

## **OIL ANALYSIS REPORT**

Sample Rating Trend



## Machine Id **JOHN DEERE 624K 640** Component

**Diesel Engine** Fluid

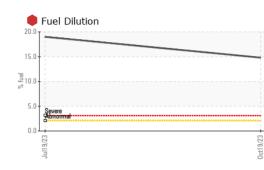
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

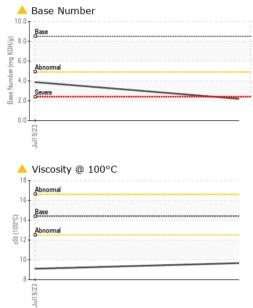
DIAGNOSIS	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Recommendation	Sample Number		Client Info		PCA0096380	PCA0081000	
We advise that you check the fuel injection system.	Sample Date		Client Info		19 Oct 2023	19 Jul 2023	
The oil change at the time of sampling has been	Machine Age	hrs	Client Info		16784	16356	
noted. We recommend an early resample to monitor this condition.	Oil Age	hrs	Client Info		429	900	
	Oil Changed		Client Info		Changed	Changed	
Wear	Sample Status				SEVERE	SEVERE	
All component wear rates are normal.	CONTAMINAT		method	limit/base	ourropt	history1	history?
Contamination					current	history1	history2
There is a high amount of fuel present in the oil.	Water		WC Method	>0.21	NEG	NEG	
Fluid Condition	Glycol		WC Method		NEG	NEG	
Fuel is present in the oil and is lowering the	WEAR METAL	S	method	limit/base	current	history1	history2
viscosity. The BN level is low. The oil is no longer serviceable due to the presence of contaminants.	Iron	ppm	ASTM D5185m	<u>\51</u>	5	23	
	Chromium	ppm	ASTM D5185m		0	<1	
	Nickel		ASTM D5185m		۰ <1	0	
	Titanium	ppm	ASTM D5185m	>5	0	0	
	Silver	ppm		. 2	0	0	
	Aluminum	ppm	ASTM D5185m ASTM D5185m		1	2	
	Lead	ppm	ASTM D5185m		۱ <1	3	
		ppm			<1		
	Copper Tin	ppm	ASTM D5185m			2	
	Vanadium	ppm	ASTM D5185m	>4	<1	<1	
		ppm	ASTM D5185m		0	<1	
	Cadmium	ppm	ASTM D5185m		0	0	
	ADDITIVES		method	limit/base	current	history1	history2
	7188711720		mounou	initia babb	oarront	,	
	Boron	ppm	ASTM D5185m	250	2	0	
		ppm ppm		250			
	Boron		ASTM D5185m	250 10	2	0	
	Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	2 0	0	
	Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	2 0 44	0 0 47	
	Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	2 0 44 <1	0 0 47 <1	
	Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	2 0 44 <1 745	0 0 47 <1 785	
	Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150	2 0 44 <1 745 871	0 0 47 <1 785 895	  
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350	2 0 44 <1 745 871 870	0 0 47 <1 785 895 806	
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350	2 0 44 <1 745 871 870 986	0 0 47 <1 785 895 806 1032	
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base	2 0 44 <1 745 871 870 986 2575 current	0 0 47 <1 785 895 806 1032 2597 history1	
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >22	2 0 44 <1 745 871 870 986 2575 current 5	0 0 47 <1 785 895 806 1032 2597 history1 10	     history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >22 >158	2 0 44 <1 745 871 870 986 2575 <u>current</u> 5 3	0 0 47 <1 785 895 806 1032 2597 history1 10 8	    history2 
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >22 >158 >20	2 0 44 <1 745 871 870 986 2575 <u>current</u> 5 3 2	0 0 47 <1 785 895 806 1032 2597 history1 10 8 1	     history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >22 >158 >20 >2.1	2 0 44 <1 745 871 870 986 2575 <u>current</u> 5 3	0 0 47 <1 785 895 806 1032 2597 history1 10 8 1 10 8 1	     history2  
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >22 >158 >20	2 0 44 <1 745 871 870 986 2575 <u>current</u> 5 3 2	0 0 47 <1 785 895 806 1032 2597 history1 10 8 1	     history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >22 >158 >20 >2.1	2 0 44 <1 745 871 870 986 2575 <u>current</u> 5 3 2 2 14.8	0 0 47 <1 785 895 806 1032 2597 history1 10 8 1 10 8 1	     history2  
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm ppm %	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >22 >158 >20 >2.1 <b>limit/base</b> >3	2 0 44 <1 745 871 870 986 2575 Current 5 3 2 2 14.8 Current	0 0 47 <1 785 895 806 1032 2597 history1 10 8 1 10 8 1 1 10 8 1 1 9 19.0 history1	     history2    history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >22 >158 >20 >2.1 <b>limit/base</b> >3 >20	2 0 44 <1 745 871 870 986 2575 <i>current</i> 5 3 2 14.8 <i>current</i> 0.1	0 0 47 <1 785 895 806 1032 2597 history1 10 8 1 10 8 1 1 19.0 <b>history1</b> 0.2	     history2    history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >22 >158 >20 >2.1 <b>limit/base</b> >3 >20	2 0 44 <1 745 871 870 986 2575 <u>current</u> 5 3 2 14.8 <u>current</u> 0.1 9.2	0 0 47 <1 785 895 806 1032 2597 history1 10 8 1 10 8 1 10 8 1 10 0.2 13.5 41.3	      history2   history2  history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >22 >158 >20 >2.1 <b>limit/base</b> >3 >20 >30 30	2 0 44 <1 745 871 870 986 2575 current 5 3 2 5 3 2 14.8 current 0.1 9.2 28.7 current	0 0 47 <1 785 895 806 1032 2597 history1 10 8 1 10 8 1 1 10 8 1 1 0.2 13.5 41.3 history1	        
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7614	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >22 >158 >20 >2.1 <b>imit/base</b> >3 >20 >30 imit/base	2 0 44 <1 745 871 870 986 2575 <b>current</b> 5 3 2 14.8 <b>current</b> 0.1 9.2 28.7	0 0 47 <1 785 895 806 1032 2597 history1 10 8 1 10 8 1 10 8 1 10 0.2 13.5 41.3	

FUEL



## **OIL ANALYSIS REPORT**





White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Ddor Emulsified Water Free Water FLUID PROPEF Visc @ 100°C GRAPHS Iron (ppm)	scalar scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual method	NONE NONE NONE NONE NONE NORML NORML >0.21		NONE NONE NONE NONE NONE NORE NORML	NONE NONE NONE NONE NONE NORML NORML	
Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPEF Visc @ 100°C GRAPHS Iron (ppm)	scalar scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual *Visual	NONE NONE NONE NORML NORML		NONE NONE NONE NORML NORML	NONE NONE NONE NORML NORML	  
Silt Debris Sand/Dirt Appearance Ddor Emulsified Water Free Water FLUID PROPEF Visc @ 100°C GRAPHS Iron (ppm)	scalar scalar scalar scalar scalar scalar scalar Scalar	*Visual *Visual *Visual *Visual *Visual *Visual	NONE NONE NORML NORML		NONE NONE NORML NORML	NONE NONE NORML NORML	
Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPEF Visc @ 100°C GRAPHS Iron (ppm)	scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual	NONE NORML NORML		NONE NONE NORML NORML	NONE NORE NORML NORML	
Sand/Dirt Appearance Ddor Emulsified Water Free Water FLUID PROPEF /isc @ 100°C GRAPHS Iron (ppm)	scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual	NONE NORML NORML		NONE NORML NORML	NONE NORML NORML	
Appearance Ddor Emulsified Water Free Water FLUID PROPEF /isc @ 100°C GRAPHS Iron (ppm)	scalar scalar scalar scalar RTIES	*Visual *Visual *Visual *Visual	NORML NORML		NORML NORML	NORML NORML	
Ddor Emulsified Water Free Water FLUID PROPEF /isc @ 100°C GRAPHS Iron (ppm)	scalar scalar scalar RTIES	*Visual *Visual *Visual	NORML		NORML	NORML	
Emulsified Water Free Water FLUID PROPEF /isc @ 100°C GRAPHS Iron (ppm)	scalar scalar RTIES	*Visual *Visual					
Free Water FLUID PROPEF /isc @ 100°C GRAPHS Iron (ppm)	scalar RTIES	*Visual	>0.21				
FLUID PROPEF /isc @ 100°C GRAPHS Iron (ppm)	RTIES				NEG	NEG	
/isc @ 100°C GRAPHS Iron (ppm)		method			NEG	NEG	
GRAPHS Iron (ppm)	cSt		limit/base	Э	current	history1	history2
Iron (ppm)		ASTM D445	14.4		9.7	<b>9</b> .1	
					.ead (ppm)		
Severe				100	Severe		
				80 - 6			
			bhu	60 -			
Abnormal				40-	Abnormal		
9/23			9/23				272
Jult			0ct1		5		0~19/23
Aluminum (ppm)				C	Chromium (p	opm)	
Severe				25 T			
				20 - 5			
Abnormal				15	Abnormal		
				10 -			
				5-			
53			23	04	3		
Jul19.			0ct19,	6111	2		Det19.023
Copper (ppm)				S	Silicon (ppm)	)	
Severe				<sup>40</sup>	Severe		
				30 - 7			
			mag	20	Honormai		
Abnormal				10			
1/23			1/23	0 20	27		50
21lul			0ct19	1119			0~19/23
Viscosity @ 100°C				A B	Base Numbe	r	
<b>T</b>				ю.о <sub>т</sub> -			
+			KOH/	8.0 -			
			sr (mg	6.0 -	Abnormal		
<b>P</b>			umbe	4.0			
			ase	2.0 -			
L				0.0	2		2
/119/			ct19/2	6/611	5		0419/23
	Abnomal Copper (ppm) Severe Abnomal Viscosity @ 100°C Abnomal Base Abnomal Abnomal Base Abnomal Abno	Aluminum (ppm)	Aluminum (ppm)	Aluminum (ppm)	Aluminum (ppm)	Aluminum (ppm) Aluminum (ppm) Anormal Anormal Copper (ppm) Viscosity @ 100°C Anormal A	Aluminum (ppm) Aluminum (ppm) Copper (ppm) Viscosity @ 100°C Anomal Anomal Anomal Chromium (ppm) Silicon (ppm) Gene Viscosity @ 100°C Anomal Anomal Chromium (ppm) Gene Chromium (ppm) Chromium

\* - 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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