

## **OIL ANALYSIS REPORT**

### Area MINING ME-103 JOHN DEERE 844L 1DW844LXHNL715325

**Diesel Engine** 

Fluid SHELL RIMULA SUPER SAE 15W40 (10 GAL)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

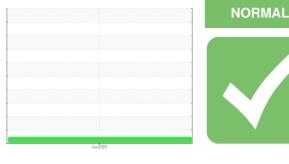
All component wear rates are normal.

#### 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 Rating Trend



SAMPLE INFORM	IATION	method	limit/base	current	history1	history2	
Sample Number		Client Info		WC0942221			
Sample Date		Client Info		19 Jun 2024			
Machine Age	hrs	Client Info		4981			
Oil Age	hrs	Client Info		500			
Oil Changed		Client Info		Changed			
Sample Status				NORMAL			
CONTAMINATIO	N	method	limit/base	current	history1	history2	
Fuel		WC Method	>2.1	<1.0			
Water		WC Method	>0.21	NEG			
Glycol		WC Method		NEG			
WEAR METALS		method	limit/base	current	history1	history2	
Iron	nnm	ASTM D5185m	>51	20			
Chromium	ppm ppm	ASTM D5185m	>11	<1			
Nickel		ASTM D5185m	>5	<1			
Titanium	ppm ppm	ASTM D5185m	<i>ل در</i>	<1			
Silver		ASTM D5185m	>3	<1			
Aluminum	ppm ppm	ASTM D5185m	>3	<1			
Lead		ASTM D5185m	>26	7			
	ppm	ASTM D5185m	>26	7			
Copper Tin	ppm ppm	ASTM D5185m	>20	3			
Vanadium	ppm	ASTM D5185m	24	۲ ۲			
Cadmium	ppm	ASTM D5185m		<1			
Gaumum	ppin	ASTIVI DJ TOJITI		<1			
ADDITIVES		method	limit/base	current	history1	history2	
ADDITIVES Boron	ppm	ASTM D5185m	limit/base	10	history1	history2	
Boron Barium	ppm ppm		limit/base	10 1			
Boron Barium Molybdenum		ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	10 1 87			
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	10 1 87 <1			
Boron Barium Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		10 1 87 <1 36			
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2840	10 1 87 <1 36 2128			
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 ASTM D5185m	2840 1150	10 1 87 <1 36 2128 924			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2840 1150 1270	10 1 87 <1 36 2128 924 1101	  	  	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2840 1150 1270 2829	10 1 87 <1 36 2128 924	  		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	2840 1150 1270	10 1 87 <1 36 2128 924 1101	    		
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>	2840 1150 1270 2829 limit/base >22	10 1 87 <1 36 2128 924 1101 3618 current 11			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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	2840 1150 1270 2829 limit/base	10 1 87 <1 36 2128 924 1101 3618 <u>current</u> 11 5	      history1	     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>	2840 1150 1270 2829 limit/base >22	10 1 87 <1 36 2128 924 1101 3618 current 11	     history1	     history2	
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	2840 1150 1270 2829 limit/base >22 >31	10 1 87 <1 36 2128 924 1101 3618 <u>current</u> 11 5	      history1	     history2	
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	2840 1150 1270 2829 limit/base >22 >31 >20	10 1 87 <1 36 2128 924 1101 3618 current 11 5 3	      history1  	     history2  	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2840 1150 1270 2829 limit/base >22 >31 >20 limit/base	10 1 87 <1 36 2128 924 1101 3618 current 11 5 3 current	      history1   history1	     history2   history2	
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	2840 1150 1270 2829 limit/base >22 >31 >20 limit/base >3	10 1 87 <1 36 2128 924 1101 3618 current 11 5 3 current 0.6	     history1   history1	     history2  history2  history2	
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	ASTM D5185m ASTM D5185m	2840 1150 1270 2829 limit/base >22 >31 >20 limit/base >3 >20	10 1 87 <1 36 2128 924 1101 3618 current 11 5 3 current 0.6 10.3	      history1   history1  	history2 history2 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	2840 1150 1270 2829 <b>limit/base</b> >22 >31 >20 <b>limit/base</b> >3 >20	10 1 87 <1 36 2128 924 1101 3618 <u>current</u> 11 5 3 <u>current</u> 0.6 10.3 22.0	       history1  history1  history1	    history2  history2  history2  history2	



35 30

<sup>25</sup> 4ps/cm 20

15 10 Jun19/24

12.0 Base

Base Number (mg KOH/g) 0.9 0.0 0.0 0.0

0.0 Jun19/24

<sup>19</sup> T 18 Abnormal 17.

() 16 () 15 15 14 Base

# **OIL ANALYSIS REPORT**

FT-IR (Direct Trend)	VISUAL		method	limit/base	current	history1	history2
Oxidation Oxidation	White Metal	scalar	*Visual	NONE	NONE		
suggestion Sulfation	Yellow Metal	scalar	*Visual	NONE	NONE		
Abnormal	Precipitate	scalar	*Visual	NONE	NONE		
20 -	Silt	scalar	*Visual	NONE	NONE		
5-	Debris	scalar	*Visual	NONE	NONE		
	Sand/Dirt	scalar	*Visual	NONE	NONE		
9/24	Appearance	scalar	*Visual	NORML	NORML		
Jun 19/24	Odor	scalar	*Visual	NORML	NORML		
Base Number	Emulsified Water	scalar	*Visual	>0.21	NEG		
.0 , , , , , , , , , , , , , , , , , , ,	Free Water	scalar	*Visual		NEG		
Base	FLUID PROPERT	IES	method	limit/base	current	history1	history2
0	Visc @ 100°C	cSt	ASTM D445	15.5	12.7		
Abnomal	GRAPHS						
Severe	Ferrous Alloys						
	<sup>20</sup>						
9/24	iron chromium						
Jun 19,24	15 - nickel						
Viscosity @ 100°C	Ein						
9 T	Ē_10-						
8 - Abnormal	5+						
6 Base	-						
5	0		****	*****			
4 3 Abaamal	Jun 19/24			Jun19/24			
2 +				Jun			
11 4: 5	Non-ferrous Metals	s					
Jun 19/24	copper						
	8 - management lead						
	6 -			1			
	wdd						
	4-						
	2						
	19/24 + 0			9/24			
	lun 19,			Jun 19,			
	→ Viscosity @ 100°C			7			
	<sup>19</sup>			12.0	Base Number		
	18 Abnormal				Base		
	17-			10.0 위			
	S 16 Base			103 KO	+		
	G 16 Base 15 3 14			0.8 (0H) 6.0 kmpsc (mg KOH) 8986 Nrmpsc 4.0	Abnormal		
				4.0	ų.		
	13 Abnormal			2.0	Severe		
	12-						
	11-+			0.0	3/24		/24 +
	Jun 19/24			Jun19/24	Jun 19/24		Jun 19/24
	-			-			-
Laboratory	: WearCheck USA - 501						RSTON - 012
Sample No.	: WC0942221	Recei <sup>®</sup> Teste		l Jun 2024 5 Jun 2024			OGNAC ROAD
		Diagn		5 Jun 2024 5 Jun 2024 - W	es Davis	IV	US 28363
Certificate 12367 Test Package : CONST (Additional Tests: TBN)							t: Matt Wilkins
To discuss this sample report,	contact Customer Servi	ce at 1-8	00-237-1369			matt.wilkins@	
* - Denotes test methods that a Statements of conformity to sp					rula ( ICCM 106	T: (	919)815-5671 F:
tid: COVMAP INUISCAPI 06217810 (Coporated: 06/25/202)		3///	ipie accepta			2012)	

Submitted By: PAUL BRIDGEMAN

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