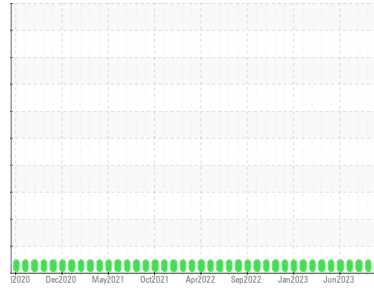




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area
Ohio Valley
 Machine Id
[Ohio Valley] Oil - Starboard Reduction Gear
 Component
Starboard Reduction Gear
 Fluid
GEAR OIL SAE 85W140 (180 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

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		WC0621921	WC0735230	WC0735737
Sample Date	Client Info		26 Oct 2023	03 Sep 2023	05 Aug 2023
Machine Age	hrs	Client Info	23724	23063	22566
Oil Age	hrs	Client Info	23724	23063	22566
Oil Changed	Client Info		Not Changed	Not Changed	Not Changed
Sample Status			NORMAL	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >150	28	53	50
Chromium	ppm	ASTM D5185m >10	0	0	<1
Nickel	ppm	ASTM D5185m >10	<1	0	<1
Titanium	ppm	ASTM D5185m	<1	<1	<1
Silver	ppm	ASTM D5185m	0	0	<1
Aluminum	ppm	ASTM D5185m >25	4	4	11
Lead	ppm	ASTM D5185m >100	0	0	<1
Copper	ppm	ASTM D5185m >50	3	4	4
Tin	ppm	ASTM D5185m >10	0	0	<1
Vanadium	ppm	ASTM D5185m	0	0	<1
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 400	253	18	21
Barium	ppm	ASTM D5185m 200	0	0	<1
Molybdenum	ppm	ASTM D5185m 12	2	<1	<1
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m 12	0	1	3
Calcium	ppm	ASTM D5185m 150	64	42	37
Phosphorus	ppm	ASTM D5185m 1650	1003	860	897
Zinc	ppm	ASTM D5185m 125	24	21	28
Sulfur	ppm	ASTM D5185m 22500	18368	17433	16865

CONTAMINANTS

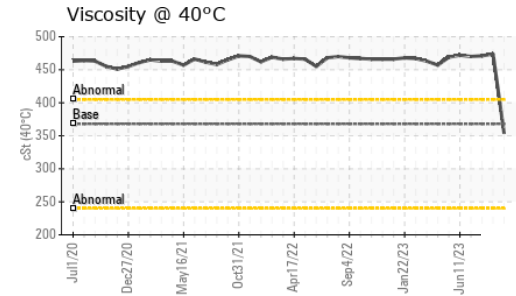
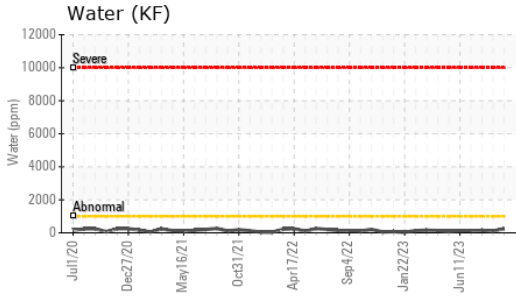
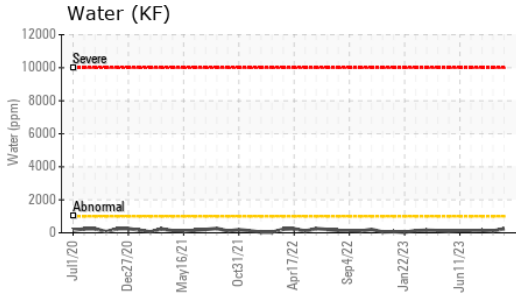
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	4	9	9
Sodium	ppm	ASTM D5185m	2	2	4
Potassium	ppm	ASTM D5185m >20	4	35	33
Water	%	ASTM D6304 >0.1	0.025	0.011	0.014
ppm Water	ppm	ASTM D6304 >1000	250.0	112.9	145.0

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045 2.00	1.61	1.85	1.90



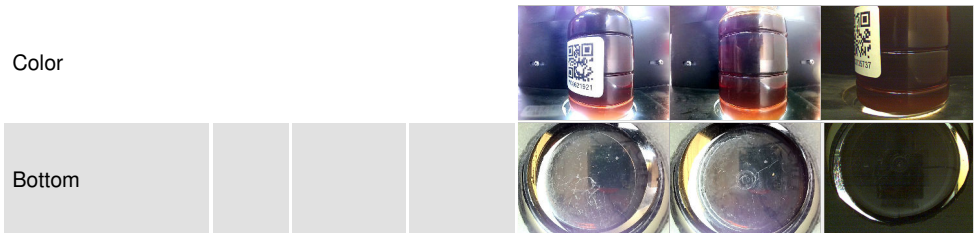
OIL ANALYSIS REPORT



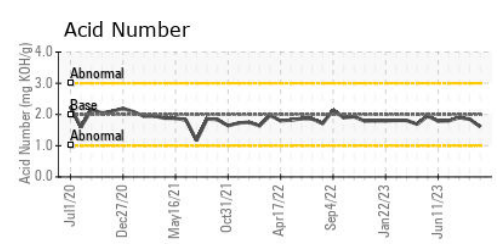
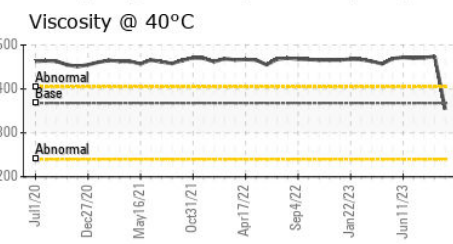
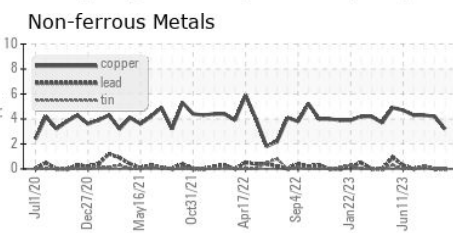
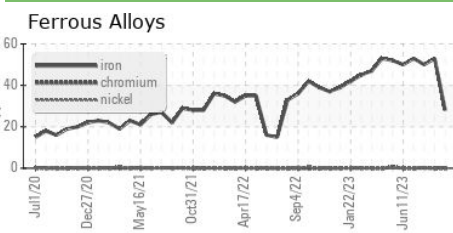
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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	368	354	474	471

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0621921 **Received** : 01 Nov 2023
Lab Number : 05995688 **Diagnosed** : 02 Nov 2023
Unique Number : 10724048 **Diagnostician** : 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
 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)