

OIL ANALYSIS REPORT

Area West Virginia [West Virginia] Oil - Port Reduction Gear Component

Port Reduction Gear

MARATHON 85W140 (35 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

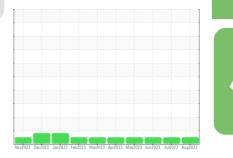
All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



Sample Rating Trend

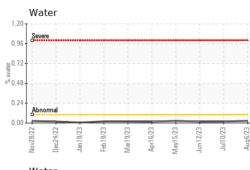


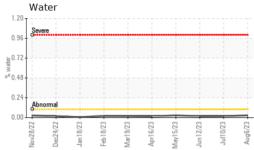
NORMAL

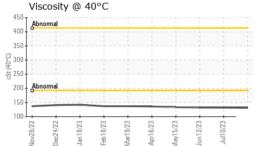
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0769029	WC0735521	WC0769155
Sample Date		Client Info		06 Aug 2023	10 Jul 2023	12 Jun 2023
Machine Age	hrs	Client Info		37602	37034	36513
Oil Age	hrs	Client Info		176	1300	779
Oil Changed		Client Info		Not Changd	N/A	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>150	3	4	4
Chromium	ppm	ASTM D5185m	>10	<1	0	<1
Nickel	ppm	ASTM D5185m	>10	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	<1	<1	<1
Lead	ppm	ASTM D5185m	>100	<1	0	<1
Copper	ppm	ASTM D5185m	>50	23	26	21
Tin	ppm	ASTM D5185m	>10	0	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 16	history1 15	history2 18
	ppm ppm		limit/base			1
Boron		ASTM D5185m	limit/base	16	15	18
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	16 0 90 <1	15 0	18 0 86 <1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	16 0 90	15 0 91	18 0 86
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	16 0 90 <1 228 2300	15 0 91 <1	18 0 86 <1 221 2297
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	16 0 90 <1 228	15 0 91 <1 237	18 0 86 <1 221
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	16 0 90 <1 228 2300 876 992	15 0 91 <1 237 2394 893 1026	18 0 86 <1 221 2297 855 1010
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	16 0 90 <1 228 2300 876	15 0 91 <1 237 2394 893	18 0 86 <1 221 2297 855
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	16 0 90 <1 228 2300 876 992	15 0 91 <1 237 2394 893 1026	18 0 86 <1 221 2297 855 1010
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		16 0 90 <1 228 2300 876 992 5108	15 0 91 <1 237 2394 893 1026 5268	18 0 86 <1 221 2297 855 1010 5404
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 ASTM D5185m	limit/base	16 0 90 <1 228 2300 876 992 5108 current	15 0 91 <1 237 2394 893 1026 5268 history1	18 0 86 <1 221 2297 855 1010 5404 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	limit/base	16 0 90 <1 228 2300 876 992 5108 <u>current</u> 3 4 <1	15 0 91 <1 237 2394 893 1026 5268 history1 3	18 0 86 <1 221 2297 855 1010 5404 history2 3
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 ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	16 0 90 <1 228 2300 876 992 5108 current 3 4	15 0 91 <1 237 2394 893 1026 5268 history1 3 2	18 0 86 <1 221 2297 855 1010 5404 history2 3 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >50 >20	16 0 90 <1 228 2300 876 992 5108 <u>current</u> 3 4 <1	15 0 91 <1 237 2394 893 1026 5268 history1 3 2 0	18 0 86 <1 221 2297 855 1010 5404 history2 3 2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >50 >20 >0.1	16 0 90 <1 228 2300 876 992 5108 current 3 4 <1 0.027	15 0 91 <1 237 2394 893 1026 5268 history1 3 2 0 0 0.018	18 0 86 <1 221 2297 855 1010 5404 history2 3 2 0 0 0.016



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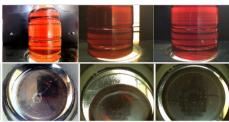






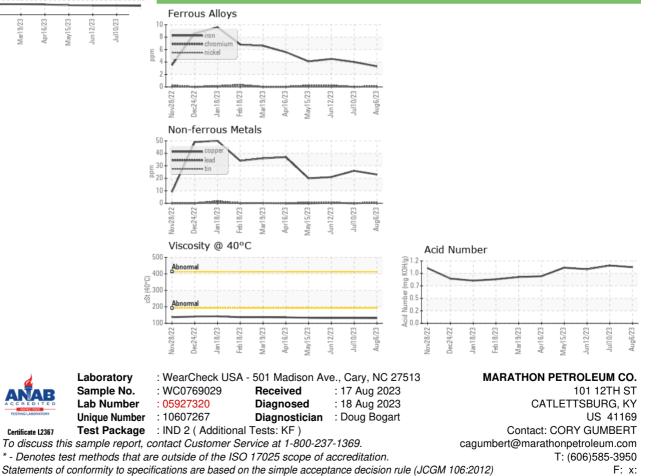
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPER	TIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445		131	132	132
SAMPLE IMAGES		method	limit/base	current	history1	history2

Color



Bottom





Submitted By: M/V CATLETTSBURG

Page 2 of 2