



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

Machine Id  
**JOHN DEERE PM061092**  
 Component  
**Hydraulic System**  
 Fluid  
**HITACHI HYDRAULIC SUPER EX 46HN (--- GAL)**

### RECOMMENDATION

Recommend drain oil if not already done. Reduce drain interval to 2000 hours or drain and flush and use recommended zinc free oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0203148</b>	JR0174589	JR0153254
Sample Date		Client Info		<b>22 Feb 2024</b>	31 May 2023	11 Nov 2022
Machine Age	hrs	Client Info		<b>6469</b>	5991	5527
Oil Age	hrs	Client Info		<b>5467</b>	5453	538
Filter Age	hrs	Client Info		<b>5467</b>	5453	0
Oil Changed		Client Info		<b>Not Chngd</b>	Not Chngd	N/A
Filter Changed		Client Info		<b>Not Chngd</b>	Changed	N/A
Sample Status				<b>ABNORMAL</b>	ABNORMAL	NORMAL

### WEAR

All component wear rates are normal.

PQ		ASTM D8184	>50	<b>12</b>	14	11
Iron	ppm	ASTM D5185m	>32	<b>11</b>	15	12
Chromium	ppm	ASTM D5185m	>9	<b>&lt;1</b>	1	<1
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>9	<b>3</b>	4	3
Lead	ppm	ASTM D5185m	>28	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>50	<b>1</b>	2	<1
Tin	ppm	ASTM D5185m	>5	<b>0</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

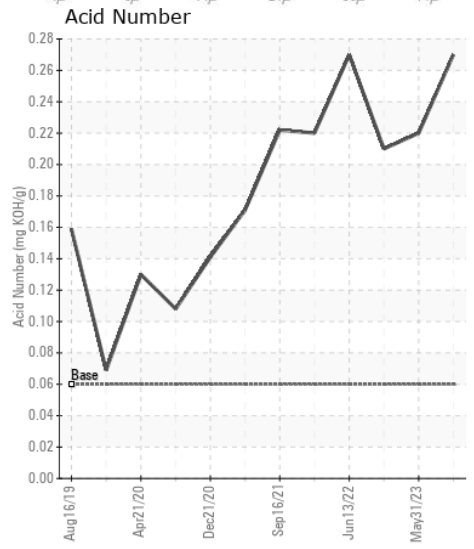
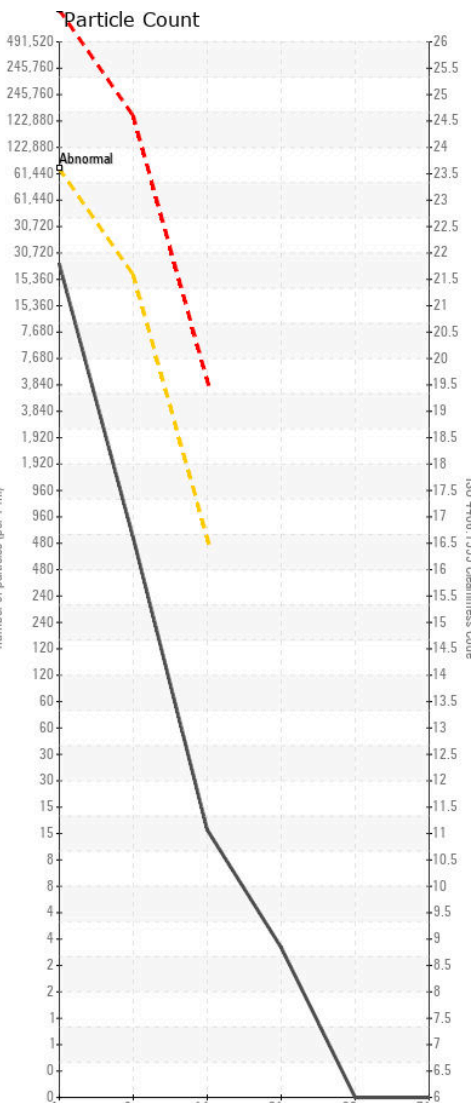
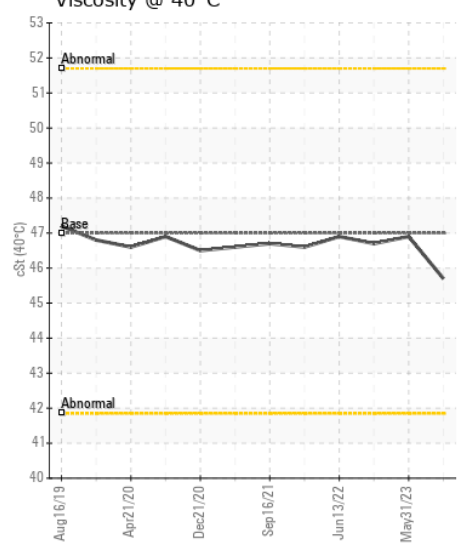
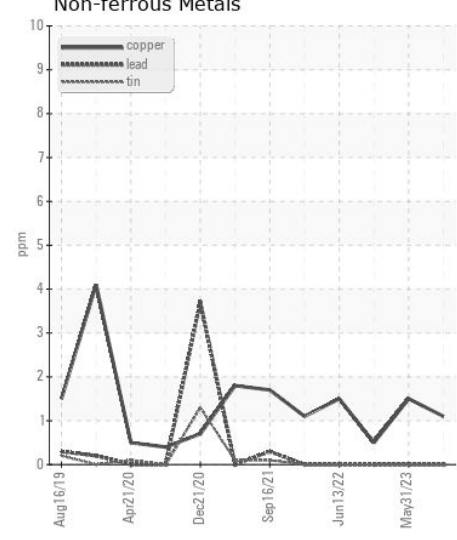
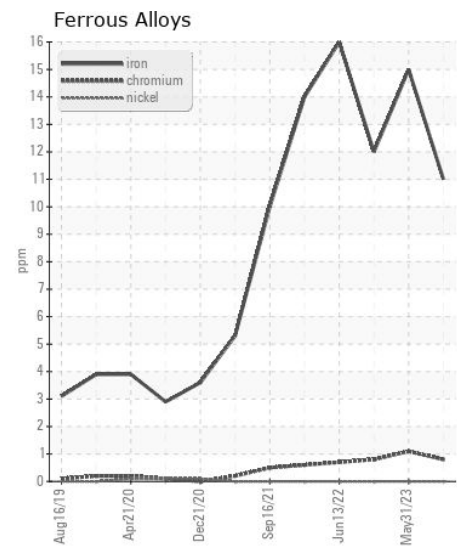
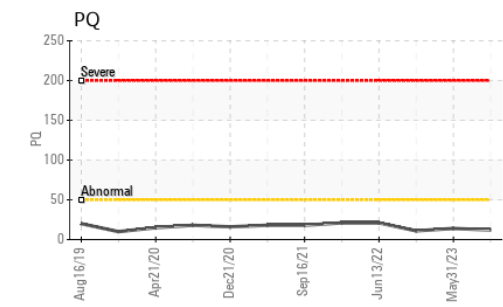
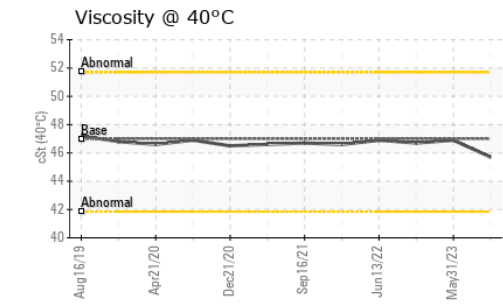
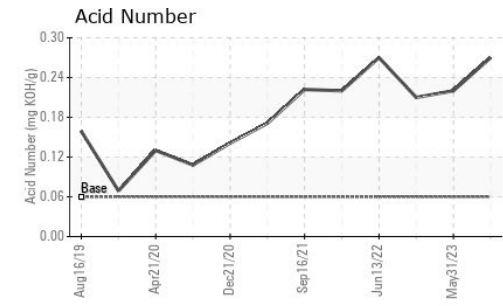
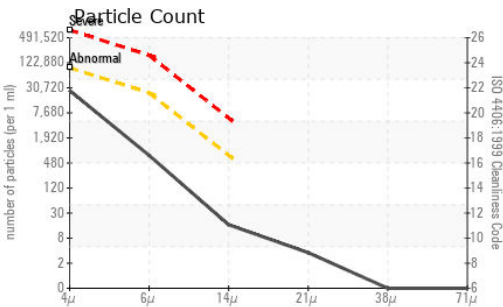
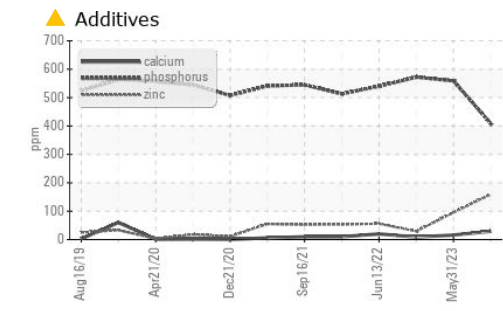
The amount and size of particulates present in the system are acceptable.

Silicon	ppm	ASTM D5185m	>11	<b>7</b>	8	5
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	2	0
Water		WC Method	>0.075	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>80000	<b>23014</b>	---	25104
Particles >6µm		ASTM D7647	>20000	<b>639</b>	---	906
Particles >14µm		ASTM D7647	>640	<b>14</b>	---	38
Particles >21µm		ASTM D7647	>160	<b>3</b>	---	10
Particles >38µm		ASTM D7647	>40	<b>0</b>	---	1
Particles >71µm		ASTM D7647	>10	<b>0</b>	---	1
Oil Cleanliness		ISO 4406 (c)	>23/21/16	<b>22/16/11</b>	---	22/17/12
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	▲ HEAVY	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	>0.075	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

Zinc level above manufacturer's recommendations. The AN level is acceptable for this fluid.

Sodium	ppm	ASTM D5185m	>21	<b>2</b>	0	0
Boron	ppm	ASTM D5185m		<b>0</b>	0	0
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>&lt;1</b>	1	<1
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>0</b>	4	<1
Calcium	ppm	ASTM D5185m		<b>29</b>	16	9
Phosphorus	ppm	ASTM D5185m	827	<b>409</b>	559	572
Zinc	ppm	ASTM D5185m	0	▲ <b>159</b>	▲ 95	29
Sulfur	ppm	ASTM D5185m	13	<b>452</b>	296	154
Acid Number (AN)	mg KOH/g	ASTM D8045	0.06	<b>0.27</b>	0.22	0.21
Visc @ 40°C	cSt	ASTM D445	47	<b>45.7</b>	46.9	46.7



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0203148 **Received** : 26 Feb 2024  
**Lab Number** : 06100053 **Tested** : 27 Feb 2024  
**Unique Number** : 10898283 **Diagnosed** : 27 Feb 2024 - Don Baldrige  
**Test Package** : CONST ( Additional Tests: PQ )

**FITZGERALD EXCAVATING**  
 PO BOX 2168  
 WINCHESTER, VA  
 US 22604  
 Contact: Service Manager

Certificate L2367  
 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)