



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL



Area
Store 9 - Marietta [ro#125990]
Machine Id
JOHN DEERE 290GL 1FF290GXPEE706215
Component
Hydraulic System
Fluid
HITACHI HYDRAULIC SUPER EX 46HN (63 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		LEC0027420	LEC0013750	LECP184430
Sample Date		Client Info		15 Mar 2022	08 Jul 2020	15 Mar 2019
Machine Age	hrs	Client Info		5564	4883	4777
Oil Age	hrs	Client Info		4646	4883	4777
Filter Age	hrs	Client Info		787	106	1056
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Filter Changed		Client Info		Changed	Not Changd	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

PQ		ASTM D8184	>50	17	18	12
Iron	ppm	ASTM D5185m	>32	8	13	15
Chromium	ppm	ASTM D5185m	>9	3	1	1
Nickel	ppm	ASTM D5185m	>5	0	0	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m		<1	<1	0
Aluminum	ppm	ASTM D5185m	>9	2	3	6
Lead	ppm	ASTM D5185m	>28	<1	<1	<1
Copper	ppm	ASTM D5185m	>50	3	2	2
Tin	ppm	ASTM D5185m	>5	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

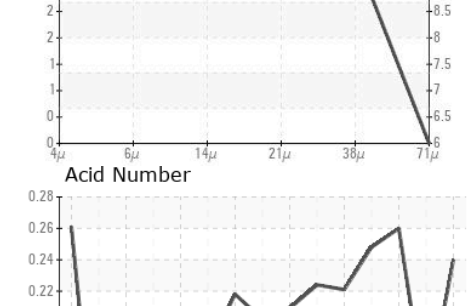
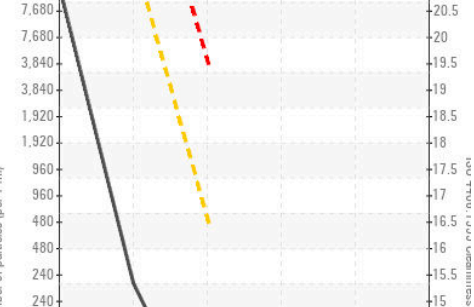
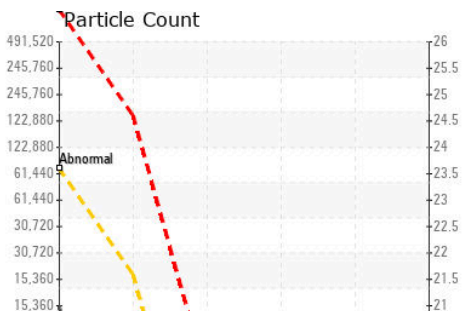
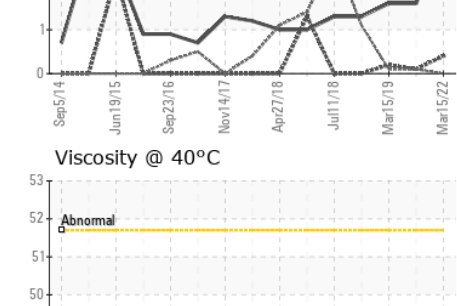
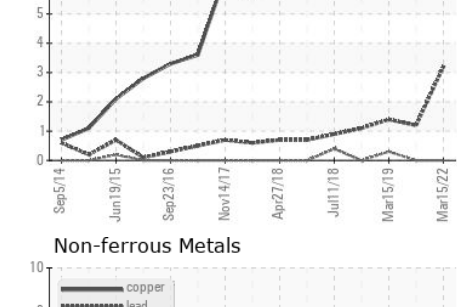
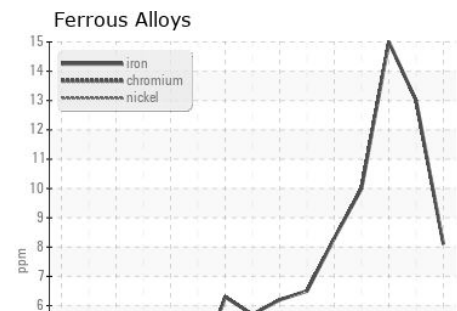
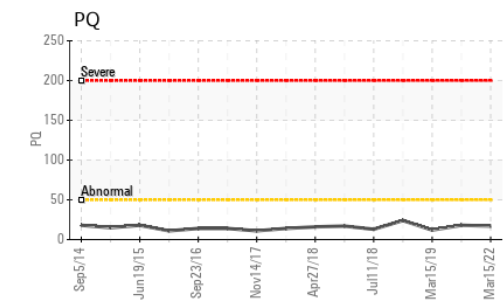
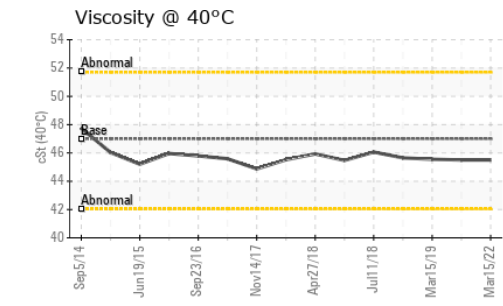
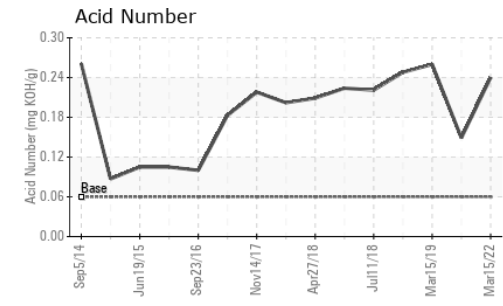
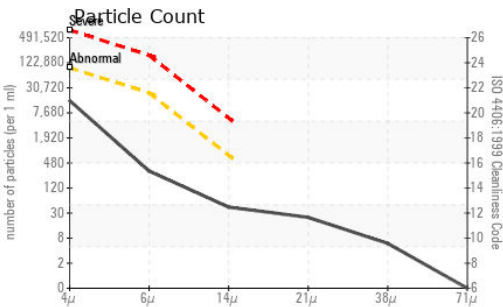
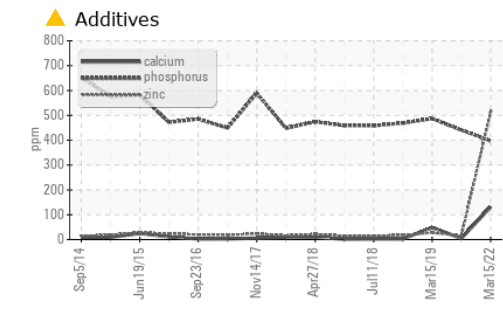
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

Silicon	ppm	ASTM D5185m	>11	2	4	4
Potassium	ppm	ASTM D5185m	>20	0	<1	1
Water		WC Method	>0.075	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>80000	13166	18229	24033
Particles >6µm		ASTM D7647	>20000	270	657	1778
Particles >14µm		ASTM D7647	>640	37	15	62
Particles >21µm		ASTM D7647	>160	21	4	15
Particles >38µm		ASTM D7647	>40	5	1	1
Particles >71µm		ASTM D7647	>10	0	0	0
Oil Cleanliness		ISO 4406 (c)	>23/21/16	21/15/12	21/17/11	22/18/13
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	VLITE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.075	NEG	NEG	NEG

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m	>21	2	0	0
Boron	ppm	ASTM D5185m		3	<1	<1
Barium	ppm	ASTM D5185m		0	1	0
Molybdenum	ppm	ASTM D5185m		2	<1	<1
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		25	<1	<1
Calcium	ppm	ASTM D5185m		131	5	48
Phosphorus	ppm	ASTM D5185m	827	397	441	487
Zinc	ppm	ASTM D5185m	0	▲ 510	15	27
Sulfur	ppm	ASTM D5185m	13	967	117	156
Acid Number (AN)	mg KOH/g	ASTM D8045	0.06	0.24	0.149	0.260
Visc @ 40°C	cSt	ASTM D445	47	45.5	45.5	45.55



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0027420 **Received** : 18 Mar 2022
Lab Number : 05495626 **Tested** : 23 Mar 2022
Unique Number : 9894846 **Diagnosed** : 23 Mar 2022 - Jonathan Hester
Test Package : MOBCE (Additional Tests: PQ)

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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)