

## **OIL ANALYSIS REPORT**

Windmill Plastics - W02200 A2406073

Hydraulic System AW HYDRAULIC OIL ISO 46 (--- GAL)

## Recommendation

We certify that this oil is clean, that the additives are at acceptable levels, and that it is suitable for use.

Wear

Copper and iron ppm levels are noted.

Batch #Client Info2024 05 0790DepartmentClient InfoProductionSample FromClient InfoMachineProduction StageClient InfoFinalSent to WCClient Info06/11/2024Sample NumberClient InfoE30002370Sample DateClient Info10 Jun 2024Machine AgehrsClient Info0Oil AgehrsClient Info0Oil ChangedClient InfoN/ASample StatusKient Info0	
SAMPLE INFORMATION         method         limit/base         current         history1           Batch #         Client Info         2024 05 0790             Department         Client Info         Production             Sample From         Client Info         Machine             Production Stage         Client Info         Machine             Sample Number         Client Info         06/11/2024             Sample Number         Client Info         10 Jun 2024             Sample Date         Client Info         0             Machine Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Changed         Client Info         N/A              Sample Status         Tethod         Mit/base         current         history1            Iron         ppm         ASTM D5185(m)         >20         44             Nickel         <	history2    
SAMPLE INFORMATIONmethodlimit/basecurrenthistory1Batch #Client Info2024 05 0790DepartmentClient InfoProductionSample FromClient InfoMachineProduction StageClient InfoMachineSent to WCClient Info06/11/2024Sample NumberClient Info06/11/2024Sample DateClient Info10 Jun 2024Machine AgehrsClient Info0Oil AgehrsClient Info0Oil ChangedClient Info0Sample StatusVClient InfoN/AWEAR METALSmethodlimit/basecurrenthistory1IronppmASTM D5185(m) >20<1NickelppmASTM D5185(m) >20<1NickelppmASTM D5185(m) >20<1SilverppmASTM D5185(m) >20<1AluminumppmASTM D5185(m) >202LeadppmASTM D5185(m) >202LeadppmASTM D5185(m) >202SilverppmASTM D5185(m) >202SilverppmASTM	history2    
Batch #         Client Info         2024 05 0790             Department         Client Info         Production             Sample From         Client Info         Machine             Production Stage         Client Info         Machine             Sent to WC         Client Info         06/11/2024             Sample Number         Client Info         06/11/2024             Sample Number         Client Info         01 Jun 2024             Sample Date         Client Info         0             Machine Age         hrs         Client Info         0             Oil Age         hrs         Client Info         N/A             Oil Changed         Client Info         N/A              Sample Status         method         limit/base         current         history1            Iron         ppm         ASTM D5185(m)         >20         <1             Nickel         ppm </th <th>history2    </th>	history2    
DepartmentClient InfoProductionSample FromClient InfoMachineProduction StageClient InfoFinalSent to WCClient Info06/11/2024Sample NumberClient Info06/11/2024Sample DateClient Info10 Jun 2024Machine AgehrsClient Info0Oil AgehrsClient Info0Oil AgehrsClient Info0Oil ChangedClient InfoN/ASample StatusNORMALWEAR METALSmethodlimit/basecurrenthistory1IronppmASTM D5185(m) >20<1NickelppmASTM D5185(m) >20<1NickelppmASTM D5185(m) >20<1SilverppmASTM D5185(m) >202AluminumppmASTM D5185(m) >202LeadppmASTM D5185(m) >202	
Sample FromClient InfoMachineProduction StageClient InfoFinalSent to WCClient Info06/11/2024Sample NumberClient Info10 Jun 2024Sample DateClient Info10 Jun 2024Machine AgehrsClient Info0Oil AgehrsClient Info0Oil ChangedClient InfoN/ASample StatusVerAR METALSmethodlimit/basecurrenthistory1IronppmASTM 05185(m)>20<1	
Production Stage         Client Info         Final             Sent to WC         Client Info         06/11/2024             Sample Number         Client Info         E30002370             Sample Date         Client Info         10 Jun 2024             Machine Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Changed         K         Client Info         0             Oil Changed         Client Info         N/A             Sample Status         Client Info         N/A             WEAR METALS         method         limit/base         current         history1           Iron         ppm         ASTM D5185(m)         >20         <1	
Production Stage         Client Info         Final             Sent to WC         Client Info         06/11/2024             Sample Number         Client Info         E30002370             Sample Date         Client Info         10 Jun 2024             Machine Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Changed         K         Client Info         0             Oil Changed         Client Info         N/A             Sample Status         Client Info         N/A             WEAR METALS         method         limit/base         current         history1           Iron         ppm         ASTM D5185(m)         >20         <1	
Sample Number         Client Info         E30002370             Sample Date         Client Info         10 Jun 2024             Machine Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Changed         Client Info         0              Oil Changed         Client Info         N/A              Sample Status         Method         limit/base         current         history1            Iron         ppm         ASTM D5185(m)         >20         44             Chromium         ppm         ASTM D5185(m)         >20         <1	
Sample Date         Client Info         10 Jun 2024             Machine Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Changed         Client Info         N/A             Sample Status         Client Info         N/A             WEAR METALS         method         limit/base         current         history1           Iron         ppm         ASTM D5185(m)         >20         44             Chromium         ppm         ASTM D5185(m)         >20         <1	
Machine Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0              Oil Changed         Client Info         N/A              Sample Status         NORMAL               WEAR METALS         method         limit/base         current         history1            Iron         ppm         ASTM D5185(m)         >20         44             Chromium         ppm         ASTM D5185(m)         >20         <1	
Oil Age         hrs         Client Info         0             Oil Changed         Client Info         N/A              Sample Status         Client Info         N/A              WEAR METALS         method         limit/base         current         history1            Iron         ppm         ASTM D5185(m)         >20         44             Chromium         ppm         ASTM D5185(m)         >20         <1	
Dil Age         hrs         Client Info         0             Dil Changed         Client Info         N/A   <	
N/A             Sample Status         Client Info         N/A             WEAR METALS         method         limit/base         current         history1           Iron         ppm         ASTM D5185(m)         >20         44             Chromium         ppm         ASTM D5185(m)         >20         <1             Nickel         ppm         ASTM D5185(m)         >20         <1             Silver         ppm         ASTM D5185(m)         >20         <1             Aluminum         ppm         ASTM D5185(m)         >20         <1             Lead         ppm         ASTM D5185(m)         >20         <1	
Sample Status         NORMAL             WEAR METALS         method         limit/base         current         history1           Iron         ppm         ASTM D5185(m)         >20         44             Chromium         ppm         ASTM D5185(m)         >20         <1	
Iron         ppm         ASTM D5185(m)         >20         44             Chromium         ppm         ASTM D5185(m)         >20         <1             Nickel         ppm         ASTM D5185(m)         >20         <1             Titanium         ppm         ASTM D5185(m)         >20         <1             Silver         ppm         ASTM D5185(m)         0              Aluminum         ppm         ASTM D5185(m)         >20         2             Lead         ppm         ASTM D5185(m)         >20         2	
Iron         ppm         ASTM D5185(m)         >20         44             Chromium         ppm         ASTM D5185(m)         >20         <1             Nickel         ppm         ASTM D5185(m)         >20         <1             Titanium         ppm         ASTM D5185(m)         >20         <1             Silver         ppm         ASTM D5185(m)         0              Aluminum         ppm         ASTM D5185(m)         >20         2             Lead         ppm         ASTM D5185(m)         >20         2	
Chromium         ppm         ASTM D5185(m)         >20         <1             Nickel         ppm         ASTM D5185(m)         >20         <1	
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         2             Lead         ppm         ASTM D5185(m)         >20         2	
Titanium         ppm         ASTM D5185(m)         0             Silver         ppm         ASTM D5185(m)         0             Aluminum         ppm         ASTM D5185(m)         >20         2             Lead         ppm         ASTM D5185(m)         >20         2	
Silver         ppm         ASTM D5185(m)         0             Aluminum         ppm         ASTM D5185(m)         >20         2             Lead         ppm         ASTM D5185(m)         >20         2	-
Aluminum         ppm         ASTM D5185(m)         >20         2	
Lead ppm ASTM D5185(m) >20 2	
Copper ppm ASIM DS185(m) >20 34	-
Tin         ppm         ASTM D5185(m)         >20         O             Astimory         ASTM D5185(m)         >20         O	
Antimony ppm ASTM D5185(m) 0	
Vanadium ppm ASTM D5185(m) <b>0</b>	
Beryllium         ppm         ASTM D5185(m)         O	
Cadmium ppm ASTM D5185(m) <b>0</b>	
ADDITIVES method limit/base current history1	history2
Boron ppm ASTM D5185(m) 5 <b>1</b>	-
Barium         ppm         ASTM D5185(m)         5         <1	-
Molybdenum         ppm         ASTM D5185(m)         5         0	-
Manganese ppm ASTM D5185(m) <1	
Magnesium ppm ASTM D5185(m) 25 50	
Calcium ppm ASTM D5185(m) 200 44	
Phosphorus ppm ASTM D5185(m) 300 512	-
Zinc ppm ASTM D5185(m) 370 451	-
Sulfur ppm ASTM D5185(m) 2500 1889	_
Lithium ppm ASTM D5185(m) <1	
CONTAMINANTS method limit/base current history1	history2
Silicon ppm ASTM D5185(m) >15 2	_
Sodium ppm ASTM D5185(m) 4	
Potassium ppm ASTM D5185(m) >20 <1	
Water % ASTM D6304* >0.05 0.001	-
ppm Water ppm ASTM D6304* >500 <b>11</b>	



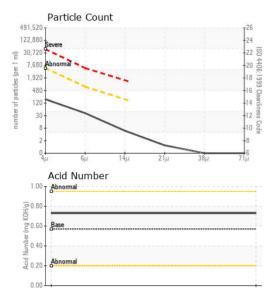
Sample Rating Trend

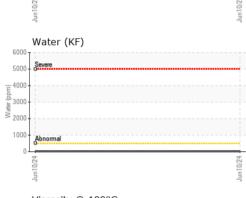


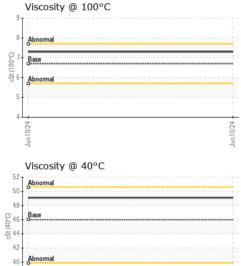
NORMAL



## **OIL ANALYSIS REPORT**

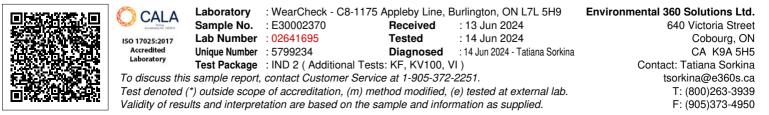






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FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	161		
Particles >6µm		ASTM D7647	>640	35		
Particles >14µm		ASTM D7647	>160	5		
Particles >21µm		ASTM D7647	>40	1		
Particles >38µm		ASTM D7647	>10	0		
Particles >71µm		ASTM D7647	>3	0		
Oil Cleanliness		ISO 4406 (c)	>19/16/14	15/12/10		
FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.57	0.73		
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE		
Yellow Metal	scalar	Visual*	NONE	NONE		
Precipitate	scalar	Visual*	NONE	NONE		
Silt	scalar	Visual*	NONE	NONE		
Debris	scalar	Visual*	NONE	NONE		
Sand/Dirt	scalar	Visual*	NONE	NONE		
Appearance	scalar	Visual*	NORML	NORML		
Odor	scalar	Visual*	NORML	NORML		
Emulsified Water	scalar	Visual*	>0.05	NEG		
Free Water	scalar	Visual*		NEG		
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	46	49.1		
Visc @ 100°C	cSt	ASTM D7279(m)	6.7	7.3		
Viscosity Index (VI)	Scale	ASTM D2270*	97	108		
SAMPLE IMAGES	6	method	limit/base	current	history1	history2
Color					no image	no image
Bottom					no image	no image



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Jun10/24

Contact/Location: Tatiana Sorkina - CHECOB Page 2 of 2