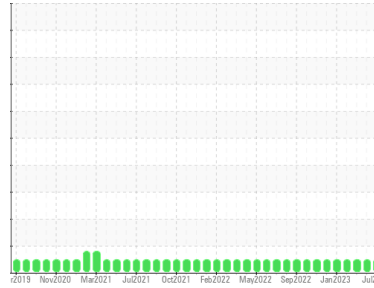




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
Speedway
 Machine Id
[Speedway] Oil - Port Main Engine
 Component
Port Main Engine
 Fluid
SAE 40W (35 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Jd Ridout)

Wear

All component wear rates are normal.

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		WC0735493	WC0735424	WC0735420
Sample Date	Client Info		10 Jul 2023	10 Jun 2023	10 May 2023
Machine Age	hrs	Client Info	16333	15962	15413
Oil Age	hrs	Client Info	15146	14805	14259
Oil Changed	Client Info		Not Chngd	Oil Added	Not Chngd
Sample Status			NORMAL	NORMAL	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	>75	6	6	7
Chromium	ppm	ASTM D5185m	>8	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>3	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	3	3	<1
Lead	ppm	ASTM D5185m	>18	2	1	<1
Copper	ppm	ASTM D5185m	>80	8	6	7
Tin	ppm	ASTM D5185m	>14	2	2	2
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		6	6	8
Barium	ppm	ASTM D5185m		2	0	0
Molybdenum	ppm	ASTM D5185m		15	18	20
Manganese	ppm	ASTM D5185m		<1	<1	0
Magnesium	ppm	ASTM D5185m		18	33	22
Calcium	ppm	ASTM D5185m		3163	3271	3085
Phosphorus	ppm	ASTM D5185m		19	27	23
Zinc	ppm	ASTM D5185m		12	15	0
Sulfur	ppm	ASTM D5185m		4732	5387	4484

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>20	3	4	3
Sodium	ppm	ASTM D5185m	>75	0	<1	1
Potassium	ppm	ASTM D5185m	>20	<1	1	0

INFRA-RED

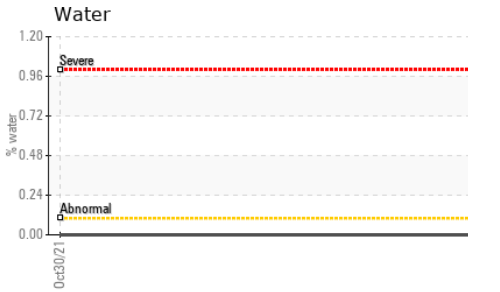
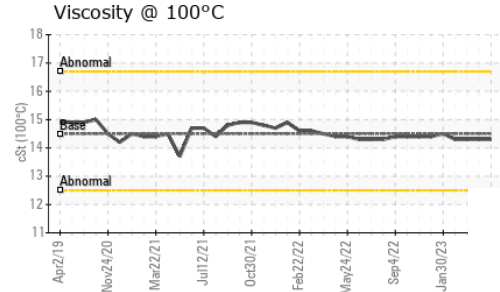
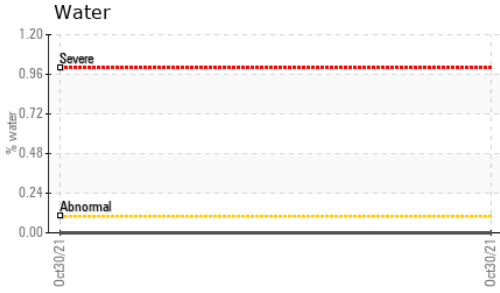
	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844	>3	0.4	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	8.2	7.9	8.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.7	19.0	18.4

FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	11.4	12.6	11.0
Base Number (BN)	mg KOH/g	ASTM D2896		10.06	9.57	10.47



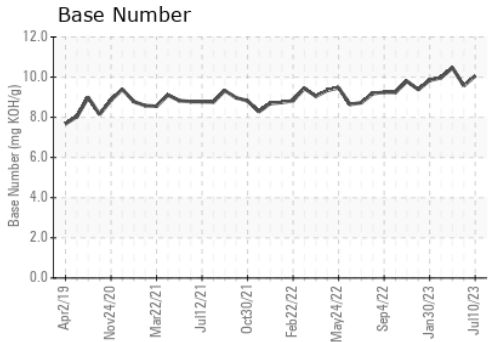
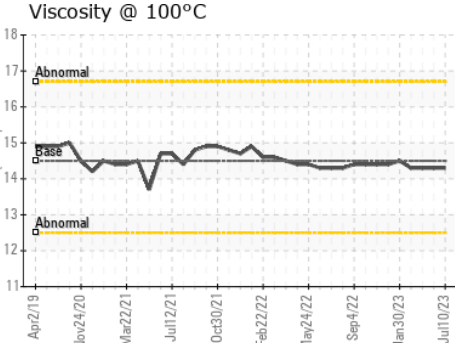
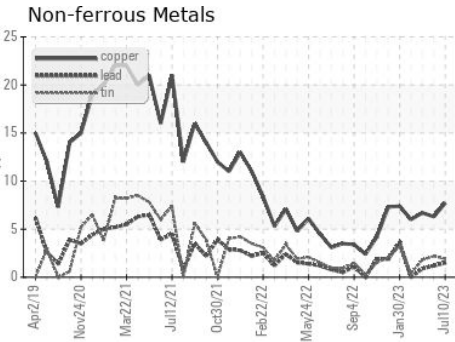
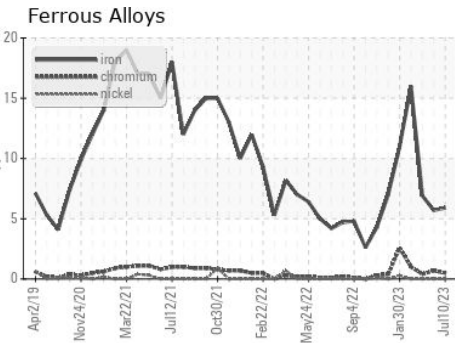
OIL ANALYSIS REPORT



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 @ 100°C	cSt	ASTM D445	14.5	14.3	14.3

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0735493 **Received** : 21 Jul 2023
Lab Number : 05904533 **Diagnosed** : 01 Aug 2023
Unique Number : 10565889 **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:

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)