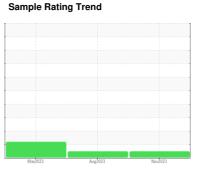


OIL ANALYSIS REPORT



NORMAL



426137-4618

Component

Diesel Engine

Diesel Engine

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Engine)

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

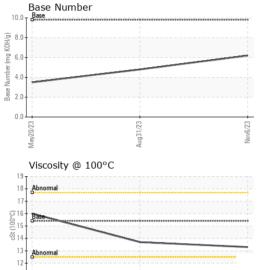
Fluid Condition

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

GAL)		Ma	y2023	Aug2023 Nov20	23	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number Sample Date		Client Info		GFL0094107 06 Nov 2023	GFL0089404 31 Aug 2023	GFL0075341 20 May 2023
Machine Age	mls	Client Info		355610	348319	544075
Oil Age	mls	Client Info		355610	348319	0
Oil Changed		Client Info		N/A	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	15	45	77
Chromium	ppm	ASTM D5185m	>20	<1	2	4
Nickel	ppm	ASTM D5185m	>4	0	<1	1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	3	6
Lead	ppm	ASTM D5185m	>40	0	2	5
Copper	ppm	ASTM D5185m	>330	0	3	3
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		_	0	<1
Oddiniani	ppiii	ASTIVI DOTOSITI		0	0	< 1
ADDITIVES	ррш	method	limit/base	current	history1	history2
	ppm	method	limit/base			
ADDITIVES		method ASTM D5185m		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 0	history1	history2
ADDITIVES Boron Barium	ppm	method ASTM D5185m ASTM D5185m	0 0 60	current 0 0	history1 0 0	history2 1 0
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 0 0 40	history1 0 0 45	history2 1 0 58
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 0 0 40 <1	history1 0 0 45	history2 1 0 58
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 0 0 40 <1 20	history1 0 0 45 2 144	history2 1 0 58 1 895
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current 0 0 40 <1 20 2353	history1 0 0 45 2 144 2363	history2 1 0 58 1 895 1379
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150	current 0 0 40 <1 20 2353 1007	history1 0 0 45 2 144 2363 1098	history2 1 0 58 1 895 1379 1006
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150	current 0 0 40 <1 20 2353 1007 1179	history1 0 0 45 2 144 2363 1098 1351	history2 1 0 58 1 895 1379 1006 1342
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 0 0 40 <1 20 2353 1007 1179 2906	history1 0 0 45 2 144 2363 1098 1351 3991	history2 1 0 58 1 895 1379 1006 1342 3210
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 0 0 40 <1 20 2353 1007 1179 2906 current	history1 0 0 45 2 144 2363 1098 1351 3991 history1	history2 1 0 58 1 895 1379 1006 1342 3210 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 0 0 40 <1 20 2353 1007 1179 2906 current 6	history1 0 0 45 2 144 2363 1098 1351 3991 history1 13	history2 1 0 58 1 895 1379 1006 1342 3210 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current 0 0 40 <1 20 2353 1007 1179 2906 current 6 2	history1 0 0 45 2 144 2363 1098 1351 3991 history1 13 2	history2 1 0 58 1 895 1379 1006 1342 3210 history2 10 6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current 0 0 40 <1 20 2353 1007 1179 2906 current 6 2 <1	history1 0 0 45 2 144 2363 1098 1351 3991 history1 13 2 3	history2 1 0 58 1 895 1379 1006 1342 3210 history2 10 6 4
ADDITIVES 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	method ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current 0 0 40 <1 20 2353 1007 1179 2906 current 6 2 <1	history1 0 0 45 2 144 2363 1098 1351 3991 history1 13 2 3 history1	history2 1 0 58 1 895 1379 1006 1342 3210 history2 10 6 4 history2
ADDITIVES 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	method ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	current 0 0 40 <1 20 2353 1007 1179 2906 current 6 2 <1 current 0.4	history1 0 0 45 2 144 2363 1098 1351 3991 history1 13 2 3 history1 0.8	history2 1 0 58 1 895 1379 1006 1342 3210 history2 10 6 4 history2 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	method ASTM D5185m method ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D76185m *ASTM D7844 *ASTM D7624 *ASTM D76185m	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base	current 0 0 40 <1 20 2353 1007 1179 2906 current 6 2 <1 current 0.4 10.6	history1 0 0 45 2 144 2363 1098 1351 3991 history1 13 2 3 history1 0.8 13.8	history2 1 0 58 1 895 1379 1006 1342 3210 history2 10 6 4 history2 2 22.7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	method ASTM D5185m method ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D76185m *ASTM D7844 *ASTM D7624 *ASTM D76185m	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30	current 0 0 40 <1 20 2353 1007 1179 2906 current 6 2 <1 current 0.4 10.6 21.3	history1 0 0 45 2 144 2363 1098 1351 3991 history1 13 2 3 history1 0.8 13.8 26.2	history2 1 0 58 1 895 1379 1006 1342 3210 history2 10 6 4 history2 2 22.7 40.7



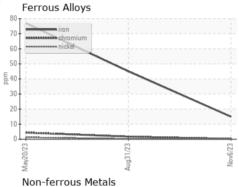
OIL ANALYSIS REPORT

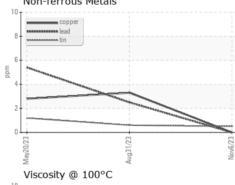


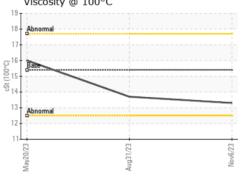
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

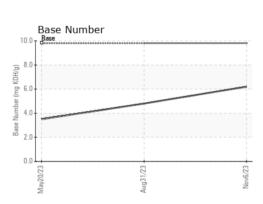
FLUID PROPE	RHES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.3	13.7	16.0

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number Test Package : FLEET

Unique Number : 10740563

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0094107 : 06006801

Diagnosed

Received : 14 Nov 2023 : 16 Nov 2023 Diagnostician : Don Baldridge GFL Environmental - 983 - Sugar Land Hauling

16011 West Belfort Street Sugar Land, TX US 77498 Contact: Gino Griego ggriego@gflenv.com T: (720)999-0726

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)