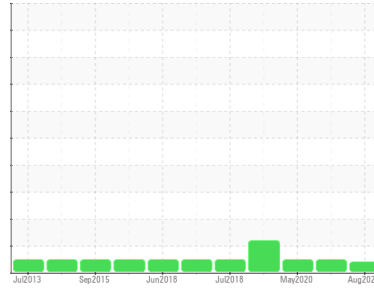




PROBLEM SUMMARY

Sample Rating Trend



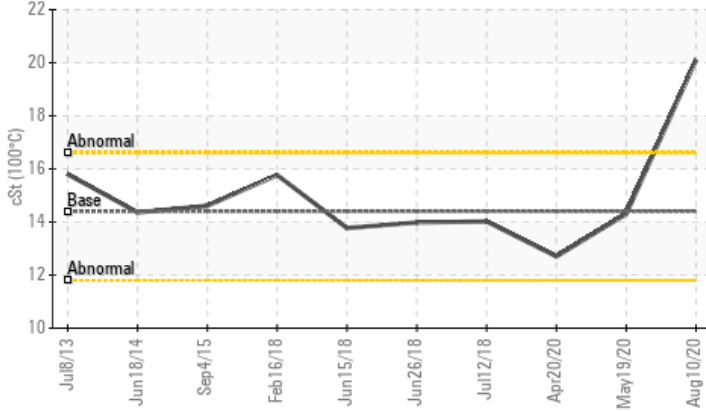
VISCOSITY



Area
COLORADO/443
 Machine Id
96.21W [COLORADO^443]
 Component
Diesel Engine
 Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Viscosity @ 100°C



RECOMMENDATION

We advise that you check for a possible overheat condition. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	NORMAL	NORMAL
Visc @ 100°C	cSt	ASTM D445	14.4	▲ 20.1	---	14.3

Customer Id: SHEWIC
 Sample No.: WC0421862
 Lab Number: 05044207
 Test Package: MOBCE



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Doug Bogart +1 (800)237-1369 x4016
dougb@wearcheckusa.com

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Check For Overheating	---	---	?	We advise that you check for a possible overheat condition.

HISTORICAL DIAGNOSIS

15 Jun 2020 Diag: Doug Bogart

NORMAL



Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Insufficient sample was received to conduct all the routine laboratory tests. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

view report



19 May 2020 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Metal levels are typical for a new component breaking in. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report



20 Apr 2020 Diag: Jonathan Hester

GLYCOL



Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. Sodium and/or potassium levels are high. Test for glycol is negative. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

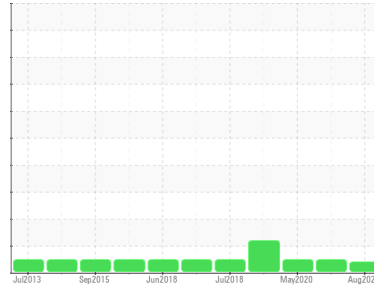
view report





OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY



Area
COLORADO/443
Machine Id
96.21W [COLORADO^443]
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for a possible overheat condition. 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 no indication of any contamination in the oil.

Fluid Condition

The oil viscosity is higher than normal. The BN level is lower than normal.

SAMPLE INFORMATION	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0421862	WC0421599	WC0392468
Sample Date	Client Info		10 Aug 2020	15 Jun 2020	19 May 2020
Machine Age	hrs	Client Info	1946	1578	889
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			ABNORMAL	NORMAL	NORMAL

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

WEAR METALS	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	33	56	17
Chromium	ppm	ASTM D5185m >20	2	4	<1
Nickel	ppm	ASTM D5185m >4	<1	<1	<1
Titanium	ppm	ASTM D5185m	<1	<1	0
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >20	4	5	2
Lead	ppm	ASTM D5185m >40	<1	3	0
Copper	ppm	ASTM D5185m >330	20	50	160
Tin	ppm	ASTM D5185m >15	0	2	0
Antimony	ppm	ASTM D5185m	0	0	0
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	0	<1	0

ADDITIVES	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 250	58	24	62
Barium	ppm	ASTM D5185m 10	0	0	0
Molybdenum	ppm	ASTM D5185m 100	13	29	21
Manganese	ppm	ASTM D5185m	<1	2	1
Magnesium	ppm	ASTM D5185m 450	675	598	527
Calcium	ppm	ASTM D5185m 3000	1211	1050	1625
Phosphorus	ppm	ASTM D5185m 1150	607	634	677
Zinc	ppm	ASTM D5185m 1350	715	794	819
Sulfur	ppm	ASTM D5185m 4250	1846	1592	2292

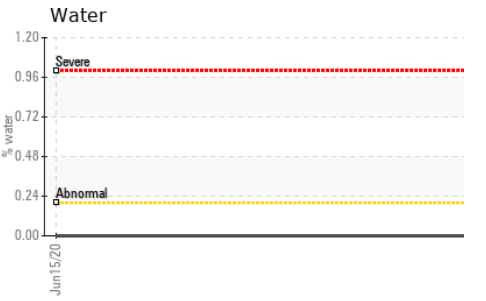
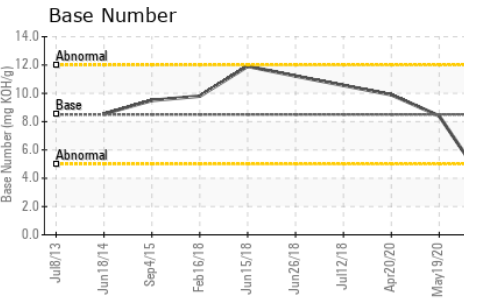
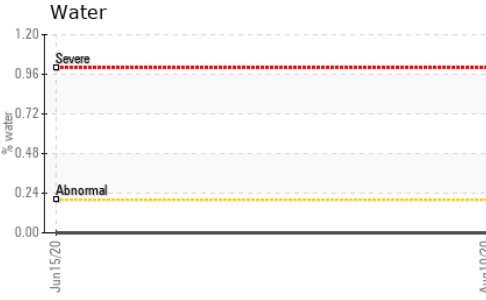
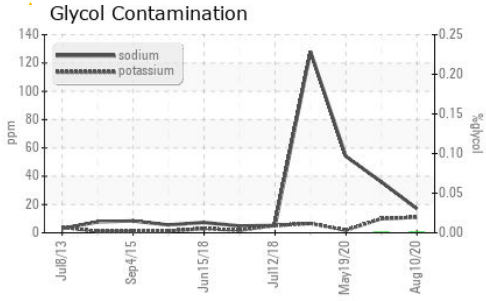
CONTAMINANTS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	9	14	15
Sodium	ppm	ASTM D5185m >158	17	36	54
Potassium	ppm	ASTM D5185m >20	11	10	2
Glycol	%	*ASTM D2982	0.0	0.0	NEG

INFRA-RED	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.1	---	0.1
Nitration	Abs/cm	*ASTM D7624 >20	24.8	---	11.1
Sulfation	Abs/.1mm	*ASTM D7415 >30	40.5	---	22.3

FLUID DEGRADATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	80.2	---	22.6
Base Number (BN)	mg KOH/g	ASTM D2896 8.5	3.4	---	8.4



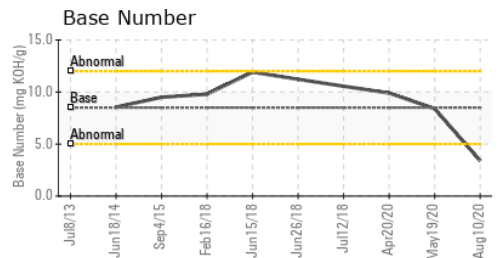
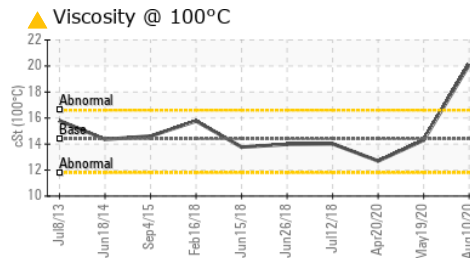
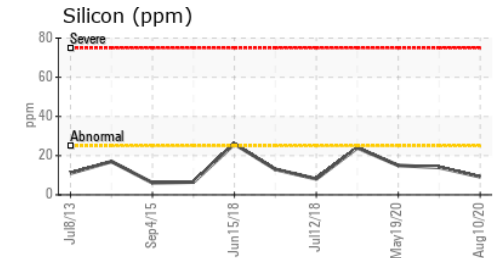
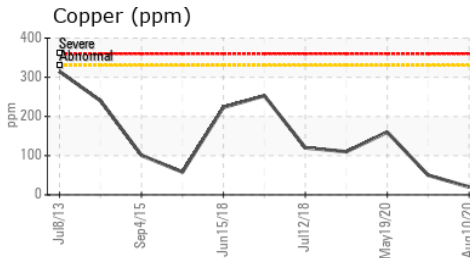
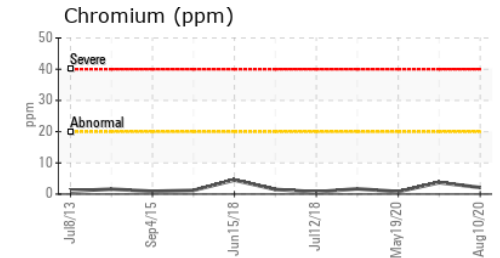
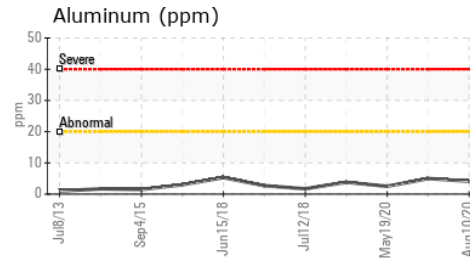
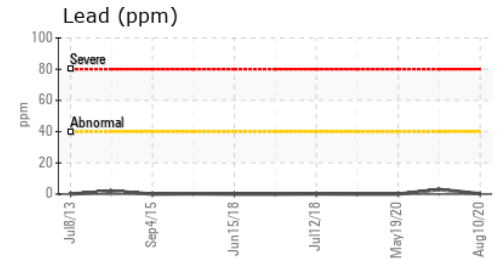
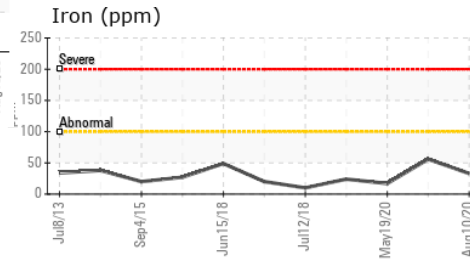
OIL ANALYSIS REPORT



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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4 ▲ 20.1	---	14.3

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0421862 **Received** : 14 Aug 2020
Lab Number : 05044207 **Diagnosed** : 20 Aug 2020
Unique Number : 9139378 **Diagnostician** : Doug Bogart
Test Package : MOBCE (Additional Tests: Glycol, KF, TBN)

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 US 67213
 Contact: DOUG KING
 doug.king@sherwood.net
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 F: x:

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)