

## **OIL ANALYSIS REPORT**

Sample Rating Trend







Machine Id **2319** Component **Diesel Engine** Fluid **DIESEL ENGINE OIL SAE 5W30 (--- QTS)** 

### DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

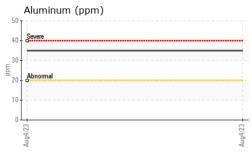
### Fluid Condition

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

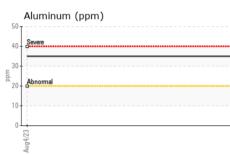
SAMPLE INFORM	ΛΑΤΙΟΝ	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0836267		
Sample Date		Client Info		04 Aug 2023		
Machine Age	mls	Client Info		116388		
Oil Age	mls	Client Info		50000		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	74		
Chromium	ppm	ASTM D5185m	>20	2		
Nickel	ppm	ASTM D5185m	>4	0		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>20	35		
Lead	ppm	ASTM D5185m	>40	<1		
Copper	ppm	ASTM D5185m	>330	16		
Tin	ppm	ASTM D5185m	>15	2		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
Boron	nnm	ASTM D5185m	250			
Boron	ppm	ASTM D5185m	250 10	14		
Barium	ppm	ASTM D5185m	10	0		
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m		0 43		
Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	10 100	0 43 2		
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450	0 43 2 1042		 
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000	0 43 2 1042 1223		
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000 1150	0 43 2 1042 1223 958	  	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350	0 43 2 1042 1223 958 1187		  
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	10 100 450 3000 1150 1350 4250	0 43 2 1042 1223 958 1187 3647	    	
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	10 100 450 3000 1150 1350 4250 limit/base	0 43 2 1042 1223 958 1187 3647 current	     history1	     history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base	0 43 2 1042 1223 958 1187 3647 current 14	    	    
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 <b>method</b> ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25	0 43 2 1042 1223 958 1187 3647 <u>current</u> 14 7	     history1	     history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25	0 43 2 1042 1223 958 1187 3647 current 14	     history1  	    history2  
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 <b>method</b> ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25	0 43 2 1042 1223 958 1187 3647 <u>current</u> 14 7	     history1	     history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25	0 43 2 1042 1223 958 1187 3647 <i>current</i> 14 7 89 <i>current</i> 0.5	     history1  	    history2  
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	10 100 450 3000 1150 1350 4250 <i>limit/base</i> >25 >20 <i>limit/base</i> >3	0 43 2 1042 1223 958 1187 3647 current 14 7 89 current	    history1   history1	    history2   history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >20 <b>limit/base</b> >3 >20	0 43 2 1042 1223 958 1187 3647 <i>current</i> 14 7 89 <i>current</i> 0.5	    history1   history1  history1	    history2   history2
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	10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >20 <b>limit/base</b> >3 >20	0 43 2 1042 1223 958 1187 3647 <u>current</u> 14 7 89 <u>current</u> 0.5 13.1	     history1  history1  history1	    history2  history2  history2
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	10 100 450 3000 1150 1350 4250 imit/base >25 >20 imit/base >3 >20 >30	0 43 2 1042 1223 958 1187 3647 <u>current</u> 14 7 89 <u>current</u> 0.5 13.1 28.9	     history1   history1  history1	    history2  history2  history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	10 100 450 3000 1150 1350 4250 <b>imit/base</b> >25 .20 <b>imit/base</b> >3 >20 30 <b>imit/base</b>	0 43 2 1042 1223 958 1187 3647 <i>current</i> 14 7 89 <i>current</i> 0.5 13.1 28.9 <i>current</i>	<ul> <li></li> <li></li> <li></li> <li></li> <li></li> <li>history1</li> <li></li> <li></li> <li>history1</li> <li></li> <li>history1</li> <li></li> <li>history1</li> </ul>	     history2  history2  history2  history2



# **OIL ANALYSIS REPORT**



# Viscosity @ 100°C



	VISUAL		method				history
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE		
	Precipitate	scalar	*Visual	NONE	NONE		
	Silt	scalar	*Visual	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE		
	Sand/Dirt	scalar	*Visual	NONE	NONE		
/23	Appearance	scalar	*Visual	NORML	NORML		
Aug4/23	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water	scalar	*Visual	20.L	NEG		
	FLUID PROPER		method	limit/base	current	history1	history
	Visc @ 100°C	cSt	ASTM D445	10.9	12.4		
	GRAPHS						
	Ferrous Alloys						
-	80						
	70 - chromium						
	60						
	50 - E 40 -						
	30						
-	20 -						
-	10-						
	Aug4/23 -			Aug4/23 -			
	Aug			Aug			
_	Non-ferrous Meta	als					
	16 copper 1						
	14 - Lead						
	12 tin						
	10						
	튭 8-						
	6-						
	4 -						
	2						
	23+0			/23			
	Aug4/23			Aug4/23			
	Viscosity @ 100°	C			·		
	<sup>14</sup> T	-		14.0	Base Number		
	13			12.0	Abnormal		
	Abnormal						
	12 5			H 10.0	Base		
ĉ	Base			0.0 KOH(d) 8.0 0.0 Base Number (mg 4.0	-		
				4 6.0			
1000017-00							
10-104 PJ 10	3 10 Abnormal			8 4.0	Abnormal		
	10			ي ي 2.0	Abnormal		
	10- Abnormal			2.0	Abnormal		
na - Ana si	Abnormal			2.0			
10 - 10 - 10 - 10	10- Abnormal			2.0	Abnormal CZ/+Bmy		
	10 4 4 4 4 4 4 4 4 4 4 4 4 4	501 Mod	son Ava. Ca	2.0 	Aug4/23		
y	10 9 8 8 8 10 10 10 10 10 10 10 10 10 10			2.0 0.0 ry, NC 27513	Aug4/23	MAI	
y 5.	10 4 4 4 4 4 4 4 4 4 4 4 4 4	Receive	d : 21 /	ry, NC 27513 Aug 2023	Aug4/23	MAI	PO BOX 1
y o. oer	: WearCheck USA - : WC0836267		d : 21 /	2.0 0.0 ry, NC 27513	Aug4/23	MAI	PO BOX 1 EDEN,
ry o. ber mber tage	10 3 8 8 10 10 10 10 10 10 10 10 10 10	Receive Diagnos Diagnos	d : 21 / ed : 23 / tician : Jon	ry, NC 27513 Aug 2023 Aug 2023 athan Hester	Aug4/23		BE TRUCKI PO BOX 1 EDEN, US 27 IAINTENAN

 Certificate L2367
 Test Package
 : FLEET

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