

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

2108 Component Diesel Engine Fluid DIESEL ENGINE OIL SAE 15W40 (--- 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.

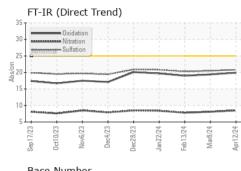
Fluid Condition

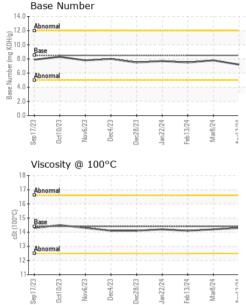
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0897928	WC0878866	WC0878767
Sample Date		Client Info		12 Apr 2024	08 Mar 2024	13 Feb 2024
Machine Age	mls	Client Info		174033	0	0
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	N	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	5	3
Chromium	ppm	ASTM D5185m	>20	0	<1	0
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	4	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>20	<1	3	2
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m		<1	1	<1
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES	ppm	method	limit/base	0 current	0 history1	0 history2
	ppm		limit/base 250	current 0	history1 3	history2 0
ADDITIVES		method	250 10	current 0 0	history1 3 2	history2 0 0
ADDITIVES Boron Barium Molybdenum	ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	250	current 0 0 57	history1 3 2 58	history2 0 0 55
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	Current 0 0 57 0	history1 3 2 58 0	history2 0 0 55 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	Current 0 0 57 0 917	history1 3 2 58 0 919	history2 0 0 55 0 1033
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	Current 0 0 57 0 917 1021	history1 3 2 58 0 919 1160	history2 0 0 55 0 1033 1074
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150	Current 0 57 0 917 1021 943	history1 3 2 58 0 919 1160 1088	history2 0 0 55 0 1033 1074 1051
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350	Current 0 57 0 917 1021 943 1148	history1 3 2 58 0 919 1160 1088 1238	history2 0 55 0 1033 1074 1051 1300
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250	Current 0 57 0 917 1021 943 1148 3310	history1 3 2 58 0 919 1160 1088 1238 3502	history2 0 0 555 0 1033 1074 1051 1300 3107
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250	Current 0 57 0 917 1021 943 1148 3310 Current	history1 3 2 58 0 919 1160 1088 1238 3502 history1	history2 0 0 55 0 1033 1074 1051 1300 3107 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 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	Current 0 0 57 0 917 1021 943 1148 3310 Current 6	history1 3 2 58 0 919 1160 1088 1238 3502 history1 4	history2 0 0 55 0 1033 1074 1051 1300 3107 history2 4
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	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158	Current 0 0 57 0 917 1021 943 1148 3310 Current 6 3	history1 3 2 58 0 919 1160 1088 1238 3502 history1 4 3	history2 0 0 55 0 1033 1074 1051 1300 3107 history2 4 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	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	Current 0 0 57 0 917 1021 943 1148 3310 Current 6 3 0	history1 3 2 58 0 919 1160 1088 1238 3502 history1 4 3 6	history2 0 0 55 0 1033 1074 1051 1300 3107 history2 4 1 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 Imit/base >25 >158 >20 Imit/base	Current 0 0 57 0 917 1021 943 1148 3310 Current 6 3 0 0	history1 3 2 58 0 919 1160 1088 1238 3502 history1 4 3 6 history1	history2 0 0 55 0 1033 1074 1051 1300 3107 history2 4 1 <1 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 Imit/base >25 >158 >20 Imit/base >3	Current 0 0 57 0 917 1021 943 1148 3310 Current 6 3 0 Current 0.2	history1 3 2 58 0 919 1160 1088 1238 3502 history1 4 3 6 history1 0.2	history2 0 0 55 0 1033 1074 1051 1300 3107 history2 4 1 <1 +istory2 0 0.2
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	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20	Current 0 0 57 0 917 1021 943 1148 3310 current 6 3 0 current 0.2 8.5	history1 3 2 58 0 919 1160 1088 1238 3502 history1 4 3 6 history1 0.2 8.1	history2 0 0 55 0 1033 1074 1051 1300 3107 history2 4 1 <1 history2 0.2 7.8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 Imit/base >25 >158 >20 Imit/base >3	Current 0 0 57 0 917 1021 943 1148 3310 Current 6 3 0 Current 0.2	history1 3 2 58 0 919 1160 1088 1238 3502 history1 4 3 6 history1 0.2	history2 0 0 55 0 1033 1074 1051 1300 3107 history2 4 1 <1 +istory2 0 0.2
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	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20	Current 0 0 57 0 917 1021 943 1148 3310 current 6 3 0 current 0.2 8.5	history1 3 2 58 0 919 1160 1088 1238 3502 history1 4 3 6 history1 0.2 8.1	history2 0 0 55 0 1033 1074 1051 1300 3107 history2 4 1 <1 history2 0.2 7.8
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 ASTM D5185m	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20 >3	Current 0 0 57 0 917 1021 943 1148 3310 Current 6 3 0 Current 0.2 8.5 20.8	history1 3 2 58 0 919 1160 1088 1238 3502 history1 4 3 6 history1 0.2 8.1 20.5	history2 0 0 55 0 1033 1074 1051 1300 3107 history2 4 1 <1 <1 0.2 7.8 20.3



OIL ANALYSIS REPORT





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150

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50

40

30

10

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300

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100

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18

16 -St (100°C)

10

Laboratory

Sample No.

ppm

NONE NONE NONE NONE White Metal *Visual scalar Yellow Metal *Visual NONE NONE NONE NONE scalar NONE NONE Precipitate scalar *Visual NONE NONE Silt scalar *Visual NONE NONE NONE NONE Debris *Visual NONE NONE NONE NONE scalar Sand/Dirt NONE NONE NONE NONE scalar *Visual NORML NORML NORML NORML Appearance scalar *Visual Odor *Visual NORML NORML NORML NORML scalar *Visual **Emulsified Water** scalar >0.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG FLUID PROPERTIES Visc @ 100°C cSt ASTM D445 14.4 14.3 14.2 14.1 GRAPHS Iron (ppm) Lead (ppm) 100 80 60 ppm Abne 40 20 Sep17/23 Dec4/23 ; an22/24 Dec4/23 /ar8/24 12/24 ec28/23 eb 13/24 ec28/23 an22/24 eb13/24 Sep 1 Aluminum (ppm) Chromium (ppm) 50 40 30 10 0 Sep17/23 vpr12/24 Sep17/23 PC/9vul Uec4/73 Jov6/73 Dec4/73 sc78/73 PC/22/04 eb 13/24 eh13/74 C/ C C us Silicon (ppm) Copper (ppm) 80 Sev 60 u 40 Ab 20 Dec4/23 Apr12/24 Sep17/23 eb13/24 Feb 13/24 Aar8/74 Dec4/73 an 22/74 Sep1 Viscosity @ 100°C Base Number 15.0 (B/HOX Bul) (B/HOX Bul) Abnorm Abnorma Abnorma 5. Base 0.0 Apr12/24 -Sep17/23 Dec4/23 Mar8/24 pr12/24 28/23 Feb 13/24 Sep17/23 Jec28/23 an22/24 Mar8/74 ov6/73 Jec4/23 an22/24 Feb 13/24 : WearCheck USA - 501 Madison Ave., Cary, NC 27513 **GO DURHAM - RAPT** : WC0897928 Received : 17 Apr 2024 1903 FAYETTEVILLE ST Lab Number : 06151542 Tested : 19 Apr 2024 DURHAM, NC Diagnosed : 19 Apr 2024 - Wes Davis US 27701

- Unique Number : 10981620 Test Package : MOB 1 (Additional Tests: TBN)
- 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)

Report Id: GODDUR [WUSCAR] 06151542 (Generated: 04/19/2024 18:21:27) Rev: 1

Certificate 12367

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