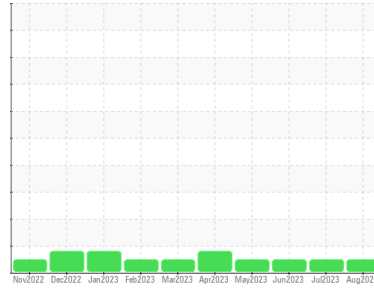




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
West Virginia
 Machine Id
[West Virginia] Oil - Starboard Reduction Gear
 Component
Starboard Reduction Gear
 Fluid
MARATHON 85W140 (35 GAL)

DIAGNOSIS

- Recommendation**
 Resample at the next service interval to monitor.
- 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		WC0769027	WC0735402	WC0769415
Sample Date	Client Info		06 Aug 2023	10 Jul 2023	12 Jun 2023
Machine Age	hrs	Client Info	37518	36950	36470
Oil Age	hrs	Client Info	176	1300	779
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	5	6	7
Chromium	ppm	ASTM D5185m >10	<1	0	<1
Nickel	ppm	ASTM D5185m >10	0	0	0
Titanium	ppm	ASTM D5185m	<1	0	0
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >25	<1	<1	<1
Lead	ppm	ASTM D5185m >100	1	0	<1
Copper	ppm	ASTM D5185m >50	32	40	33
Tin	ppm	ASTM D5185m >10	<1	0	<1
Vanadium	ppm	ASTM D5185m	<1	<1	0
Cadmium	ppm	ASTM D5185m	<1	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	15	15	19
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	88	88	86
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	229	231	221
Calcium	ppm	ASTM D5185m	2259	2312	2265
Phosphorus	ppm	ASTM D5185m	861	880	867
Zinc	ppm	ASTM D5185m	984	1002	1002
Sulfur	ppm	ASTM D5185m	5029	5238	5482

CONTAMINANTS

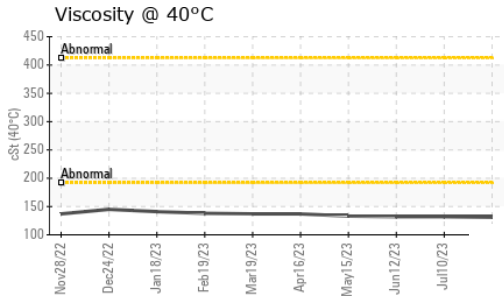
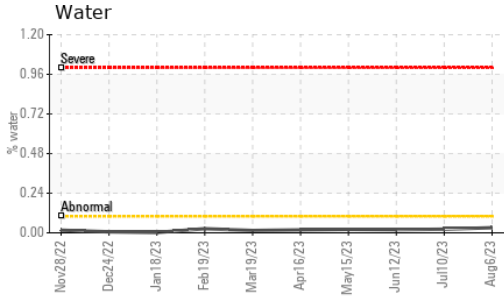
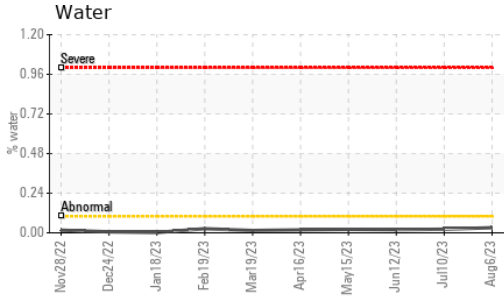
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	3	3	3
Sodium	ppm	ASTM D5185m	4	2	3
Potassium	ppm	ASTM D5185m >20	<1	0	<1
Water	%	ASTM D6304 >0.1	0.031	0.022	0.019
ppm Water	ppm	ASTM D6304 >1000	315.3	222.5	195.7

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.02	0.991	1.01



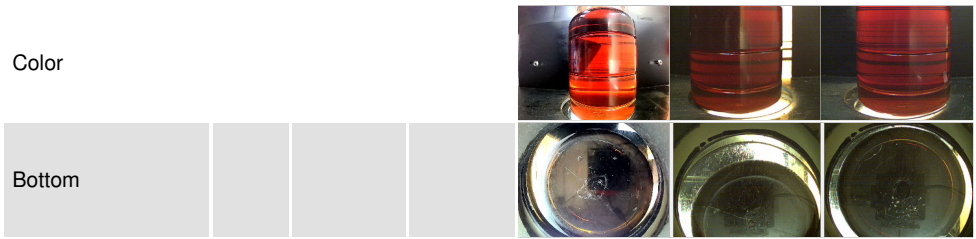
OIL ANALYSIS REPORT



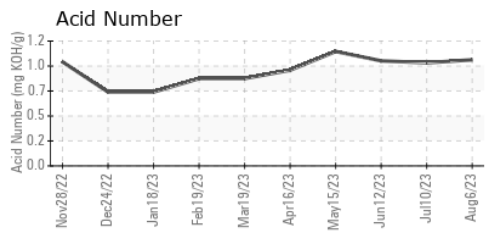
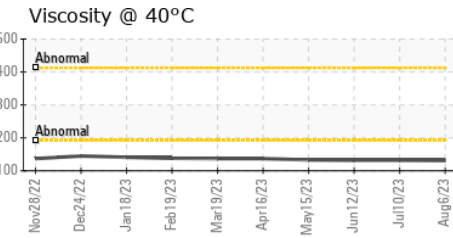
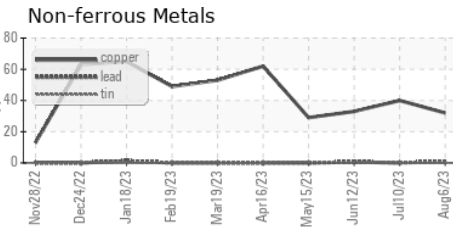
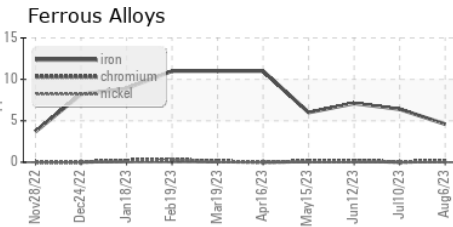
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	LIGHT
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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	131	132	132

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0769027 **Received** : 17 Aug 2023
Lab Number : 05927319 **Diagnosed** : 18 Aug 2023
Unique Number : 10607266 **Diagnostician** : Doug Bogart
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:

Certificate L2367
 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)