



# OIL ANALYSIS REPORT

WEAR  
CONTAMINATION  
FLUID CONDITION

**ABNORMAL**  
**SEVERE**  
**ATTENTION**

Machine Id  
**BLUEBIRD 246**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 15W40 (--- QTS)**

## RECOMMENDATION

We advise that you check for the source of the coolant leak. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>RW0004210</b>	RW0004207	---
Sample Date		Client Info		<b>11 Dec 2023</b>	09 May 2023	---
Machine Age	mls	Client Info		<b>36000</b>	24000	---
Oil Age	mls	Client Info		<b>12000</b>	12000	---
Filter Age	mls	Client Info		<b>12000</b>	12000	---
Oil Changed		Client Info		<b>Changed</b>	Changed	---
Filter Changed		Client Info		<b>Changed</b>	Changed	---
Sample Status				<b>SEVERE</b>	MARGINAL	---

## WEAR

Aluminum ppm levels are abnormal. Piston wear is indicated.

Iron	ppm	ASTM D5185m	>100	<b>61</b>	33	---
Chromium	ppm	ASTM D5185m	>20	<b>2</b>	1	---
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	---
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	---
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	---
Aluminum	ppm	ASTM D5185m	>20	<b>▲ 66</b>	20	---
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	0	---
Copper	ppm	ASTM D5185m	>330	<b>9</b>	5	---
Tin	ppm	ASTM D5185m	>15	<b>1</b>	0	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---

## CONTAMINATION

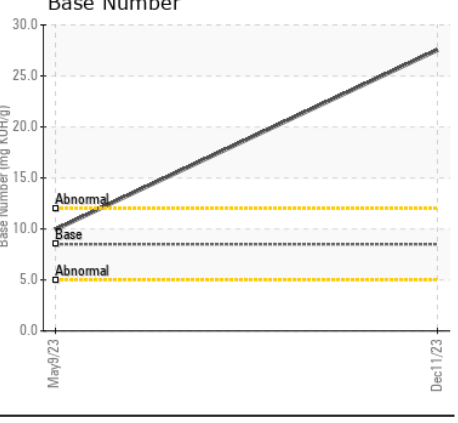
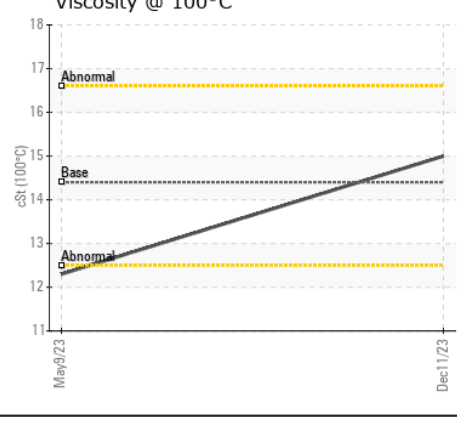
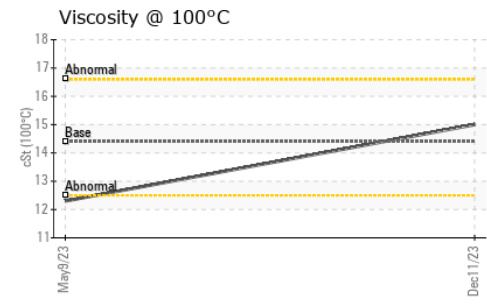
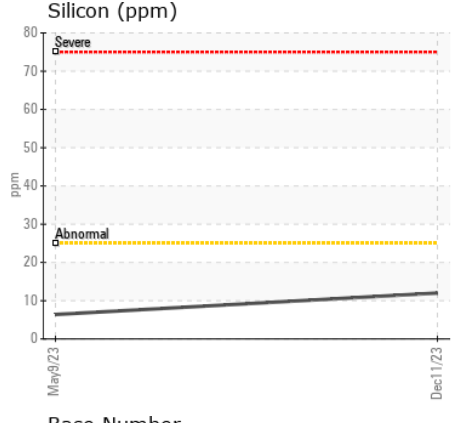
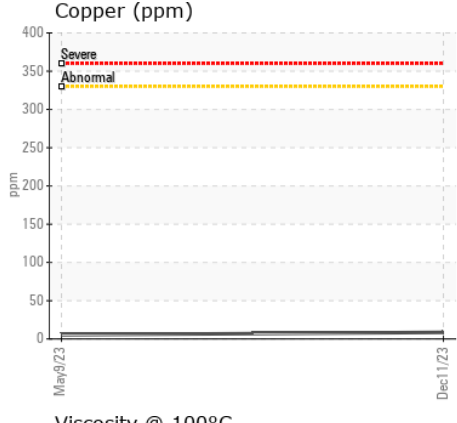
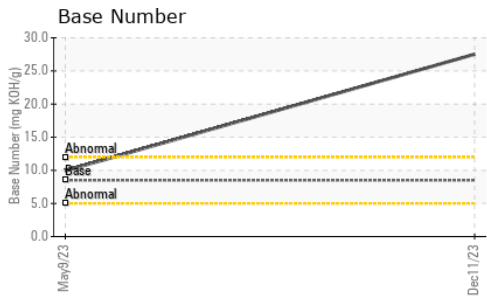
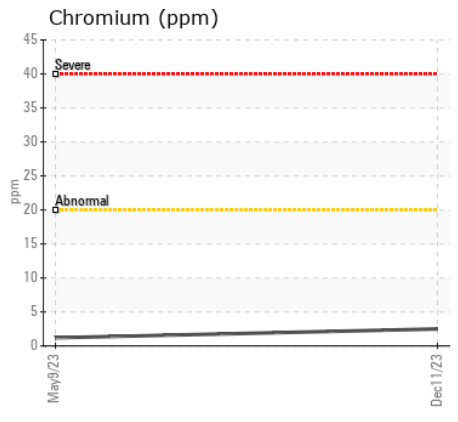
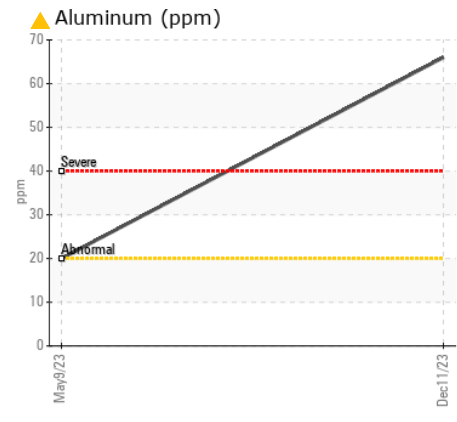
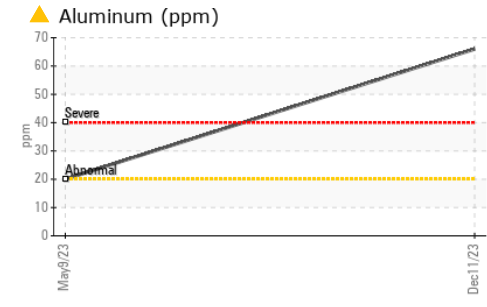
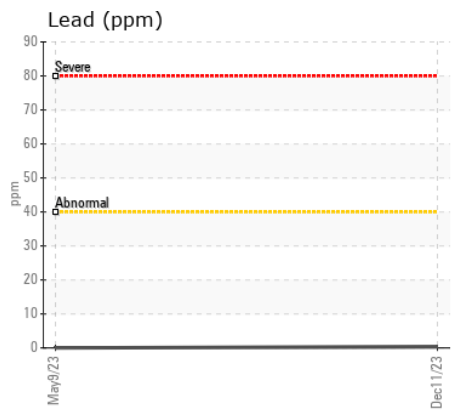
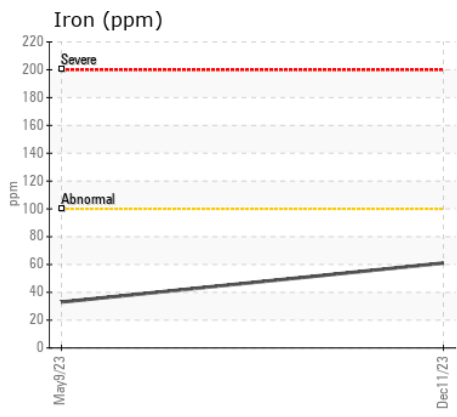
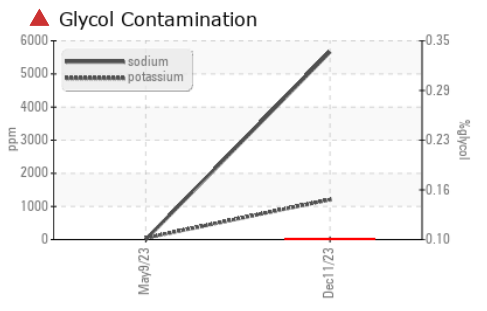
Test for glycol is positive. There is a high concentration of glycol present in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>12</b>	6	---
Potassium	ppm	ASTM D5185m	>20	<b>▲ 1209</b>	46	---
Fuel		WC Method	>5	<b>&lt;1.0</b>	<b>▲ 2.1</b>	---
Water		WC Method	>0.2	<b>NEG</b>	NEG	---
Glycol	%	*ASTM D2982		<b>▲ 0.10</b>	NEG	---
Soot %	%	*ASTM D7844	>3	<b>0.5</b>	0.6	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>18.1</b>	8.1	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.7</b>	19.3	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	---

## FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185m	>158	<b>● 5661</b>	<1	---
Boron	ppm	ASTM D5185m	250	<b>2</b>	8	---
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	---
Molybdenum	ppm	ASTM D5185m	100	<b>241</b>	44	---
Manganese	ppm	ASTM D5185m		<b>2</b>	<1	---
Magnesium	ppm	ASTM D5185m	450	<b>837</b>	663	---
Calcium	ppm	ASTM D5185m	3000	<b>1100</b>	940	---
Phosphorus	ppm	ASTM D5185m	1150	<b>952</b>	727	---
Zinc	ppm	ASTM D5185m	1350	<b>1152</b>	958	---
Sulfur	ppm	ASTM D5185m	4250	<b>3187</b>	2525	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.8</b>	14.6	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>27.52</b>	9.92	---
Visc @ 100°C	cSt	ASTM D445	14.4	<b>15.0</b>	12.3	---



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : RW0004210 **Received** : 15 Dec 2023  
**Lab Number** : 06036938 **Tested** : 20 Dec 2023  
**Unique Number** : 10792167 **Diagnosed** : 20 Dec 2023 - Wes Davis  
**Test Package** : MOB 2 ( Additional Tests: Glycol )

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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)