



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL



Machine Id
LIEBHERR 944B-HD C-41 (S/N 022530-744)
Component
Diesel Engine
Fluid
CONOCO PHILLIPS GUARDOL ECT 15W40 (6 GAL)

RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter 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		WC0948364	WC0920337	WC0899841
Sample Date		Client Info		12 Jul 2024	15 May 2024	16 Mar 2024
Machine Age	hrs	Client Info		39080	38746	38395
Oil Age	hrs	Client Info		1926	351	303
Filter Age	hrs	Client Info		1926	351	303
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	32	17	32
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	0	<1
Titanium	ppm	ASTM D5185m		83	87	140
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>15	3	3	5
Lead	ppm	ASTM D5185m	>30	4	2	2
Copper	ppm	ASTM D5185m	>125	9	<1	2
Tin	ppm	ASTM D5185m	>5	0	<1	<1
Vanadium	ppm	ASTM D5185m		<1	1	2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

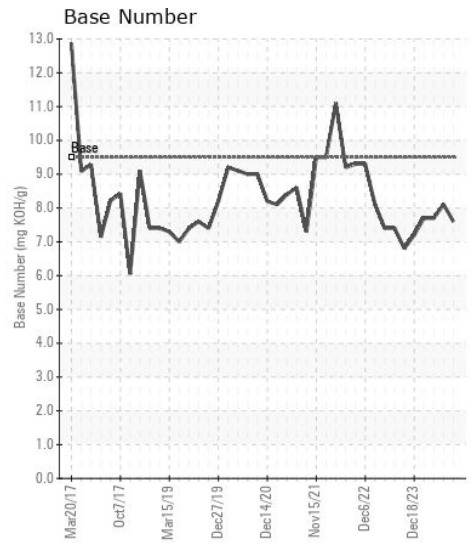
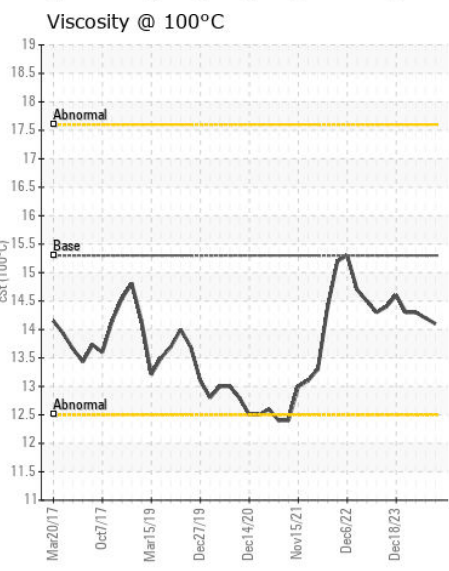
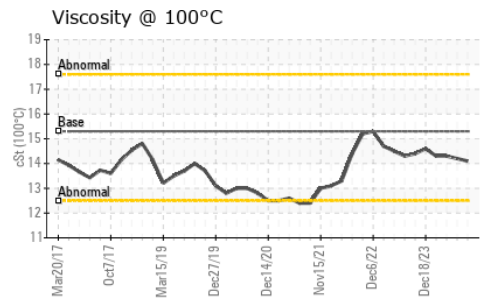
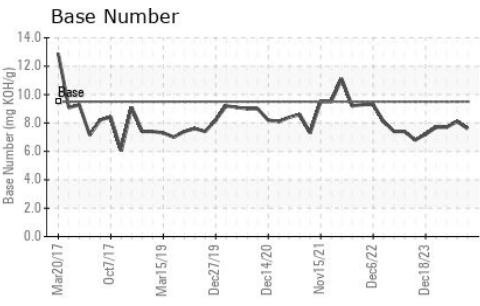
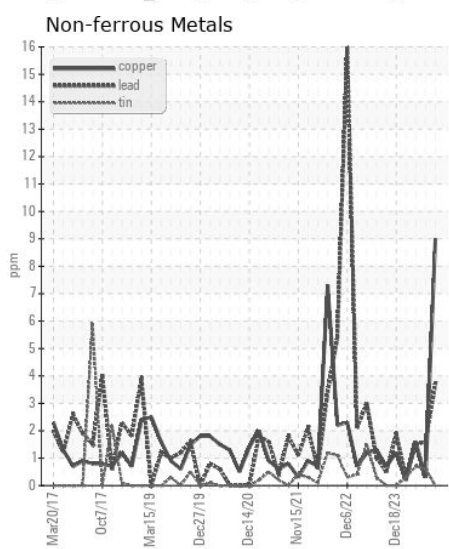
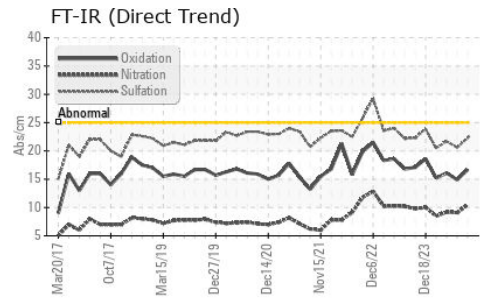
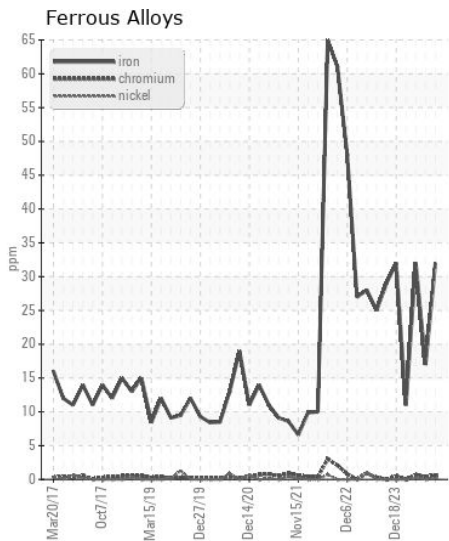
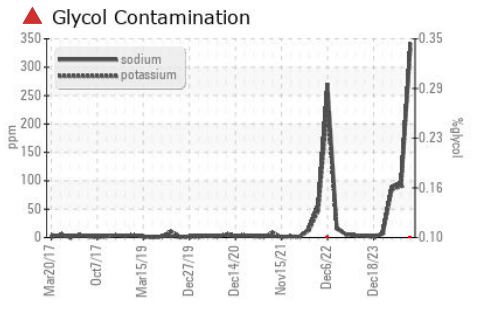
Sodium and/or potassium levels are high. Test for glycol is positive.

Silicon	ppm	ASTM D5185m	>60	28	10	13
Potassium	ppm	ASTM D5185m	>20	▲ 334	▲ 90	▲ 85
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		▲ 0.10	NEG	NEG
Soot %	%	*ASTM D7844	>3	1.4	0.9	0.9
Nitration	Abs/cm	*ASTM D7624	>20	10.5	9.1	9.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.3	20.6	21.7
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.

Sodium	ppm	ASTM D5185m		▲ 342	▲ 98	▲ 90
Boron	ppm	ASTM D5185m	85	21	34	67
Barium	ppm	ASTM D5185m		0	0	2
Molybdenum	ppm	ASTM D5185m		6	2	2
Manganese	ppm	ASTM D5185m		2	<1	<1
Magnesium	ppm	ASTM D5185m	350	394	395	598
Calcium	ppm	ASTM D5185m	1800	1804	1921	2807
Phosphorus	ppm	ASTM D5185m	1000	1032	1067	1475
Zinc	ppm	ASTM D5185m	1100	1155	1189	1789
Sulfur	ppm	ASTM D5185m	3500	4021	4192	5850
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.7	14.9	16.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.5	7.6	8.1	7.7
Visc @ 100°C	cSt	ASTM D445	15.3	14.1	14.2	14.3



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0948364 **Received** : 17 Jul 2024
Lab Number : 06238771 **Tested** : 19 Jul 2024
Unique Number : 11127605 **Diagnosed** : 19 Jul 2024 - Jonathan Hester
Test Package : CONST (Additional Tests: Glycol, TBN)

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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)