



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area  
**KOECKNER METALS CORP/MAC STEEL**  
Machine Id  
**FREIGHTLINER 98054**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		NL0000708	---	---
Sample Date		Client Info		07 Mar 2024	---	---
Machine Age	mls	Client Info		350641	---	---
Oil Age	mls	Client Info		0	---	---
Filter Age	mls	Client Info		0	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		Changed	---	---
Sample Status				NORMAL	---	---

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	60	---	---
Chromium	ppm	ASTM D5185m	>5	2	---	---
Nickel	ppm	ASTM D5185m	>2	0	---	---
Titanium	ppm	ASTM D5185m		<1	---	---
Silver	ppm	ASTM D5185m	>3	<1	---	---
Aluminum	ppm	ASTM D5185m	>30	9	---	---
Lead	ppm	ASTM D5185m	>30	9	---	---
Copper	ppm	ASTM D5185m	>150	4	---	---
Tin	ppm	ASTM D5185m	>5	2	---	---
Vanadium	ppm	ASTM D5185m		0	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

## CONTAMINATION

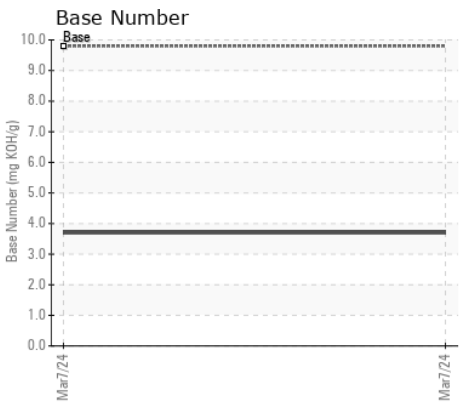
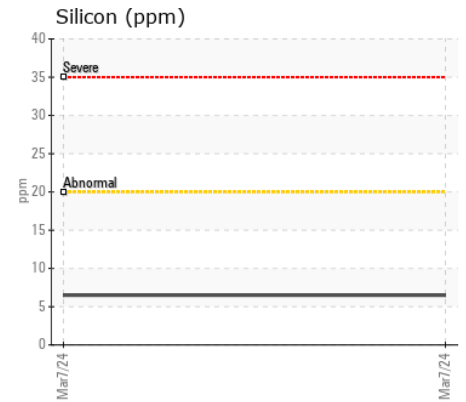
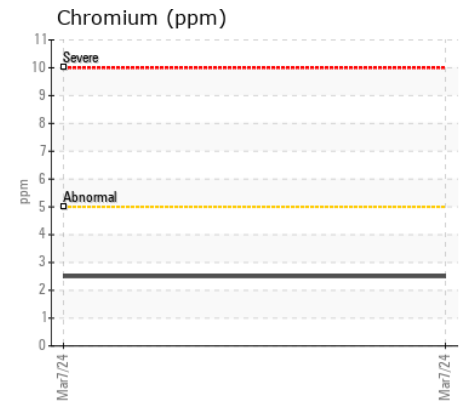
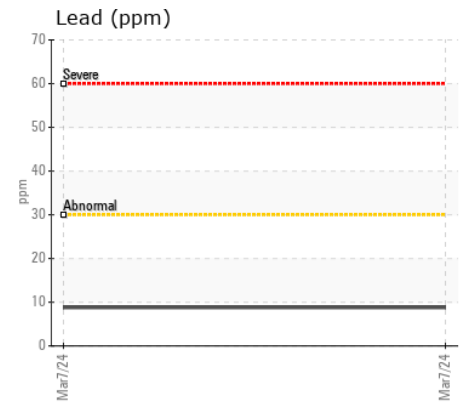
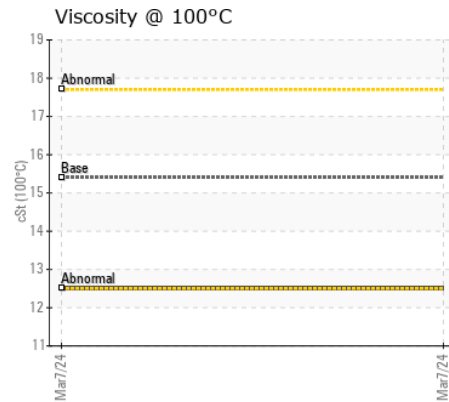
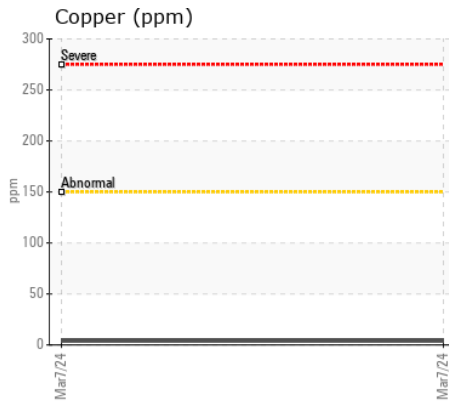
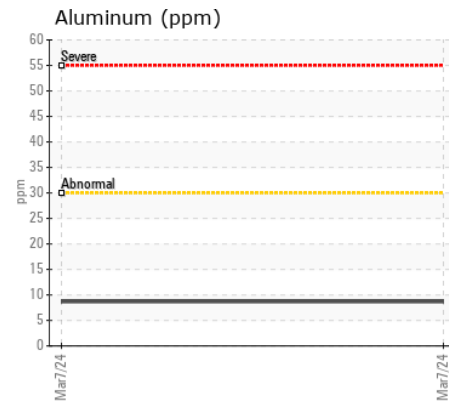
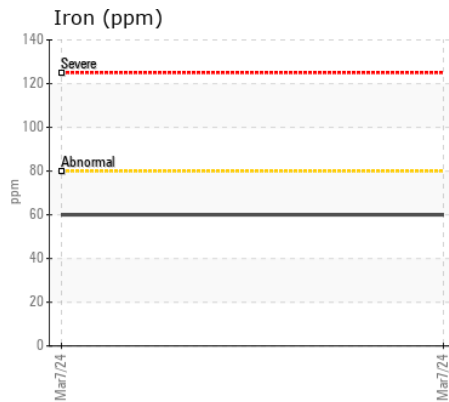
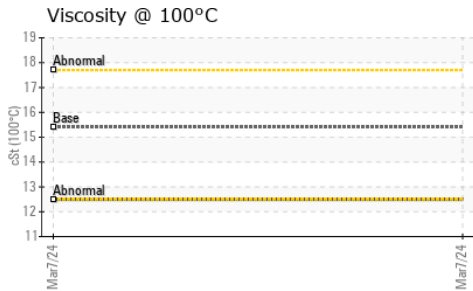
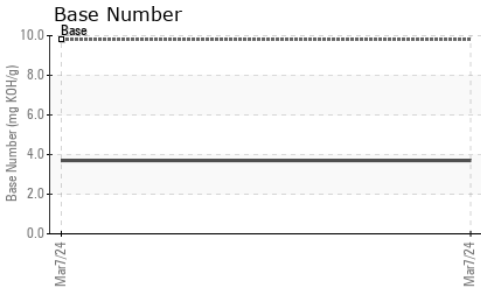
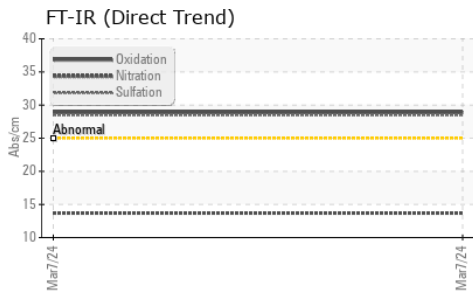
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	6	---	---
Potassium	ppm	ASTM D5185m	>20	16	---	---
Fuel		WC Method	>5	<1.0	---	---
Water		WC Method	>0.2	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	*ASTM D7844	>3	1.1	---	---
Nitration	Abs/cm	*ASTM D7624	>20	13.7	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	28.5	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---	---

## FLUID CONDITION

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

Sodium	ppm	ASTM D5185m		7	---	---
Boron	ppm	ASTM D5185m	0	6	---	---
Barium	ppm	ASTM D5185m	0	0	---	---
Molybdenum	ppm	ASTM D5185m	60	58	---	---
Manganese	ppm	ASTM D5185m	0	2	---	---
Magnesium	ppm	ASTM D5185m	1010	914	---	---
Calcium	ppm	ASTM D5185m	1070	1251	---	---
Phosphorus	ppm	ASTM D5185m	1150	1046	---	---
Zinc	ppm	ASTM D5185m	1270	1293	---	---
Sulfur	ppm	ASTM D5185m	2060	3077	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	28.9	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	3.7	---	---
Visc @ 100°C	cSt	ASTM D445	15.4	12.5	---	---



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : NL0000708  
**Lab Number** : 06176694  
**Unique Number** : 11022747  
**Test Package** : MOB1+  
**Received** : 13 May 2024  
**Tested** : 14 May 2024  
**Diagnosed** : 14 May 2024 - Angela Borella

**FOX & JAMES NATIONALEASE - YORK**  
 2080 LEMON ST  
 YORK, PA  
 US 17408  
 Contact: CHRIS BRACKBILL  
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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)