

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 413058

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Engine) $% \label{eq:commutative}$

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

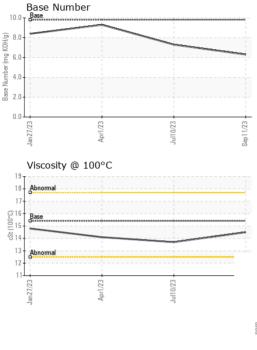
Fluid Condition

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

		Jan2023	Apr2023	Jul2023 Se	p2023	
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0089402	GFL0085471	GFL0075309
Sample Date		Client Info		11 Sep 2023	10 Jul 2023	01 Apr 2023
Machine Age	mls	Client Info		64736	53854	38262
Oil Age	mls	Client Info		64736	53854	0
Oil Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	NC	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	\$	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	7	6	10
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	4
Lead	ppm	ASTM D5185m	>40	1	<1	<1
Copper	ppm	ASTM D5185m	>330	1	<1	8
Tin	ppm	ASTM D5185m	>15	2	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	0	0
Barium	ppm	ASTM D5185m	0	44	0	0
Molybdenum		ASTM D5185m	60		4.4	46
morybaonann	ppm	ASTIVI DJIOJIII	60	38	44	40
	ppm	ASTM D5185m		38 1	44 <1	<1
Manganese						
Manganese Magnesium	ppm	ASTM D5185m	0	1	<1	<1
Manganese Magnesium Calcium	ppm ppm	ASTM D5185m ASTM D5185m	0 1010	1 27	<1 0	<1 18
Manganese Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070	1 27 2164	<1 0 2506	<1 18 3066
Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150	1 27 2164 956	<1 0 2506 1096	<1 18 3066 1153
Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270	1 27 2164 956 1168	<1 0 2506 1096 1250	<1 18 3066 1153 1433
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 1010 1070 1150 1270 2060	1 27 2164 956 1168 3296	<1 0 2506 1096 1250 3544	<1 18 3066 1153 1433 3788
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 1010 1070 1150 1270 2060 Imit/base	1 27 2164 956 1168 3296 current	<1 0 2506 1096 1250 3544 history1	<1 18 3066 1153 1433 3788 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium	ppm ppm ppm ppm ppm ppm S	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25	1 27 2164 956 1168 3296 current 8	<1 0 2506 1096 1250 3544 history1 10	<1 18 3066 1153 1433 3788 history2 8
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium	ppm ppm ppm ppm ppm ppm S ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25	1 27 2164 956 1168 3296 current 8 <1	<1 0 2506 1096 1250 3544 history1 10 0	<1 18 3066 1153 1433 3788 history2 8 0
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm S ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25 >20	1 27 2164 956 1168 3296 current 8 <1 6	<1 0 2506 1096 1250 3544 <u>history1</u> 10 0 7	<1 18 3066 1153 1433 3788 history2 8 0 12
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >3	1 27 2164 956 1168 3296 current 8 <1 6 current	<1 0 2506 1096 1250 3544 history1 10 0 7 history1	<1 18 3066 1153 1433 3788 history2 8 0 12 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 -20 <i>limit/base</i> >3 >20	1 27 2164 956 1168 3296 current 8 <1 6 current 0.2	<1 0 2506 1096 1250 3544 history1 10 0 7 history1 0.1	<1 18 3066 1153 1433 3788 history2 8 0 12 history2 0.2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 -20 <i>limit/base</i> >3 >20	1 27 2164 956 1168 3296 <u>current</u> 8 <1 6 <u>current</u> 0.2 7.8	<1 0 2506 1096 1250 3544 <u>history1</u> 10 0 7 <u>history1</u> 0.1 6.8	<1 18 3066 1153 1433 3788 history2 8 0 12 history2 0.2 8.0
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >3 >20 >30	1 27 2164 956 1168 3296 <u>current</u> 8 <1 6 <u>current</u> 0.2 7.8 18.2	<1 0 2506 1096 1250 3544 history1 10 0 7 history1 0.1 6.8 17.0	<1 18 3066 1153 1433 3788 history2 8 0 12 history2 0.2 8.0 18.7



OIL ANALYSIS REPORT



VISUAL		method	limit/base	current	history1	history2
Vhite Metal	scalar	*Visual	NONE	NONE	NONE	NONE
ellow 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
Ddor	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	limit/base	current	history1	history2
/isc @ 100°C	cSt	ASTM D445	15.4	14.5	13.7	14.1
GRAPHS						
Ferrous Alloys						
nickel						
an27/23 Apr1/23	antere terreter anter a	Juli 10/23				
EZUZZUBY Non-ferrous Metal		Juli 0,23	Sep11/23			

Sep11/23

Sep11/23 -

: 15 Sep 2023

: 19 Sep 2023

10.0 T Base

(mg KOH/g) oo

(Bul) Jaquini 4:

Hase Num

0.0

Jan27/23 -

Base Number

Apr1/23



 Unique Number
 : 10648455
 Diagnostician
 : Sean Felton

 Certificate 12367
 Test Package
 : FLEET

 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)

Jul10/23 -

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

Received

Diagnosed

0

19

18

() 100°C) 15

ぢ 14

Laboratory

Sample No.

Lab Number

13 Abno 12

Jan27/23

: GFL0089402

: 05952496

Jan27/23

Apr1/23

Apr1/23

Viscosity @ 100°C

Submitted By: TECHNICIAN ACCOUNT

GFL Environmental - 983 - Sugar Land Hauling

16011 West Belfort Street

Sugar Land, TX

Contact: Gino Griego

ggriego@gflenv.com

US 77498

1/23

Sep 1

T:

F: