

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Area Canton [Canton] Oil - Port Genset Port Genset

Fluid MARATHON 15W40 (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

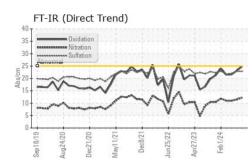
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

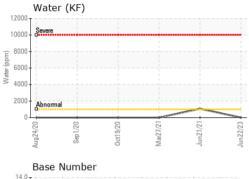
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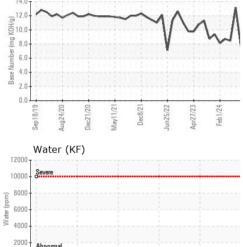
SAMPLE INFORM	/IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0874579	WC0874843	WC0805423
Sample Date		Client Info		18 Jun 2024	22 Apr 2024	28 Mar 2024
Machine Age	hrs	Client Info		0	0	17830
Oil Age	hrs	Client Info		0	0	3672
Oil Changed		Client Info		N/A	N/A	Oil Added
Sample Status				NORMAL	ABNORMAL	NORMAL
CONTAMINATIO	N	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	14	10	8
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>5	0	<1	0
Aluminum	ppm	ASTM D5185m	>12	4	3	4
Lead	ppm	ASTM D5185m	>17	0	<1	0
Copper	ppm	ASTM D5185m	>70	<1	1	0
Tin	ppm	ASTM D5185m	>15	0	1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 85	history1 135	history2 141
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	85	135	141
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	85 0	135 <1	141 0 117 <1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	85 0 110	135 <1 118 <1 683	141 0 117 <1 696
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	85 0 110 <1 761 1626	135 <1 118 <1	141 0 117 <1 696 1488
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	85 0 110 <1 761 1626 823	135 <1 118 <1 683 1414 739	141 0 117 <1 696 1488 759
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	85 0 110 <1 761 1626 823 997	135 <1 118 <1 683 1414 739 894	141 0 117 <1 696 1488 759 921
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	85 0 110 <1 761 1626 823	135 <1 118 <1 683 1414 739	141 0 117 <1 696 1488 759
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	85 0 110 <1 761 1626 823 997	135 <1 118 <1 683 1414 739 894	141 0 117 <1 696 1488 759 921
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		85 0 110 <1 761 1626 823 997 3319	135 <1 118 <1 683 1414 739 894 2772	141 0 117 <1 696 1488 759 921 3117
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	85 0 110 <1 761 1626 823 997 3319 current	135 <1 118 <1 683 1414 739 894 2772 history1	141 0 117 <1 696 1488 759 921 3117 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	85 0 110 <1 761 1626 823 997 3319 current 5 15 3	135 <1 118 <1 683 1414 739 894 2772 history1 5 8 8 3	141 0 117 <1 696 1488 759 921 3117 history2 5 8 8 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	limit/base >25	85 0 110 <1 761 1626 823 997 3319 current 5 15	135 <1 118 <1 683 1414 739 894 2772 history1 5 8	141 0 117 <1 696 1488 759 921 3117 history2 5 8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20	85 0 110 <1 761 1626 823 997 3319 current 5 15 3	135 <1 118 <1 683 1414 739 894 2772 history1 5 8 8 3	141 0 117 <1 696 1488 759 921 3117 history2 5 8 8 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 >0.1	85 0 110 <1 761 1626 823 997 3319 current 5 15 3 NEG	135 <1 118 <1 683 1414 739 894 2772 history1 5 8 8 3 NEG	141 0 117 <1 696 1488 759 921 3117 history2 5 8 2 2 NEG
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 >0.1	85 0 110 <1 761 1626 823 997 3319 current 5 15 3 NEG current	135 <1 118 <1 683 1414 739 894 2772 history1 5 8 3 3 NEG history1	141 0 117 <1 696 1488 759 921 3117 history2 5 8 2 2 NEG history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 >0.1 limit/base	85 0 110 <1 761 1626 823 997 3319 current 5 15 3 NEG current 0.2	135 <1 118 <1 683 1414 739 894 2772 history1 5 8 8 3 NEG history1 0.2	141 0 117 <1 696 1488 759 921 3117 history2 5 8 2 8 2 NEG history2 0.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 >0.1 limit/base	85 0 110 <1 761 1626 823 997 3319 current 5 15 3 NEG 0.2 12.2	135 <1 118 <1 683 1414 739 894 2772 history1 5 8 8 3 NEG NEG history1 0.2 11.5	141 0 117 <1 696 1488 759 921 3117 history2 5 8 2 NEG history2 0.2 11.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 >20 >0.1 limit/base >20 >30	85 0 110 <1 761 1626 823 997 3319 current 5 15 3 NEG 0.2 12.2 22.9	135 <1 118 <1 683 1414 739 894 2772 history1 5 8 3 NEG history1 0.2 11.5 22.9	141 0 117 <1 696 1488 759 921 3117 history2 5 8 2 NEG history2 0.2 11.0 22.0



OIL ANALYSIS REPORT







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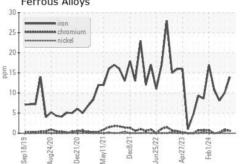
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	🔺 MODER	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		12.7	12.5	12.6
GRAPHS						

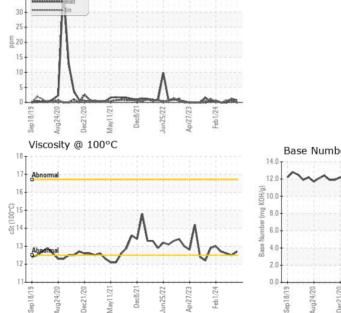
Ferrous Alloys

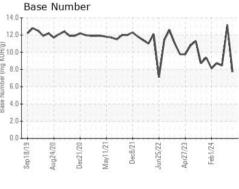
Non-ferrous Metals

40

35







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 MARATHON PETROLEUM CO. Sample No. : WC0874579 Received : 25 Jun 2024 101 12TH ST 옾 Lab Number : 06219923 Tested : 26 Jun 2024 CATLETTSBURG, KY Unique Number : 11098120 Diagnosed : 26 Jun 2024 - Sean Felton US 41169 Test Package : IND 2 (Additional Tests: KF) Contact: M/V CANTON Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. mvcanton@marathonpetroleum.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F:

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: MARCAT [WUSCAR] 06219923 (Generated: 06/30/2024 15:40:42) Rev: 1

Aar27/2

Submitted By: M/V CANTON

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