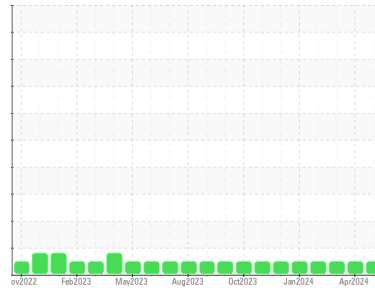




OIL ANALYSIS REPORT

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.

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		WC0874542	WC0731870	WC0874781
Sample Date	Client Info		13 May 2024	16 Apr 2024	17 Mar 2024
Machine Age	hrs	Client Info	43193	42634	42100
Oil Age	hrs	Client Info	1457	898	364
Oil Changed	Client Info		Not Chngd	N/A	Not Chngd
Sample Status			NORMAL	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >150	3	3	4
Chromium	ppm	ASTM D5185m >10	<1	0	<1
Nickel	ppm	ASTM D5185m >10	0	0	<1
Titanium	ppm	ASTM D5185m	0	0	<1
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >25	<1	<1	1
Lead	ppm	ASTM D5185m >100	0	<1	<1
Copper	ppm	ASTM D5185m >50	27	23	21
Tin	ppm	ASTM D5185m >10	0	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	17	13	14
Barium	ppm	ASTM D5185m	0	0	<1
Molybdenum	ppm	ASTM D5185m	90	84	90
Manganese	ppm	ASTM D5185m	<1	0	<1
Magnesium	ppm	ASTM D5185m	253	237	238
Calcium	ppm	ASTM D5185m	2304	2124	2199
Phosphorus	ppm	ASTM D5185m	948	877	933
Zinc	ppm	ASTM D5185m	1003	959	988
Sulfur	ppm	ASTM D5185m	5246	5090	5119

CONTAMINANTS

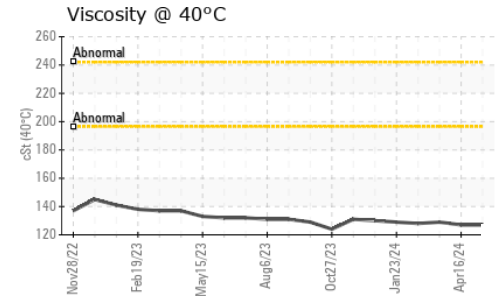
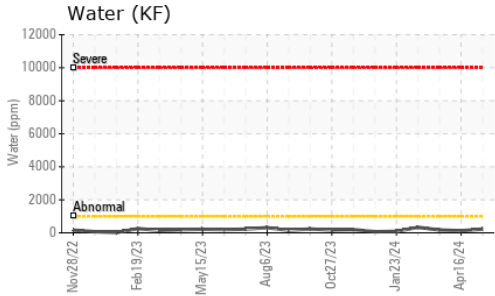
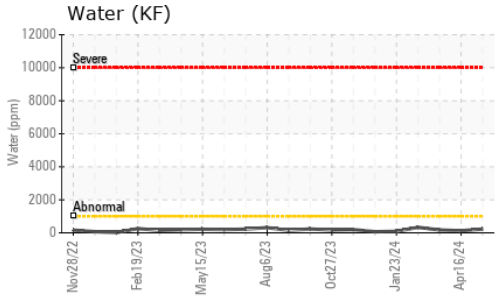
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	0	3	5
Sodium	ppm	ASTM D5185m	3	3	0
Potassium	ppm	ASTM D5185m >20	0	0	2
Water	%	ASTM D6304 >0.1	0.022	0.012	0.017
ppm Water	ppm	ASTM D6304 >1000	230	126	173

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.28	1.06	1.29



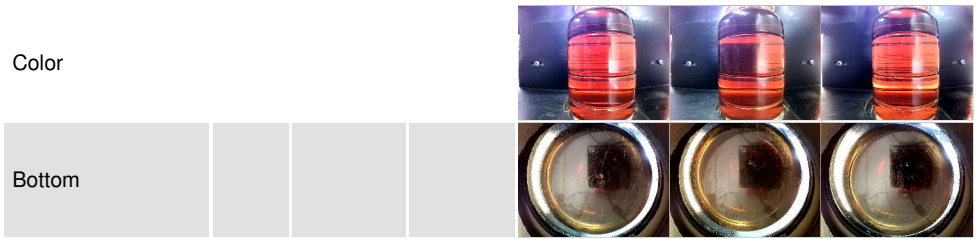
OIL ANALYSIS REPORT



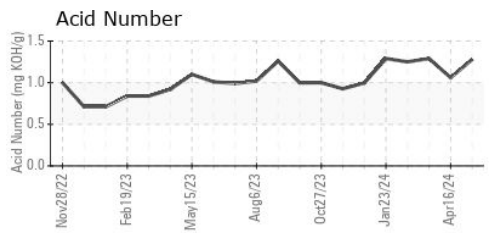
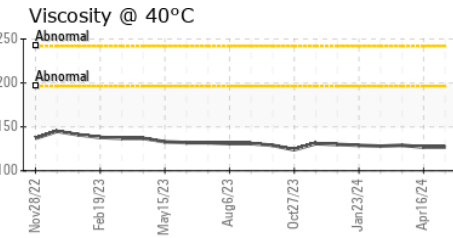
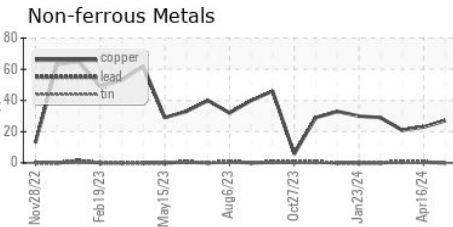
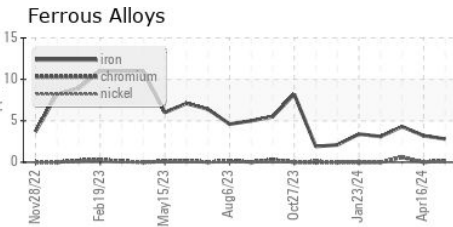
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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	127	127	129

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0874542 **Received** : 16 May 2024
Lab Number : 06181431 **Tested** : 17 May 2024
Unique Number : 11032757 **Diagnosed** : 17 May 2024 - Wes Davis
Test Package : IND 2 (Additional Tests: KF)

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)