

# **OIL ANALYSIS REPORT**

Sample Rating Trend





#### Area Action Newark Machine Id CATERPILLAR 966H 5583 (S/N A6D02838) Component Diesel Engine

# K 5583 (S/N A6D02838) AE 15W40 (--- GAL) SAMPLE INFORMATION method limit/base current his



Fluid DIESEL ENGINE OIL SAE 15W40 (--- 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.

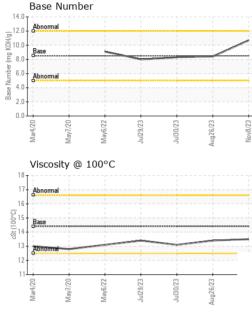
## Fluid Condition

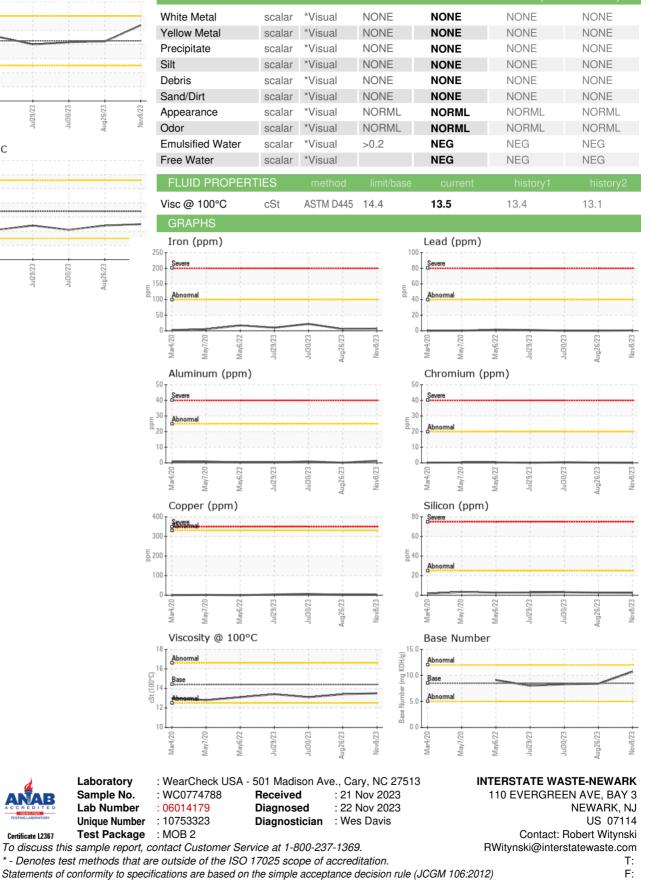
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM		method	limit/base	current	history1	history2
Sample Number		Client Info		WC0774788	WC0840432	WC0830938
Sample Date		Client Info		08 Nov 2023	26 Aug 2023	30 Jul 2023
Machine Age	hrs	Client Info		37336	36811	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed	1110	Client Info		N/A	0 N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
				NORMAL	NOTIVIAL	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	7	5	22
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	1	<1	<1
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	2	2	7
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 250	current 9	history1 19	history2 18
	ppm ppm					
Boron		ASTM D5185m	250	9	19	18
Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	9 0	19 0	18 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	9 0 56	19 0 66	18 0 67
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	9 0 56 <1	19 0 66 <1	18 0 67 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	9 0 56 <1 862	19 0 66 <1 836	18 0 67 <1 829
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	9 0 56 <1 862 1126	19 0 66 <1 836 1281	18 0 67 <1 829 1277
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	250 10 100 450 3000 1150	9 0 56 <1 862 1126 1033	19 0 66 <1 836 1281 1048	18 0 67 <1 829 1277 1077
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	250 10 100 450 3000 1150 1350	9 0 56 <1 862 1126 1033 1231	19 0 66 <1 836 1281 1048 1229	18 0 67 <1 829 1277 1077 1253
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 ASTM D5185m	250 10 100 450 3000 1150 1350 4250	9 0 56 <1 862 1126 1033 1231 3223	19 0 66 <1 836 1281 1048 1229 3975	18 0 67 <1 829 1277 1077 1253 3949
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	250 10 100 450 3000 1150 1350 4250 <b>Iimit/base</b>	9 0 56 <1 862 1126 1033 1231 3223 current	19 0 66 <1 836 1281 1048 1229 3975 history1	18 0 67 <1 829 1277 1077 1253 3949 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>	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >25 >158	9 0 56 <1 862 1126 1033 1231 3223 current 3	19 0 66 <1 836 1281 1048 1229 3975 history1 3	18 0 67 <1 829 1277 1077 1253 3949 history2 3
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	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >25 >158	9 0 56 <1 862 1126 1033 1231 3223 current 3 0	19 0 66 <1 836 1281 1048 1229 3975 history1 3 9	18 0 67 <1 829 1277 1077 1253 3949 history2 3 1
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	250 10 100 450 3000 1150 1350 4250 <b>Imit/base</b> >25 >158 >20 <b>Imit/base</b>	9 0 56 <1 862 1126 1033 1231 3223 current 3 0 0 0	19 0 66 <1 836 1281 1048 1229 3975 history1 3 9 0 0	18 0 67 <1 829 1277 1077 1253 3949 history2 3 1 0 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	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>Imit/base</b> >25 >158 >20 <b>Imit/base</b> >3	9 0 56 <1 862 1126 1033 1231 3223 current 3 0 0 0 0 current 0.4	19 0 66 <1 836 1281 1048 1229 3975 history1 3 9 0 history1 0.2	18 0 67 <1 829 1277 1077 1253 3949 history2 3 1 0 history2 0.7
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	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >25 >158 >20 <b>imit/base</b> >3 >20	9 0 56 <1 862 1126 1033 1231 3223 current 3 0 0 0 current 0.4 6.3	19 0 66 <1 836 1281 1048 1229 3975 history1 3 9 0 history1 0.2 5.6	18 0 67 <1 829 1277 1077 1253 3949 history2 3 1 0 history2 0.7 7.9
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	250 10 100 450 3000 1150 1350 4250 <b>Imit/base</b> >25 >158 >20 <b>Imit/base</b> >3 >20	9 0 56 <1 862 1126 1033 1231 3223 current 3 0 0 0 0 current 0.4 6.3 18.5	19 0 66 <1 836 1281 1048 1229 3975 history1 3 9 0 history1 0.2 5.6 17.2	18 0 67 <1 829 1277 1077 1253 3949 <b>history2</b> 3 1 0 <b>history2</b> 0.7 7.9 19.0
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	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >25 >158 >20 <b>imit/base</b> >3 >20	9 0 56 <1 862 1126 1033 1231 3223 Current 3 0 0 0 Current 0.4 6.3 18.5	19 0 66 <1 836 1281 1048 1229 3975 history1 3 9 0 history1 0.2 5.6	18 0 67 <1 829 1277 1077 1253 3949 history2 3 1 0 history2 0.7 7.9
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	250 10 100 450 3000 1150 1350 4250 <b>Imit/base</b> >25 >158 >20 <b>Imit/base</b> >3 >20	9 0 56 <1 862 1126 1033 1231 3223 current 3 0 0 0 0 current 0.4 6.3 18.5	19 0 66 <1 836 1281 1048 1229 3975 history1 3 9 0 history1 0.2 5.6 17.2	18 0 67 <1 829 1277 1077 1253 3949 <b>history2</b> 3 1 0 <b>history2</b> 0.7 7.9 19.0



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Certificate L2367

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