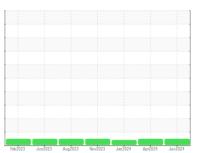


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 427190 - SW4735

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 oil.

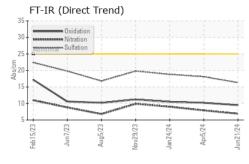
Fluid Condition

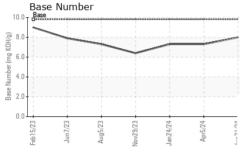
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

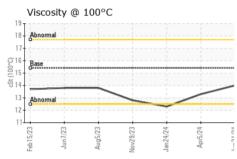
SAMPLE INFORMATION method limit/base current history1 history2	JAL)		Feb2023	Jun2023 Aug2023	Nov2023 Jan2024 Apr2024	Jun2024	
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Date Client Info 21 Jun 2024 05 Apr 2024 24 Jan 2024 Machine Age mis Client Info 355962 345411 333869 Oil Age mis Client Info 355962 11542 333869 Oil Changed Client Info Changed Changed Changed Changed Changed NORMAL NORMAL ATTENTION	Sample Number		Client Info		GFL0123524	GFL0112098	GFL0105513
Machine Age mls Client Info 355962 345411 333869 Oil Age mls Client Info 355962 11542 333869 Oil Changed Sample Status Client Info Changed			Client Info		21 Jun 2024	05 Apr 2024	24 Jan 2024
Oil Changed Sample Status Client Info Changed NORMAL Changed NORMAL Changed ATTENTION CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5.5 <1.0 <1.0 0.2 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 4 8 21 Chromium ppm ASTM D5185m >20 0 <1 1 Nickel ppm ASTM D5185m >3 0 <1 0 Silver ppm ASTM D5185m >3 0 <1 2 3 Lead ppm ASTM D5185m >40 2 3 2 Copper ppm ASTM D5185m 0 <1 <1 0 <1 <th></th> <th>mls</th> <th>Client Info</th> <th></th> <th>355962</th> <th>345411</th> <th>333869</th>		mls	Client Info		355962	345411	333869
CONTAMINATION		mls	Client Info		355962	11542	333869
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 0.2 Water WC Method NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 4 8 21 Chromium ppm ASTM D5185m >20 0 <1 1 Nickel ppm ASTM D5185m >4 0 <1 0 Silver ppm ASTM D5185m >3 0 0 0 Lead ppm ASTM D5185m >330 0 <1 0 Copper ppm ASTM D5185m >30 0 <1 <1 Vanadium ppm ASTM D5185m 0 <1 <1 0 Vanadium ppm <td< th=""><th>Oil Changed</th><th></th><th>Client Info</th><th></th><th>Changed</th><th>Changed</th><th>Changed</th></td<>	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	ATTENTION
Water Glycol WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 4 8 21 Chromium ppm ASTM D5185m >20 0 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
Silycol WC Method NEG NEG NEG	Fuel		WC Method	>5	<1.0	<1.0	0.2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 4 8 21 Chromium ppm ASTM D5185m >20 0 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 0 <1 1 Nickel ppm ASTM D5185m >4 0 <1	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	4	8	21
Titanium	Chromium	ppm	ASTM D5185m	>20	0	<1	1
Silver	Nickel	ppm	ASTM D5185m	>4	0	<1	0
Altuminum ppm ASTM D5185m >20 1 2 3 Lead ppm ASTM D5185m >40 2 3 2 Copper ppm ASTM D5185m >330 0 <1 0 Tin ppm ASTM D5185m >15 0 <1 <1 Vanadium ppm ASTM D5185m 0 <1 0 <1 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 1 <1	Titanium	ppm	ASTM D5185m		0	<1	0
Lead ppm ASTM D5185m >40 2 3 2 Copper ppm ASTM D5185m >330 0 <1	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m >330 0 -1 0 Tin ppm ASTM D5185m >15 0 <1 <1 Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 1 <1 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 <1 1 Magnesium ppm ASTM D5185m 0 <1 <1 1 Magnesium ppm ASTM D5185m 1070 2661 2830 2565 Phosphorus ppm ASTM D5185m 1150 882 1199 1195 Zinc ppm ASTM D5185m 1270 1238 1391 1349 <th>Aluminum</th> <th>ppm</th> <th>ASTM D5185m</th> <th>>20</th> <th>1</th> <th>2</th> <th>3</th>	Aluminum	ppm	ASTM D5185m	>20	1	2	3
Tin ppm ASTM D5185m >15 0 <1	Lead	ppm	ASTM D5185m	>40	2	3	2
Vanadium ppm ASTM D5185m 0 <1	Copper	ppm	ASTM D5185m	>330	0	<1	0
Cadmium ppm ASTM D5185m 0 <1	Tin	ppm	ASTM D5185m	>15	0	<1	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	<1	0
Boron ppm ASTM D5185m 0 1 <1	Cadmium	ppm	ASTM D5185m		0	<1	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 43 63 57 Manganese ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 43 63 57 Manganese ppm ASTM D5185m 0 <1	Boron	ppm	ASTM D5185m	0		<1	
Manganese ppm ASTM D5185m 0 <1	Barium	ppm			-	-	
Magnesium ppm ASTM D5185m 1010 10 31 13 Calcium ppm ASTM D5185m 1070 2661 2830 2565 Phosphorus ppm ASTM D5185m 1150 882 1199 1195 Zinc ppm ASTM D5185m 1270 1238 1391 1349 Sulfur ppm ASTM D5185m 2060 3432 3612 3268 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 10 Sodium ppm ASTM D5185m >25 4 9 10 Sodium ppm ASTM D5185m >20 2 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.4 Nitration Abs/cm *ASTM D7415 </th <th>•</th> <th>ppm</th> <th></th> <th></th> <th></th> <th>63</th> <th></th>	•	ppm				63	
Calcium ppm ASTM D5185m 1070 2661 2830 2565 Phosphorus ppm ASTM D5185m 1150 882 1199 1195 Zinc ppm ASTM D5185m 1270 1238 1391 1349 Sulfur ppm ASTM D5185m 2060 3432 3612 3268 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 10 Sodium ppm ASTM D5185m >25 4 9 10 Sodium ppm ASTM D5185m >20 2 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 6.9 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 16.3 18.1 18.8 FLUID DEGRADATION limit/	-	ppm	ASTM D5185m				
Phosphorus ppm ASTM D5185m 1150 882 1199 1195 Zinc ppm ASTM D5185m 1270 1238 1391 1349 Sulfur ppm ASTM D5185m 2060 3432 3612 3268 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 10 Sodium ppm ASTM D5185m >25 4 9 10 Sodium ppm ASTM D5185m >20 2 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 6.9 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 16.3 18.1 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm <td< th=""><th>-</th><th>ppm</th><th></th><th></th><th></th><th></th><th></th></td<>	-	ppm					
Zinc ppm ASTM D5185m 1270 1238 1391 1349 Sulfur ppm ASTM D5185m 2060 3432 3612 3268 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 10 Sodium ppm ASTM D5185m >25 4 9 4 Potassium ppm ASTM D5185m >20 2 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.4 Nitration Abs/.mm *ASTM D7624 >20 6.9 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 16.3 18.1 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm <th></th> <th>ppm</th> <th></th> <th></th> <th></th> <th></th> <th></th>		ppm					
Sulfur ppm ASTM D5185m 2060 3432 3612 3268 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 10 Sodium ppm ASTM D5185m >25 4 9 10 Sodium ppm ASTM D5185m >20 2 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 6.9 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 16.3 18.1 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 9.5 10.2 10.5							
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 10 Sodium ppm ASTM D5185m <1							
Silicon ppm ASTM D5185m >25 4 9 10 Sodium ppm ASTM D5185m <1 45 2 Potassium ppm ASTM D5185m >20 2 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 6.9 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 16.3 18.1 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 9.5 10.2 10.5			ASTM D5185m	2060	3432	3612	3268
Sodium ppm ASTM D5185m <1		ITS	method	limit/base	current	•	· ·
Potassium ppm ASTM D5185m >20 2 9 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 6.9 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 16.3 18.1 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 9.5 10.2 10.5				>25			
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 6.9 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 16.3 18.1 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 9.5 10.2 10.5		ppm					
Soot % % *ASTM D7844 >3 0.2 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 6.9 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 16.3 18.1 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 9.5 10.2 10.5		ppm	ASTM D5185m	>20	2	9	4
Nitration Abs/cm *ASTM D7624 >20 6.9 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 16.3 18.1 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 9.5 10.2 10.5	INFRA-RED		method	limit/base		history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 16.3 18.1 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 9.5 10.2 10.5							
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 9.5 10.2 10.5							
Oxidation Abs/.1mm *ASTM D7414 >25 9.5 10.2 10.5	Sulfation	Abs/.1mm	*ASTM D7415	>30	16.3	18.1	18.8
	FLUID DEGRA	NOITAC	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.0 7.3 7.3	Oxidation	Abs/.1mm	*ASTM D7414	>25	9.5	10.2	10.5
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.0	7.3	7.3

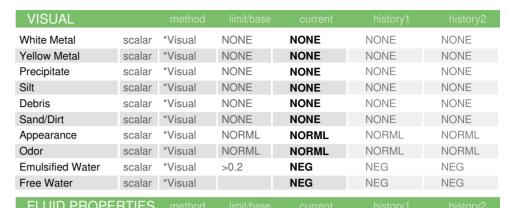


OIL ANALYSIS REPORT



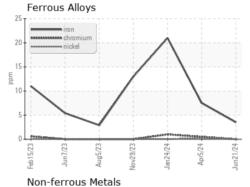


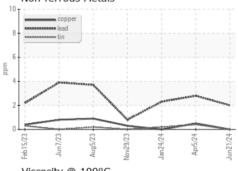


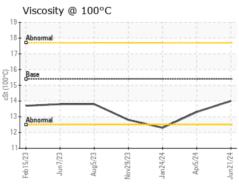


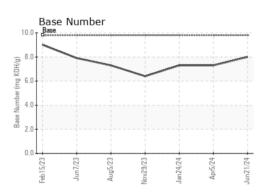
	LITTIES					
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	13.3	12.3

GRAPHS













Certificate 12367

Laboratory Sample No.

Lab Number : 06222074 Unique Number : 11100271 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0123524

Tested : 28 Jun 2024 Diagnosed

Received

: 28 Jun 2024 - Don Baldridge

: 27 Jun 2024

GFL Environmental - 983 - Sugar Land Hauling 16011 West Belfort Street

Sugar Land, TX US 77498

Contact: Adrian Martinez adrianmartinez@gflenv.com

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: GFL983 [WUSCAR] 06222074 (Generated: 06/28/2024 14:38:52) Rev: 1

Submitted By: TECHNICIAN ACCOUNT

T:

F: