



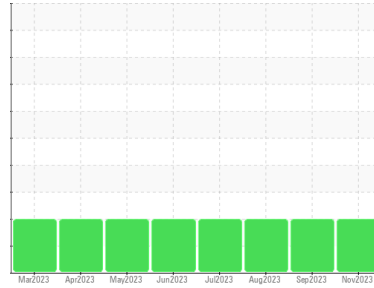
PROBLEM SUMMARY

Sample Rating Trend

GLYCOL

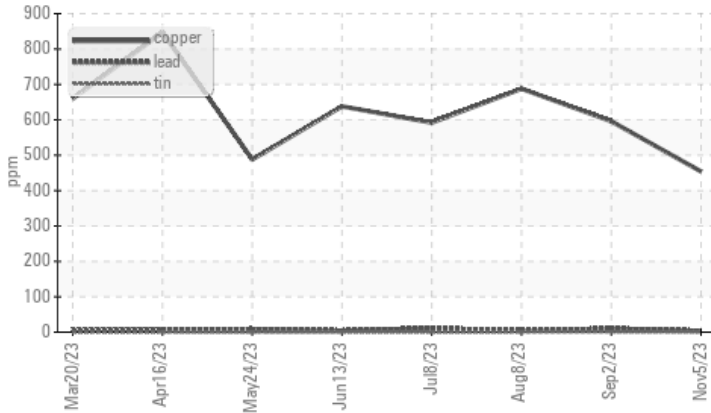


Area
Huntington
 Machine Id
[Huntington] Oil - Port Main Engine
 Component
Port Main Engine
 Fluid
DIESEL ENGINE OIL SAE 15W40 (165 GAL)

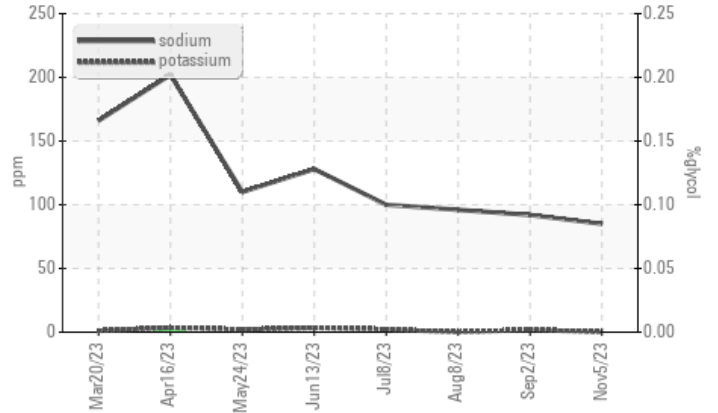


COMPONENT CONDITION SUMMARY

▲ Non-ferrous Metals



▲ Glycol Contamination



RECOMMENDATION

No corrective action is recommended at this time.
 Resample at the next service interval to monitor. (Customer Sample Comment:
 Top Up Amount: 14 GAL)

PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	ABNORMAL	ABNORMAL
Copper	ppm	ASTM D5185m >80	▲ 454	▲ 596	▲ 688
Sodium	ppm	ASTM D5185m >158	▲ 85	▲ 92	▲ 96

Customer Id: MARCAT
 Sample No.: WC0804877
 Lab Number: 06008553
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Sean Felton +1 919-379-4092
sfelton@wearcheckusa.com

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

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

02 Sep 2023 Diag: Sean Felton

GLYCOL



No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. 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). 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 suitable for further service.

view report



08 Aug 2023 Diag: Jonathan Hester

GLYCOL



No corrective action is recommended at this time. Resample at the next service interval to monitor. 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). 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 suitable for further service.

view report



08 Jul 2023 Diag: Jonathan Hester

GLYCOL



No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. 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). 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 suitable for further service.

view report



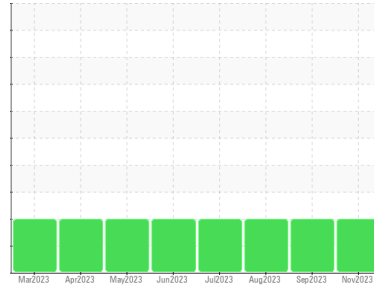


OIL ANALYSIS REPORT

Sample Rating Trend

GLYCOL

Area
Huntington
 Machine Id
[Huntington] Oil - Port Main Engine
 Component
Port Main Engine
 Fluid
DIESEL ENGINE OIL SAE 15W40 (165 GAL)



DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor. (Customer Sample Comment: Top Up Amount: 14 GAL)

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).

Contamination

Sodium and/or potassium levels are high. Test for glycol is negative.

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		WC0804877	WC0735518	WC0769512
Sample Date	Client Info		05 Nov 2023	02 Sep 2023	08 Aug 2023
Machine Age	hrs	Client Info	18450	17471	16408
Oil Age	hrs	Client Info	1043	0	16408
Oil Changed	Client Info		Oil Added	Oil Added	N/A
Sample Status			ABNORMAL	ABNORMAL	ABNORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >75	7	6	4
Chromium	ppm	ASTM D5185m >8	0	0	<1
Nickel	ppm	ASTM D5185m >2	0	0	0
Titanium	ppm	ASTM D5185m >3	0	<1	0
Silver	ppm	ASTM D5185m >2	0	0	0
Aluminum	ppm	ASTM D5185m >15	2	<1	3
Lead	ppm	ASTM D5185m >18	4	10	4
Copper	ppm	ASTM D5185m >80	▲ 454	▲ 596	▲ 688
Tin	ppm	ASTM D5185m >14	<1	<1	<1
Vanadium	ppm	ASTM D5185m	0	<1	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 250	29	35	41
Barium	ppm	ASTM D5185m 10	0	0	0
Molybdenum	ppm	ASTM D5185m 100	86	91	93
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m 450	907	951	889
Calcium	ppm	ASTM D5185m 3000	1210	1348	1322
Phosphorus	ppm	ASTM D5185m 1150	833	891	906
Zinc	ppm	ASTM D5185m 1350	1066	1084	1091
Sulfur	ppm	ASTM D5185m 4250	2607	3413	3524

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >20	3	4	4
Sodium	ppm	ASTM D5185m >158	▲ 85	▲ 92	▲ 96
Potassium	ppm	ASTM D5185m >20	<1	2	0
Fuel	%	ASTM D3524 >4.0	<1.0	<1.0	<1.0
Water	%	ASTM D6304 >0.1	NEG	NEG	NEG
Glycol	%	*ASTM D2982	NEG	NEG	NEG

INFRA-RED

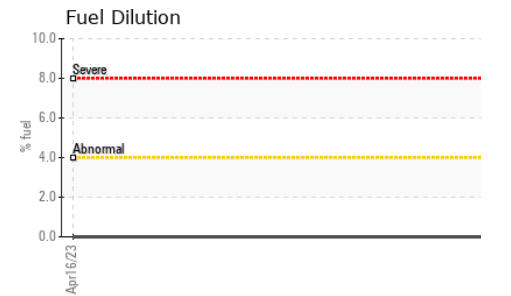
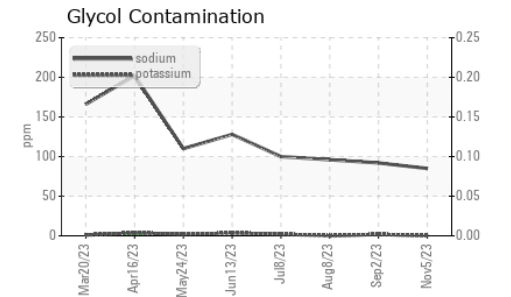
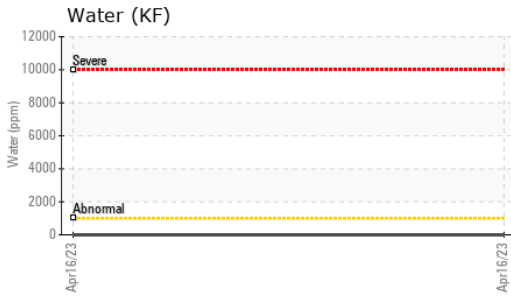
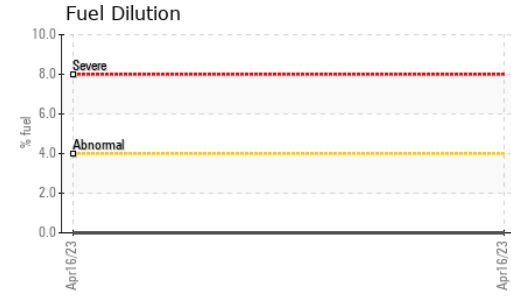
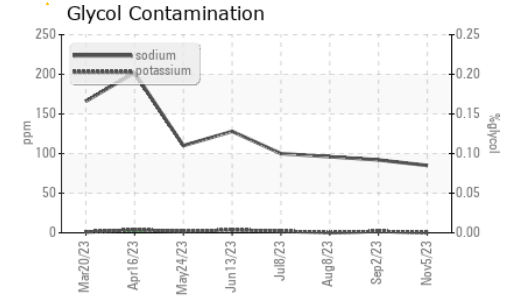
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624 >20	9.6	9.3	8.9
Sulfation	Abs/.1mm	*ASTM D7415 >30	22.0	21.0	20.1

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	18.5	17.3	16.4
Base Number (BN)	mg KOH/g	ASTM D2896 8.5	10.53	10.06	10.27



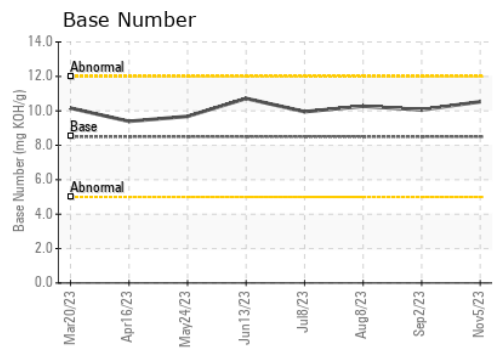
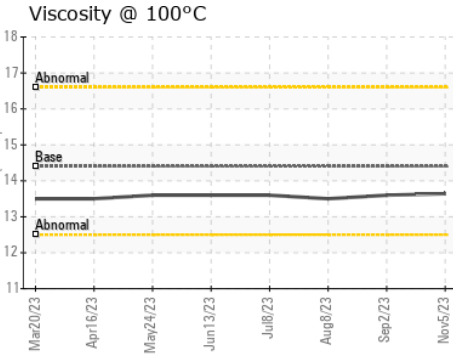
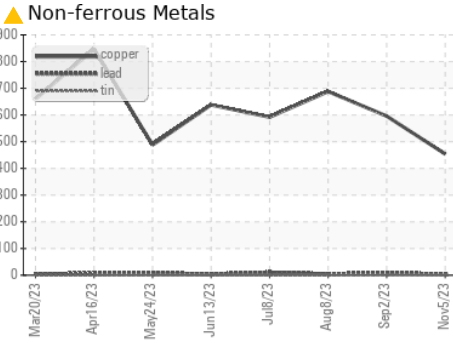
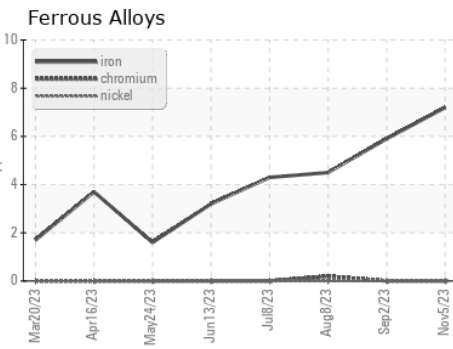
OIL ANALYSIS REPORT



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	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	14.4	13.64	13.6	13.5

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0804877 **Received** : 15 Nov 2023
Lab Number : 06008553 **Diagnosed** : 20 Nov 2023
Unique Number : 10742315 **Diagnostician** : Sean Felton
Test Package : IND 2 (Additional Tests: FuelDilution, Glycol, KF)
 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)

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