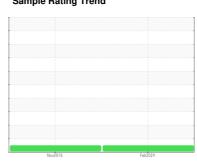


# **OIL ANALYSIS REPORT**

Sample Rating Trend







Machine Id **272** Component **Hydraulic System** 

**AW HYDRAULIC OIL ISO 32 (100 GAL)** 

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### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable.

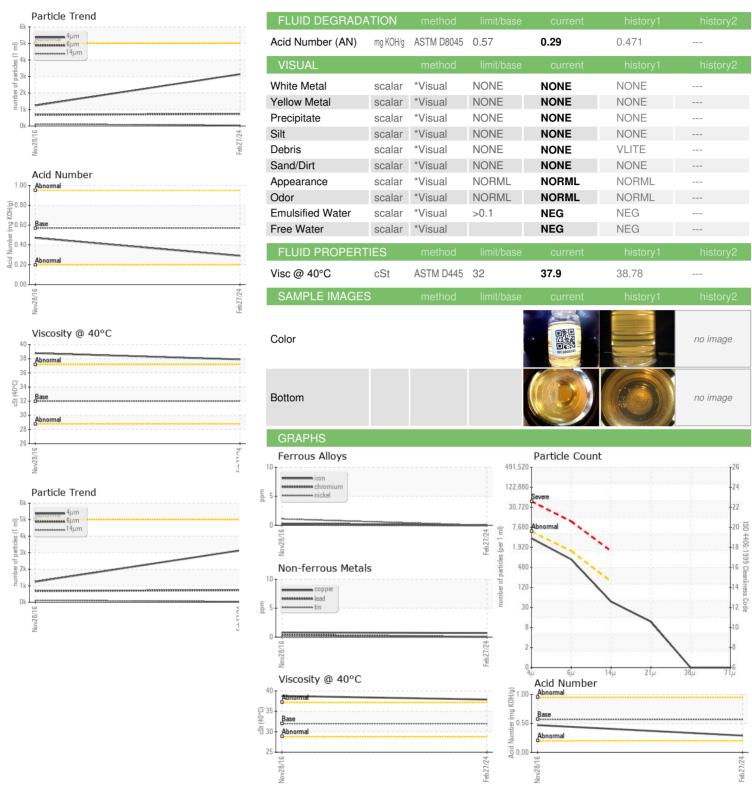
### **Fluid Condition**

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

SAMPLE INFORMATION   method   limit/base   current   history1   history2							
Sample Number   Client Info   WC0905545   WC12296529				Nov2016	Feb 2024		
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   820   0	Sample Number		Client Info		WC0905545	WCI2296529	
Oil Age         hrs         Client Info         820         0	Sample Date		Client Info		27 Feb 2024	28 Nov 2016	
Oil Age         hrs         Client Info         820         0	•	hrs	Client Info		1028	634	
Oil Changed Sample Status   Not Changed NORMAL   NORMA	-	hrs	Client Info		820	0	
CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         >0.1         NEG         NEG	-		Client Info		Not Changd	Changed	
Water         WC Method         >0.1         NEG         NEG            WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >20         0         <1	Sample Status				NORMAL	NORMAL	
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >20         0         <1            Ohromium         ppm         ASTM D5185m         >10         0         <1            Nickel         ppm         ASTM D5185m         >10         0         1            Titanium         ppm         ASTM D5185m         0         0             Aluminum         ppm         ASTM D5185m         >10         0         <1            Lead         ppm         ASTM D5185m         >10         0         <1            Antimony         ppm         ASTM D5185m         >10         0            Antimony         ppm         ASTM D5185m         0         0 </th <th>CONTAMINATIO</th> <th>N</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	CONTAMINATIO	N	method	limit/base	current	history1	history2
Iron	Water		WC Method	>0.1	NEG	NEG	
Chromium         ppm         ASTM D5185m         >10         0         <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel         ppm         ASTM D5185m         >10         0         1            Titanium         ppm         ASTM D5185m         0         0            Silver         ppm         ASTM D5185m         0         0            Aluminum         ppm         ASTM D5185m         >10         0         <1            Lead         ppm         ASTM D5185m         >10         0         <1            Copper         ppm         ASTM D5185m         >10         0         0            Tin         ppm         ASTM D5185m         >10         0         0            Antimony         ppm         ASTM D5185m         0         0          0           Vanadium         ppm         ASTM D5185m         0         0          0            Admium         ppm         ASTM D5185m         0         0          0            ADDITIVES         method         limit/base         current         history1         history2         history2           Boron         ppm         ASTM D5185m         5 <td< th=""><th>Iron</th><th>ppm</th><th>ASTM D5185m</th><th>&gt;20</th><th>0</th><th>&lt;1</th><th></th></td<>	Iron	ppm	ASTM D5185m	>20	0	<1	
Titanium	Chromium	ppm	ASTM D5185m	>10	0	<1	
Silver         ppm         ASTM D5185m         0         0            Aluminum         ppm         ASTM D5185m         >10         0         <1            Lead         ppm         ASTM D5185m         >10         0         <1            Copper         ppm         ASTM D5185m         >75         <1         <1            Tin         ppm         ASTM D5185m         >10         0         0            Antimony         ppm         ASTM D5185m         0         0            Vanadium         ppm         ASTM D5185m         0         0            Vanadium         ppm         ASTM D5185m         0         0            Cadmium         ppm         ASTM D5185m         5         <1         3            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         5         0         0            ADDITIVES         method         limit/base         current         history1         history2           Barium <t< th=""><td>Nickel</td><td>ppm</td><td>ASTM D5185m</td><td>&gt;10</td><th>0</th><td>1</td><td></td></t<>	Nickel	ppm	ASTM D5185m	>10	0	1	
Silver         ppm         ASTM D5185m         0         0            Aluminum         ppm         ASTM D5185m         >10         0         <1	Titanium		ASTM D5185m		0	0	
Aluminum	Silver		ASTM D5185m		0	0	
Lead         ppm         ASTM D5185m         >10         0         <1	Aluminum		ASTM D5185m	>10	0	<1	
Copper         ppm         ASTM D5185m         >75         <1	Lead		ASTM D5185m	>10	0	<1	
Tin ppm ASTM D5185m > 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Copper		ASTM D5185m	>75	<1	<1	
Antimony         ppm         ASTM D5185m          0            Vanadium         ppm         ASTM D5185m         0         0            Cadmium         ppm         ASTM D5185m         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         5         <1         3            Barium         ppm         ASTM D5185m         5         0         0            Molybdenum         ppm         ASTM D5185m         5         0         <1            Magnesium         ppm         ASTM D5185m         25         0         7            Magnesium         ppm         ASTM D5185m         20         97         108            Phosphorus         ppm         ASTM D5185m         300         271         283            Zinc         ppm         ASTM D5185m         250         5446         4380            Sulfur         ppm         ASTM D5185m         20         <1         <1	• • • • • • • • • • • • • • • • • • • •				0		
Vanadium         ppm         ASTM D5185m         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         5         <1	Antimony		ASTM D5185m			0	
Cadmium         ppm         ASTM D5185m         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         5         <1         3            Barium         ppm         ASTM D5185m         5         0         0            Molybdenum         ppm         ASTM D5185m         5         0         <1            Manganese         ppm         ASTM D5185m         25         0         7            Magnesium         ppm         ASTM D5185m         200         97         108            Calcium         ppm         ASTM D5185m         200         97         108            Phosphorus         ppm         ASTM D5185m         200         97         108            Zinc         ppm         ASTM D5185m         370         316         315            Sulfur         ppm         ASTM D5185m         2500         5446         4380            CONTAMINANTS         method         limit/base         current         his	•				0		
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         5         <1         3            Barium         ppm         ASTM D5185m         5         0         0            Molybdenum         ppm         ASTM D5185m         5         0         <1            Manganese         ppm         ASTM D5185m         25         0         7            Magnesium         ppm         ASTM D5185m         200         97         108            Calcium         ppm         ASTM D5185m         200         97         108            Phosphorus         ppm         ASTM D5185m         200         97         108            Zinc         ppm         ASTM D5185m         300         271         283            Zinc         ppm         ASTM D5185m         370         316         315            Sulfur         ppm         ASTM D5185m         2500         5446         4380            Sodium         ppm         ASTM D5185m         >20<							
Boron         ppm         ASTM D5185m         5         <1		PP		11 11 11			
Barium         ppm         ASTM D5185m         5         0         0            Molybdenum         ppm         ASTM D5185m         5         0         <1            Manganese         ppm         ASTM D5185m         0         0            Magnesium         ppm         ASTM D5185m         25         0         7            Calcium         ppm         ASTM D5185m         200         97         108            Phosphorus         ppm         ASTM D5185m         300         271         283            Zinc         ppm         ASTM D5185m         370         316         315            Sulfur         ppm         ASTM D5185m         2500         5446         4380            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         <1         <1            Sodium         ppm         ASTM D5185m         >20         0         0            Potassium         pm         ASTM D7647         >5000	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         5         0         <1	Boron	ppm		5	<1	3	
Manganese         ppm         ASTM D5185m         0         0            Magnesium         ppm         ASTM D5185m         25         0         7            Calcium         ppm         ASTM D5185m         200         97         108            Phosphorus         ppm         ASTM D5185m         300         271         283            Zinc         ppm         ASTM D5185m         370         316         315            Sulfur         ppm         ASTM D5185m         2500         5446         4380            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         <1         <1            Sodium         ppm         ASTM D5185m         >20         0         0            Potassium         ppm         ASTM D5185m         >20         0         0            FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4µm         ASTM D7647         >5000 <t< th=""><th>Barium</th><th>ppm</th><th>ASTM D5185m</th><th>5</th><th>0</th><th>0</th><th></th></t<>	Barium	ppm	ASTM D5185m	5	0	0	
Magnesium         ppm         ASTM D5185m         25         0         7            Calcium         ppm         ASTM D5185m         200         97         108            Phosphorus         ppm         ASTM D5185m         300         271         283            Zinc         ppm         ASTM D5185m         370         316         315            Sulfur         ppm         ASTM D5185m         2500         5446         4380            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         <1         <1            Sodium         ppm         ASTM D5185m         >20         0         0            Potassium         ppm         ASTM D5185m         >20         0         0            FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         3138         1243            Particles >514μm         ASTM D7647         >100         <	Molybdenum	ppm	ASTM D5185m	5	0	<1	
Calcium         ppm         ASTM D5185m         200         97         108            Phosphorus         ppm         ASTM D5185m         300         271         283            Zinc         ppm         ASTM D5185m         370         316         315            Sulfur         ppm         ASTM D5185m         2500         5446         4380            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         <1         <1            Sodium         ppm         ASTM D5185m         >20         0         0         1            Potassium         ppm         ASTM D5185m         >20         0         0            FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         3138         1243            Particles >21μm         ASTM D7647         >160         40         115            Particles >21μm         ASTM	Manganese	ppm	ASTM D5185m		0	0	
Phosphorus         ppm         ASTM D5185m         300         271         283            Zinc         ppm         ASTM D5185m         370         316         315            Sulfur         ppm         ASTM D5185m         2500         5446         4380            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         <1         <1            Sodium         ppm         ASTM D5185m         >20         0         1            Potassium         ppm         ASTM D5185m         >20         0         0            FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         3138         1243            Particles >6μm         ASTM D7647         >1300         730         677            Particles >21μm         ASTM D7647         >40         10         38            Particles >21μm         ASTM D7647         >10         0         6 <th>Magnesium</th> <th>ppm</th> <th>ASTM D5185m</th> <th>25</th> <th>0</th> <th>7</th> <th></th>	Magnesium	ppm	ASTM D5185m	25	0	7	
Zinc         ppm         ASTM D5185m         370         316         315            Sulfur         ppm         ASTM D5185m         2500         5446         4380            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         <1         <1            Sodium         ppm         ASTM D5185m         >20         0         0            Potassium         ppm         ASTM D5185m         >20         0         0            FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         3138         1243            Particles >6μm         ASTM D7647         >1300         730         677            Particles >14μm         ASTM D7647         >160         40         115            Particles >21μm         ASTM D7647         >40         10         38            Particles >38μm         ASTM D7647         >10         0         6	Calcium	ppm	ASTM D5185m	200	97	108	
Sulfur         ppm         ASTM D5185m         2500         5446         4380            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         <1         <1            Sodium         ppm         ASTM D5185m         0         1            Potassium         ppm         ASTM D5185m         >20         0         0            FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4µm         ASTM D7647         >5000         3138         1243            Particles >6µm         ASTM D7647         >1300         730         677            Particles >14µm         ASTM D7647         >160         40         115            Particles >21µm         ASTM D7647         >40         10         38            Particles >38µm         ASTM D7647         >10         0         6            Particles >71µm         ASTM D7647         >3         0         0	Phosphorus	ppm	ASTM D5185m	300	271	283	
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         <1         <1            Sodium         ppm         ASTM D5185m         0         1            Potassium         ppm         ASTM D5185m         >20         0         0            FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4µm         ASTM D7647         >5000         3138         1243            Particles >6µm         ASTM D7647         >1300         730         677            Particles >14µm         ASTM D7647         >160         40         115            Particles >21µm         ASTM D7647         >40         10         38            Particles >38µm         ASTM D7647         >10         0         6            Particles >71µm         ASTM D7647         >3         0         0	Zinc	ppm	ASTM D5185m	370	316	315	
Silicon         ppm         ASTM D5185m         >20         <1	Sulfur	ppm	ASTM D5185m	2500	5446	4380	
Sodium         ppm         ASTM D5185m         0         1            Potassium         ppm         ASTM D5185m         >20         0         0            FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         3138         1243            Particles >6μm         ASTM D7647         >1300         730         677            Particles >14μm         ASTM D7647         >160         40         115            Particles >21μm         ASTM D7647         >40         10         38            Particles >38μm         ASTM D7647         >10         0         6            Particles >71μm         ASTM D7647         >3         0         0	CONTAMINANTS	3	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         0         0            FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         3138         1243            Particles >6μm         ASTM D7647         >1300         730         677            Particles >14μm         ASTM D7647         >160         40         115            Particles >21μm         ASTM D7647         >40         10         38            Particles >38μm         ASTM D7647         >10         0         6            Particles >71μm         ASTM D7647         >3         0         0	Silicon	ppm		>20	<1	<1	
FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         3138         1243            Particles >6μm         ASTM D7647         >1300         730         677            Particles >14μm         ASTM D7647         >160         40         115            Particles >21μm         ASTM D7647         >40         10         38            Particles >38μm         ASTM D7647         >10         0         6            Particles >71μm         ASTM D7647         >3         0         0	Sodium	ppm	ASTM D5185m		0	1	
Particles >4μm       ASTM D7647       >5000       3138       1243          Particles >6μm       ASTM D7647       >1300       730       677          Particles >14μm       ASTM D7647       >160       40       115          Particles >21μm       ASTM D7647       >40       10       38          Particles >38μm       ASTM D7647       >10       0       6          Particles >71μm       ASTM D7647       >3       0       0	Potassium	ppm	ASTM D5185m	>20	0	0	
Particles >6μm       ASTM D7647       >1300       730       677          Particles >14μm       ASTM D7647       >160       40       115          Particles >21μm       ASTM D7647       >40       10       38          Particles >38μm       ASTM D7647       >10       0       6          Particles >71μm       ASTM D7647       >3       0       0	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >14μm       ASTM D7647       >160       40       115          Particles >21μm       ASTM D7647       >40       10       38          Particles >38μm       ASTM D7647       >10       0       6          Particles >71μm       ASTM D7647       >3       0       0	Particles >4µm		ASTM D7647	>5000	3138	1243	
Particles >21μm       ASTM D7647       >40       10       38          Particles >38μm       ASTM D7647       >10       0       6          Particles >71μm       ASTM D7647       >3       0       0	Particles >6µm		ASTM D7647	>1300	730	677	
Particles >38μm       ASTM D7647       >10       0       6          Particles >71μm       ASTM D7647       >3       0       0	Particles >14μm		ASTM D7647	>160	40	115	
Particles >71μm	Particles >21µm		ASTM D7647	>40	10	38	
Particles >71μm	•		ASTM D7647	>10	0	6	
Oil Cleanliness ISO 4406 (c) >19/17/14 19/17/12 17/17/14			ASTM D7647	>3	0	0	
	Oil Cleanliness		ISO 4406 (c)	>19/17/14	19/17/12	17/17/14	



## OIL ANALYSIS REPORT







Certificate L2367

Laboratory Sample No. Lab Number

: WC0905545 : 06122298 Unique Number: 10936449 Test Package : IND 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received **Tested** 

Diagnosed

: 19 Mar 2024 : 20 Mar 2024 : 21 Mar 2024 - Don Baldridge

TRANSPORT PRODUCTS & SERVICE ENTERPRISE 3101 OXBOW CIRCLE COCOA, FL

US 32926 Contact: Merrell Shye merrell@tpseinc.com

T: (321)631-3803

F: (321)635-2042

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)

Contact/Location: Merrell Shye - PRECOC