

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 912011 Component Diesel Engine Fluid

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

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

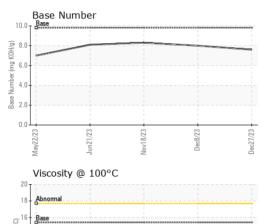
Fluid Condition

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

`		May2023	Jun2023	Nov2023 Dec2023	Dec2023	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0105858	GFL0105643	GFL0089075
Sample Date		Client Info		27 Dec 2023	08 Dec 2023	18 Nov 2023
Machine Age	hrs	Client Info		4846	4725	4545
Oil Age	hrs	Client Info		0	0	200
Oil Changed		Client Info		Changed	Changed	Changed
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		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	10	6	18
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	1	1	1
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	2
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m		20	2	2
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	2	<1	0
	le le			0		9
Barium	ppm	ASTM D5185m	()		()	
Barium Molybdenum	ppm	ASTM D5185m		-	0 58	
Molybdenum	ppm	ASTM D5185m	60	60	58	58
Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	60	60	58 <1	58 <1
Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010	60 0 973	58 <1 977	58 <1 868
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070	60 0 973 1129	58 <1 977 1091	58 <1 868 1036
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150	60 0 973 1129 1004	58 <1 977 1091 1074	58 <1 868 1036 947
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070	60 0 973 1129	58 <1 977 1091	58 <1 868 1036
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270	60 0 973 1129 1004 1231	58 <1 977 1091 1074 1312	58 <1 868 1036 947 1154
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base	60 0 973 1129 1004 1231 2885	58 <1 977 1091 1074 1312 3153 history1	58 <1 868 1036 947 1154 3202 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m	60 0 1010 1070 1150 1270 2060	60 0 973 1129 1004 1231 2885 current	58 <1 977 1091 1074 1312 3153 history1 6	58 <1 868 1036 947 1154 3202 history2 5
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base	60 0 973 1129 1004 1231 2885	58 <1 977 1091 1074 1312 3153 history1	58 <1 868 1036 947 1154 3202 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base	60 0 973 1129 1004 1231 2885 current 5	58 <1 977 1091 1074 1312 3153 history1 6 5	58 <1 868 1036 947 1154 3202 history2 5 2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >25 >20	60 0 973 1129 1004 1231 2885 current 5 2 2	58 <1 977 1091 1074 1312 3153 history1 6 5 0 history1	58 <1 868 1036 947 1154 3202 history2 5 2 2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	60 0 973 1129 1004 1231 2885 current 5 2 2 current 0.4	58 <1 977 1091 1074 1312 3153 history1 6 5 0 history1 0.4	58 <1 868 1036 947 1154 3202 history2 5 2 2 history2 0.6
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	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	60 0 973 1129 1004 1231 2885 current 5 2 2 current 0.4 7.2	58 <1 977 1091 1074 1312 3153 history1 6 5 0 history1 0.4 6.7	58 <1 868 1036 947 1154 3202 history2 5 2 2 history2 0.6 8.1
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	60 0 973 1129 1004 1231 2885 current 5 2 2 current 0.4 7.2 19.4	58 <1 977 1091 1074 1312 3153 history1 6 5 0 history1 0.4 6.7 19.0	58 <1 868 1036 947 1154 3202 history2 5 2 2 history2 0.6 8.1 20.3
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D7415 Method	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30 limit/base	60 0 973 1129 1004 1231 2885 current 5 2 2 current 0.4 7.2 19.4 current	58 <1 977 1091 1074 1312 3153 history1 6 5 0 history1 0.4 6.7 19.0 history1	58 <1 868 1036 947 1154 3202 history2 5 2 2 history2 0.6 8.1 20.3 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	60 0 973 1129 1004 1231 2885 current 5 2 2 current 0.4 7.2 19.4	58 <1 977 1091 1074 1312 3153 history1 6 5 0 history1 0.4 6.7 19.0	58 <1 868 1036 947 1154 3202 history2 5 2 2 history2 0.6 8.1 20.3



OIL ANALYSIS REPORT

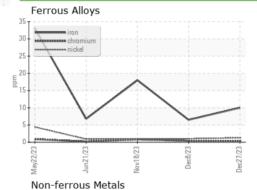


Dec8/23

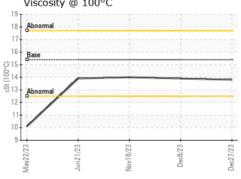
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

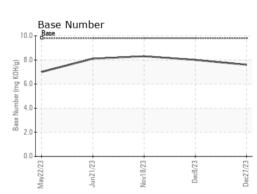
FLUID PROPE	ERTIES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.9	14.0

GRAPHS



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E 10				
May22/23	Jun21/23	Nov18/23	Dec8/23	Dec27/23
Viscos	ity @ 100	°C		









Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10807310

: GFL0105858 : 06046702 Test Package : FLEET

To discuss this sample report, contact Customer Service at 1-800-237-1369.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 28 Dec 2023

Diagnosed : 28 Dec 2023 Diagnostician : Wes Davis

GFL Environmental - 415 - Michigan East

6200 Elmridge Sterling Heights, MI US 48313 Contact: Frank Wolak

fwolak@gflenv.com T: (586)825-9514

* - 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)