

# **OIL ANALYSIS REPORT**

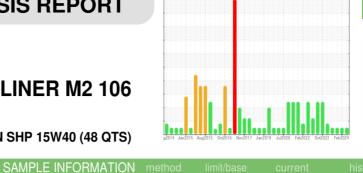
Sample Rating Trend





Machine Id **10188 FREIGHTLINER M2 106** Component **Diesel Engine** 

PETRO CANADA DURON SHP 15W40 (48 QTS)



 $\checkmark$ 

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.

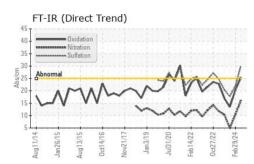
### Fluid Condition

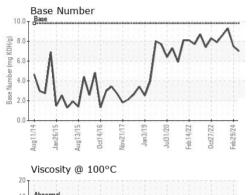
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

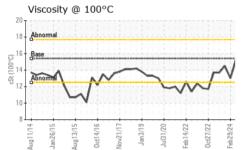
Sample Number		Client Info		GFL0117514	GFL0103195	GFL0103258
Sample Date		Client Info		11 Apr 2024	29 Feb 2024	01 Dec 2023
Machine Age	mls	Client Info		73206	25864	25227
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	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	>90	45	23	4
Chromium	ppm	ASTM D5185m	>20	2	<1	0
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	2	1
Lead	ppm	ASTM D5185m	>40	5	<1	0
Copper	ppm	ASTM D5185m	>330	5	<1	0
Tin	ppm	ASTM D5185m	>15	3	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		<1	0	0
						biotory()
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	1	nistory i 2	<1
	ppm ppm					
Boron		ASTM D5185m	0	1	2	<1
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	1 0	2 0	<1 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	1 0 63	2 0 52	<1 0 59
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	1 0 63 <1	2 0 52 <1	<1 0 59 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	1 0 63 <1 940	2 0 52 <1 859	<1 0 59 0 958
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	1 0 63 <1 940 1206	2 0 52 <1 859 922	<1 0 59 0 958 1057
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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	1 0 63 <1 940 1206 1010	2 0 52 <1 859 922 898	<1 0 59 0 958 1057 1120
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	0 0 60 0 1010 1070 1150 1270	1 0 63 <1 940 1206 1010 1197	2 0 52 <1 859 922 898 1156	<1 0 59 0 958 1057 1120 1276
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 63 <1 940 1206 1010 1197 3049	2 0 52 <1 859 922 898 1156 2515	<1 0 59 0 958 1057 1120 1276 3192
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 0 1010 1070 1150 1270 2060	1 0 63 <1 940 1206 1010 1197 3049 current	2 0 52 <1 859 922 898 1156 2515 history1	<1 0 59 0 958 1057 1120 1276 3192 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 0 1010 1070 1150 1270 2060	1 0 63 <1 940 1206 1010 1197 3049 current 7	2 0 52 <1 859 922 898 1156 2515 history1 5	<1 0 59 0 958 1057 1120 1276 3192 history2 5
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 <b>limit/base</b>	1 0 63 <1 940 1206 1010 1197 3049 current 7 5	2 0 52 <1 859 922 898 1156 2515 history1 5 7	<1 0 59 0 958 1057 1120 1276 3192 history2 5 2
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	1 0 63 <1 940 1206 1010 1197 3049 current 7 5 2	2 0 52 <1 859 922 898 1156 2515 history1 5 7 2	<1 0 59 0 958 1057 1120 1276 3192 history2 5 2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 2060 225 >25 >20	1 0 63 <1 940 1206 1010 1197 3049 current 7 5 2 2	2 0 52 <1 859 922 898 1156 2515 history1 5 7 2 2 history1	<1 0 59 0 958 1057 1120 1276 3192 bistory2 5 2 0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	1 0 63 <1 940 1206 1010 1197 3049 current 7 5 2 2 current 3.3	2 0 52 <1 859 922 898 1156 2515 history1 5 7 2 2 history1 0.9	<1 0 59 0 958 1057 1120 1276 3192 history2 5 2 0 0 history2 0.2
Boron Barium 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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	1 0 63 <1 940 1206 1010 1197 3049 <i>current</i> 7 5 2 2 <i>current</i> 3.3 16.1	2 0 52 <1 859 922 898 1156 2515 history1 5 7 2 2 history1 0.9 10.5	<1 0 59 0 958 1057 1120 1276 3192 bistory2 5 2 0 bistory2 0.2 5.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium 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 2060 225 20 225 20 <b>imit/base</b> >6 >20 20	1 0 63 <1 940 1206 1010 1197 3049 <u>current</u> 7 5 2 2 <u>current</u> 3.3 16.1 30.1	2 0 52 <1 859 922 898 1156 2515 history1 5 7 2 2 history1 0.9 10.5 22.0	<1 0 59 0 958 1057 1120 1276 3192 bistory2 5 2 0 bistory2 0.2 5.0 17.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	1 0 63 <1 940 1206 1010 1197 3049 <i>current</i> 7 5 2 <i>current</i> 3.3 16.1 30.1 <i>current</i>	2 0 52 <1 859 922 898 1156 2515 history1 5 7 2 2 history1 0.9 10.5 22.0 history1	<1 0 59 0 958 1057 1120 1276 3192



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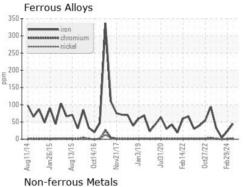


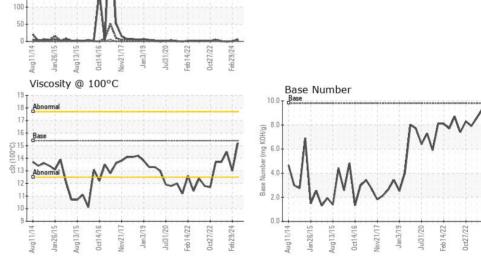
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	15.2	13.0	14.5
GRAPHS						

lead

350

300





: WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 001 - Raleigh(CNG) : 12 Apr 2024 3741 Conquest Drive : 15 Apr 2024 Garner, NC US 27529 Contact: Craig Johnson craig.johnson@gflenv.com T: (919)662-7100 F: (919)662-7130



Unique Number : 10978039 Diagnosed : 16 Apr 2024 - Don Baldridge Test Package : FLEET Certificate 12367 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)

Received

Tested

Report Id: GFL001 [WUSCAR] 06147961 (Generated: 04/16/2024 14:29:44) Rev: 1

Laboratory

Sample No.

Lab Number : 06147961

: GFL0117514

Submitted By: aka Keith - Ronald Gregory

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Feb29/24