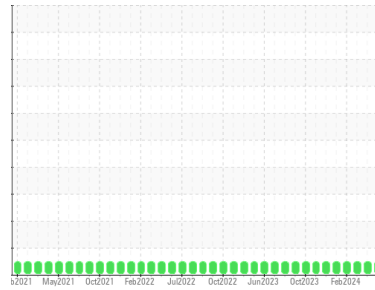




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area

**Tri State**

Machine Id

**[Tri State] Oil - Starboard Reduction Gear**

Component

**Starboard Reduction Gear**

Fluid

**DIESEL ENGINE OIL SAE 40 (8 GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### 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		<b>WC0874538</b>	WC0719294	WC0874792
Sample Date	Client Info		<b>24 May 2024</b>	23 Apr 2024	20 Mar 2024
Machine Age	hrs	Client Info	<b>23684</b>	23068	22372
Oil Age	hrs	Client Info	<b>590</b>	1111	415
Oil Changed	Client Info		<b>Not Changed</b>	Changed	Not Changed
Sample Status			<b>NORMAL</b>	NORMAL	NORMAL

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >150	<b>2</b>	3	2
Chromium	ppm	ASTM D5185m >10	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m >10	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >25	<b>2</b>	0	1
Lead	ppm	ASTM D5185m >100	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m >50	<b>1</b>	<1	<1
Tin	ppm	ASTM D5185m >10	<b>&lt;1</b>	0	0
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 250	<b>0</b>	<1	0
Barium	ppm	ASTM D5185m 10	<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m 100	<b>41</b>	40	40
Manganese	ppm	ASTM D5185m	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185m 450	<b>642</b>	618	644
Calcium	ppm	ASTM D5185m 3000	<b>714</b>	707	722
Phosphorus	ppm	ASTM D5185m 1150	<b>753</b>	813	825
Zinc	ppm	ASTM D5185m 1350	<b>919</b>	892	931
Sulfur	ppm	ASTM D5185m 4250	<b>2295</b>	2694	2461

## CONTAMINANTS

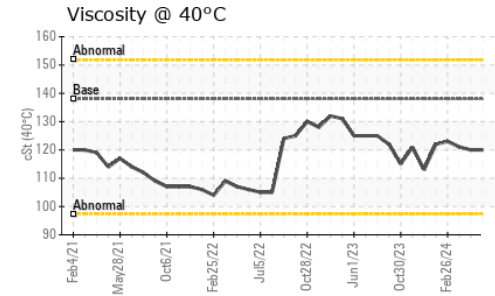
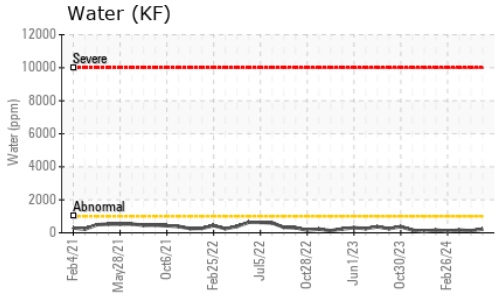
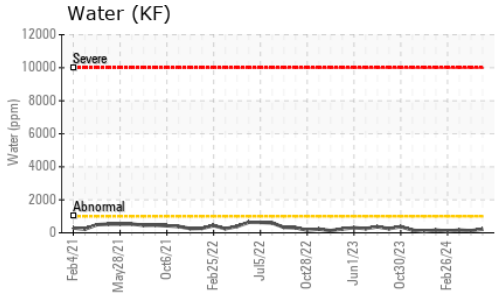
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	<b>2</b>	1	2
Sodium	ppm	ASTM D5185m >216	<b>0</b>	2	<1
Potassium	ppm	ASTM D5185m >20	<b>2</b>	<1	2
Water	%	ASTM D6304 >0.1	<b>0.022</b>	0.012	0.016
ppm Water	ppm	ASTM D6304 >1000	<b>226</b>	127	166

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>0.98</b>	1.04	1.11



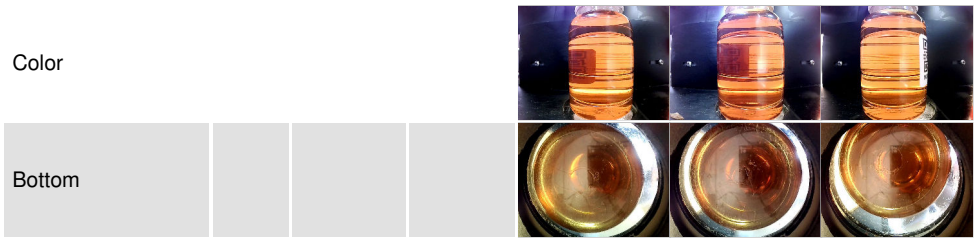
# OIL ANALYSIS REPORT



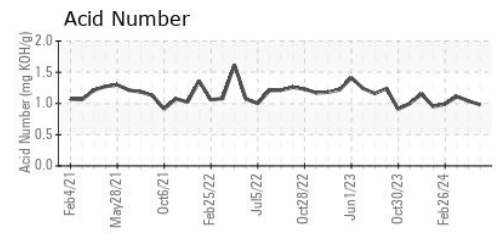
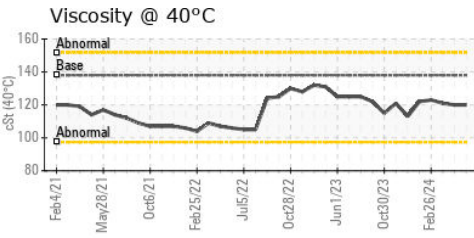
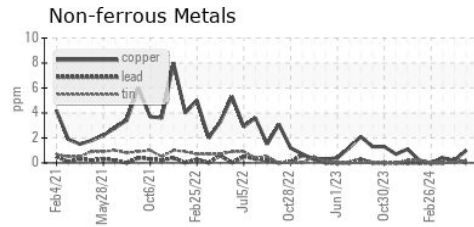
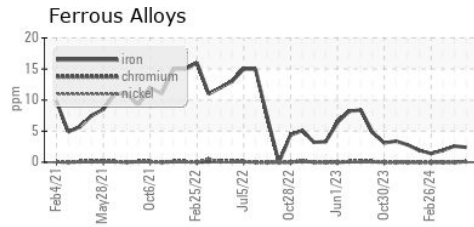
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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	120	120	121

SAMPLE IMAGES	method	limit/base	current	history1	history2
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## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0874538 **Received** : 06 Jun 2024  
**Lab Number** : 06201559 **Tested** : 10 Jun 2024  
**Unique Number** : 11063682 **Diagnosed** : 10 Jun 2024 - Angela Borella  
**Test Package** : IND 2 ( Additional Tests: KF, PQ )

**MARATHON PETROLEUM CO.**  
 101 12TH ST  
 CATLETTSBURG, KY  
 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)