

OIL ANALYSIS REPORT

ISO

Machine Id MACHINE 6 (S/N 35770H) Component

Hydraulic System ESSO NUTO H ISO 46 (--- LTR)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. 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. The water content is negligible.

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.

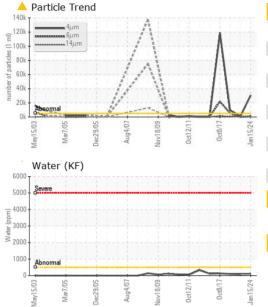
		ay2003 Mar	2005 Dec2005 Aug20	07 Nov2009 Oct2011 Oct20	117 Jan202	
SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		RP0034649	RP05160647	RP73137
Sample Date		Client Info		15 Jan 2024	18 Jan 2021	09 Sep 2018
Machine Age	yrs	Client Info		0	0	0
Oil Age	yrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	NORMAL	ABNORMAL
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	6	3	4
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>20	0	1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	<1
Aluminum	ppm	ASTM D5185m	>20	0	0	<1
Lead	ppm	ASTM D5185m	>20	0	2	0
Copper	ppm	ASTM D5185m	>20	2	3	4
Tin	ppm	ASTM D5185m	>20	0	0	<1
Antimony	ppm	ASTM D5185m			0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVEO		methou	IIIIII/Dase	Current	Thistory	Thistory 2
	ppm	ASTM D5185m	0	0	<1	<1
Boron	ppm ppm		0			
Boron Barium		ASTM D5185m	0	0	<1	<1
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	0	0 0	<1 0	<1 0
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 5	0 0 0	<1 0 1	<1 0 <1 <1 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	0 0 0	<1 0 1 <1	<1 0 <1 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 5	0 0 0 0	<1 0 1 <1 <1 32 368	<1 0 <1 <1 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 5 50	0 0 0 0 22	<1 0 1 <1 <1 32	<1 0 <1 <1 0 41
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 5 50 330	0 0 0 0 22 334	<1 0 1 <1 <1 32 368	<1 0 <1 <1 0 41 324
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 5 50 330 410	0 0 0 0 22 334 358	<1 0 1 <1 <1 32 368 431	<1 0 <1 <1 0 41 324 388
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 5 50 330 410 limit/base	0 0 0 0 22 334 358 current	<1 0 1 <1 <1 32 368 431 history1	<1 0 <1 <1 0 41 324 388 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 0 5 50 330 410 limit/base	0 0 0 0 22 334 358 current	<1 0 1 <1 <1 32 368 431 history1 <1	<1 0 <1 <1 0 41 324 388 history2 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 0 0 5 50 330 410 limit/base >15 >20	0 0 0 0 22 334 358 current <1 <1	<1 0 1 <1 <1 32 368 431 history1 <1 <1	<1 0 <1 <1 0 41 324 388 history2 <1 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 5 50 330 410 limit/base >15 >20	0 0 0 0 22 334 358 <u>current</u> <1 <1 0	<1 0 1 <1 <1 32 368 431 history1 <1 <1 8	<1 0 <1 <1 0 41 324 388 history2 <1 <1 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 5 50 330 410 limit/base >15 >20 >0.05	0 0 0 0 22 334 358 current <1 <1 <1 0 0 0.011	<1 0 1 <1 <1 32 368 431 history1 <1 <1 8 0.007	<1 0 <1 0 41 324 388 history2 <1 <1 1 0.010
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304	0 0 0 5 50 330 410 limit/base >15 >20 >20 >0.05 >500	0 0 0 0 22 334 358 <u>current</u> <1 <1 0 0 0.011 112	<1 0 1 <1 <1 32 368 431 history1 <1 <1 <1 8 0.007 78.5	<1 0 <1 <1 0 41 324 388 history2 <1 <1 <1 1 0.010 100
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304	0 0 0 5 50 330 410 >15 >15 >20 >20 >0.05 >500 limit/base >5000	0 0 0 22 334 358 current <1 <1 <1 0 0 0.011 112 current	<1 0 1 <1 <1 32 368 431 history1 <1 <1 <1 8 0.007 78.5 history1	<1 0 <1 41 324 388 history2 <1 <1 1 0.010 100 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304	0 0 0 5 50 330 410 >15 >15 >20 >20 >0.05 >500 limit/base >5000	0 0 0 22 334 358 current <1 <1 <1 0 0.011 112 current % 30741	<1 0 1 <1 32 368 431 history1 <1 <1 <1 8 0.007 78.5 history1 1005	<1 0 <1 41 324 388 history2 <1 <1 <1 1 0.010 100 history2 ▲ 9461
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647	0 0 0 5 50 330 410 bimit/base >15 >20 >20 >500 bimit/base >5000 >1300 >160	0 0 0 22 334 358 current <1 <1 <1 0 0.011 112 0 0.011 112 xurrent 0 30741 945	<1 0 1 <1 <1 32 368 431 history1 <1 <1 <1 8 0.007 78.5 history1 1005 100	<1 0 <1 41 324 388 history2 <1 <1 1 0.010 100 history2 < 9461 < 9461 < 15154
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Vater ppm Water FLUID CLEANLIN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 5 50 330 410 bimit/base >15 >20 >20 >500 bimit/base >5000 >1300 >160	0 0 0 22 334 358 current <1 <1 <1 0 0.011 112 0 0.011 112 0 0.011 112	<1 0 1 <1 <1 32 368 431 history1 <1 <1 <1 8 0.007 78.5 history1 1005 100 14	<1 0 <1 41 0 41 324 388 history2 <1 <1 <1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 5 50 330 410 *10 *15 *20 *0.05 *500 *500 *1300 *160 *40 *10	0 0 0 22 334 358 current <1 <1 <1 0 0.011 112 current 112 0 30741 945 25 6	<1 0 1 <1 <1 32 368 431 history1 <1 <1 <1 <1 8 0.007 78.5 history1 1005 100 14 6	<1 0 <1 0 41 324 388 history2 <1 <1 1 0.010 100 history2 4 9461 5154 878 296
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Vater ppm Water FLUID CLEANLIN Particles >4µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 5 50 330 410 *10 *15 *20 *0.05 *500 *500 *1300 *160 *40 *10	0 0 0 22 334 358 current <1 <1 <1 0 0.011 112 current 112 0 0.011 112 0 0.011 112 5 6 0 0	<1 0 1 <1 <1 32 368 431 history1 <1 <1 <1 8 0.007 78.5 history1 1005 100 14 6 0	<1 0 <1 0 41 324 388 history2 <1 <1 1 0.010 100 history2 0.010 100 100 0.010 100 0.010 100 0.010 0.
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Vater ppm Water FLUID CLEANLIN Particles >4µm Particles >51µm Particles >38µm Particles >71µm	ppm ppm ppm ppm ppm ppm ppm ppm % ppm	ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 5 5 330 410 330 410 330 410 >15 >20 >20 >20 >0.05 >500 3 500 >100 >1300 >160 >40 >40 >10 >3	0 0 0 22 334 358 current <1 <1 <1 0 0.011 112 current 12 0 0.011 112 0 0 0.011 112 6 0 0 0.011 0 0 0 0.011 0 0 0 0 0 0 0 0 0	<1 0 1 <1 <1 32 368 431 history1 <1 <1 <1 8 0.007 78.5 history1 1005 100 14 6 0 0 0	<1 0 <1 0 41 324 388 history2 <1 <1 1 0.010 100 history2 4 5154 878 296 45 4



Acid Number

1.20

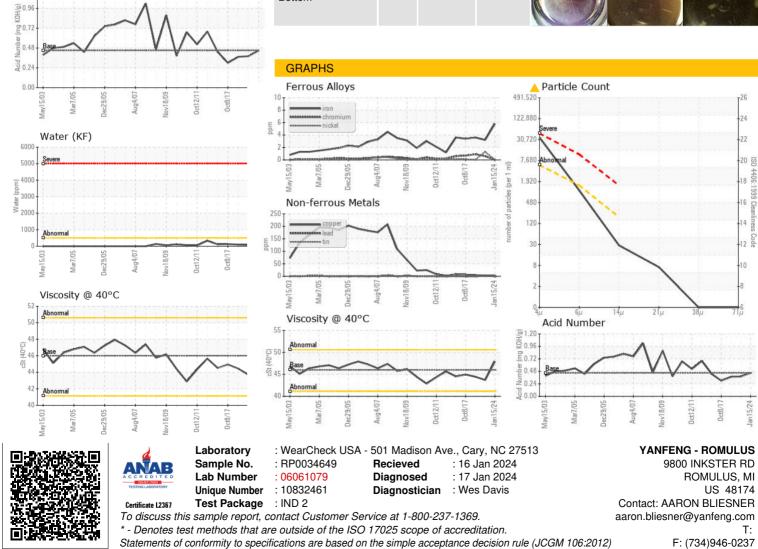
OIL ANALYSIS REPORT



VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	VLITE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	NONE	VLITE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46	47.9	43.7	44.45
SAMPLE IMAGES		method	limit/base	current	history1	history2
Color				a.		







Contact/Location: AARON BLIESNER - PLAROM