

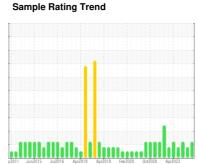
OIL ANALYSIS REPORT



(MB7753) 2410 Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (42 QTS)





DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

All component wear rates are normal.

Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

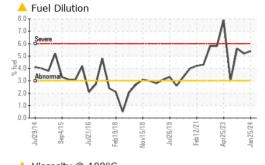
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

N 3111 13W 40 (4.						
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0090129	GFL0075167	GFL0061877
Sample Date		Client Info		25 Jan 2024	19 Sep 2023	31 Jul 2023
Machine Age	hrs	Client Info		7701	6972	6536
Oil Age	hrs	Client Info		7701	6972	6536
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
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	>90	8	8	12
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	<1	<1	<1
Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	3	5
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	1	1	2
Tin	ppm	ASTM D5185m	>15	1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		ام مطلم مما	limit/base		la la La mud	history2
ADDITIVEO		method	IIIIII/Dase	current	history1	HISTORYZ
Boron	ppm	ASTM D5185m	0	<1	0	<1
	ppm					
Boron		ASTM D5185m	0	<1	0	<1
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	<1 0	0	<1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 0 52	0 0 62	<1 0 54
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 0 52 <1	0 0 62 <1	<1 0 54 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	<1 0 52 <1 808	0 0 62 <1 898	<1 0 54 <1 864
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	<1 0 52 <1 808 939	0 0 62 <1 898 1062	<1 0 54 <1 864 1003
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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	<1 0 52 <1 808 939 889	0 0 62 <1 898 1062 1012	<1 0 54 <1 864 1003 864
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270	<1 0 52 <1 808 939 889 1043	0 0 62 <1 898 1062 1012 1214	<1 0 54 <1 864 1003 864 1086
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	<1 0 52 <1 808 939 889 1043 2301	0 62 <1 898 1062 1012 1214 3330	<1 0 54 <1 864 1003 864 1086 3108
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	<1 0 52 <1 808 939 889 1043 2301 current	0 0 62 <1 898 1062 1012 1214 3330 history1	<1 0 54 <1 864 1003 864 1086 3108 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	<1 0 52 <1 808 939 889 1043 2301 current	0 0 62 <1 898 1062 1012 1214 3330 history1	<1 0 54 <1 864 1003 864 1086 3108 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	<1 0 52 <1 808 939 889 1043 2301 current 8	0 0 62 <1 898 1062 1012 1214 3330 history1 4	<1 0 54 <1 864 1003 864 1086 3108 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	<1 0 52 <1 808 939 889 1043 2301 current 8 4	0 0 62 <1 898 1062 1012 1214 3330 history1 4 2	<1 0 54 <1 864 1003 864 1086 3108 history2 4 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	<1 0 52 <1 808 939 889 1043 2301 current 8 4 6 ▲ 5.4	0 0 62 <1 898 1062 1012 1214 3330 history1 4 2 1	<1 0 54 <1 864 1003 864 1086 3108 history2 4 4 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	<1 0 52 <1 808 939 889 1043 2301	0 0 62 <1 898 1062 1012 1214 3330 history1 4 2 1 1 5.2	<1 0 54 <1 864 1003 864 1086 3108 history2 4 4 1 ▲ 5.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	<1 0 52 <1 808 939 889 1043 2301 current 8 4 6 ▲ 5.4 current 0.4	0 0 62 <1 898 1062 1012 1214 3330 history1 4 2 1 1 5.2 history1	<1 0 54 <1 864 1003 864 1086 3108 history2 4 4 1 ▲ 5.6 history2 0.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >3.0 limit/base	<1 0 52 <1 808 939 889 1043 2301	0 0 62 <1 898 1062 1012 1214 3330 history1 4 2 1 ▲ 5.2 history1	<1 0 54 <1 864 1003 864 1086 3108 history2 4 4 1 ▲ 5.6 history2 0.8 9.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624	0 0 0 0 1010 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >6 >20 >30	<1 0 52 <1 808 939 889 1043 2301	0 0 62 <1 898 1062 1012 1214 3330 history1 4 2 1 ▲ 5.2 history1 1 7.9 18.9	<1 0 54 <1 864 1003 864 1086 3108 history2 4 4 1 ▲ 5.6 history2 0.8 9.8 20.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m ASTM D78185m ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >6 >20 >30 limit/base	<1 0 52 <1 808 939 889 1043 2301 current 8 4 6 ▲ 5.4 current 0.4 9.1 19.4 current	0 0 62 <1 898 1062 1012 1214 3330 history1 4 2 1 ▲ 5.2 history1 1 7.9 18.9 history1	<1 0 54 <1 864 1003 864 1086 3108 history2 4 4 1 ▲ 5.6 history2 0.8 9.8 20.3 history2



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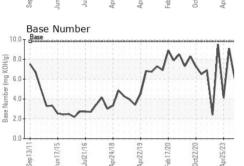
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White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

△ Viso	cosity	@ 100)°C					
18 - Abno	ormal							
⊕ 16 - Base			******		*****			
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12	~~	<u> </u>				\sim	Λ V v	
8	LS	9		6		0	m	
Sep13/1	Jun17/1	Jul21/1	Apr24/1	Apr22/1	Feb17/2	Oct22/2	Apr25/2	



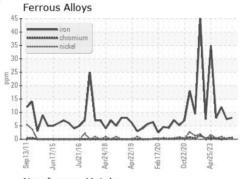
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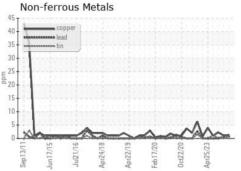
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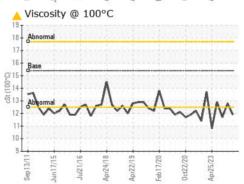


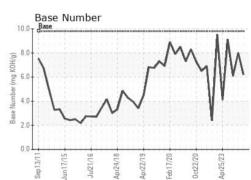
GRAPHS

VISUAI









history1

history2

NONE

NONE

NONE

NONE

NONE

NORML

NEG NEG

NORML

NONE





Certificate L2367

Laboratory Sample No. Lab Number Unique Number

: 10848144

: GFL0090129 : 06071467

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

: 26 Jan 2024 : 29 Jan 2024 Diagnostician : Wes Davis

Test Package : FLEET (Additional Tests: PercentFuel) 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)

GFL Environmental - 044 - Elizabeth City

657 Old US 17 Elizabeth City, NC US 27909

Contact: TOM BAIRD tom.baird@gflenv.com

Submitted By: TOM BAIRD

T: (252)562-2645 F: (252)264-4411