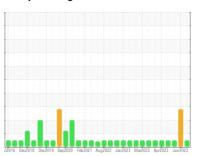


# **OIL ANALYSIS REPORT**

Sample Rating Trend



NORMAL



## Machine Id 10628 Component

**Diesel Engine** 

PETRO CANADA DURON SHP 15W40 (28 QTS)

## 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.

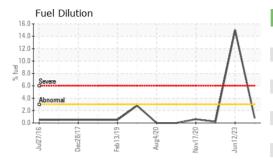
### **Fluid Condition**

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

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SAMPLE INFOR	MATION	method	limit/base	current	history1	history2			
Sample Number		Client Info		GFL0097197	GFL0068717	GFL0068782			
Sample Date		Client Info		13 Oct 2023	12 Jun 2023	16 May 2023			
Machine Age	hrs	Client Info		20000	19792	19642			
Oil Age	hrs	Client Info		0	0	0			
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd			
Sample Status				NORMAL	SEVERE	NORMAL			
CONTAMINAT	ION	method	limit/base	current	history1	history2			
Glycol		WC Method		NEG	NEG	NEG			
WEAR METAL	S	method	limit/base	current	history1	history2			
Iron	ppm	ASTM D5185m	>75	10	12	4			
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1			
Nickel	ppm	ASTM D5185m	>4	<1	0	<1			
Titanium	ppm	ASTM D5185m	>2	<1	0	<1			
Silver	ppm	ASTM D5185m	>2	0	0	0			
Aluminum	ppm	ASTM D5185m	>15	4	<1	<1			
Lead	ppm	ASTM D5185m	>25	<1	<1	0			
Copper	ppm	ASTM D5185m	>100	<1	<1	<1			
Tin	ppm	ASTM D5185m	>4	<1	0	<1			
Vanadium	ppm	ASTM D5185m		<1	<1	0			
Cadmium	ppm	ASTM D5185m		<1	0	0			
	1-1-		11 11 11						
ADDITIVES		method	limit/base		historv1	nistory			
ADDITIVES Boron	maa	method ASTM D5185m	limit/base	current 5	history1	history2			
Boron	ppm	ASTM D5185m	0	5	5	9			
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	5 10	5	9			
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	5 10 52	5 0 55	9 0 67			
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	5 10 52 0	5 0 55	9 0 67 <1			
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	5 10 52 0 789	5 0 55 0 835	9 0 67 <1 980			
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	5 10 52 0 789 886	5 0 55 0 835 944	9 0 67 <1 980 1073			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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	5 10 52 0 789 886 920	5 0 55 0 835 944 871	9 0 67 <1 980 1073 1053			
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	5 10 52 0 789 886	5 0 55 0 835 944	9 0 67 <1 980 1073			
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 ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	5 10 52 0 789 886 920 1032	5 0 55 0 835 944 871 1107	9 0 67 <1 980 1073 1053 1279			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	5 10 52 0 789 886 920 1032 2732	5 0 55 0 835 944 871 1107 3127 history1	9 0 67 <1 980 1073 1053 1279 3940 history2			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	5 10 52 0 789 886 920 1032 2732 current	5 0 55 0 835 944 871 1107 3127 history1	9 0 67 <1 980 1073 1053 1279 3940 history2			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	5 10 52 0 789 886 920 1032 2732 current 4	5 0 55 0 835 944 871 1107 3127 history1 5	9 0 67 <1 980 1073 1053 1279 3940 history2 4			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	5 10 52 0 789 886 920 1032 2732 current 4 <1	5 0 55 0 835 944 871 1107 3127 history1 5 4	9 0 67 <1 980 1073 1053 1279 3940 history2 4 3 <1			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	5 10 52 0 789 886 920 1032 2732 current 4 <1 2	5 0 55 0 835 944 871 1107 3127 history1 5 4 2	9 0 67 <1 980 1073 1053 1279 3940 history2 4 3 <1			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185m	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >3.0	5 10 52 0 789 886 920 1032 2732 current 4 <1 2 0.8	5 0 55 0 835 944 871 1107 3127 history1 5 4 2	9 0 67 <1 980 1073 1053 1279 3940 history2 4 3 <1 <1.0			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >3.0	5 10 52 0 789 886 920 1032 2732 current 4 <1 2 0.8	5 0 55 0 835 944 871 1107 3127 history1 5 4 2 15.0 history1 0.3	9 0 67 <1 980 1073 1053 1279 3940 history2 4 3 <1 <1.0 history2 0.1			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base	5 10 52 0 789 886 920 1032 2732 current 4 <1 2 0.8 current	5 0 55 0 835 944 871 1107 3127 history1 5 4 2 15.0 history1 0.3 10.1	9 0 67 <1 980 1073 1053 1279 3940 history2 4 3 <1 <1.0 history2 0.1 5.5			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >3.0	5 10 52 0 789 886 920 1032 2732 current 4 <1 2 0.8	5 0 55 0 835 944 871 1107 3127 history1 5 4 2 15.0 history1 0.3	9 0 67 <1 980 1073 1053 1279 3940 history2 4 3 <1 <1.0 history2 0.1			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7415 method	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base	5 10 52 0 789 886 920 1032 2732 current 4 <1 2 0.8 current	5 0 55 0 835 944 871 1107 3127 history1 5 4 2 15.0 history1 0.3 10.1	9 0 67 <1 980 1073 1053 1279 3940 history2 4 3 <1 <1.0 history2 0.1 5.5			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >6 >20 >30	5 10 52 0 789 886 920 1032 2732 current 4 <1 2 0.8 current 0.1 5.9 17.4	5 0 55 0 835 944 871 1107 3127 history1 5 4 2 15.0 history1 0.3 10.1 20.2	9 0 67 <1 980 1073 1053 1279 3940 history2 4 3 <1 <1.0 history2 0.1 5.5 17.8			



# **OIL ANALYSIS REPORT**

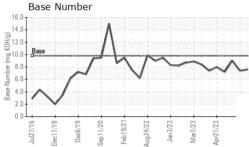


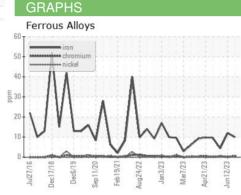
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

13.4

10.5

13.9



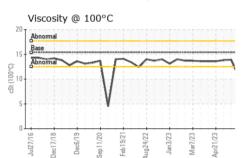


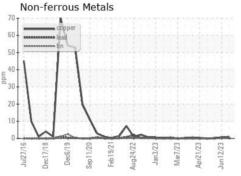
cSt

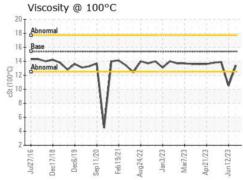
ASTM D445

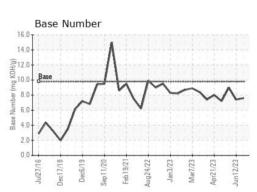
15.4

Visc @ 100°C













Laboratory Sample No. Lab Number Unique Number

: 10698405

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0097197 : 05981110

Received Diagnosed

: 17 Oct 2023 : 18 Oct 2023 Diagnostician : Wes Davis

GFL Environmental - 073 - Warner Robins - Transwaste 155 Story Road

Warner Robins, GA US 31093 Contact: Mike Taft

Test Package : FLEET ( Additional Tests: PercentFuel ) Certificate L2367 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)

T: F: