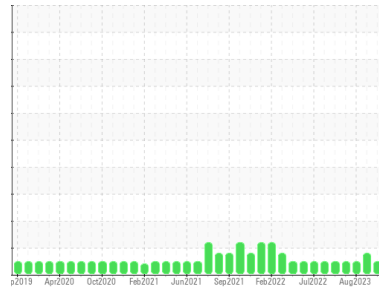




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
Catlettsburg
 Machine Id
[Catlettsburg] Oil - Port Genset
 Component
Port Genset
 Fluid
MARATHON 15W40 (6 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal for time on oil.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2	
Sample Number	Client Info	WC0898416	WC0769478	WC0769479	
Sample Date	Client Info	09 Jul 2024	28 Mar 2024	08 Aug 2023	
Machine Age	hrs	Client Info	10257	9412	0
Oil Age	hrs	Client Info	0	9412	0
Oil Changed	Client Info	N/A	Changed	Changed	
Sample Status		NORMAL	ABNORMAL	NORMAL	

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >4.0	<1.0	<1.0	<1.0
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >50	3	▲ 49	5
Chromium	ppm ASTM D5185m >4	0	<1	<1
Nickel	ppm ASTM D5185m >2	0	0	0
Titanium	ppm ASTM D5185m	0	0	0
Silver	ppm ASTM D5185m >5	0	0	0
Aluminum	ppm ASTM D5185m >12	1	2	2
Lead	ppm ASTM D5185m >17	0	0	0
Copper	ppm ASTM D5185m >70	0	<1	<1
Tin	ppm ASTM D5185m >15	0	<1	<1
Vanadium	ppm ASTM D5185m	0	0	0
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m	35	28	6
Barium	ppm ASTM D5185m	0	0	0
Molybdenum	ppm ASTM D5185m	46	41	21
Manganese	ppm ASTM D5185m	0	<1	<1
Magnesium	ppm ASTM D5185m	66	250	65
Calcium	ppm ASTM D5185m	3402	2977	3858
Phosphorus	ppm ASTM D5185m	44	193	56
Zinc	ppm ASTM D5185m	43	222	42
Sulfur	ppm ASTM D5185m	3272	2857	4000

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	4	7	6
Sodium	ppm ASTM D5185m	<1	8	3
Potassium	ppm ASTM D5185m >20	<1	0	<1
Water	% ASTM D6304 >0.1	NEG	NEG	NEG

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844	0.1	0.2	0.1
Nitration	Abs/cm *ASTM D7624 >20	5.3	13.0	8.4
Sulfation	Abs/.1mm *ASTM D7415 >30	12.7	18.1	12.9

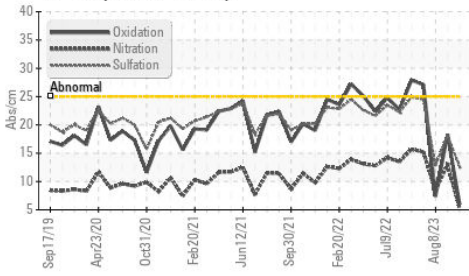
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	6.0	18.3	7.4
Base Number (BN)	mg KOH/g ASTM D2896	8.75	8.06	12.43

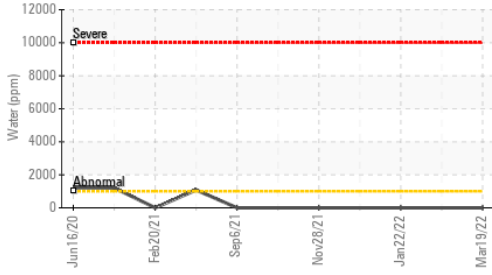


OIL ANALYSIS REPORT

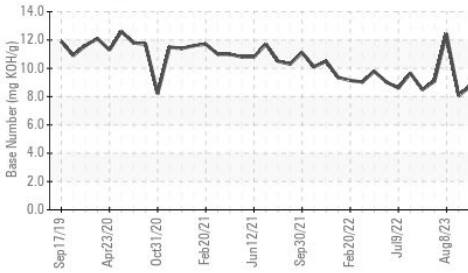
FT-IR (Direct Trend)



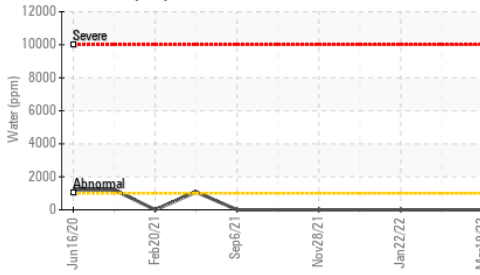
Water (KF)



Base Number



Water (KF)

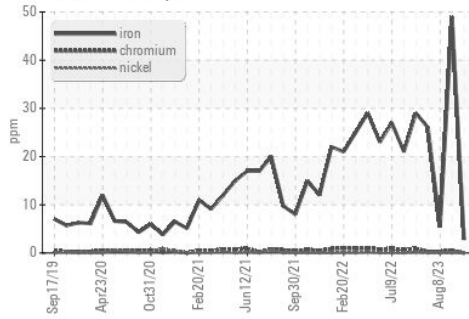


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

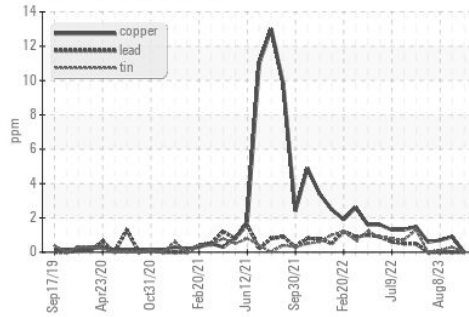
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.6	13.2	14.4

GRAPHS

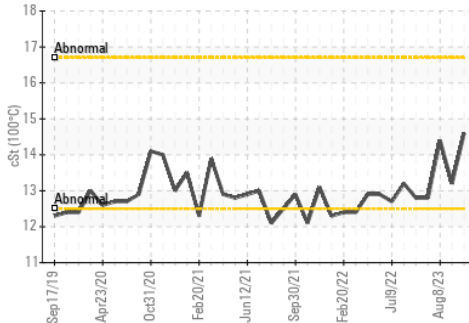
Ferrous Alloys



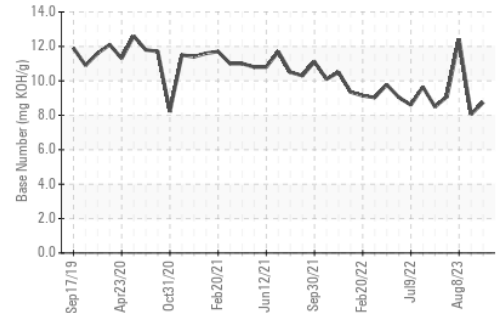
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : WC0898416

Lab Number : 06236292

Unique Number : 11125126

Test Package : IND 2 (Additional Tests: KF)

Received : 15 Jul 2024

Tested : 16 Jul 2024

Diagnosed : 16 Jul 2024 - Sean Felton

MARATHON PETROLEUM CO.

101 12TH ST

CATLETTSBURG, KY

US 41169

Contact: Barry Bridges

babridges@marathonpetroleum.com

T: (731)607-4313

F:

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)