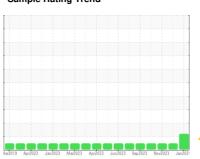


OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

A

927081-260333

Component

Diesel Engine

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

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Light fuel dilution occurring.

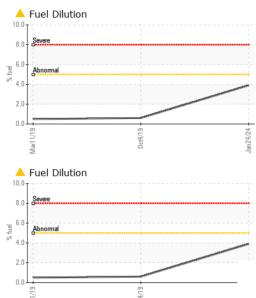
▲ Fluid Condition

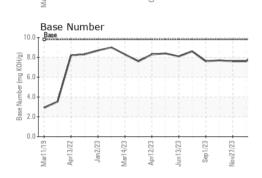
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

	กับเรื่อง19 Apr2012								
SAMPLE INFORM	NOITAN	method	limit/base	current	history1	history2			
Sample Number		Client Info		GFL0098355	GFL0098320	GFL0098338			
Sample Date		Client Info		24 Jan 2024	20 Dec 2023	27 Nov 2023			
Machine Age	hrs	Client Info		18892	18831	18667			
Oil Age	hrs	Client Info		600	700	700			
Oil Changed		Client Info		Changed	Changed	Not Changd			
Sample Status				ABNORMAL	NORMAL	NORMAL			
CONTAMINATION	ON	method	limit/base	current	history1	history2			
Water		WC Method	>0.2	NEG	NEG	NEG			
Glycol		WC Method		NEG	NEG	NEG			
WEAR METALS	3	method	limit/base	current	history1	history2			
Iron	ppm	ASTM D5185m	>100	28	7	31			
Chromium	ppm	ASTM D5185m	>20	2	<1	2			
Nickel	ppm	ASTM D5185m	>4	0	0	0			
Titanium	ppm	ASTM D5185m		<1	0	0			
Silver	ppm	ASTM D5185m	>3	0	0	0			
Aluminum	ppm	ASTM D5185m	>20	4	1	6			
Lead	ppm	ASTM D5185m	>40	<1	0	0			
Copper	ppm	ASTM D5185m	>330	<1	2	<1			
Tin	ppm	ASTM D5185m		<1	<1	0			
Vanadium	ppm	ASTM D5185m		<1	0	0			
Cadmium	ppm	ASTM D5185m		<1	0	0			
ADDITIVES		method	limit/base	OLUMNO 10 t	hiotonut	history2			
ADDITIVES		memod	iiiiii/base	current	history1	HISTOLYZ			
Boron	ppm		0	41	<1	0			
	ppm ppm		0						
Boron Barium		ASTM D5185m	0	41	<1	0			
Boron	ppm ppm	ASTM D5185m ASTM D5185m	0 0 60	41 0	<1	0			
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	41 0 54	<1 0 54	0 3 66			
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	41 0 54 <1	<1 0 54	0 3 66 0			
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	41 0 54 <1 578	<1 0 54 0 889	0 3 66 0 899			
Boron Barium Molybdenum Manganese Magnesium	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	41 0 54 <1 578 1456	<1 0 54 0 889 958 1030	0 3 66 0 899 1003 987			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	41 0 54 <1 578 1456 753	<1 0 54 0 889 958	0 3 66 0 899 1003			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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 0 1010 1070 1150	41 0 54 <1 578 1456 753 894	<1 0 54 0 889 958 1030 1164	0 3 66 0 899 1003 987 1173			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 0 1010 1070 1150 1270 2060	41 0 54 <1 578 1456 753 894 2538	<1 0 54 0 889 958 1030 1164 2893	0 3 66 0 899 1003 987 1173 3129			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT	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	41 0 54 <1 578 1456 753 894 2538 current	<1 0 54 0 889 958 1030 1164 2893 history1	0 3 66 0 899 1003 987 1173 3129 history2			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	41 0 54 <1 578 1456 753 894 2538 current 6	<1 0 54 0 889 958 1030 1164 2893 history1	0 3 66 0 899 1003 987 1173 3129 history2			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	41 0 54 <1 578 1456 753 894 2538 current 6 6	<1 0 54 0 889 958 1030 1164 2893 history1 3	0 3 66 0 899 1003 987 1173 3129 history2 6 41			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	41 0 54 <1 578 1456 753 894 2538 current 6 6	<1 0 54 0 889 958 1030 1164 2893 history1 3 2 <1	0 3 66 0 899 1003 987 1173 3129 history2 6 41			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	41 0 54 <1 578 1456 753 894 2538 current 6 6 2 ▲ 3.9	<1 0 54 0 889 958 1030 1164 2893 history1 3 2 <1 <1.0	0 3 66 0 899 1003 987 1173 3129 history2 6 41 9 <<1.0			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185m	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >5	41 0 54 <1 578 1456 753 894 2538 current 6 6 2 ▲ 3.9 current 0.8	<1 0 54 0 889 958 1030 1164 2893 history1 3 2 <1 <1.0 history1 0.7	0 3 66 0 899 1003 987 1173 3129 history2 6 41 9 <1.0 history2 1.1			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >5	41 0 54 <1 578 1456 753 894 2538 current 6 6 2 ▲ 3.9	<1 0 54 0 889 958 1030 1164 2893 history1 3 2 <1 <1.0 history1	0 3 66 0 899 1003 987 1173 3129 history2 6 41 9 <1.0 history2			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT 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 >5	41 0 54 <1 578 1456 753 894 2538	<1 0 54 0 889 958 1030 1164 2893 history1 3 2 <1 <1.0 history1 0.7 8.0	0 3 66 0 899 1003 987 1173 3129 history2 6 41 9 <1.0 history2 1.1 10.4			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm	ASTM D5185m ASTM D78185m ASTM D7844 *ASTM D7624 *ASTM D7624 *ASTM D7415 method	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >5 limit/base >3 >20 >30 limit/base	41 0 54 <1 578 1456 753 894 2538 current 6 6 2 ▲ 3.9 current 0.8 9.0 21.7 current	<1 0 54 0 889 958 1030 1164 2893 history1 3 2 <1 <1.0 history1 0.7 8.0 19.8 history1	0 3 66 0 899 1003 987 1173 3129 history2 6 41 9 <1.0 history2 1.1 10.4 20.9 history2			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >5 limit/base >3 >20 >30 limit/base	41 0 54 <1 578 1456 753 894 2538 current 6 6 2 ▲ 3.9 current 0.8 9.0 21.7	<1 0 54 0 889 958 1030 1164 2893 history1 3 2 <1 <1.0 history1 0.7 8.0 19.8	0 3 66 0 899 1003 987 1173 3129 history2 6 41 9 <1.0 history2 1.1 10.4 20.9			



OIL ANALYSIS REPORT





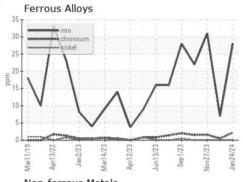
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

12.1

13.1

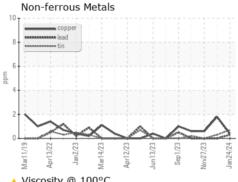
13.7

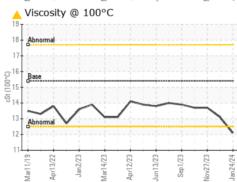
Visc @ 100°C **GRAPHS**

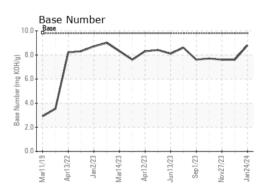


cSt

ASTM D445 15.4











Certificate L2367

Laboratory Sample No.

Lab Number **Unique Number**

: 06075368 : 10857459

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0098355 Recieved : 31 Jan 2024 Diagnosed : 02 Feb 2024

Diagnostician : Jonathan Hester

Test Package: FLEET (Additional Tests: FuelDilution, 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)

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