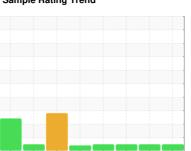


# **OIL ANALYSIS REPORT**

## Sample Rating Trend







**Action Newark CATERPILLAR 5582** 

Component **Diesel Engine** 

**DIESEL ENGINE OIL SAE 15W40 (--- GAL)** 

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

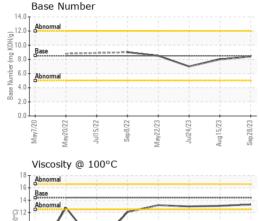
### **Fluid Condition**

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	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0850717	WC0774703	WC0831077
Sample Date		Client Info		28 Sep 2023	15 Aug 2023	24 Jul 2023
Machine Age	hrs	Client Info		28355	28151	27926
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	V	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	9	7	8
Chromium	ppm	ASTM D5185m	>20	<1	0	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	3	<1	<1
Lead	ppm	ASTM D5185m	>40	1	<1	<1
Copper	ppm	ASTM D5185m	>330	<1	4	1
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
	nnm				•	· ·
Boron	ppm	ASTM D5185m	250	6	13	10
Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	6 0	13 0	10
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250	6 0 65	13 0 65	10 0 55
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	6 0 65 0	13 0 65 <1	10 0 55 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	6 0 65 0 847	13 0 65 <1 819	10 0 55 <1 715
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	6 0 65 0 847 1170	13 0 65 <1 819 1283	10 0 55 <1 715 1168
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	250 10 100 450 3000 1150	6 0 65 0 847 1170 1006	13 0 65 <1 819 1283 941	10 0 55 <1 715 1168 881
Boron 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 ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350	6 0 65 0 847 1170 1006	13 0 65 <1 819 1283 941 1159	10 0 55 <1 715 1168 881 1106
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150	6 0 65 0 847 1170 1006	13 0 65 <1 819 1283 941	10 0 55 <1 715 1168 881
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base	6 0 65 0 847 1170 1006 1205 3281	13 0 65 <1 819 1283 941 1159 3642 history1	10 0 55 <1 715 1168 881 1106 3790 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25	6 0 65 0 847 1170 1006 1205 3281 current	13 0 65 <1 819 1283 941 1159 3642 history1	10 0 55 <1 715 1168 881 1106 3790 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158	6 0 65 0 847 1170 1006 1205 3281 current 4	13 0 65 <1 819 1283 941 1159 3642 history1 4	10 0 55 <1 715 1168 881 1106 3790 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	6 0 65 0 847 1170 1006 1205 3281 current 4 0	13 0 65 <1 819 1283 941 1159 3642 history1 4 3 6	10 0 55 <1 715 1168 881 1106 3790 history2 3 <1 <1
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	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	6 0 65 0 847 1170 1006 1205 3281 current 4 0 1	13 0 65 <1 819 1283 941 1159 3642 history1 4 3 6	10 0 55 <1 715 1168 881 1106 3790 history2 3 <1 <1
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  method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	6 0 65 0 847 1170 1006 1205 3281 current 4 0 1	13 0 65 <1 819 1283 941 1159 3642 history1 4 3 6 history1 0.2	10 0 55 <1 715 1168 881 1106 3790 history2 3 <1 <1 history2 0.2
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  method  *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	6 0 65 0 847 1170 1006 1205 3281 current 4 0 1 current 0.3 6.7	13 0 65 <1 819 1283 941 1159 3642 history1 4 3 6 history1 0.2 6.7	10 0 55 <1 715 1168 881 1106 3790 history2 3 <1 <1 history2 0.2 6.2
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  method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	6 0 65 0 847 1170 1006 1205 3281 current 4 0 1	13 0 65 <1 819 1283 941 1159 3642 history1 4 3 6 history1 0.2	10 0 55 <1 715 1168 881 1106 3790 history2 3 <1 <1 history2 0.2
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  method  *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	6 0 65 0 847 1170 1006 1205 3281 current 4 0 1 current 0.3 6.7	13 0 65 <1 819 1283 941 1159 3642 history1 4 3 6 history1 0.2 6.7	10 0 55 <1 715 1168 881 1106 3790 history2 3 <1 <1 history2 0.2 6.2
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  Method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >3 >20 >30	6 0 65 0 847 1170 1006 1205 3281 current 4 0 1 current 0.3 6.7 18.9	13 0 65 <1 819 1283 941 1159 3642 history1 4 3 6 history1 0.2 6.7 18.7	10 0 55 <1 715 1168 881 1106 3790 history2 3 <1 <1 <1 history2 0.2 6.2 17.5



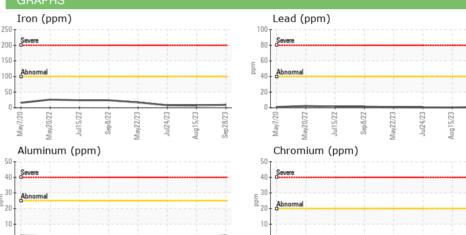
## **OIL ANALYSIS REPORT**

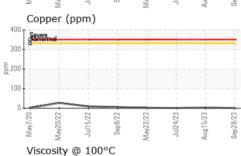


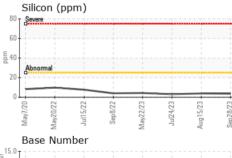
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
ELLID DDODEDI	TIEC	mathad	limit/bass	ourront.	hiotomit	hiotom/2

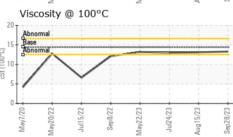
FLUID PHOPENTIES		method			riistory i	nistory∠
Visc @ 100°C	cSt	ASTM D445	14.4	13.3	13.1	13.0

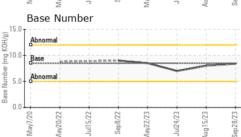
	r
	F
V	'is
·	
	( I
250	
Aug15/23	
50-	
0.	May7/20
	1
50 - 40 -	
30- md	
음 20-	













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** 

: WC0850717 : 05967348 : 10673899

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

: 03 Oct 2023 : 04 Oct 2023

Diagnostician : Wes Davis Test Package : MOB 1 (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)

**INTERSTATE WASTE-NEWARK** 

110 EVERGREEN AVE, BAY 3 NEWARK, NJ US 07114

Contact: Robert Witynski

RWitynski@interstatewaste.com T:

F: