



Machine Id  
**A133**

Component  
**Rear Diesel Engine**

Fluid  
**CASTROL HYPURON 15W40 (40 LTR)**



## DIAGNOSIS

### ▲ Recommendation

Check for low coolant level. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

### ▲ Wear

Iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated.

### Contamination

Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative. There is no indication of any contamination in the oil.

### ▲ Fluid Condition

The oil is no longer serviceable as a result of the abnormal and/or severe wear. The condition of the oil is acceptable for the time in service (see recommendation).

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>PC0075201</b>	---	---
Sample Date	Client Info			<b>08 Nov 2023</b>	---	---
Machine Age	kms	Client Info		<b>155754</b>	---	---
Oil Age	kms	Client Info		<b>0</b>	---	---
Oil Changed	Client Info			<b>Changed</b>	---	---
Sample Status				<b>ABNORMAL</b>	---	---

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

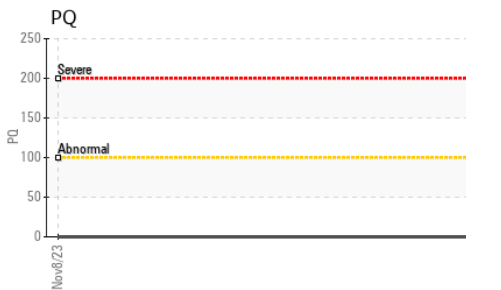
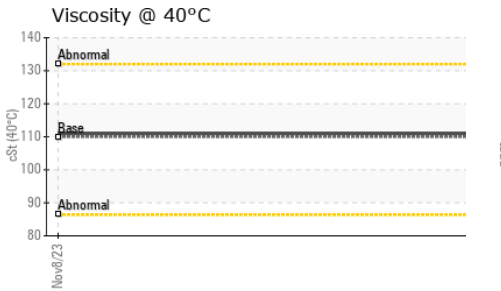
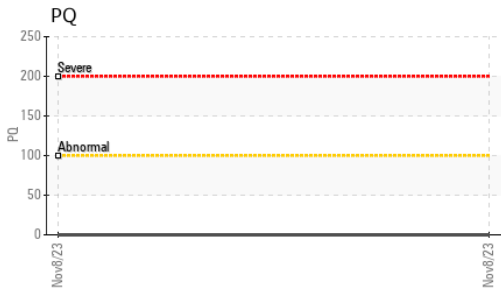
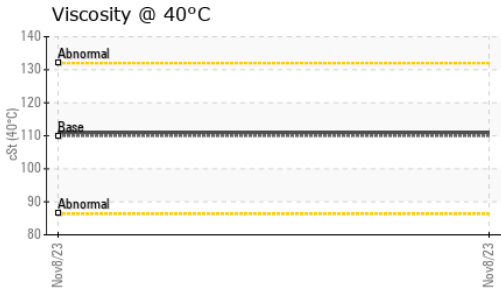
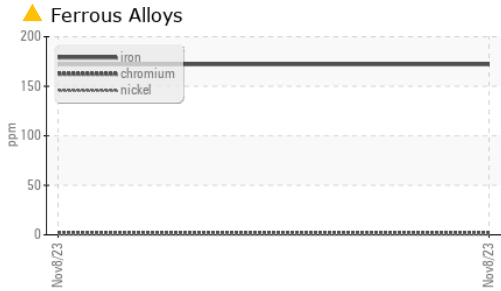
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		<b>0</b>	---	---
Iron	ppm	ASTM D5185(m)	>165	<b>▲ 172</b>	---	---
Chromium	ppm	ASTM D5185(m)	>5	<b>2</b>	---	---
Nickel	ppm	ASTM D5185(m)	>4	<b>&lt;1</b>	---	---
Titanium	ppm	ASTM D5185(m)	>2	<b>0</b>	---	---
Silver	ppm	ASTM D5185(m)	>2	<b>&lt;1</b>	---	---
Aluminum	ppm	ASTM D5185(m)	>20	<b>3</b>	---	---
Lead	ppm	ASTM D5185(m)	>150	<b>5</b>	---	---
Copper	ppm	ASTM D5185(m)	>90	<b>2</b>	---	---
Tin	ppm	ASTM D5185(m)	>5	<b>0</b>	---	---
Antimony	ppm	ASTM D5185(m)		<b>0</b>	---	---
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	---	---
Beryllium	ppm	ASTM D5185(m)		<b>0</b>	---	---
Cadmium	ppm	ASTM D5185(m)		<b>0</b>	---	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		<b>8</b>	---	---
Barium	ppm	ASTM D5185(m)		<b>0</b>	---	---
Molybdenum	ppm	ASTM D5185(m)		<b>73</b>	---	---
Manganese	ppm	ASTM D5185(m)		<b>&lt;1</b>	---	---
Magnesium	ppm	ASTM D5185(m)		<b>964</b>	---	---
Calcium	ppm	ASTM D5185(m)		<b>1036</b>	---	---
Phosphorus	ppm	ASTM D5185(m)		<b>1000</b>	---	---
Zinc	ppm	ASTM D5185(m)		<b>1195</b>	---	---
Sulfur	ppm	ASTM D5185(m)		<b>2542</b>	---	---
Lithium	ppm	ASTM D5185(m)		<b>&lt;1</b>	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>35	<b>11</b>	---	---
Sodium	ppm	ASTM D5185(m)		<b>▲ 359</b>	---	---
Potassium	ppm	ASTM D5185(m)	>20	<b>92</b>	---	---
Glycol	%	ASTM D7922*		<b>0.0</b>	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>7.5	<b>2</b>	---	---
Nitration	Abs/cm	ASTM D7624*	>20	<b>12.7</b>	---	---
Sulfation	Abs./1mm	ASTM D7415*	>30	<b>24.3</b>	---	---

# OIL ANALYSIS REPORT

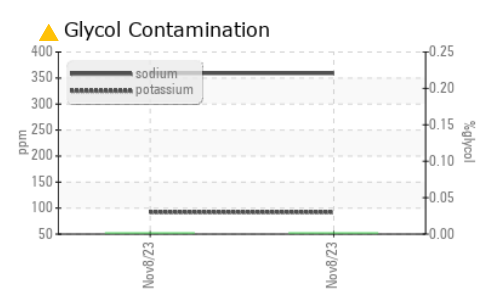
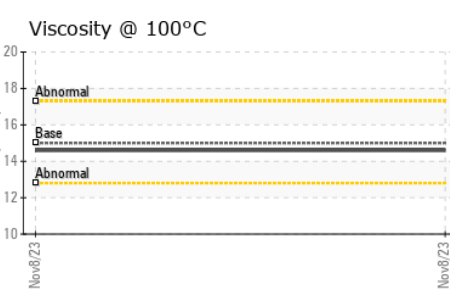
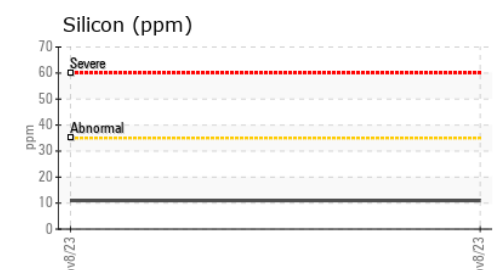
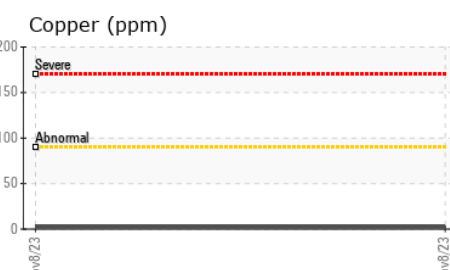
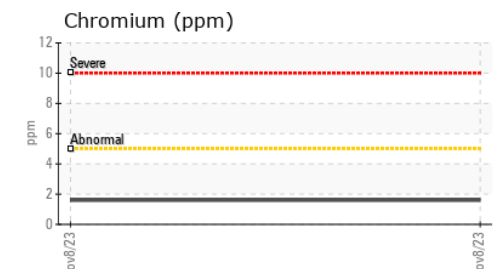
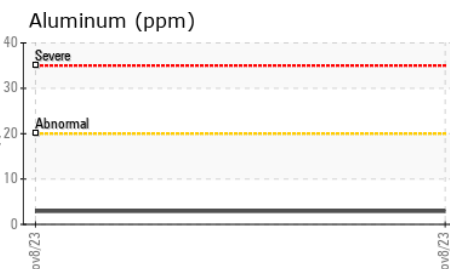
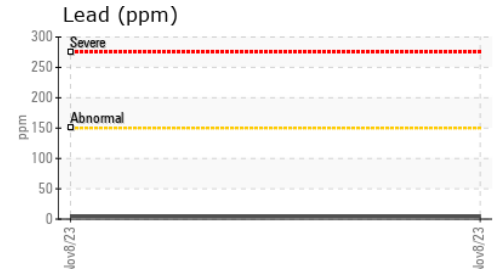
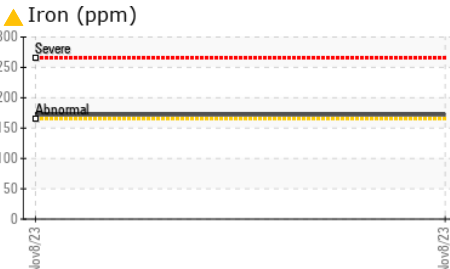


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	>25	<b>17.3</b>	---	---

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	---	---
Free Water	scalar	Visual*		<b>NEG</b>	---	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	110	<b>111</b>	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	15.0	<b>14.6</b>	---	---
Viscosity Index (VI)	Scale	ASTM D2270*	140	<b>134</b>	---	---

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0075201 **Received** : 15 Dec 2023  
**Lab Number** : **02603424** **Diagnosed** : 18 Dec 2023  
**Unique Number** : 5696509 **Diagnostician** : Kevin Marson  
**Test Package** : MOB 1 ( Additional Tests: Glycol, KV40, PQ, VI )

**TORONTO FIRE SERVICES**  
 40 TORYORK DRIVE  
 TORONTO, ON  
 CA M9L 1X6  
 Contact: Antonio Rodrigues  
 antonio.rodrigues@toronto.ca  
 T:  
 F: (416)338-9207

To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.