

OIL ANALYSIS REPORT

Sample Rating Trend





AW HYDRAULIC OIL ISO 46 (--- LTR)

DIAGNOSIS

Recommendation

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	IATI <u>ON</u>	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0647428		
Sample Date		Client Info		03 Jul 2024		
Machine Age	mths	Client Info		10		
Oil Age	mths	Client Info		10		
Oil Changed		Client Info		Not Changd		
Sample Status				NORMAL		
CONTAMINATION	J	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	0		
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	0		
Copper	ppm	ASTM D5185(m)	>20	2		
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
	ppm	method ASTM D5185(m)	limit/base 5	current 1	history1	history2
Boron	ppm ppm					
Boron Barium		ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5	1		
Boron Barium Molybdenum Manganese	ppm	ASTM D5185(m) ASTM D5185(m)	5 5	1 0		
Boron Barium Molybdenum Manganese	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 3		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5	1 0 0 3 91		
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 3 91 345		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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 25 200	1 0 0 3 91	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 3 91 345 432 1191	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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)	5 5 5 25 200 300 370	1 0 0 3 91 345 432	 	
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 3 91 345 432 1191	 	
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) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5 200 300 370 2500	1 0 0 3 91 345 432 1191 <1 current 0		
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 3 91 345 432 1191 <1 current 0 <1	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	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 3 91 345 432 1191 <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 ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370 2500 2500 limit/base >15	1 0 0 3 91 345 432 1191 <1 current 0 <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 ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370 2500 2500 limit/base >15	1 0 0 3 91 345 432 1191 <1 current 0 <1 0 current 466	 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 ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370 2500 2500 imit/base >25 20	1 0 0 3 91 345 432 1191 <1 current 0 <1 0 Current	 history1 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLINI Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 200 300 370 2500 2500 Iimit/base >20 Iimit/base >20	1 0 0 3 91 345 432 1191 <1 current 0 <1 0 current 466	 history1 history1 	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 200 300 370 2500 2500 2500 1imit/base >15 >20 1imit/base >5000 >1300 >160	1 0 0 3 91 345 432 1191 <1 current 0 <1 0 current 466 145	 history1 history1 history1	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D76477 ASTM D7647	5 5 5 200 300 370 2500 2500 2500 1imit/base >15 >20 1imit/base >5000 >1300 >160	1 0 0 3 91 345 432 1191 <1 0 current 0 <1 0 0 <1 0 0 current 466 145 35	 history1 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLINI Particles >4µm Particles >14µm Particles >21µm	ppm 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 370 2500 370 2500 370 2500 315 30 310 310 310 310 310 310 310 310 310	1 0 0 3 91 345 432 1191 <1 current 0 <1 0 <1 0 current 466 145 35 14	 history1 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 200 300 370 2500 370 2500 370 2500 370 2500 315 30 310 310 310 310 310 310 310 310 310	1 0 0 3 91 345 432 1191 <1 current 0 <1 0 <1 0 current 466 145 35 14 1 1 0 16/14/12	 history1 history1 	 history2 history2 history2



OIL ANALYSIS REPORT

Particle Trend			FLUID DEGRAD	ATION	method			history1	history2
k - μπ β			Acid Number (AN)	mg KOH/g	ASTM D974*	0.57	0.36		
ik -			VISUAL		method	limit/base	current	history1	history2
lk			White Metal	scalar	Visual*	NONE	NONE		
k		1	Yellow Metal	scalar	Visual*	NONE	NONE		
			Precipitate	scalar	Visual*	NONE	NONE		
Jul3/24		Jul3/24	Silt		Visual*	NONE	NONE		
5		5	Debris	scalar	Visual*	NONE	NONE		
Acid Number			Sand/Dirt Appearance	scalar scalar	Visual* Visual*	NONE NORML	NONE NORML		
Abnormal			Odor	scalar	Visual*	NORML	NORML		
0 - Base			Emulsified Water	scalar	Visual*	>0.05	NEG		
0 - Base			Free Water	scalar	Visual*		NEG		
0-			FLUID PROPER	ΓIES	method	limit/base	current	history1	history2
0 - Abnormal			Visc @ 40°C	cSt	ASTM D7279(m)	46	47.1		
Jul3/24 +		Jul3/24 -	SAMPLE IMAGE	S	method	limit/base	current	history1	history2
٦٢		7							
Viscosity @ 40°	°C		Color					no image	no image
Abnormal								-	_
8-									
6 - Base			Bottom				6000	no imago	no imago
2			BOLLOITI					no image	no image
0 - Abnormal									
84		÷.	GRAPHS						
Jul3/24		G 61-1	Ferrous Alloys			491,52	Particle Count		т26
			iron			122,88	0		-24
Particle Trend			E. 5 nickel			30,72	Severe		-22
4μm 4μm			0						
k			Jul3/24			1 m	0 Abnormal		+20 +18 +16 +14
k			٦ ^L			마 lag 1.92 say	0	•	+18
k -			Non-ferrous Meta	s		48 daticles			-16
k -			copper			12 numper of	0		-14
Jul3/24		100	ق 5- tin			ie 3	0 -		-12
Ju C							8 -		-10
			Jul3/24			Jul3/24	2 -		-8
			- Tri			Jul	0	14µ 21µ	38µ 71µ
			Viscosity @ 40°C			-	^{4μ} Acid Number	14μ 21μ	30μ Πμ
						Acid Number (mg KOH(g)	Abnormal		
			50 - Base € 45 - Abnormal			ຍິ ພ.5	Base	*****	*****
			40 - Abnormal			Numb	Abnormal		
			35						
			Jul3/24			Jul3/24	Jul3/24		Jul3/24
	CALLA Laboratory	Sample No. Lab Number Unique Number Test Package	: 5811792	Recei Teste Diagr	ved : 08 d : 09 iosed : 09	3 Jul 2024 9 Jul 2024 9 Jul 2024 - W		62 MC KI Cont	AUTOMATION BRINE PL #17 TCHENER, ON CA N2R 1H3 tact: Rob Frank

Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. 網 Validity of results and interpretation are based on the sample and information as supplied.

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