TRAAP
Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
CASE IH 275
Component
Diesel Engine
Fluid
TRC MOLY XL PRO-SPEC IV 15W40 (22 QTS)

RECOMMENDATION

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

WEAR

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal.

CONTAMINATION

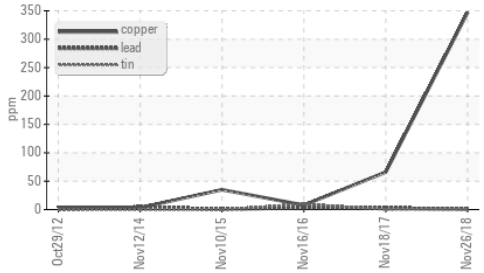
There is no indication of any contamination in the oil.

FLUID CONDITION

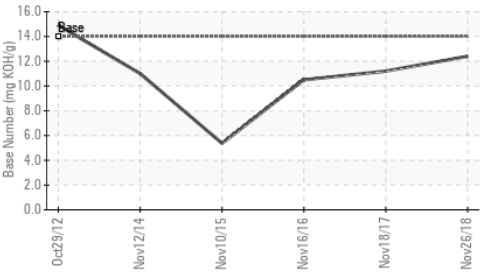
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR04607581	TR04374733	TR04139947
Sample Date		Client Info		26 Nov 2018	18 Nov 2017	16 Nov 2016
Machine Age	hrs	Client Info		2330	2117	1870
Oil Age	hrs	Client Info		213	233	226
Filter Age	hrs	Client Info		213	233	226
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>100	15	15	16
Chromium	ppm	ASTM D5185m	>20	1	1	<1
Nickel	ppm	ASTM D5185m	>2	<1	<1	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	<1	<1	<1
Aluminum	ppm	ASTM D5185m	>20	3	4	3
Lead	ppm	ASTM D5185m	>40	<1	3	3
Copper	ppm	ASTM D5185m	>330	▲ 347	66	8
Tin	ppm	ASTM D5185m	>15	<1	0	10
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	2	4	2
Potassium	ppm	ASTM D5185m	>20	<1	<1	2
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	0.3	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	15	9.	9.
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.6	18.	19.
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
Sodium	ppm	ASTM D5185m		5	4	5
Boron	ppm	ASTM D5185m		2	<1	1
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		151	182	195
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		894	878	889
Calcium	ppm	ASTM D5185m	1300	1725	1772	1824
Phosphorus	ppm	ASTM D5185m		1054	1115	1058
Zinc	ppm	ASTM D5185m	1300	1204	1328	1339
Sulfur	ppm	ASTM D5185m		3944	3424	3755
Oxidation	Abs/.1mm	*ASTM D7414	>25	21.1	15.	15.
Base Number (BN)	mg KOH/g	ASTM D2896	14	12.4	11.2	10.5
Visc @ 100°C	cSt	ASTM D445	15.5	15.65	14.79	15.03

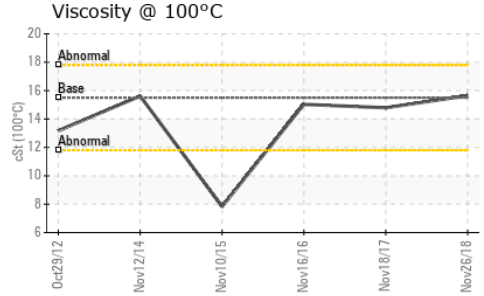
Non-ferrous Metals



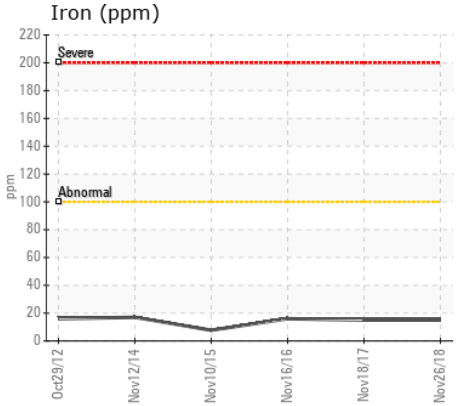
Base Number



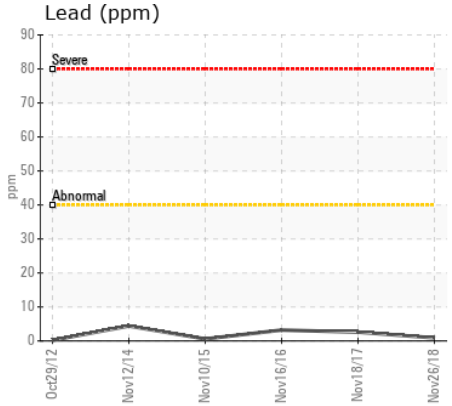
Viscosity @ 100°C



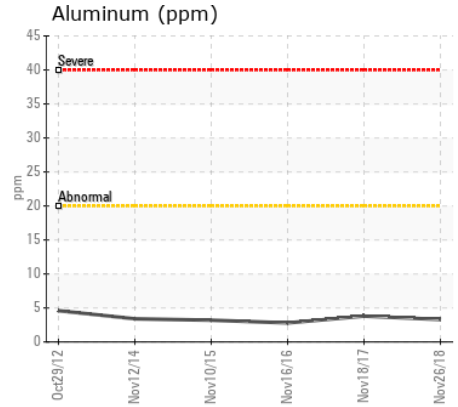
Iron (ppm)



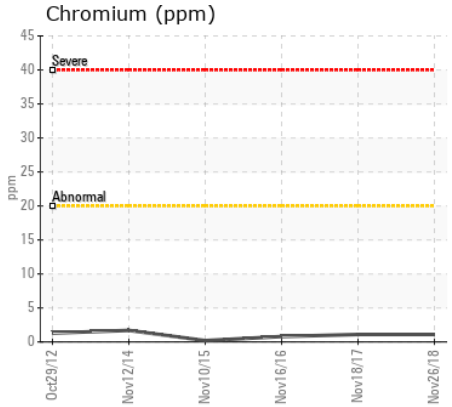
Lead (ppm)



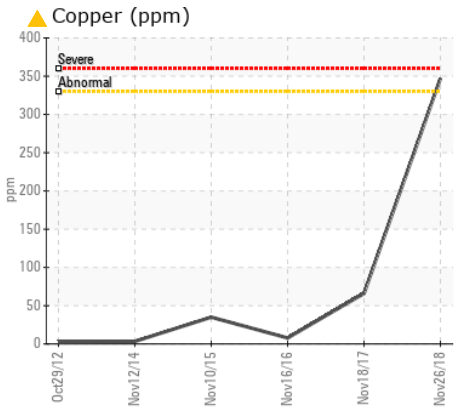
Aluminum (ppm)



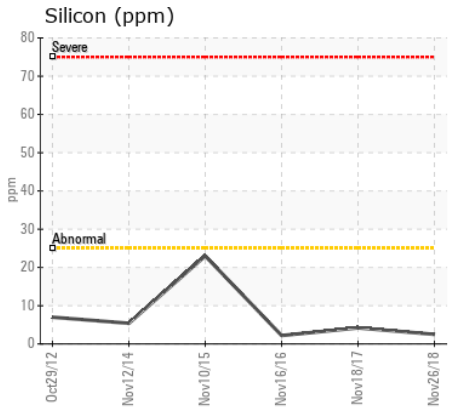
Chromium (ppm)



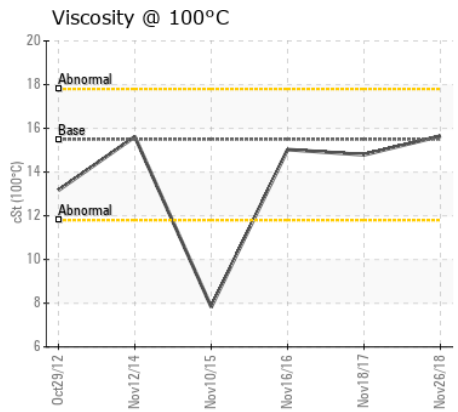
Copper (ppm)



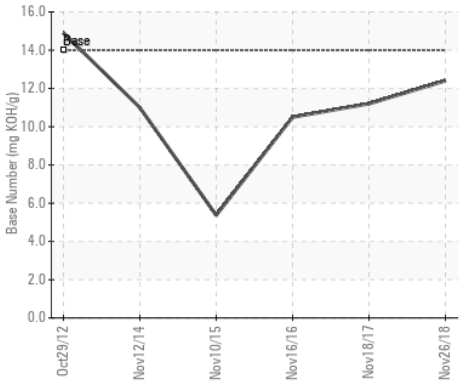
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR04607581
Lab Number : 04607581
Unique Number : 8421601
Test Package : MOB 2

Received : 07 Dec 2018
Tested : 10 Dec 2018
Diagnosed : 10 Dec 2018 - Don Baldridge

To discuss this sample report, contact Customer Service at 1-800-827-0711.
** - 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)

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