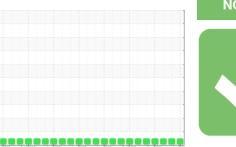


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id
811069
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- QTS)

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

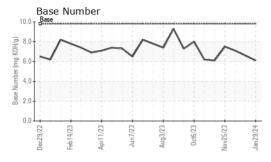
Fluid Condition

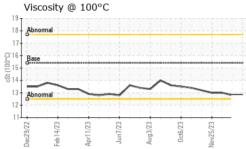
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info GFL0097161 GFL0068879 GFL0097178 Sample Date Client Info 29 Jan 2024 13 Jan 2024 11 Dec 2023 Machine Age hrs Client Info 8700 8550 8400 Oil Age hrs Client Info 556 406 256 Oil Changed Client Info Changed Not Changd Not Changd Sample Status NORMAL NORMAL NORMAL 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 Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >2 <1 <th>OANIDI E INICADI</th> <th>AATION</th> <th></th> <th>The second second</th> <th>23 Aug²023 Oct2023 Nov2</th> <th></th> <th></th>	OANIDI E INICADI	AATION		The second second	23 Aug ² 023 Oct2023 Nov2		
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 556 406 256	Sample Number					GFL0068879	GFL0097178
Oil Age hrs Client Info 556 406 256 Oil Changed Sample Status Client Info Changed Not Changd Not	Sample Date		Client Info		29 Jan 2024	13 Jan 2024	11 Dec 2023
Oil Changed Sample Status Client Info Changed NORMAL Not Changd NORMAL Not Changd NORMAL Not Changd NORMAL Not Changd NORMAL NOR	Machine Age	hrs	Client Info		8700	8550	8400
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2	Oil Age	hrs	Client Info		556	406	256
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 9 5 5 Chromium ppm ASTM D5185m >120 <1 <1 <1 Nickel ppm ASTM D5185m >5 <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	Oil Changed		Client Info		Changed	Not Changd	Not Changd
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 9 5 5 Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >5 <1 0 <1 Silver ppm ASTM D5185m >2 <1 0 <1 Silver ppm ASTM D5185m >2 <1 0 <1 Silver ppm ASTM D5185m >20 <1 2 2 Silver ppm ASTM D5185m >20 <1 0 <1 Silver ppm ASTM D5185m >40 1 0 <1 Copper ppm ASTM D5185m >15 <1 <1 <1	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			9	5	5
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 <1 2 2 Lead ppm ASTM D5185m >40 1 0 <1 Copper ppm ASTM D5185m >330 2 1 1 Tin ppm ASTM D5185m >15 <1 <1 <1 Vanadium ppm ASTM D5185m 0 <1 0 <1 Cadmium ppm ASTM D5185m 0 4 4 5 Barium ppm ASTM D5185m 0 0 0 12 Molybdenum ppm ASTM D5185m 10 0 1 2	Nickel	ppm	ASTM D5185m	>5	<1	0	<1
Aluminum	Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Lead ppm ASTM D5185m >40 1 0 <1 Copper ppm ASTM D5185m >330 2 1 1 Tin ppm ASTM D5185m >15 <1 <1 <1 <1 Vanadium ppm ASTM D5185m 0 <1 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 4 5 Barium ppm ASTM D5185m 0 0 0 12 Molybdenum ppm ASTM D5185m 0 4 4 5 Barium ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 0 <1 0 <1 Validium ppm ASTM D5185m	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >330 2 1 1 Tin ppm ASTM D5185m >15 <1	Aluminum	ppm	ASTM D5185m	>20	<1	2	2
Tin ppm ASTM D5185m >15 <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 <1 <0 <1 <0 <1 <0 <1 <0 <1 <0 <1 <0 <1 <0 <1 <0 <1 <0 <1 <0 <1 <0 <1 <0 <1 <0 <1 <0 <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	Lead	ppm	ASTM D5185m	>40	1	0	<1
Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m <1 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 4 5 Barium ppm ASTM D5185m 0 0 0 12 Molybdenum ppm ASTM D5185m 60 54 49 52 Manganese ppm ASTM D5185m 1010 852 820 803 Calcium ppm ASTM D5185m 1010 852 820 803 Calcium ppm ASTM D5185m 1070 887 877 913 Phosphorus ppm ASTM D5185m 1270 1106 1075 1039 Sulfur ppm ASTM D5185m 2060 2532 2631 2823 CONTAMINANTS method limit/base current history1	Copper	ppm	ASTM D5185m	>330	2	1	1
Cadmium ppm ASTM D5185m <1 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 4 5 Barium ppm ASTM D5185m 0 0 0 12 Molybdenum ppm ASTM D5185m 0 <1	Tin	ppm	ASTM D5185m	>15	<1	<1	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	<1	0
Boron	Cadmium	ppm	ASTM D5185m		<1	0	<1
Barium ppm ASTM D5185m 0 0 0 12 Molybdenum ppm ASTM D5185m 60 54 49 52 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 852 820 803 Calcium ppm ASTM D5185m 1070 887 877 913 Phosphorus ppm ASTM D5185m 1150 885 875 836 Zinc ppm ASTM D5185m 1270 1106 1075 1039 Sulfur ppm ASTM D5185m 2060 2532 2631 2823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 4 Sodium ppm ASTM D5185m >20 2 9 2 INFRA-RED method limit/base	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 54 49 52 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 852 820 803 Calcium ppm ASTM D5185m 1070 887 877 913 Phosphorus ppm ASTM D5185m 1150 885 875 836 Zinc ppm ASTM D5185m 1270 1106 1075 1039 Sulfur ppm ASTM D5185m 2060 2532 2631 2823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 4 Sodium ppm ASTM D5185m >20 21 2 Potassium ppm ASTM D5185m >20 2 9 2 INFRA-RED method limit/base current	Boron	ppm	ASTM D5185m	0	4	4	5
Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 852 820 803 Calcium ppm ASTM D5185m 1070 887 877 913 Phosphorus ppm ASTM D5185m 1150 885 875 836 Zinc ppm ASTM D5185m 1270 1106 1075 1039 Sulfur ppm ASTM D5185m 2060 2532 2631 2823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 4 Sodium ppm ASTM D5185m >20 21 2 Potassium ppm ASTM D5185m >20 2 9 2 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844 >4 0.6	Barium	ppm	ASTM D5185m	0	0	0	12
Magnesium ppm ASTM D5185m 1010 852 820 803 Calcium ppm ASTM D5185m 1070 887 877 913 Phosphorus ppm ASTM D5185m 1150 885 875 836 Zinc ppm ASTM D5185m 1270 1106 1075 1039 Sulfur ppm ASTM D5185m 2060 2532 2631 2823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 4 Sodium ppm ASTM D5185m >20 21 2 Potassium ppm ASTM D5185m >20 2 9 2 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7624 >20 7.9 7.3 6.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.3	Molybdenum	ppm	ASTM D5185m	60	54	49	52
Calcium ppm ASTM D5185m 1070 887 877 913 Phosphorus ppm ASTM D5185m 1150 885 875 836 Zinc ppm ASTM D5185m 1270 1106 1075 1039 Sulfur ppm ASTM D5185m 2060 2532 2631 2823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 4 Sodium ppm ASTM D5185m >0 21 2 Potassium ppm ASTM D5185m >20 2 9 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >4 0.6 0.5 0.3 Nitration Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.0 FLUID DEGRADATION *ASTM D7414 >	Manganese	ppm	ASTM D5185m	0	<1	0	<1
Phosphorus ppm ASTM D5185m 1150 885 875 836 Zinc ppm ASTM D5185m 1270 1106 1075 1039 Sulfur ppm ASTM D5185m 2060 2532 2631 2823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 4 Sodium ppm ASTM D5185m >20 21 2 Potassium ppm ASTM D5185m >20 2 9 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.5 0.3 Nitration Abs/cm *ASTM D7415 >30 19.3 18.6 18.0 FLUID DEGRADATION *ASTM D7414 >25 14.5 13.8 13.0	Magnesium	ppm	ASTM D5185m	1010	852	820	803
Zinc ppm ASTM D5185m 1270 1106 1075 1039 Sulfur ppm ASTM D5185m 2060 2532 2631 2823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 4 Sodium ppm ASTM D5185m >20 21 2 Potassium ppm ASTM D5185m >20 2 9 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 7.9 7.3 6.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM	Calcium	ppm	ASTM D5185m	1070	887	877	913
Sulfur ppm ASTM D5185m 2060 2532 2631 2823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 4 Sodium ppm ASTM D5185m 0 21 2 Potassium ppm ASTM D5185m >20 2 9 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 7.9 7.3 6.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 13.8 13.0	Phosphorus	ppm	ASTM D5185m	1150	885	875	836
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 4 Sodium ppm ASTM D5185m 0 21 2 Potassium ppm ASTM D5185m >20 2 9 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 7.9 7.3 6.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 13.8 13.0	Zinc	ppm	ASTM D5185m	1270	1106	1075	1039
Silicon ppm ASTM D5185m >25 5 4 4 Sodium ppm ASTM D5185m 0 21 2 Potassium ppm ASTM D5185m >20 2 9 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 7.9 7.3 6.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 13.8 13.0	Sulfur	ppm	ASTM D5185m	2060	2532	2631	2823
Sodium ppm ASTM D5185m 0 21 2 Potassium ppm ASTM D5185m >20 2 9 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 7.9 7.3 6.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 13.8 13.0	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 9 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 7.9 7.3 6.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 13.8 13.0	Silicon	ppm	ASTM D5185m	>25	5	4	4
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 7.9 7.3 6.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 13.8 13.0	Sodium	ppm	ASTM D5185m		0	21	2
Soot % % *ASTM D7844 >4 0.6 0.5 0.3 Nitration Abs/cm *ASTM D7624 >20 7.9 7.3 6.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 13.8 13.0	Potassium	ppm	ASTM D5185m	>20	2	9	2
Nitration Abs/cm *ASTM D7624 >20 7.9 7.3 6.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 13.8 13.0	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.3 18.6 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 13.8 13.0	Soot %	%	*ASTM D7844	>4	0.6	0.5	0.3
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 13.8 13.0	Nitration	Abs/cm	*ASTM D7624	>20	7.9	7.3	6.1
Oxidation Abs/.1mm *ASTM D7414 >25 14.5 13.8 13.0	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.3	18.6	18.0
	FLUID DEGRAD	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 6.1 6.6 7.1	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.5	13.8	13.0
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	6.1	6.6	7.1



OIL ANALYSIS REPORT

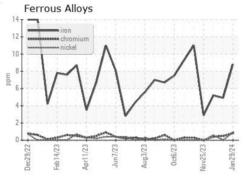


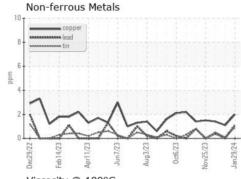


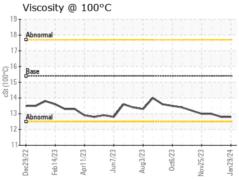
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

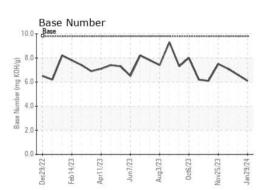
FLUID PROPE	RTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.8	12.8	13.0

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number Test Package : FLEET

: GFL0097161 : 06078146 Unique Number : 10860237

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 02 Feb 2024 : 04 Feb 2024 Diagnosed

Diagnostician : Wes Davis

GFL Environmental - 073 - Warner Robins - Transwaste

155 Story Road Warner Robins, GA US 31093

Contact: JOSH MALONEY

jmaloney@gflenv.com T:

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)

F: