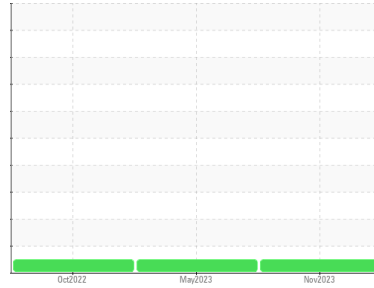




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
LIEBHERR LTM 1300 AT1760

Component
Diesel Engine

Fluid
HPL 10W40 (--- LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

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

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		HPL0002642	HPL0003152	HPL0002113
Sample Date	Client Info		15 Nov 2023	10 May 2023	24 Oct 2022
Machine Age	hrs	Client Info	6906	6060	5350
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			NORMAL	NORMAL	NORMAL

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
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	3	7	14
Chromium	ppm	ASTM D5185m >5	<1	<1	<1
Nickel	ppm	ASTM D5185m >5	0	0	0
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >15	7	2	3
Lead	ppm	ASTM D5185m >30	0	<1	<1
Copper	ppm	ASTM D5185m >125	2	4	8
Tin	ppm	ASTM D5185m >5	<1	<1	<1
Vanadium	ppm	ASTM D5185m	0	<1	<1
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	17	37	155
Barium	ppm	ASTM D5185m	0	0	3
Molybdenum	ppm	ASTM D5185m	587	577	749
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	948	952	509
Calcium	ppm	ASTM D5185m	2514	2839	4015
Phosphorus	ppm	ASTM D5185m	1045	1055	871
Zinc	ppm	ASTM D5185m	1259	1278	1077
Sulfur	ppm	ASTM D5185m	7718	11310	19118

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >60	8	12	11
Sodium	ppm	ASTM D5185m	0	2	<1
Potassium	ppm	ASTM D5185m >20	0	<1	2

INFRA-RED

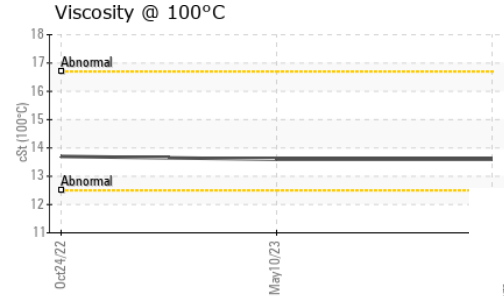
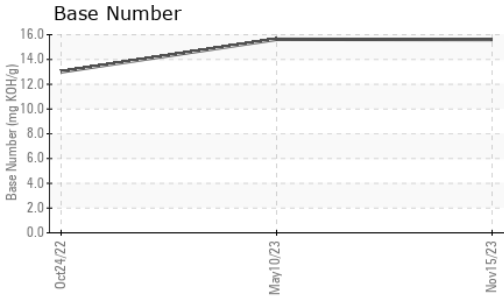
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624 >20	11.6	11.2	11.6
Sulfation	Abs/.1mm	*ASTM D7415 >30	37.1	37.1	33.7

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	39.8	37.5	23.7
Base Number (BN)	mg KOH/g	ASTM D2896	15.61	15.63	13.0



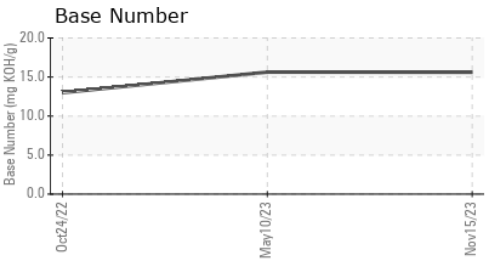
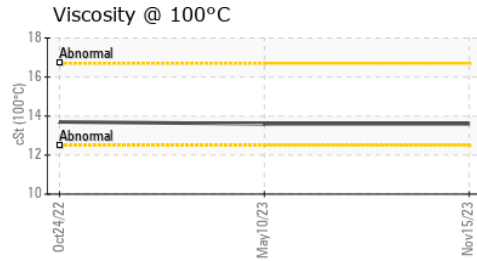
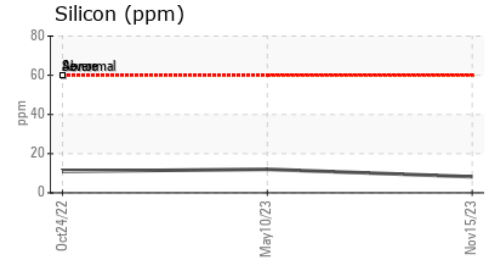
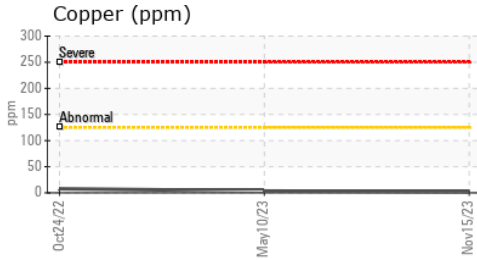
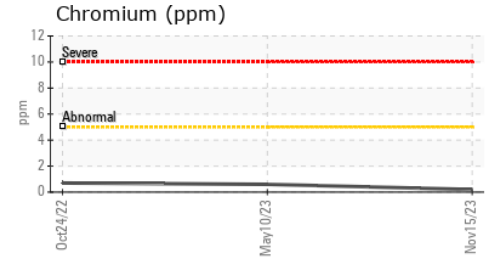
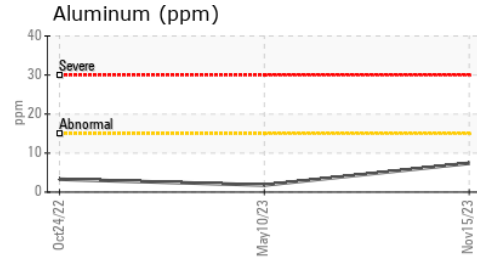
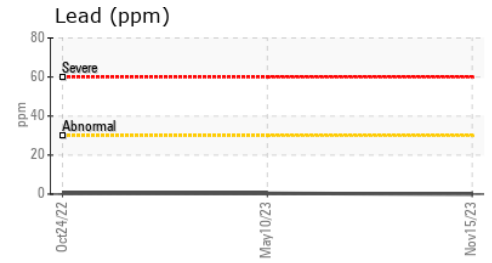
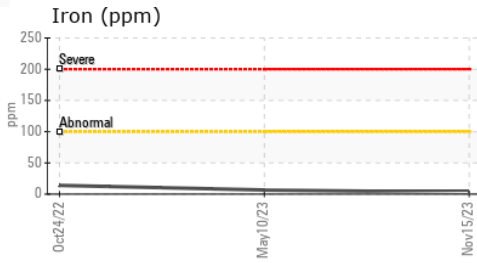
OIL ANALYSIS REPORT



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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.6	13.6	13.7

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HPL0002642 **Received** : 22 Nov 2023
Lab Number : 06015288 **Diagnosed** : 26 Nov 2023
Unique Number : 10754432 **Diagnostician** : Don Baldrige
Test Package : MOB 2

STEVENSON CRANE
 410 STEVENSON DR
 BOLINGBROOK, IL
 US 60440
 Contact: DAVE KOEHNE
 davidk@stevensoncrane.com
 T: (630)972-9199
 F:

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)