



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**HC1111**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 5W40 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0952100</b>	WC0867361	WC0810475
Sample Date		Client Info		<b>18 Jun 2024</b>	30 Nov 2023	11 Jul 2023
Machine Age	hrs	Client Info		<b>9134</b>	8352	8096
Oil Age	hrs	Client Info		<b>500</b>	0	0
Filter Age	hrs	Client Info		<b>500</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	ATTENTION	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>4</b>	0	2
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>3</b>	1	2
Lead	ppm	ASTM D5185m	>40	<b>7</b>	0	<1
Copper	ppm	ASTM D5185m	>330	<b>5</b>	3	5
Tin	ppm	ASTM D5185m	>15	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

There is no indication of any contamination in the oil.

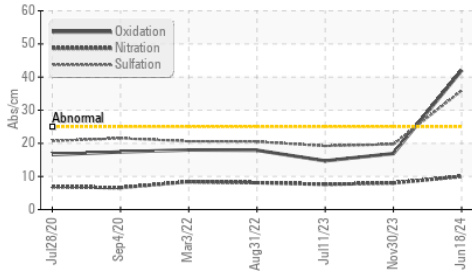
Silicon	ppm	ASTM D5185m	>25	<b>10</b>	7	7
Potassium	ppm	ASTM D5185m	>20	<b>82</b>	16	25
Fuel		WC Method	>5	<b>&lt;1.0</b>	0.8	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	%	*ASTM D2982		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>10.0</b>	8.0	7.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>35.9</b>	19.7	19.2
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

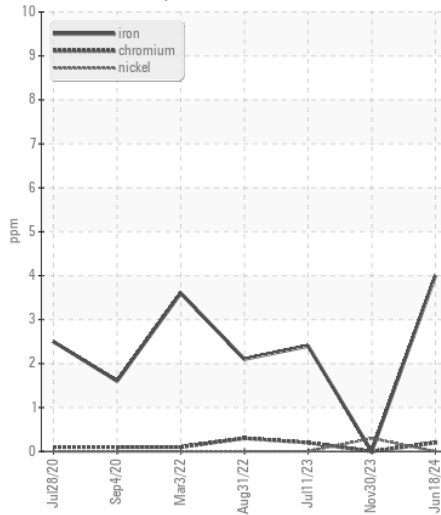
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m	>44	<b>38</b>	9	12
Boron	ppm	ASTM D5185m	250	<b>39</b>	44	111
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>56</b>	41	30
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>1024</b>	682	231
Calcium	ppm	ASTM D5185m	3000	<b>1246</b>	1226	1983
Phosphorus	ppm	ASTM D5185m	1150	<b>1212</b>	790	958
Zinc	ppm	ASTM D5185m	1350	<b>1494</b>	913	1180
Sulfur	ppm	ASTM D5185m	4250	<b>3515</b>	2535	4321
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>42.0</b>	16.9	14.7
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>5.0</b>	8.6	5.6
Visc @ 100°C	cSt	ASTM D445	14.4	<b>12.8</b>	11.3	13.0

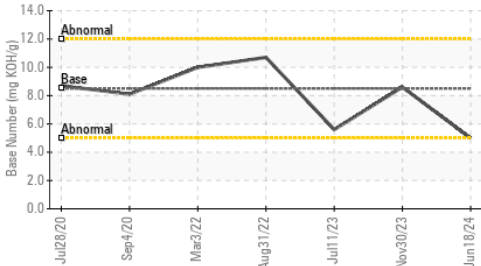
**FT-IR (Direct Trend)**



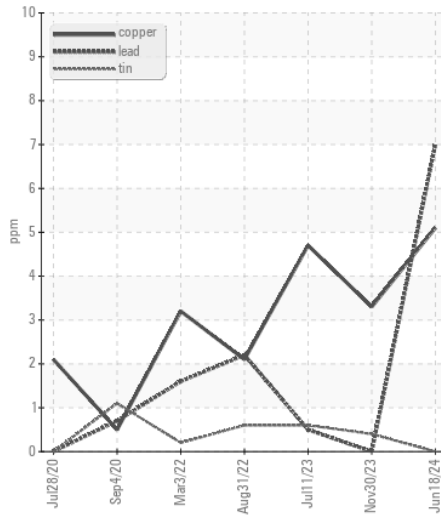
**Ferrous Alloys**



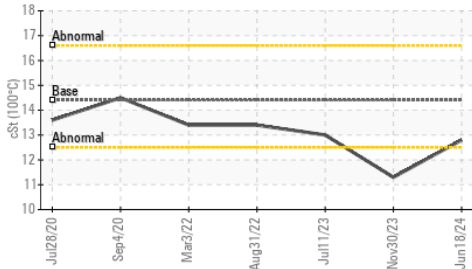
**Base Number**



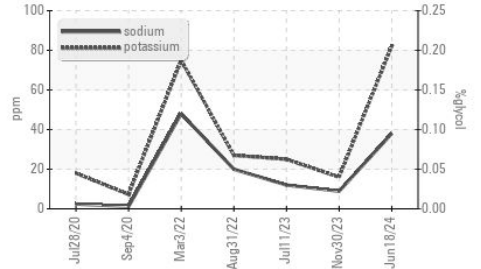
**Non-ferrous Metals**



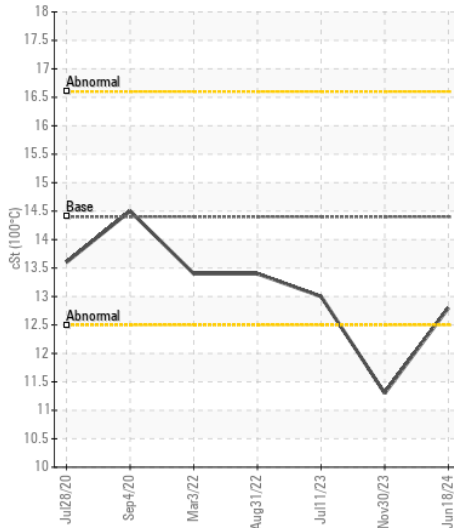
**Viscosity @ 100°C**



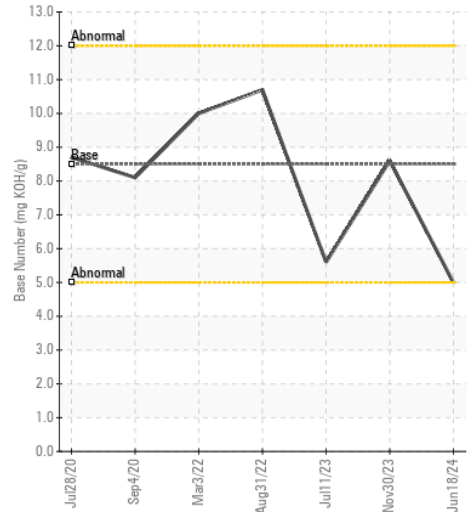
**Glycol Contamination**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0952100 **Received** : 21 Jun 2024  
**Lab Number** : 06216550 **Tested** : 24 Jun 2024  
**Unique Number** : 11089414 **Diagnosed** : 24 Jun 2024 - Sean Felton  
**Test Package** : CONST ( Additional Tests: Glycol, TBN )

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)

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