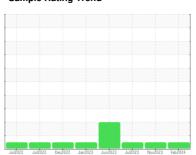


# **OIL ANALYSIS REPORT**

### Sample Rating Trend







## Ma 4 Cc D D P

Machine Id 426093 Component

Diesel Engine

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

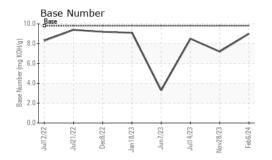
### **Fluid Condition**

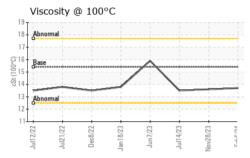
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0100893	GFL0086826	GFL0072552
Sample Date		Client Info		06 Feb 2024	28 Nov 2023	14 Jul 2023
Machine Age	mls	Client Info		437660	600	15469
Oil Age	mls	Client Info		0	600	600
Oil Changed		Client Info		Not Changd	Changed	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	>80	22	21	26
Chromium	ppm	ASTM D5185m	>5	2	<1	2
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	2	18	7
Lead	ppm	ASTM D5185m	>30	0	<1	<1
Copper	ppm	ASTM D5185m	>150	2	<1	6
Tin	ppm		>5	0	<1	0
Vanadium	ppm	ASTM D5185m	75	0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
				U	U	
	ррііі		limit/base			-
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 4	history1	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0	current 4 0	history1 3 0	history2 7 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 4 0 63	history1 3 0 59	history2 7 0 64
ADDITIVES  Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 4 0 63 <1	history1 3 0 59 <1	history2  7  0  64  <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	current 4 0 63 <1 946	history1  3  0 59 <1 852	history2  7  0 64 <1 912
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium	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 0 63 <1 946 1123	history1  3  0 59 <1 852 1042	history2  7  0 64 <1 912 1236
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus	ppm ppm ppm ppm ppm ppm	method  ASTM D5185m	0 0 60 0 1010 1070 1150	current 4 0 63 <1 946 1123 1045	history1  3 0 59 <1 852 1042 893	history2  7  0 64 <1 912 1236 1007
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc	ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current 4 0 63 <1 946 1123 1045 1305	history1  3 0 59 <1 852 1042 893 1087	history2  7  0 64 <1 912 1236 1007 1246
ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 4 0 63 <1 946 1123 1045 1305 3194	history1  3 0 59 <1 852 1042 893 1087 2423	history2  7  0 64 <1 912 1236 1007 1246 3586
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current  4 0 63 <1 946 1123 1045 1305 3194 current	history1  3  0 59 <1 852 1042 893 1087 2423 history1	history2  7  0  64  <1  912  1236  1007  1246  3586  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	0 0 60 0 1010 1070 1150 1270 2060	current  4  0  63  <1  946  1123  1045  1305  3194  current  9	history1  3 0 59 <1 852 1042 893 1087 2423 history1 8	history2  7  0  64  <1  912  1236  1007  1246  3586  history2
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 limit/base	current  4  0  63  <1  946  1123  1045  1305  3194  current  9  1	history1  3 0 59 <1 852 1042 893 1087 2423 history1 8 6	history2  7  0  64  <1  912  1236  1007  1246  3586  history2
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 60 0 1010 1070 1150 1270 2060 limit/base >20	current  4  0  63  <1  946  1123  1045  1305  3194  current  9  1 2	history1  3  0 59 <1 852 1042 893 1087 2423 history1 8 6 1	history2  7  0  64  <1  912  1236  1007  1246  3586  history2  13  2  7
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 60 0 1010 1070 1150 1270 2060 limit/base >20	current  4  0  63  <1  946  1123  1045  1305  3194  current  9  1  2  current	history1  3 0 59 <1 852 1042 893 1087 2423 history1  8 6 1 history1	history2  7  0 64 <1 912 1236 1007 1246 3586 history2 13 2 7 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  ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 	current  4  0  63  <1  946  1123  1045  1305  3194  current  9  1  2  current  0.2	history1  3 0 59 <1 852 1042 893 1087 2423 history1 8 6 1 history1 0.7	history2  7  0 64 <1 912 1236 1007 1246 3586 history2 13 2 7 history2 0.3
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 ppm	method  ASTM D5185m method  ASTM D5185m	0 0 60 0 1010 1150 1270 2060 limit/base >20 >20 limit/base	current  4 0 63 <1 946 1123 1045 1305 3194  current 9 1 2  current 0.2 5.7	history1  3  0 59 <1 852 1042 893 1087 2423 history1 8 6 1 history1 0.7 8.7	history2  7  0  64  <1  912  1236  1007  1246  3586  history2  13  2  7  history2  0.3  7.2
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 D7624	0 0 0 0 1010 1070 1150 1270 2060 limit/base >20 >20 limit/base >3 >20 >3	current  4  0  63  <1  946  1123  1045  1305  3194  current  9  1  2  current  0.2	history1  3 0 59 <1 852 1042 893 1087 2423 history1 8 6 1 history1 0.7	history2  7  0 64 <1 912 1236 1007 1246 3586 history2 13 2 7 history2 0.3
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 D7624	0 0 60 0 1010 1150 1270 2060 limit/base >20 >20 limit/base	current  4 0 63 <1 946 1123 1045 1305 3194  current 9 1 2  current 0.2 5.7	history1  3  0 59 <1 852 1042 893 1087 2423 history1 8 6 1 history1 0.7 8.7	history2  7  0  64  <1  912  1236  1007  1246  3586  history2  13  2  7  history2  0.3  7.2
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 D7624	0 0 0 0 1010 1070 1150 1270 2060 limit/base >20 >20 limit/base >3 >20 >3	current  4  0  63  <1  946  1123  1045  1305  3194  current  9  1  2  current  0.2  5.7  17.4	history1  3 0 59 <1 852 1042 893 1087 2423 history1  8 6 1 history1 0.7 8.7 20.5	history2  7  0 64 <1 912 1236 1007 1246 3586 history2 13 2 7 history2 0.3 7.2 18.9



## **OIL ANALYSIS REPORT**



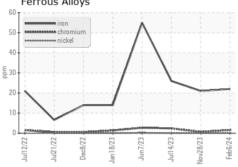


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

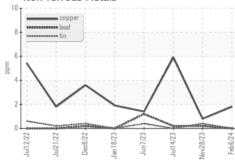
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	13.6	13.5

### **GRAPHS**

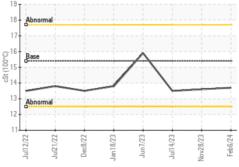
## Ferrous Alloys











(mg K0H/g) 0.0

Base Number





Certificate L2367

Laboratory Sample No.

Lab Number : 06085612 Unique Number : 10873057 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0100893 Received : 12 Feb 2024 **Tested** 

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

Diagnosed

: 12 Feb 2024 : 12 Feb 2024 - Wes Davis 6950 N Michigan Saginaw, MI US 48604

GFL Environmental - 419 - Metro Saginaw

Contact: Jeremy Hines jhines@gflenv.com

T: (800)684-1277

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.

Report Id: GFL419 [WUSCAR] 06085612 (Generated: 02/13/2024 09:01:18) Rev: 1

Submitted By: Colton Kitts

F: