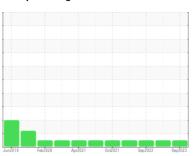


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



FSP137895

Component

Diesel Engine

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

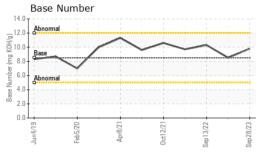
Fluid Condition

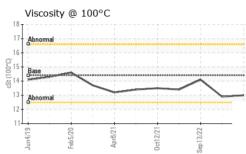
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		Jun2019	Feb 2020 Apr 2021	Oct2021 Sep 2022	Sep 2023	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0787679	WC0787547	WC0717456
Sample Date		Client Info		28 Sep 2023	28 Mar 2023	13 Sep 2022
Machine Age	mls	Client Info		182822	162730	146534
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	V	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	11	13	11
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	3	2	5
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m		4	2	1
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	nnm	ACTM DE10Em		^		<u> </u>
Cadilliulli	ppm	ASTM D5185m		0	0	0
ADDITIVES	ррш	method	limit/base	current	history1	history2
	ppm		limit/base			
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	250	current 3 5 67	history1	history2
ADDITIVES Boron Barium Molybdenum Manganese	ppm	method ASTM D5185m ASTM D5185m	250 10 100	current 3 5	history1 1 0 62 <1	history2 4 0 65 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	current 3 5 67 0 891	history1 1 0 62 <1 938	history2 4 0 65 <1 917
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	current 3 5 67 0 891 1027	history1 1 0 62 <1 938 1074	history2 4 0 65 <1 917 1133
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150	current 3 5 67 0 891 1027 995	history1 1 0 62 <1 938 1074 1016	history2 4 0 65 <1 917 1133 1025
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350	current 3 5 67 0 891 1027 995 1177	history1 1 0 62 <1 938 1074 1016 1221	history2 4 0 65 <1 917 1133 1025 1204
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250	current 3 5 67 0 891 1027 995 1177 3298	history1 1 0 62 <1 938 1074 1016 1221 3195	history2 4 0 65 <1 917 1133 1025 1204 3626
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base	current 3 5 67 0 891 1027 995 1177 3298 current	history1 1 0 62 <1 938 1074 1016 1221 3195 history1	history2 4 0 65 <1 917 1133 1025 1204 3626 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	250 10 100 450 3000 1150 1350 4250 limit/base >25	current 3 5 67 0 891 1027 995 1177 3298 current 5	history1 1 0 62 <1 938 1074 1016 1221 3195 history1 6	history2 4 0 65 <1 917 1133 1025 1204 3626 history2 6
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 3 5 67 0 891 1027 995 1177 3298 current 5	history1 1 0 62 <1 938 1074 1016 1221 3195 history1 6 2	history2 4 0 65 <1 917 1133 1025 1204 3626 history2 6 <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 3 5 67 0 891 1027 995 1177 3298 current 5 1	history1 1 0 62 <1 938 1074 1016 1221 3195 history1 6 2 4	history2 4 0 65 <1 917 1133 1025 1204 3626 history2 6 <1 12
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm 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 limit/base	current 3 5 67 0 891 1027 995 1177 3298 current 5 1 7 current	history1 1 0 62 <1 938 1074 1016 1221 3195 history1 6 2 4 history1	history2 4 0 65 <1 917 1133 1025 1204 3626 history2 6 <1 12 history2
ADDITIVES 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 ppm	method ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3	current 3 5 67 0 891 1027 995 1177 3298 current 5 1 7 current	history1 1 0 62 <1 938 1074 1016 1221 3195 history1 6 2 4 history1 1	history2 4 0 65 <1 917 1133 1025 1204 3626 history2 6 <1 12 history2 0.8
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 method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20	current 3 5 67 0 891 1027 995 1177 3298 current 5 1 7 current 0.9 7.8	history1 1 0 62 <1 938 1074 1016 1221 3195 history1 6 2 4 history1 1 7.6	history2 4 0 65 <1 917 1133 1025 1204 3626 history2 6 <1 12 history2 0.8 7.6
ADDITIVES 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 ppm	method ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3	current 3 5 67 0 891 1027 995 1177 3298 current 5 1 7 current	history1 1 0 62 <1 938 1074 1016 1221 3195 history1 6 2 4 history1 1	history2 4 0 65 <1 917 1133 1025 1204 3626 history2 6 <1 12 history2 0.8
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 method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20	current 3 5 67 0 891 1027 995 1177 3298 current 5 1 7 current 0.9 7.8	history1 1 0 62 <1 938 1074 1016 1221 3195 history1 6 2 4 history1 1 7.6	history2 4 0 65 <1 917 1133 1025 1204 3626 history2 6 <1 12 history2 0.8 7.6
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 METHOD *ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7415	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20 >30	current 3 5 67 0 891 1027 995 1177 3298 current 5 1 7 current 0.9 7.8 20.1	history1 1 0 62 <1 938 1074 1016 1221 3195 history1 6 2 4 history1 1 7.6 18.8	history2 4 0 65 <1 917 1133 1025 1204 3626 history2 6 <1 12 history2 0.8 7.6 20.0



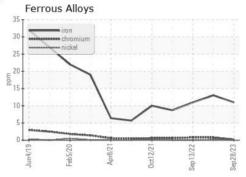
OIL ANALYSIS REPORT

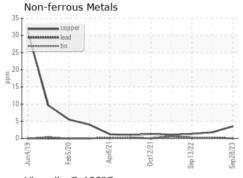


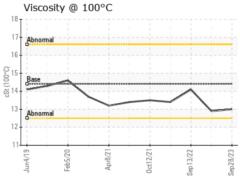


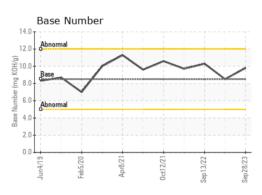
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	14.4	13.0	12.9	14.1













Certificate L2367

Laboratory Sample No. Test Package : FLEET

Lab Number Unique Number : 10729285

: WC0787679 : 06000925

To discuss this sample report, contact Customer Service at 1-800-237-1369.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 07 Nov 2023 Diagnosed Diagnostician : Wes Davis

: 08 Nov 2023

FRESHPOINT 8801 EXCHANGE DRVIE ORLANDO, FL US 32809 Contact: CRAIG EVANS

evans_craig@sbcglobal.net T:

* - 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)

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