

## **OIL ANALYSIS REPORT**

Sample Rating Trend



#### Machine Id

### 511027-1360

### Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (46 QTS)

#### 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.

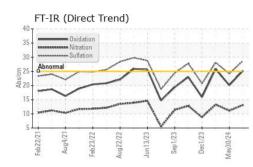
#### Fluid Condition

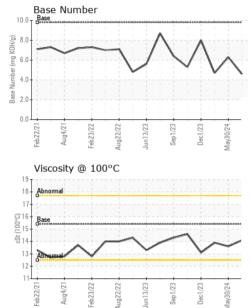
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0120904	GFL0120861	GFL0110310
Sample Date		Client Info		02 Jul 2024	30 May 2024	08 Mar 2024
Machine Age	hrs	Client Info		9590	9360	8721
Oil Age	hrs	Client Info		869	539	926
Oil Changed		Client Info		Changed	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<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	>100	58	33	74
Chromium	ppm	ASTM D5185m	>20	3	2	3
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	2	5
Lead	ppm	ASTM D5185m	>40	12	5	13
Copper	ppm	ASTM D5185m	>330	2	<1	1
Tin	ppm	ASTM D5185m	>15	<1	0	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES	ppm	method	limit/base	0 current	0 history1	0 history2
	ppm ppm		limit/base	-	-	
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 4	history1 0	history2 0
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0 0 60	current 4 <1	history1 0 0	history2 0 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 4 <1 65	history1 0 0 64	history2 0 0 70
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 4 <1 65 <1	history1 0 0 64 <1	history2 0 0 70 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 4 <1 65 <1 976	history1 0 0 64 <1 918	history2 0 0 70 <1 1053
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current     4     <1     65     <1     976     1241	history1 0 0 64 <1 918 1178	history2 0 0 70 <1 1053 1271
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	current     4     <1     65     <1     976     1241     1041	history1 0 0 64 <1 918 1178 1019	history2 0 0 70 <1 1053 1271 1139
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current     4     <1     65     <1     976     1241     1041     1304	history1 0 0 64 <1 918 1178 1019 1228	history2     0     0     70     <1     1053     1271     1139     1413
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method 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	Current 4 <1 65 <1 976 1241 1041 1304 2874	history1 0 0 64 <1 918 1178 1019 1228 2971	history2     0     0     70     <1     1053     1271     1139     1413     2970
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method 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	current     4     <1     65     <1     976     1241     1041     1304     2874     current	history1 0 0 64 <1 918 1178 1019 1228 2971 history1	history2   0   0   70   <1   1053   1271   1139   1413   2970   history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method 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 <b>limit/base</b>	current     4     <1     65     <1     976     1241     1041     1304     2874     current     6	history1     0     0     64     <1     918     1178     1019     1228     2971     history1     0	history2     0     0     70     <1     1053     1271     1139     1413     2970     history2     15
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b>	current     4     <1     65     <1     976     1241     1041     1304     2874     current     6     6     6	history1     0     0     64     <1     918     1178     1019     1228     2971     history1     0     5	history2     0     0     70     <1     1053     1271     1139     1413     2970     history2     15     7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	current     4     <1     65     <1     976     1241     1041     1304     2874     current     6     5	history1     0     0     64     <1     918     1178     1019     1228     2971     history1     0     5     1	history2   0   0   0   70   <1   1053   1271   1139   1413   2970   history2   15   7   2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	current   4   <1   65   <1   976   1241   1041   1304   2874   current   6   5   current	history1   0   0   64   <1   918   1178   1019   1228   2971   history1   0   5   1   history1	history2   0   0   70   <1   1053   1271   139   1413   2970   history2   15   7   2   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	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	current     4     <1     65     <1     976     1241     1041     1304     2874     current     6     5     current     1.9	history1     0     0     64     <1     918     1178     1019     1228     2971     history1     0     5     1     history1     1.1	history2   0   0   70   <1   1053   1271   139   1413   2970   history2   15   7   2   history2   15   7   2   history2   1.9
ADDITIVES 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 t t t t	method     ASTM D5185m     ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	current   4   <1   65   <1   976   1241   1041   1304   2874   current   6   5   current   1.9   13.1	history1     0     0     64     <1     918     1178     1019     1228     2971     history1     0     5     1     history1     1.1     11.1	history2   0   0   70   <1   1053   1271   1139   1413   2970   history2   15   7   2   history2   1.9   13.3
ADDITIVES 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 t t t t	method     ASTM D5185m     ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 20 320 33 20 20 20	current   4   <1   65   <1   976   1241   1041   1304   2874   current   6   5   current   1.9   13.1   28.7	history1   0   0   64   <1   918   1178   1019   1228   2971   history1   0   5   1   history1   1.1   1.1   11.1   24.2	history2   0   0   70   <1   1053   1271   1139   1413   2970   history2   15   7   2   history2   1.9   13.3   28.1



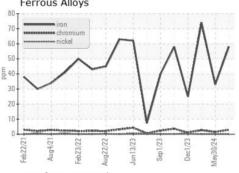
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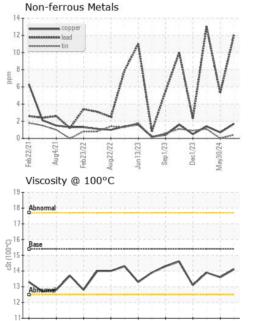


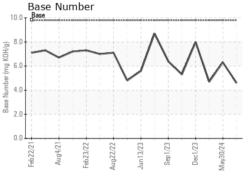


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	14.1	13.6	13.9
GRAPHS						

Ferrous Alloys







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 622 - Traverse City Hauling Sample No. : GFL0120904 Received : 05 Jul 2024 160 Hughes Dr Lab Number : 06229541 Tested : 09 Jul 2024 Traverse City, MI US 49686 Unique Number : 11113034 Diagnosed : 09 Jul 2024 - Don Baldridge Test Package : FLEET Contact: GARY BREWER Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. T: \* - 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)

Dec1/23 -

Mav30/24

Sep1/23

Jun 13/23

Aug4/21.

Feb23/22

Aug22/22

Feb22/21

Report Id: GFL622 [WUSCAR] 06229541 (Generated: 07/09/2024 13:11:33) Rev: 1

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