



OIL ANALYSIS REPORT

WEAR	SEVERE
CONTAMINATION	SEVERE
FLUID CONDITION	ATTENTION

Machine Id
1681
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- QTS)

RECOMMENDATION

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. 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		WC0870855	WC0821289	WC0729898
Sample Date		Client Info		02 Feb 2024	31 May 2023	24 Aug 2022
Machine Age	mls	Client Info		124216	114012	98977
Oil Age	mls	Client Info		0	0	0
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				SEVERE	SEVERE	NORMAL

WEAR

Aluminum ppm levels are severe. Piston wear is indicated.

Iron	ppm	ASTM D5185m	>100	51	13	39
Chromium	ppm	ASTM D5185m	>20	2	1	1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	▲ 42	5	13
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	3	<1	2
Tin	ppm	ASTM D5185m	>15	0	<1	1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

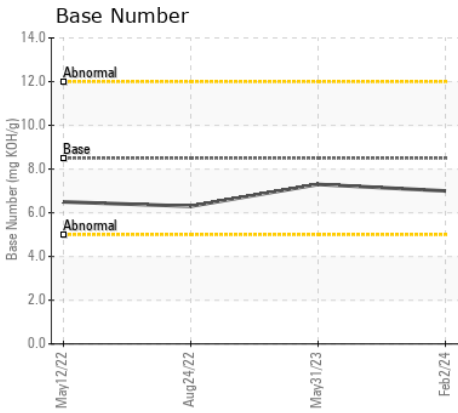
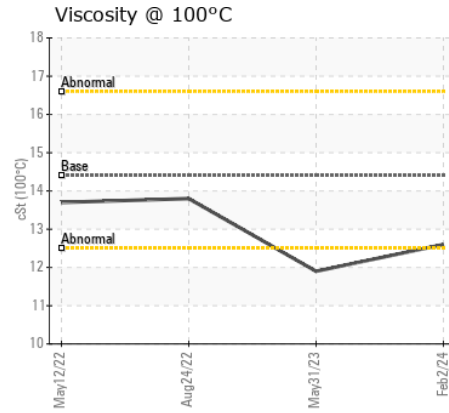
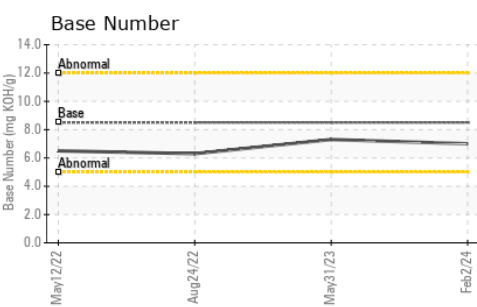
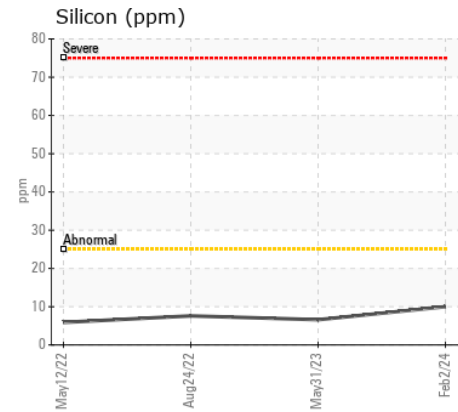
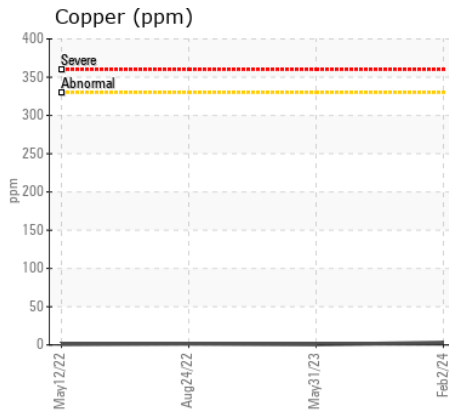
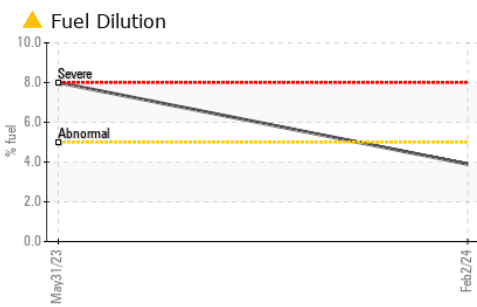
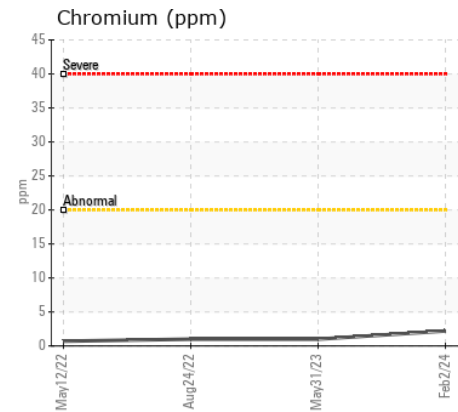
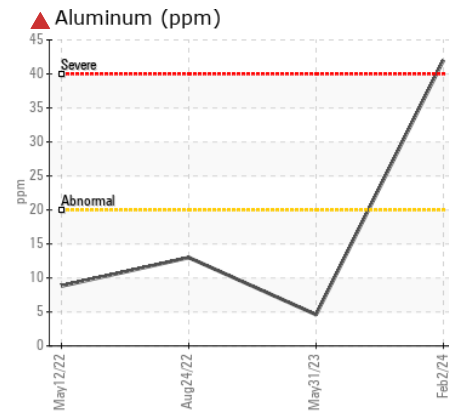
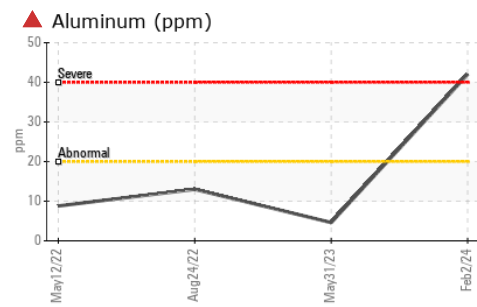
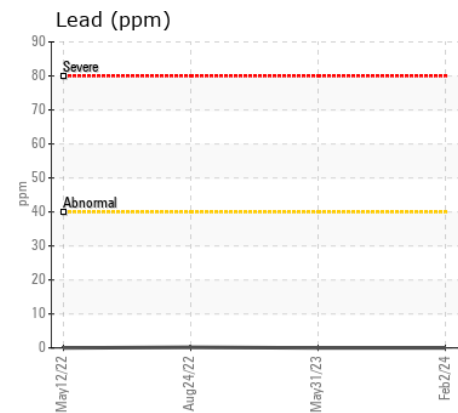
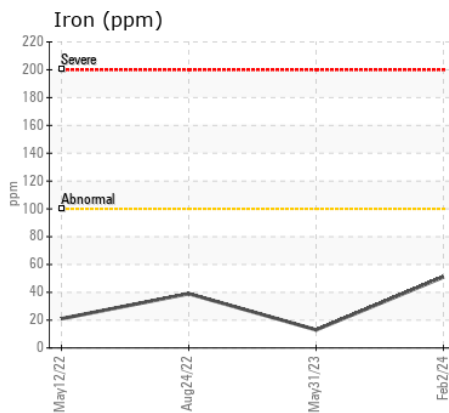
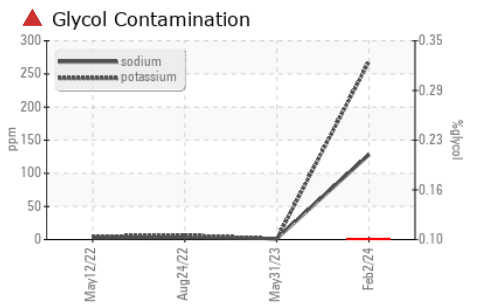
Test for glycol is positive. Light fuel dilution occurring. There is a high concentration of glycol present in the oil. No other contaminants were detected in the oil.

Silicon	ppm	ASTM D5185m	>25	10	7	8
Potassium	ppm	ASTM D5185m	>20	▲ 269	1	6
Fuel	%	ASTM D3524	>5	▲ 3.9	▲ 8.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		▲ 0.10	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.6	0.6	1.1
Nitration	Abs/cm	*ASTM D7624	>20	10.6	10.5	13.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.9	19.3	26.6
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

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	● 128	2	3
Boron	ppm	ASTM D5185m	250	25	31	19
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	103	77	86
Manganese	ppm	ASTM D5185m		1	<1	<1
Magnesium	ppm	ASTM D5185m	450	207	144	22
Calcium	ppm	ASTM D5185m	3000	1911	2107	2157
Phosphorus	ppm	ASTM D5185m	1150	1012	990	936
Zinc	ppm	ASTM D5185m	1350	1222	1180	1120
Sulfur	ppm	ASTM D5185m	4250	3864	4010	3528
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.6	16.8	21.7
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.0	7.3	6.3
Visc @ 100°C	cSt	ASTM D445	14.4	12.6	▲ 11.9	13.8



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0870855 **Received** : 29 Feb 2024
Lab Number : 06104817 **Tested** : 05 Mar 2024
Unique Number : 10903047 **Diagnosed** : 05 Mar 2024 - Wes Davis
Test Package : MOB 1 (Additional Tests: Glycol, PercentFuel, 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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