

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

FSP141614

Component Diesel Engine Fluid DIESEL ENGINE OIL SAE 15W40 (--- QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

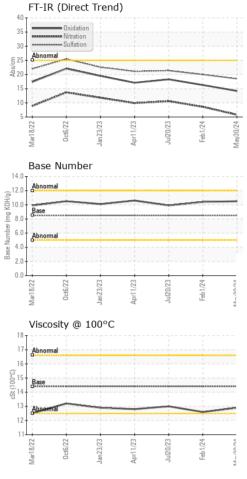
Fluid Condition

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

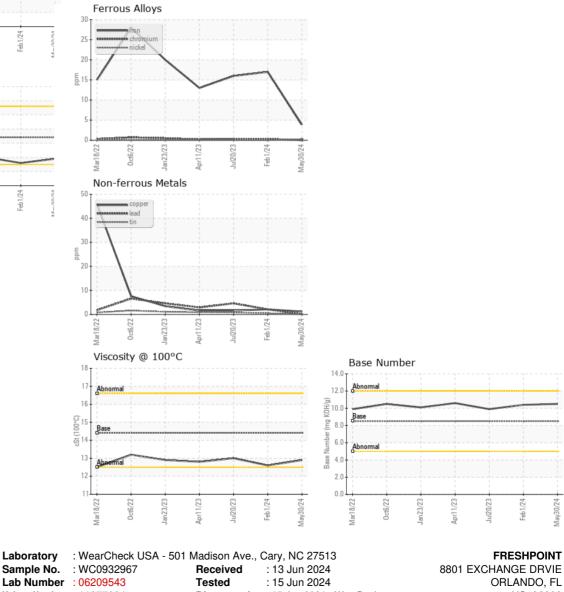
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0932967	WC0891688	WC0811102
Sample Date		Client Info		30 May 2024	01 Feb 2024	20 Jul 2023
Machine Age	mls	Client Info		0	92932	82047
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	٨	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	4	17	16
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	<1	3	4
Lead	ppm	ASTM D5185m	>40	<1	2	5
Copper	ppm	ASTM D5185m	>330	1	2	2
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		2	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 250	current 0	history1 0	history2 0
	ppm ppm					
Boron		ASTM D5185m	250	0	0	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	0 0	0 0	0 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	0 0 59	0 0 64	0 0 66
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	0 0 59 1	0 0 64 <1	0 0 66 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	0 0 59 1 987	0 0 64 <1 1065	0 0 66 <1 1036
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	0 0 59 1 987 1099	0 0 64 <1 1065 1170	0 0 66 <1 1036 1114
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	250 10 100 450 3000 1150	0 0 59 1 987 1099 983	0 0 64 <1 1065 1170 1130	0 0 66 <1 1036 1114 1071
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	250 10 100 450 3000 1150 1350	0 0 59 1 987 1099 983 1227	0 0 64 <1 1065 1170 1130 1319	0 0 66 <1 1036 1114 1071 1258
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	250 10 100 450 3000 1150 1350 4250	0 0 59 1 987 1099 983 1227 3649	0 0 64 <1 1065 1170 1130 1319 4006	0 0 66 <1 1036 1114 1071 1258 3616
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	250 10 100 450 3000 1150 1350 4250	0 0 59 1 987 1099 983 1227 3649 current	0 0 64 <1 1065 1170 1130 1319 4006 history1	0 0 66 <1 1036 1114 1071 1258 3616 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	250 10 100 450 3000 1150 1350 4250 imit/base >25	0 0 59 1 987 1099 983 1227 3649 current 2	0 0 64 <1 1065 1170 1130 1319 4006 history1 4	0 0 66 <1 1036 1114 1071 1258 3616 history2 4
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	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158	0 0 59 1 987 1099 983 1227 3649 <u>current</u> 2 3	0 0 64 <1 1065 1170 1130 1319 4006 history1 4 2	0 0 66 <1 1036 1114 1071 1258 3616 history2 4 4
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	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	0 0 59 1 987 1099 983 1227 3649 <u>current</u> 2 3 4	0 0 64 <1 1065 1170 1130 1319 4006 history1 4 2 5	0 0 66 <1 1036 1114 1071 1258 3616 history2 4 4 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 Imit/base >25 >158 >20 Imit/base	0 0 59 1 987 1099 983 1227 3649 current 2 3 4 4	0 0 64 <1 1065 1170 1130 1319 4006 history1 4 2 5 5 history1	0 0 66 <1 1036 1114 1071 1258 3616 history2 4 4 4 4 4 4 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3	0 0 59 1 987 1099 983 1227 3649 <i>current</i> 2 3 4 <i>current</i> 0.2	0 0 64 <1 1065 1170 1130 1319 4006 history1 4 2 5 5 <u>history1</u> 0.6	0 0 66 <1 1036 1114 1071 1258 3616 history2 4 4 4 4 4 history2 1
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	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >3	0 0 59 1 987 1099 983 1227 3649 <i>current</i> 2 3 3 4 <i>current</i> 0.2 5.8	0 0 64 <1 1065 1170 1130 1319 4006 history1 4 2 5 history1 0.6 8.6	0 0 66 <1 1036 1114 1071 1258 3616 history2 4 4 4 4 4 history2 1 10.6
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	250 10 100 450 3000 1150 1350 4250 Imit/base >25 >158 >20 Imit/base >3 >20	0 0 59 1 987 1099 983 1227 3649 <u>current</u> 2 3 4 2 3 4 <u>current</u> 0.2 5.8 18.5	0 0 64 <1 1065 1170 1130 1319 4006 history1 4 2 5 <u>history1</u> 0.6 8.6 20.0	0 0 66 <1 1036 1114 1071 1258 3616 history2 4 4 4 4 history2 1 10.6 21.4
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 D7844 *ASTM D7624 *ASTM D7415	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20 >30	0 0 59 1 987 1099 983 1227 3649 current 2 3 4 2 3 4 0.2 5.8 18.5 current	0 0 64 <1 1065 1170 1130 1319 4006 history1 4 2 5 history1 0.6 8.6 20.0 history1	0 0 66 <1 1036 1114 1071 1258 3616 history2 4 4 4 4 4 history2 1 10.6 21.4 history2



OIL ANALYSIS REPORT



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
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FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	12.9	12.6	13.0
GRAPHS						





Unique Number : 11077004 Diagnosed : 15 Jun 2024 - Wes Davis Test Package : FLEET Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. * - 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)

US 32809 Contact: CRAIG EVANS evans_craig@sbcglobal.net Т: F:

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Laboratory

Contact/Location: CRAIG EVANS - FREORL