

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

822019-114

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

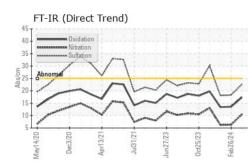
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

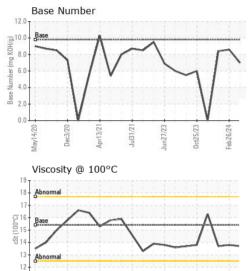
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0122057	GFL0111851	GFL0108303
Sample Date		Client Info		23 May 2024	26 Feb 2024	19 Feb 2024
Machine Age	mls	Client Info		256740	251300	177140
Oil Age	mls	Client Info		182575	251295	177136
Oil Changed		Client Info		Changed	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
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	35	8	5
Chromium	ppm	ASTM D5185m	>4	2	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>2	<1	<1	<1
Aluminum	ppm	ASTM D5185m	>25	2	<1	1
Lead	ppm	ASTM D5185m	>45	4	<1	0
Copper	ppm	ASTM D5185m	>85	1	<1	0
Tin	ppm	ASTM D5185m	>4	1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 10	history1 15	history2 14
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	10	15	14
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	10 0	15 <1	14 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	10 0 59	15 <1 58	14 0 52
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	10 0 59 <1	15 <1 58 <1	14 0 52 <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	10 0 59 <1 932	15 <1 58 <1 868	14 0 52 <1 845
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	10 0 59 <1 932 1120	15 <1 58 <1 868 1059	14 0 52 <1 845 999
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	0 0 60 0 1010 1070 1150	10 0 59 <1 932 1120 1058	15 <1 58 <1 868 1059 1007	14 0 52 <1 845 999 971
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	10 0 59 <1 932 1120 1058 1252	15 <1 58 <1 868 1059 1007 1167	14 0 52 <1 845 999 971 1163
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 0 1010 1070 1150 1270 2060	10 0 59 <1 932 1120 1058 1252 3210	15 <1 58 <1 868 1059 1007 1167 3246	14 0 52 <1 845 999 971 1163 2883 history2 4
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	10 0 59 <1 932 1120 1058 1252 3210 current	15 <1 58 <1 868 1059 1007 1167 3246 history1	14 0 52 <1 845 999 971 1163 2883 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	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 imit/base >30	10 0 59 <1 932 1120 1058 1252 3210 current 12	15 <1 58 <1 868 1059 1007 1167 3246 history1 6	14 0 52 <1 845 999 971 1163 2883 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS 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 imit/base >30	10 0 59 <1 932 1120 1058 1252 3210 current 12 6 3 3	15 <1 58 <1 868 1059 1007 1167 3246 history1 6 2 3 3 history1	14 0 52 <1 845 999 971 1163 2883 history2 4 2 2 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 TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >30 >20 Imit/base >33	10 0 59 <1 932 1120 1058 1252 3210 current 12 6 3 3 current 12	15 <1 58 <1 868 1059 1007 1167 3246 history1 6 2 3 3 history1 0.3	14 0 52 <1 845 999 971 1163 2883 history2 4 2 2 2 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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >30 >20 Imit/base >33	10 0 59 <1 932 1120 1058 1252 3210 current 12 6 3 3	15 <1 58 <1 868 1059 1007 1167 3246 history1 6 2 3 3 history1	14 0 52 <1 845 999 971 1163 2883 history2 4 2 2 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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >30 >20 Imit/base >33	10 0 59 <1 932 1120 1058 1252 3210 current 12 6 3 3 current 12	15 <1 58 <1 868 1059 1007 1167 3246 history1 6 2 3 3 history1 0.3	14 0 52 <1 845 999 971 1163 2883 history2 4 2 2 2 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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30 200 imit/base >33 >20	10 0 59 <1 932 1120 1058 1252 3210 current 12 6 3 current 1.2 1.2 10.5	15 <1 58 <1 868 1059 1007 1167 3246 history1 6 2 3 history1 0.3 6.3	14 0 52 <1 845 999 971 1163 2883 history2 4 2 2 history2 0.2 6.2
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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30 imit/base >3 20	10 0 59 <1 932 1120 1058 1252 3210 current 12 6 3 3 <u>current</u> 1.2 1.2 10.5 22.6	15 <1 58 <1 868 1059 1007 1167 3246 history1 6 2 3 history1 0.3 6.3 18.3	14 0 52 <1 845 999 971 1163 2883 history2 4 2 2 2 history2 0.2 6.2 18.1



May14/20

OIL ANALYSIS REPORT





Apr13/21

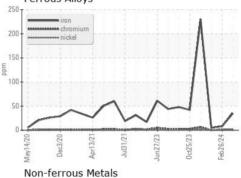
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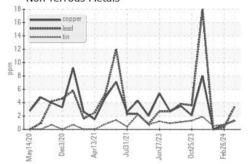
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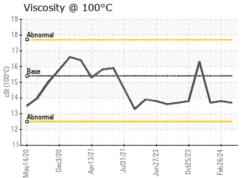
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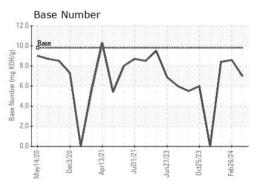
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	13.7	13.8	13.7
GRAPHS						

Ferrous Alloys









Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 652 - Fredericksburg Hauling Sample No. : GFL0122057 Received : 29 May 2024 10954 Houser Drive Lab Number : 06193833 Tested : 30 May 2024 Fredericksburg, VA US 22408 Unique Number : 11055956 Diagnosed : 30 May 2024 - Wes Davis Test Package : FLEET Contact: WILLIAM MILO Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. wmilo@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

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Submitted By: TECHNICIAN ACCOUNT