

## **OIL ANALYSIS REPORT**

Sample Rating Trend

WEAR

Machine Id ES013 Component **Auxiliary Hydraulic System** AW HYDRAULIC OIL ISO 46 (--- GAL)

#### 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. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) AW HYDRAULIC OIL ISO 46. Please confirm. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

#### Wear

Copper ppm levels are noted. All other 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. NOTE: The color of the oil is darker then previous samples.

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SAMPLE INFORM		method	limit/base	current	history1	history2
Sample Number		Client Info		WC0914612		
Sample Date		Client Info		11 Mar 2024		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				ATTENTION		
CONTAMINATION	N	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	3		
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	<1		
Lead	ppm	ASTM D5185(m)	>20	1		
Copper	ppm	ASTM D5185(m)	>20	<mark> </mark> 16		
Tin	ppm	ASTM D5185(m)	>20	<1		
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	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	5	<1		
Barium	ppm	ASTM D5185(m)	5	<1		
Molybdenum	ppm	ASTM D5185(m)	5	0		
Manganese	ppm	ASTM D5185(m)		0		
Magnesium	ppm	ASTM D5185(m)	25	4		
Calcium	ppm	ASTM D5185(m)	200	67		
Phosphorus	ppm	ASTM D5185(m)	300	319		
Zinc		( )				
	ppm	ASTM D5185(m)	370	345		
Sulfur	ppm ppm	ASTM D5185(m) ASTM D5185(m)	370 2500	345 1585		
	ppm	ASTM D5185(m)		1585		
Lithium	ppm ppm	ASTM D5185(m) ASTM D5185(m)	2500	1585 <1		
Lithium CONTAMINANTS	ppm ppm	ASTM D5185(m) ASTM D5185(m) method	2500 limit/base	1585 <1 current		  history2
Lithium CONTAMINANTS Silicon	ppm ppm	ASTM D5185(m) ASTM D5185(m) method ASTM D5185(m)	2500	1585 <1 current <1		
Lithium CONTAMINANTS Silicon Sodium	ppm ppm	ASTM D5185(m) ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m)	2500 limit/base >15	1585 <1 current <1 4	   history1	  history2
Lithium CONTAMINANTS Silicon Sodium	ppm ppm	ASTM D5185(m) ASTM D5185(m) method ASTM D5185(m)	2500 limit/base >15	1585 <1 current <1	  history1 	  history2
Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m)	2500 limit/base >15	1585 <1 current <1 4	  history1 	  history2 
Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	2500 limit/base >15 >20	1585 <1 current <1 4 2	  history1  	  history2  
Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) Method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) method	2500 limit/base >15 >20 limit/base	1585 <1 current <1 4 2 current	  history1   history1	<ul> <li></li> <li></li> <li>history2</li> <li></li> <li></li> <li>history2</li> </ul>
Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) method ASTM D7647	2500 limit/base >15 >20 limit/base >5000	1585 <1 current <1 4 2 current 2519	  history1   history1 	<ul> <li></li> <li></li> <li>history2</li> <li></li> <li></li> <li>history2</li> </ul>
Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) Method ASTM D7647 ASTM D7647	2500 imit/base >15 >20 imit/base >5000 >1300 >160	1585 <1 current <1 4 2 current 2519 342	  history1   history1  	<ul> <li></li> <li>history2</li> <li></li> <li></li> <li>history2</li> <li></li> <li></li> </ul>
Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647	2500 imit/base >15 >20 imit/base >5000 >1300 >160	1585 <1 current <1 4 2 2 current 2519 342 20	  history1   history1  	<ul> <li></li> <li></li> <li>history2</li> <li></li> <li></li> <li>history2</li> <li></li> <li></li> </ul>
Silicon Sodium Potassium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	2500 imit/base >15 >20 imit/base >5000 >1300 >160 >40 >10	1585 <1 current <1 4 2 2 current 2519 342 20 4	  history1   history1    	<ul> <li></li> <li></li> <li>history2</li> <li></li> <li></li> <li>history2</li> <li></li> <li></li></ul>
Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	2500 imit/base >15 >20 imit/base >5000 >1300 >160 >40 >10	1585 <1 current <1 4 2 current 2519 342 20 4 0	 history1   history1  history1  	<ul> <li></li> <li></li> <li>history2</li> <li></li> <li></li> <li>history2</li> <li></li> <li></li></ul>



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6k 5k 5k 4μm 4μm 6μm 14μm 14μm 14μm	Acid Number (AN)	mg KOH/g					
		ing Non/g	ASTM D974*	0.57	0.83		
5 3k	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	Visual*	NONE	NONE		
	Yellow Metal	scalar	Visual*	NONE	NONE		
	Precipitate	scalar	Visual*	NONE	NONE		
	5 Silt	scalar	Visual*	NONE	NONE		
Mar11/24	Silt Debris	scalar	Visual*	NONE	NONE		
Particle Count	Sand/Dirt	scalar	Visual*	NONE	NONE		
1.520	T <sup>26</sup> Appearance	scalar	Visual*	NORML	NORML		
2.880 Severe 0.720 +	-24 Odor	scalar	Visual*	NORML	NORML		
7,680 Abnormal	Emulsified Water	scalar	Visual*	>0.05	NEG		
1,920	Free Water	scalar	Visual*		NEG		
480	22     Emulsified Water       20     Free Water       16     Free Water       16     FLUID PROPER	TIES	method	limit/base	current	history1	history2
30	12 Wisc @ 40°C	cSt	ASTM D7279(m)	46	46.4		
2	SAMPLE IMAGE	S	method	limit/base	current	history1	history2
0 <sub>4μ</sub> 6μ 14μ 21μ 38μ 7	16 1μ						
Acid Number	Color					no image	no image
1.0 Abnoma						-	
0.6 - <b>Base</b>							
0.6 - Base	Bottom					no imago	no imago
0.4	DOLLOITI				63	no image	no image
0.2 - Abnormal	-						
0.0	GRAPHS						
Marl 1/24	Ferrous Alloys			491,520	Particle Count		т26
M	iron						
Viscosity @ 40°C	E. 5-			122,880	Severe		-24
52 50 Abnormal				30,720	Ť • • •		-22
48 -	0_ <u>+</u>			5 E 7,680	Abnormal		-20
5 46 + <b>Base</b> 5 44 -	Marl 1/24			s (per 1 m] 1/24 1000			+20 +18 +16
5 44 -	≥ ●Non-ferrous Meta	le		Mar11/24 1056'1 ml) 1800 1900 1900 1900 1900 1900 1900 1900	1		-16
42 Abnormal						•	
40 Abnormal	15 - copper			una 120			1
Mar11/24	5 E 10-			= 30			-12
Mari	5			8	+		-10
Particle Trend	1/24			1/24	+		-8
6k T	Mar11/			Mar11/24			
5k - Hononnan θμm	Viscosity @ 40°C				Acid Number	14μ 21μ	38µ 71µ
4k	55 Abnormal			( <sup>B</sup> H0	Abnormal		
5k - 6μm	Base			B K	Base		
2 k +	50			4cid Number (mg KOH(d)	Abnormal		
1k	35	**************		N N			
0k ++				Au	1/24		
Mar11/2	Mar11/24			Mar11/24	Mar11/24		
Laborat Sample Loboratory CALA Laborat Sample Laboratory CALA Laborat Sample Laboratory To discuss this sample	•	Recei Teste Diagr sts: TAN I vice at 1-8	ved : 12 d : 13 losed : 13 Man ) 00-268-213	2 Mar 2024 3 Mar 2024 Mar 2024 - Kev 1.	in Marson	245 Britar Mi Contac	North Americ nnia Road Ea ississauga, O CA L4Z 4J t: Sandip Pat el@amcor.con T