

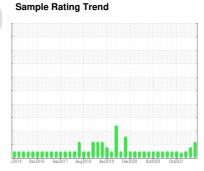
OIL ANALYSIS REPORT



OKLAHOMA/3/EG - LOADER 50.25L [OKLAHOMA^3^EG - LOADER]

Diesel Engine

MOBIL 15W40 (--- GAL)





DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

Light fuel dilution occurring.

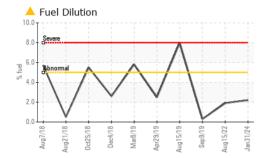
▲ Fluid Condition

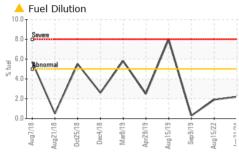
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The condition of the oil is suitable for further service.

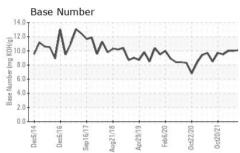
Sample Number Client Info WC0886944 WC0726146 WC0746328 Sample Date Client Info 31 Jan 2024 10 Dec 2022 27 Oct 2022 21510 220 21510 21510 220 21510 21510 220 21510 21510 21510 21510 21510 21510 21510 21510 21510 21510 21510 21510 21510 21510 21510 21510 21510 21510)		c2014 Dec20	16 Sep2017 Aug2018	Apr2019 Feb2020 Oct2020	Oct2021	
Sample Date Client Info 31 Jan 2024 10 Dec 2022 27 Oct 2022	SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 22322 21603 21310 744 Oil Age hrs Client Info 21603 21310 744 Oil Changed Changed Changed Changed Changed Changed Sample Status method limit/base current history1 history2 Water WC Method NEG NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTMD5185m >0.0 26 23 53 Chromium ppm ASTMD5185m >20 <1 <1 1 Inchester ppm ASTMD5185m >20 <1 <1 <1 Itanium ppm ASTMD5185m >2 0 <1 <1 <1 Itanium ppm ASTMD5185m >2 0 <1	Sample Number		Client Info		WC0886944	WC0726146	WC0746328
Oil Age hrs Client Info 21603 21310 744 Oil Changed	Sample Date		Client Info		31 Jan 2024	10 Dec 2022	27 Oct 2022
Oil Changed Sample Status Client Info Changed ABNORMAL MARGINAL MARGINA	Machine Age	hrs	Client Info		22322	21603	21310
Oil Changed Sample Status Client Info Changed ABNORMAL MARGINAL MARGINA	Oil Age	hrs	Client Info		21603	21310	744
ABNORMAL MARGINAL NORMAL	-		Client Info		Changed	Changed	Changed
Water WC Method >0.2 NEG Ned NEG <	Sample Status				_	MARGINAL	NORMAL
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 26 23 53 Chromium ppm ASTM D5185m >20 <1	CONTAMINATION		method	limit/base	current	history1	history2
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1 <1 1 Nickel ppm ASTM D5185m >2 0 ▲ 1 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	26	23	53
Description	Chromium	ppm	ASTM D5185m	>20	<1	<1	1
Silver	Nickel	ppm	ASTM D5185m	>2	0	<u> </u>	<1
Aluminum	Titanium	ppm	ASTM D5185m	>2	0	<1	0
Lead ppm ASTM D5185m >40 <1 1 2 Copper ppm ASTM D5185m >330 11 2 9 Tin ppm ASTM D5185m >15 2 <1 <1 Vanadium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 48 49 36 Barium ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 36 41 39 Manganese ppm ASTM D5185m 1 <1 <1 <1 Magnesium ppm ASTM D5185m 1579 1621 1727 Phosphorus ppm ASTM D5185m 1020 865 874 Sulfur ppm ASTM D5185m 2643 2497 2661 CONTAMINANTS method <	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >330 11 2 9 Tin ppm ASTM D5185m >15 2 <1	Aluminum	ppm	ASTM D5185m	>25	1	1	<1
Tin ppm ASTM D5185m >15 2 <1 <1 <1	Lead	ppm	ASTM D5185m	>40	<1	1	2
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 48 49 36 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 36 41 39 Manganese ppm ASTM D5185m 1 <1 <1 <1 Magnesium ppm ASTM D5185m 1579 1621 1727 Phosphorus ppm ASTM D5185m 1020 865 874 Sulfur ppm ASTM D5185m 1020 865 874 Sulfur ppm ASTM D5185m 2643 2497 2661 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <	Copper	ppm	ASTM D5185m	>330	11	2	9
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 48 49 36 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 36 41 39 Manganese ppm ASTM D5185m 1 <1	Tin	ppm	ASTM D5185m	>15	2	<1	<1
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 48 49 36 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 36 41 39 Manganese ppm ASTM D5185m 1 <1	Vanadium	ppm	ASTM D5185m		0	0	0
Boron ppm ASTM D5185m 48 49 36 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 36 41 39 Manganese ppm ASTM D5185m 1 <1 <1 <1 Magnesium ppm ASTM D5185m 449 481 477 Calcium ppm ASTM D5185m 1579 1621 1727 Phosphorus ppm ASTM D5185m 866 738 700 Zinc ppm ASTM D5185m 1020 865 874 Sulfur ppm ASTM D5185m 2643 2497 2661 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 12 4 6 Sodium ppm ASTM D5185m >20 1 0 0 Fuel % ASTM D5185m >20	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 36 41 39 Manganese ppm ASTM D5185m 1 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 36 41 39 Manganese ppm ASTM D5185m 1 <1 <1 Magnesium ppm ASTM D5185m 449 481 477 Calcium ppm ASTM D5185m 1579 1621 1727 Phosphorus ppm ASTM D5185m 866 738 700 Zinc ppm ASTM D5185m 1020 865 874 Sulfur ppm ASTM D5185m 2643 2497 2661 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 12 4 6 Sodium ppm ASTM D5185m >20 1 0 0 Fuel % ASTM D5185m >20 1 0 0 Fuel % ASTM D5185m >20 1 0 0 Fuel % ASTM D5185m	Boron	ppm	ASTM D5185m		48	49	36
Manganese ppm ASTM D5185m 1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <td>Barium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <td>0</td> <td>0</td> <td>0</td>	Barium	ppm	ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m 449 481 477 Calcium ppm ASTM D5185m 1579 1621 1727 Phosphorus ppm ASTM D5185m 866 738 700 Zinc ppm ASTM D5185m 1020 865 874 Sulfur ppm ASTM D5185m 2643 2497 2661 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 12 4 6 Sodium ppm ASTM D5185m >118 6 3 0 Potassium ppm ASTM D5185m >20 1 0 0 Fuel % ASTM D3524 >5 2.2 <1.0	Molybdenum	ppm	ASTM D5185m		36	41	39
Calcium ppm ASTM D5185m 1579 1621 1727 Phosphorus ppm ASTM D5185m 866 738 700 Zinc ppm ASTM D5185m 1020 865 874 Sulfur ppm ASTM D5185m 2643 2497 2661 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 12 4 6 Sodium ppm ASTM D5185m >118 6 3 0 Potassium ppm ASTM D5185m >20 1 0 0 Fuel % ASTM D5185m >20 1 0 Fuel % ASTM D5185m >20 1 0 Soot % ASTM D5185m >20 1 0 <1.0	Manganese	ppm	ASTM D5185m		1	<1	<1
Phosphorus ppm ASTM D5185m 866 738 700 Zinc ppm ASTM D5185m 1020 865 874 Sulfur ppm ASTM D5185m 2643 2497 2661 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 12 4 6 Sodium ppm ASTM D5185m >25 12 4 6 Sodium ppm ASTM D5185m >20 1 0 0 Fuel % ASTM D5185m >20 1 0 0 Fuel % ASTM D3524 >5 2.2 <1.0	Magnesium	ppm	ASTM D5185m		449	481	477
Zinc ppm ASTM D5185m 1020 865 874 Sulfur ppm ASTM D5185m 2643 2497 2661 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 12 4 6 Sodium ppm ASTM D5185m >118 6 3 0 Potassium ppm ASTM D5185m >20 1 0 0 Fuel % ASTM D3524 >5 22 <1.0 <1.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.8 1.6 Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 22.3 24.7 26.5 FLUID DEGRADATION method limit/base current history	Calcium	ppm	ASTM D5185m		1579	1621	1727
Sulfur ppm ASTM D5185m 2643 2497 2661 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 12 4 6 Sodium ppm ASTM D5185m >118 6 3 0 Potassium ppm ASTM D5185m >20 1 0 0 Fuel % ASTM D5185m >20 1 0 0 Fuel % ASTM D3524 >5 ▲ 2.2 <1.0	Phosphorus	ppm	ASTM D5185m		866	738	700
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 12 4 6 Sodium ppm ASTM D5185m >118 6 3 0 Potassium ppm ASTM D5185m >20 1 0 0 Fuel % ASTM D3524 >5 ▲ 2.2 <1.0	Zinc	ppm	ASTM D5185m		1020	865	874
Silicon ppm ASTM D5185m >25 12 4 6 Sodium ppm ASTM D5185m >118 6 3 0 Potassium ppm ASTM D5185m >20 1 0 0 Fuel % ASTM D3524 >5 ▲ 2.2 <1.0 <1.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.8 1.6 Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 22.3 24.7 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 21.3 21.7	Sulfur	ppm	ASTM D5185m		2643	2497	2661
Sodium ppm ASTM D5185m >118 6 3 0 Potassium ppm ASTM D5185m >20 1 0 0 Fuel % ASTM D3524 >5 ▲ 2.2 <1.0 <1.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.8 1.6 Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 22.3 24.7 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 21.3 21.7	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 1 0 0 Fuel % ASTM D3524 >5 ▲ 2.2 <1.0 <1.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.8 1.6 Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 22.3 24.7 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 21.3 21.7	Silicon	ppm	ASTM D5185m	>25	12	4	6
Fuel % ASTM D3524 >5 ▲ 2.2 <1.0 <1.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.8 1.6 Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 22.3 24.7 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 21.3 21.7	Sodium	ppm	ASTM D5185m	>118	6	3	0
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.8 1.6 Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 22.3 24.7 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 21.3 21.7	Potassium	ppm	ASTM D5185m	>20		0	0
Soot % % *ASTM D7844 >3 0.3 0.8 1.6 Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 22.3 24.7 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 21.3 21.7	Fuel	%	ASTM D3524	>5	<u>^</u> 2.2	<1.0	<1.0
Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 22.3 24.7 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 21.3 21.7	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 22.3 24.7 26.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 21.3 21.7	Soot %	%	*ASTM D7844	>3	0.3	0.8	1.6
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 21.3 21.7	Nitration	Abs/cm	*ASTM D7624	>20	6.7	7.3	8.8
Oxidation Abs/.1mm *ASTM D7414 >25 19.4 21.3 21.7	Sulfation	Abs/.1mm	*ASTM D7415	>30	22.3	24.7	26.5
		TION	method	limit/base	current	history1	history2
Dado Harmoof (DIV) Inghoring Morning Morning 2000	FLUID DEGRADA						



OIL ANALYSIS REPORT



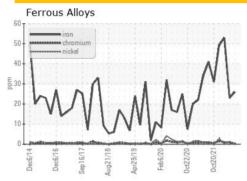


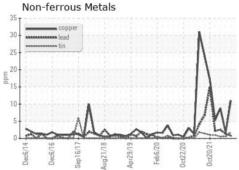


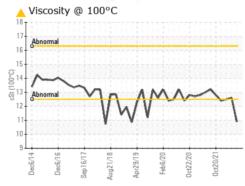
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

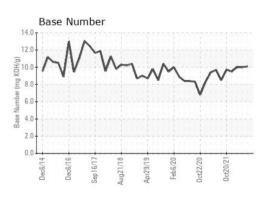
FLUID PROPER	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	_	10.9	12.6	12.5

GRAPHS













Laboratory Sample No. Lab Number : 06098112 Unique Number : 10896342

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0886944

Received **Tested**

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Diagnosed

: 27 Feb 2024

: 23 Feb 2024

: 27 Feb 2024 - Wes Davis

3219 WEST MAY ST WICHITA, KS

Test Package: CONST (Additional Tests: FuelDilution, PercentFuel, TBN) Contact: DOUG KING To discuss this sample report, contact Customer Service at 1-800-237-1369. doug.king@sherwood.net * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (316)617-3161

Report Id: SHEWIC [WUSCAR] 06098112 (Generated: 02/27/2024 09:22:18) Rev: 1

Submitted By: GARRETT ADAMS

SHERWOOD CONSTRUCTION CO INC

US 67213

F: x: