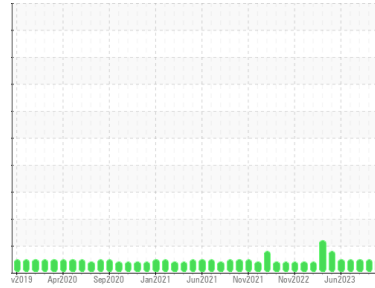




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
Kentucky
 Machine Id
[Kentucky] Oil - Port Genset
 Component
Port Genset
 Fluid
DIESEL ENGINE OIL SAE 15W40 (35 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Changed #2 injector Tyson Bias)

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			WC0805479	WC0769071	WC0805557
Sample Date	Client Info			28 Nov 2023	30 Oct 2023	03 Oct 2023
Machine Age	hrs	Client Info		18126	17839	17378
Oil Age	hrs	Client Info		287	483	26
Oil Changed	Client Info			N/A	Changed	Not Changed
Sample Status				NORMAL	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Glycol	WC Method			NEG	NEG	NEG

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

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	14	23	43
Barium	ppm	ASTM D5185m	10	<1	2	0
Molybdenum	ppm	ASTM D5185m	100	54	50	53
Manganese	ppm	ASTM D5185m		0	0	0
Magnesium	ppm	ASTM D5185m	450	1280	775	694
Calcium	ppm	ASTM D5185m	3000	1244	1333	1432
Phosphorus	ppm	ASTM D5185m	1150	1085	983	1116
Zinc	ppm	ASTM D5185m	1350	1276	1205	1231
Sulfur	ppm	ASTM D5185m	4250	3009	3004	3954

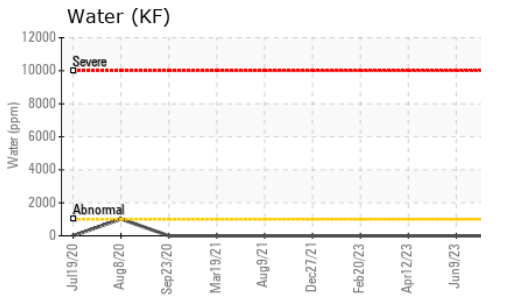
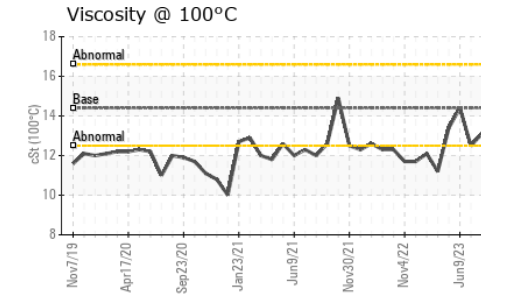
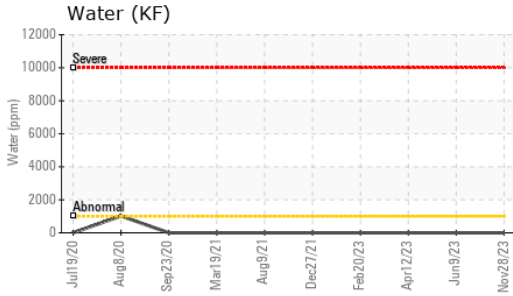
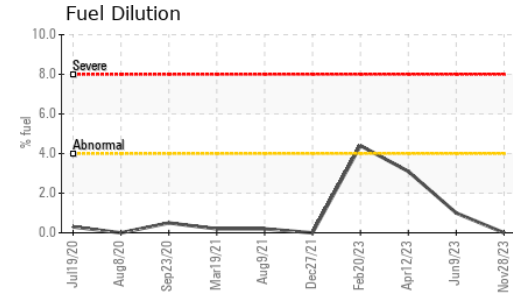
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	3	3	4
Sodium	ppm	ASTM D5185m	>158	2	2	<1
Potassium	ppm	ASTM D5185m	>20	0	2	1
Fuel	%	ASTM D3524	>4.0	0.0	<1.0	<1.0
Water	%	ASTM D6304	>0.1	NEG	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		0.1	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	6.8	8.0	6.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.4	20.9	19.0

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.3	17.2	15.3
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	12.23	11.25	10.39



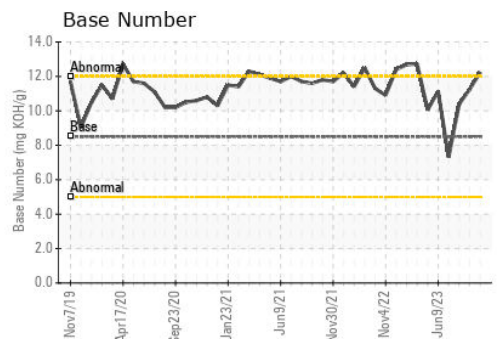
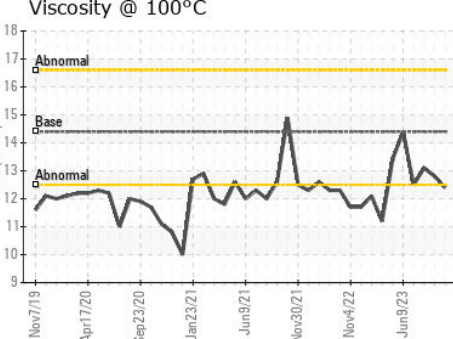
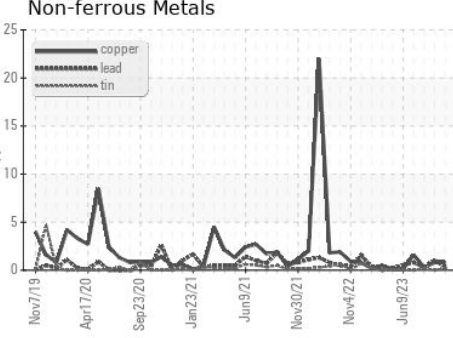
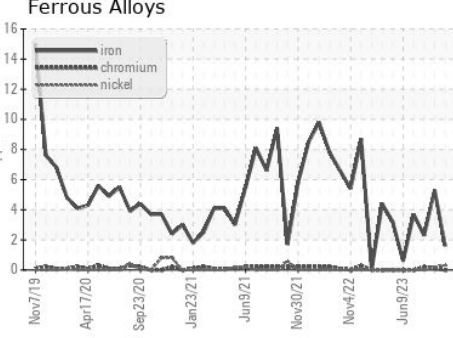
OIL ANALYSIS REPORT



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	14.4	12.4	12.8

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0805479 **Received** : 06 Dec 2023
Lab Number : 06026659 **Diagnosed** : 14 Dec 2023
Unique Number : 10776450 **Diagnostician** : Jonathan Hester
Test Package : IND 2 (Additional Tests: FuelDilution, KF, PercentFuel)

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)