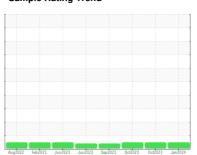


OIL ANALYSIS REPORT

Sample Rating Trend









Machine Id
412009
Component
Diesel Engine
Fluid

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

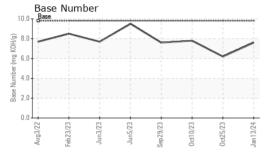
Fluid Condition

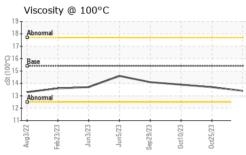
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

			Aug2022 F		3 Sep 2023 Oct2023 Oct2023	Jan2024	
Sample Date	SAMPLE INFO	RMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 4229 3730 3637 Oil Age hrs Client Info 3730 2919 2983 Oil Changed Client Info Not Changed Not Changed NoRMAL NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method Imit/base current history1 history2 Fuel	Sample Number		Client Info		GFL0101286	GFL0091760	GFL0091823
Oil Age	Sample Date		Client Info		13 Jan 2024	25 Oct 2023	10 Oct 2023
Oil Changed Sample Status Client Info Not Changed NORMAL NORMAL NORMAL NORMAL Evel WC Method >3.0 <1.0	Machine Age	hrs	Client Info		4229	3730	3637
NORMAL NORMAL NORMAL CONTAMINATION method imit/base current history1 history2	Oil Age	hrs	Client Info		3730	2919	2983
Fuel	Oil Changed		Client Info		Not Changd	Changed	Not Changd
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imitibase current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 2 14 11 Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >5 1 5 <1 0 <1 0 Silver ppm ASTM D5185m >2 0 0 0 0 0 Aluminum ppm ASTM D5185m >20 2 3 8 8 Lead ppm ASTM D5185m >40 0 0 1 Copper ppm ASTM D5185m >40 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CONTAMINA	TION	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 META	LS	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	2	14	11
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Titanium ppm ASTM D5185m >2 0 <1 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 2 3 8 Lead ppm ASTM D5185m >40 0 0 1 Copper ppm ASTM D5185m >330 2 3 16 Tin ppm ASTM D5185m >15 <1 <1 1 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 3 Barium ppm ASTM D5185m 0 0 0 2 0 Molybdenum ppm ASTM D5185m 0 1	Nickel	ppm	ASTM D5185m	>5	1	5	<1
Aluminum ppm ASTM D5185m >20 2 3 8 Lead ppm ASTM D5185m >40 0 0 1 Copper ppm ASTM D5185m >330 2 3 16 Tin ppm ASTM D5185m >15 <1	Titanium	ppm	ASTM D5185m	>2	0	<1	0
Lead ppm ASTM D5185m >40 0 0 1 Copper ppm ASTM D5185m >330 2 3 16 Tin ppm ASTM D5185m >15 <1 <1 1 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 3 Barium ppm ASTM D5185m 0 0 0 2 Molybdenum ppm ASTM D5185m 0 1 <1 <1 <1 Magnesium ppm ASTM D5185m 0 1 <1 <1 <1 Calcium ppm ASTM D5185m 1010 910 939 1132 Zinc ppm ASTM D5185m 1070	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >330 2 3 16 Tin ppm ASTM D5185m >15 <1	Aluminum	ppm	ASTM D5185m	>20	2	3	8
Copper ppm ASTM D5185m >330 2 3 16 Tin ppm ASTM D5185m >15 <1	Lead	ppm	ASTM D5185m	>40	0	0	1
Tin	Copper		ASTM D5185m	>330	2	3	16
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 3 Barium ppm ASTM D5185m 0 0 0 2 Molybdenum ppm ASTM D5185m 60 57 60 70 Manganese ppm ASTM D5185m 0 1 <1 <1 Magnesium ppm ASTM D5185m 1010 910 939 1132 Calcium ppm ASTM D5185m 1070 976 1016 1167 Phosphorus ppm ASTM D5185m 1270 1173 1244 1442 Sulfur ppm ASTM D5185m 2060 2712 2481 3666 CONTAMINANTS method limit/base current history1<				>15	<1		1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 3 Barium ppm ASTM D5185m 0 0 0 2 Molybdenum ppm ASTM D5185m 0 1 <1	Vanadium		ASTM D5185m		0	0	0
Boron	Cadmium		ASTM D5185m		0		0
Barium ppm ASTM D5185m 0 0 0 2 Molybdenum ppm ASTM D5185m 60 57 60 70 Manganese ppm ASTM D5185m 0 1 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 57 60 70 Manganese ppm ASTM D5185m 0 1 <1 <1 Magnesium ppm ASTM D5185m 1010 910 939 1132 Calcium ppm ASTM D5185m 1070 976 1016 1167 Phosphorus ppm ASTM D5185m 1150 1031 952 1184 Zinc ppm ASTM D5185m 1270 1173 1244 1442 Sulfur ppm ASTM D5185m 2060 2712 2481 3666 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 25 4 7 7 Sodium ppm ASTM D5185m 1 6 4 Potassium ppm ASTM D5185m 20 0 8 10 INFRA-RED method limit/base current	Boron	ppm	ASTM D5185m	0	0	0	3
Manganese ppm ASTM D5185m 0 1 <1 <1 Magnesium ppm ASTM D5185m 1010 910 939 1132 Calcium ppm ASTM D5185m 1070 976 1016 1167 Phosphorus ppm ASTM D5185m 1150 1031 952 1184 Zinc ppm ASTM D5185m 1270 1173 1244 1442 Sulfur ppm ASTM D5185m 2060 2712 2481 3666 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 7 7 Sodium ppm ASTM D5185m >20 0 8 10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.6 0.2 Nitration Abs/cm *ASTM D7815	Barium	ppm	ASTM D5185m	0	0	0	2
Magnesium ppm ASTM D5185m 1010 910 939 1132 Calcium ppm ASTM D5185m 1070 976 1016 1167 Phosphorus ppm ASTM D5185m 1150 1031 952 1184 Zinc ppm ASTM D5185m 1270 1173 1244 1442 Sulfur ppm ASTM D5185m 2060 2712 2481 3666 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 7 7 Sodium ppm ASTM D5185m >20 0 8 10 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >4 0.4 0.6 0.2 Nitration Abs/cm *ASTM D7415 >30 19.7 20.6 20.3 FLUID DEGRADATION *ASTM D7414 >2	Molybdenum	ppm	ASTM D5185m	60	57	60	70
Calcium ppm ASTM D5185m 1070 976 1016 1167 Phosphorus ppm ASTM D5185m 1150 1031 952 1184 Zinc ppm ASTM D5185m 1270 1173 1244 1442 Sulfur ppm ASTM D5185m 2060 2712 2481 3666 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 7 7 Sodium ppm ASTM D5185m >20 0 8 10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.6 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 9.0 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 20.6 20.3 FLUID DEGRADATION <	Manganese	ppm	ASTM D5185m	0	1	<1	<1
Phosphorus ppm ASTM D5185m 1150 1031 952 1184 Zinc ppm ASTM D5185m 1270 1173 1244 1442 Sulfur ppm ASTM D5185m 2060 2712 2481 3666 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 7 7 Sodium ppm ASTM D5185m >20 0 8 10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.6 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 9.0 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 20.6 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm	Magnesium	ppm	ASTM D5185m	1010	910	939	1132
Zinc ppm ASTM D5185m 1270 1173 1244 1442 Sulfur ppm ASTM D5185m 2060 2712 2481 3666 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 7 7 Sodium ppm ASTM D5185m 1 6 4 Potassium ppm ASTM D5185m >20 0 8 10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.6 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 9.0 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 20.6 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7	Calcium	ppm	ASTM D5185m	1070	976	1016	1167
Zinc ppm ASTM D5185m 1270 1173 1244 1442 Sulfur ppm ASTM D5185m 2060 2712 2481 3666 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 7 7 Sodium ppm ASTM D5185m 20 0 8 10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.6 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 9.0 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 20.6 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 16.7 16.6	Phosphorus	ppm	ASTM D5185m	1150	1031	952	1184
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 7 7 Sodium ppm ASTM D5185m 1 6 4 Potassium ppm ASTM D5185m >20 0 8 10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.6 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 9.0 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 20.6 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 16.7 16.6		ppm	ASTM D5185m	1270	1173	1244	1442
Silicon ppm ASTM D5185m >25 4 7 7 Sodium ppm ASTM D5185m 1 6 4 Potassium ppm ASTM D5185m >20 0 8 10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.6 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 9.0 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 20.6 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 16.7 16.6	Sulfur	ppm	ASTM D5185m	2060	2712	2481	3666
Sodium ppm ASTM D5185m 1 6 4 Potassium ppm ASTM D5185m >20 0 8 10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.6 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 9.0 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 20.6 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 16.7 16.6	CONTAMINA	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 8 10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.6 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 9.0 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 20.6 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 16.7 16.6	Silicon	ppm	ASTM D5185m	>25	4	7	7
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.6 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 9.0 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 20.6 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 16.7 16.6	Sodium	ppm	ASTM D5185m		1	6	4
Soot % % *ASTM D7844 >4 0.4 0.6 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 9.0 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 20.6 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 16.7 16.6	Potassium	ppm	ASTM D5185m	>20	0	8	10
Nitration Abs/cm *ASTM D7624 >20 8.3 9.0 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 20.6 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 16.7 16.6	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.7 20.6 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 16.7 16.6	Soot %	%	*ASTM D7844	>4	0.4	0.6	0.2
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 16.7 16.6	Nitration	Abs/cm	*ASTM D7624	>20	8.3	9.0	7.9
Oxidation Abs/.1mm *ASTM D7414 >25 16.2 16.7 16.6	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.7	20.6	20.3
	FLUID DEGRA	ADATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.2	16.7	16.6
	Base Number (BN	mg KOH/g	ASTM D2896	9.8	7.6	6.2	7.8



OIL ANALYSIS REPORT



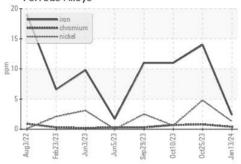


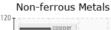
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

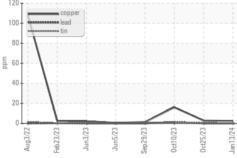
FLUID PROPE	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.4	13.7	13.9

GRAPHS

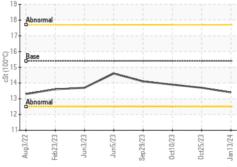
Ferrous Alloys











Base Number (mg K0H/g) 0.0





Certificate L2367

Laboratory Sample No. Lab Number

Unique Number : 10842810

: GFL0101286 : 06066133 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 19 Jan 2024 Diagnosed : 22 Jan 2024

Diagnostician : Wes Davis

GFL Environmental - 654 - Richmond Hauling

11800 Lewis Road Chester, VA US 23831

Contact: Jimmy Mayes jmayes@gflenv.com

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

T:

F: