

OIL ANALYSIS REPORT



Machine Id P2 MAIN Hydraulic System 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. 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		WC0943187	WC	
Sample Date		Client Info		03 Jul 2024	08 Apr 2021	
Machine Age	hrs	Client Info		0	0	
Oil Age	hrs	Client Info		0	0	
Oil Changed		Client Info		N/A	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINATION	N	method	limit/base	current	history1	history2
Water		WC Method	>0.05	NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	3	<1	
Chromium	ppm	ASTM D5185(m)	>20	0	0	
Nickel	ppm	ASTM D5185(m)	>20	<1	<1	
Titanium	ppm	ASTM D5185(m)		0	0	
Silver	ppm	ASTM D5185(m)		0	<1	
Aluminum	ppm	ASTM D5185(m)	>20	<1	<1	
Lead	ppm	ASTM D5185(m)	>20	<1	<1	
Copper	ppm	ASTM D5185(m)	>20	16	11	
Tin	ppm	ASTM D5185(m)	>20	0	0	
Antimony	ppm	ASTM D5185(m)		0	0	
Vanadium	ppm	ASTM D5185(m)		0	0	
Beryllium	ppm	ASTM D5185(m)		0	0	
Cadmium	ppm	ASTM D5185(m)		0	0	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base 5	current	history1 1	history2
	ppm ppm		5			
Boron		ASTM D5185(m)	5	1	1	
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	5 5	1 0	1 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5	1 0 0	1 0 <1	
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	1 0 <1 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	1 0 <1 0 3	
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 60	1 0 <1 0 3 57	
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 60 339	1 0 <1 0 3 57 316	
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 60 339 437	1 0 <1 0 3 57 316 415	
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 60 339 437 761	1 0 <1 0 3 57 316 415 765	
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 60 339 437 761 <1	1 0 <1 0 3 57 316 415 765 <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 2 60 339 437 761 <1	1 0 <1 0 3 57 316 415 765 <1 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) 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 60 339 437 761 <1 current 0	1 0 <1 0 3 57 316 415 765 <1 history1 <1	 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 limit/base >15	1 0 0 2 60 339 437 761 <1 <i>current</i> 0 <1	1 0 <1 0 3 57 316 415 765 <1 history1 <1 <1	 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 limit/base >15	1 0 0 2 60 339 437 761 <1 <1 current 0 <1 0	1 0 <1 0 3 57 316 415 765 <1 history1 <1 <1 <1 0	 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 imit/base >20	1 0 0 2 60 339 437 761 <1 <i>current</i> 0 <1 0 <i>current</i>	1 0 <1 0 3 57 316 415 765 <1 history1 <1 <1 0 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 imit/base >20 imit/base 55000	1 0 0 2 60 339 437 761 <1 <i>current</i> 0 <1 0 <i>current</i> 677	1 0 <1 0 3 57 316 415 765 <1 history1 <1 <1 <1 0 history1 1116	 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 >20 imit/base >20 imit/base >5000 >1300 >1300	1 0 0 2 60 339 437 761 <1 <i>current</i> 0 <1 0 <i>current</i> 677 85	1 0 <1 0 3 57 316 415 765 <1 history1 <1 <1 0 history1 1116 210	 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	ASTM D5185(m) ASTM D76477 ASTM D7647	5 5 5 200 300 370 2500 2500 imit/base >20 imit/base >20 imit/base >5000 >1300 >1300	1 0 0 2 60 339 437 761 <1 current 0 <1 0 <1 0 current 677 85 7	1 0 <1 0 3 57 316 415 765 <1 history1 <1 <1 <1 0 history1 1116 210 20	 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 iimit/base >15 20 iimit/base >20 iimit/base >15 0 2 100 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1 0 0 2 60 339 437 761 <1 0 current 0 <1 0 <1 0 5 7 85 7 2	1 0 <1 0 3 57 316 415 765 <1 history1 <1 <1 <1 0 history1 1116 210 20 7	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS 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 ASTM D7647	5 5 5 25 200 300 370 2500 2500 iimit/base >15 20 iimit/base >20 iimit/base >15 0 2 100 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1 0 0 2 60 339 437 761 <1 <i>current</i> 0 <1 0 <1 0 <i>current</i> 677 85 7 2 1 1 1 1 1/14/10	1 0 <1 0 3 57 316 415 765 <1 history1 <1 <1 <1 0 history1 1116 210 20 7 0 0 0 17/15/11	 history2 history2



61

particles (1 ml) 3k 3k 5k

la 1k 0k Apr8/21

(B/H0.80 0.60 Base

-a u 0.40 0.20 Abno

> 0.00 Apr8/2

52 Abnormal 50 48 (J- 46 St (40-C) B

42 Abnorma 40 38 Apr8/21

6k

f particles (1 ml) 8 4k 8 2k

in 2k ē 1, ok L# Apr8/21

h.

1.00 T Abnormal

OIL ANALYSIS REPORT

		FLUID DEGRADA		method	limit/base	current	history1	history2
		Acid Number (AN)	mg KOH/g	ASTM D974*	0.57	0.30	0.36	
		VISUAI		method	limit/base	current	historv1	history2
			coalar					
	24							
	Jul3/	Debris						
		Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	
		Appearance	scalar	Visual*	NORML	NORML	NORML	
		Odor	scalar	Visual*	NORML	NORML	NORML	
		Emulsified Water	scalar	Visual*	>0.05	NEG	NEG	
		Free Water	scalar	Visual*		NEG	NEG	
		FLUID PROPERT	TIES	method	limit/base	current	history1	history2
	-	Visc @ 40°C	cSt	ASTM D7279(m)	46	45.8	45.2	
	3/24	SAMPLE IMAGES	S	method	limit/base	current	history1	history2
	Ju							
°C		Color				1187		no imago
		0000						no image
							(CA)	
		Bottom						no image
							Mart I	
		GRAPHS						
	4 C C	Ferrous Alloys						10.000
	-	10 iron 1			491,520	1		T ²⁶
		E. 5			122,880	Severe		-24
					30,720			-22
		2 ⁷ 0				Abnormal		-20
		Apr8/.			Jul3/2 1 r 1 r			+20 +18 +16 +14
			c					10
		20 T	3		5		×	10
		15 - copper lead						+14 -12
	C C	5.10 - tin			= 30			-12
	1		************		8			-10
		Apr8/21			Jul3/24	-		-8
					₹ 0	C	14	28
		Viscosity @ 40°C			_	^{به} Acid Number	14μ 21μ	38µ 71µ́
		EE			^딸 1.00	Abnormal		
		55 50 Abnormal			Ŋ			
		Aba amazi			9 9 10 50	Base		
		Abnormal			ump value va	Base Abnormal		
		50 - Abnormal Base			(0)HOX But Jun 2000 400 Mumber Month 1000 4000 Mumber Mumber Month 1000 4000 Mumber Mumber	Abnormal		2
	•C	مدمد ها المراجع	Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPERT Visc @ 40°C SAMPLE IMAGES Oc Color Bottom GRAPHS Ferrous Alloys Job C Sond Color Bottom Color Color Color	White Metal scalar Yellow Metal scalar Precipitate scalar Silt scalar Debris scalar Appearance scalar Odor scalar Emulsified Water scalar Free Water scalar Free Water scalar SAMPLE IMAGES Scalar Oc Color Off GRAPHS Ferrous Alloys Image: Scalar Off Scalar Social Scalar Social Scalar Scalar	White Metal scalar Visual* Yellow Metal scalar Visual* Precipitate scalar Visual* Sitt scalar Visual* Debris scalar Visual* Sand/Dirt scalar Visual* Appearance scalar Visual* Odor scalar Visual* Emulsified Water scalar Visual* Free Water scalar Visual*	White Metal scalar Visual* NONE Yellow Metal scalar Visual* NONE Precipitate scalar Visual* NONE Sitt scalar Visual* NONE Sand/Dirt scalar Visual* NONE Appearance scalar Visual* NORML Odor scalar Visual* NORML Color CSt ASTM D7279(m) 46 SAMPLE IMAGES method imit/base Visc @ 40°C cSt ASTM D7279(m) 46 SAMPLE IMAGES method imit/base Non-ferrous Metals Mon-ferrous Metals 122,880 03,720 03,720 04 122,880 03,720 04 120 120 120 120 120 120 120 120	White Metal scalar Visual* NONE NONE Yellow Metal scalar Visual* NONE NONE Precipitate scalar Visual* NONE NONE Sitt scalar Visual* NONE NONE Sand/Dirit scalar Visual* NONE NONE Sand/Dirit scalar Visual* NONE NONE Sand/Dirit scalar Visual* NORML NORML Odor scalar Visual* NORML NORML Odor scalar Visual* NORML NORML Odor scalar Visual* NORML NORML Precipitate scalar Visual* NONE NONE Sand/Dirit scalar Visual* NORML NORML Odor scalar Visual* NORML NORML Codor scalar Visual* NORML NORML Visuar* NORML NORML Codor scalar Visual* NORML NORML Emulsified Water scalar Visual* NORML NORML Visc @ 40°C cSt ASTMD7278(m) 46 45.8 SAMPLE IMAGES method imit/base current Visc @ 40°C cSt ASTMD7278(m) 46 45.8 SAMPLE IMAGES method imit/base current Ferrous Alloys Particle Count 41.520 000 000 000 000 000 000 000	White Metal scalar Visual* NONE NONE NONE Yeliow Metal scalar Visual* NONE NONE NONE Precipitate scalar Visual* NONE NONE NONE Sitt scalar Visual* NONE NONE NONE NONE NONE Sand/Dirt scalar Visual* NONE NONE NONE Appearance scalar Visual* NORML NORML NORML Odor scalar Visual* NORML

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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Page 2 of 2

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