



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	MARGINAL
FLUID CONDITION	ABNORMAL

Machine Id
MAIN ENGINE
Component
Port Main Engine
Fluid
SHELL ROTELLA T4 15W40 (--- GAL)

RECOMMENDATION

We advise that you check the cylinder liner seals for deterioration to ensure that cooling water is not entering the sump. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0754191	WC0754187	---
Sample Date		Client Info		20 Feb 2024	22 Sep 2023	---
Machine Age	hrs	Client Info		2536	0	---
Oil Age	hrs	Client Info		436	0	---
Filter Age	hrs	Client Info		436	0	---
Oil Changed		Client Info		Not Changd	Not Changd	---
Filter Changed		Client Info		Not Changd	Not Changd	---
Sample Status				ABNORMAL	MARGINAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>75	5	4	---
Chromium	ppm	ASTM D5185(m)	>8	0	0	---
Nickel	ppm	ASTM D5185(m)	>2	<1	0	---
Titanium	ppm	ASTM D5185(m)	>3	0	0	---
Silver	ppm	ASTM D5185(m)	>2	0	<1	---
Aluminum	ppm	ASTM D5185(m)	>15	1	<1	---
Lead	ppm	ASTM D5185(m)	>18	<1	<1	---
Copper	ppm	ASTM D5185(m)	>80	3	2	---
Tin	ppm	ASTM D5185(m)	>14	0	0	---
Vanadium	ppm	ASTM D5185(m)		0	0	---
White Metal	scalar	Visual*	NONE	NONE	NONE	---
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	---

CONTAMINATION

Elemental level of sodium (Na) and/or boron (B) indicates a possible cooling water leak. Light fuel dilution occurring.

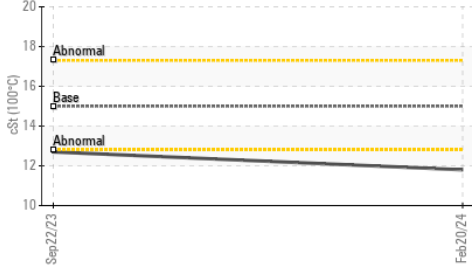
Silicon	ppm	ASTM D5185(m)	>20	2	2	---
Potassium	ppm	ASTM D5185(m)	>20	6	5	---
Fuel	%	ASTM D7593*	>4.0	▲ 2.8	▲ 2.9	---
Water		WC Method	>0.1	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	ASTM D7844*		0	0	---
Nitration	Abs/cm	ASTM D7624*	>20	7.4	6.0	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	27.5	21.3	---
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*	>0.1	NEG	NEG	---

FLUID CONDITION

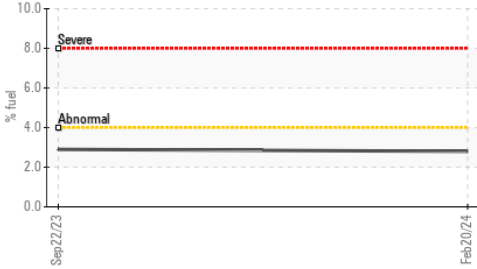
Fuel is present in the oil and is lowering the viscosity. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)	>75	2	2	---
Boron	ppm	ASTM D5185(m)		● 139	163	---
Barium	ppm	ASTM D5185(m)		0	<1	---
Molybdenum	ppm	ASTM D5185(m)		0	0	---
Manganese	ppm	ASTM D5185(m)		0	0	---
Magnesium	ppm	ASTM D5185(m)		● 11	11	---
Calcium	ppm	ASTM D5185(m)		2075	2155	---
Phosphorus	ppm	ASTM D5185(m)		917	961	---
Zinc	ppm	ASTM D5185(m)		1065	1090	---
Sulfur	ppm	ASTM D5185(m)		2963	2888	---
Oxidation	Abs/.1mm	ASTM D7414*	>25	33.0	18.9	---
Visc @ 100°C	cSt	ASTM D7279(m)	15	▲ 11.8	12.7	---

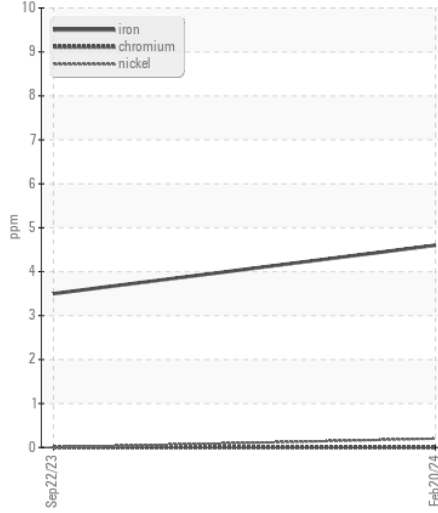
▲ Viscosity @ 100°C



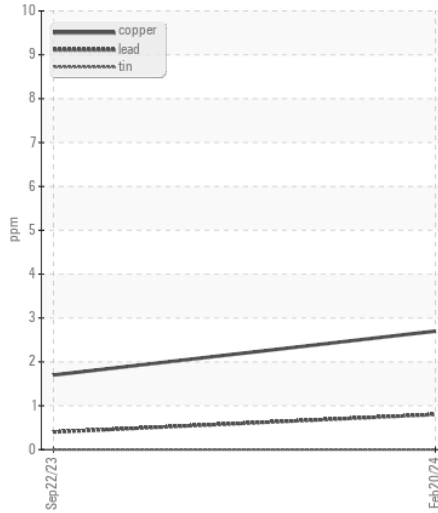
▲ Fuel Dilution



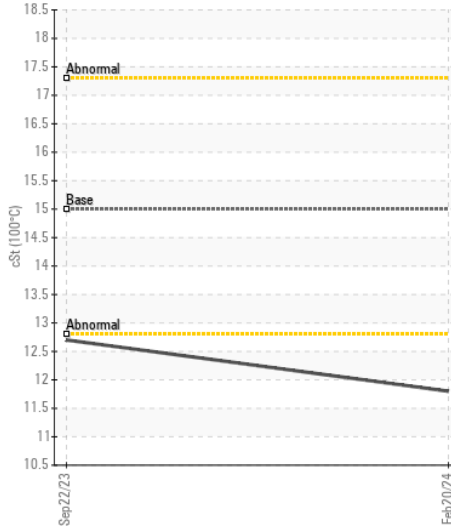
Ferrous Alloys



Non-ferrous Metals



▲ Viscosity @ 100°C



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0754191 **Received** : 29 Feb 2024
Lab Number : 02618889 **Tested** : 01 Mar 2024
Unique Number : 5735999 **Diagnosed** : 04 Mar 2024 - Kevin Marson
Test Package : MAR 1 (Additional Tests: FuelDilution, PercentFuel)

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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.