

# **OIL ANALYSIS REPORT**

Sample Rating Trend



JOHN DEERE 133 Component Hydraulic System Fluid JD (--- QTS)

## DIAGNOSIS

Machine Id

#### Recommendation

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

#### Wear

All component wear rates are normal.

### Contamination

There is a high 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.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		JR0189889	JR0189730	JR0135348
Sample Date		Client Info		03 Apr 2024	26 Jan 2024	30 Oct 2023
Machine Age	hrs	Client Info		4002	3500	3000
Oil Age	hrs	Client Info		4000	3500	3000
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				ABNORMAL	ABNORMAL	ATTENTION
CONTAMINATION	l	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184		18	16	11
Iron	ppm	ASTM D5185m	>20	23	24	18
Chromium	ppm	ASTM D5185m	>10	10	9	7
Nickel	ppm	ASTM D5185m	>10	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>10	0	2	<1
Lead	ppm	ASTM D5185m	>10	0	0	0
Copper	ppm	ASTM D5185m	>75	4	6	5
Tin	ppm	ASTM D5185m	>10	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1 3	<mark>history2</mark> 2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base	current 0 0	history1 3 <1	history2 2 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 0 0 0	history1 3 <1 1	history2 2 0 <1
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current O O O O	history1 3 <1 1 0	history2 2 0 <1 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 0 0 0 0 2	history1 3 <1 1 0 7	history2 2 0 <1 <1 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 0 0 0 0 2 2 243	history1 3 <1 1 0 7 194	history2 2 0 <1 <1 0 191
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 0 0 0 0 2 243 689	history1 3 <1 1 0 7 194 641	history2 2 0 <1 <1 0 191 656
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 0 0 0 0 2 243 689 905	history1 3 <1 1 0 7 194 641 960	history2 2 0 <1 <1 0 191 656 841
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 0 0 0 2 243 689 905 2193	history1 3 <1 1 0 7 194 641 960 1871	history2 2 0 <1 <1 0 191 656 841 1721
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 0 0 0 2 243 689 905 2193 Current	history1         3         <1         1         0         7         194         641         960         1871         history1	history2 2 0 <1 <1 0 191 656 841 1721 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 4 ppm 4 ppm 4 ppm 4 ppm 4	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base limit/base >20	current           0           0           0           0           2           243           689           905           2193           current           3	history1         3         <1         1         0         7         194         641         960         1871         history1         5	history2         2         0         <1         0         191         656         841         1721         history2         4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 4 ppm 4 ppm 4 ppm 4 ppm 4	method           ASTM D5185m	limit/base limit/base >20	Current         0         0         0         2         243         689         905         2193         current         3         4	history1         3         <1         1         0         7         194         641         960         1871         history1         5         0	history2         2         0         <1         <1         0         191         656         841         1721         history2         4         4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 2 ppm 2 ppm 2 ppm 2	method           ASTM D5185m	limit/base limit/base >20 >20	current           0           0           0           0           2           243           689           905           2193           current           3           4           1	history1         3         <1         0         7         194         641         960         1871         bistory1         5         0         3	history2         2         0         <1         <1         0         191         656         841         1721         history2         4         4         4         4         1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 4 ppm 4	method           ASTM D5185m	limit/base limit/base >20 >20 limit/base	current         0         0         0         2         243         689         905         2193         current         3         4         1         current	history1         3         <1         1         0         7         194         641         960         1871         history1         5         0         3	history2         2         0         <1         0         191         656         841         1721         history2         4         4         4         4         4         4         4         4         4         1721
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4	method           ASTM D5185m	limit/base   	Current         0         0         0         2         243         689         905         2193         current         3         4         1         current         17519	history1         3         <1         1         0         7         194         641         960         1871         history1         5         0         3         history1         1875         1874         5         1874         1875         1875         1875         1875         1875         1875         1875         1875         1875         1875         1875	history2         2         0         <1         0         191         656         841         1721         history2         4         -         4         -         0         636
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm	ppm	method           ASTM D5185m	limit/base limit/base limit/base >20 limit/base >20 limit/base >20 limit/base >20 limit/base	current         0         0         0         0         2         243         689         905         2193         current         3         4         1         current         89	history1         3         <1         0         7         194         641         960         1871         bistory1         5         0         3         +history1         5         0         3         +history1         5         64         5         6         6         5         6         6         6         6	history2         2         0         <1         0         191         656         841         1721         history2         4         4         4         4         658         6988         241
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m           ASTM D7647           ASTM D7647           ASTM D7647	limit/base 	Current         0         0         0         2         243         689         905         2193         current         3         4         1         current         89         17519         89         17	history1         3         <1         0         7         194         641         960         1871         bistory1         5         0         3         history1         5         0         3         history1         645         65         645	history2         2         0         <1         0         191         656         841         1721         history2         4         4         4         4         6988         241         21
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLINI Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m           ASTM D7647           ASTM D7647           ASTM D7647           ASTM D7647           ASTM D7647	limit/base 	Current         0         0         0         2         243         689         905         2193         current         3         4         1         current         89         17         7	history1         3         <1         1         0         7         194         641         960         1871         5         0         3         history1         5         0         3         history1         65         65         62         2	history2         2         0         <1         0         191         656         841         1721         history2         4         <1         6988         241         21         6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >21µm Particles >38µm	ppm of pp	method           ASTM D5185m	limit/base   	Current         0         0         0         2         243         689         905         2193         current         3         4         1         current         89         17519         89         17         7         0	history1         3         <1         0         7         194         641         960         1871         bistory1         5         0         3         history1         5         0         3         16856         65         6         2         0	history2         2         0         <1         0         191         656         841         1721         history2         4         <1         6988         241         21         6         1

ISO 4406 (c) >19/17/14 **A 21/14/11** 

**Oil Cleanliness** 

0/15/12

🔺 21/13/10



# **OIL ANALYSIS REPORT**

201	Partic	le Trei	nd				
206	—	4μm				-	
E 15k		14μm				/	
population for the second seco					/		
nber of	Abnorm	al	/		$\checkmark$		
E SK							
0k	2	2	2	S	2	54	54
	Dec5/2	Feb27/2	May8/2	Jul28/2	0ct30/2	Jan 26/2	Apr3/2
						2	
250	PQ						
250	PQ						
250	PQ Severe						
250 200 150 문	PQ	1					
250 200 150 200	PQ Severe	al					
250 200 150 200 100 50	PQ Severe	al					
250 200 150 200 200 200 200 200 200 200 200 200 2	PQ Severe	al					
250 200 150 200 50 0	PQ Severe Abnorm	z1/23	v6/23	28/23	20/23	26/24	03/24



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		0.78	0.72	0.69
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	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	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445		54.9	55.4	55.9
SAMPLE IMAGES	;	method	limit/base	current	history1	history2
				and a second		

Color



Bottom





\* - 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)

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