

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 526012-7007

Component Diesel Engine

Fluid 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.

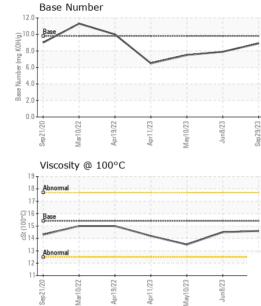
Fluid Condition

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

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0086549	GFL0067849	GFL0074323
Sample Date		Client Info		29 Sep 2023	08 Jun 2023	10 May 2023
Machine Age	hrs	Client Info		577931	16608	16543
Oil Age	hrs	Client Info		16373	0	0
Oil Changed		Client Info		N/A	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method	20	NEG	NEG	NEG
-	0		line it /le e e e			
WEAR METAL	5	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	11	15	11
Chromium	ppm	ASTM D5185m	>4	<1	1	1
Nickel	ppm	ASTM D5185m	>2	0	<1	2
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	0	<1	4
Lead	ppm	ASTM D5185m	>45	2	<1	<1
Copper	ppm	ASTM D5185m	>85	1	<1	4
Tin	ppm	ASTM D5185m	>4	<1	<1	1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
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Boron	ppm	ASTM D5185m	0	4	6	5
	ppm ppm					
Boron		ASTM D5185m	0	4	6	5
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	4 0	6 2	5 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 62	6 2 66	5 0 62
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 62 <1	6 2 66 <1	5 0 62 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	4 0 62 <1 1012	6 2 66 <1 929	5 0 62 <1 1020
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	4 0 62 <1 1012 1088	6 2 66 <1 929 1097	5 0 62 <1 1020 1178
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	4 0 62 <1 1012 1088 1054	6 2 66 <1 929 1097 1051	5 0 62 <1 1020 1178 1078
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	4 0 62 <1 1012 1088 1054 1294	6 2 66 <1 929 1097 1051 1281	5 0 62 <1 1020 1178 1078 1360
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	4 0 62 <1 1012 1088 1054 1294 3261	6 2 66 <1 929 1097 1051 1281 3522	5 0 62 <1 1020 1178 1078 1360 3777
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	0 0 60 1010 1070 1150 1270 2060	4 0 62 <1 1012 1088 1054 1294 3261 current	6 2 66 <1 929 1097 1051 1281 3522 history1	5 0 62 <1 1020 1178 1078 1360 3777 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	4 0 62 <1 1012 1088 1054 1294 3261 <i>current</i> 6	6 2 66 <1 929 1097 1051 1281 3522 history1 7	5 0 62 <1 1020 1178 1078 1360 3777 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >30	4 0 62 <1 1012 1088 1054 1294 3261 <u>current</u> 6 2	6 2 66 <1 929 1097 1051 1281 3522 history1 7 2	5 0 62 <1 1020 1178 1078 1360 3777 history2 6 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >30	4 0 62 <1 1012 1088 1054 1294 3261 current 6 2 0 0	6 2 66 <1 929 1097 1051 1281 3522 history1 7 2 1 1 history1	5 0 62 <1 1020 1178 1078 1360 3777 history2 6 3 11
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >30 >20 Imit/base >33	4 0 62 <1 1012 1088 1054 1294 3261 <i>current</i> 6 2 0 <i>current</i> 0.1	6 2 66 <1 929 1097 1051 1281 3522 history1 7 2 1 1 <i>history1</i> 0.2	5 0 62 <1 1020 1178 1078 1360 3777 history2 6 3 11 history2 0.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >30 >20 Imit/base >33	4 0 62 <1 1012 1088 1054 1294 3261 current 6 2 0 0	6 2 66 <1 929 1097 1051 1281 3522 history1 7 2 1 1 history1	5 0 62 <1 1020 1178 1078 1360 3777 history2 6 3 11 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30 220 imit/base >3 >20	4 0 62 <1 1012 1088 1054 1294 3261 current 6 2 0 current 0.1 5.9	6 2 66 <1 929 1097 1051 1281 3522 history1 7 2 1 7 2 1 history1 0.2 7.7	5 0 62 <1 1020 1178 1078 1360 3777 history2 6 3 11 history2 0.4 7.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30 imit/base >3 20	4 0 62 <1 1012 1088 1054 1294 3261 <i>current</i> 6 2 0 <i>current</i> 0.1 5.9 18.5	6 2 66 <1 929 1097 1051 1281 3522 history1 7 2 1 7 2 1 1 0.2 7.7 19.9 history1	5 0 62 <1 1020 1178 1078 1360 3777 history2 6 3 3777 history2 6 3 11 history2 0.4 7.8 19.6 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 2060 2060 2060 2060 200 200 200 200 20	4 0 62 <1 1012 1088 1054 1294 3261 <i>current</i> 6 2 0 <i>current</i> 0.1 5.9 18.5	6 2 66 <1 929 1097 1051 1281 3522 history1 7 2 1 1 <u>history1</u> 0.2 7.7 19.9	5 0 62 <1 1020 1178 1078 1360 3777 history2 6 3 11 history2 0.4 7.8 19.6



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	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.6	14.5	13.5
GRAPHS						
Ferrous Alloys						
80						
70 - iron						
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Sep21/20 -

Sep29/23.

: 03 Oct 2023

: 04 Oct 2023

Jun8/23



Test Package : FLEET Certificate L2367 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)

Apr19/22

Apr11/23

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

Received

Diagnosed

May10/23 -

Diagnostician : Wes Davis

12 11

Laboratory

Sample No.

Lab Number

Unique Number : 10674052

Sep21/20

Mar10/22

: GFL0086549

: 05967501

Submitted By: TECHNICIAN ACCOUNT

Apr11/23 -

Apr19/22

Mar10/22

May10/23 -

GFL Environmental - 654 - Richmond Hauling

Sep29/23

T:

F:

Jun8/23

11800 Lewis Road

Contact: Jimmy Mayes

jmayes@gflenv.com

Chester, VA

US 23831