

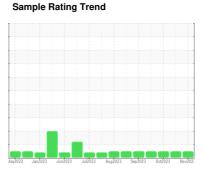
# **OIL ANALYSIS REPORT**



# MONTGOMERY **MACK 420042**

Component
Diesel Engine

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





### DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

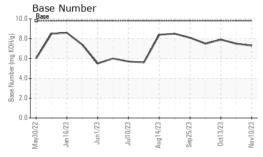
### **Fluid Condition**

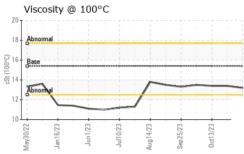
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0087994	GFL0092395	GFL0092415
Sample Date		Client Info		10 Nov 2023	31 Oct 2023	13 Oct 2023
Machine Age	hrs	Client Info		8470	8354	8265
Oil Age	hrs	Client Info		836	720	631
Oil Changed		Client Info		Not Changd	Not Changd	N/A
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	>120	18	18	15
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	1	1
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	<1	<1	<1
Aluminum	ppm	ASTM D5185m	>20	2	3	2
Lead	ppm	ASTM D5185m	>40	1	1	1
Copper	ppm	ASTM D5185m	>330	47	50	47
Tin	ppm	ASTM D5185m	>15	2	1	1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	<1
Oddiniani	ppiii	710 1111 20 100111		U	< 1	~ 1
ADDITIVES	ppiii	method	limit/base	current	history1	history2
	ppm		limit/base			
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 5	history1	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0	current 5 0	history1 2 <1	history2 3 10
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 5 0 60	history1 2 <1 63	history2 3 10 61
ADDITIVES  Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 5 0 60 <1	history1 2 <1 63 <1	history2 3 10 61 <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  5  0  60  <1  955	history1  2  <1 63 <1 929	history2  3 10 61 <1 855
ADDITIVES  Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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  5  0  60  <1  955  1089	history1  2  <1 63 <1 929 1080	history2  3 10 61 <1 855 1011 944 1125
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  5  0  60  <1  955  1089  999	history1  2  <1 63 <1 929 1080 994	history2  3 10 61 <1 855 1011 944
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  5 0 60 <1 955 1089 999 1293 2575 current	history1  2  <1 63  <1 929 1080 994 1237 3090 history1	history2  3 10 61 <1 855 1011 944 1125 2627 history2
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  5  0  60  <1  955  1089  999  1293  2575	history1  2  <1 63 <1 929 1080 994 1237 3090 history1 8	history2  3 10 61 <1 855 1011 944 1125 2627
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current  5 0 60 <1 955 1089 999 1293 2575 current	history1  2  <1 63 <1 929 1080 994 1237 3090 history1  8 6	history2  3 10 61 <1 855 1011 944 1125 2627 history2 7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current  5 0 60 <1 955 1089 999 1293 2575 current 8	history1  2  <1 63 <1 929 1080 994 1237 3090 history1 8	history2  3 10 61 <1 855 1011 944 1125 2627 history2 7
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  5 0 60 <1 955 1089 999 1293 2575 current 8 3	history1  2  <1 63 <1 929 1080 994 1237 3090 history1  8 6	history2  3 10 61 <1 855 1011 944 1125 2627 history2 7
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  5 0 60 <1 955 1089 999 1293 2575 current  8 3 <1	history1  2  <1 63  <1 929 1080 994 1237 3090 history1  8 6 2	history2  3 10 61 <1 855 1011 944 1125 2627 history2 7 2
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	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current  5 0 60 <1 955 1089 999 1293 2575 current  8 3 <1 current	history1  2  <1 63  <1 929 1080 994 1237 3090 history1  8 6 2 history1 0.4 7.4	history2  3 10 61 <1 855 1011 944 1125 2627 history2 7 2 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  method  ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current  5 0 60 <1 955 1089 999 1293 2575 current 8 3 <1 current 0.5	history1  2  <1 63 <1 929 1080 994 1237 3090 history1  8 6 2 history1 0.4	history2  3 10 61 <1 855 1011 944 1125 2627 history2 7 2 2 history2 0.4
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 D76185m ASTM D76185m ASTM D76185m ASTM D76185m ASTM D76185m	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base	current  5 0 60 <1 955 1089 999 1293 2575 current 8 3 <1 current 0.5 7.8	history1  2  <1 63  <1 929 1080 994 1237 3090 history1  8 6 2 history1 0.4 7.4	history2  3 10 61 <1 855 1011 944 1125 2627 history2 7 2 2 history2 0.4 7.1
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 D76185m ASTM D76185m ASTM D76185m ASTM D76185m ASTM D76185m	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	current  5 0 60 <1 955 1089 999 1293 2575 current 8 3 <1 current 0.5 7.8 19.9	history1  2  <1 63 <1 929 1080 994 1237 3090 history1  8 6 2 history1 0.4 7.4 19.7	history2  3 10 61 <1 855 1011 944 1125 2627 history2 7 2 2 history2 0.4 7.1 19.5



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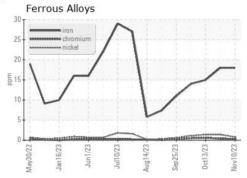


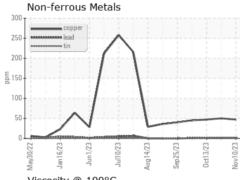


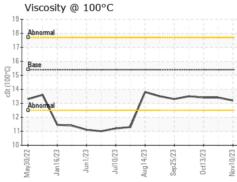
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

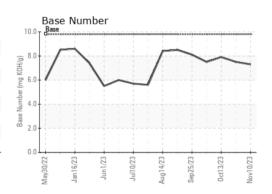
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.2	13.4	13.4

### **GRAPHS**













Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10741245 Test Package : FLEET

: GFL0087994 : 06007483

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 14 Nov 2023 Diagnosed : 15 Nov 2023

Diagnostician : Wes Davis

GFL Environmental - 955 - Montgomery

1121 Wilbanks St Montgomery, AL US 36108 Contact: LISA REEVES

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)

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