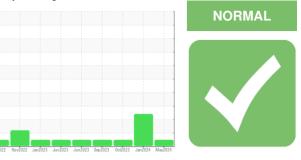


# **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id 4503M

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

DIAGNOSIS	
Recommendation	

No corrective action is recommended at this time. Resample at the next service interval to monitor.

## Wear

All component wear rates are normal.

### Contamination

Fuel content negligible. There is no indication of any contamination in the oil.

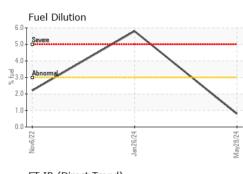
### Fluid Condition

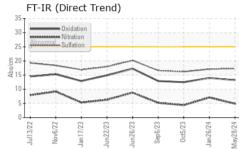
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

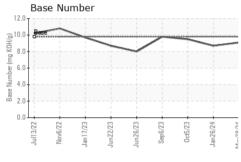
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0100992	GFL0100880	GFL0086904
Sample Date		Client Info		28 May 2024	26 Jan 2024	05 Oct 2023
Machine Age	mls	Client Info		0	266202	261721
Oil Age	mls	Client Info		0	0	261721
Oil Changed		Client Info		N/A	Not Changd	Not Changd
Sample Status				NORMAL	SEVERE	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
		_				
WEAR METAL		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	3	6	1
Chromium	ppm	ASTM D5185m		<1	<1	0
Nickel	ppm	ASTM D5185m	>5	0	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	0
Lead	ppm	ASTM D5185m	>40	1	<1	<1
Copper	ppm	ASTM D5185m	>330	3	9	2
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 4	2	history2 6
	ppm ppm		0	4 0	2 12	6 <1
Boron		ASTM D5185m	0	4	2	6
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	4 0	2 12	6 <1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 58	2 12 55	6 <1 62
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 58 <1	2 12 55 0	6 <1 62 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	4 0 58 <1 888	2 12 55 0 784	6 <1 62 0 868
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	4 0 58 <1 888 1061	2 12 55 0 784 918	6 <1 62 0 868 1022
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	4 0 58 <1 888 1061 1021	2 12 55 0 784 918 952	6 <1 62 0 868 1022 1002
Boron Barium 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	4 0 58 <1 888 1061 1021 1159	2 12 55 0 784 918 952 1067	6 <1 62 0 868 1022 1002 1195
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	0 0 60 1010 1070 1150 1270 2060 limit/base	4 0 58 <1 888 1061 1021 1159 3478	2 12 55 0 784 918 952 1067 3050	6 <1 62 0 868 1022 1002 1195 3262
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	4 0 58 <1 888 1061 1021 1159 3478 current	2 12 55 0 784 918 952 1067 3050 history1	6 <1 62 0 868 1022 1002 1195 3262 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 <b>method</b> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	4 0 58 <1 888 1061 1021 1159 3478 current 5	2 12 55 0 784 918 952 1067 3050 history1 4	6 <1 62 0 868 1022 1002 1195 3262 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 <b>method</b> ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	4 0 58 <1 888 1061 1021 1159 3478 current 5 3	2 12 55 0 784 918 952 1067 3050 history1 4 2	6 <1 62 0 868 1022 1002 1195 3262 history2 4 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	4 0 58 <1 888 1061 1021 1159 3478 <u>current</u> 5 3 1	2 12 55 0 784 918 952 1067 3050 history1 4 2 1	6 <1 62 0 868 1022 1002 1195 3262 history2 4 <1 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20 >3.0	4 0 58 <1 888 1061 1021 1159 3478 <u>current</u> 5 3 3 1 0.8	2 12 55 0 784 918 952 1067 3050 history1 4 2 1 ▲ 5.8	6 <1 62 0 868 1022 1002 1195 3262 history2 4 <1 2 <1.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 >3.0 <i>limit/base</i>	4 0 58 <1 888 1061 1021 1159 3478 <i>current</i> 5 3 1 0.8 <i>current</i>	2 12 55 0 784 918 952 1067 3050 history1 4 2 1 4 2 1 5.8 x	6 <1 62 0 868 1022 1002 1195 3262 history2 4 <1 2 <1.0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 >3.0 <i>limit/base</i>	4 0 58 <1 888 1061 1021 1159 3478 <i>current</i> 5 3 3 1 0.8 <i>current</i> 0.1	2 12 55 0 784 918 952 1067 3050 history1 4 2 1 4 2 1 5.8 5.8	6 <1 62 0 868 1022 1002 1195 3262 history2 4 <1 2 <1.0 history2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 >3.0 <i>limit/base</i> >4 >20	4 0 58 <1 888 1061 1021 1159 3478 <u>current</u> 5 3 1 0.8 <u>current</u> 0.1 4.9	2 12 55 0 784 918 952 1067 3050 history1 4 2 1 ↓ 5.8 history1 0.1 7.1	6 <1 62 0 868 1022 1002 1195 3262 history2 4 <1 2 <1.0 history2 0 4.4
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 D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20 >20 >3.0 <b>limit/base</b> >4 >20 >3.0	4 0 58 <1 888 1061 1021 1159 3478 <i>current</i> 5 3 3 1 0.8 <i>current</i> 0.1 4.9 17.3	2 12 55 0 784 918 952 1067 3050 history1 4 2 1 ▲ 5.8 history1 0.1 7.1 17.1	6 <1 62 0 868 1022 1002 1195 3262 history2 4 <1 2 <1.0 history2 0 4.4 16.2
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 D5185m	0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4 >20 >3.0	4 0 58 <1 888 1061 1021 1159 3478 <b>current</b> 5 3 1 0.8 <b>current</b> 0.1 4.9 17.3	2 12 55 0 784 918 952 1067 3050 history1 4 2 1 ↓ 5.8 history1 0.1 7.1 17.1 history1	6 <1 62 0 868 1022 1002 1195 3262 history2 4 <1 2 <1.0 history2 0 4.4 16.2 history2

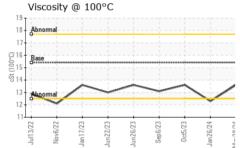


# **OIL ANALYSIS REPORT**

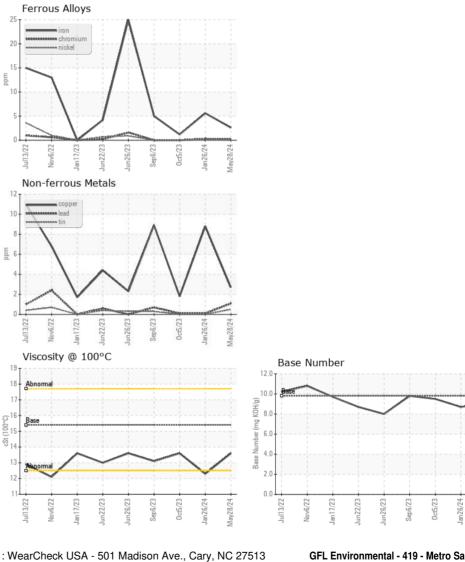








VISUAL		method	limit/base	current	history1	history2
VISUAL		method	inin/base	Current	matory	Thistory Z
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	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	DTIEC	mathad	lipsit/base	ourropt	biotoryd	biotory ()
	RHES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.6	12.3	13.6
GRAPHS						



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 419 - Metro Saginaw Sample No. : GFL0100992 Received : 29 May 2024 6950 N Michigan Lab Number : 06194781 Tested : 03 Jun 2024 Saginaw, MI US 48604 Unique Number : 11056904 Diagnosed : 03 Jun 2024 - Wes Davis Test Package : FLEET ( Additional Tests: PercentFuel ) Contact: Jeremy Hines Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jhines@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (800)684-1277 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Report Id: GFL419 [WUSCAR] 06194781 (Generated: 06/03/2024 11:06:12) Rev: 1

Submitted By: Colton Kitts

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May28/24