

OIL ANALYSIS REPORT

Sample Rating Trend

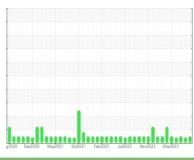


Martinsville Martinsville] Oil - Port Genset

Port Genset

Fluid

MOBIL 15W40 (7 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.

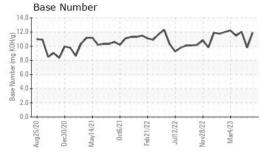
Fluid Condition

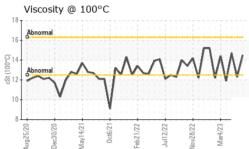
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0769179	WC0719195	WC0683416
Sample Date		Client Info		10 Jul 2023	13 Jun 2023	15 May 2023
Machine Age	hrs	Client Info		3795	3488	3235
Oil Age	hrs	Client Info		55	258	0
Oil Changed		Client Info		N/A	Not Changd	Changed
Sample Status				NORMAL	ATTENTION	NORMAL
CONTAMINATION	N	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0	0.5	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>25	2	5	2
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>10	<1	<1	<1
Lead	ppm	ASTM D5185m	>10	<1	0	0
Copper	ppm	ASTM D5185m	>20	<1	2	1
Tin	ppm	ASTM D5185m	>5	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	<1	0
Gaarmani	- - · · ·	7.07.11.20.00.11		· ·		-
ADDITIVES	lo lo	method	limit/base	current	history1	history2
	ppm		limit/base			
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 85	history1	history2
ADDITIVES Boron Barium	ppm	method ASTM D5185m ASTM D5185m	limit/base	current 85 2	history1 73 0	history2 70 0
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 85 2 68	history1 73 0 72	history2 70 0 58
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	85 2 68 <1	history1 73 0 72 <1	history2 70 0 58 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 85 2 68 <1 1264	history1 73 0 72 <1 1440	history2 70 0 58 <1 1265
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 85 2 68 <1 1264 1217	history1 73 0 72 <1 1440 1407	history2 70 0 58 <1 1265 1110
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 85 2 68 <1 1264 1217 929	history1 73 0 72 <1 1440 1407 1039	history2 70 0 58 <1 1265 1110 858
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 85 2 68 <1 1264 1217 929 1105	history1 73 0 72 <1 1440 1407 1039 1251	history2 70 0 58 <1 1265 1110 858 1076
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 85 2 68 <1 1264 1217 929 1105 3280	history1 73 0 72 <1 1440 1407 1039 1251 4109	history2 70 0 58 <1 1265 1110 858 1076 3550
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 85 2 68 <1 1264 1217 929 1105 3280 current	history1 73 0 72 <1 1440 1407 1039 1251 4109 history1	history2 70 0 58 <1 1265 1110 858 1076 3550 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base	current 85 2 68 <1 1264 1217 929 1105 3280 current 6	history1 73 0 72 <1 1440 1407 1039 1251 4109 history1 3	history2 70 0 58 <1 1265 1110 858 1076 3550 history2 5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base >25 >118	current 85 2 68 <1 1264 1217 929 1105 3280 current 6 0	history1 73 0 72 <1 1440 1407 1039 1251 4109 history1 3	history2 70 0 58 <1 1265 1110 858 1076 3550 history2 5 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base >25 >118 >20	current 85 2 68 <1 1264 1217 929 1105 3280 current 6 0 1	history1 73 0 72 <1 1440 1407 1039 1251 4109 history1 3 2 1	history2 70 0 58 <1 1265 1110 858 1076 3550 history2 5 <1 3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base >25 >118 >20 limit/base	current 85 2 68 <1 1264 1217 929 1105 3280 current 6 0 1 current	history1 73 0 72 <1 1440 1407 1039 1251 4109 history1 3 2 1 history1	history2 70 0 58 <1 1265 1110 858 1076 3550 history2 5 <1 3 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >25 >118 >20 limit/base	current 85 2 68 <1 1264 1217 929 1105 3280 current 6 0 1 current 0.1	history1 73 0 72 <1 1440 1407 1039 1251 4109 history1 3 2 1 history1 0.2	history2 70 0 58 <1 1265 1110 858 1076 3550 history2 5 <1 3 history2 0.1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >25 >118 >20 limit/base >20	current 85 2 68 <1 1264 1217 929 1105 3280 current 6 0 1 current 0.1 5.5	history1 73 0 72 <1 1440 1407 1039 1251 4109 history1 3 2 1 history1 0.2 7.0	history2 70 0 58 <1 1265 1110 858 1076 3550 history2 5 <1 3 history2 0.1 5.4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m method *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76185m	limit/base >25 >118 >20 limit/base >20 >30	current 85 2 68 <1 1264 1217 929 1105 3280 current 6 0 1 current 0.1 5.5 18.2	history1 73 0 72 <1 1440 1407 1039 1251 4109 history1 3 2 1 history1 0.2 7.0 20.3	history2 70 0 58 <1 1265 1110 858 1076 3550 history2 5 <1 3 history2 0.1 5.4 18.9



OIL ANALYSIS REPORT



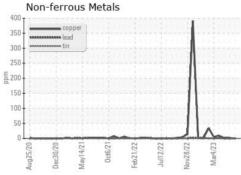


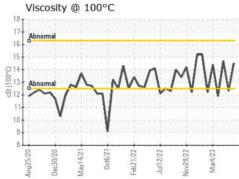
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

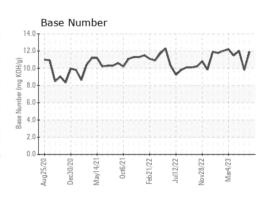
FLUID PROPERTIES		method			history2
Visc @ 100°C	cSt	ASTM D445	14.5	▲ 12.3	14.7

GRAPHS

Ferrous Alloys E 15











Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : IND 2

: WC0769179 : 05904528 : 10565884

To discuss this sample report, contact Customer Service at 1-800-237-1369.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 21 Jul 2023 Diagnosed : 26 Jul 2023 Diagnostician : Don Baldridge

MARATHON PETROLEUM CO. 101 12TH ST CATLETTSBURG, KY US 41169

Contact: CORY GUMBERT

cagumbert@marathonpetroleum.com T: (606)585-3950

* - 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)

Report Id: MARCAT [WUSCAR] 05904528 (Generated: 07/26/2023 13:13:02) Rev: 1

Submitted By: M/V MARTINSVILLE

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