 3022 3209 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m 20 <1 8 2 Potassium ppm ASTM D5185m >20 <1 8 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 6.3 8.2 5.4 Sulfation Abs/.1mm *ASTM D7415	Molybdenum	ppm	ASTM D5185m	60	52	69	58
Calcium ppm ASTM D5185m 1070 1089 1035 1006 Phosphorus ppm ASTM D5185m 1150 1053 1075 971 Zinc ppm ASTM D5185m 1270 1263 1210 1202 Sulfur ppm ASTM D5185m 2060 3138 3022 3209 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m 2 ▲ 131 2 Potassium ppm ASTM D5185m >20 <1	Manganese	ppm	ASTM D5185m	0	0	<1	0
Phosphorus ppm ASTM D5185m 1150 1053 1075 971 Zinc ppm ASTM D5185m 1270 1263 1210 1202 Sulfur ppm ASTM D5185m 2060 3138 3022 3209 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m 2 ▲ 131 2 Potassium ppm ASTM D5185m >20 <1	Magnesium	ppm	ASTM D5185m	1010	985	935	888
Zinc ppm ASTM D5185m 1270 1263 1210 1202 Sulfur ppm ASTM D5185m 2060 3138 3022 3209 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m 2 ▲ 131 2 Potassium ppm ASTM D5185m >20 <1	Calcium	ppm	ASTM D5185m	1070	1089	1035	1006
Sulfur ppm ASTM D5185m 2060 3138 3022 3209 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m 2 131 2 Potassium ppm ASTM D5185m >20 <1	Phosphorus	ppm	ASTM D5185m	1150	1053	1075	971
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m 2 ▲ 131 2 Potassium ppm ASTM D5185m >20 <1	Zinc	ppm	ASTM D5185m	1270	1263	1210	1202
Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m 2 131 2 Potassium ppm ASTM D5185m >20 <1 8 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.8 0.2 Nitration Abs/cm *ASTM D7624 >20 6.3 8.2 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 19.9 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 14.7 13.7	Sulfur	ppm	ASTM D5185m	2060	3138	3022	3209
Sodium ppm ASTM D5185m 2 ▲ 131 2 Potassium ppm ASTM D5185m >20 <1 8 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.8 0.2 Nitration Abs/cm *ASTM D7624 >20 6.3 8.2 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 19.9 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 14.7 13.7	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 <1 8 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.8 0.2 Nitration Abs/cm *ASTM D7624 >20 6.3 8.2 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 19.9 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 14.7 13.7	Silicon	ppm	ASTM D5185m	>25	4	8	4
INFRA-RED	Sodium	ppm	ASTM D5185m		2	▲ 131	2
Soot % % *ASTM D7844 >4 0.3 0.8 0.2 Nitration Abs/cm *ASTM D7624 >20 6.3 8.2 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 19.9 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 14.7 13.7	Potassium	ppm	ASTM D5185m	>20	<1	8	2
Nitration Abs/cm *ASTM D7624 >20 6.3 8.2 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 19.9 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 14.7 13.7	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 18.3 19.9 17.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 14.7 13.7	Soot %	%	*ASTM D7844	>4	0.3	0.8	0.2
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 14.7 13.7	Nitration	Abs/cm	*ASTM D7624	>20	6.3	8.2	5.4
Oxidation Abs/.1mm *ASTM D7414 >25 13.8 14.7 13.7	Sulfation	Abs/.1mm	*ASTM D7415	>30	18.3	19.9	17.9
	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.2 8.6 8.2	Oxidation	Abs/.1mm	*ASTM D7414	>25	13.8	14.7	13.7
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.2	8.6	8.2



OIL ANALYSIS REPORT

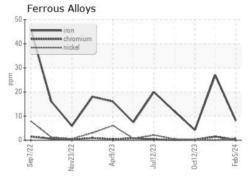


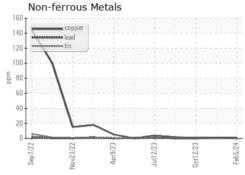


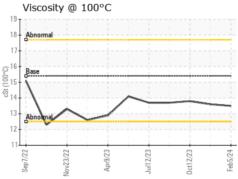
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	LIGHT
Sand/Dirt	scalar	*Visual	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

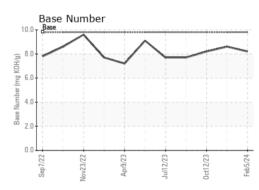
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.5	13.6	13.8

GRAPHS













Certificate L2367

Laboratory Sample No.

: GFL0109221 Lab Number : 06092664 Unique Number: 10885517 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 19 Feb 2024 **Tested** : 20 Feb 2024

Diagnosed : 20 Feb 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

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)