

### **OIL ANALYSIS REPORT**



# Machine Id 1000004355

#### Component Hydraulic System Fluid AW HYDRAULIC OIL ISO 46 (1800 LTR)

#### DIAGNOSIS

#### Recommendation

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

#### Wear

All component wear rates are normal.

#### Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

#### **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		WC0905449		
Sample Date		Client Info		04 Apr 2024		
Machine Age		Client Info		0		
Oil Age		Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
CONTAMINATION	٧	method	limit/base	current	history1	history2
Water		WC Method	>0.05	NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	1		
Chromium	ppm	ASTM D5185(m)	>20	<1		
Nickel	ppm	ASTM D5185(m)	>20	<1		
Titanium	ppm	ASTM D5185(m)		0		
Silver	ppm	ASTM D5185(m)		0		
Aluminum	ppm	ASTM D5185(m)	>20	0		
Lead	ppm	ASTM D5185(m)	>20	0		
Copper	ppm	ASTM D5185(m)	>20	4		
Tin	ppm	ASTM D5185(m)	>20	0		
Antimony	ppm	ASTM D5185(m)		0		
Vanadium	ppm	ASTM D5185(m)		0		
Beryllium	ppm	ASTM D5185(m)		0		
Cadmium	ppm	ASTM D5185(m)		0		
ADDITIVES		method				history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base 5	current	history1	history2
	ppm ppm	ASTM D5185(m)				
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	5	<1		
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5	<1 0 0		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5	<1 0 0 0		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 25 25	<1 0 0 0 6		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 25 200	<1 0 0 0 6 94		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300	<1 0 0 6 94 312		  
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370	<1 0 0 6 94 312 395	   	  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300	<1 0 0 6 94 312		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 25 200 300 370 2500	<1 0 0 6 94 312 395 752 <1		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 25 200 300 370 2500	<1 0 0 6 94 312 395 752 <1 current	     	    
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm	ASTM D5185(m) ASTM D5185(m)	5 5 25 200 300 370 2500	<1 0 0 6 94 312 395 752 <1 <i>current</i> 0	       history1	      history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 25 200 300 370 2500	<1 0 0 6 94 312 395 752 <1 current	      history1 	      history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370 2500 <b>limit/base</b> >15	<1 0 0 6 94 312 395 752 <1 <i>current</i> 0 <1 <1	       history1 	       history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 25 200 300 370 2500 <b>imit/base</b> >15	<1 0 0 6 94 312 395 752 <1 <i>current</i> 0 <1 <1	       history1  	history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370 2500 2500 <b>limit/base</b> >20 <b>limit/base</b>	<1 0 0 6 94 312 395 752 <1 <i>current</i> 0 <1 <1 <1	      history1   history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370 2500 2500 <b>imit/base</b> >20 <b>imit/base</b>	<1 0 0 6 94 312 395 752 <1 <i>current</i> 0 <1 <1 <1 <1 493	      history1   history1 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D76477 ASTM D7647	5 5 5 200 300 370 2500 2500 <b>limit/base</b> >15 20 <b>limit/base</b> >5000 >1300 >1300	<1 0 0 6 94 312 395 752 <1 <i>current</i> 0 <1 <1 <1 <i>current</i> 493 135	       history1   history1  history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 200 300 370 2500 2500 <b>limit/base</b> >15 20 <b>limit/base</b> >5000 >1300 >1300	<1 0 0 6 94 312 395 752 <1 <i>current</i> 0 <1 <1 <1 <1 <i>current</i> 493 135 13	       history1  history1	      history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >4µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 25 200 300 370 2500 2500 <b>limit/base</b> >15 >20 <b>limit/base</b> >5000 >1300 >160 >40 >40	<1 0 0 0 6 94 312 395 752 <1 Current 0 <1 <1 <1 Current 493 135 13 4 1	       history1  history1  history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 25 200 300 370 2500 2500 <b>limit/base</b> >15 >20 <b>limit/base</b> >5000 >1300 >160 >40	<1 0 0 0 6 94 312 395 752 <1 Current 0 <1 <1 <1 <1 <1 <1 493 135 13 4	        history1  history1  history1	



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6.08 KOH/8) Ê0.60 Base

0.20 Al

> 0.00 Apr4

52 Abnorma 50 48 (0-0<del>4</del>6 tso 42

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barticles (1 ml) 4k 3k

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Abnormal 40 38 Apr4/24

## **OIL ANALYSIS REPORT**

		FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
4μm 6μm 14μm		Acid Number (AN)	mg KOH/g	ASTM D974*	0.57	0.42		
		VISUAL		method	limit/base	current	history1	history2
		White Metal	scalar	Visual*	NONE	NONE		
		Yellow Metal	scalar	Visual*	NONE	NONE		
		Precipitate	scalar	Visual*	NONE	NONE		
	Apr4/24 -	Silt	scalar	Visual*	NONE	NONE		
	Apr	Debris	scalar	Visual*	NONE	NONE		
id Number		Sand/Dirt	scalar	Visual*	NONE	NONE		
normal		Appearance	scalar	Visual*	NORML	NORML		
		Odor	scalar	Visual*	NORML	NORML		
<b>69</b>		Emulsified Water	scalar	Visual*	>0.05	NEG		
8		Free Water	scalar	Visual*		NEG		
rormal		FLUID PROPER	TIES	method	limit/base	current	history1	history2
	-	Visc @ 40°C	cSt	ASTM D7279(m)	46	45.5		
	Apr4/24 -	SAMPLE IMAGE	S	method	limit/base	current	history1	history2
scosity @ 40°C normal		Color					no image	no image
se								
		Bottom					no image	no image
normal		GRAPHS						
	¢.	Ferrous Alloys				Particle Count		
	Aread	<sup>10</sup>			491,520			T <sup>26</sup>
ukiala. Tuo o d		iron			122,880	ļ		+24
rticle Trend		E. 5 - mickel			30,720	Severe		-22
nonmar 4µm 6µm								
		0-+			1,680 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Abnormal		-20
		Apr4/24			Apr4/24. 17.617 m]) 18.61 m])	-	•	+20 +18
		Non-ferrous Meta	ls					16
					12(		N	-14
		E c			qump			14
	V GI P	E 5-			30			12
	Α			******		1		-10
		Apr4/24			Apr4/24	-		-8
		Ap			db (	4	14µ 21µ	38µ 71µ
		Viscosity @ 40°C				Acid Number	21μ 21μ	30μ Πμ
		Aba amazi			NOT NOT			
		50 Base 45 45 45 45 45 45 45 45 45 45			ຍິ ພັ 0.50	Base		
		<sup>성</sup> 40 <b>Abnormal</b>			40.00 Page 4	Abnormal		
		35				) 		
					2	Apr4/24		
		Apr4/24			Apr4/24	brd		

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.

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