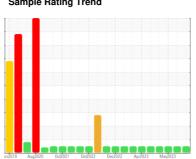


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 429060-402468

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

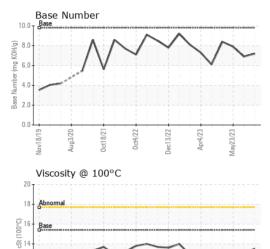
Fluid Condition

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

Sample Date Client Info 14 Aug 2023 04 Jul 2023 23 May 2023 24 May 2023	iAL)		ov2019 Aug	2020 Oct2021 Oct2	022 Dec2022 Apr2023 N	lay2023	
Sample Date Client Info 14 Aug 2023 04 Jul 2023 23 May 2023 24 May 2023	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 0 0 0 0 0 0 0 0	Sample Number		Client Info		GFL0083658	GFL0083670	GFL0080009
Dil Changed	Sample Date		Client Info		14 Aug 2023	04 Jul 2023	23 May 2023
Coli Changed Changed NoRMAL N	Machine Age	hrs	Client Info		0	0	0
CONTAMINATION	Oil Age	hrs	Client Info		0	600	0
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	Oil Changed		Client Info		Not Changd	Changed	Not Changd
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS	CONTAMINATI	ION	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >110 8 17 9 Chromium ppm ASTM D5185m >4 <1	Fuel		WC Method	>5	<1.0	<1.0	<1.0
Chromium	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METALS	S	method	limit/base	current	history1	history2
Nickel	ron	ppm	ASTM D5185m	>110	8	17	9
Description	Chromium	ppm	ASTM D5185m	>4	<1	<1	1
Saliver	Nickel	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	Titanium	ppm	ASTM D5185m		0	0	<1
Deed	Silver	ppm	ASTM D5185m	>2	0	0	<1
Copper	Aluminum	ppm	ASTM D5185m	>25	3	4	2
Copper	_ead	ppm	ASTM D5185m	>45	1	2	3
Tin	Copper		ASTM D5185m	>85	<1	<1	<1
Anadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 2 2 2 Barium ppm ASTM D5185m 0 0 0 0 0 0 Molybdenum ppm ASTM D5185m 60 60 62 55 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 970 985 945 Calcium ppm ASTM D5185m 1070 1265 1326 1269 Phosphorus ppm ASTM D5185m 1270 1290 1381 1299 Sulfur ppm ASTM D5185m >30 4 6 5 CONTAMINANTS method limit/base <			ASTM D5185m	>4	0	<1	1
ADDITIVES	/anadium		ASTM D5185m		<1	0	<1
Soron ppm ASTM D5185m 0 0 0 0 0 0 0 0 0	Cadmium		ASTM D5185m			0	<1
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 60 62 55 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 970 985 945 Calcium ppm ASTM D5185m 1070 1265 1326 1269 Phosphorus ppm ASTM D5185m 1150 1027 1090 1005 Zinc ppm ASTM D5185m 1270 1290 1381 1299 Sulfur ppm ASTM D5185m 2060 3578 3676 3679 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 5 Sodium ppm ASTM D5185m >20 4 4 4 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >3	Boron	ppm	ASTM D5185m	0	0	2	2
Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 970 985 945 Calcium ppm ASTM D5185m 1070 1265 1326 1269 Phosphorus ppm ASTM D5185m 1150 1027 1090 1005 Zinc ppm ASTM D5185m 1270 1290 1381 1299 Sulfur ppm ASTM D5185m 2060 3578 3676 3679 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 5 Godium ppm ASTM D5185m >5 6 5 Potassium ppm ASTM D5185m >20 4 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 9.4	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 970 985 945 Calcium ppm ASTM D5185m 1070 1265 1326 1269 Phosphorus ppm ASTM D5185m 1150 1027 1090 1005 Zinc ppm ASTM D5185m 1270 1290 1381 1299 Sulfur ppm ASTM D5185m 2060 3578 3676 3679 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 5 Sodium ppm ASTM D5185m 5 6 5 Potassium ppm ASTM D5185m >20 4 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 9.4 11.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 </td <td>Molybdenum</td> <td>ppm</td> <td>ASTM D5185m</td> <td>60</td> <td>60</td> <td>62</td> <td>55</td>	Molybdenum	ppm	ASTM D5185m	60	60	62	55
Calcium ppm ASTM D5185m 1070 1265 1326 1269 Phosphorus ppm ASTM D5185m 1150 1027 1090 1005 Zinc ppm ASTM D5185m 1270 1290 1381 1299 Sulfur ppm ASTM D5185m 2060 3578 3676 3679 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D5185m >30 4 6 5 Solicon ppm ASTM D5185m 5 6 5 Potassium ppm ASTM D5185m >20 4 4 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.2 Nitration Abs/cm *ASTM D7415 >30 22.1 22.9 20.6 FLUID DEGRADATION method	Manganese	ppm	ASTM D5185m	0	0	<1	<1
Calcium ppm ASTM D5185m 1 070 1265 1326 1269 Phosphorus ppm ASTM D5185m 1 150 1027 1 090 1 005 Zinc ppm ASTM D5185m 1270 1290 1 381 1 299 Sulfur ppm ASTM D5185m 2060 3578 3676 3679 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 5 Solium ppm ASTM D5185m 5 6 5 Potassium ppm ASTM D5185m >20 4 4 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.2 Nitration Abs/.1mm *ASTM D7415 >30 22.1 22.9 20.6 FLUID DEGRADATION *ASTM D7414	Magnesium	ppm	ASTM D5185m	1010	970	985	945
Time	Calcium	ppm	ASTM D5185m	1070	1265	1326	1269
Zinc ppm ASTM D5185m 1270 1290 1381 1299 Sulfur ppm ASTM D5185m 2060 3578 3676 3679 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 5 Sodium ppm ASTM D5185m 5 6 5 Potassium ppm ASTM D5185m >20 4 4 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 9.4 11.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 22.9 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7	Phosphorus	ppm	ASTM D5185m	1150	1027	1090	1005
Sulfur ppm ASTM D5185m 2060 3578 3676 3679 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 6 5 Sodium ppm ASTM D5185m 5 6 5 Potassium ppm ASTM D5185m >20 4 4 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 9.4 11.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 22.9 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.9 20.4 16.6			ASTM D5185m	1270	1290	1381	1299
Soliticon ppm ASTM D5185m >30 4 6 5	Sulfur	ppm	ASTM D5185m	2060	3578	3676	3679
Sodium ppm ASTM D5185m 5 6 5 Potassium ppm ASTM D5185m >20 4 4 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 9.4 11.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 22.9 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.9 20.4 16.6	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 4 4 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 9.4 11.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 22.9 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.9 20.4 16.6	Silicon	ppm	ASTM D5185m	>30	4	6	5
INFRA-RED	Sodium	ppm	ASTM D5185m		5	6	5
Soot % % *ASTM D7844 >3 0.3 0.4 0.2 Nitration Abs/cm *ASTM D7624 >20 9.4 11.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 22.9 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.9 20.4 16.6	Potassium	ppm	ASTM D5185m	>20	4	4	4
Nitration Abs/cm *ASTM D7624 >20 9.4 11.3 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 22.1 22.9 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.9 20.4 16.6	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 22.1 22.9 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.9 20.4 16.6	Soot %	%	*ASTM D7844	>3	0.3	0.4	0.2
Sulfation Abs/.1mm *ASTM D7415 >30 22.1 22.9 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.9 20.4 16.6	Vitration	Abs/cm	*ASTM D7624	>20	9.4	11.3	8.3
Oxidation	Sulfation	Abs/.1mm		>30	22.1	22.9	
	FLUID DEGRAD	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 7.2 6.9 7.9	Oxidation	Abs/.1mm	*ASTM D7414	>25	18.9	20.4	16.6
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.2	6.9	7.9



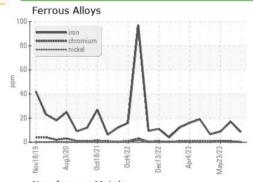
OIL ANALYSIS REPORT

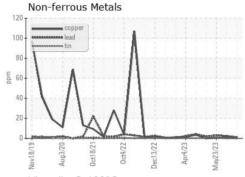


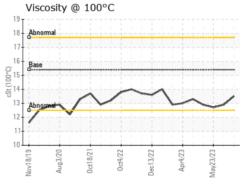
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

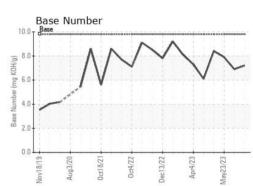
FLUID PROPE	ERTIES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.5	12.9	12.7

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : FLEET

: 10633880

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0083658 Received : 05943268

Diagnosed

: 06 Sep 2023 : 07 Sep 2023

Diagnostician : Wes Davis

GFL Environmental - 846 - Mayfield Hauling

3426 State Route 45 Mayfield, KY US 42066

Contact: Jack Lindsey jack.lindsey@gflenv.com T: (270)970-3690

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: GFL846 [WUSCAR] 05943268 (Generated: 09/07/2023 09:32:41) Rev: 1