

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

825018-140

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.

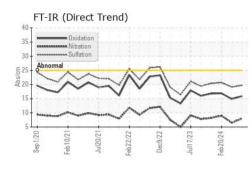
Fluid Condition

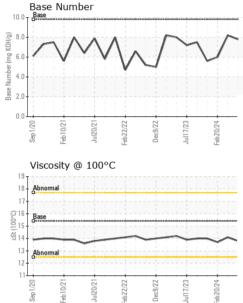
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0119278	GFL0070922	GFL0058090
Sample Date		Client Info		03 Jul 2024	23 May 2024	20 Feb 2024
Machine Age	hrs	Client Info		20814	20594	19995
Oil Age	hrs	Client Info		396	175	502
Oil Changed		Client Info		Changed	Not Changd	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method	20.L	NEG	NEG	NEG
-	0		1' 't /l	-		
WEAR METAL		method	limit/base	current	history1	history2
Iron	ppm		>120	4	5	7
Chromium	ppm		>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>2	<1	<1	0
Aluminum	ppm	ASTM D5185m		2	2	2
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m		1	<1	<1
Tin	ppm		>15	0	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 2	history1 2	history2 2
	ppm ppm					
Boron		ASTM D5185m	0	2	2	2
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	2 0	2 0	2 <1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 61	2 0 60	2 <1 68
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 61 <1	2 0 60 <1	2 <1 68 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 0 61 <1 965	2 0 60 <1 991	2 <1 68 0 942
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	2 0 61 <1 965 1125	2 0 60 <1 991 1124	2 <1 68 0 942 977
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	2 0 61 <1 965 1125 950	2 0 60 <1 991 1124 1053	2 <1 68 0 942 977 836
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	2 0 61 <1 965 1125 950 1131	2 0 60 <1 991 1124 1053 1265	2 <1 68 0 942 977 836 1210
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	2 0 61 <1 965 1125 950 1131 2864	2 0 60 <1 991 1124 1053 1265 3571	2 <1 68 0 942 977 836 1210 2522
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	0 0 60 1010 1070 1150 1270 2060 limit/base	2 0 61 <1 965 1125 950 1131 2864 current	2 0 60 <1 991 1124 1053 1265 3571 history1	2 <1 68 0 942 977 836 1210 2522 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	2 0 61 <1 965 1125 950 1131 2864 current 6	2 0 60 <1 991 1124 1053 1265 3571 history1 5	2 <1 68 0 942 977 836 1210 2522 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25	2 0 61 <1 965 1125 950 1131 2864 current 6 25	2 0 60 <1 991 1124 1053 1265 3571 history1 5 12	2 <1 68 0 942 977 836 1210 2522 history2 6 6 68
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 0 1010 1070 1150 1270 2060 limit/base >25	2 0 61 <1 965 1125 950 1131 2864 <u>current</u> 6 25 7	2 0 60 <1 991 1124 1053 1265 3571 history1 5 12 7	2 <1 68 0 942 977 836 1210 2522 history2 6 6 68 36
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	2 0 61 <1 965 1125 950 1131 2864 current 6 25 7 2 kurrent	2 0 60 <1 991 1124 1053 1265 3571 history1 5 12 7 7 history1	2 <1 68 0 942 977 836 1210 2522 history2 6 6 68 36 36 history2
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 limit/base >25 >20 limit/base >4	2 0 61 <1 965 1125 950 1131 2864 <i>current</i> 6 25 7 <i>current</i> 0.3	2 0 60 <1 991 1124 1053 1265 3571 history1 5 12 7 history1 0.2	2 <1 68 0 942 977 836 1210 2522 history2 6 6 68 36 36 history2 0.2
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 >25 imit/base >20 imit/base	2 0 61 <1 965 1125 950 1131 2864 <i>current</i> 6 25 7 <i>current</i> 0.3 8.0	2 0 60 <1 991 1124 1053 1265 3571 history1 5 12 7 history1 0.2 6.5	2 <1 68 0 942 977 836 1210 2522 history2 6 6 68 36 36 history2 0.2 9.0
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 D7624	0 0 0 1010 1070 1150 1270 2060 imit/base >25 	2 0 61 <1 965 1125 950 1131 2864 <i>current</i> 6 25 7 <i>current</i> 0.3 8.0 19.7	2 0 60 <1 991 1124 1053 1265 3571 history1 5 12 7 history1 0.2 6.5 19.1 history1	2 <1 68 0 942 977 836 1210 2522 history2 6 6 68 36 8 36 history2 0.2 9.0 20.7
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 >25 imit/base >20 imit/base >4 >20	2 0 61 <1 965 1125 950 1131 2864 <i>current</i> 6 25 7 <i>current</i> 0.3 8.0 19.7	2 0 60 <1 991 1124 1053 1265 3571 history1 5 12 7 history1 0.2 6.5 19.1	2 <1 68 0 942 977 836 1210 2522 history2 6 6 68 36 history2 0.2 9.0 20.7



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	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	14.1	13.7
GRAPHS						

Ferrous Alloys

Sep1

19

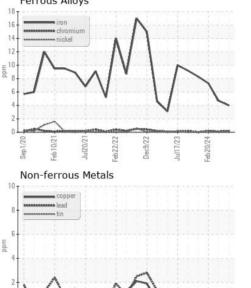
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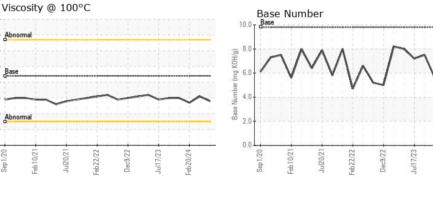
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Sep1/20

Feb10/21

Feb 1





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 657 - Charlottesville Hauling Sample No. : GFL0119278 Received : 05 Jul 2024 5498 Richmond Road Lab Number : 06228398 Tested : 08 Jul 2024 Troy, VA US 22974 Unique Number : 11111891 Diagnosed : 08 Jul 2024 - Wes Davis Test Package : FLEET Contact: Brian Ulickas Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. bulickas@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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Submitted By: TECHNICIAN ACCOUNT

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