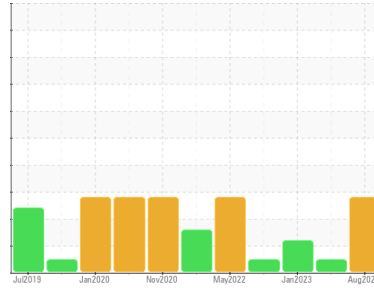




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id
PETERBILT VS 9744

Component
Diesel Engine

Fluid
SHELL ROTELLA T 15W40 (--- QTS)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. 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

There is a high amount of particulates present 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		WC0793353	WC0779700	WC0723261
Sample Date	Client Info		02 Aug 2023	07 Mar 2023	08 Jan 2023
Machine Age	hrs	Client Info	6606	5937	5474
Oil Age	hrs	Client Info	2736	2070	1617
Oil Changed	Client Info		Changed	Changed	Not Changed
Sample Status			ABNORMAL	NORMAL	ABNORMAL

CONTAMINATION

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

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >110	13	15	49
Chromium	ppm	ASTM D5185m >4	<1	<1	2
Nickel	ppm	ASTM D5185m >2	0	0	0
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m >2	0	0	0
Aluminum	ppm	ASTM D5185m >25	2	4	8
Lead	ppm	ASTM D5185m >45	2	6	7
Copper	ppm	ASTM D5185m >85	<1	2	11
Tin	ppm	ASTM D5185m >4	<1	<1	1
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 316	3	17	19
Barium	ppm	ASTM D5185m 0.0	0	0	0
Molybdenum	ppm	ASTM D5185m 1.2	60	54	4
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m 24	940	701	61
Calcium	ppm	ASTM D5185m 2292	1161	1326	2232
Phosphorus	ppm	ASTM D5185m 1064	1081	926	892
Zinc	ppm	ASTM D5185m 1160	1304	1117	1098
Sulfur	ppm	ASTM D5185m 4996	4467	4053	4343

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >30	5	4	6
Sodium	ppm	ASTM D5185m	4	1	7
Potassium	ppm	ASTM D5185m >20	6	6	20

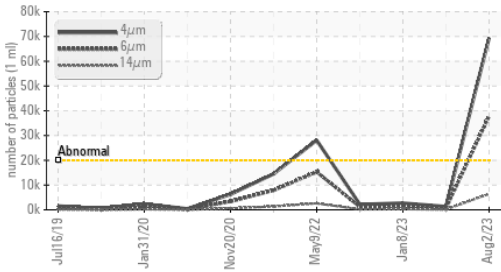
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.3	0.2	0.5
Nitration	Abs/cm	*ASTM D7624 >20	10.2	8.6	11.2
Sulfation	Abs./1mm	*ASTM D7415 >30	20.4	20.2	26.4

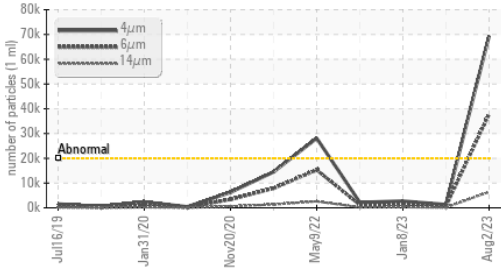


OIL ANALYSIS REPORT

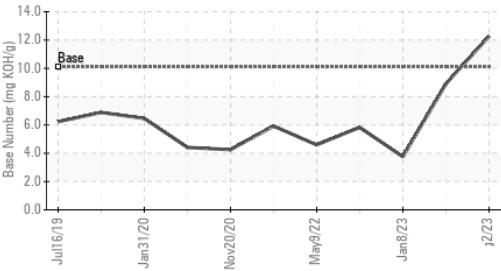
▲ Particle Trend



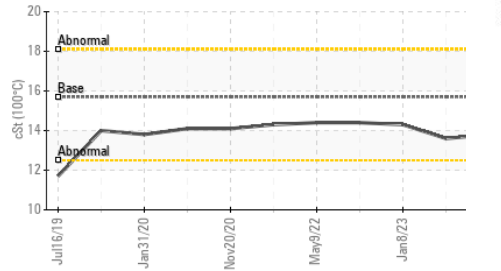
▲ Particle Trend



Base Number



Viscosity @ 100°C



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	▲ 69397	1322	2727
Particles >6µm	ASTM D7647	>5000	▲ 37805	720	1486
Particles >14µm	ASTM D7647	>640	▲ 6434	123	253
Particles >21µm	ASTM D7647	>160	▲ 2167	41	85
Particles >38µm	ASTM D7647	>40	▲ 335	6	13
Particles >71µm	ASTM D7647	>10	▲ 34	1	1
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 23/22/20	18/17/14	19/18/15

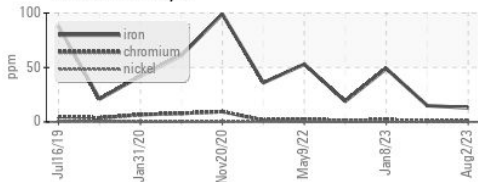
FLUID DEGRADATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414	>25	17.3	16.5	24.2
Base Number (BN)	mg KOH/g ASTM D2896	10.1	12.27	8.91	▲ 3.75

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

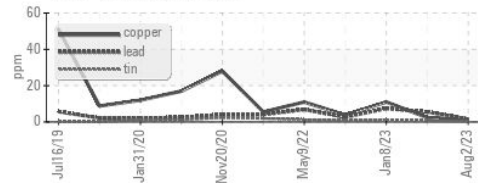
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt ASTM D445	15.7	13.8	13.6	14.3

GRAPHS

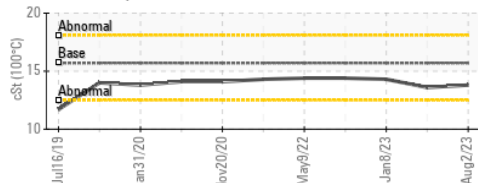
Ferrous Alloys



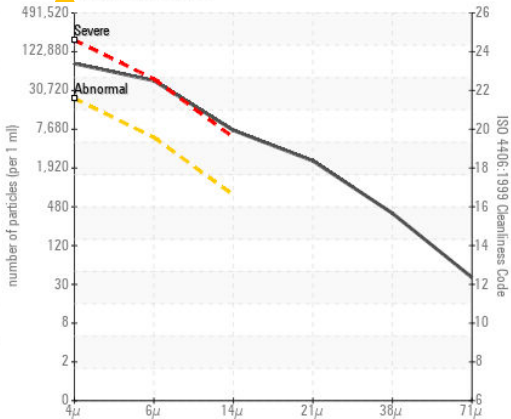
Non-ferrous Metals



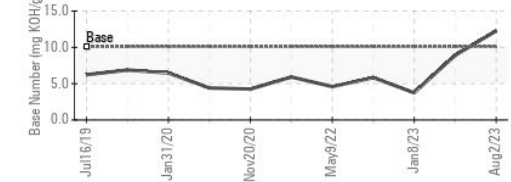
Viscosity @ 100°C



▲ Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0793353 **Received** : 14 Aug 2023
Lab Number : 05923548 **Diagnosed** : 15 Aug 2023
Unique Number : 10603495 **Diagnostician** : Doug Bogart
Test Package : MOB 2 (Additional Tests: PrtCount)

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 CUERO, TX
 US 77954
 Contact: BILL FOJTIK
 info@mcmahanservices.com
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 F: (361)275-0110

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)