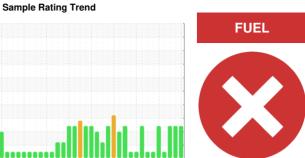


# **PROBLEM SUMMARY**



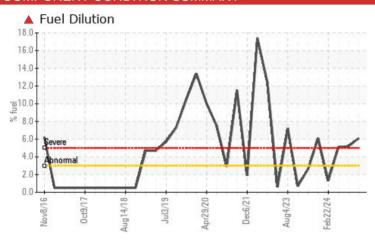


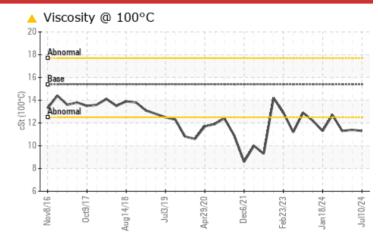
Machine Id

MACK 2658
Component
Diesel Engine
Fluid

PETRO CANADA DURON SHP 15W40 (7 GAL)

# **COMPONENT CONDITION SUMMARY**





# **RECOMMENDATION**

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS								
Sample Status				SEVERE	SEVERE	SEVERE		
Fuel	%	ASTM D3524	>3.0	<b>▲</b> 6.1	▲ 5.2	<b>▲</b> 5.1		
Visc @ 100°C	cSt	ASTM D445	15.4	<b>11.3</b>	▲ 11.4	▲ 11.3		

Customer Id: GFL009 Sample No.: GFL0116830 Lab Number: 06235490 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data: Wes Davis +1 905-569-8600 x223 wesd@wearcheck.ca

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDED ACTIONS					
Action	Status	Date	Done By	Description	
Change Fluid			?	We recommend that you drain the oil from the component if this has not already been done.	
Resample			?	We recommend an early resample to monitor this condition.	
Check Fuel/injector System			?	We advise that you check the fuel injection system.	

# HISTORICAL DIAGNOSIS

# 03 Jun 2024 Diag: Wes Davis

FUEL



We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.



#### FUEL



24 May 2024 Diag: Wes Davis

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.



#### NORMAL



22 Feb 2024 Diag: Wes Davis

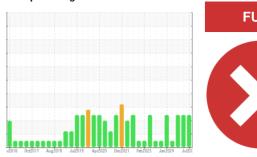
No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. Light fuel dilution occurring. No other contaminants were detected in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.





# **OIL ANALYSIS REPORT**

# Sample Rating Trend







Machine Id **MACK 2658** Diesel Engine

PETRO CANADA DURON SHP 15W40 (7 GAL)

# **DIAGNOSIS**

### Recommendation

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

### Wear

All component wear rates are normal.

### ▲ Contamination

There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

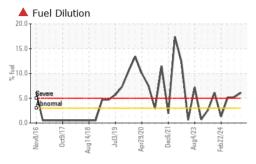
# Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

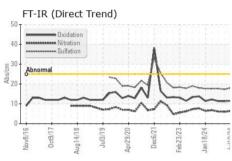
SAMPLE INFORMATION method   Imit/base   current   bistory1   bistory2							
Sample Date         Client Info         34101         34030         34029           Machine Age         hrs         Client Info         34101         34030         34029           Oil Age         hrs         Client Info         1589         1518         1517           Oil Changed         Client Info         N/A         Not Changd         Not Changd           Sample Status         VC Bethod         SEVERE         SEVERE         SEVERE           CONTAMINATION         method         limit/base         current         Inistory1         history2           Ware         WC Method         NEG         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >120         40         31         34           Chromium         ppm         ASTM D5185m         >20         <1	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         34101         34030         34029           Oil Age         hrs         Client Info         1589         1518         1517           Oil Changed         Client Info         N/A         Not Changd         Not Changd         Not Changd           Sample Status         SEVERE         SEVERE         SEVERE         SEVERE         SEVERE           CONTAMINATION         method         limit/base         current         history1         history2           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >20         40         31         34           Chromium         ppm         ASTM D5185m         >20         41         <1         <1           Nickel         ppm         ASTM D5185m         >20         0         0         0           Nickel         ppm         ASTM D5185m         >20         0         0         0           Aluminum         ppm         ASTM D5185m         >20         0         0         <1           Aluminum         ppm         ASTM D5185m         >40         0<	Sample Number		Client Info		GFL0116830	GFL0116777	GFL0116764
Oil Age         hrs         Client Info         1589         1518         1517           Oil Changed         Client Info         N/A         Not Changd         Not Changd           Sample Status         Client Info         N/A         Not Changd         Not Changd           Severe         SEVERE         SEVERE         SEVERE           CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         >0.2         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >120         40         31         34           Chromium         ppm         ASTM D5185m         >20         <1	Sample Date		Client Info		10 Jul 2024	03 Jun 2024	24 May 2024
Oil Changed Sample Status         Client Info         N/A         Not Changd SEVERE         Not Changd SEVERE         Not Changd SEVERE         SEVERE	Machine Age	hrs	Client Info		34101	34030	34029
Sample Status	Oil Age	hrs	Client Info		1589	1518	1517
CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >20         <1         <1         <1           Chromium         ppm         ASTM D5185m         >20         <1         <1         <1           Nickel         ppm         ASTM D5185m         >5         0         0         0           Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >20         2         2         3           Lead         ppm         ASTM D5185m         >40         0         0         <1         <1           Vanadium         ppm         ASTM D5185m         >15         0         <1         <1         <1           Vanadium         ppm         ASTM D5185m         0         0         <1 <td< th=""><th>Oil Changed</th><th></th><th>Client Info</th><th></th><th>N/A</th><th>Not Changd</th><th>Not Changd</th></td<>	Oil Changed		Client Info		N/A	Not Changd	Not Changd
Water Glycol         WC Method Glycol         >0.2         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >120         40         31         34           Chromium         ppm         ASTM D5185m         >20         <1	Sample Status				SEVERE	SEVERE	SEVERE
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >120         40         31         34           Chromium         ppm         ASTM D5185m         >20         <1         <1         <1           Nickel         ppm         ASTM D5185m         >20         0         0         0           Silver         ppm         ASTM D5185m         >2         0         0         0           Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >2         0         0         0           Lead         ppm         ASTM D5185m         >40         0         0         <1         <1           Copper         ppm         ASTM D5185m         >15         0         <1         <1         <1           Vanadium         ppm         ASTM D5185m         0         0         0         0         0           ADDITIVES         rethod         limit/base         current         history1         history2           Barium         ppm         ASTM D5185m	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium         ppm         ASTM D5185m         >20         <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel         ppm         ASTM D5185m         >5         0         0         0           Titanium         ppm         ASTM D5185m         >2         0         0         0           Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >20         2         2         3           Lead         ppm         ASTM D5185m         >40         0         <1         <1           Copper         ppm         ASTM D5185m         >330         5         4         4           Tin         ppm         ASTM D5185m         0         <1         <1           Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         13         18         18           Barium         ppm         ASTM D5185m         0         13         18         18           Bariu	Iron	ppm	ASTM D5185m	>120	40	31	34
Titanium         ppm         ASTM D5185m         >2         0         0         0           Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >20         2         2         3           Lead         ppm         ASTM D5185m         >40         0         0         <1	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >20         2         2         3           Lead         ppm         ASTM D5185m         >40         0         0         <1	Nickel	ppm	ASTM D5185m	>5	0	0	0
Aluminum         ppm         ASTM D5185m         >20         2         2         3           Lead         ppm         ASTM D5185m         >40         0         0         <1           Copper         ppm         ASTM D5185m         >330         5         4         4           Tin         ppm         ASTM D5185m         >15         0         <1         <1           Vanadium         ppm         ASTM D5185m         0         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0         0           Boron         ppm         ASTM D5185m         0         13         18         18           Barium         ppm         ASTM D5185m         0         0         <1         0           Molybdenum         ppm         ASTM D5185m         0         57         56         55           Manganese         ppm         ASTM D5185m         0         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1<	Titanium	ppm	ASTM D5185m	>2	0	0	0
Lead         ppm         ASTM D5185m         >40         0         0         <1	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper         ppm         ASTM D5185m         >330         5         4         4           Tin         ppm         ASTM D5185m         >15         0         <1         <1           Vanadium         ppm         ASTM D5185m         0         0         0         0           Cadmium         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         history2           Boron         ppm         ASTM D5185m         0         0         <1         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         <1         1         0         0           ADDITIVES         method         limit/base         current         history1         history2           Borium         ppm         ASTM D5185m         0         0<	Aluminum	ppm	ASTM D5185m	>20	2	2	3
Tin         ppm         ASTM D5185m         >15         0         <1	Lead	ppm	ASTM D5185m	>40	0	0	<1
Vanadium         ppm         ASTM D5185m         0         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         13         18         18           Barium         ppm         ASTM D5185m         0         0         <1	Copper	ppm	ASTM D5185m	>330	5	4	4
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         13         18         18           Barium         ppm         ASTM D5185m         0         0         -1         0           Molybdenum         ppm         ASTM D5185m         0         -1         -1         -1           Manganese         ppm         ASTM D5185m         1010         719         728         728           Calcium         ppm         ASTM D5185m         1070         1105         1058         1053           Phosphorus         ppm         ASTM D5185m         1070         1105         1058         1053           Phosphorus         ppm         ASTM D5185m         1270         1037         1044         1052           Zinc         ppm         ASTM D5185m         220         3070         3027         3073           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m	Tin	ppm	ASTM D5185m	>15	0	<1	<1
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         13         18         18           Barium         ppm         ASTM D5185m         0         0         <1         0           Molybdenum         ppm         ASTM D5185m         60         57         56         55           Manganese         ppm         ASTM D5185m         0         <1         <1         <1           Magnesium         ppm         ASTM D5185m         1010         719         728         728           Calcium         ppm         ASTM D5185m         1070         1105         1058         1053           Phosphorus         ppm         ASTM D5185m         1270         1037         1044         1052           Sulfur         ppm         ASTM D5185m         2060         3070         3027         3073           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         2         3         4           Sodium         ppm         ASTM D5185m	Vanadium	ppm	ASTM D5185m		0	0	0
Boron         ppm         ASTM D5185m         0         13         18         18           Barium         ppm         ASTM D5185m         0         0         <1	Cadmium	ppm	ASTM D5185m		0	0	0
Barium         ppm         ASTM D5185m         0         0         <1	ADDITIVES		method	limit/hase	current	history1	history2
Molybdenum         ppm         ASTM D5185m         60         57         56         55           Manganese         ppm         ASTM D5185m         0         <1	ADDITIVEO		method	IIIIII/Dasc	Current	riistory i	111010132
Manganese         ppm         ASTM D5185m         0         <1		ppm				•	
Magnesium         ppm         ASTM D5185m         1010         719         728         728           Calcium         ppm         ASTM D5185m         1070         1105         1058         1053           Phosphorus         ppm         ASTM D5185m         1150         915         925         906           Zinc         ppm         ASTM D5185m         1270         1037         1044         1052           Sulfur         ppm         ASTM D5185m         2060         3070         3027         3073           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         2         3         4           Sodium         ppm         ASTM D5185m         >25         2         3         4           Sodium         ppm         ASTM D5185m         >20         0         2         2           Potassium         ppm         ASTM D5185m         >20         0         2         2           Fuel         %         ASTM D3524         >3.0         6.1         0.9         0.9           Nitration         Abs/cm         *ASTM D7624 <th>Boron</th> <th></th> <th>ASTM D5185m</th> <th>0</th> <th>13</th> <th>18</th> <th>18</th>	Boron		ASTM D5185m	0	13	18	18
Calcium         ppm         ASTM D5185m         1070         1105         1058         1053           Phosphorus         ppm         ASTM D5185m         1150         915         925         906           Zinc         ppm         ASTM D5185m         1270         1037         1044         1052           Sulfur         ppm         ASTM D5185m         2060         3070         3027         3073           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         2         3         4           Sodium         ppm         ASTM D5185m         >20         0         2         2           Potassium         ppm         ASTM D5185m         >20         0         2         2           Fuel         %         ASTM D3524         >3.0         6.1         5.2         5.1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         1         0.9         0.9           Nitration         Abs/.1mm         *ASTM D7415	Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	13 0	18	18
Phosphorus         ppm         ASTM D5185m         1150         915         925         906           Zinc         ppm         ASTM D5185m         1270         1037         1044         1052           Sulfur         ppm         ASTM D5185m         2060         3070         3027         3073           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         2         3         4           Sodium         ppm         ASTM D5185m         >25         2         3         4           Sodium         ppm         ASTM D5185m         >20         0         2         2           Potassium         ppm         ASTM D5185m         >20         0         2         2           Fuel         %         ASTM D3524         >3.0         6.1         5.2         5.1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         *ASTM D7624         >20         6.4         6.0         6.1           Sulfation         Abs/.1mm         *ASTM D7415         >30	Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	13 0 57	18 <1 56	18 0 55
Zinc         ppm         ASTM D5185m         1270         1037         1044         1052           Sulfur         ppm         ASTM D5185m         2060         3070         3027         3073           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         2         3         4           Sodium         ppm         ASTM D5185m         >20         0         2         2           Potassium         ppm         ASTM D5185m         >20         0         2         2           Fuel         %         ASTM D3524         >3.0         6.1         5.2         5.1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         1         0.9         0.9           Nitration         Abs/.1mm         *ASTM D7415         >30         18.0         17.3         17.7           FLUID DEGRADATION         *astm D7414         >25         11.5         11.3         11.4	Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	13 0 57 <1	18 <1 56 <1	18 0 55 <1
Sulfur         ppm         ASTM D5185m         2060         3070         3027         3073           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         2         3         4           Sodium         ppm         ASTM D5185m         2         <1         2           Potassium         ppm         ASTM D5185m         >20         0         2         2           Fuel         %         ASTM D3524         >3.0         6.1         5.2         5.1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         1         0.9         0.9           Nitration         Abs/cm         *ASTM D7624         >20         6.4         6.0         6.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.0         17.3         17.7           FLUID DEGRADATION method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25	Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	13 0 57 <1 719	18 <1 56 <1 728	18 0 55 <1 728
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         2         3         4           Sodium         ppm         ASTM D5185m         2         <1         2           Potassium         ppm         ASTM D5185m         >20         0         2         2           Fuel         %         ASTM D3524         >3.0         6.1         5.2         5.1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         1         0.9         0.9           Nitration         Abs/cm         *ASTM D7624         >20         6.4         6.0         6.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.0         17.3         17.7           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         11.5         11.3         11.4	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	13 0 57 <1 719 1105	18 <1 56 <1 728 1058	18 0 55 <1 728 1053
Silicon         ppm         ASTM D5185m         >25         2         3         4           Sodium         ppm         ASTM D5185m         2         <1	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	13 0 57 <1 719 1105 915	18 <1 56 <1 728 1058 925	18 0 55 <1 728 1053 906
Sodium         ppm         ASTM D5185m         2         <1	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	13 0 57 <1 719 1105 915	18 <1 56 <1 728 1058 925 1044	18 0 55 <1 728 1053 906 1052
Potassium         ppm         ASTM D5185m         >20         0         2         2           Fuel         %         ASTM D3524         >3.0         ▲ 6.1         ▲ 5.2         ▲ 5.1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         1         0.9         0.9           Nitration         Abs/cm         *ASTM D7624         >20         6.4         6.0         6.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.0         17.3         17.7           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         11.5         11.3         11.4	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	13 0 57 <1 719 1105 915 1037 3070	18 <1 56 <1 728 1058 925 1044 3027	18 0 55 <1 728 1053 906 1052 3073
Fuel         %         ASTM D3524         >3.0         ▲ 6.1         ▲ 5.2         ▲ 5.1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         1         0.9         0.9           Nitration         Abs/cm         *ASTM D7624         >20         6.4         6.0         6.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.0         17.3         17.7           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         11.5         11.3         11.4	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	13 0 57 <1 719 1105 915 1037 3070 current	18 <1 56 <1 728 1058 925 1044 3027 history1	18 0 55 <1 728 1053 906 1052 3073 history2
INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         1         0.9         0.9           Nitration         Abs/cm         *ASTM D7624         >20         6.4         6.0         6.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.0         17.3         17.7           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         11.5         11.3         11.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	13 0 57 <1 719 1105 915 1037 3070 current	18 <1 56 <1 728 1058 925 1044 3027 history1 3	18 0 55 <1 728 1053 906 1052 3073 history2
Soot %         %         *ASTM D7844         >4         1         0.9         0.9           Nitration         Abs/cm         *ASTM D7624         >20         6.4         6.0         6.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.0         17.3         17.7           FLUID DEGRADATION method limit/base current history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         11.5         11.3         11.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	13 0 57 <1 719 1105 915 1037 3070 current 2 2	18 <1 56 <1 728 1058 925 1044 3027 history1 3 <1	18 0 55 <1 728 1053 906 1052 3073 history2 4
Nitration         Abs/cm         *ASTM D7624         >20         6.4         6.0         6.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.0         17.3         17.7           FLUID DEGRADATION method limit/base current history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         11.5         11.3         11.4	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	13 0 57 <1 719 1105 915 1037 3070 current 2 2	18	18 0 55 <1 728 1053 906 1052 3073 history2 4 2 2
Sulfation         Abs/.1mm         *ASTM D7415         >30         18.0         17.3         17.7           FLUID DEGRADATION method limit/base current history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         11.5         11.3         11.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	13 0 57 <1 719 1105 915 1037 3070 current 2 2 0 ▲ 6.1	18 <1 56 <1 728 1058 925 1044 3027 history1 3 <1 2 ▲ 5.2	18 0 55 <1 728 1053 906 1052 3073 history2 4 2 2  ▲ 5.1
FLUID DEGRADATION method limit/base current history1 history2  Oxidation Abs/.1mm *ASTM D7414 >25 11.5 11.3 11.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185m ASTM D3524	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	13 0 57 <1 719 1105 915 1037 3070 current 2 2 0 ▲ 6.1	18 <1 56 <1 728 1058 925 1044 3027 history1 3 <1 2 ▲ 5.2 history1	18 0 55 <1 728 1053 906 1052 3073 history2 4 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1
Oxidation         Abs/.1mm         *ASTM D7414         >25         11.5         11.3         11.4	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	13 0 57 <1 719 1105 915 1037 3070 current 2 2 0 ▲ 6.1 current	18 <1 56 <1 728 1058 925 1044 3027 history1 3 <1 2 ▲ 5.2 history1 0.9	18 0 55 <1 728 1053 906 1052 3073 history2 4 2 2  ▲ 5.1 history2 0.9
	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 0 0 1010 1150 1270 2060 limit/base >25 >20 >3.0 limit/base	13 0 57 <1 719 1105 915 1037 3070 current 2 2 0 ▲ 6.1 current 1 6.4	18 <1 56 <1 728 1058 925 1044 3027 history1 3 <1 2  ▲ 5.2 history1 0.9 6.0	18 0 55 <1 728 1053 906 1052 3073 history2 4 2 2  ▲ 5.1 history2 0.9 6.1
	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 D7844 *ASTM D7624 *ASTM D7624	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4 >20 >30	13 0 57 <1 719 1105 915 1037 3070	18 <1 56 <1 728 1058 925 1044 3027 history1 3 <1 2 ▲ 5.2 history1 0.9 6.0 17.3	18 0 55 <1 728 1053 906 1052 3073 history2 4 2 2 ▲ 5.1 history2 0.9 6.1 17.7
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m  METHOD  ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D78185m ASTM D7824  *ASTM D7844  *ASTM D7844  *ASTM D7844  *ASTM D7844  *ASTM D7844	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4 >20 >30 limit/base	13 0 57 <1 719 1105 915 1037 3070 current 2 2 0 ▲ 6.1 current 1 6.4 18.0 current	18 <1 56 <1 728 1058 925 1044 3027 history1  3 <1 2  ▲ 5.2 history1  0.9 6.0 17.3 history1	18 0 55 <1 728 1053 906 1052 3073 history2 4 2 2  ▲ 5.1 history2 0.9 6.1 17.7 history2

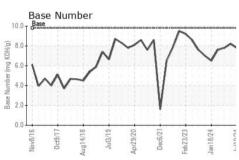


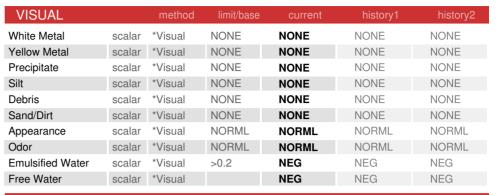
# **OIL ANALYSIS REPORT**



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Abnormal			$\Lambda$	
No. of the second				
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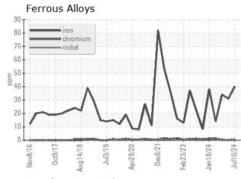


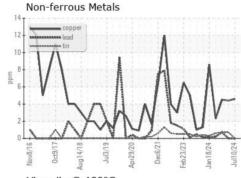


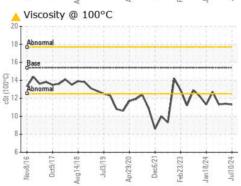


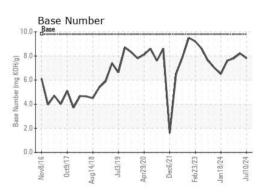
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	<b>11.3</b>	<u></u> 11.4	<b>△</b> 11.3

### **GRAPHS**













Laboratory

Sample No.

: GFL0116830 Lab Number : 06235490 Unique Number : 11124324

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 15 Jul 2024 **Tested** 

: 16 Jul 2024 Diagnosed

: 16 Jul 2024 - Wes Davis

Fairburn, GA US 30213 Contact: Eric Jones erjones@gflenv.com T: (678)630-9927

6905 Roosevelt Hwy

GFL Environmental - 009 - Fairburn

Test Package : FLEET ( Additional Tests: PercentFuel ) Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369.

 $^st$  - 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)