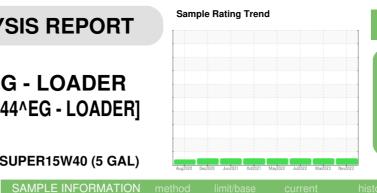


## **OIL ANALYSIS REPORT**

### Area KANSAS/44/EG - LOADER 45.51L [KANSAS^44^EG - LOADER] Component

**Diesel Engine** Fluic

MOBIL DELVAC 1300 SUPER15W40 (5 GAL)





NORMAL

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		method	limit/base	current	history1	history2
Sample Number		Client Info		WC0781196	WC0673489	WC0712171
Sample Date		Client Info		30 Nov 2023	28 Mar 2023	26 Jul 2022
Machine Age	hrs	Client Info		2475	2073	1518
Oil Age	hrs	Client Info		402	555	258
Oil Changed		Client Info		N/A	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	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	16	16	10
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>25	10	12	5
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	1	2	1
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 35	history1 45	history2 54
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	35	45	54
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	35 2	45 0	54 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	35 2 39	45 0 41	54 0 40
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	35 2 39 0	45 0 41 1	54 0 40 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	35 2 39 0 487	45 0 41 1 545	54 0 40 <1 523
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	35 2 39 0 487 1664	45 0 41 1 545 1724	54 0 40 <1 523 1603
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	0 0 0	35 2 39 0 487 1664 710	45 0 41 1 545 1724 799	54 0 40 <1 523 1603 734
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	0 0 0	35 2 39 0 487 1664 710 915	45 0 41 1 545 1724 799 960	54 0 40 <1 523 1603 734 913
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 ASTM D5185m	0 0 0 0 0 limit/base	35 2 39 0 487 1664 710 915 2851	45 0 41 1 545 1724 799 960 2820	54 0 40 <1 523 1603 734 913 2978
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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	0 0 0 0 0 limit/base	35 2 39 0 487 1664 710 915 2851 current	45 0 41 1 545 1724 799 960 2820 history1	54 0 40 <1 523 1603 734 913 2978 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 <b>method</b> ASTM D5185m	0 0 0 0 ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !	35 2 39 0 487 1664 710 915 2851 2851 current	45 0 41 1 545 1724 799 960 2820 history1 5	54 0 40 <1 523 1603 734 913 2978 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 <b>method</b> ASTM D5185m ASTM D5185m	0 0 0 0 ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !	35 2 39 0 487 1664 710 915 2851 2851 current 5 <	45 0 41 1 545 1724 799 960 2820 history1 5 3	54 0 40 <1 523 1603 734 913 2978 history2 4 2
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	0 0 0 0 1 0 1 1 1 1 1 1 1 1 1 2 5 2 5 2 0	35 2 39 0 487 1664 710 915 2851 current 5 < <1 1	45 0 41 1 545 1724 799 960 2820 history1 5 3 0	54 0 40 <1 523 1603 734 913 2978 history2 4 2 0
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	0 0 0 0 limit/base >25 >20 limit/base >3	35 2 39 0 487 1664 710 915 2851 current 5 <1 1 current 0.5	45 0 41 1 545 1724 799 960 2820 <b>history1</b> 5 3 0 0	54 0 40 <1 523 1603 734 913 2978 history2 4 2 0 bistory2
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	ASTM D5185m ASTM D5185m	0 0 0 0 limit/base >25 >20 limit/base >3	35 2 39 0 487 1664 710 915 2851 current 5 <1 1 2	45 0 41 1 545 1724 799 960 2820 history1 5 3 0 history1 0.4	54 0 40 <1 523 1603 734 913 2978 history2 4 2 2 0 history2 0.3
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	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	35 2 39 0 487 1664 710 915 2851 <b>current</b> 5 <1 1 1 <b>current</b> 0.5 7.8 21.8	45 0 41 1 545 1724 799 960 2820 <b>history1</b> 5 3 0 <b>history1</b> 0.4 7.8 21.9	54 0 40 <1 523 1603 734 913 2978 history2 4 2 2 0 history2 0.3 6.7 23.4
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 D7615	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	35 2 39 0 487 1664 710 915 2851 <i>current</i> 5 <1 1 <i>current</i> 0.5 7.8 21.8	45 0 41 1 545 1724 799 960 2820 history1 5 3 0 history1 0.4 7.8 21.9 history1	54 0 40 <1 523 1603 734 913 2978 history2 4 2 2 0 history2 0.3 6.7 23.4 history2
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	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	35 2 39 0 487 1664 710 915 2851 <u>current</u> 5 <1 1 1 <u>current</u> 0.5 7.8 21.8	45 0 41 1 545 1724 799 960 2820 <b>history1</b> 5 3 0 <b>history1</b> 0.4 7.8 21.9	54 0 40 <1 523 1603 734 913 2978 history2 4 2 2 0 history2 0.3 6.7 23.4



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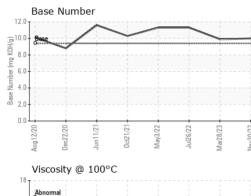
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Aug12/20

Dec22/20

# **OIL ANALYSIS REPORT**



Jun11/21.

0ct21/21

Mav3/22

Jul26/22

	100712		mounou			motory	
-	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
Mar28/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Marý	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
		304141	VISUAI		NEG	NEG	NEG
	FLUID PROPER		method	limit/base		history1	history2
	Visc @ 100°C	cSt	ASTM D445	14	12.9	12.7	13.2
	GRAPHS						
	Ferrous Alloys						
	20						
Mar28/23	iron chromium						
Mar	15 - pickel						
	튭 10-		$\checkmark$				
	5						
	O ARABA DE CONTRACTOR OF THE OWNER			The sume			
	2/20	3/22	6/22	0/23			
	Aug12/20 Dec22/20	0ct21/21 May3/22	Jul26/22 Mar28/23	Nov30/23			
	Non-ferrous Meta	le	_	-			
	<sup>10</sup> T <b>1</b>						
	copper						
	8 - second tin						
	6 E						
	<sup>8</sup> 4 − − − − − − − − − − − − − − − − − −						
	2						
			3 J				
	Aug12/20 Dec22/20 Jun11/21	0ct21/21 May3/22	Jul26/22 Mar28/23	Nov30/23			
	Aug	0 X	Ju Ma	Nov			
	Viscosity @ 100°C	2			Base Number	r	
	18			1	2.0		
	Abnormal			1	0.0 Base	$\checkmark$	
	15-			(B/H(			
	D 14 Base			Base Number (mg KOH/g)	8.0		
				er (m	6.0		
	73 Abnormal			dumb			
	11			ase ase	4.0-		
					2.0		
	10-						
	21 50 Fe	21-	22	5		21-	23
	Aug12/20 Dec22/20	0ct21/21 May3/22	Jul26/22 Mar28/23	Nov30/23 -	Aug12/20 Dec22/20 Jun11/21	0ct21/21 May3/22	Jul26/22 - Mar28/23 - Nov30/23 -



 Unique Number
 : 10776052
 Diagnostician
 : Wes Davis

 Certificate 12367
 Test Package
 : CONST (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)

: WC0781196

: 06026261

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

Received

Diagnosed

: 06 Dec 2023

: 07 Dec 2023

Laboratory

Sample No.

Lab Number

SHERWOOD CONSTRUCTION CO INC

3219 WEST MAY ST

Contact: DOUG KING

T: (316)617-3161

doug.king@sherwood.net

WICHITA, KS

US 67213

F: x: