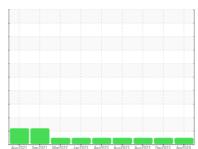


OIL ANALYSIS REPORT

Sample Rating Trend









Machine Id **928076-205292** Component

Diesel Engine

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

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

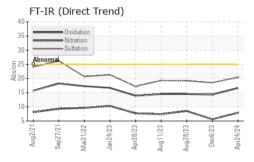
Fluid Condition

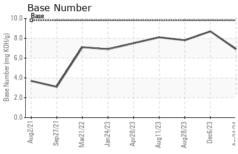
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

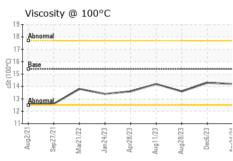
Sample Number Client Info GFL0092597 GFL0092597	•	,					
Client Info	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age	Sample Number		Client Info		GFL0092597	GFL0092557	GFL0071931
Oil Age hrs Client Info 600 600 600 600 Oil Changed Sample Status Client Info Changed Changed Oil Added Changed Cha	Sample Date		Client Info		24 Apr 2024	06 Dec 2023	28 Aug 2023
Cilent Info	Machine Age	hrs	Client Info		17777	16631	15753
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 history2 history2 history2 history2 history2 history2 history2 NEG NEG	Oil Age	hrs	Client Info		600	600	600
Fuel	Oil Changed		Client Info		Changed	Oil Added	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG NEG Glycol WC Method Imitibase current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 49 7 11 Chromium ppm ASTM D5185m >5 0 0 0 Nickel ppm ASTM D5185m >5 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >20 3 <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
Irron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1 <1 0 Nickel ppm ASTM D5185m >5 0 0 0 Titanium ppm ASTM D5185m >2 0 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	49	7	11
Description	Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Silver	Nickel	ppm	ASTM D5185m	>5	0	0	0
Aluminum	Titanium	ppm	ASTM D5185m	>2	0	<1	0
Lead	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >330 0 <1 0 Tin ppm ASTM D5185m >15 1 0 0 Vanadium ppm ASTM D5185m 0 <1	Aluminum	ppm	ASTM D5185m	>20	3	<1	2
Tin	Lead	ppm	ASTM D5185m	>40	2	<1	2
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 2 9 1 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 928 902 1010 Calcium ppm ASTM D5185m 1070 1055 1165 1281 Phosphorus ppm ASTM D5185m 1270 1245 1239 1374 Sulfur ppm ASTM D5185m 2060 3129 3027 3923 CONTAMINANTS method limit/base current history1 </td <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>330</td> <th>0</th> <td><1</td> <td>0</td>	Copper	ppm	ASTM D5185m	>330	0	<1	0
Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 9 1 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 -1 -1 0 Manganese ppm ASTM D5185m 0 -1 -1 0 Magnesium ppm ASTM D5185m 1010 928 902 1010 Calcium ppm ASTM D5185m 1070 1055 1165 1281 Phosphorus ppm ASTM D5185m 1150 1058 1043 1083 Zinc ppm ASTM D5185m 1270 1245 1239 1374 Sulfur ppm ASTM D5185m 2060 3129 3027 3923 CONTAMINANTS method limit/base current	Tin	ppm	ASTM D5185m	>15	1	0	0
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	<1	0
Boron	Cadmium	ppm	ASTM D5185m		0	<1	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 59 58 64 Manganese ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 59 58 64 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 928 902 1010 Calcium ppm ASTM D5185m 1070 1055 1165 1281 Phosphorus ppm ASTM D5185m 1150 1058 1043 1083 Zinc ppm ASTM D5185m 1270 1245 1239 1374 Sulfur ppm ASTM D5185m 2060 3129 3027 3923 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 4 4 Potassium ppm ASTM D5185m >20 2 0 7 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7624 >20	Boron	ppm	ASTM D5185m	0	2	9	1
Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 928 902 1010 Calcium ppm ASTM D5185m 1070 1055 1165 1281 Phosphorus ppm ASTM D5185m 1150 1058 1043 1083 Zinc ppm ASTM D5185m 1270 1245 1239 1374 Sulfur ppm ASTM D5185m 2060 3129 3027 3923 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 4 4 Sodium ppm ASTM D5185m >20 2 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.7 0.2 0.4 Nitration Abs/cm *ASTM D	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 928 902 1010 Calcium ppm ASTM D5185m 1070 1055 1165 1281 Phosphorus ppm ASTM D5185m 1150 1058 1043 1083 Zinc ppm ASTM D5185m 1270 1245 1239 1374 Sulfur ppm ASTM D5185m 2060 3129 3027 3923 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 4 4 Sodium ppm ASTM D5185m >20 2 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.7 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 7.9 5.6 8.5 Sulfation Abs/.1mm	Molybdenum	ppm	ASTM D5185m	60	59	58	64
Calcium ppm ASTM D5185m 1070 1055 1165 1281 Phosphorus ppm ASTM D5185m 1150 1058 1043 1083 Zinc ppm ASTM D5185m 1270 1245 1239 1374 Sulfur ppm ASTM D5185m 2060 3129 3027 3923 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 4 4 Sodium ppm ASTM D5185m >20 2 0 7 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 >4 0.7 0.2 0.4 Nitration Abs/cm "ASTM D7624 >20 7.9 5.6 8.5 Sulfation Abs/.1mm "ASTM D7415 >30 20.4 18.5 19.2 FLUID DEGRADAT	Manganese	ppm	ASTM D5185m	0	<1	<1	0
Phosphorus ppm ASTM D5185m 1150 1058 1043 1083 Zinc ppm ASTM D5185m 1270 1245 1239 1374 Sulfur ppm ASTM D5185m 2060 3129 3027 3923 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 4 4 Sodium ppm ASTM D5185m >20 2 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.7 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 7.9 5.6 8.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 18.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs	Magnesium	ppm	ASTM D5185m	1010	928	902	1010
Zinc ppm ASTM D5185m 1270 1245 1239 1374 Sulfur ppm ASTM D5185m 2060 3129 3027 3923 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 4 4 Sodium ppm ASTM D5185m 20 2 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.7 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 7.9 5.6 8.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 18.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 14.3 14.5	Calcium	ppm	ASTM D5185m	1070	1055	1165	1281
Sulfur ppm ASTM D5185m 2060 3129 3027 3923 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 4 4 Sodium ppm ASTM D5185m 20 2 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.7 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 7.9 5.6 8.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 18.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 14.3 14.5	Phosphorus	ppm	ASTM D5185m	1150	1058	1043	1083
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 4 4 Sodium ppm ASTM D5185m 4 4 4 Potassium ppm ASTM D5185m >20 2 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.7 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 7.9 5.6 8.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 18.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 14.3 14.5	Zinc	ppm	ASTM D5185m	1270	1245	1239	1374
Silicon ppm ASTM D5185m >25 8 4 4 Sodium ppm ASTM D5185m 4 4 4 4 Potassium ppm ASTM D5185m >20 2 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.7 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 7.9 5.6 8.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 18.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 14.3 14.5	Sulfur	ppm	ASTM D5185m	2060	3129	3027	3923
Sodium ppm ASTM D5185m 4 4 4 4 Potassium ppm ASTM D5185m >20 2 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.7 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 7.9 5.6 8.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 18.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 14.3 14.5	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 0 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.7 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 7.9 5.6 8.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 18.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 14.3 14.5	Silicon	ppm	ASTM D5185m	>25	8	4	4
INFRA-RED	Sodium	ppm	ASTM D5185m		4	4	4
Soot % % *ASTM D7844 >4 0.7 0.2 0.4 Nitration Abs/cm *ASTM D7624 >20 7.9 5.6 8.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 18.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 14.3 14.5	Potassium	ppm	ASTM D5185m	>20	2	0	7
Nitration Abs/cm *ASTM D7624 >20 7.9 5.6 8.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 18.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 14.3 14.5	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 20.4 18.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 14.3 14.5	Soot %	%	*ASTM D7844	>4	0.7	0.2	0.4
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.6 14.3 14.5	Nitration	Abs/cm	*ASTM D7624	>20	7.9	5.6	8.5
Oxidation Abs/.1mm *ASTM D7414 >25 16.6 14.3 14.5	Sulfation	Abs/.1mm	*ASTM D7415	>30	20.4	18.5	19.2
	FLUID DEGRADATION method limit/base current history1 history2						
	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.6	14.3	14.5
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	6.9	8.7	7.8



OIL ANALYSIS REPORT



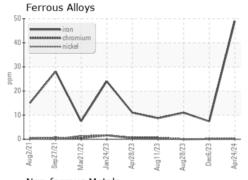


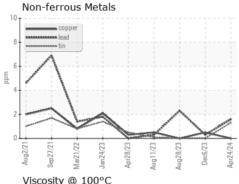


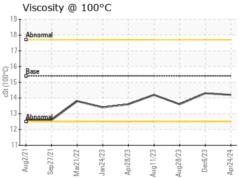
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

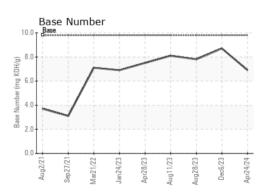
FLUID PROPI	ERHES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.2	14.3	13.6

GRAPHS













Certificate 12367

Laboratory

Sample No. Lab Number : 06160152 Unique Number : 10995575

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0092597

Received **Tested** Diagnosed

: 25 Apr 2024 : 26 Apr 2024

: 26 Apr 2024 - Wes Davis

GFL Environmental - 885 - Orlando

1263 W Landstreet Rd Orlando, FL US 32824

Contact: Brian Bou Diaz bboudiaz@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)

T:

F: