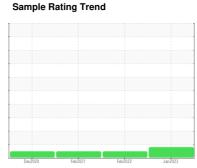


OIL ANALYSIS REPORT

CURING [CURING] LINE 1 HYDRAULIC CURING PRESS

Hydraulic System

NOT GIVEN (500 LTR)





Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is a moderate amount of silt (particulates < 6 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 Number Client Info WC0752533 WC0641707 WC05122 Sample Date Client Info 30 Jan 2023 28 Feb 2022 18 Feb 20 Machine Age Client Info 0			Dec202	Dec2020 Feb2021 Feb2022 Jan2023				
Sample Date Client Info 30 Jan 2023 28 Feb 2022 18 Feb 20 Machine Age Client Info 0	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2	
Machine Age Client Info 0 0 0 Oil Age Client Info 0 0 0 Oil Changed Client Info N/A N/A N/A Sample Status Total Control N/A N/A N/A N/A CONTAMINATION method limit/base current history1 history1 WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >20 5 2 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Sample Number		Client Info		WC0752533	WC0641707	WC0512281	
Oil Age Client Info 0 0 0 Oil Changed Client Info N/A N/A N/A N/A Sample Status Client Info N/A N/A N/A N/A N/A CONTAMINATION method limit/base current history1 history1 Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >20 5 2 <1 Iron ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >20 0 0 <1 Lead ppm ASTM D5185m >20 0 <1 0 Copper ppm ASTM D5185m >20 0 <1 0	Sample Date		Client Info		30 Jan 2023	28 Feb 2022	18 Feb 2021	
Oil Changed Sample Status Client Info N/A N/A N/A N/A CONTAMINATION method limit/base current history1 history1 Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >20 5 2 <1	Machine Age		Client Info		0	0	0	
Sample Status ATTENTION NORMAL NORMAL CONTAMINATION method limit/base current history1 history Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 histor Iron ppm ASTM D5185m >20 5 2 <1 <1 <1 1 1 <1 <1 <1 <1 <1 <1 <1 <1 <0 0 0 0 0 <0 0 <0 0 0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <t< th=""><th>Oil Age</th><th></th><th>Client Info</th><th></th><th>0</th><th>0</th><th>0</th></t<>	Oil Age		Client Info		0	0	0	
CONTAMINATION method limit/base current history1 history1 Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >20 5 2 <1 Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 0 0 0 Copper ppm ASTM D5185m >20 0 <1 0 Copper ppm ASTM D5185m >20 0 <1 0 Copper ppm ASTM D5185m >20 0 <1 0 <th>Oil Changed</th> <th></th> <th>Client Info</th> <th></th> <th>N/A</th> <th>N/A</th> <th>N/A</th>	Oil Changed		Client Info		N/A	N/A	N/A	
Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >20 5 2 <1	Sample Status				ATTENTION	NORMAL	NORMAL	
WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >20 ≤1 <1 <1 Nickel ppm ASTM D5185m >20 0 0 0 Titanium ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m 20 0 0 0 1 Aluminum ppm ASTM D5185m >20 0 0 0 0 Lead ppm ASTM D5185m >20 0 0 0 0 Copper ppm ASTM D5185m >20 0 0 1 0 0 Antimony ppm ASTM D5185m >20 0 <1 0 0 Vanadium ppm ASTM D5185m 0 0 0 <1 0 ADDITIVES method limit/base current history1 history1 history1 <th>CONTAMINATION</th> <th>V</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	CONTAMINATION	V	method	limit/base	current	history1	history2	
Iron	Water		WC Method	>0.05	NEG	NEG	NEG	
Chromium ppm ASTM D5185m >20 <1	WEAR METALS		method	limit/base	current	history1	history2	
Nickel ppm ASTM D5185m >20 0 0 0 Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m 20 0 0 0 Aluminum ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 0 0 <1	Iron	ppm	ASTM D5185m	>20	5	2	<1	
Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m 0 0 <1	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1	
Silver ppm ASTM D5185m 0 0 <1 Aluminum ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 0 0 0 Copper ppm ASTM D5185m >20 4 5 3 Tin ppm ASTM D5185m >20 0 <1 0 Antimony ppm ASTM D5185m >20 0 <1 0 Vanadium ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 <1 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 0 <1 Barium ppm ASTM D5185m 0 0 0 <1	Nickel	ppm	ASTM D5185m	>20	0	0	0	
Aluminum ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 0 0 <1	Titanium	ppm	ASTM D5185m		0	0	0	
Lead ppm ASTM D5185m >20 0 0 <1 Copper ppm ASTM D5185m >20 4 5 3 Tin ppm ASTM D5185m >20 0 <1 0 Antimony ppm ASTM D5185m 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 <1 Boron ppm ASTM D5185m 0 0 0 <1 Barium ppm ASTM D5185m 0 0 0 <1 Barium ppm ASTM D5185m 0 0 0 <1 Barium ppm ASTM D5185m 0 0 0 <1 Magnesium ppm ASTM D5185m 0 0 0 <1 Magnesium ppm ASTM D5185m 114 107 114 107<	Silver	ppm	ASTM D5185m		0	0	<1	
Copper ppm ASTM D5185m >20 4 5 3 Tin ppm ASTM D5185m >20 0 <1	Aluminum	ppm	ASTM D5185m	>20	0	0	0	
Tin ppm ASTM D5185m >20 0 <1 0 0 Antimony ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 histor Boron ppm ASTM D5185m 0 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 0 Calcium ppm ASTM D5185m 1114 107 1144 Phosphorus ppm ASTM D5185m 1468 440 482 Zinc ppm ASTM D5185m 1973 1651 1858 CONTAMINANTS method limit/base current history1 histor Silicon ppm ASTM D5185m 2 1 1 <1 Sodium ppm ASTM D5185m 2 0 0 0 <1 FLUID CLEANLINESS method limit/base current history1 histor Particles >4μm ASTM D5185m >20 0 0 <1 FLUID CLEANLINESS method limit/base current history1 histor Particles >6μm ASTM D5647 >5000 A 8275 4030 1417 Particles >6μm ASTM D7647 >160 24 19 7 Particles >21μm ASTM D7647 >40 3 5 5 3	Lead	ppm	ASTM D5185m	>20	0	0	<1	
Antimony ppm ASTM D5185m 0 0 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 histor Boron ppm ASTM D5185m 0 0 <1 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 Calcium ppm ASTM D5185m 114 107 114 Phosphorus ppm ASTM D5185m 468 440 482 Zinc ppm ASTM D5185m 38 35 24 Sulfur ppm ASTM D5185m 1973 1651 1858 <th col<="" td=""><th>Copper</th><td>ppm</td><td>ASTM D5185m</td><td>>20</td><th>4</th><td>5</td><td>3</td></th>	<th>Copper</th> <td>ppm</td> <td>ASTM D5185m</td> <td>>20</td> <th>4</th> <td>5</td> <td>3</td>	Copper	ppm	ASTM D5185m	>20	4	5	3
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history Boron ppm ASTM D5185m 0 0 <1 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m <1 0 <1 Magnesium ppm ASTM D5185m 0 0 0 Calcium ppm ASTM D5185m 114 107 114 Phosphorus ppm ASTM D5185m 468 440 482 Zinc ppm ASTM D5185m 38 35 24 Sulfur ppm ASTM D5185m 1973 1651 1858 CONTAMINANTS method limit/base current history1 history </td <th>Tin</th> <td>ppm</td> <td>ASTM D5185m</td> <td>>20</td> <th>0</th> <td><1</td> <td>0</td>	Tin	ppm	ASTM D5185m	>20	0	<1	0	
Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history Boron ppm ASTM D5185m 0 0 √1 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 Calcium ppm ASTM D5185m 114 107 114 Phosphorus ppm ASTM D5185m 468 440 482 Zinc ppm ASTM D5185m 1973 1651 1858 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m 2 1 <1	Antimony	ppm	ASTM D5185m			0	0	
ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 <1	Vanadium	ppm	ASTM D5185m		0	0	0	
Boron ppm ASTM D5185m 0 0 <1 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m <1 0 <1 Magnesium ppm ASTM D5185m 0 0 0 Calcium ppm ASTM D5185m 114 107 114 Phosphorus ppm ASTM D5185m 468 440 482 Zinc ppm ASTM D5185m 38 35 24 Sulfur ppm ASTM D5185m 1973 1651 1858 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m 2 1 <1 Sodium ppm ASTM D5185m 20 0 0 <1 FLUID CLEANLINESS method limit/base current history1	Cadmium	ppm	ASTM D5185m		0	0	<1	
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m <1 0 <1 Magnesium ppm ASTM D5185m 0 0 0 Calcium ppm ASTM D5185m 114 107 114 Phosphorus ppm ASTM D5185m 468 440 482 Zinc ppm ASTM D5185m 38 35 24 Sulfur ppm ASTM D5185m 1973 1651 1858 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >15 2 1 <1 Sodium ppm ASTM D5185m >20 0 0 <1 FLUID CLEANLINESS method limit/base current history1 history Particles >4μm ASTM D7647 >5000	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m		0	0	<1	
Manganese ppm ASTM D5185m <1 0 <1 Magnesium ppm ASTM D5185m 0 0 0 Calcium ppm ASTM D5185m 114 107 114 Phosphorus ppm ASTM D5185m 468 440 482 Zinc ppm ASTM D5185m 38 35 24 Sulfur ppm ASTM D5185m 1973 1651 1858 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m 2 1 <1	Barium	ppm	ASTM D5185m		0	0	0	
Magnesium ppm ASTM D5185m 0 0 0 Calcium ppm ASTM D5185m 114 107 114 Phosphorus ppm ASTM D5185m 468 440 482 Zinc ppm ASTM D5185m 38 35 24 Sulfur ppm ASTM D5185m 1973 1651 1858 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >15 2 1 <1	Molybdenum	ppm	ASTM D5185m		0	0	0	
Calcium ppm ASTM D5185m 114 107 114 Phosphorus ppm ASTM D5185m 468 440 482 Zinc ppm ASTM D5185m 38 35 24 Sulfur ppm ASTM D5185m 1973 1651 1858 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >15 2 1 <1	Manganese	ppm	ASTM D5185m		<1	0	<1	
Phosphorus ppm ASTM D5185m 468 440 482 Zinc ppm ASTM D5185m 38 35 24 Sulfur ppm ASTM D5185m 1973 1651 1858 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >15 2 1 <1	Magnesium	ppm	ASTM D5185m		0	0	0	
Zinc ppm ASTM D5185m 38 35 24 Sulfur ppm ASTM D5185m 1973 1651 1858 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >15 2 1 <1	Calcium	ppm	ASTM D5185m		114	107	114	
Sulfur ppm ASTM D5185m 1973 1651 1858 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >15 2 1 <1 Sodium ppm ASTM D5185m 2 <1 0 Potassium ppm ASTM D5185m >20 0 0 <1 FLUID CLEANLINESS method limit/base current history1 history1 history1 Particles >4μm ASTM D7647 >5000 ▲ 8275 4030 1417 Particles >6μm ASTM D7647 >1300 964 353 74 Particles >14μm ASTM D7647 >160 24 19 7 Particles >21μm ASTM D7647 >40 3 5 3	Phosphorus	ppm	ASTM D5185m		468	440	482	
CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >15 2 1 <1	Zinc	ppm	ASTM D5185m		38	35	24	
Silicon ppm ASTM D5185m >15 2 1 <1	Sulfur	ppm	ASTM D5185m		1973	1651	1858	
Sodium ppm ASTM D5185m 2 <1	CONTAMINANTS	;	method	limit/base	current	history1	history2	
Potassium ppm ASTM D5185m >20 0 0 <1	Silicon	ppm		>15	2	1	<1	
FLUID CLEANLINESS method limit/base current history1 history1 Particles >4μm ASTM D7647 >5000 ▲ 8275 4030 1417 Particles >6μm ASTM D7647 >1300 964 353 74 Particles >14μm ASTM D7647 >160 24 19 7 Particles >21μm ASTM D7647 >40 3 5 3	Sodium	ppm	ASTM D5185m		2	<1	0	
Particles >4μm ASTM D7647 >5000 ▲ 8275 4030 1417 Particles >6μm ASTM D7647 >1300 964 353 74 Particles >14μm ASTM D7647 >160 24 19 7 Particles >21μm ASTM D7647 >40 3 5 3	Potassium	ppm	ASTM D5185m	>20	0	0	<1	
Particles >6μm ASTM D7647 >1300 964 353 74 Particles >14μm ASTM D7647 >160 24 19 7 Particles >21μm ASTM D7647 >40 3 5 3	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2	
Particles >14μm ASTM D7647 >160 24 19 7 Particles >21μm ASTM D7647 >40 3 5 3	Particles >4µm		ASTM D7647	>5000	8275	4030	1417	
Particles >21μm	Particles >6µm		ASTM D7647	>1300	964	353	74	
	Particles >14µm		ASTM D7647	>160	24	19	7	
	Particles >21µm		ASTM D7647	>40	3	5	3	
	Particles >38µm				0	0	0	

ASTM D7647 >3

Particles >71µm Oil Cleanliness

0

ISO 4406 (c) >19/17/14 **20/17/12**

0

19/16/11

18/13/10

0



OIL ANALYSIS REPORT







Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : PLANT

: WC0752533 : 05759375 : 10323982

: 06 Feb 2023 Recieved Diagnosed : 07 Feb 2023 Diagnostician : Jonathan Hester

NOKIAN TYRES US OPERATIONS LLC 520 NOKIAN TYRES DRIVE

DAYTON, TN US 37321

Contact: CHRIS NAPIER

christopher.napier@nokiantyres.com

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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)

Report Id: NOKDAY [WUSCAR] 05759375 (Generated: 12/26/2023 15:02:39) Rev: 1