



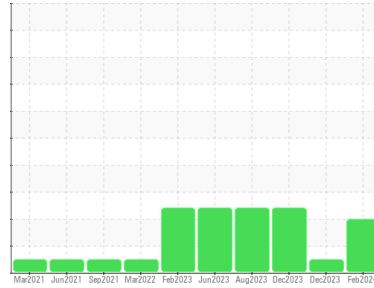
# OIL ANALYSIS REPORT

Sample Rating Trend

DEGRADATION



Machine Id  
**586M**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**



## DIAGNOSIS

### Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

### Wear

Cylinder, crank, or cam shaft wear is indicated. All other component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

The BN level is low. The condition of the oil is acceptable for the time in service.

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>GFL0107666</b>	GFL0107677	GFL0107047
Sample Date	Client Info	<b>09 Feb 2024</b>	28 Dec 2023	20 Dec 2023
Machine Age	hrs	<b>6615</b>	10476	10408
Oil Age	hrs	<b>600</b>	600	600
Oil Changed	Client Info	<b>Changed</b>	Changed	Not Changed
Sample Status		<b>ABNORMAL</b>	NORMAL	SEVERE

## CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >3.0	<b>&lt;1.0</b>	0.6	13.5
Water	WC Method >0.2	<b>NEG</b>	NEG	NEG
Glycol	WC Method	<b>NEG</b>	NEG	NEG

## WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >90	<b>▲ 85</b>	3	28
Chromium	ppm ASTM D5185m >20	<b>5</b>	<1	<1
Nickel	ppm ASTM D5185m >2	<b>1</b>	0	<1
Titanium	ppm ASTM D5185m >2	<b>&lt;1</b>	0	0
Silver	ppm ASTM D5185m >2	<b>&lt;1</b>	0	0
Aluminum	ppm ASTM D5185m >20	<b>2</b>	<1	2
Lead	ppm ASTM D5185m >40	<b>&lt;1</b>	<1	0
Copper	ppm ASTM D5185m >330	<b>2</b>	1	<1
Tin	ppm ASTM D5185m >15	<b>&lt;1</b>	<1	0
Vanadium	ppm ASTM D5185m	<b>&lt;1</b>	0	0
Cadmium	ppm ASTM D5185m	<b>&lt;1</b>	0	0

## ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	<b>2</b>	2	1
Barium	ppm ASTM D5185m 0	<b>0</b>	0	0
Molybdenum	ppm ASTM D5185m 60	<b>51</b>	57	63
Manganese	ppm ASTM D5185m 0	<b>1</b>	0	0
Magnesium	ppm ASTM D5185m 1010	<b>768</b>	930	983
Calcium	ppm ASTM D5185m 1070	<b>851</b>	1041	1088
Phosphorus	ppm ASTM D5185m 1150	<b>803</b>	1077	1010
Zinc	ppm ASTM D5185m 1270	<b>1020</b>	1214	1287
Sulfur	ppm ASTM D5185m 2060	<b>2284</b>	3192	3027

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	<b>11</b>	4	4
Sodium	ppm ASTM D5185m	<b>2</b>	2	<1
Potassium	ppm ASTM D5185m >20	<b>2</b>	<1	2

## INFRA-RED

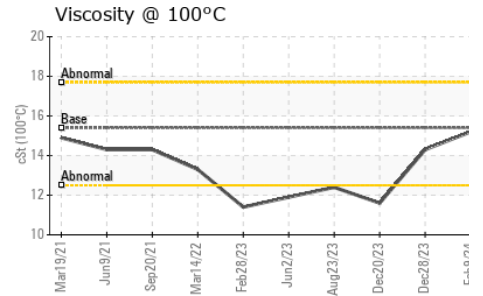
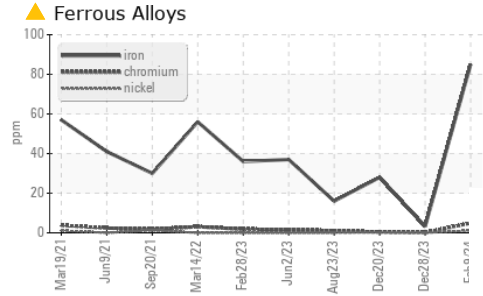
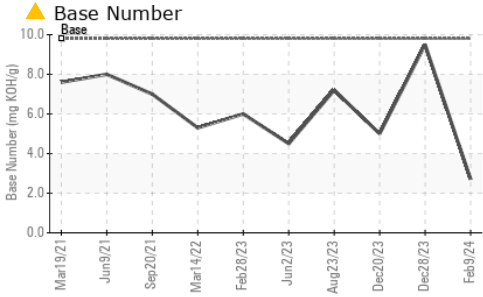
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >6	<b>1.3</b>	0.1	0.4
Nitration	Abs/cm *ASTM D7624 >20	<b>21.2</b>	5.4	12.5
Sulfation	Abs/.1mm *ASTM D7415 >30	<b>34.0</b>	17.6	24.0

## FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	<b>50.2</b>	13.4	26.4
Base Number (BN)	mg KOH/g ASTM D2896 9.8	<b>▲ 2.7</b>	9.5	5.0



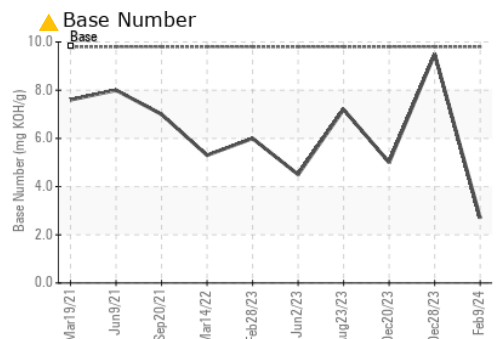
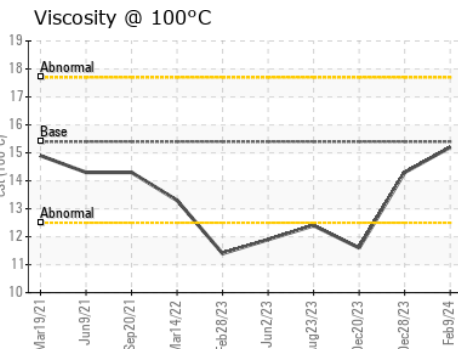
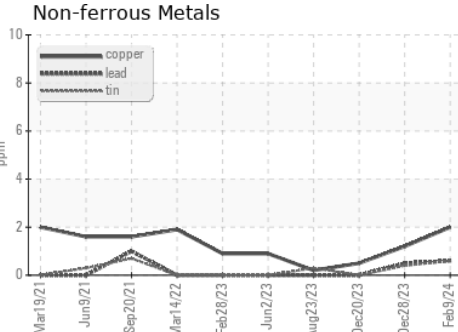
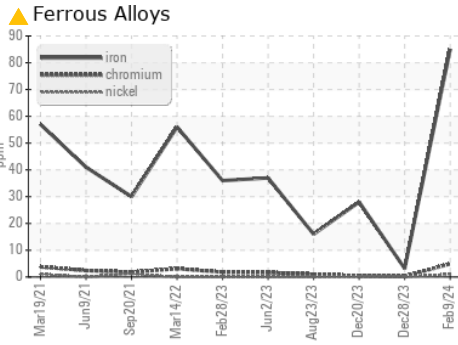
# OIL ANALYSIS REPORT



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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	15.2	14.3 ▲ 11.6

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0107666 **Received** : 15 Feb 2024  
**Lab Number** : 06090791 **Tested** : 19 Feb 2024  
**Unique Number** : 10883644 **Diagnosed** : 19 Feb 2024 - Don Baldrige  
**Test Package** : FLEET

**GFL Environmental - 465 - Pontiac**  
 888 Baldwin  
 Pontiac, MI  
 US 48340  
 Contact: Ricky Matthews  
 rickymathews@gflenv.com  
 T: (586)825-9514  
 F:

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)