



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

Machine Id  
**JOHN DEERE 50G 1FF050GXHHH287220**

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>JR0201466</b>	JR0185170	JR0160571
Sample Date		Client Info		<b>03 Jan 2024</b>	22 Aug 2023	03 Apr 2023
Machine Age	hrs	Client Info		<b>2984</b>	2984	2711
Oil Age	hrs	Client Info		<b>1212</b>	1212	939
Filter Age	hrs	Client Info		<b>273</b>	273	939
Oil Changed		Client Info		<b>Not Chngd</b>	Not Chngd	Not Chngd
Filter Changed		Client Info		<b>Not Chngd</b>	Not Chngd	Changed
Sample Status				<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

**WEAR**

All component wear rates are normal.

PQ		ASTM D8184	>50	<b>12</b>	11	13
Iron	ppm	ASTM D5185m	>32	<b>6</b>	5	4
Chromium	ppm	ASTM D5185m	>9	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>9	<b>2</b>	2	0
Lead	ppm	ASTM D5185m	>28	<b>&lt;1</b>	<1	0
Copper	ppm	ASTM D5185m	>50	<b>3</b>	3	1
Tin	ppm	ASTM D5185m	>5	<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**

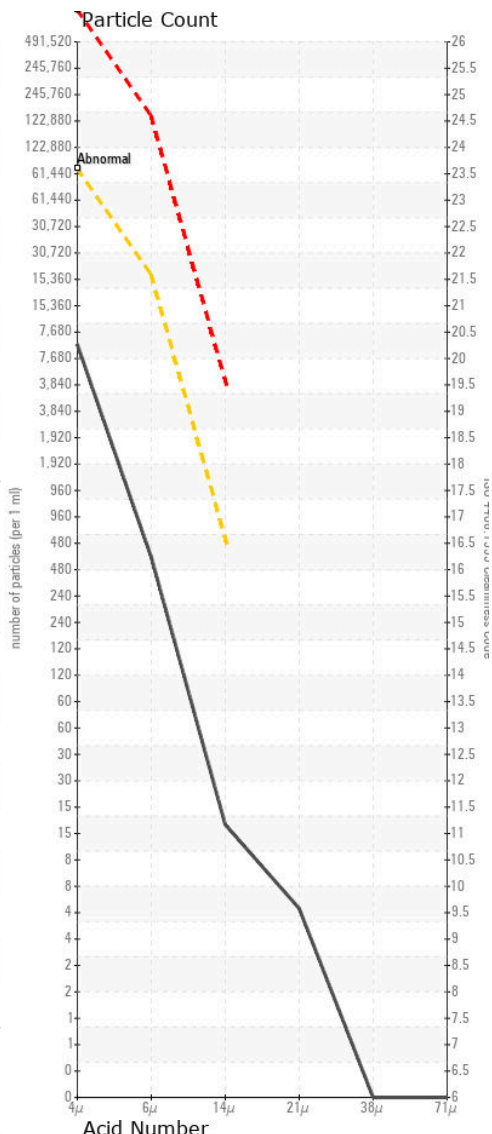
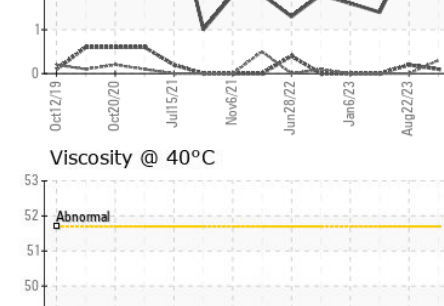
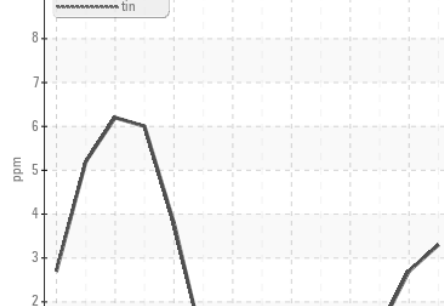
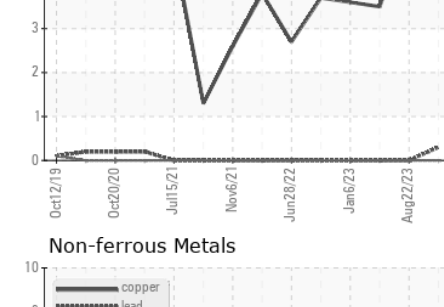
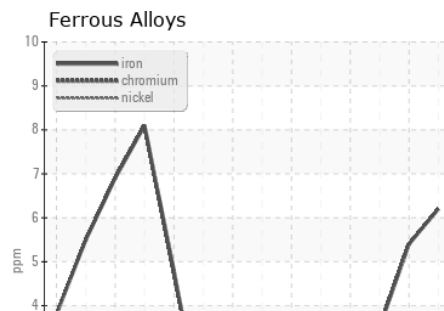
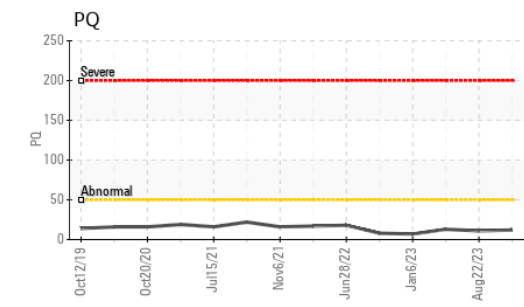
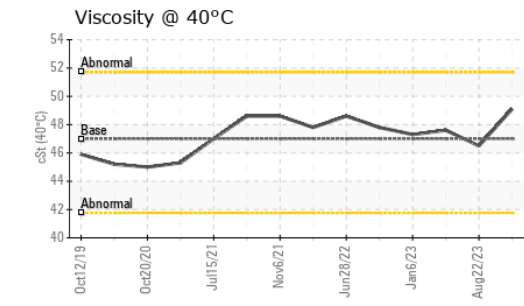
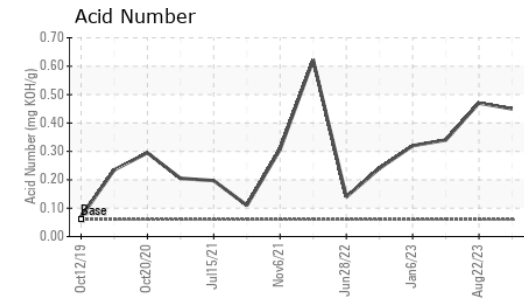
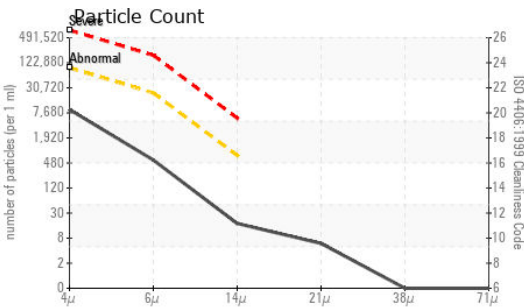
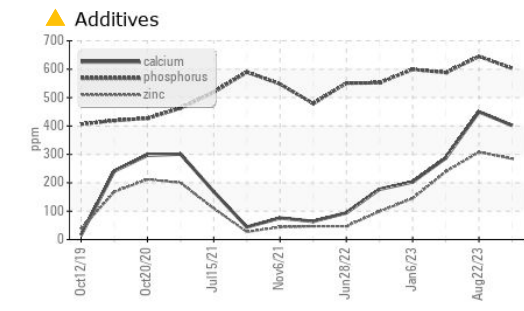
The amount and size of particulates present in the system are acceptable.

Silicon	ppm	ASTM D5185m	>11	<b>2</b>	2	2
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	1	0
Water		WC Method	>0.075	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>80000	<b>8030</b>	7226	6986
Particles >6µm		ASTM D7647	>20000	<b>496</b>	783	831
Particles >14µm		ASTM D7647	>640	<b>15</b>	52	26
Particles >21µm		ASTM D7647	>160	<b>5</b>	14	3
Particles >38µm		ASTM D7647	>40	<b>0</b>	1	1
Particles >71µm		ASTM D7647	>10	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>23/21/16	<b>20/16/11</b>	20/17/13	20/17/12
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	>0.075	<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>0</b>	0	0
Boron	ppm	ASTM D5185m		<b>0</b>	0	0
Barium	ppm	ASTM D5185m		<b>0</b>	2	0
Molybdenum	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Manganese	ppm	ASTM D5185m		<b>0</b>	0	<1
Magnesium	ppm	ASTM D5185m		<b>5</b>	7	8
Calcium	ppm	ASTM D5185m		<b>402</b>	450	287
Phosphorus	ppm	ASTM D5185m	827	<b>603</b>	645	588
Zinc	ppm	ASTM D5185m	0	<b>▲ 285</b>	▲ 308	▲ 239
Sulfur	ppm	ASTM D5185m	13	<b>1139</b>	1266	649
Acid Number (AN)	mg KOH/g	ASTM D8045	0.06	<b>0.45</b>	0.47	0.34
Visc @ 40°C	cSt	ASTM D445	47	<b>49.1</b>	46.5	47.6



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0201466 **Received** : 16 Jan 2024  
**Lab Number** : 06061888 **Diagnosed** : 17 Jan 2024  
**Unique Number** : 10833270 **Diagnostician** : Don Baldridge  
**Test Package** : CONST ( Additional Tests: PQ )

**TENNOCA CONSTRUCTION**  
 PO BOX 2379  
 CANDLER, NC  
 US 28715  
 Contact: MARK ROSS  
 mark@tennoca.com  
 T: (828)665-8331  
 F:

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)