McCLUNG LOGAN EQUIPMENT COMPANY

OIL ANALYSIS REPORT

Sample Rating Trend

VISCOSITY

⚠️

Area
[W/O 11059]
Machine Id
VOLVO L180H 5100
Component
Diesel Engine
Fluid
CHEVRON 15W40 (13 GAL)
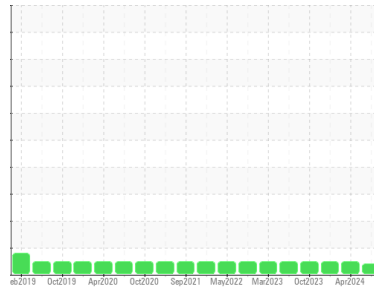
## DIAGNOSIS

⚠️ **Recommendation**
Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
Fuel content negligible. There is no indication of any contamination in the oil.

⚠️ **Fluid Condition**
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION

SAMPLE INFORMATION	method	limit/base	current	history1	history2
Sample Number	Client Info		**ML0002026**	ML0001170	ML0000128
Sample Date	Client Info		**02 Jul 2024**	09 Apr 2024	23 Jan 2024
Machine Age	hrs	Client Info	**14101**	13489	13139
Oil Age	hrs	Client Info	**612**	500	515
Oil Changed		Client Info	**Changed**	Changed	Changed
Sample Status			**MARGINAL**	NORMAL	NORMAL

CONTAMINATION

CONTAMINATION	method	limit/base	current	history1	history2
Water		WC Method	>0.1	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**4**	5	4
Chromium	ppm	ASTM D5185m	>10	**0**	<1	0
Nickel	ppm	ASTM D5185m	>10	**0**	1	0
Titanium	ppm	ASTM D5185m		**0**	1	2
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>10	**2**	2	2
Lead	ppm	ASTM D5185m	>20	**0**	1	<1
Copper	ppm	ASTM D5185m	>15	**<1**	<1	<1
Tin	ppm	ASTM D5185m	>10	**0**	1	<1
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	1	0

ADDITIVES

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**74**	314	418
Barium	ppm	ASTM D5185m		**0**	<1	0
Molybdenum	ppm	ASTM D5185m		**53**	91	84
Manganese	ppm	ASTM D5185m		**<1**	1	<1
Magnesium	ppm	ASTM D5185m		**495**	511	413
Calcium	ppm	ASTM D5185m		**1738**	1444	1450
Phosphorus	ppm	ASTM D5185m		**915**	870	994
Zinc	ppm	ASTM D5185m		**1046**	944	1262
Sulfur	ppm	ASTM D5185m		**3203**	2817	3295

CONTAMINANTS

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	**5**	5	5
Sodium	ppm	ASTM D5185m	>50	**3**	0	2
Potassium	ppm	ASTM D5185m	>20	**0**	2	<1
Fuel	%	ASTM D3524	>6.0	**2.0**	<1.0	<1.0

INFRA-RED

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.1**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**7.1**	6.2	6.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	**21.3**	21.6	21.2

FLUID DEGRADATION

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**18.0**	16.5	14.7
Base Number (BN)	mg KOH/g	ASTM D2896		**8.9**	8.7	7.0

OIL ANALYSIS REPORT

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Fuel Dilution

FT-IR (Direct Trend)

FT-IR (Direct Trend)

Base Number
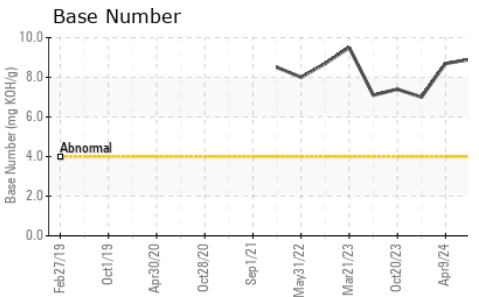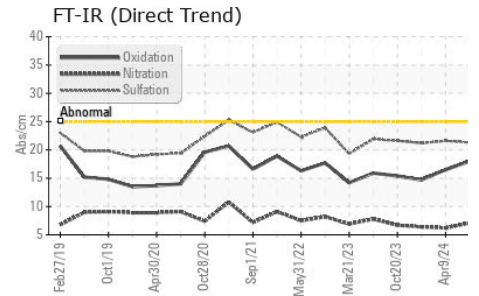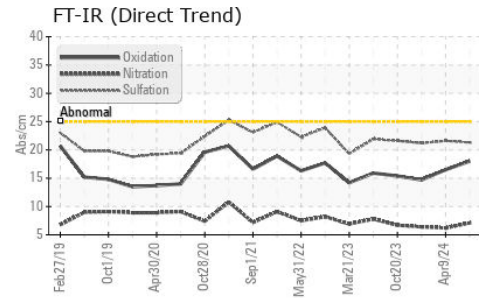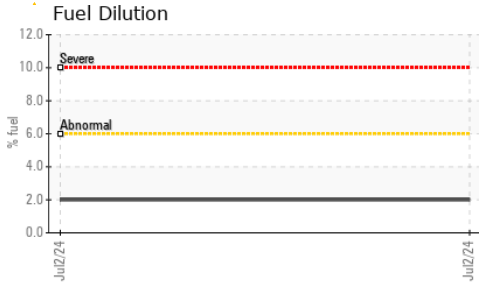
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	**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	▲ **12.2**	12.5	12.9

GRAPHS
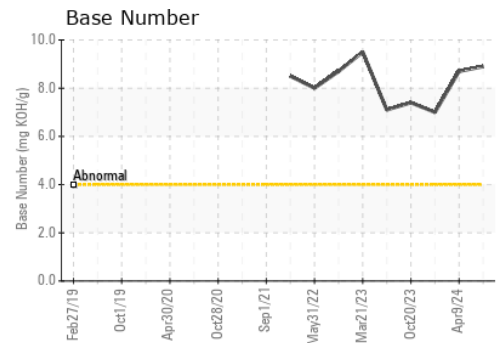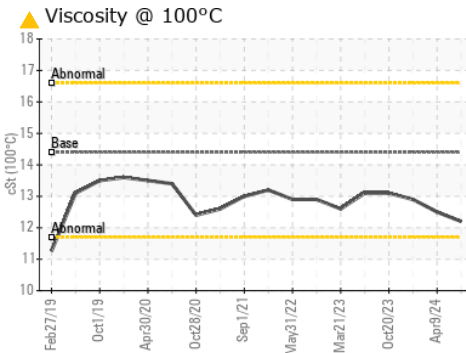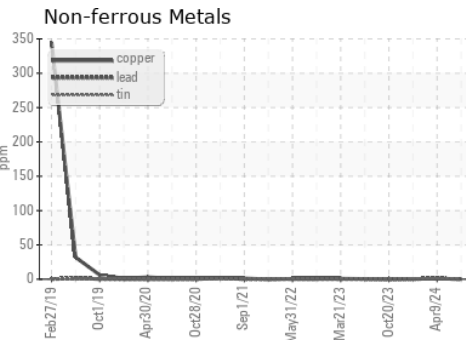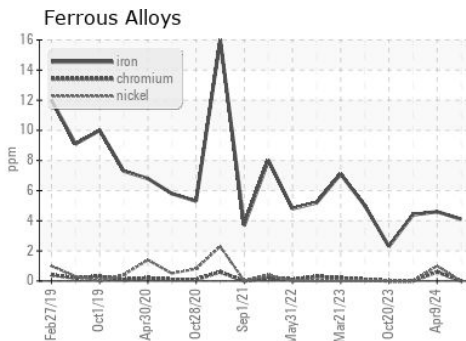
Ferrous Alloys

Non-ferrous Metals

▲ Viscosity @ 100°C

Base Number

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)