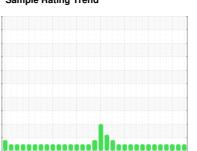


## **OIL ANALYSIS REPORT**

## Sample Rating Trend







# MONTGOMERY **MACK 920107**

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

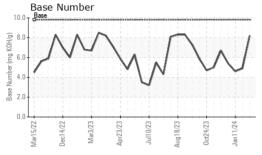
## **Fluid Condition**

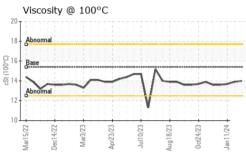
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method limit/base current   history1   history2			BYZUZZ DBCZU	IZZ MBrZUZ3 AprZUZ3	Jul2023 Aug2023 Oct2023	Jan2024	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         8474         8314         8303           Oil Age         hrs         Client Info         1444         1284         1273           Oil Changed         Client Info         Changed         Not Changd         Not Changd           Sample Status         Normal         NoRMAL         NORMAL         NORMAL           CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >3.0         <1.0	Sample Number		Client Info		GFL0088673	GFL0081887	GFL0081870
Oil Age         hrs         Client Info         1444         1284         1273           Oil Changed Sample Status         Client Info         Changed Not Changd Not Changd Not Changd Not Changd Not Changd Nor Changd N	Sample Date		Client Info		31 Jan 2024	11 Jan 2024	11 Jan 2024
Oil Changed Sample Status	Machine Age	hrs	Client Info		8474	8314	8303
NORMAL   NORMAL   NORMAL   NORMAL	Oil Age	hrs	Client Info		1444	1284	1273
NORMAL   NORMAL   NORMAL	Oil Changed		Client Info		Changed	Not Changd	Not Changd
Fuel	Sample Status				_	NORMAL	NORMAL
Water Glycol         WC Method WC Method         >0.2         NEG NEG         NEG NEG         NEG NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >120         16         47         50           Chromium         ppm         ASTM D5185m         >20         <1         <1         1           Nickel         ppm         ASTM D5185m         >2         <1         <0         0           Silver         ppm         ASTM D5185m         >2         <1         <0         0           Silver         ppm         ASTM D5185m         >2         <1         <1         <1           Silver         ppm         ASTM D5185m         >2         <1         <1         <1         <1           Lead         ppm         ASTM D5185m         >20         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1	CONTAMINATI	ON	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METALS	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	16	47	50
Titanium         ppm         ASTM D5185m         >2         <1	Chromium	ppm	ASTM D5185m	>20	<1	<1	1
Titanium         ppm         ASTM D5185m         >2         <1	Nickel	ppm	ASTM D5185m	>5	<1	<1	<1
Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >20         <1         1         1           Lead         ppm         ASTM D5185m         >40         <1         <1         <1           Copper         ppm         ASTM D5185m         >330         <1         1         1           Tin         ppm         ASTM D5185m         >15         <1         0         0           Vanadium         ppm         ASTM D5185m         0         <1         <1         0           Cadmium         ppm         ASTM D5185m         0         <1         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0         0           ADDITIVES         method         limit/base         current         history1         histo	Titanium		ASTM D5185m	>2	<1	0	0
Aluminum	Silver		ASTM D5185m	>2	0	0	0
Lead         ppm         ASTM D5185m         >40         <1	Aluminum		ASTM D5185m	>20	<1	1	1
Copper         ppm         ASTM D5185m         >330         <1	Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Tin         ppm         ASTM D5185m         >15         <1	Copper		ASTM D5185m	>330	<1	1	1
Vanadium         ppm         ASTM D5185m         0         <1						0	0
Cadmium         ppm         ASTM D5185m         <1	Vanadium		ASTM D5185m				<1
Boron							
Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         60         63         64         65           Manganese         ppm         ASTM D5185m         0         <1	ADDITIVES		method	limit/base	current	history1	history2
Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         60         63         64         65           Manganese         ppm         ASTM D5185m         0         <1	Boron	ppm	ASTM D5185m	0	3	2	2
Molybdenum         ppm         ASTM D5185m         60         63         64         65           Manganese         ppm         ASTM D5185m         0         <1	Barium		ASTM D5185m	0	0	0	0
Manganese         ppm         ASTM D5185m         0         <1	Molybdenum	ppm		60	63	64	65
Magnesium         ppm         ASTM D5185m         1010         996         987         995           Calcium         ppm         ASTM D5185m         1070         971         1130         1136           Phosphorus         ppm         ASTM D5185m         1150         898         1050         1044           Zinc         ppm         ASTM D5185m         1270         1274         1244         1251           Sulfur         ppm         ASTM D5185m         2060         2833         2732         2719           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         8         8           Sodium         ppm         ASTM D5185m         >20         2         0         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.6         1.2         1.2           Nitration         Abs/:mm         *ASTM D7415         >30         19.5         24.7         25.0           FLUID DEGRADATION         *ASTM D7414<	•	• • • • • • • • • • • • • • • • • • • •	ASTM D5185m	0	<1	<1	<1
Calcium         ppm         ASTM D5185m         1070         971         1130         1136           Phosphorus         ppm         ASTM D5185m         1150         898         1050         1044           Zinc         ppm         ASTM D5185m         1270         1274         1244         1251           Sulfur         ppm         ASTM D5185m         2060         2833         2732         2719           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         8         8           Sodium         ppm         ASTM D5185m         >20         2         0         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.6         1.2         1.2           Nitration         Abs/:1mm         *ASTM D7415         >30         19.5         24.7         25.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/:1mm	•			1010	996	987	995
Phosphorus         ppm         ASTM D5185m         1150         898         1050         1044           Zinc         ppm         ASTM D5185m         1270         1274         1244         1251           Sulfur         ppm         ASTM D5185m         2060         2833         2732         2719           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         8         8           Sodium         ppm         ASTM D5185m         >20         2         0         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.6         1.2         1.2           Nitration         Abs/cm         *ASTM D7624         >20         8.0         11.5         11.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.5         24.7         25.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm			ASTM D5185m	1070	971	1130	1136
Zinc         ppm         ASTM D5185m         1270         1274         1244         1251           Sulfur         ppm         ASTM D5185m         2060         2833         2732         2719           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         8         8           Sodium         ppm         ASTM D5185m         >20         6         6           Potassium         ppm         ASTM D5185m         >20         2         0         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.6         1.2         1.2           Nitration         Abs/cm         *ASTM D7624         >20         8.0         11.5         11.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.5         24.7         25.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414	Phosphorus			1150			1044
Sulfur         ppm         ASTM D5185m         2060         2833         2732         2719           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         8         8           Sodium         ppm         ASTM D5185m         0         6         6           Potassium         ppm         ASTM D5185m         >20         2         0         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.6         1.2         1.2           Nitration         Abs/cm         *ASTM D7624         >20         8.0         11.5         11.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.5         24.7         25.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.3         20.7         20.9		• • • • • • • • • • • • • • • • • • • •					
Silicon         ppm         ASTM D5185m         >25         5         8         8           Sodium         ppm         ASTM D5185m         0         6         6           Potassium         ppm         ASTM D5185m         >20         2         0         <1							
Sodium         ppm         ASTM D5185m         0         6         6           Potassium         ppm         ASTM D5185m         >20         2         0         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.6         1.2         1.2           Nitration         Abs/cm         *ASTM D7624         >20         8.0         11.5         11.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.5         24.7         25.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.3         20.7         20.9	CONTAMINAN	TS	method	limit/base	current	history1	history2
Sodium         ppm         ASTM D5185m         0         6         6           Potassium         ppm         ASTM D5185m         >20         2         0         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.6         1.2         1.2           Nitration         Abs/cm         *ASTM D7624         >20         8.0         11.5         11.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.5         24.7         25.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.3         20.7         20.9	Silicon	ppm	ASTM D5185m	>25	5	8	8
Potassium         ppm         ASTM D5185m         >20         2         0         <1		• • • • • • • • • • • • • • • • • • • •					
INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.6         1.2         1.2           Nitration         Abs/cm         *ASTM D7624         >20         8.0         11.5         11.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.5         24.7         25.0           FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.3         20.7         20.9				>20			
Nitration         Abs/cm         *ASTM D7624         >20         8.0         11.5         11.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.5         24.7         25.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.3         20.7         20.9	INFRA-RED		method	limit/base	current	history1	history2
Nitration         Abs/cm         *ASTM D7624         >20         8.0         11.5         11.6           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.5         24.7         25.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.3         20.7         20.9	Soot %	%	*ASTM D7844	>4	0.6	1.2	12
Sulfation         Abs/.1mm         *ASTM D7415         >30         19.5         24.7         25.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.3         20.7         20.9							
FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     15.3     20.7     20.9							
Oxidation Abs/.1mm *ASTM D7414 >25 <b>15.3</b> 20.7 20.9							
		AHON	method	limit/base	current	history1	history2
Base Number (BN)         mg KOH/g         ASTM D2896         9.8         8.2         4.9         4.6					15.3		
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.2	4.9	4.6



## **OIL ANALYSIS REPORT**

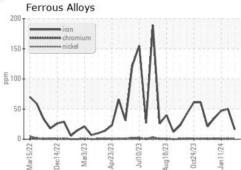


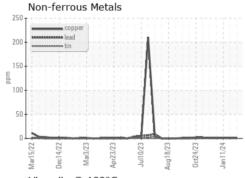


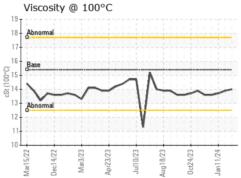
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

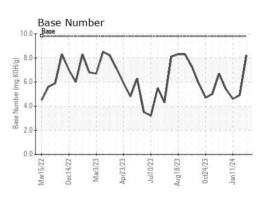
FLUID PROPE	RHES	metnoa	ilmit/base	current	nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	13.9	13.7

## **GRAPHS**













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** 

: GFL0088673 : 06078820

: 10860911 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 02 Feb 2024

: 05 Feb 2024 Diagnosed 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)

T:

F: