

OIL ANALYSIS REPORT

(89785X) Walgreens - Tractor [Walgreens - Tractor] 136A69029

Diesel Engine

SAE 0W30 (11 GAL)

Sample Rating Trend



DIAGNOSIS

Recommendation

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Cylinder, crank, or cam shaft wear is indicated. All other component wear rates are normal.

Contamination

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

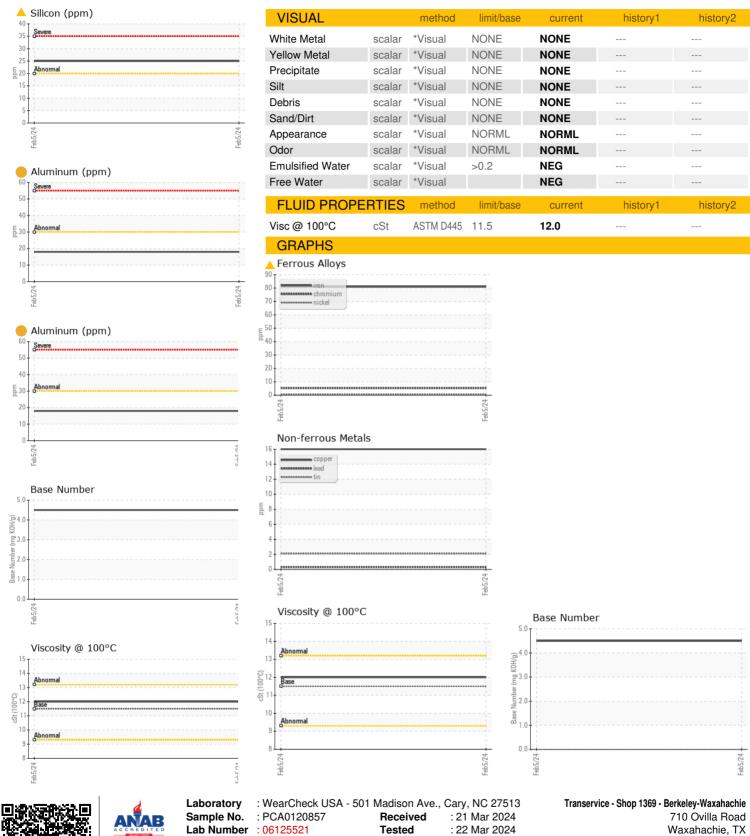
Fluid Condition

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

Machine Age mls Client Info 574437 Oil Age mls Client Info 60000 Oil Changed Client Info Changed					Feb2024		
Sample Date Client Info 05 Feb 2024	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Date Client Info 05 Feb 2024	Sample Number		Client Info		PCA0120857		
Oil Age mls Client Info 60000	Sample Date		Client Info		05 Feb 2024		
Oil Changed Client Info	Machine Age	mls	Client Info		574437		
ABNORMAL	Oil Age	mls	Client Info		60000		
CONTAMINATION	Oil Changed		Client Info		Changed		
Fuel WC Method S5 <1.0	Sample Status				ABNORMAL		
Water Glycol WC Method WC Method >0.2 NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 & 81 Chromium ppm ASTM D5185m >5 5 Nickel ppm ASTM D5185m >2 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 81 Chromium ppm ASTM D5185m >5 5 Nickel ppm ASTM D5185m >2 <1	Fuel		WC Method	>5	<1.0		
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 \$81 Chromium ppm ASTM D5185m >5 5 Nickel ppm ASTM D5185m >2 <1	Water		WC Method	>0.2	NEG		
ASTM D5185m ASTM D5185m	Glycol		WC Method		NEG		
Chromium	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>80	<u></u> 81		
Nickel	Chromium		ASTM D5185m	>5	5		
Silver	Nickel		ASTM D5185m	>2	<1		
Silver	Titanium		ASTM D5185m		<1		
Lead ppm ASTM D5185m >30 <1 Copper ppm ASTM D5185m >150 16 Tin ppm ASTM D5185m >5 2 Vanadium ppm ASTM D5185m 0 Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 Barium ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 89 Manganese ppm ASTM D5185m 1 Magnesium ppm ASTM D5185m 1616 Calcium ppm ASTM D5185m 1877	Silver		ASTM D5185m	>3	<1		
Copper ppm ASTM D5185m >150 16 Tin ppm ASTM D5185m >5 2 Vanadium ppm ASTM D5185m 0 Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 Barium ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 1 Manganese ppm ASTM D5185m 1 Manganesium ppm ASTM D5185m 1616 Calcium ppm ASTM D5185m 1493 Phosphorus ppm ASTM D5185m 3907 Sulfur ppm ASTM D5185m 3907	Aluminum	ppm	ASTM D5185m	>30	<u> </u>		
Tin	Lead	ppm	ASTM D5185m	>30	<1		
Vanadium ppm ASTM D5185m <1 Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 Barium ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 89 Manganese ppm ASTM D5185m 1 Magnesium ppm ASTM D5185m 16166 Calcium ppm ASTM D5185m 1493 Phosphorus ppm ASTM D5185m 1877 Sulfur ppm ASTM D5185m 3907 CONTAMINANTS method limit/base current history1 history2 Sodium ppm ASTM D5185m >20 25	Copper	ppm	ASTM D5185m	>150	16		
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Boron ppm ASTM D5185m 0	Cadmium	ppm	ASTM D5185m		0		
Barium ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 89 Manganese ppm ASTM D5185m 1 Magnesium ppm ASTM D5185m 1448 Calcium ppm ASTM D5185m 1616 Phosphorus ppm ASTM D5185m 1493 Zinc ppm ASTM D5185m 1877 Sulfur ppm ASTM D5185m 3907 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 25 Sodium ppm ASTM D5185m >12 4 Potassium ppm ASTM D5185m >20 6 INFRA-RED method li	ADDITIVES		method	limit/base	current	history1	history2
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Magnesium ppm ASTM D5185m 1448 Calcium ppm ASTM D5185m 1616 Phosphorus ppm ASTM D5185m 1493 Zinc ppm ASTM D5185m 1877 Sulfur ppm ASTM D5185m 3907 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 25 Sodium ppm ASTM D5185m >12 4 Potassium ppm ASTM D5185m >20 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.8 Nitration Abs/cm *ASTM D7415 >30 23.9	Molybdenum	ppm	ASTM D5185m		89		
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Zinc ppm ASTM D5185m 1877 Sulfur ppm ASTM D5185m 3907 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 25 Sodium ppm ASTM D5185m >12 4 Potassium ppm ASTM D5185m >20 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.8 Nitration Abs/cm *ASTM D7624 >20 10.8 Sulfation Abs/.1mm *ASTM D7415 >30 23.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 <	Calcium	ppm	ASTM D5185m		1616		
Sulfur ppm ASTM D5185m 3907 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 25 Sodium ppm ASTM D5185m >12 4 Potassium ppm ASTM D5185m >20 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.8 Nitration Abs/cm *ASTM D7624 >20 10.8 Sulfation Abs/.1mm *ASTM D7415 >30 23.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.4	Phosphorus	ppm	ASTM D5185m		1493		
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 ▲ 25 Sodium ppm ASTM D5185m >12 4 Potassium ppm ASTM D5185m >20 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.8 Nitration Abs/cm *ASTM D7624 >20 10.8 Sulfation Abs/.1mm *ASTM D7415 >30 23.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.4	Zinc	ppm	ASTM D5185m		1877		
Silicon ppm ASTM D5185m >20 25 Sodium ppm ASTM D5185m >12 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.8 Nitration Abs/cm *ASTM D7624 >20 10.8 Sulfation Abs/.1mm *ASTM D7415 >30 23.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.4	Sulfur	ppm	ASTM D5185m		3907		
Sodium ppm ASTM D5185m >12 4 Potassium ppm ASTM D5185m >20 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.8 Nitration Abs/cm *ASTM D7624 >20 10.8 Sulfation Abs/.1mm *ASTM D7415 >30 23.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.4	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.8 Nitration Abs/cm *ASTM D7624 >20 10.8 Sulfation Abs/.1mm *ASTM D7415 >30 23.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.4	Silicon	ppm	ASTM D5185m	>20	25		
INFRA-RED	Sodium	ppm	ASTM D5185m	>12	4		
Soot % % *ASTM D7844 >3 0.8 Nitration Abs/cm *ASTM D7624 >20 10.8 Sulfation Abs/.1mm *ASTM D7415 >30 23.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.4	Potassium	ppm	ASTM D5185m	>20	6		
Nitration Abs/cm *ASTM D7624 >20 10.8 Sulfation Abs/.1mm *ASTM D7615 >30 23.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.4	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 23.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.4	Soot %	%	*ASTM D7844	>3	8.0		
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 21.4	Nitration	Abs/cm	*ASTM D7624	>20	10.8		
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	23.9		
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	21.4		
	Base Number (BN)	mg KOH/g	ASTM D2896		4.5		



OIL ANALYSIS REPORT





Certificate L2367

Unique Number : 10939672 Test Package : FLEET

Diagnosed

: 25 Mar 2024 - Don Baldridge

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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)