

OIL ANALYSIS REPORT

Sample Rating Trend

DEGRADATION



GFL035
Machine Id
2453
Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (11 GAL)





DIAGNOSIS

Recommendation

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend you service the filters on this component. Resample at the next service interval to monitor. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

Wear

All component wear rates are normal.

Contamination

There is an abnormal amount of solids and carbon present in the oil.

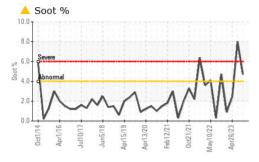
Fluid Condition

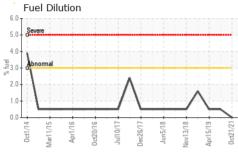
The BN level is low.

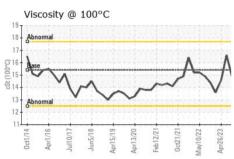
SAMPLE INFORMATION method limit/base current history1 history2	`				Apr2020 Feb2021 Oct2021 May20		
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WEAR METALS	CONTAMINATI	ON	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 79 ▲ 134 44 Chromium ppm ASTM D5185m >20 2 4 1 Nickel ppm ASTM D5185m >20 2 4 1 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Lead ppm ASTM D5185m >40 1 4 0 Copper ppm ASTM D5185m >41 0 0 Vanadium ppm ASTM D5185m >15 2 3 1 Vanadium ppm ASTM D5185m 0 5 2 8 Barium ppm ASTM D5185m 0 5 2 8 <td>Water</td> <td></td> <td>WC Method</td> <td>>0.2</td> <td>NEG</td> <td>NEG</td> <td>NEG</td>	Water		WC Method	>0.2	NEG	NEG	NEG
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Nickel ppm ASTM D5185m >5 0 <1 0 Titanium ppm ASTM D5185m >2 <1	Iron	ppm	ASTM D5185m	>120	79	<u> </u>	44
Titanium ppm ASTM D5185m >2 <1 <1 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 2 4 3 Lead ppm ASTM D5185m >330 8 14 8 Copper ppm ASTM D5185m >15 2 3 1 Vanadium ppm ASTM D5185m >15 2 3 1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 5 2 8 Boron ppm ASTM D5185m 0 5 2 8 Barium ppm ASTM D5185m 0 6 60 60 60 63 Magnesium ppm ASTM D5185m 0100 <th< td=""><td>Chromium</td><td>ppm</td><td>ASTM D5185m</td><td>>20</td><td>2</td><td>4</td><td>1</td></th<>	Chromium	ppm	ASTM D5185m	>20	2	4	1
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CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 8 Sodium ppm ASTM D5185m 1 1 <1	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 ASTM D5185m	0 0 60 0 1010 1070 1150	5 0 60 <1 903 1121 1004	2 0 60 2 899 1066 1029	8 0 63 <1 1000 1273 1075
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Soot % % *ASTM D7844 >4 ▲ 4.7 ● 8 2.4 Nitration Abs/cm *ASTM D7624 >20 10.5 49.0 7.3 Sulfation Abs/.1mm *ASTM D7415 >30 27.5 61.8 22.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 114.8 14.2	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	5 0 60 <1 903 1121 1004 1243 2973 current 4 1	2 0 60 2 899 1066 1029 1225 2554 history1 8 1	8 0 63 <1 1000 1273 1075 1409 3626 history2 8 <1 0
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Oxidation Abs/.1mm *ASTM D7414 >25 15.3 114.8 14.2	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >3.0 limit/base	5 0 60 <1 903 1121 1004 1243 2973 current 4 1 0 <1.0 current	2 0 60 2 899 1066 1029 1225 2554 history1 8 1 <1 <1.0 history1	8 0 63 <1 1000 1273 1075 1409 3626 history2 8 <1 0 <1.0 history2 2.4
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Base Number (BN) mg KOH/g ASTM D2896 9.8 ▲ 0.0 ▲ 0.0 9.1	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4 >20 >30	5 0 60 <1 903 1121 1004 1243 2973 current 4 1 0 <1.0 current 4 1 0 <1.0	2 0 60 2 899 1066 1029 1225 2554 history1 8 1 <1 <1.0 history1	8 0 63 <1 1000 1273 1075 1409 3626 history2 8 <1 0 <1.0 history2 2.4 7.3 22.2
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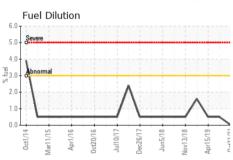


OIL ANALYSIS REPORT





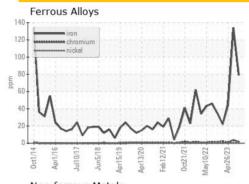


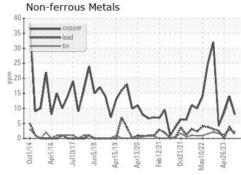


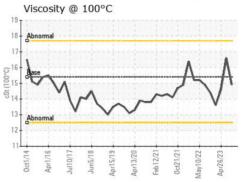
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

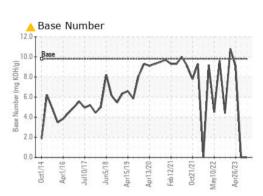
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.9	▲ 16.6	14.6

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number : 06084281

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0102362

Received **Tested** Unique Number : 10871726

Diagnosed Test Package: FLEET (Additional Tests: FuelDilution)

: 08 Feb 2024 : 12 Feb 2024

: 12 Feb 2024 - Don Baldridge

GFL Environmental - 035 - Greensboro 1236 Elon Place High Point, NC

US 27263 Contact: JORGE COSTA

jorge.costa@gflenv.com T: (336)668-3712

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

F: