

OIL ANALYSIS REPORT

Sample Rating Trend

ISO

JOHN DEERE 38-20

Hydraulic System Fluid JOHN DEERE HYDRAU (80 LTR)

DIAGNOSIS

Recommendation

The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a light amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition

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

			Jun2023	Feb2024		
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PC0052719	PC0061422	
Sample Date		Client Info		05 Feb 2024	20 Jun 2023	
Vachine Age	hrs	Client Info		5265	4343	
Dil Age	hrs	Client Info		0	0	
Dil Changed		Client Info		Not Changd	Not Changd	
Sample Status				ATTENTION	NORMAL	
CONTAMINATI	ON	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	
WEAR METALS	5	method	limit/base	current	history1	history2
ron	ppm	ASTM D5185(m)	>20	14	9	
Chromium	ppm	ASTM D5185(m)	>10	7	5	
lickel	ppm	ASTM D5185(m)	>10	<1	0	
Titanium	ppm	ASTM D5185(m)		0	0	
Silver	ppm	ASTM D5185(m)		0	0	
Aluminum	ppm	ASTM D5185(m)	>10	1	<1	
ead	ppm	ASTM D5185(m)	>10	<1	<1	
Copper	ppm	ASTM D5185(m)		1	1	
-in	ppm	ASTM D5185(m)	>10	0	0	
Antimony	ppm	ASTM D5185(m)		0	0	
/anadium	ppm	ASTM D5185(m)		0	0	
Beryllium	ppm	ASTM D5185(m)		0	0	
•		. ,				
Cadmium	mag	ASTM D5185(m)		0	0	
	ppm	ASTM D5185(m)		0	0	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base	current <1	history1 <1	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185(m) ASTM D5185(m)	limit/base	current <1 0	history1 <1 0	history2
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	current <1 0 <1	history1 <1 0 1	history2
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	Method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	current <1 0 <1 0	history1 <1 0 1 0	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	Method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		current <1 0 <1 0 12	history1 <1 0 1 0 13	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	87	Current <1 0 <1 0 12 420	history1 <1 0 1 0 13 127	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	methodASTM D5185(m)ASTM D5185(m)ASTM D5185(m)ASTM D5185(m)ASTM D5185(m)ASTM D5185(m)ASTM D5185(m)ASTM D5185(m)	87 727	Current <1 0 <1 0 12 420 671	history1 <1 0 1 0 13 127 690	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	87 727 900	<1 0 <1 0 12 420 671 808	history1 <1 0 1 0 13 127 690 820	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	87 727	<1 0 <1 0 12 420 671 808 1810	history1 <1 0 1 0 13 127 690 820 1497	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	87 727 900 1500	Current <1 0 <1 0 12 420 671 808 1810 <1	history1 <1 0 1 0 13 127 690 820 1497 <1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	87 727 900 1500	<1 0 <1 0 12 420 671 808 1810 <1 current	history1 <1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Cinc Sulfur Lithium CONTAMINANT Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	87 727 900 1500	<1 0 <1 0 12 420 671 808 1810 <1 current	history1 <1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium	ppm	method ASTM D5185(m)	87 727 900 1500 limit/base >20	<1 0 <1 0 12 420 671 808 1810 <1 Current 1 2	history1 <1	history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium	ppm	method ASTM D5185(m)	87 727 900 1500 Imit/base >20	<1 0 <1 0 12 420 671 808 1810 <1 current	history1 <1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANL	ppm	method ASTM D5185(m) ASTM D5185(m)	87 727 900 1500 ilmit/base >20 imit/base	<1 0 <1 0 12 420 671 808 1810 <1 current 1 2 2 current	history1 <1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Sulfur ithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANL Particles >4µm	ppm	method ASTM D5185(m)	87 727 900 1500 20 20 20 20 1imit/base >20	<1 0 <1 0 12 420 671 808 1810 <1 current 1 2 2 current 6921	history1 <1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Sulfur Sulfur CONTAMINANT Silicon Sodium Potassium FLUID CLEANL Particles >6µm	ppm	method ASTM D5185(m) ASTM D5185(m)	87 727 900 1500 ilmit/base >20 imit/base	<1 0 <1 0 12 420 671 808 1810 <1 0urrent 1 2 2 current 1 2 2 current 1064	history1 <1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Sulfur ithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANL Particles >6µm	ppm	method ASTM D5185(m)	87 727 900 1500 imit/base >20 imit/base >20 imit/base >20 imit/base >20	<1 0 <1 0 12 420 671 808 1810 <1 current 1 2 2 current 6921	history1 <1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANL Particles >4µm Particles >6µm Particles >14µm Particles >21µm	ppm	method ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	87 727 900 1500 imit/base >20 imit/base >20 imit/base >20 imit/base >20	<1 0 <1 0 12 420 671 808 1810 <1 0urrent 1 2 2 current 1 2 2 current 1064	history1 <1	history2 history2 history2 history2 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANL Particles >4µm Particles >6µm Particles >14µm Particles >21µm	ppm	method ASTM D5185(m)	87 727 900 1500 imit/base >20 imit/base >20 imit/base >20 imit/base >20	<1 0 <1 0 12 420 671 808 1810 <1 2 current 1 2 current 1064 97 2 2	history1 <1	history2 history2 history2 history2 history2 history2 history2 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANL Particles >4µm Particles >6µm Particles >14µm	ppm	method ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	87 727 900 1500 imit/base >20 20 20 imit/base >5000 >1300 >160 >40 >10	<1 0 <1 0 12 420 671 808 1810 <1 0urrent 1 2 current 1 2 current 1064 97 29	history1 <1	history2 history2 history2 <

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OIL ANALYSIS REPORT

/ 7k -	Particle Trend	FLUID DEGRA		method	limit/base	current	history1	history2
6k -	4μm 6μm	Acid Number (AN)	mg KOH/g	ASTM D974*	1.0	0.73	1.03	
of particles (1 r 3k	Abnomul. 14µm	VISUAL		method	limit/base	current	history1	history2
jo 3k -		White Metal	scalar	Visual*	NONE	NONE	NONE	
Jaquinu 2k •		Yellow Metal	scalar	Visual*	NONE	NONE	NONE	
- 1k -		Precipitate	scalar	Visual*	NONE	NONE	NONE	
0k 1	/23	Silt	scalar	Visual*	NONE	NONE	NONE	
	Jun 20/23 Feb 5/24	Debris	scalar	Visual*	NONE	NONE	VLITE	
		Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	
15 -	Viscosity @ 100°C	Appearance	scalar	Visual*	NORML	NORML	NORML	
14	Abnormal	Odor	scalar	Visual*	NORML	NORML	NORML	
_13-		Emulsified Water	scalar	Visual*	>0.1	NEG	NEG	
(J-012- 25 (100-C) 11-	Base	Free Water	scalar	Visual*		NEG	NEG	
ਲੂ 11 10	Abnormal	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
9-		Visc @ 40°C	cSt	ASTM D7279(m)	65	53.0	52.9	
81	/23 -	Visc @ 100°C	cSt	ASTM D7279(m)	11.8	9.7	10.0	
	Jun20/23 Feb5/24	Viscosity Index (VI)	Scale	ASTM D2270*	178	170	179	
	Acid Number	SAMPLE IMAG	äES	method	limit/base	current	history1	history2
1.2 1.0 (B/1.0 0.7 0.7	Base	Color						no image
0.0 Veral N	Jun 20 23	Bottom						no image
	ر اس Fa	GRAPHS						
	Viscosity @ 100°C	Ferrous Alloys			491,52	Particle Count		т26
15 14	· · ·	iron			122,88			-24
13	Abnormal	E 10 management chromium			Piezesea46	Severe		
_	Base	0			30,72			-22
(J_012- 11- 11-		un 20,23			(per 1 ml) (10 Feb5/24			-20 4406:1999 Cle
10	Abnormal	, un C			ළි <u>ම</u> 1,92 ම	0-	•	-18
9-		Non-ferrous Metal	s		pitred 48			-16 Cea
81	/23 -	10 copper			Jo 12	0-		-14 n
	Jun 20/23	E. 5-			^m n 3	0-		-12 0
				*****		8 -		-10
75 -	Viscosity @ 40°C	0/23			Feb5/24 -	2-		
70-	Abnormal	Jun20/25			윤	0,		6
65-	Base	Viscosity @ 40°C			(B	Acid Number	14μ 21μ	38µ 71µ́
65 (40°C)					(B/H0, Bull 1.1	⁵ J		
ぞう 55		;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;			<u>ຍ</u> 1.	0 - Dase		
50-		3 50 - <mark>Abnormal</mark>			Acid Number	5		
45	Abnormal	404			Z4			24
	lun 20/23	Jun20/23			Feb5/24	Jun20/23		Feb 5/24
	Laboratory Sample No. Lab Number Unique Number	: 5733751 : IND 2 (Additional Tes contact Customer Servi e of accreditation, (m) m	Recei Teste Diagr sts: KV10 ice at 1-8 ethod mo	ved : 20 d : 21 iosed : 21 0, VI : 000-268-213 : odified, (e) te) Feb 2024 Feb 2024 Feb 2024 - W 1. sted at exter	2 BE Ves Davis mal lab.	Cont jirwin@ar T:	

Contact/Location: John Irwin - EQUMID