



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
Store 9 - Marietta
Machine Id
PETERBILT 1067

Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (10 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LEC0045874	LEC0045156	LEC0045290
Sample Date		Client Info		06 Jan 2024	23 Nov 2023	10 Oct 2023
Machine Age	hrs	Client Info		14907	14279	13722
Oil Age	hrs	Client Info		400	400	400
Filter Age	hrs	Client Info		400	400	400
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	ABNORMAL

WEAR

The lead level is abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>110	28	29	30
Chromium	ppm	ASTM D5185m	>4	1	2	2
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	4	4	▲ 6
Lead	ppm	ASTM D5185m	>45	▲ 46	12	2
Copper	ppm	ASTM D5185m	>85	10	17	11
Tin	ppm	ASTM D5185m	>4	2	2	3
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

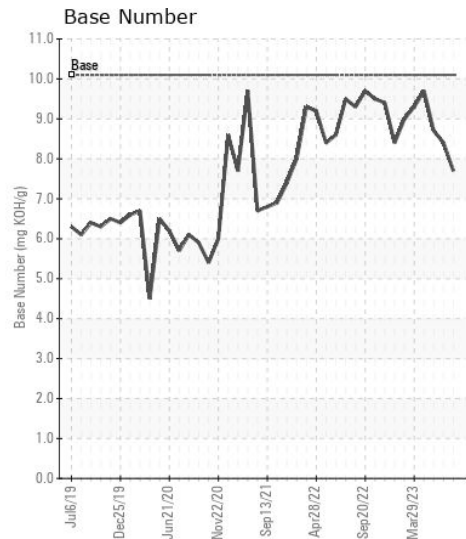
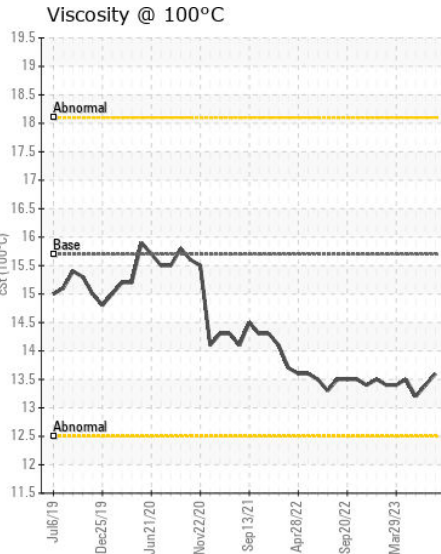
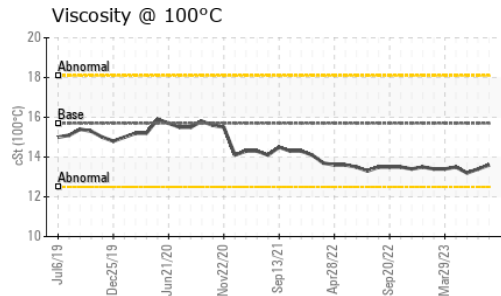
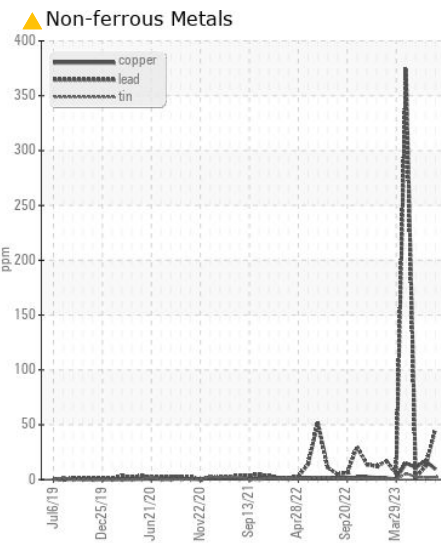
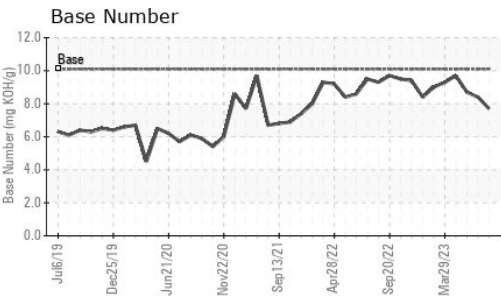
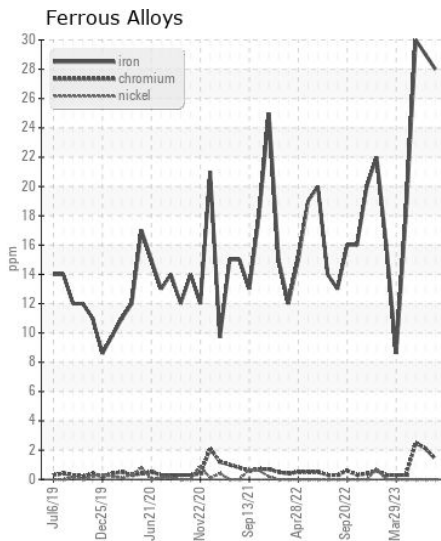
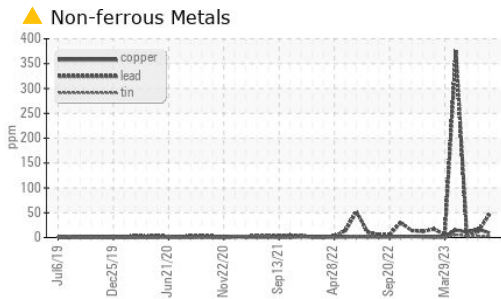
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>120	9	13	▲ 29
Potassium	ppm	ASTM D5185m	>20	2	4	12
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	1.2	1	0.5
Nitration	Abs/cm	*ASTM D7624	>20	11.4	10.6	9.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	27.2	25.9	23.9
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

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.

Sodium	ppm	ASTM D5185m		2	3	5
Boron	ppm	ASTM D5185m	316	178	187	237
Barium	ppm	ASTM D5185m	0.0	0	0	0
Molybdenum	ppm	ASTM D5185m	1.2	137	127	121
Manganese	ppm	ASTM D5185m		<1	<1	2
Magnesium	ppm	ASTM D5185m	24	692	710	664
Calcium	ppm	ASTM D5185m	2292	1573	1648	1503
Phosphorus	ppm	ASTM D5185m	1064	750	698	719
Zinc	ppm	ASTM D5185m	1160	866	936	875
Sulfur	ppm	ASTM D5185m	4996	2466	2485	2492
Oxidation	Abs/.1mm	*ASTM D7414	>25	21.7	20.4	18.2
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	7.7	8.4	8.7
Visc @ 100°C	cSt	ASTM D445	15.7	13.6	13.4	13.2



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0045874 **Received** : 16 Jan 2024
Lab Number : 06060798 **Diagnosed** : 17 Jan 2024
Unique Number : 10832180 **Diagnostician** : Jonathan Hester
Test Package : CONST (Additional Tests: TBN)

HALL DRILLING LLC
 PO BOX 249
 ELLENBORO, WV
 US 26346

Contact: CHRIS PETROVICH
 chrispetrovich@halldrilling.com
 T: (304)869-3404
 F: (304)869-3408

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)