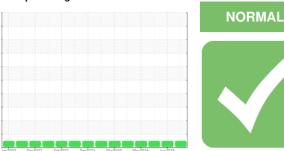


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

711012-310094

Component

Diesel Engine

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

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

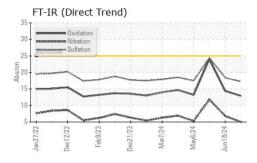
Fluid Condition

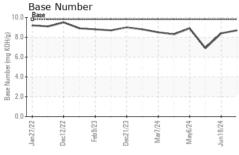
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

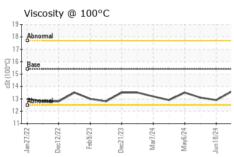
SAMPLE INFORMATION method timu/base current history1 history2	āAL)		Jan 2022 D	ec2022 Feb2023 Dec	2023 Mar2024 May2024 .	Jun2024	
Sample Date	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Date	Sample Number		Client Info		GFL0104856	GFL0123150	GFL0123156
Oil Age hrs Client Info 6312 6620 6312 Oil Changed Client Info N/A N/A N/A N/A Sample Status Contament NoRMAL NoRMAL NoRMAL NoRMAL CONTAMINATION method limit/base current history2 Fuel WC Method >5 <1.0			Client Info		08 Jul 2024	18 Jun 2024	27 May 2024
Oil Changed Status Client Info N/A N/A N/A N/A N/A NORMAL NEG NEG 1.0 1.0 1.0 1.0 1.0 1.0 NEG NEG </th <th></th> <th>hrs</th> <th>Client Info</th> <th></th> <th>6889</th> <th>6889</th> <th>52724</th>		hrs	Client Info		6889	6889	52724
Sample Status	Oil Age	hrs	Client Info		6312	6620	6312
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 Water WC Method NEG NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limil/base current history1 history2 Iron ppm ASTM D5185m >100 3 6 5 Chromium ppm ASTM D5185m >20 <1 0 0 Nickel ppm ASTM D5185m >4 0 0 0 0 Silver ppm ASTM D5185m >3 0 <1 0 0 0 Silver ppm ASTM D5185m >3 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <1 0 <t< th=""><th>Oil Changed</th><th></th><th>Client Info</th><th></th><th>N/A</th><th>N/A</th><th>N/A</th></t<>	Oil Changed		Client Info		N/A	N/A	N/A
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 6 5 Chromium ppm ASTM D5185m >20 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	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	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	3	6	5
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	0	0
Silver	Nickel	ppm	ASTM D5185m	>4	0	0	0
Altuminum ppm ASTM D5185m >20 2 5 3 Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >330 <1 0 <1 Tin ppm ASTM D5185m >15 0 <1 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 <th>Titanium</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th><1</th> <th>0</th> <th>0</th>	Titanium	ppm	ASTM D5185m		<1	0	0
Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >330 <1	Silver	ppm	ASTM D5185m	>3	0	<1	0
Copper ppm ASTM D5185m >330 <1	Aluminum	ppm	ASTM D5185m	>20	2	5	3
Tin ppm ASTM D5185m >15 0 <1	Lead	ppm	ASTM D5185m	>40	0	0	0
Vanadium ppm ASTM D5185m <1	Copper	ppm	ASTM D5185m	>330	<1	0	<1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 1 2 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 907 969 919 Calcium ppm ASTM D5185m 1070 1090 1100 1082 Phosphorus ppm ASTM D5185m 1270 1224 1322 1213 Sulfur ppm ASTM D5185m 2060 2939 3715 3486 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 25 <	Tin	ppm	ASTM D5185m	>15	0	<1	0
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	0	0
Boron ppm ASTM D5185m 0 1 2 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 56 57 56 Manganese ppm ASTM D5185m 0 0 <1	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 56 57 56 Manganese ppm ASTM D5185m 0 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 56 57 56 Manganese ppm ASTM D5185m 0 0 <1	Boron	ppm					
Manganese ppm ASTM D5185m 0 0 <1	Barium	ppm	ASTM D5185m		-		· ·
Magnesium ppm ASTM D5185m 1010 907 969 919 Calcium ppm ASTM D5185m 1070 1090 1100 1082 Phosphorus ppm ASTM D5185m 1150 1043 1132 1018 Zinc ppm ASTM D5185m 1270 1224 1322 1213 Sulfur ppm ASTM D5185m 2060 2939 3715 3486 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 0 Sodium ppm ASTM D5185m 2 5 3 Potassium ppm ASTM D5185m >20 3 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 5.0 6.8 11.8 Sulfation Abs/.1mm *ASTM D7415		ppm					
Calcium ppm ASTM D5185m 1070 1090 1100 1082 Phosphorus ppm ASTM D5185m 1150 1043 1132 1018 Zinc ppm ASTM D5185m 1270 1224 1322 1213 Sulfur ppm ASTM D5185m 2060 2939 3715 3486 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 0 Sodium ppm ASTM D5185m 2 5 3 Potassium ppm ASTM D5185m >20 3 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 5.0 6.8 11.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 18.4 24.4 FLUID DEGRADATION limit/base	-	ppm	ASTM D5185m		-		
Phosphorus ppm ASTM D5185m 1150 1043 1132 1018 Zinc ppm ASTM D5185m 1270 1224 1322 1213 Sulfur ppm ASTM D5185m 2060 2939 3715 3486 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 0 Sodium ppm ASTM D5185m 2 5 3 Potassium ppm ASTM D5185m >20 3 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7644 >3 0.1 0.2 0.8 Nitration Abs/.1mm *ASTM D7624 >20 5.0 6.8 11.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 18.4 24.4 FLUID DEGRADATION limit/base curren		ppm					
Zinc ppm ASTM D5185m 1270 1224 1322 1213 Sulfur ppm ASTM D5185m 2060 2939 3715 3486 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 0 Sodium ppm ASTM D5185m 2 5 3 Potassium ppm ASTM D5185m >20 3 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7644 >3 0.1 0.2 0.8 Nitration Abs/.1mm *ASTM D7624 >20 5.0 6.8 11.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 18.4 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM		ppm					
Sulfur ppm ASTM D5185m 2060 2939 3715 3486 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 0 Sodium ppm ASTM D5185m 2 5 3 Potassium ppm ASTM D5185m >20 3 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.2 0.8 Nitration Abs/cm *ASTM D7624 >20 5.0 6.8 11.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 18.4 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 14.4 24.1	·						
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 0 Sodium ppm ASTM D5185m 2 5 3 Potassium ppm ASTM D5185m >20 3 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.2 0.8 Nitration Abs/cm *ASTM D7624 >20 5.0 6.8 11.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 18.4 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 14.4 24.1							
Silicon ppm ASTM D5185m >25 3 6 0 Sodium ppm ASTM D5185m 2 5 3 Potassium ppm ASTM D5185m >20 3 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.2 0.8 Nitration Abs/cm *ASTM D7624 >20 5.0 6.8 11.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 18.4 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 14.4 24.1			ASTM D5185m	2060	2939	3715	3486
Sodium ppm ASTM D5185m 2 5 3 Potassium ppm ASTM D5185m >20 3 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.2 0.8 Nitration Abs/cm *ASTM D7624 >20 5.0 6.8 11.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 18.4 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 14.4 24.1		ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 3 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.2 0.8 Nitration Abs/cm *ASTM D7624 >20 5.0 6.8 11.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 18.4 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 14.4 24.1				>25			
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.2 0.8 Nitration Abs/cm *ASTM D7624 >20 5.0 6.8 11.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 18.4 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 14.4 24.1		ppm					
Soot % % *ASTM D7844 >3 0.1 0.2 0.8 Nitration Abs/cm *ASTM D7624 >20 5.0 6.8 11.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 18.4 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 14.4 24.1	Potassium	ppm	ASTM D5185m	>20	3	9	4
Nitration Abs/cm *ASTM D7624 >20 5.0 6.8 11.8 Sulfation Abs/.1mm *ASTM D7415 >30 17.2 18.4 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 14.4 24.1	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.2 18.4 24.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.9 14.4 24.1	Soot %						
FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2512.914.424.1	Nitration	Abs/cm	*ASTM D7624	>20	5.0	6.8	
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	17.2	18.4	24.4
	FLUID DEGRA	NOITAC	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.7 8.4 6.9	Oxidation	Abs/.1mm	*ASTM D7414	>25	12.9	14.4	24.1
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.7	8.4	6.9



OIL ANALYSIS REPORT



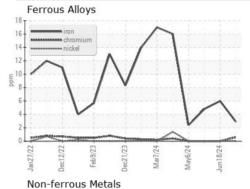


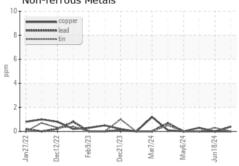


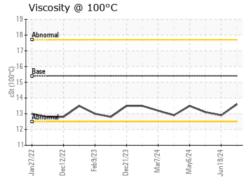
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

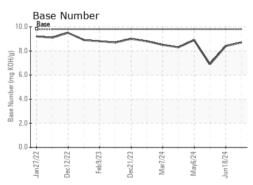
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.6	12.9	13.1

GRAPHS













Certificate 12367

Sample No.

: GFL0104856 Lab Number : 06234538

Unique Number : 11123372 Test Package : FLEET

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received : 12 Jul 2024 **Tested** : 12 Jul 2024 Diagnosed : 12 Jul 2024 - Wes Davis

GFL Environmental - 820 - Joplin Hauling 3700 West 7th Street Joplin, MO

US 64801 Contact: James Jarrett jjarrett@gflenv.com T: (417)310-2802

* - 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)

Submitted By: James Jarrett