



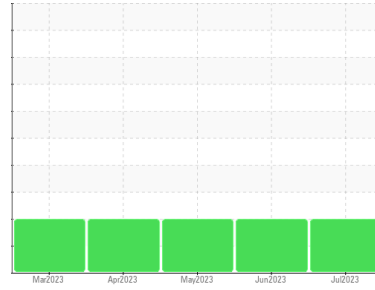
PROBLEM SUMMARY

Sample Rating Trend

GLYCOL

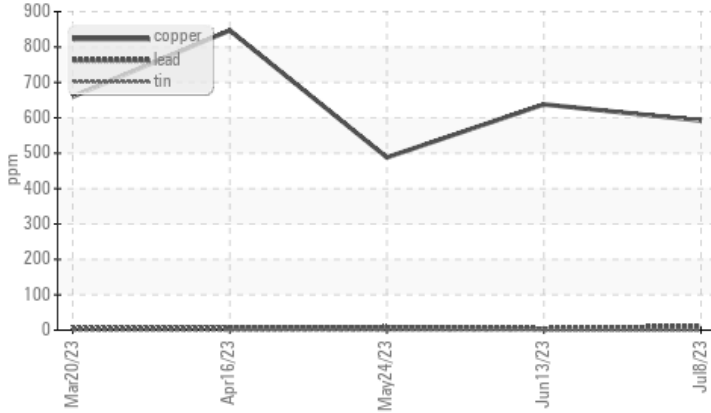


Area
Huntington
 Machine Id
[Huntington] Oil - Port Main Engine
 Component
Port Main Engine
 Fluid
DIESEL ENGINE OIL SAE 15W40 (165 GAL)

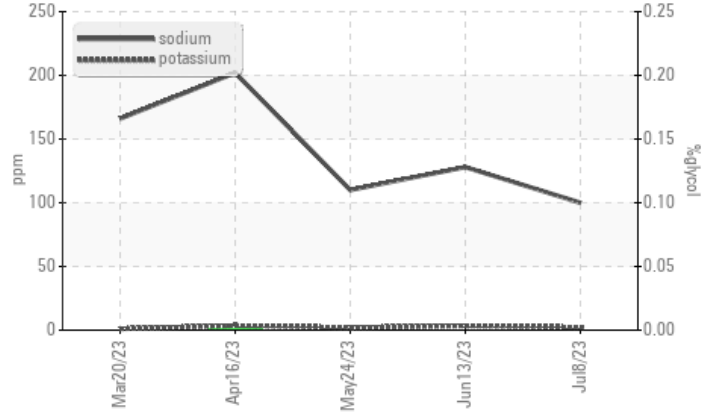


COMPONENT CONDITION SUMMARY

▲ Non-ferrous Metals



▲ Glycol Contamination



RECOMMENDATION

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

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Copper	ppm	ASTM D5185m	>80	▲ 592	▲ 638	▲ 488
Sodium	ppm	ASTM D5185m	>158	▲ 100	▲ 128	▲ 110

Customer Id: MARCAT
 Sample No.: WC0769142
 Lab Number: 05900170
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Jonathan Hester +1 919-379-4092 x4092
jhester@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

13 Jun 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



24 May 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



16 Apr 2023 Diag: Angela Borella

GLYCOL



We advise that you check for possible coolant leak. Check for low coolant level. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. 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. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

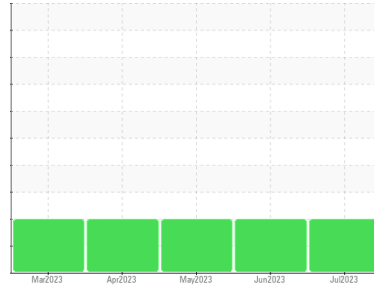




OIL ANALYSIS REPORT

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. The 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).

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		WC0769142	WC0735467	WC0769217
Sample Date	Client Info		08 Jul 2023	13 Jun 2023	24 May 2023
Machine Age	hrs	Client Info	16408	14758	14758
Oil Age	hrs	Client Info	0	14758	14758
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			ABNORMAL	ABNORMAL	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<1.0	<1.0	<1.0

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >75	4	3	2
Chromium	ppm	ASTM D5185m >8	0	0	0
Nickel	ppm	ASTM D5185m >2	0	0	0
Titanium	ppm	ASTM D5185m >3	0	0	0
Silver	ppm	ASTM D5185m >2	0	0	0
Aluminum	ppm	ASTM D5185m >15	2	0	5
Lead	ppm	ASTM D5185m >18	11	4	9
Copper	ppm	ASTM D5185m >80	▲ 592	▲ 638	▲ 488
Tin	ppm	ASTM D5185m >14	<1	<1	0
Vanadium	ppm	ASTM D5185m	<1	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 250	43	54	58
Barium	ppm	ASTM D5185m 10	0	0	0
Molybdenum	ppm	ASTM D5185m 100	97	105	98
Manganese	ppm	ASTM D5185m	<1	0	0
Magnesium	ppm	ASTM D5185m 450	912	778	827
Calcium	ppm	ASTM D5185m 3000	1402	1342	1359
Phosphorus	ppm	ASTM D5185m 1150	925	904	900
Zinc	ppm	ASTM D5185m 1350	1135	1045	1055
Sulfur	ppm	ASTM D5185m 4250	3702	3183	3521

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >20	3	5	4
Sodium	ppm	ASTM D5185m >158	▲ 100	▲ 128	▲ 110
Potassium	ppm	ASTM D5185m >20	2	3	2
Glycol	%	*ASTM D2982	NEG	NEG	NEG

INFRA-RED

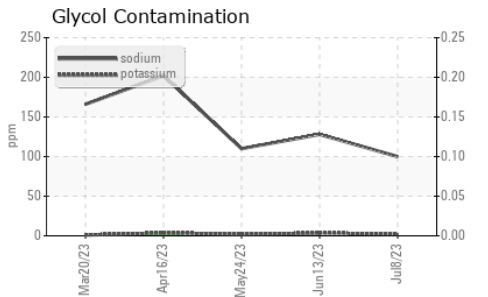
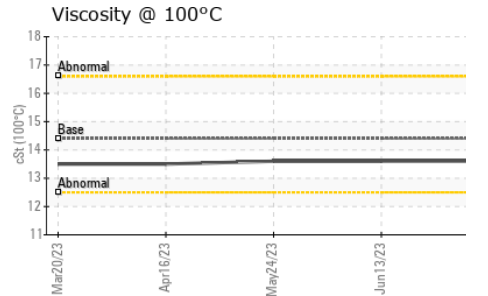
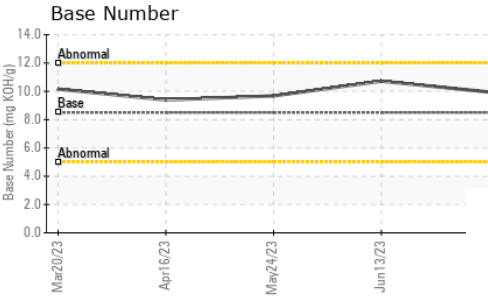
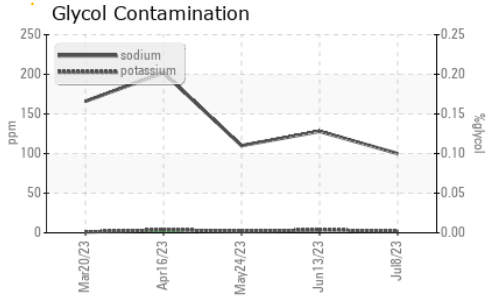
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0.2	0.1	0.1
Nitration	Abs/cm	*ASTM D7624 >20	8.8	8.0	7.8
Sulfation	Abs/.1mm	*ASTM D7415 >30	21.3	20.9	20.8

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	16.9	17.4	16.3
Base Number (BN)	mg KOH/g	ASTM D2896 8.5	9.95	10.72	9.68



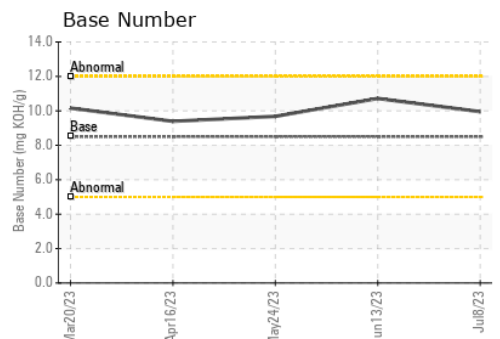
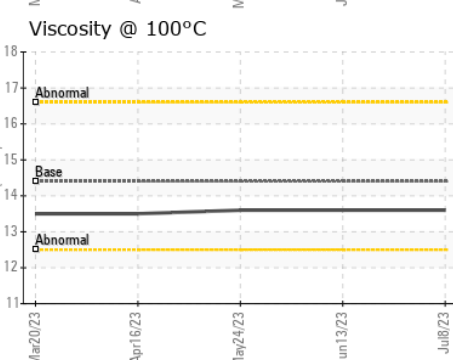
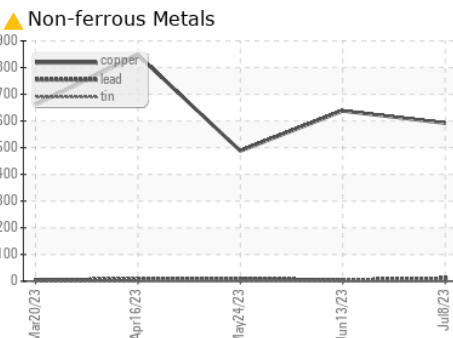
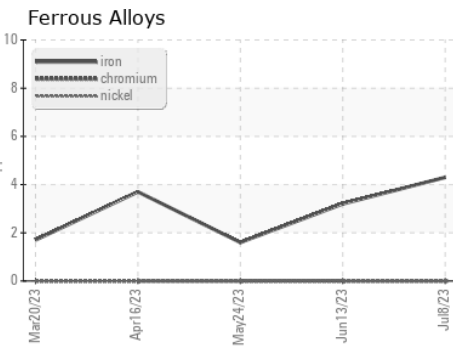
OIL ANALYSIS REPORT



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	13.6	13.6

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : WC0769142 Received : 17 Jul 2023
 Lab Number : 05900170 Diagnosed : 20 Jul 2023
 Unique Number : 10561526 Diagnostician : Jonathan Hester
 Test Package : IND 2 (Additional Tests: Glycol)

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 US 41169
 Contact: CORY GUMBERT
 cagumbert@marathonpetroleum.com

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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