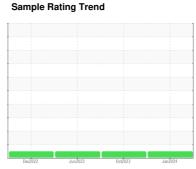


OIL ANALYSIS REPORT



NORMAL



920067

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

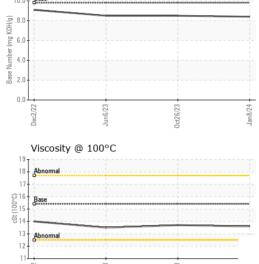
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Client Info	iAL)		Dec202	2 Jun 2023	0ct2023 J:	an 2024	
Client Info	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info S710 S144 7020	Sample Number		Client Info		GFL0080370	GFL0086740	GFL0071279
Oil Changed	Sample Date		Client Info		08 Jan 2024	26 Oct 2023	06 Jun 2023
Client Info Changed NORMAL NORM	Machine Age	hrs	Client Info		8710	8144	7020
CONTAMINATION	Oil Age	hrs	Client Info		566	8144	7020
CONTAMINATION	Oil Changed		Client Info		Changed	Changed	Not Changd
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method WC Method >0.2 NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >110 8 9 11 Chromium ppm ASTM D5185m >4 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >110 8 9 11 Chromium ppm ASTM D5185m >4 <1	Water		WC Method	>0.2	NEG	NEG	NEG
	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>110	8	9	11
Description	Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Description	Nickel	ppm	ASTM D5185m	>2	0	0	0
Aluminum	Titanium	ppm	ASTM D5185m		0	<1	0
Lead	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >85 <1 <1 <1 <1 <1 <1 <1 <1 O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O D	Aluminum	ppm	ASTM D5185m	>25	2	3	8
Trin	Lead	ppm	ASTM D5185m	>45	0	0	0
Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 0 0 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 0 Manganese ppm ASTM D5185m 0 <1 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 1039 996 1003 Calcium ppm ASTM D5185m 1070 1124 1114 1124 Phosphorus ppm ASTM D5185m 1270 1308 1315 1289 Sulfur ppm ASTM D5185m 1270 1308 1315 1289 Sulfur ppm ASTM D	Copper	ppm	ASTM D5185m	>85	<1	<1	<1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1	Tin	ppm	ASTM D5185m	>4	<1	<1	0
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	0	0
Boron ppm ASTM D5185m 0 0 0 0 0 0 0 0 0	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 63 63 63 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 1039 996 1003 Calcium ppm ASTM D5185m 1070 1124 1114 1124 Phosphorus ppm ASTM D5185m 1150 1101 1110 1062 Zinc ppm ASTM D5185m 1270 1308 1315 1289 Sulfur ppm ASTM D5185m 2060 3200 2876 3666 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 3 3 Sodium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/ba	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 63 63 63 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 1039 996 1003 Calcium ppm ASTM D5185m 1070 1124 1114 1124 Phosphorus ppm ASTM D5185m 1150 1101 1110 1062 Zinc ppm ASTM D5185m 1270 1308 1315 1289 Sulfur ppm ASTM D5185m 2060 3200 2876 3666 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 3 3 Sodium ppm ASTM D5185m 20 0 2 1 Potassium ppm ASTM D5185m 20 0 2 1 INFRA-RED method limit/base	Boron	ppm	ASTM D5185m	0	2	0	0
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 1039 996 1003 Calcium ppm ASTM D5185m 1070 1124 1114 1124 Phosphorus ppm ASTM D5185m 1150 1101 1110 1062 Zinc ppm ASTM D5185m 1270 1308 1315 1289 Sulfur ppm ASTM D5185m 2060 3200 2876 3666 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 3 3 Sodium ppm ASTM D5185m >20 0 2 1 2 Potassium ppm ASTM D5185m >20 0 2 1 1 INFRA-RED method limit/base current history1 history2 Soot % %	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 1039 996 1003 Calcium ppm ASTM D5185m 1070 1124 1114 1124 Phosphorus ppm ASTM D5185m 1150 1101 1110 1062 Zinc ppm ASTM D5185m 1270 1308 1315 1289 Sulfur ppm ASTM D5185m 2060 3200 2876 3666 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 3 3 Sodium ppm ASTM D5185m 2 1 2 Potassium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.5 0.5 Nitration Abs/cm *ASTM D7415 >30	Molybdenum	ppm	ASTM D5185m	60	63	63	63
Calcium ppm ASTM D5185m 1070 1124 1114 1124 Phosphorus ppm ASTM D5185m 1150 1101 1110 1062 Zinc ppm ASTM D5185m 1270 1308 1315 1289 Sulfur ppm ASTM D5185m 2060 3200 2876 3666 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 3 3 Sodium ppm ASTM D5185m 2 1 2 2 Potassium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.5 0.5 Nitration Abs/cm *ASTM D7415 >30 19.1 19.5 19.2 FLUID DEGRADATION method <td>Manganese</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th><1</th> <td><1</td> <td><1</td>	Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 1150 1101 1110 1062 Zinc ppm ASTM D5185m 1270 1308 1315 1289 Sulfur ppm ASTM D5185m 2060 3200 2876 3666 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 3 3 Sodium ppm ASTM D5185m 2 1 2 Potassium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.5 0.5 Nitration Abs/cm *ASTM D7624 >20 7.8 7.6 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.1 19.5 19.2 FLUID DEGRADATION method l	Magnesium	ppm	ASTM D5185m	1010	1039	996	1003
Zinc ppm ASTM D5185m 1270 1308 1315 1289	Calcium	ppm	ASTM D5185m	1070	1124	1114	1124
Sulfur ppm ASTM D5185m 2060 3200 2876 3666 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 3 3 Sodium ppm ASTM D5185m 2 1 2 2 Potassium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.5 0.5 Nitration Abs/cm *ASTM D7624 >20 7.8 7.6 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.1 19.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.2 15.4 15.2	Phosphorus	ppm	ASTM D5185m	1150	1101	1110	1062
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 3 3 Sodium ppm ASTM D5185m 2 1 2 2 Potassium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.5 0.5 Nitration Abs/cm *ASTM D7624 >20 7.8 7.6 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.1 19.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.2 15.4 15.2	Zinc	ppm	ASTM D5185m	1270	1308	1315	1289
Silicon ppm ASTM D5185m >30 3 3 Sodium ppm ASTM D5185m 2 1 2 Potassium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.5 0.5 Nitration Abs/cm *ASTM D7624 >20 7.8 7.6 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.1 19.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.2 15.4 15.2	Sulfur	ppm	ASTM D5185m	2060	3200	2876	3666
Sodium ppm ASTM D5185m 2 1 2 Potassium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.5 0.5 Nitration Abs/cm *ASTM D7624 >20 7.8 7.6 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.1 19.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.2 15.4 15.2	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 2 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.5 0.5 Nitration Abs/cm *ASTM D7624 >20 7.8 7.6 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.1 19.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.2 15.4 15.2	Silicon	ppm	ASTM D5185m	>30	3	3	3
INFRA-RED	Sodium	ppm	ASTM D5185m		2	1	2
Soot % % *ASTM D7844 >3 0.5 0.5 0.5 Nitration Abs/cm *ASTM D7624 >20 7.8 7.6 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.1 19.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.2 15.4 15.2	Potassium	ppm	ASTM D5185m	>20	0	2	1
Nitration Abs/cm *ASTM D7624 >20 7.8 7.6 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.1 19.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.2 15.4 15.2	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.1 19.5 19.2 FLUID DEGRADATION method limit/base current Limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.2 15.4 15.2	Soot %	%	*ASTM D7844	>3	0.5	0.5	0.5
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.2 15.4 15.2	Nitration	Abs/cm	*ASTM D7624	>20	7.8	7.6	8.1
Oxidation Abs/.1mm *ASTM D7414 >25 15.2 15.4 15.2	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.1	19.5	19.2
	FLUID DEGRADATION method limit/base current history1 history2						
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.4 8.5 8.5	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.2	15.4	15.2
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.4	8.5	8.5



Base Number

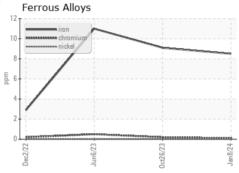
OIL ANALYSIS REPORT

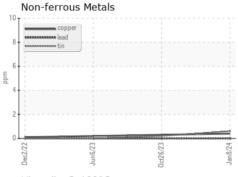


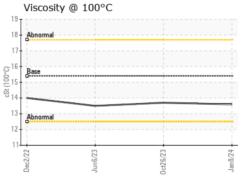
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

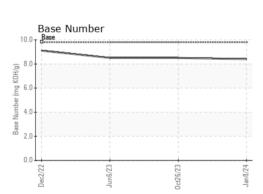
FLUID PROP	EHILO	method			riistory i	HISTORY
Visc @ 100°C	cSt	ASTM D445	15.4	13.6	13.7	13.5

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number

: GFL0080370 : 06068248 Unique Number : 10844925 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 23 Jan 2024 Diagnosed : 24 Jan 2024

Diagnostician : Wes Davis

GFL Environmental - 932 - Muskego HC

W144 S6400 College Ct. Muskego, WI US 53150

Contact: Brian Schlomann brian.schlomann@gflenv.com T: (262)510-4586

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)