

OIL ANALYSIS REPORT

Sample Rating Trend



INTERNATIONAL 42

Diesel Engine

Fluid CONOCO PHILLIPS GUARDOL ECT 15W40 (--- Oz)

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.

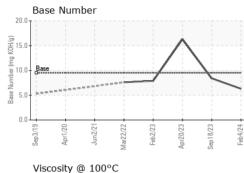
Fluid Condition

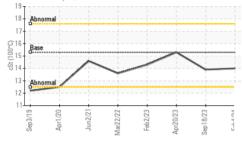
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0083470	PCA0028067	PCA0083480
Sample Date		Client Info		04 Feb 2024	18 Sep 2023	20 Apr 2023
Machine Age	mls	Client Info		915234	907580	3373
Oil Age	mls	Client Info		10000	907580	3373
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>2.0	<1.0	<1.0	<1.0
Water			>0.2	NEG	NEG	NEG
Glycol		WC Method	20.2	NEG	NEG	NEG
-	0			-		-
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	24	32	32
Chromium	ppm	ASTM D5185m		2	2	3
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		76	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	1	2
Lead	ppm		>40	1	<1	2
Copper	ppm	ASTM D5185m	>330	13	32	72
Tin	ppm	ASTM D5185m	>15	<1	1	<1
Vanadium	ppm	ASTM D5185m		1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 85	current 102	history1 3	history2 35
	ppm ppm					
Boron		ASTM D5185m		102	3	35
Boron Barium	ppm	ASTM D5185m ASTM D5185m		102 0	3 0	35 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		102 0 12	3 0 60	35 0 56
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85	102 0 12 <1	3 0 60 0	35 0 56 1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350	102 0 12 <1 457	3 0 60 0 951	35 0 56 1 865
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800	102 0 12 <1 457 1551	3 0 60 0 951 1018	35 0 56 1 865 938
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	85 350 1800 1000	102 0 12 <1 457 1551 939	3 0 60 0 951 1018 975	35 0 56 1 865 938 917
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	85 350 1800 1000 1100	102 0 12 <1 457 1551 939 1125	3 0 60 0 951 1018 975 1197	35 0 56 1 865 938 917 1165
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	85 350 1800 1000 1100 3500	102 0 12 <1 457 1551 939 1125 3986	3 0 60 951 1018 975 1197 2882	35 0 56 1 865 938 917 1165 3088
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500	102 0 12 <1 457 1551 939 1125 3986 current	3 0 60 951 1018 975 1197 2882 history1	35 0 56 1 865 938 917 1165 3088 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	85 350 1800 1000 1100 3500 limit/base >25	102 0 12 <1 457 1551 939 1125 3986 current 8	3 0 60 951 1018 975 1197 2882 history1 13	35 0 56 1 865 938 917 1165 3088 history2 8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 limit/base >25	102 0 12 <1 457 1551 939 1125 3986 current 8 0	3 0 60 951 1018 975 1197 2882 history1 13 8	35 0 56 1 865 938 917 1165 3088 history2 8 ▲ 94
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 limit/base >25 >20	102 0 12 <1 457 1551 939 1125 3986 <u>current</u> 8 0 9	3 0 60 0 951 1018 975 1197 2882 history1 13 8 32	35 0 56 1 865 938 917 1165 3088 history2 8 ▲ 94 ♦ 986
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 limit/base >25 >20	102 0 12 <1 457 1551 939 1125 3986 current 8 0 9 9	3 0 60 951 1018 975 1197 2882 history1 13 8 32 history1	35 0 56 1 865 938 917 1165 3088 history2 8 ▲ 94 ● 94 ● 986
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 limit/base >25 >20 limit/base >3	102 0 12 <1 457 1551 939 1125 3986 current 8 0 9 9 current 0.5	3 0 60 951 1018 975 1197 2882 history1 13 8 32 history1 0.6	35 0 56 1 865 938 917 1165 3088 history2 8 ▲ 94 • 94 • 94 • 986 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 imit/base >25 >20 imit/base >3 >20	102 0 12 <1 457 1551 939 1125 3986 <u>current</u> 8 0 9 9 <u>current</u> 0.5 7.5	3 0 60 951 1018 975 1197 2882 history1 13 8 32 history1 0.6 7.6	35 0 56 1 865 938 917 1165 3088 history2 8 ▲ 94 • 94 • 986 history2 0.4 9.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624	85 350 1800 1000 1100 3500 25 >25 >20 >20 >3 >20 >30 >30 Simit/base	102 0 12 <1 457 1551 939 1125 3986 current 8 0 9 current 0.5 7.5 18.3 current	3 0 60 0 951 1018 975 1197 2882 history1 13 8 32 history1 0.6 7.6 20.7 history1	35 0 56 1 865 938 917 1165 3088 history2 8 ▲ 94 • 94 • 986 history2 0.4 9.7 18.1 • 18.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 Iinit/base >25 20 Iinit/base >3 >20 >30	102 0 12 <1 457 1551 939 1125 3986 current 8 0 9 9 current 0.5 7.5 18.3	3 0 60 951 1018 975 1197 2882 history1 13 8 32 history1 0.6 7.6 20.7	35 0 56 1 865 938 917 1165 3088 bistory2 8 ▲ 94 ● 94 ● 986 bistory2 0.4 9.7 18.1



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* - 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) F: (316)321-1396

Certificate L2367

Laboratory

Sample No.

Lab Number

Contact/Location: LOREN JACK - OILELD

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