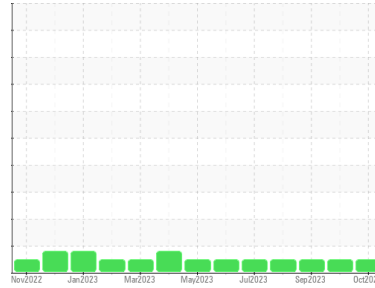




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
West Virginia
 Machine Id
[West Virginia] Oil - Starboard Reduction Gear
 Component
Starboard Reduction Gear
 Fluid
MARATHON 40W (35 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Thurman Richardson)

Wear

All component wear rates are normal.

Contamination

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		WC0805456	WC0804883	WC0805326
Sample Date	Client Info		27 Oct 2023	01 Oct 2023	02 Sep 2023
Machine Age	hrs	Client Info	39066	38557	37989
Oil Age	hrs	Client Info	75	1228	660
Oil Changed	Client Info		N/A	Not Changd	N/A
Sample Status			NORMAL	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >150	8	6	5
Chromium	ppm	ASTM D5185m >10	0	<1	0
Nickel	ppm	ASTM D5185m >10	0	0	0
Titanium	ppm	ASTM D5185m	0	<1	0
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >25	2	0	0
Lead	ppm	ASTM D5185m >100	<1	<1	0
Copper	ppm	ASTM D5185m >50	6	46	40
Tin	ppm	ASTM D5185m >10	<1	<1	0
Vanadium	ppm	ASTM D5185m	0	<1	0
Cadmium	ppm	ASTM D5185m	0	<1	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	10	16	17
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	37	91	91
Manganese	ppm	ASTM D5185m	<1	<1	0
Magnesium	ppm	ASTM D5185m	188	229	237
Calcium	ppm	ASTM D5185m	2732	2173	2421
Phosphorus	ppm	ASTM D5185m	711	873	904
Zinc	ppm	ASTM D5185m	777	991	1041
Sulfur	ppm	ASTM D5185m	6088	4417	5505

CONTAMINANTS

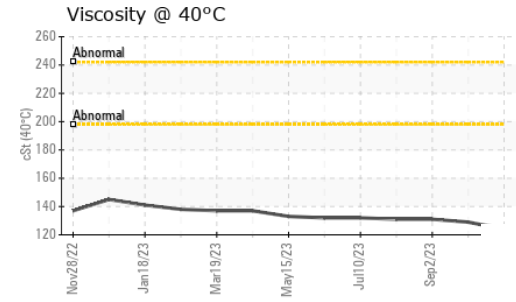
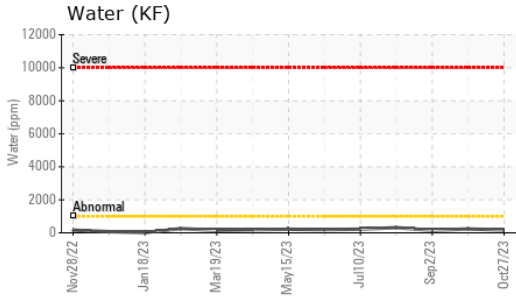
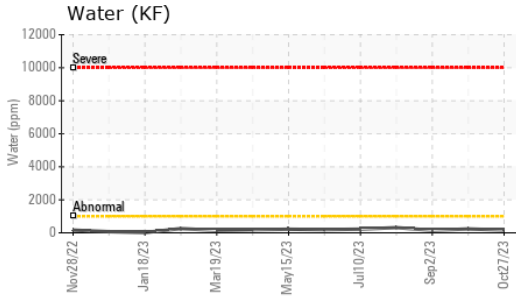
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	4	3	3
Sodium	ppm	ASTM D5185m	3	3	2
Potassium	ppm	ASTM D5185m >20	<1	<1	1
Water	%	ASTM D6304 >0.1	0.017	0.023	0.015
ppm Water	ppm	ASTM D6304 >1000	170.1	235.2	151.5

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.00	0.998	1.26



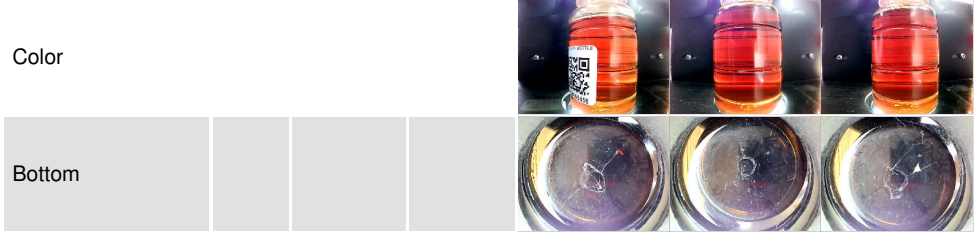
OIL ANALYSIS REPORT



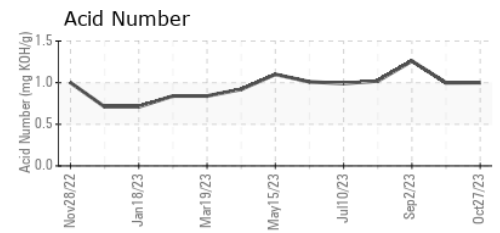
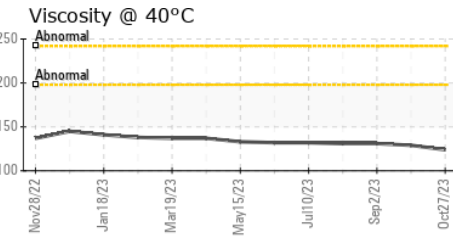
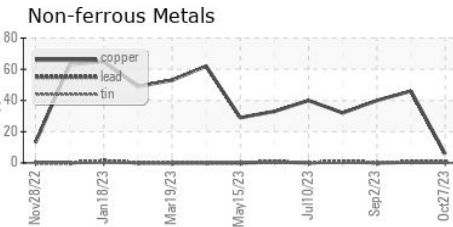
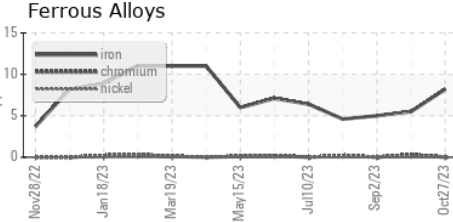
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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	124	129	131

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0805456 **Received** : 01 Nov 2023
Lab Number : 05995685 **Diagnosed** : 03 Nov 2023
Unique Number : 10724045 **Diagnostician** : Jonathan Hester
Test Package : IND 2 (Additional Tests: KF)

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 CATLETTSBURG, KY
 US 41169
 Contact: CORY GUMBERT
 cagumbert@marathonpetroleum.com
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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)