

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

# **OSHKOSH 4392**

### Diesel Engine

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

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

Metal levels are typical for a new component breaking in.

#### 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	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0917061	WC0917274	WC0893865
Sample Date		Client Info		30 May 2024	15 Apr 2024	22 Jan 2024
Machine Age	mls	Client Info		56444	54746	50760
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	٧	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	1	2	1
Chromium	ppm	ASTM D5185m		0	0	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	- T	0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m		0	0	<1
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m		0	0	0
Tin	ppm		>15	0	0	0
Vanadium	ppm	ASTM D5185m	10	0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	nom	method	limit/base		history1	history2
Boron	ppm	ASTM D5185m	250	3	6	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	3 0	6 0	4 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250	3 0 53	6 0 61	4 0 58
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	3 0 53 0	6 0	4 0
Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	3 0 53	6 0 61 <1	4 0 58 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	3 0 53 0 873	6 0 61 <1 997	4 0 58 <1 930
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	3 0 53 0 873 1107	6 0 61 <1 997 1170	4 0 58 <1 930 1041
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	3 0 53 0 873 1107 989	6 0 61 <1 997 1170 1046	4 0 58 <1 930 1041 1055
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	3 0 53 0 873 1107 989 1158	6 0 61 <1 997 1170 1046 1219	4 0 58 <1 930 1041 1055 1228
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	250 10 100 450 3000 1150 1350 4250	3 0 53 0 873 1107 989 1158 3509	6 0 61 <1 997 1170 1046 1219 3524	4 0 58 <1 930 1041 1055 1228 3003
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	3 0 53 0 873 1107 989 1158 3509 current	6 0 61 <1 997 1170 1046 1219 3524 history1	4 0 58 <1 930 1041 1055 1228 3003 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 imit/base >25	3 0 53 0 873 1107 989 1158 3509 current 2	6 0 61 <1 997 1170 1046 1219 3524 history1 2	4 0 58 <1 930 1041 1055 1228 3003 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 ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >158	3 0 53 0 873 1107 989 1158 3509 current 2 2 <1	6 0 61 <1 997 1170 1046 1219 3524 history1 2 1	4 0 58 <1 930 1041 1055 1228 3003 history2 3 <1
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	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >158 >20	3 0 53 0 873 1107 989 1158 3509 current 2 2 <1 0	6 0 61 <1 997 1170 1046 1219 3524 history1 2 1 0	4 0 58 <1 930 1041 1055 1228 3003 history2 3 <1 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	250 10 100 450 3000 1150 1350 4250 <b>Imit/base</b> >25 >158 >20 <b>Imit/base</b>	3 0 53 0 873 1107 989 1158 3509 current 2 <1 0 current	6 0 61 <1 997 1170 1046 1219 3524 history1 2 1 0 0 history1	4 0 58 <1 930 1041 1055 1228 3003 history2 3 <1 0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >158 >20 <b>limit/base</b> >3	3 0 53 0 873 1107 989 1158 3509 current 2 <1 0 current 0.3	6 0 61 <1 997 1170 1046 1219 3524 history1 2 1 0 history1 0.4	4 0 58 <1 930 1041 1055 1228 3003 history2 3 <1 0 history2 0.3
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>i</b> mit/base >25 >158 >20 <b>i</b> mit/base >3 >20	3 0 53 0 873 1107 989 1158 3509 current 2 <1 0 current 0.3 5.9	6 0 61 <1 997 1170 1046 1219 3524 history1 2 1 0 history1 0.4 6.5	4 0 58 <1 930 1041 1055 1228 3003 history2 3 <1 0 Vhistory2 0.3 6.0
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	3 0 53 0 873 1107 989 1158 3509 <u>current</u> 2 <1 0 <u>current</u> 0.3 5.9 17.7	6 0 61 <1 997 1170 1046 1219 3524 history1 2 1 0 history1 0.4 6.5 18.3	4 0 58 <1 930 1041 1055 1228 3003 <b>history2</b> 3 <1 0 <b>history2</b> 0.3 6.0 18.0
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 D7415	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >25 >158 >20 <b>imit/base</b> >3 >20 >30	3 0 53 0 873 1107 989 1158 3509 current 2 <1 0 current 0.3 5.9 17.7 current	6 0 61 <1 997 1170 1046 1219 3524 history1 2 1 0 history1 0.4 6.5 18.3 history1	4 0 58 <1 930 1041 1055 1228 3003 history2 3 <1 0 history2 0.3 6.0 18.0



31

2!

Abs/cm

10

14

0.212.0 0.0 KOH/g) 0.8 Base Number (mg KOH/g) 0.9 CON KOH/g)

2.0

0.0

18

16 cSt (100°C) В

Abnorma

an22/24

Oxidation

Sulfatio

Base Number

# **OIL ANALYSIS REPORT**



Report Id: CONFAY [WUSCAR] 06214286 (Generated: 06/21/2024 13:01:27) Rev: 1

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