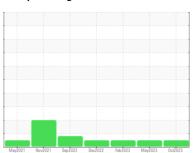


# **OIL ANALYSIS REPORT**

## Sample Rating Trend









Machine Id
4708M
Component
Diesel Engine
Fluid

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

## 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

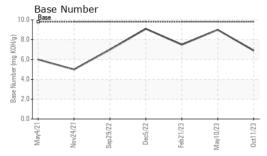
## **Fluid Condition**

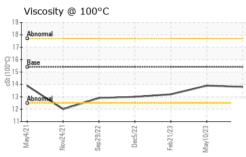
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0093199	GFL0081454	GFL0073866
Sample Date		Client Info		11 Oct 2023	10 May 2023	21 Feb 2023
Machine Age	hrs	Client Info		11413	10173	9675
Oil Age	hrs	Client Info		10173	9675	9802
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
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>75	35	29	42
Chromium	ppm	ASTM D5185m	>5	2	2	2
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	10	10	15
Lead	ppm	ASTM D5185m	>25	<1	<1	<1
Copper	ppm	ASTM D5185m	>100	2	<1	1
Tin	ppm	ASTM D5185m	>4	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	0
O I!	nnm	ASTM D5185m		0	0	0
Cadmium	ppm	AO INI DO IOSIII		U	0	U
ADDITIVES	ррш	method	limit/base	current	history1	history2
	ppm		limit/base			
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current	history1	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0	current <1 12	history1 4 0	history2 0 0
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current <1 12 64	history1  4  0 63 <1 975	history2 0 0 63
ADDITIVES  Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current <1 12 64 <1 990 1102	history1  4  0  63  <1	history2 0 0 0 63 <1
ADDITIVES  Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method  ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	current <1 12 64 <1 990 1102 1073	history1  4  0 63 <1 975 1081 1068	history2  0  0 63 <1 917 1090 1028
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc	ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150	current <1 12 64 <1 990 1102	history1  4  0 63 <1 975 1081 1068 1315	history2  0  0 63 <1 917 1090 1028 1246
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur	ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current <1 12 64 <1 990 1102 1073	history1  4  0 63 <1 975 1081 1068	history2  0  0 63 <1 917 1090 1028
ADDITIVES  Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current <1 12 64 <1 990 1102 1073 1299 3128 current	history1  4  0 63 <1 975 1081 1068 1315 3746 history1	history2  0  0 63 <1 917 1090 1028 1246 3038 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current <1 12 64 <1 990 1102 1073 1299 3128 current 8	history1  4  0 63 <1 975 1081 1068 1315 3746 history1 7	history2  0  0  63  <1  917  1090  1028  1246  3038  history2  9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current <1 12 64 <1 990 1102 1073 1299 3128 current 8 57	history1  4  0  63  <1  975  1081  1068  1315  3746  history1  7	history2  0  0 63 <1 917 1090 1028 1246 3038 history2 9 56
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current <1 12 64 <1 990 1102 1073 1299 3128 current 8	history1  4  0 63 <1 975 1081 1068 1315 3746 history1 7	history2  0  0  63  <1  917  1090  1028  1246  3038  history2  9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current <1 12 64 <1 990 1102 1073 1299 3128 current 8 57 17 current	history1  4  0 63 <1 975 1081 1068 1315 3746 history1  7  73 19 history1	history2  0  0 63 <1 917 1090 1028 1246 3038 history2 9 56 30 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current <1 12 64 <1 990 1102 1073 1299 3128 current 8 57	history1  4  0 63 <1 975 1081 1068 1315 3746 history1  7 73 19	history2  0  0 63 <1 917 1090 1028 1246 3038 history2 9 56 30
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  CONTAMINAN  Silicon  Sodium  Potassium  INFRA-RED	ppm	method  ASTM D5185m	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current <1 12 64 <1 990 1102 1073 1299 3128 current 8 57 17 current	history1  4  0 63 <1 975 1081 1068 1315 3746 history1  7  73 19 history1	history2  0  0 63 <1 917 1090 1028 1246 3038 history2 9 56 30 history2
ADDITIVES 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	method  ASTM D5185m  method  ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  method	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current <1 12 64 <1 990 1102 1073 1299 3128 current 8 57 17 current 0.9	history1  4  0 63 <1 975 1081 1068 1315 3746 history1  7 73 19 history1 0.4	history2  0  0 63 <1 917 1090 1028 1246 3038 history2 9 56 30 history2 0.7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	method  ASTM D5185m  method  ASTM D5185m ASTM D5185m  *ASTM D5185m ASTM D5185m  *ASTM D5185m ASTM D5185m ASTM D5185m  *ASTM D5185m ASTM D5185m  *ASTM D5185m  *ASTM D7844  *ASTM D7624  *ASTM D76185m	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base	current <1 12 64 <1 990 1102 1073 1299 3128 current 8 57 17 current 0.9 10.1	history1  4  0 63 <1 975 1081 1068 1315 3746 history1  7 73 19 history1 0.4 7.8	history2  0  0 63 <1 917 1090 1028 1246 3038 history2 9 56 30 history2 0.7 10.8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	method  ASTM D5185m  method  ASTM D5185m ASTM D5185m  *ASTM D5185m ASTM D5185m  *ASTM D5185m ASTM D5185m ASTM D5185m  *ASTM D5185m ASTM D5185m  *ASTM D5185m  *ASTM D7844  *ASTM D7624  *ASTM D76185m	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20 >30	current <1 12 64 <1 990 1102 1073 1299 3128 current 8 57 17 current 0.9 10.1 19.5	history1  4  0 63 <1 975 1081 1068 1315 3746 history1  7  73 19 history1  0.4 7.8 19.6	history2  0  0 63 <1 917 1090 1028 1246 3038 history2 9 56 30 history2 0.7 10.8 20.1



## **OIL ANALYSIS REPORT**

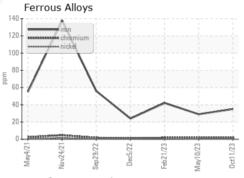


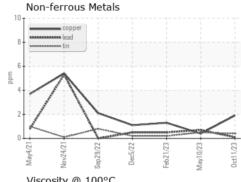


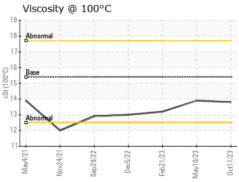
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

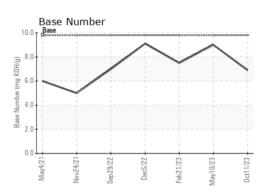
FLUID PROPE	RHES	metnoa	ilmit/base	current	nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.9	13.2

## **GRAPHS**













Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10695986 Test Package : FLEET

: 05978691

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0093199 Received

Diagnosed : 16 Oct 2023 Diagnostician : Wes Davis

: 13 Oct 2023

GFL Environmental - 415 - Michigan East

6200 Elmridge Sterling Heights, MI US 48313 Contact: Frank Wolak fwolak@gflenv.com T: (586)825-9514

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)