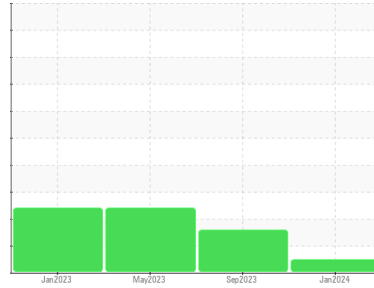


# OIL ANALYSIS REPORT



Area  
**CHICAGO 95TH**  
Machine Id  
**LIEBHERR L546P L-146 (S/N 061803-1755)**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 15W40 (--- GAL)**

Sample Rating Trend



NORMAL

✓

## DIAGNOSIS

- Recommendation**  
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 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	<b>PCA0113140</b>	PCA0105654	PCA0097251
Sample Date	Client Info	<b>31 Jan 2024</b>	28 Sep 2023	31 May 2023
Machine Age	hrs	<b>5786</b>	55147	0
Oil Age	hrs	<b>1000</b>	250	4123
Oil Changed	Client Info	<b>Changed</b>	N/A	N/A
Sample Status		<b>NORMAL</b>	ABNORMAL	SEVERE

## CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >0.2	<b>NEG</b>	NEG	NEG
Glycol	WC Method	<b>NEG</b>	NEG	NEG

## WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	<b>8</b>	61	28
Chromium	ppm ASTM D5185m >5	<b>&lt;1</b>	2	<1
Nickel	ppm ASTM D5185m >5	<b>&lt;1</b>	<1	<1
Titanium	ppm ASTM D5185m	<b>&lt;1</b>	<1	<1
Silver	ppm ASTM D5185m >3	<b>0</b>	0	0
Aluminum	ppm ASTM D5185m >15	<b>1</b>	4	2
Lead	ppm ASTM D5185m >30	<b>1</b>	6	1
Copper	ppm ASTM D5185m >125	<b>&lt;1</b>	2	2
Tin	ppm ASTM D5185m >5	<b>&lt;1</b>	1	<1
Vanadium	ppm ASTM D5185m	<b>&lt;1</b>	<1	<1
Cadmium	ppm ASTM D5185m	<b>0</b>	0	<1

## ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 250	<b>3</b>	14	<1
Barium	ppm ASTM D5185m 10	<b>0</b>	0	0
Molybdenum	ppm ASTM D5185m 100	<b>50</b>	66	38
Manganese	ppm ASTM D5185m	<b>&lt;1</b>	1	<1
Magnesium	ppm ASTM D5185m 450	<b>864</b>	474	640
Calcium	ppm ASTM D5185m 3000	<b>980</b>	901	1013
Phosphorus	ppm ASTM D5185m 1150	<b>951</b>	536	754
Zinc	ppm ASTM D5185m 1350	<b>1151</b>	656	962
Sulfur	ppm ASTM D5185m 4250	<b>2860</b>	2110	2596

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >60	<b>3</b>	14	3
Sodium	ppm ASTM D5185m >158	<b>2</b>	3	3
Potassium	ppm ASTM D5185m >20	<b>&lt;1</b>	<1	2
Fuel	% ASTM D3524 >5	<b>1.0</b>	0.2	13.2

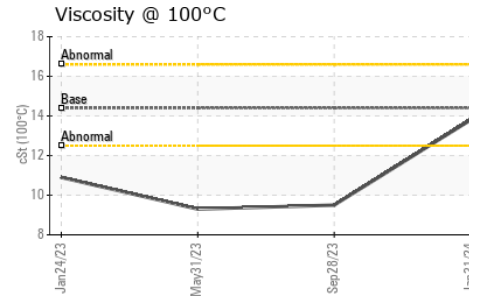
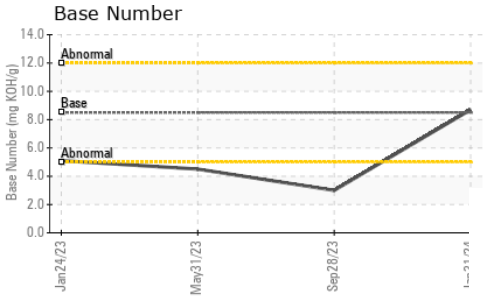
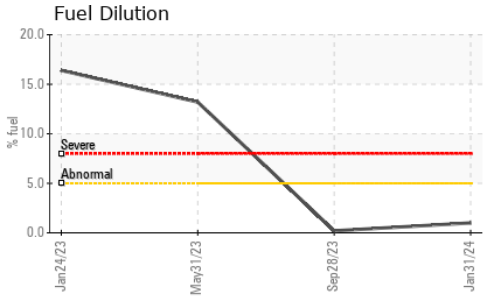
## INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	<b>0.4</b>	0	0.7
Nitration	Abs/cm *ASTM D7624 >20	<b>7.1</b>	8.9	11.8
Sulfation	Abs/.1mm *ASTM D7415 >30	<b>18.5</b>	21.3	25.1

## FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	<b>14.5</b>	10.9	26.0
Base Number (BN)	mg KOH/g ASTM D2896 8.5	<b>8.7</b>	3.0	4.5

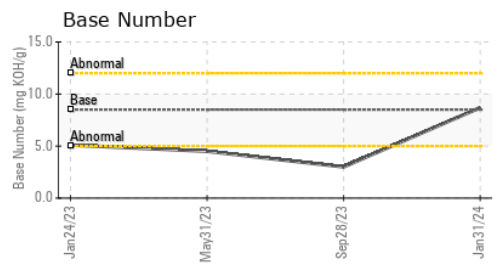
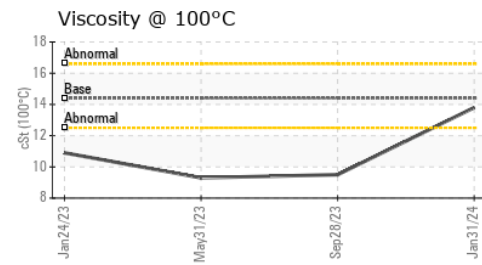
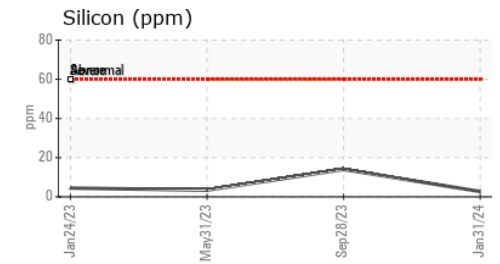
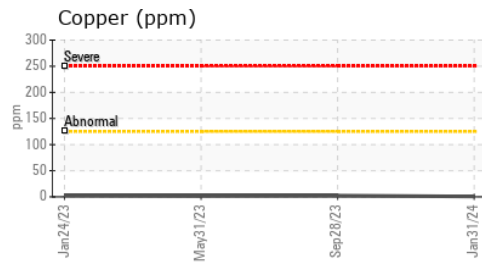
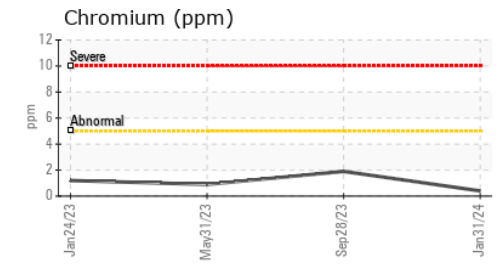
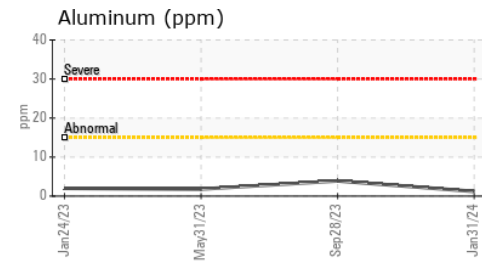
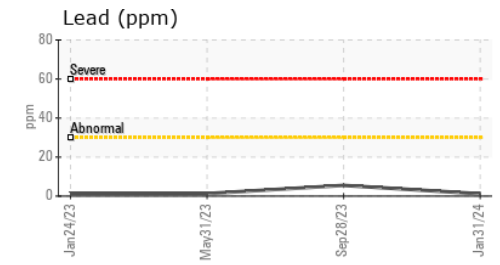
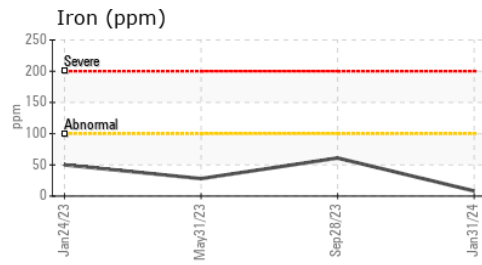
# OIL ANALYSIS REPORT



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	14.4	<b>13.8</b>	▲ 9.5 ▲ 9.3

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0113140 **Received** : 01 Feb 2024  
**Lab Number** : 06076483 **Tested** : 05 Feb 2024  
**Unique Number** : 10858574 **Diagnosed** : 05 Feb 2024 - Jonathan Hester  
**Test Package** : MOB 1 ( Additional Tests: FuelDilution, PercentFuel, TBN )

**NORTH AMERICAN STEVEDORING CO**  
 9301 S KREITER AVE  
 CHICAGO, IL  
 US 60617  
 Contact: PACO MARTINEZ  
 paco.martinez@qsl.com

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)