

OIL ANALYSIS REPORT

Sample Rating Trend

ISO

Machine I LINE 2 (S/N 3000) Component

Hydraulic System

SAFETY-KLEEN PERFORMANCE PLUS HYDRAU

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. 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

Fuel content negligible. 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.

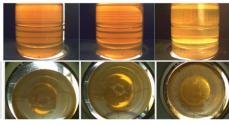
AULIC AW 46 (GAL) initial and a strain of the strai	SIS REPU	INI					150	
SAMPLE INFORMATION method limit/base current history1 history2 Sample Number Client Info WC0801321 WC0801232 WC0801232 Mar 2023 18 May 2022 Machine Age hrs Client Info 0 0 0 0 Oil Ghanged Client Info 0 0 0 0 0 Sample Status Client Info Not Changd Not Changd NA ABNORMAL ABNORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG Water WC Method >0.50 NEG NEG NEG Water WC Method >0.50 NEG NEG NEG Viral MST D51555 >2.0 0 0 0 Nickel ppm ASTM D51555 >2.0 0 0 0 Aluminum ppm ASTM D51555								
SAMPLE INFORMATION method limit/base current history1 history2 Sample Number Client Info WC0801321 WC0801232 WC0801232 Mar 2023 18 May 2022 Machine Age hrs Client Info 0 0 0 0 Oil Ghanged Client Info 0 0 0 0 0 Sample Status Client Info Not Changd Not Changd NA ABNORMAL ABNORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG Water WC Method >0.50 NEG NEG NEG Water WC Method >0.50 NEG NEG NEG Viral MST D51555 >2.0 0 0 0 Nickel ppm ASTM D51555 >2.0 0 0 0 Aluminum ppm ASTM D51555								
SAMPLE INFORMATION method limit/base current history1 history2 Sample Number Client Info WC0801321 WC0801232 WC0801232 Mar 2023 18 May 2022 Machine Age hrs Client Info 0 0 0 0 Oil Ghanged Client Info 0 0 0 0 0 Sample Status Client Info Not Changd Not Changd NA ABNORMAL ABNORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG Water WC Method >0.50 NEG NEG NEG Water WC Method >0.50 NEG NEG NEG Viral MST D51555 >2.0 0 0 0 Nickel ppm ASTM D51555 >2.0 0 0 0 Aluminum ppm ASTM D51555								
SAMPLE INFORMATION method limit/base current history1 history2 Sample Number Client Info WC0801321 WC0801232 WC0801232 Mar 2023 18 May 2022 Machine Age hrs Client Info 0 0 0 0 Oil Ghanged Client Info 0 0 0 0 0 Sample Status Client Info Not Changd Not Changd NA ABNORMAL ABNORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG Water WC Method >0.50 NEG NEG NEG Water WC Method >0.50 NEG NEG NEG Viral MST D51555 >2.0 0 0 0 Nickel ppm ASTM D51555 >2.0 0 0 0 Aluminum ppm ASTM D51555								
SAMPLE INFORMATION method limit/base current history1 history2 Sample Number Client Info WC0801321 WC0801321 WC0801232 Sample Number 17 May 2023 23 Mar 2023 18 May 2022 Machine Age hrs Client Info 0 0 0 0 Oil Changed Client Info 0 0 0 0 0 Sample Status Client Info Not Changd Not Changd NA ABNORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 War WC Method >0.05 NEG NEG NEG War WC Method >0.05 NEG NC 0 Kimon ppm ASTM05185m >2.0 <1								
SAMPLE INFORMATION method limit/base current history1 history2 Sample Number Client Info WC0801321 WC0801232 WC0801232 Mar 2023 18 May 2022 Machine Age hrs Client Info 0 0 0 0 Oil Ghanged Client Info 0 0 0 0 0 Sample Status Client Info Not Changd Not Changd NA ABNORMAL ABNORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG Water WC Method >0.50 NEG NEG NEG Water WC Method >0.50 NEG NEG NEG Viral MST D51555 >2.0 0 0 0 Nickel ppm ASTM D51555 >2.0 0 0 0 Aluminum ppm ASTM D51555								
Sample Number Client Info WC0801321 WC0801321 WC0801323 WC0801323 WC0801323 WC0801321 WC08013 WC0801321 WC08013	AULIC AW 46 (-	GAL)	Oct2019	Aug2020 Apr2021	May2022 Mar2023	May2023		
Sample Date Client Info 17 May 2023 23 Mar 2023 18 May 2022 Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info 0 0 0 0 Oil Changed Client Info Not Changd Not Changd NA ABNORMAL ABNORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D51555 >20 4 2 2 Iron ppm ASTM D51555 >20 0 0 0 Glopper ppm ASTM D51555 >20 0 0 0 Astmostis55 >20 0 0 0 0 0 Astm D51555 >20 0 0 0	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2	
Sample DateClient Info17 May 202323 Mar 202318 May 2022Machine AgehrsClient Info000Oil AgehrsClient Info000Sample StatusClient InfoNot ChangdNot ChangdNASample Statusmethodlimit/basecurrenthistory1history2WaterWC Method>0.05NEGNEGNEGWEAR METALSmethodlimit/basecurrenthistory1history2IronppmASTM D5185n>20<1	Sample Number		Client Info		WC0801321	WC0801293	WC0574578	
Oil Age hrs Client Info Not Changd N/A Sample Status Client Info Not Changd N/A CONTAMINATION method limil/base current ABNORMAL ABNORMAL CONTAMINATION Wethod >0.05 NEG NEG NEG Water WCthod >0.05 NEG NEG NEG WEAR METALS method limil/base current history1 history2 Iron ppm ASTM D5185m >20 <1			Client Info		17 May 2023	23 Mar 2023	18 May 2022	
Oil Changed Sample Status Client Info Not Changd ABNORMAL Not Changd ABNORMAL N/A ABNORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1		hrs	Client Info		-	0		
Sample Status Method Imit/base current ABNORMAL ABNORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1	Oil Age	hrs	Client Info		0	0	0	
CONTAMINATION method limit/base current history1 history2 Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1	Oil Changed		Client Info		Not Changd	Not Changd	N/A	
Water WC Method >0.05 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 4 2 2 Chromium ppm ASTM D5185m >20 <1	Sample Status				ABNORMAL	ABNORMAL	ABNORMAL	
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 4 2 2 Chromium ppm ASTM D5185m >20 <1	CONTAMINATIO	N	method	limit/base	current	history1	history2	
Iron ppm ASTM D5185m >20 4 2 2 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.05	NEG	NEG	NEG	
Iron ppm ASTM D5185m >20 4 2 2 Chromium ppm ASTM D5185m >20 <1	WEAR METALS		method	limit/base	current	historv1	history2	
Dromium ppm ASTM D5185m >20 <1 0 0 Nickel ppm ASTM D5185m >20 <1		nnm						
NickelppmASTM D5185m>20<100TitaniumppmASTM D5185m0000SilverppmASTM D5185m>20000AluminumppmASTM D5185m>20000LeadppmASTM D5185m>2021<1	<1							
Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 0 0 0 Copper ppm ASTM D5185m >20 0 0 0 Antimony ppm ASTM D5185m >20 0 0 0 Antimony ppm ASTM D5185m >20 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m <1								
SilverppmASTM D5185m000AluminumppmASTM D5185m>20000LeadppmASTM D5185m>2021<1				220				
Aluminum pm ASTM D5185m >20 0 0 0 Lead pm ASTM D5185m >20 0 0 0 Copper pm ASTM D5185m >20 2 1 <1								
Lead ppm ASTM D5185m >20 0 0 0 Copper ppm ASTM D5185m >20 2 1 <1	Aluminum			>20		0	0	
Tin ppm ASTM D5185m >20 0 0 0 Antimony ppm ASTM D5185m Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m <1			ASTM D5185m	>20	0	0	0	
Antimony ppm ASTM D5185m Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m <1	Copper	ppm	ASTM D5185m	>20	2	1	<1	
VanadiumppmASTM D5185m000CadmiumppmASTM D5185m000ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m0000BariumppmASTM D5185m0000MolybdenumppmASTM D5185m<1<1<1<1MagneseppmASTM D5185m<1<100MagnesiumppmASTM D5185m<41440CalciumppmASTM D5185m430350362364ZincppmASTM D5185m340350362364ZincppmASTM D5185m4304554411483SulfurppmASTM D5185m>1060737887CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>15<100SodiumppmASTM D5185m>20<10<1PotassiumppmASTM D5185m>20<10<1FLUID CLEANLINESSmethodlimit/basecurrenthistory1history2Particles >4µmASTM D7647>500031241373214 7474Particles >5µmASTM D7647>103224Particles >38µmASTM D7647>10324Particles >38µm<	Tin	ppm	ASTM D5185m	>20	0	0	0	
CadmiumppmASTM D5185m000ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m000BariumppmASTM D5185m000MolybdenumppmASTM D5185m<1	Antimony	ppm	ASTM D5185m					
ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m000BariumppmASTM D5185m000MolybdenumppmASTM D5185m<1	Vanadium	ppm	ASTM D5185m		0	0	0	
Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m <1	Cadmium	ppm	ASTM D5185m		0	0	0	
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m <1	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum ppm ASTM D5185m <1 <1 <1 <1 Manganese ppm ASTM D5185m 0 <1	Boron	ppm	ASTM D5185m		0	0	0	
Manganese ppm ASTM D5185m 0 <1 0 Magnesium ppm ASTM D5185m <1	Barium	ppm	ASTM D5185m		0	0	0	
Magnesium ppm ASTM D5185m < <1 4 0 Calcium ppm ASTM D5185m 48 44 41 48 Phosphorus ppm ASTM D5185m 340 350 362 364 Zinc ppm ASTM D5185m 430 455 441 483 Sulfur ppm ASTM D5185m 1060 737 887 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 <1	Molybdenum	ppm	ASTM D5185m		<1	<1	<1	
Calcium ppm ASTM D5185m 48 44 41 48 Phosphorus ppm ASTM D5185m 340 350 362 364 Zinc ppm ASTM D5185m 430 455 441 483 Sulfur ppm ASTM D5185m 430 455 441 483 Sulfur ppm ASTM D5185m 1060 737 887 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1	Manganese	ppm	ASTM D5185m		0			
Phosphorus ppm ASTM D5185m 340 350 362 364 Zinc ppm ASTM D5185m 430 455 441 483 Sulfur ppm ASTM D5185m 430 455 441 483 Sulfur ppm ASTM D5185m 1060 737 887 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1	-							
Zinc ppm ASTM D5185m 430 455 441 483 Sulfur ppm ASTM D5185m 1060 737 887 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1								
SulfurppmASTM D5185m1060737887CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>15<1								
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1				430				
Silicon ppm ASTM D5185m >15 <1 0 0 Sodium ppm ASTM D5185m >1 <1					1060	/3/		
Sodium ppm ASTM D5185m 1 <1 0 Potassium ppm ASTM D5185m >20 <1	CONTAMINANTS	3	method	limit/base	current	history1	history2	
Potassium ppm ASTM D5185m >20 <1 0 <1 Fuel % ASTM D3524 0.7 0.8 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >5000 ▲ 31241 ▲ 37321 ▲ 47474 Particles >6µm ASTM D7647 >1300 ▲ 3131 ▲ 3457 ▲ 7613 Particles >14µm ASTM D7647 >160 95 57 ▲ 323 Particles >21µm ASTM D7647 >40 28 12 ▲ 84 Particles >38µm ASTM D7647 >10 3 2 4 Particles >71µm ASTM D7647 >3 0 0 0	Silicon	ppm		>15				
Fuel % ASTM D3524 0.7 0.8 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >5000 ▲ 31241 ▲ 37321 ▲ 47474 Particles >6µm ASTM D7647 >1300 ▲ 3131 ▲ 3457 ▲ 7613 Particles >14µm ASTM D7647 >160 95 57 ▲ 323 Particles >14µm ASTM D7647 >40 28 12 ▲ 84 Particles >38µm ASTM D7647 >10 3 2 4 Particles >71µm ASTM D7647 >3 0 0 0		ppm						
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >5000 ▲ 31241 ▲ 37321 ▲ 47474 Particles >6µm ASTM D7647 >1300 ▲ 3131 ▲ 3457 ▲ 7613 Particles >14µm ASTM D7647 >160 95 57 ▲ 323 Particles >21µm ASTM D7647 >40 28 12 ▲ 84 Particles >38µm ASTM D7647 >10 3 2 4 Particles >71µm ASTM D7647 >3 0 0 0				>20				
Particles >4μm ASTM D7647 >5000 ▲ 31241 ▲ 37321 ▲ 47474 Particles >6μm ASTM D7647 >1300 ▲ 3131 ▲ 3457 ▲ 7613 Particles >14μm ASTM D7647 >160 95 57 ▲ 323 Particles >14μm ASTM D7647 >40 28 12 ▲ 84 Particles >38μm ASTM D7647 >10 3 2 4 Particles >71μm ASTM D7647 >3 0 0 0	Fuel	%	ASTM D3524		0.7	0.8		
Particles >6μm ASTM D7647 >1300 ▲ 3131 ▲ 3457 ▲ 7613 Particles >14μm ASTM D7647 >160 95 57 ▲ 323 Particles >21μm ASTM D7647 >40 28 12 ▲ 84 Particles >38μm ASTM D7647 >10 3 2 4 Particles >71μm ASTM D7647 >3 0 0 0	FLUID CLEANLIN	NESS	method	limit/base	current	history1	history2	
Particles >14μm ASTM D7647 >160 95 57 ▲ 323 Particles >21μm ASTM D7647 >40 28 12 ▲ 84 Particles >38μm ASTM D7647 >10 3 2 4 Particles >71μm ASTM D7647 >3 0 0 0	Particles >4µm		ASTM D7647	>5000	A 31241	▲ 37321	▲ 47474	
Particles >21μm ASTM D7647 >40 28 12 84 Particles >38μm ASTM D7647 >10 3 2 4 Particles >71μm ASTM D7647 >3 0 0 0	Particles >6µm		ASTM D7647	>1300	<u> </u>	▲ 3457	A 7613	
Particles >38μm ASTM D7647 >10 3 2 4 Particles >71μm ASTM D7647 >3 0 0 0								
Particles >71μm ASTM D7647 >3 0 0 0	•							
Uil Cleanliness ISU 4406 (c) >19/1 //14 ▲ 22/19/14 ▲ 22/19/13 ▲ 23/20/16					-			
	OII Cleanliness		150 4406 (C)	>19/1//14	<u> </u>	22/19/13	<u> </u>	



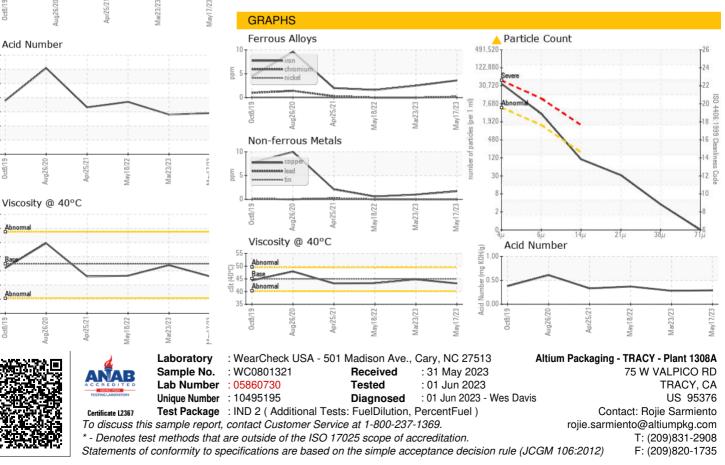
OIL ANALYSIS REPORT

FLUID DEGRADA		mathad	limit/bass	ourroat	biotoput	hist
FLUID DEGRADA	HON	method	limit/base	current	history1	his
Acid Number (AN)	mg KOH/g	ASTM D8045		0.29	0.28	0.37
VISUAL		method	limit/base	current	history1	his
White Metal	scalar	*Visual	NONE	NONE	NONE	NON
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NON
Precipitate	scalar	*Visual	NONE	NONE	NONE	NON
Silt	scalar	*Visual	NONE	NONE	NONE	NON
Debris	scalar	*Visual	NONE	LIGHT	LIGHT	LIGH
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NON
Appearance	scalar	*Visual	NORML	NORML	NORML	NOF
Odor	scalar	*Visual	NORML	NORML	NORML	NOF
Emulsified Water	scalar	*Visual	>0.05	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	his
Visc @ 40°C	cSt	ASTM D445	45.0	43.2	44.8	43.3
SAMPLE IMAGES		method	limit/base	current	history1	his
SAMPLE IMAGES		method	limit/base	current	history1	

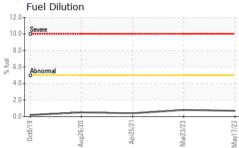
Color

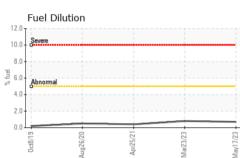


Bottom



🔺 Particle Trend 100 Ē 80 of particles 60 40 20 0 Mav18/22 Det8/





0.70

0.60 (B/HO) (B/H

Ê 0.40

-e 0.30

Acid 1 0.10

0.20

0.00

52

50

48

()-41 ()-41 ()-44 ()-44

42

38

0ct8/19

Abnorma 40

Dct8/1

Submitted By: Rojie Sarmiento

Page 2 of 2