



WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**HITACHI ZX210LC E-27 (S/N 1FFDCJ70TFE330733)**

Component  
**Diesel Engine**

Fluid  
**JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (6 GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0173383</b>	JR0173385	JR0153896
Sample Date		Client Info		<b>17 Jan 2024</b>	30 Aug 2023	12 Jan 2023
Machine Age	hrs	Client Info		<b>8032</b>	7713	7242
Oil Age	hrs	Client Info		<b>319</b>	471	430
Filter Age	hrs	Client Info		<b>319</b>	471	430
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>8</b>	11	11
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>5</b>	5	6
Lead	ppm	ASTM D5185m	>40	<b>1</b>	4	2
Copper	ppm	ASTM D5185m	>330	<b>&lt;1</b>	4	2
Tin	ppm	ASTM D5185m	>15	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

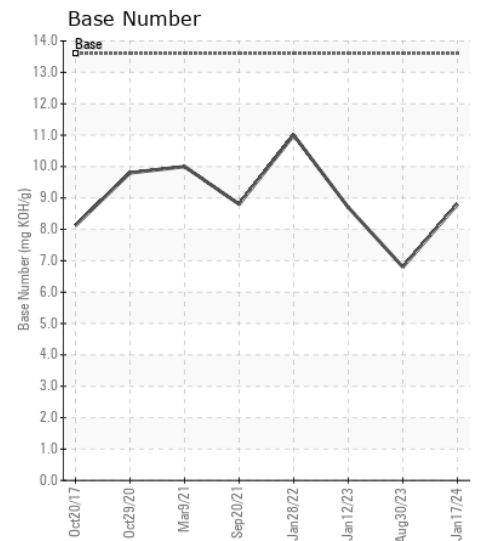
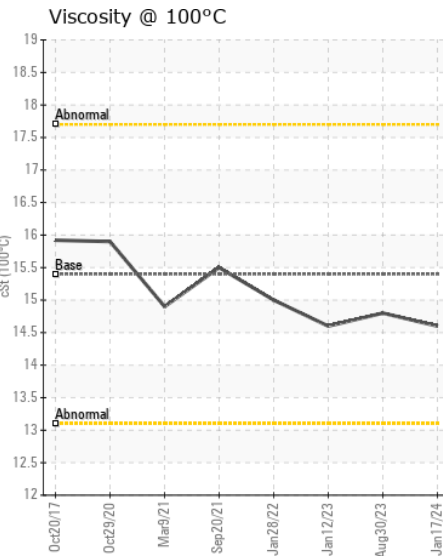
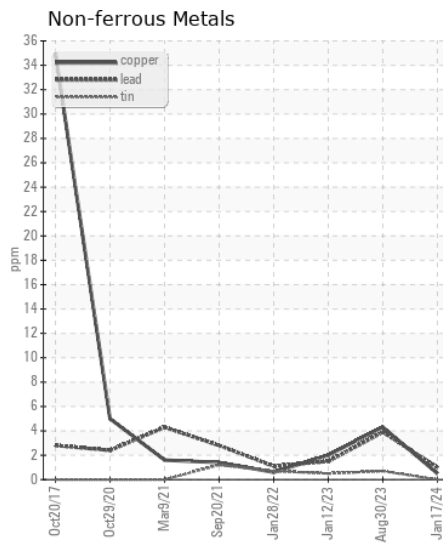
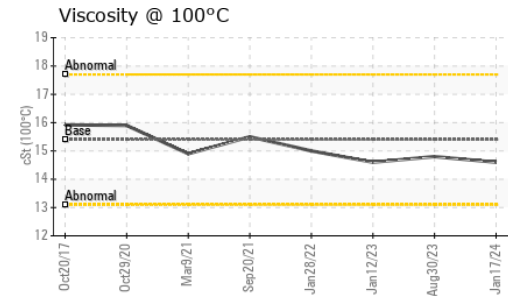
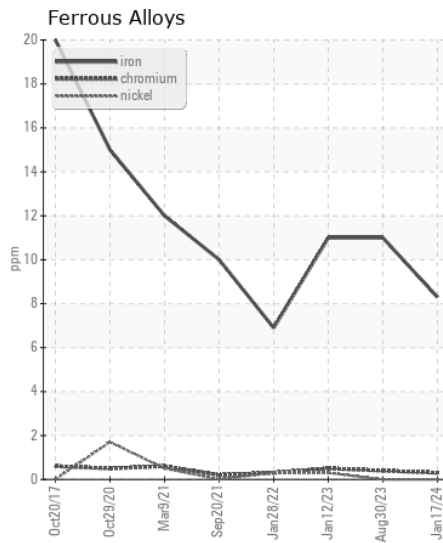
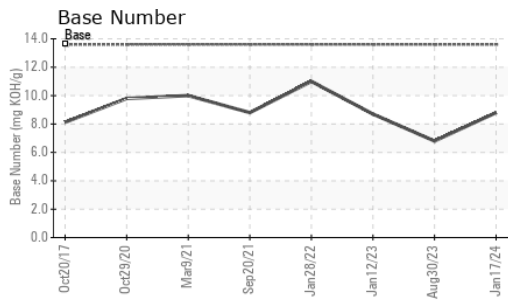
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>8</b>	7	8
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	3	6
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>1.2</b>	0.3	1.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.1</b>	8.9	10.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.1</b>	18.2	25.0
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

### 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.

Sodium	ppm	ASTM D5185m		<b>4</b>	11	23
Boron	ppm	ASTM D5185m		<b>237</b>	163	182
Barium	ppm	ASTM D5185m		<b>4</b>	<1	2
Molybdenum	ppm	ASTM D5185m		<b>265</b>	262	259
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>883</b>	898	795
Calcium	ppm	ASTM D5185m		<b>1377</b>	1554	1438
Phosphorus	ppm	ASTM D5185m		<b>858</b>	906	867
Zinc	ppm	ASTM D5185m		<b>1113</b>	1133	1072
Sulfur	ppm	ASTM D5185m		<b>3149</b>	3447	3153
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.0</b>	13.9	17.5
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	<b>8.8</b>	6.8	8.7
Visc @ 100°C	cSt	ASTM D445	15.4	<b>14.6</b>	14.8	14.6



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0173383 **Received** : 18 Jan 2024  
**Lab Number** : 06064061 **Diagnosed** : 19 Jan 2024  
**Unique Number** : 10835443 **Diagnostician** : Wes Davis  
**Test Package** : CONST ( 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)

**DIVERSIFIED BIO-MASS**  
 606 SUNYDALE DR  
 WILMINGTON, NC  
 US 28412  
 Contact: CHRIS DAWSON  
 chris@tubgrinding.com  
 T: (914)279-6817  
 F: (910)793-6227