



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

Machine Id  
**HITACHI 345LC-6 HCMDD560T00010281**

Component  
**Hydraulic System**

Fluid  
**JOHN DEERE ZINC-FREE HYDRAULIC OIL 46 (--- GAL)**

### RECOMMENDATION

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0218296</b>	JR0199851	JR0200763
Sample Date		Client Info		<b>14 Jun 2024</b>	07 Mar 2024	17 Jan 2024
Machine Age	hrs	Client Info		<b>1967</b>	1583	1458
Oil Age	hrs	Client Info		<b>1967</b>	1583	1458
Filter Age	hrs	Client Info		<b>1967</b>	617	0
Oil Changed		Client Info		<b>Not Chngd</b>	Not Chngd	Not Chngd
Filter Changed		Client Info		<b>Changed</b>	Not Chngd	Not Chngd
Sample Status				<b>ABNORMAL</b>	NORMAL	ATTENTION

### WEAR

All component wear rates are normal.

PQ	UOM	Method	Limit/Abn	Current	History1	History2
PQ		ASTM D8184		<b>20</b>	12	12
Iron	ppm	ASTM D5185m	>20	<b>11</b>	8	0
Chromium	ppm	ASTM D5185m	>10	<b>&lt;1</b>	<1	0
Nickel	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>10	<b>2</b>	1	0
Lead	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m	>75	<b>3</b>	3	3
Tin	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

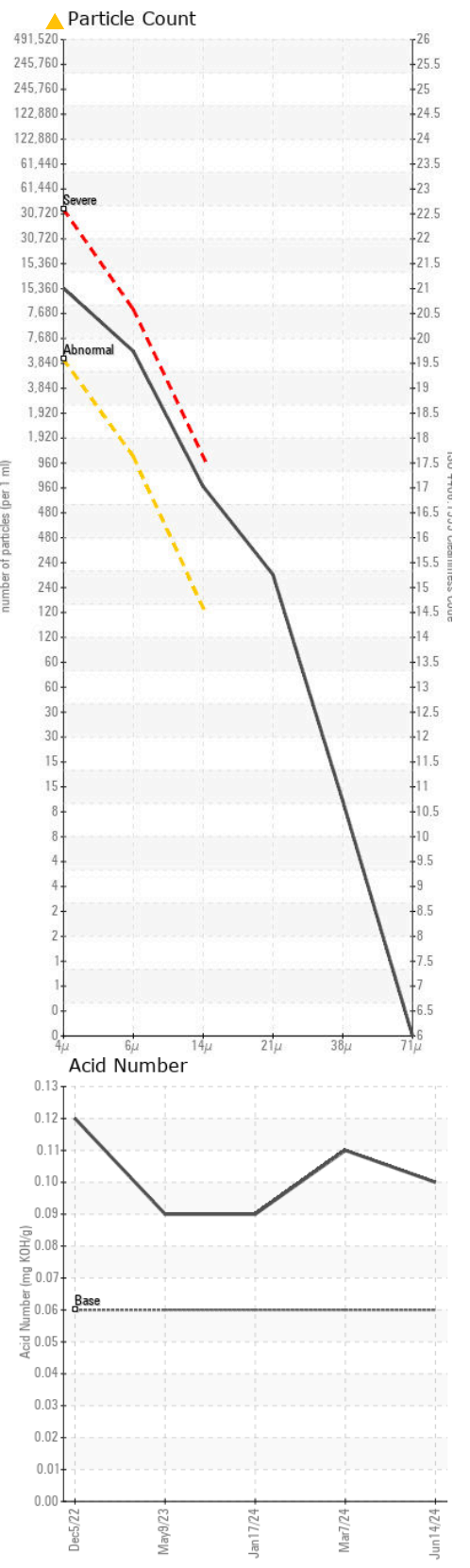
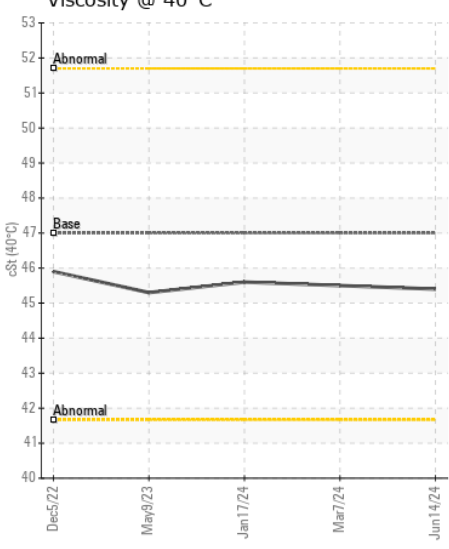
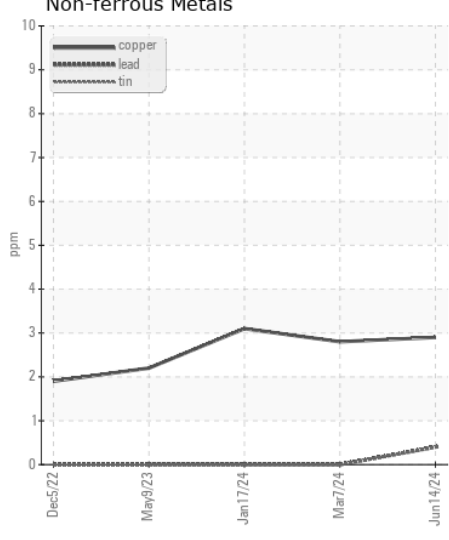
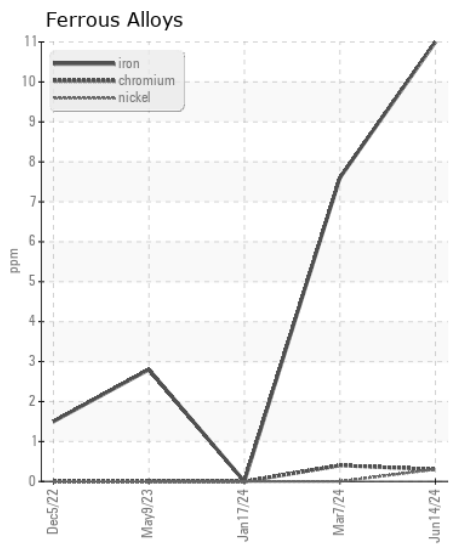
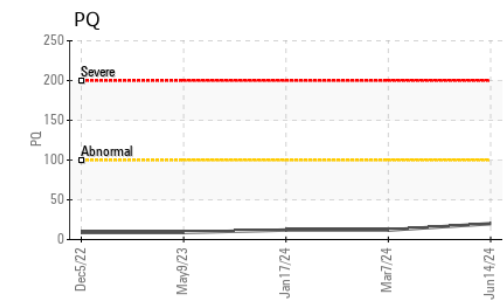
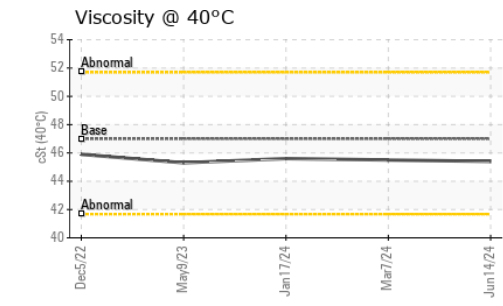
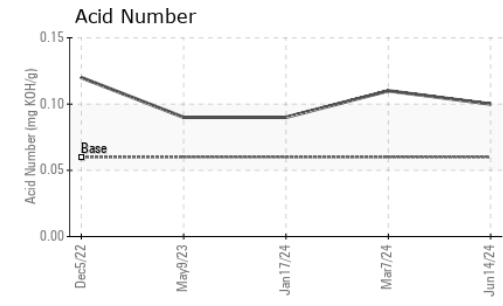
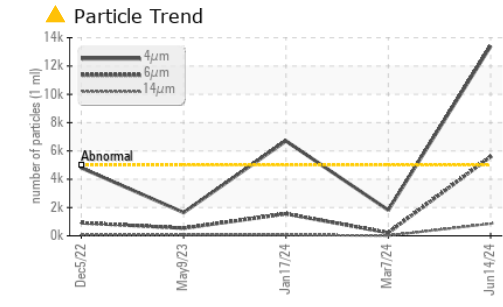
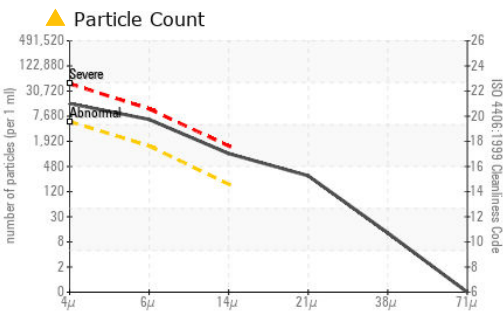
There is a high amount of particulates present in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>3</b>	2	1
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	<1	0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>5000	<b>▲ 13405</b>	1813	● 6704
Particles >6µm		ASTM D7647	>1300	<b>▲ 5594</b>	219	● 1558
Particles >14µm		ASTM D7647	>160	<b>▲ 858</b>	13	71
Particles >21µm		ASTM D7647	>40	<b>▲ 253</b>	4	17
Particles >38µm		ASTM D7647	>10	<b>▲ 11</b>	0	1
Particles >71µm		ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	<b>▲ 21/20/17</b>	18/15/11	● 20/18/13
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	>0.1	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>0</b>	<1	0
Boron	ppm	ASTM D5185m		<b>2</b>	0	0
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m		<b>1</b>	8	<1
Calcium	ppm	ASTM D5185m		<b>0</b>	36	2
Phosphorus	ppm	ASTM D5185m		<b>486</b>	480	489
Zinc	ppm	ASTM D5185m		<b>47</b>	52	39
Sulfur	ppm	ASTM D5185m		<b>127</b>	137	163
Acid Number (AN)	mg KOH/g	ASTM D8045	0.06	<b>0.10</b>	0.11	0.09
Visc @ 40°C	cSt	ASTM D445	47	<b>45.4</b>	45.5	45.6



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0218296 **Received** : 18 Jun 2024  
**Lab Number** : 06213332 **Tested** : 19 Jun 2024  
**Unique Number** : 11086196 **Diagnosed** : 20 Jun 2024 - Don Baldrige  
**Test Package** : CONST ( Additional Tests: PQ )

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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)