

## **OIL ANALYSIS REPORT**

# Area [CONHER] Flota Barda - Barda1

Component **Diesel Engine** MOBIL 15W40 (160 LTR)

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

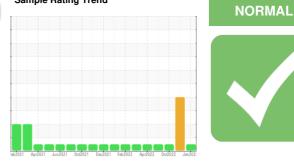
All component wear rates are normal.

#### 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.

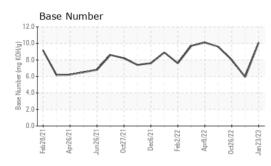


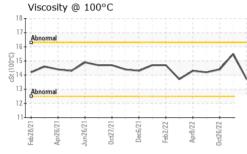
Sample Rating Trend

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		KL0010221	KL0011307	KL0010192
Sample Date		Client Info		23 Jan 2023	06 Dec 2022	26 Oct 2022
Machine Age	hrs	Client Info		7887	7577	6856
Oil Age	hrs	Client Info		1155	845	124
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	ABNORMAL	NORMAL
CONTAMINATION	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	16	68	32
Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m		0	3	<1
Lead	ppm	ASTM D5185m		<1	10	<1
Copper	ppm	ASTM D5185m	>330	1	7	4
Tin	ppm	ASTM D5185m	>15	<1	2	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 2	history1 23	history2 28
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	2	23	28
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0	23 0 33 <1	28 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 60 <1 961	23 0 33 <1 878	28 0 20 <1 746
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 60 <1 961 1134	23 0 33 <1 878 1345	28 0 20 <1 746 1275
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	2 0 60 <1 961 1134 1077	23 0 33 <1 878 1345 934	28 0 20 <1 746 1275 771
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 60 <1 961 1134 1077 1285	23 0 33 <1 878 1345 934 1056	28 0 20 <1 746 1275 771 917
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	2 0 60 <1 961 1134 1077	23 0 33 <1 878 1345 934	28 0 20 <1 746 1275 771
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	2 0 60 <1 961 1134 1077 1285	23 0 33 <1 878 1345 934 1056	28 0 20 <1 746 1275 771 917
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	2 0 60 <1 961 1134 1077 1285 3245	23 0 33 <1 878 1345 934 1056 3552	28 0 20 <1 746 1275 771 917 2820
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	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	2 0 60 <1 961 1134 1077 1285 3245 current	23 0 33 <1 878 1345 934 1056 3552 history1	28 0 20 <1 746 1275 771 917 2820 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 <b>method</b>	limit/base >25 >118	2 0 60 <1 961 1134 1077 1285 3245 3245 <u>current</u> 5	23 0 33 <1 878 1345 934 1056 3552 history1 13	28 0 20 <1 746 1275 771 917 2820 history2 14
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 >25 >118	2 0 60 <1 961 1134 1077 1285 3245 Current 5 1	23 0 33 <1 878 1345 934 1056 3552 history1 13 6	28 0 20 <1 746 1275 771 917 2820 history2 14 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >118 >20	2 0 60 <1 961 1134 1077 1285 3245 <u>current</u> 5 1 1 1 2 0.3	23 0 33 <1 878 1345 934 1056 3552 history1 13 6 <1	28 0 20 <1 746 1275 771 917 2820 history2 14 5 2
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	ASTM D5185m ASTM D5185m	limit/base >25 >118 >20 limit/base >3	2 0 60 <1 961 1134 1077 1285 3245 <i>current</i> 5 1 1 1 <i>current</i> 0.3 8.8	23 0 33 <1 878 1345 934 1056 3552 history1 13 6 <1 13	28 0 20 <1 746 1275 771 917 2820 history2 14 5 2 2 history2 0.6 12.6
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	ASTM D5185m ASTM D5185m	limit/base >25 >118 >20 limit/base >3 >20	2 0 60 <1 961 1134 1077 1285 3245 <u>current</u> 5 1 1 1 2 0.3	23 0 33 <1 878 1345 934 1056 3552 history1 13 6 <1 13 6 <1 0.9	28 0 20 <1 746 1275 771 917 2820 history2 14 5 2 2 history2 0.6
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	ASTM D5185m ASTM D5185m	limit/base >25 >118 >20 limit/base >3 >20	2 0 60 <1 961 1134 1077 1285 3245 <i>current</i> 5 1 1 1 <i>current</i> 0.3 8.8	23 0 33 <1 878 1345 934 1056 3552 history1 13 6 <1 13 6 <1 13 0.9 14.6	28 0 20 <1 746 1275 771 917 2820 history2 14 5 2 2 history2 0.6 12.6
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	ASTM D5185m ASTM D5185m	limit/base >25 >118 >20 limit/base >3 >20 >30 >30	2 0 60 <1 961 1134 1077 1285 3245 <b>current</b> 5 1 1 1 <b>current</b> 0.3 8.8 21.7	23 0 33 <1 878 1345 934 1056 3552 history1 13 6 <1 13 6 <1 13 0.9 14.6 30	28 0 20 <1 746 1275 771 917 2820 history2 14 5 2 2 history2 0.6 12.6 26.1



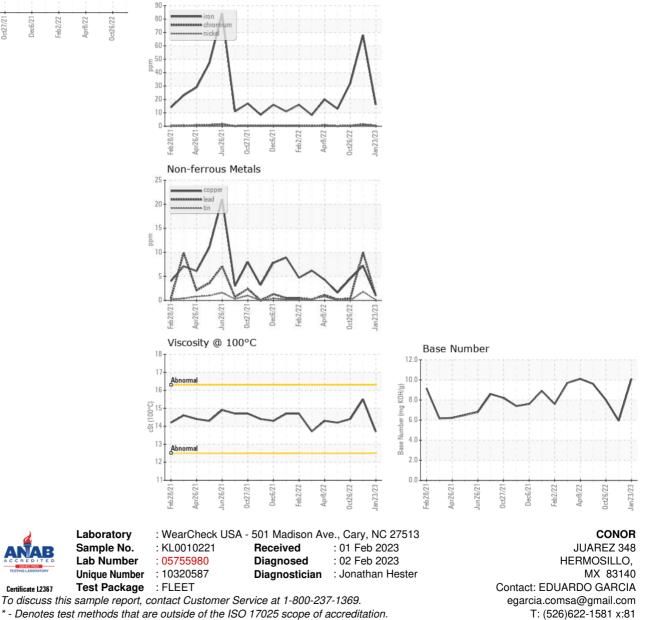
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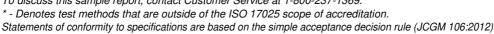




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPER	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		13.7	15.5	14.4
GRAPHS						

Ferrous Alloys





Certificate L2367

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