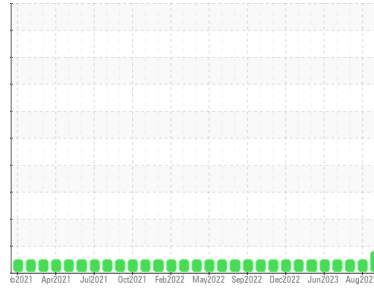




PROBLEM SUMMARY

Sample Rating Trend



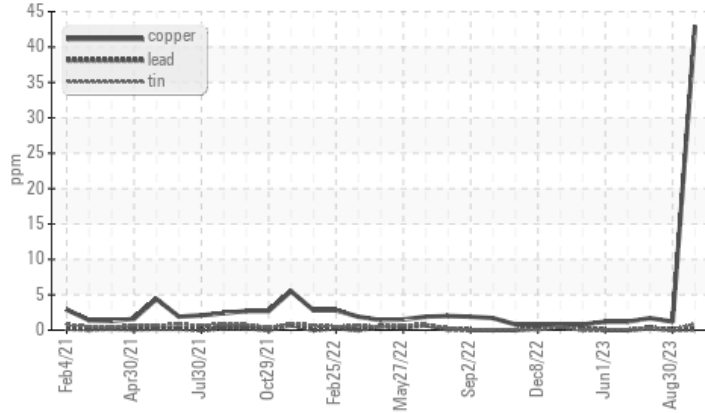
WEAR



Area
Tri State
 Machine Id
[Tri State] Oil - Port Reduction Gear
 Component
Port Reduction Gear
 Fluid
DIESEL ENGINE OIL SAE 40 (8 GAL)

COMPONENT CONDITION SUMMARY

▲ Non-ferrous Metals



RECOMMENDATION

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

PROBLEMATIC TEST RESULTS

Sample Status				MARGINAL	NORMAL	NORMAL
Copper	ppm	ASTM D5185m	>50	▲ 43	1	2

Customer Id: MARCAT
 Sample No.: WC0846093
 Lab Number: 05995692
 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

30 Aug 2023 Diag: Doug Bogart

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. The water content is negligible. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



27 Jul 2023 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. The water content is negligible. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



29 Jun 2023 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



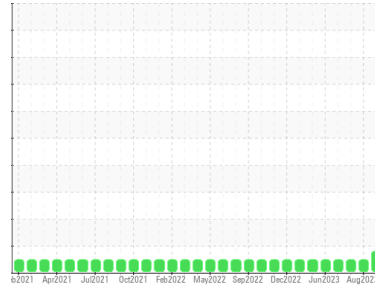


OIL ANALYSIS REPORT

Sample Rating Trend

WEAR

Area
Tri State
 Machine Id
[Tri State] Oil - Port Reduction Gear
 Component
Port Reduction Gear
 Fluid
DIESEL ENGINE OIL SAE 40 (8 GAL)



DIAGNOSIS

▲ Recommendation

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

▲ Wear

An increase in the copper level is noted.

Contamination

The water content is negligible. There is no indication of any contamination in the oil.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0846093	WC0769066	WC0769162
Sample Date	Client Info		30 Oct 2023	30 Aug 2023	27 Jul 2023
Machine Age	hrs	Client Info	19499	18409	0
Oil Age	hrs	Client Info	1813	723	4441
Oil Changed	Client Info		Changed	Oil Added	Changed
Sample Status			MARGINAL	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >150	4	4	7
Chromium	ppm	ASTM D5185m >10	0	0	<1
Nickel	ppm	ASTM D5185m >10	0	0	0
Titanium	ppm	ASTM D5185m	0	1	4
Silver	ppm	ASTM D5185m	0	<1	<1
Aluminum	ppm	ASTM D5185m >25	1	<1	0
Lead	ppm	ASTM D5185m >100	<1	0	<1
Copper	ppm	ASTM D5185m >50	▲ 43	1	2
Tin	ppm	ASTM D5185m >10	<1	0	<1
Vanadium	ppm	ASTM D5185m	0	0	<1
Cadmium	ppm	ASTM D5185m	0	0	<1

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 250	<1	6	13
Barium	ppm	ASTM D5185m 10	0	0	0
Molybdenum	ppm	ASTM D5185m 100	41	39	39
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m 450	640	696	715
Calcium	ppm	ASTM D5185m 3000	767	910	1264
Phosphorus	ppm	ASTM D5185m 1150	753	825	858
Zinc	ppm	ASTM D5185m 1350	803	972	988
Sulfur	ppm	ASTM D5185m 4250	2123	3084	3556

CONTAMINANTS

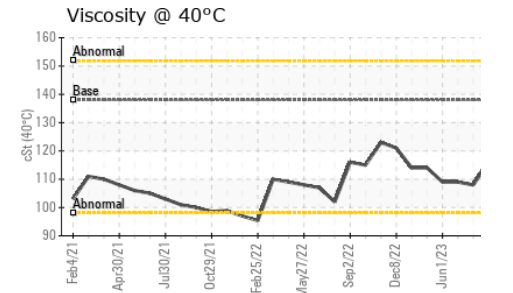
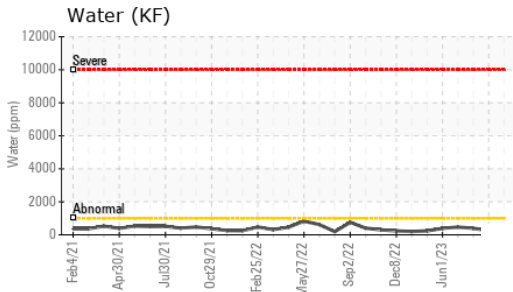
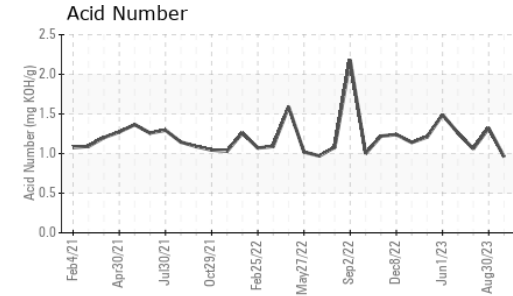
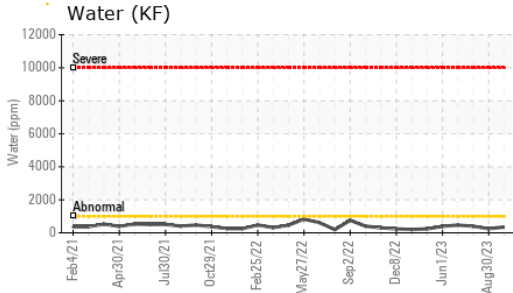
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	2	2	3
Sodium	ppm	ASTM D5185m >216	2	3	3
Potassium	ppm	ASTM D5185m >20	<1	<1	2
Water	%	ASTM D6304 >0.1	0.035	0.025	0.039
ppm Water	ppm	ASTM D6304 >1000	352.0	251.5	394.3

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.96	1.32	1.06



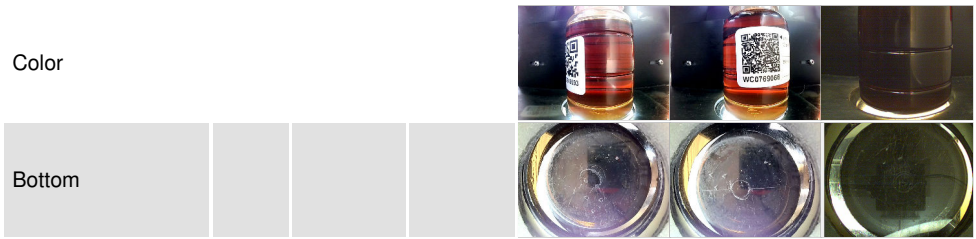
OIL ANALYSIS REPORT



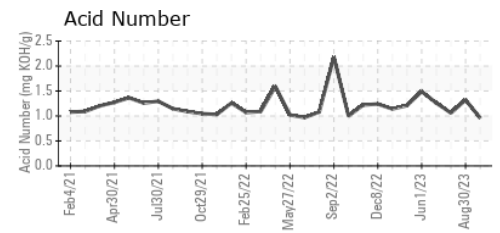
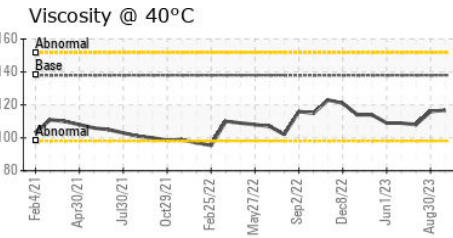
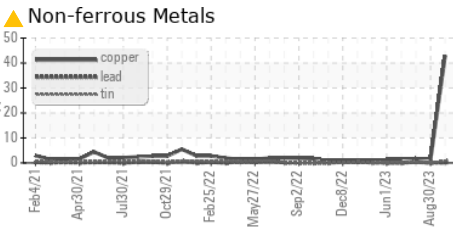
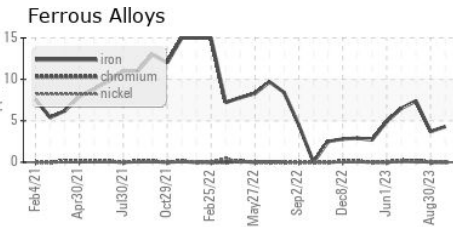
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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 @ 40°C	cSt	ASTM D445	138	116.8	116

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : WC0846093
 Lab Number : 05995692
 Unique Number : 10724052
 Test Package : IND 2 (Additional Tests: KF)

MARATHON PETROLEUM CO.
 101 12TH ST
 CATLETTSBURG, KY
 US 41169
 Contact: CORY GUMBERT
 cagumbert@marathonpetroleum.com
 T: (606)585-3950
 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)