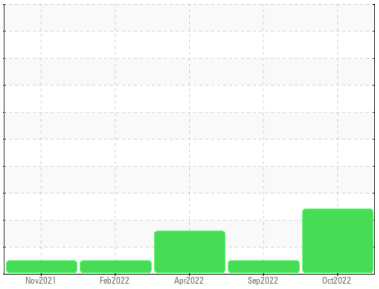
OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Machine Id
PETERBILT 22
Component
Diesel Engine
Fluid
{not provided} (--- QTS)

DIAGNOSIS

Recommendation
We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. The fluid was not specified, however, a fluid match indicates that this fluid is SAE 40 Diesel Engine Oil. Please confirm the oil type and grade, and specify the brand of the oil on your next sample.

Wear
Metal levels are typical for a new component breaking in.

Contamination
Particles >14µm are abnormally high. Particles >21µm are abnormally high. Particles >38µm are abnormally high. Particles >6µm are abnormally high. Oil Cleanliness are abnormally high. Particles >71µm are notably high. Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KL0006543**	KL0006541	KL0006368
Sample Date		Client Info		**26 Oct 2022**	08 Sep 2022	13 Apr 2022
Machine Age	mls	Client Info		**60055**	49916	30382
Oil Age	mls	Client Info		**10000**	10000	30382
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**ABNORMAL**	NORMAL	ABNORMAL

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	>110	**31**	18	71
Chromium	ppm	ASTM D5185m	>4	**0**	0	<1
Nickel	ppm	ASTM D5185m	>2	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	<1
Silver	ppm	ASTM D5185m	>2	**0**	0	<1
Aluminum	ppm	ASTM D5185m	>25	**15**	11	21
Lead	ppm	ASTM D5185m	>45	**1**	<1	<1
Copper	ppm	ASTM D5185m	>85	**6**	4	15
Tin	ppm	ASTM D5185m	>4	**1**	<1	2
Antimony	ppm	ASTM D5185m		**---**	---	---
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

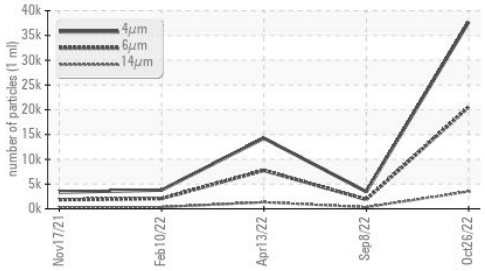
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**6**	2	23
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**58**	56	7
Manganese	ppm	ASTM D5185m		**<1**	<1	2
Magnesium	ppm	ASTM D5185m		**917**	826	774
Calcium	ppm	ASTM D5185m		**1248**	1173	1473
Phosphorus	ppm	ASTM D5185m		**1000**	939	827
Zinc	ppm	ASTM D5185m		**1233**	1110	962
Sulfur	ppm	ASTM D5185m		**4081**	3972	2842

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>30	**6**	8	13
Sodium	ppm	ASTM D5185m		**0**	0	3
Potassium	ppm	ASTM D5185m	>20	**48**	29	58

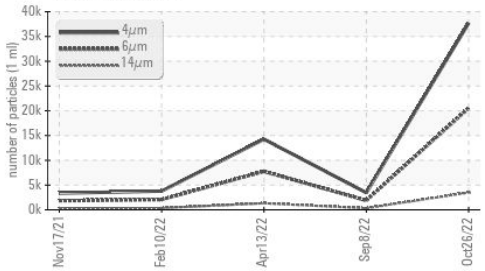
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.5**	0.3	0.5
Nitration	Abs/cm	*ASTM D7624	>20	**11.1**	8.6	11.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	**23.5**	21.6	25.8

OIL ANALYSIS REPORT

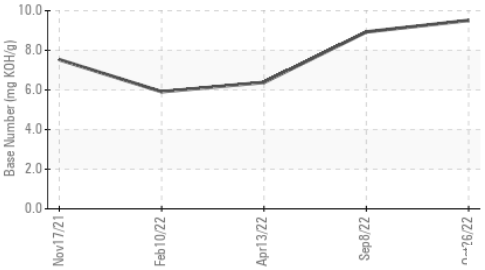
Particle Trend



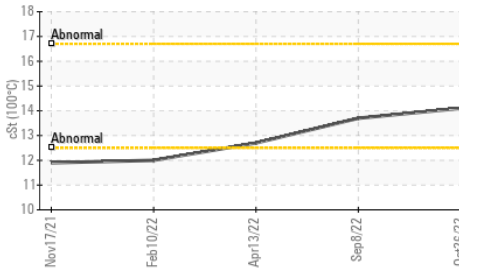
Particle Trend



Base Number



Viscosity @ 100°C



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**37676**	3452	14259
Particles >6µm		ASTM D7647	>5000	▲ **20524**	1880	● 7768
Particles >14µm		ASTM D7647	>640	▲ **3493**	320	▲ 1322
Particles >21µm		ASTM D7647	>160	▲ **1177**	108	▲ 445
Particles >38µm		ASTM D7647	>40	▲ **182**	17	● 69
Particles >71µm		ASTM D7647	>10	● **19**	2	7
Oil Cleanliness		ISO 4406 (c)	>19/16	▲ **22/19**	18/15	▲ 20/18

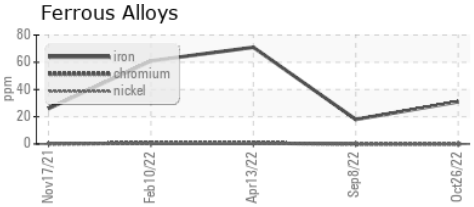
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**20.8**	17.4	21.9
Base Number (BN)	mg KOH/g	ASTM D2896		**9.51**	8.93	6.38

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	>0.2	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

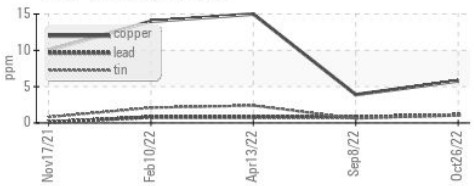
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**14.1**	13.7	12.7

GRAPHS

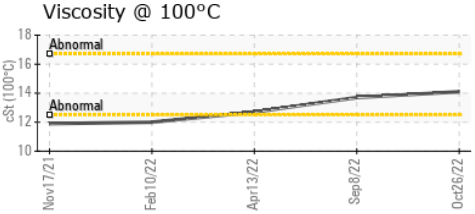
Ferrous Alloys



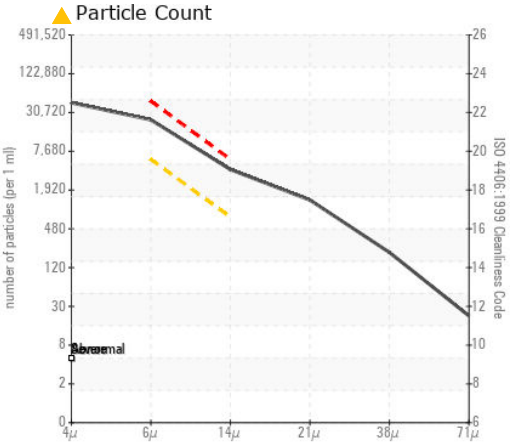
Non-ferrous Metals



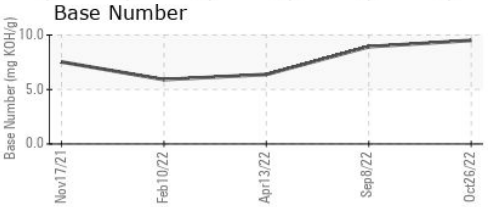
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0006543 **Received** : 10 Nov 2022
Lab Number : 05690450 **Tested** : 14 Nov 2022
Unique Number : 10215023 **Diagnosed** : 14 Nov 2022 - Wes Davis
Test Package : MOB 2 (Additional Tests: PrtCount)

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)

BERRINGTON CUSTOM HAY
PO BOX 540
WELLINGTON, NV
US 89444
Contact: REBECCA BERRINGTON
berringtoncustomhay@gmail.com
T: (775)465-2264
F: