

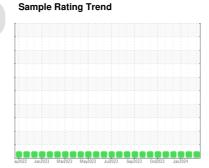
OIL ANALYSIS REPORT



MONTGOMERY **MACK 420040**

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

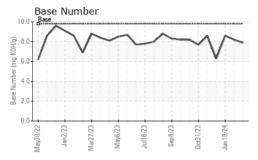
Fluid Condition

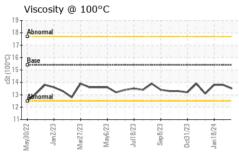
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
	VIATION		IIIIIII Dase		•	•
Sample Number		Client Info		GFL0115578	GFL0088659	GFL0081859
Sample Date		Client Info		12 Mar 2024	21 Feb 2024	18 Jan 2024
Machine Age	hrs	Client Info		9594	9469	9312
Oil Age	hrs	Client Info		9594	9469	9312
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<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	>120	6	6	4
Chromium	ppm	ASTM D5185m		<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	1	1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m		2	3	2
Lead	ppm	ASTM D5185m	>40	_ <1	0	1
Copper	ppm	ASTM D5185m		<1	<1	1
Tin	ppm	ASTM D5185m		<1	<1	1
Vanadium	ppm	ASTM D5185m	7.0	0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	<1
	le le			•	-	
ADDITIVES		method	limit/hasa	current	history1	hietory2
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	5	4	6
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	5 0	4	6
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	5 0 58	4 0 63	6 1 62
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	5 0 58 <1	4 0 63 <1	6 1 62 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 0 58 <1 925	4 0 63 <1 1001	6 1 62 1 978
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	5 0 58 <1 925 1004	4 0 63 <1 1001 1087	6 1 62 1 978 1016
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm 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 0 58 <1 925 1004 1023	4 0 63 <1 1001 1087 1052	6 1 62 1 978 1016 973
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	5 0 58 <1 925 1004 1023 1217	4 0 63 <1 1001 1087 1052 1298	6 1 62 1 978 1016 973 1264
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 1270 2060	5 0 58 <1 925 1004 1023 1217 3359	4 0 63 <1 1001 1087 1052 1298 3359	6 1 62 1 978 1016 973 1264 3237
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	5 0 58 <1 925 1004 1023 1217 3359 current	4 0 63 <1 1001 1087 1052 1298 3359 history1	6 1 62 1 978 1016 973 1264 3237 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 0 58 <1 925 1004 1023 1217 3359 current	4 0 63 <1 1001 1087 1052 1298 3359 history1	6 1 62 1 978 1016 973 1264 3237 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	5 0 58 <1 925 1004 1023 1217 3359 current 5 2	4 0 63 <1 1001 1087 1052 1298 3359 history1 6 3	6 1 62 1 978 1016 973 1264 3237 history2 5
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 limit/base	5 0 58 <1 925 1004 1023 1217 3359 current	4 0 63 <1 1001 1087 1052 1298 3359 history1	6 1 62 1 978 1016 973 1264 3237 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 0 58 <1 925 1004 1023 1217 3359 current 5 2	4 0 63 <1 1001 1087 1052 1298 3359 history1 6 3	6 1 62 1 978 1016 973 1264 3237 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	5 0 58 <1 925 1004 1023 1217 3359 current 5 2	4 0 63 <1 1001 1087 1052 1298 3359 history1 6 3	6 1 62 1 978 1016 973 1264 3237 history2 5 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	5 0 58 <1 925 1004 1023 1217 3359 current 5 2 2	4 0 63 <1 1001 1087 1052 1298 3359 history1 6 3	6 1 62 1 978 1016 973 1264 3237 history2 5 0 2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20	5 0 58 <1 925 1004 1023 1217 3359 current 5 2 2	4 0 63 <1 1001 1087 1052 1298 3359 history1 6 3 history1 0.2	6 1 62 1 978 1016 973 1264 3237 history2 5 0 2 history2 0.1
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	ASTM D5185m method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	5 0 58 <1 925 1004 1023 1217 3359 current 5 2 2 current 0.3 6.8	4 0 63 <1 1001 1087 1052 1298 3359 history1 6 3 history1 0.2 6.2	6 1 62 1 978 1016 973 1264 3237 history2 5 0 2 history2 0.1 5.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m Method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30 limit/base	5 0 58 <1 925 1004 1023 1217 3359 current 5 2 2 current 0.3 6.8 18.4	4 0 63 <1 1001 1087 1052 1298 3359 history1 6 3 history1 0.2 6.2 18.3 history1	6 1 62 1 978 1016 973 1264 3237 history2 5 0 2 history2 0.1 5.2 17.8 history2
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 ppm	ASTM D5185m Method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	5 0 58 <1 925 1004 1023 1217 3359 current 5 2 2 current 0.3 6.8 18.4	4 0 63 <1 1001 1087 1052 1298 3359 history1 6 3 3 history1 0.2 6.2 18.3	6 1 62 1 978 1016 973 1264 3237 history2 5 0 2 history2 0.1 5.2 17.8



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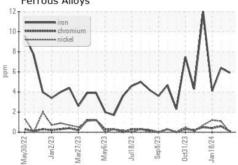


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

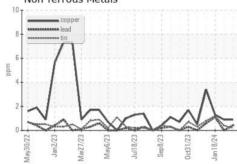
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.5	13.8	13.8

GRAPHS

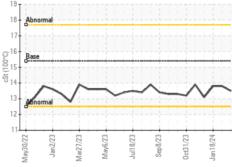
Ferrous Alloys

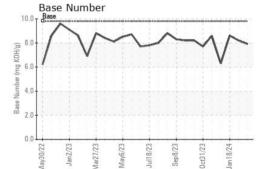
















Certificate L2367

Laboratory Sample No.

: GFL0115578 Lab Number : 06117719

Unique Number : 10926552 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 13 Mar 2024

Tested : 14 Mar 2024 Diagnosed : 14 Mar 2024 - 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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