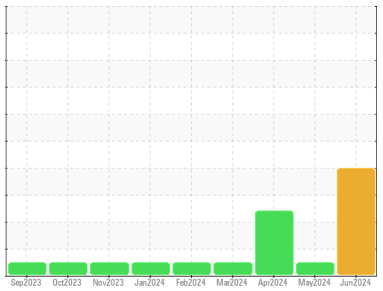
OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Machine Id
1014
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check for the source of the coolant leak. 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
All component wear rates are normal.

Contamination
Sodium and/or potassium levels are high. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0946469**	WC0897906	WC0897881
Sample Date		Client Info		**05 Jun 2024**	05 May 2024	23 Apr 2024
Machine Age	mls	Client Info		**0**	0	0
Oil Age	mls	Client Info		**898523**	0	0
Oil Changed		Client Info		**Changed**	N/A	Changed
Sample Status				**ABNORMAL**	NORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**27**	18	20
Chromium	ppm	ASTM D5185m	>20	**2**	1	1
Nickel	ppm	ASTM D5185m	>4	**0**	<1	0
Titanium	ppm	ASTM D5185m		**<1**	<1	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**2**	2	2
Lead	ppm	ASTM D5185m	>40	**0**	<1	0
Copper	ppm	ASTM D5185m	>330	**2**	2	<1
Tin	ppm	ASTM D5185m	>15	**0**	<1	<1
Vanadium	ppm	ASTM D5185m		**<1**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**1**	<1	2
Barium	ppm	ASTM D5185m	10	**0**	2	0
Molybdenum	ppm	ASTM D5185m	100	**65**	66	67
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	450	**1050**	962	1058
Calcium	ppm	ASTM D5185m	3000	**1196**	1170	1176
Phosphorus	ppm	ASTM D5185m	1150	**1079**	1133	1123
Zinc	ppm	ASTM D5185m	1350	**1373**	1283	1384
Sulfur	ppm	ASTM D5185m	4250	**3597**	3347	3561

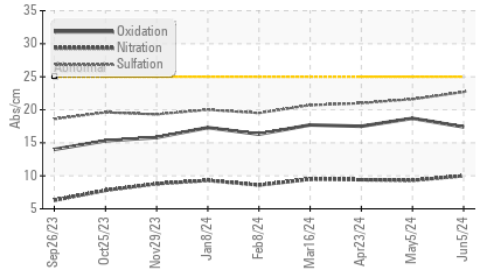
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ **26**	21	24
Sodium	ppm	ASTM D5185m	>158	▲ **282**	0	▲ 163
Potassium	ppm	ASTM D5185m	>20	▲ **69**	6	▲ 37
Glycol	%	*ASTM D2982		**NEG**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1.1**	0.6	0.8
Nitration	Abs/cm	*ASTM D7624	>20	**10.0**	9.3	9.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	**22.7**	21.6	21.0

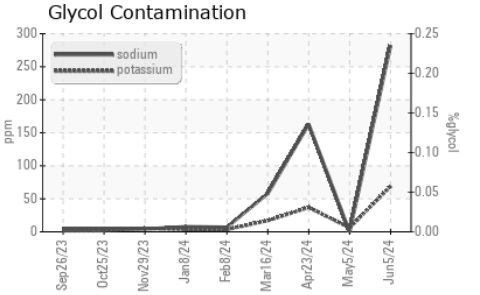
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**17.4**	18.7	17.5
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**8.2**	7.4	7.1

OIL ANALYSIS REPORT

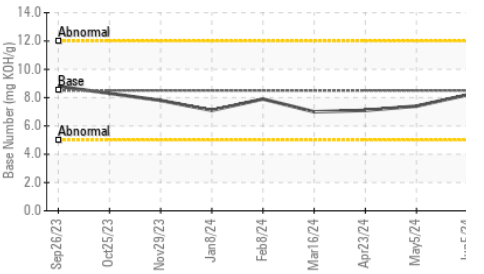
FT-IR (Direct Trend)



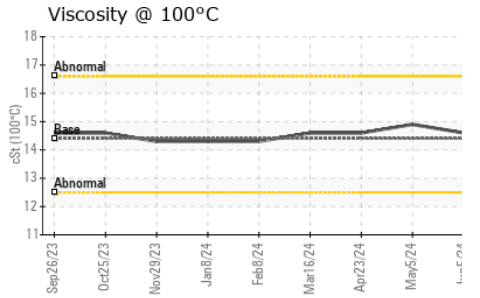
Glycol Contamination



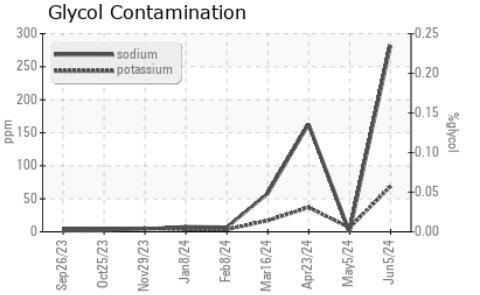
Base Number



Viscosity @ 100°C



Glycol Contamination

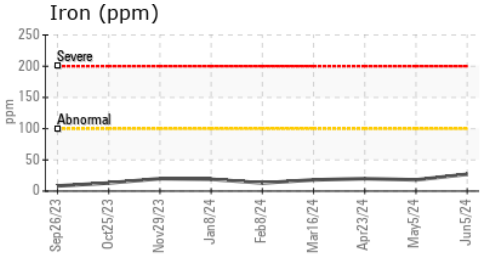


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

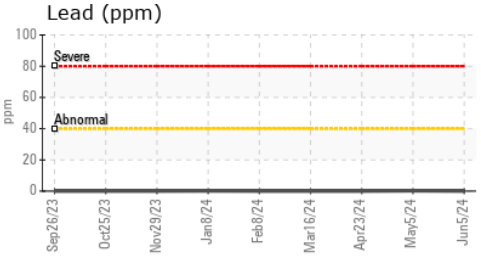
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	**14.6**	14.9	14.6

GRAPHS

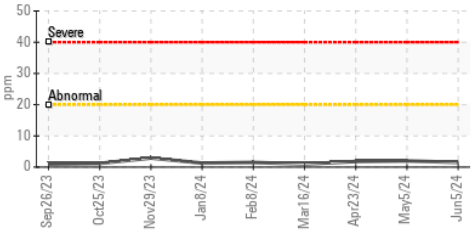
Iron (ppm)



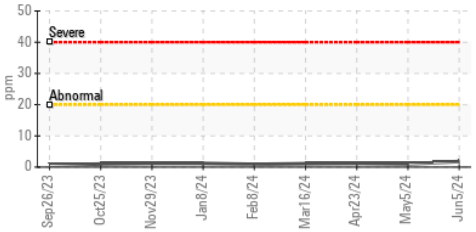
Lead (ppm)



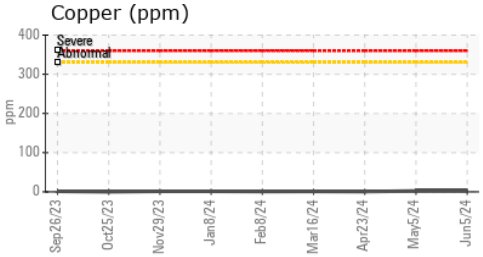
Aluminum (ppm)



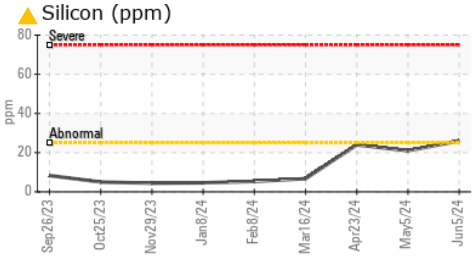
Chromium (ppm)



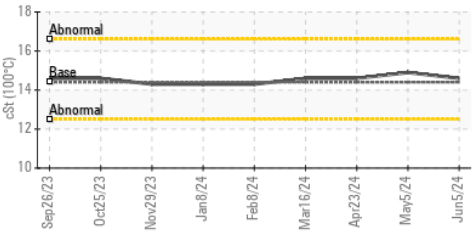
Copper (ppm)



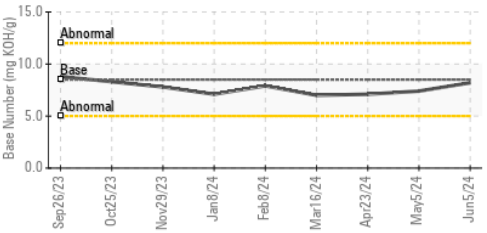
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0946469 **Received** : 24 Jun 2024
Lab Number : 06219126 **Tested** : 26 Jun 2024
Unique Number : 11097323 **Diagnosed** : 26 Jun 2024 - Jonathan Hester
Test Package : MOB 1 (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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DURHAM, NC
US 27701
Contact: Robert Iosiniecki
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Report Id: GODDUR [WUSCAR] 06219126 (Generated: 06/30/2024 14:59:55) Rev: 1

Contact/Location: Robert Iosiniecki - GODDUR