

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id JCB 8042 0160003495 (S/N 60131780) Component Diesel Engine Fluid DIESEL ENGINE OIL SAE 15W40 (3 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	NATION	method	limit/base	current	history1	history2
Sample Number		Client Info		JCB005730		
Sample Date		Client Info		24 Apr 2024		
Machine Age	hrs	Client Info		3014		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
CONTAMINATION	N	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0		
Water		WC Method	>0.2	NEG		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	9		
Chromium	ppm	ASTM D5185m	>20	1		
Nickel	ppm	ASTM D5185m	>2	1		
Titanium	ppm	ASTM D5185m	>2	<1		
Silver	ppm	ASTM D5185m	>2	<1		
Aluminum	ppm	ASTM D5185m	>20	2		
Lead	ppm	ASTM D5185m	>40	1		
Copper	ppm	ASTM D5185m	>330	97		
Tin	ppm	ASTM D5185m	>15	1		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		<1		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 250	current 18	history1	history2
	ppm ppm					
Boron		ASTM D5185m	250	18		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	18 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	18 0 15		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	18 0 15 1		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	18 0 15 1 83		
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	18 0 15 1 83 2214	 	
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	18 0 15 1 83 2214 842	 	
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	18 0 15 1 83 2214 842 1046	 	
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	18 0 15 1 83 2214 842 1046 3736		
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	18 0 15 1 83 2214 842 1046 3736 current	 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 method	250 10 100 450 3000 1150 1350 4250 limit/base >25	18 0 15 1 83 2214 842 1046 3736 current 6	 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 method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158	18 0 15 1 83 2214 842 1046 3736 <u>current</u> 6 <	 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	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	18 0 15 1 83 2214 842 1046 3736 current 6 < 1 4	 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 ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 Imit/base >25 >158 >20 Imit/base	18 0 15 1 83 2214 842 1046 3736 current 6 <1 4	 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	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 Iimit/base >25 >158 >20 Iimit/base >6	18 0 15 1 83 2214 842 1046 3736 current 6 <1 4 current 0.2	 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	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >6 >20	18 0 15 1 83 2214 842 1046 3736 <i>current</i> 6 <1 4 <i>current</i> 0.2 7.2	 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	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >6 >20	18 0 15 1 83 2214 842 1046 3736 current 6 <1 4 current 0.2 7.2 17.5	 history1 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 D7844 *ASTM D7624	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >6 >20 >30	18 0 15 1 83 2214 842 1046 3736 <i>current</i> 6 <1 4 <i>current</i> 0.2 7.2 17.5	history1 history1 history1	 history2 history2 history2 history2



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30

25 Abs/cm

FT-IR (Direct Trend)

Oxidation

litration Sulfatio

OIL ANALYSIS REPORT

V	/ISUAL		method	limit/base	e current	history1	history2
Wh	nite Metal	scalar	*Visual	NONE	NONE		
Ye	llow Metal	scalar	*Visual	NONE	NONE		
Pre	ecipitate	scalar	*Visual	NONE	NONE		
Silt	t	scalar	*Visual	NONE	NONE		
De	bris	scalar	*Visual	NONE	NONE		
Sa	nd/Dirt	scalar	*Visual	NONE	NONE		
Ар	pearance	scalar	*Visual	NORML	NORML		
Od		scalar	*Visual	NORML	NORML		
Em	nulsified Water	scalar	*Visual	>0.2	NEG		
Fre	ee Water	scalar	*Visual		NEG		
F	LUID PROPERTI	IES	method	limit/base	e current	history1	history2
Vis	sc @ 40°C	cSt	ASTM D445	115	97.2		
Vis	sc @ 100°C	cSt	ASTM D445	14.4	13.2		
Vis	scosity Index (VI)	Scale	ASTM D2270	126	134		
G I 	GRAPHS						
	ron (ppm)				Lead (ppm)	
250	Severe				80 Severe		
1							
e 150 - 1 100 - 1	Abnormal			udd	40 - Abnormal		
50-					20		
57 0				24	0		
Apr24/24				Apr24/24	Apr24/24		
	Numinum (ppm)			-	Chromium	(ppm)	
⁵⁰ T					50 T	(PP)	
10	Severe				40 - Severe		
e ³⁰	Abnormal				20 Abnormal		
10					10		
οL				_	0		
Apr24/24				Apr24/24	Apr24/24		
				Apı			
	Copper (ppm)				Silicon (ppr 80 _{1 S} evere	m)	
300	Severe Abmonmal				60 -		
				E	40 -		
E 200				00	Abnormal		
톱 200 -					20-		
100-							
100				/24	0 42		
100-				Apr24/24	Apr24/24		
Apr24/24	/iscosity @ 100°C				Base Numb	per	
100 V V 18 T 8				Apr24/24	Base Numb	per	

10 40r74/74 Viscosity @ 40°C 140 Abno 130 120 B ಸ್<u>ನ</u> 100 90 80 70 Apr24/2 Viscosity @ 100°C 18 17 16 cSt (100°C) Ba Abnormal Apr24/24 Viscosity @ 40°C 140 A 130 120 Bas cSt(100 90 80 70 Apr24/24

Report Id: VALBAL [WUSCAR] 06160221 (Generated: 04/26/2024 10:54:16) Rev: 1

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Laboratory

Sample No.

Certificate 12367

Lab Number : 06160221

Unique Number : 10995644

10

Apr24/24

: JCB005730

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.

Test Package : MOB 1 (Additional Tests: KV40, TBN, VI)

gvincent@valleysupplyequipment.com T: (410)780-4000 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (240)420-5999

VALLEY SUPPLY & EQUIPMENT CO INC - BALTIMORE

1109 MIDDLE RIVER RD

Contact: GEORGE VINCENT

BALTIMORE, MD

Contact/Location: GEORGE VINCENT - VALBAL

Apr24/24

Abnorn

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Apr24/24 -

: 25 Apr 2024

: 26 Apr 2024

: 26 Apr 2024 - Wes Davis

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

Received

Diagnosed

Tested

5.0 Base 0.0

US 21220

Apr24/24