



OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id
SHUTTLELIFT 3330FL CD4508

Component
Diesel Engine

Fluid
DIESEL ENGINE OIL SAE 10W30 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend an early resample to monitor this condition.

Wear

Piston and cylinder wear is indicated. Bearing and/or bushing wear is indicated.

Contamination

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

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	HPL0003791	---	---
Sample Date	Client Info	05 Jan 2024	---	---
Machine Age	hrs	Client Info	3240	---
Oil Age	hrs	Client Info	0	---
Oil Changed	Client Info	N/A	---	---
Sample Status		ABNORMAL	---	---

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<1.0	---	---
Water	WC Method >0.2	NEG	---	---
Glycol	WC Method	NEG	---	---

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	▲ 240	---	---
Chromium	ppm ASTM D5185m >20	7	---	---
Nickel	ppm ASTM D5185m >4	<1	---	---
Titanium	ppm ASTM D5185m	0	---	---
Silver	ppm ASTM D5185m >3	0	---	---
Aluminum	ppm ASTM D5185m >20	▲ 22	---	---
Lead	ppm ASTM D5185m >40	▲ 41	---	---
Copper	ppm ASTM D5185m >330	22	---	---
Tin	ppm ASTM D5185m >15	7	---	---
Vanadium	ppm ASTM D5185m	0	---	---
Cadmium	ppm ASTM D5185m	0	---	---

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 250	26	---	---
Barium	ppm ASTM D5185m 10	<1	---	---
Molybdenum	ppm ASTM D5185m 100	567	---	---
Manganese	ppm ASTM D5185m	3	---	---
Magnesium	ppm ASTM D5185m 450	441	---	---
Calcium	ppm ASTM D5185m 3000	3153	---	---
Phosphorus	ppm ASTM D5185m 1150	719	---	---
Zinc	ppm ASTM D5185m 1350	905	---	---
Sulfur	ppm ASTM D5185m 4250	12811	---	---

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	▲ 26	---	---
Sodium	ppm ASTM D5185m	13	---	---
Potassium	ppm ASTM D5185m >20	2	---	---

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.1	---	---
Nitration	Abs/cm *ASTM D7624 >20	15.3	---	---
Sulfation	Abs/.1mm *ASTM D7415 >30	51.4	---	---

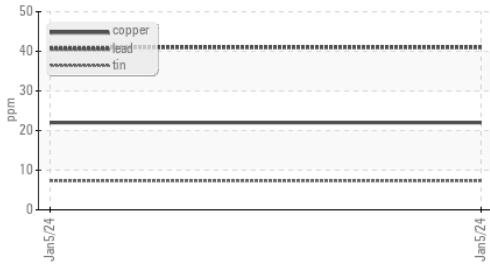
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	35.2	---	---
Base Number (BN)	mg KOH/g ASTM D2896 8.5	8.53	---	---

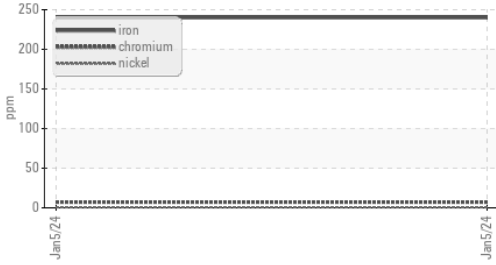


OIL ANALYSIS REPORT

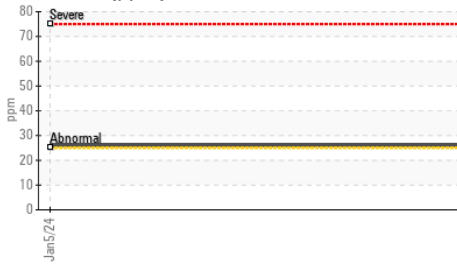
▲ Non-ferrous Metals



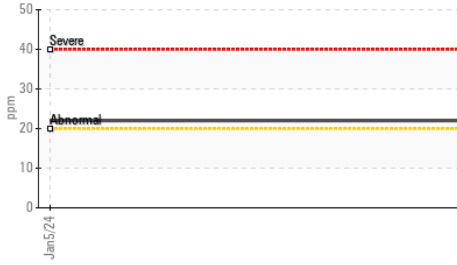
▲ Ferrous Alloys



▲ Silicon (ppm)



▲ Aluminum (ppm)



Base Number

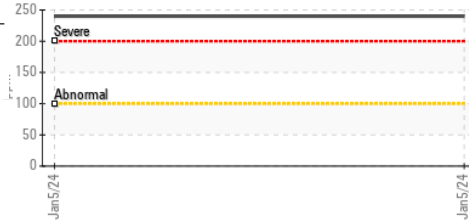


PARAMETER	VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---
Precipitate	scalar	*Visual	NONE	NONE	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE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

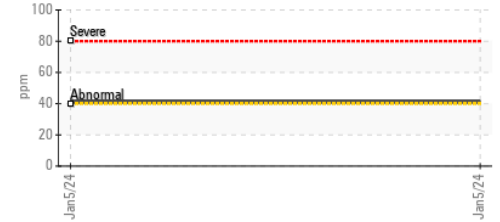
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	10.9	11.2	---

GRAPHS

▲ Iron (ppm)



▲ Lead (ppm)



▲ Aluminum (ppm)



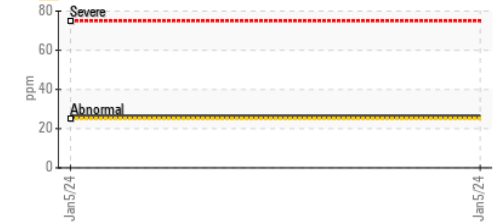
Chromium (ppm)



Copper (ppm)



▲ Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HPL0003791 **Received** : 08 Jan 2024
Lab Number : 06054149 **Diagnosed** : 10 Jan 2024
Unique Number : 10820098 **Diagnostician** : Jonathan Hester
Test Package : MOB 2

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)

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