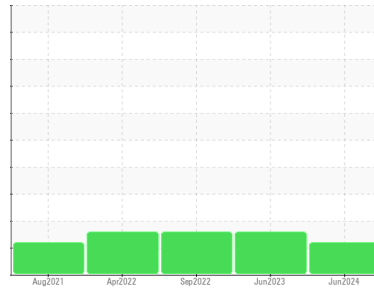


OIL ANALYSIS REPORT



Machine Id
JOHN DEERE 644K 7018 (S/N 689470)
Component
Hydraulic System
Fluid
JOHN DEERE HYDRAU (105 LTR)

Sample Rating Trend



DIAGNOSIS

Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Wear

Chromium ppm levels are abnormal. Ring wear is indicated.

Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. NOTE: An increase in the particle count is noted.

Fluid Condition

The oil viscosity is lower than typical, possibly indicating the addition of lighter grade oil. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PC0076095	PC0052729	PC0052724
Sample Date	Client Info	12 Jun 2024	02 Jun 2023	29 Sep 2022
Machine Age	hrs	9638	8137	6819
Oil Age	hrs	0	8137	0
Oil Changed	Client Info	Not Chngd	Not Chngd	Not Chngd
Sample Status		ABNORMAL	ABNORMAL	ABNORMAL

CONTAMINATION

method	limit/base	current	history1	history2	
Water	WC Method	>0.075	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185(m)	>71	31	33	35
Chromium	ppm	ASTM D5185(m)	>11	▲ 15	▲ 18	▲ 19
Nickel	ppm	ASTM D5185(m)	>6	<1	0	0
Titanium	ppm	ASTM D5185(m)		<1	<1	<1
Silver	ppm	ASTM D5185(m)		<1	<1	<1
Aluminum	ppm	ASTM D5185(m)	>11	3	2	2
Lead	ppm	ASTM D5185(m)	>13	<1	<1	<1
Copper	ppm	ASTM D5185(m)	>21	4	5	4
Tin	ppm	ASTM D5185(m)	>5	0	0	0
Antimony	ppm	ASTM D5185(m)		0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

ADDITIVES

method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185(m)		3	4	4
Barium	ppm	ASTM D5185(m)		0	0	0
Molybdenum	ppm	ASTM D5185(m)		2	2	2
Manganese	ppm	ASTM D5185(m)		<1	<1	<1
Magnesium	ppm	ASTM D5185(m)		40	29	31
Calcium	ppm	ASTM D5185(m)	87	254	313	317
Phosphorus	ppm	ASTM D5185(m)	727	629	710	684
Zinc	ppm	ASTM D5185(m)	900	811	858	853
Sulfur	ppm	ASTM D5185(m)	1500	1577	1651	1651
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS

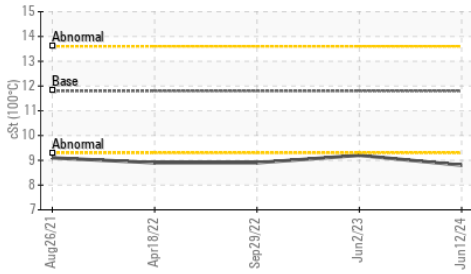
method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185(m)	>24	4	5	4
Sodium	ppm	ASTM D5185(m)	>21	6	7	6
Potassium	ppm	ASTM D5185(m)	>20	2	3	3

FLUID CLEANLINESS

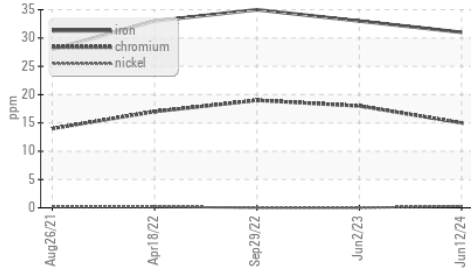
method	limit/base	current	history1	history2	
Particles >4µm	ASTM D7647	>80000	10921	664	3420
Particles >6µm	ASTM D7647	>5000	1314	128	502
Particles >14µm	ASTM D7647	>640	82	8	31
Particles >21µm	ASTM D7647	>160	28	4	9
Particles >38µm	ASTM D7647	>40	5	0	2
Particles >71µm	ASTM D7647	>10	1	0	1
Oil Cleanliness	ISO 4406 (c)	>23/19/16	21/18/14	17/14/10	19/16/12

OIL ANALYSIS REPORT

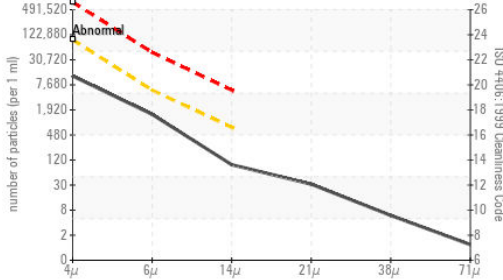
▲ Viscosity @ 100°C



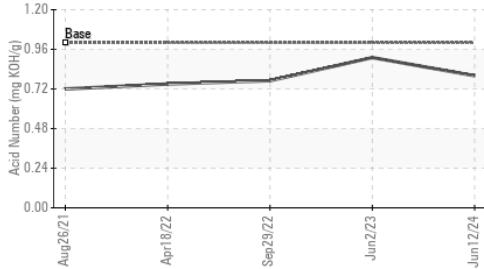
▲ Ferrous Alloys



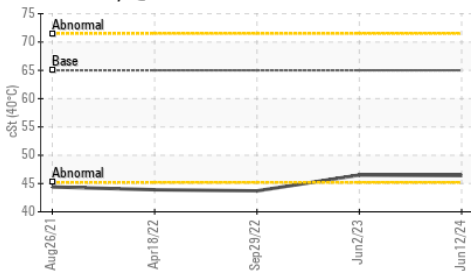
▲ Particle Count



▲ Acid Number



▲ Viscosity @ 40°C



FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D974*	1.0	0.80	0.91	0.77

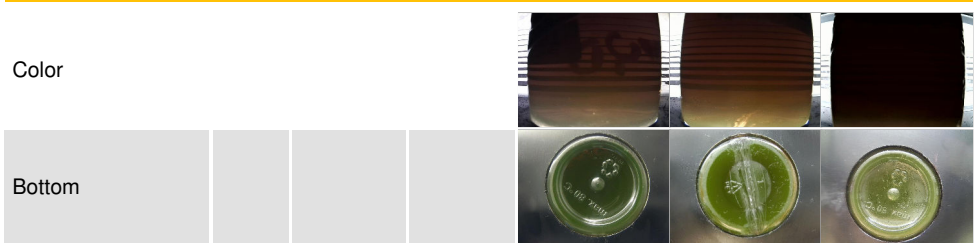
VISUAL

	method	limit/base	current	history1	history2	
White Metal	scalar	Visual*	NONE	VLITE	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	VLITE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	VLITE	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
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES

	method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D7279(m)	65	46.4	▲ 46.5	▲ 43.7
Visc @ 100°C	cSt	ASTM D7279(m)	11.8	▲ 8.8	▲ 9.2	▲ 8.9
Viscosity Index (VI)	Scale	ASTM D2270*	178	172	184	189

SAMPLE IMAGES



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0076095
Lab Number : **02647823**
Unique Number : 5813375
Test Package : IND 2 (Additional Tests: Bottom, KV100, TAN Man, VI)

TRUCK AND EQUIPMENT SOLUTION
 2 BERTRAM INDUSTRIAL PKWY.
 MIDHURST, ON
 CA L9X 1L2
 Contact: Julie Holden
 parts@tesbarrie.com
 T: (705)792-7620
 F: (705)725-5425

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.