

# **OIL ANALYSIS REPORT**



Machine Id **SP12** Component **Hydraulic System** Fluid **AW HYDRAULIC OIL ISO 46 (--- GAL)** 

## 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. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. 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

All component wear rates are normal.

#### Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

### Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0931330		
Sample Date		Client Info		09 Apr 2024		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				ABNORMAL		
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	0		
Nickel	ppm	ASTM D5185(m)	>20	0		
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	1		
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	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base	current <1	history1	history2
	ppm ppm		5			
Boron		ASTM D5185(m)	5	<1		
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	5 5	<1 0		
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 25	<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 5 25	<1 0 0 0 2		
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 5 25 200	<1 0 0 2 48	  	
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 2 48 326	   	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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 2 48 326 418		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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)	5 5 5 25 200 300 370	<1 0 0 2 48 326 418 840		
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 2 48 326 418 840 <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)	5 5 25 200 300 370 2500	<1 0 0 2 48 326 418 840 <1 current	       history1	      history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 25 200 300 370 2500 <b>limit/base</b> >15	<1 0 0 2 48 326 418 840 <1 current 0	      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 25 200 300 370 2500 <b>limit/base</b> >15	<1 0 0 2 48 326 418 840 <1 current 0 0	      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>limit/base</b> >15 >20	<1 0 0 2 48 326 418 840 <1 current 0 0 0 <1	       history1  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 5 25 200 300 370 2500 2500 <b>Iimit/base</b> >20 <b>Iimit/base</b>	<1 0 0 2 48 326 418 840 <1 current 0 0 <1 current	       history1   history1	     history2 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 limit/base >20 limit/base >20	<1 0 0 2 48 326 418 840 <1 current 0 0 <1 current 1 418 840 <1	      history1   history1	     history2  history2
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 5 200 300 370 2500 2500 Imit/base >15 >20 Imit/base >5000 >1300 >160	<1 0 0 2 48 326 418 840 <1 current 0 0 <1 current 0 1 6 4 1 8 4 1 6 4 1 8 4 0 4 1 8 4 0 4 1 4 1 8 4 0 4 1 4 8 4 0 4 1 8 4 1 4 8 4 1 4 8 4 1 4 8 4 1 4 8 4 1 4 8 4 5 4 8 4 8 4 5 4 8 4 8 4 8 4 5 6 4 8 4 8 4 8 4 8 4 8 4 8 4 8 4 8 4 8 4	      history1   history1  	      history2  history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Potassium Particles >4µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D76477 ASTM D7647	5 5 5 200 300 370 2500 2500 Imit/base >15 >20 Imit/base >5000 >1300 >160	<1 0 0 2 48 326 418 840 <1 current 0 0 <1 current 16481 ● 1780 68	       history1  history1	      history2  history2
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>Imit/base</b> >15 >20 <b>Imit/base</b> >5000 >1300 >160 >40 >10	<1 0 0 2 48 326 418 840 <1 current 0 0 <1 current 16481 ● 1780 68 15		      history2  history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 25 200 300 370 2500 2500 <b>Imit/base</b> >15 >20 <b>Imit/base</b> >5000 >1300 >160 >40 >10	<1 0 0 2 48 326 418 840 <1 current 0 0 <1 current 0 1 68 15 1 0 0 <1 2 2 1 0 68 15 1 0 0 2 2 1 1 0 0 68 15 1 0 0 2 2 1 1 0 0 2 2 2 2 2 2 2 2 2 2 2 2 2		       history2  history2



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Particle Trend	FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
4μm	Acid Number (AN)	mg KOH/g	ASTM D974*	0.57	0.35		
Abnomal	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	Visual*	NONE	NONE		
Abnormal	Yellow Metal	scalar	Visual*	NONE	NONE		
	Precipitate	scalar	Visual*	NONE	NONE		
3/24	Silt	scalar	Visual*	NONE	NONE		
Apr9/24	Debris	scalar	Visual*	NONE	VLITE		
Particle Trend	Sand/Dirt	scalar	Visual*	NONE	NONE		
Τ	Appearance	scalar	Visual*	NORML	NORML		
4μm	Odor	scalar	Visual*	NORML	NORML		
- μ	Emulsified Water	scalar	Visual*	>0.05	NEG		
	Free Water	scalar	Visual*		NEG		
Abnormal	FLUID PROPERT	TIES	method	limit/base	current	history1	history2
	Visc @ 40°C	cSt	ASTM D7279(m)	46	41.0		
Apr9/24 - Apr9/2	SAMPLE IMAGE	S	method	limit/base	current	history1	history2
Acid Number	Color					no image	no image
- Base	Bottom					no image	no image
	GRAPHS						
Apr9/24	Ferrous Alloys			491,520	Particle Count		
Viscosity @ 40°C	Ed 5	*****	*****	122,880 30,720 47/600 47/600 480 480 480 480		•	-24 -22 -20 -18 -16
	Non-ferrous Meta	S		offed 480			-16
Yong Used	E 5-			30			+14 +12 +10 +8
	Apr9/24			Apr9/24			
	Viscosity @ 40°C			7	ونام مرافع Acid Number	14μ 21μ	38µ 71µ́
	55 Abnormal			Pacial Number (mg KOH/g)	Abnormal		
	50 + Base 45 - Abnormal			Bu oro	Base		
	40 Abnormal			10.50	Abnormal		
	35						
	Apr9/24			Apr9/24	Apr9/24		
CALA Sample No 150 17025:2017 Lab Number		5 Appleby Recei Teste	ved : 10	gton, ON L7L ) Apr 2024   Apr 2024	_ 5H9 <b>Voe</b> :		Summo Corp rth Service Ro Burlington, Ol

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