

## **OIL ANALYSIS REPORT**

### Area Windmill Plastics - W02200 A2404088

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

#### DIAGNOSIS

#### 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.

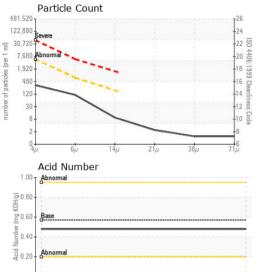
Batch #         Client Info         2024 04 0120             Department         Client Info         Machine             Sample From         Client Info         Machine             Production Stage         Client Info         0/4/17/2024             Sample Number         Client Info         0/4/17/2024             Sample Date         Client Info         0             Machine Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0              Oil Age         hrs         Client Info         0              Sample Status         method         limit/base         current         history1         history1           Iron         ppm         ASTM D5185(m)         >20         <1             Silver         ppm         ASTM D5185(m)         >20         37             Aluminum         ppm         ASTM D5185(m)         >20         37<							
SAMPLE INFORMATION         method         limit/base         current         history1         history1           Batch #         Client Info         2024 04 0120             Department         Client Info         Machine             Sample From         Client Info         Machine             Sample Date         Client Info         04/17/2024             Sample Date         Client Info         0             Machine Age         hrs         Client Info         0             Machine Age         hrs         Client Info         0             Machine Age         hrs         Client Info         0             Sample Status         reethod         Imit/base         current         history1            VEAR METALS         neethod         Imit/base         current         history1            If no         ppm         ASTM D5155(m)         >20         <1             Nickel         ppm         ASTM D5155(m)         >20         3 <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>							
SAMPLE INFORMATION         method         limit/base         current         history1         history1           Batch #         Client Info         2024 04 0120             Department         Client Info         Machine             Sample From         Client Info         Machine             Samtle Drom         Client Info         04/17/2024             Samtle Number         Client Info         0             Machine Age         hrs         Client Info         0             Sample Status         method         Imit/base         current         history1         history1            MetAl METALS         method         Imit/base         current         history1            If ange         ppm         ASTM 05156m         >20         -1         <							
SAMPLE INFORMATION         method         limit/base         current         history1         history1           Batch #         Client Info         2024 04 0120             Department         Client Info         Machine             Sample From         Client Info         Machine             Samtle Drom         Client Info         04/17/2024             Samtle Number         Client Info         0             Machine Age         hrs         Client Info         0             Sample Status         method         Imit/base         current         history1         history1            MetAl METALS         method         Imit/base         current         history1            If ange         ppm         ASTM 05156m         >20         -1         <							
Batch #         Client Info         2024 04 0120             Department         Client Info         Machine             Sample From         Client Info         Machine             Production Stage         Client Info         0/117/2024             Sample Number         Client Info         16 Apr 2024             Sample Date         Client Info         0             Oil Age         hrs         Client Info         N/A             Sample Status         Client Info         0              WEAR METALS         method         limit/base         current         history1         history1           Iron         ppm         ASTM 05186/m         >20         -1             Silver					Apr2024		
Batch #         Client Info         2024 04 0120             Department         Client Info         Machine             Sample From         Client Info         Machine             Sample From         Client Info         04/17/2024             Sample Number         Client Info         16 Apr 2024             Sample Date         Client Info         0             Oil Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Sample Status         NORMAL               WEAR METALS         meihod         limit/base         current         history1         history1           Iron         ppm         ASTM 05165(m)         >20         41             Silver         ppm         ASTM 05165(m)         >20         3             Aum	SAMPLE INFORM	ΛΑΤΙΟΝ	method	limit/base	current	historv1	history2
Department         Client Info         Production             Sample From         Client Info         Machine             Sent to WC         Client Info         GMachine             Sample Number         Client Info         GMachine             Sample Number         Client Info         16 Apr 2024             Sample Date         Client Info         0             Oil Age         hrs         Client Info         0             Oil Changed         Client Info         N/A              Sample Status         rethod         Imit/base         current         Inistory1            WEAR METALS         method         Imit/base         current             Nickel         ppm         ASIM D5185(m)         >20         <1							
Sample From         Client Info         Machine             Production Stage         Client Info         O4/17/2024             Sample Number         Client Info         O4/17/2024             Sample Date         Client Info         16 Apr 2024             Machine Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Changed         Client Info         0              Sample Status         weARM METALS         method         Imit/base         current         history1         history1           Iron         ppm         ASTM 05185(m)         >20         <1							
Production Stage         Client Info         Final             Sent to WC         Client Info         04/17/2024             Sample Number         Client Info         16 Apr 2024             Sample Date         Client Info         0             Oil Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Changed         Client Info         N/A             Sample Status         method         limit/base         current         history1         history1           VEAR METALS         method         limit/base         current         history1            WEAR METALS         method         limit/base         current         history1            Nickel         ppm         ASTM D5185(m)         >20         <1	•						
Sent to WC         Client Info         04/17/2024             Sample Number         Client Info         16 Apr 2024             Sample Date         Client Info         0             Machine Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Changed         Client Info         0              Sample Status         method         Imit/base         current         history1         history1           Iron         ppm         ASTM D5185(m)         >20         <1							
Sample Number         Client Info         E30001902             Sample Date         Client Info         16 Apr 2024             Machine Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Changed         Client Info         N/A             Sample Status         NORMAL              WEAR METALS         method         Imit/base         current         history1         history1           Iron         ppm         ASTM D5185(m)         >20         <1	0				-		
Sample Date         Client Info         16 Apr 2024             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         history1           Iron         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         Imit/base         current         history1         history1           Iron         ppm         ASTM 05186(m)         >20         <1							
Oil Age         hrs         Client Info         0             Oil Changed         Client Info         N/A             Sample Status         NORMAL             WEAR METALS         method         limit/base         current         history1            Nickel         ppm         ASTM D5185(m)         >20         <1	•	bro			-		
Ol Changed Sample Status         Client Info         N/A             WEAR METALS         method         limit/base         current         history1         history1           Iron         ppm         ASTM D5185(m)         >20         42             Chromium         ppm         ASTM D5185(m)         >20         <1	0						
Sample Status         Normal             WEAR METALS         method         limit/base         current         history1         history1           Iron         ppm         ASTM D5185(m)         >20         42             Chromium         ppm         ASTM D5185(m)         >20         <1	-	nrs			-		
WEAR METALS         method         limit/base         current         history1         history1           Iron         ppm         ASTM D5185(m)         >20         42             Chromium         ppm         ASTM D5185(m)         >20         <1	0		Client Into				
Iron         ppm         ASTM D5185(m)         >20         42            Chromium         ppm         ASTM D5185(m)         >20         <1	Sample Status				NORMAL		
Chromium         ppm         ASTM D5185(m)         >20         <1             Nickel         ppm         ASTM D5185(m)         >20         <1	WEAR METALS		method	limit/base	current	history1	history2
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         3             Lead         ppm         ASTM D5185(m)         >20         3             Copper         ppm         ASTM D5185(m)         >20         37             Antimony         ppm         ASTM D5185(m)         >20         0             Antimony         ppm         ASTM D5185(m)         0             Vanadium         ppm         ASTM D5185(m)         0	Iron	ppm			42		
Titanium         ppm         ASTM D5185(m)         0             Silver         ppm         ASTM D5185(m)         0             Aluminum         ppm         ASTM D5185(m)         >20         <1	Chromium	ppm	ASTM D5185(m)	>20	<1		
Silver         ppm         ASTM D5185(m)         0             Aluminum         ppm         ASTM D5185(m)         >20         <1	Nickel	ppm	ASTM D5185(m)	>20	<1		
Aluminum       ppm       ASTM D5185(m)       >20       <1	Titanium	ppm	ASTM D5185(m)		0		
Lead         ppm         ASTM D5185(m)         >20         3             Copper         ppm         ASTM D5185(m)         >20         37             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         history1           Boron         ppm         ASTM D5185(m)         5         <1	Silver	ppm	ASTM D5185(m)		0		
Copper         ppm         ASTM D5185(m)         >20         37             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         history1           Boron         ppm         ASTM D5185(m)         5         <1	Aluminum	ppm	ASTM D5185(m)	>20	<1		
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         history1           Boron         ppm         ASTM D5185(m)         5         <1	Lead	ppm	ASTM D5185(m)	>20	3		
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         hist           Boron         ppm         ASTM D5185(m)         5         <1	Copper	ppm	ASTM D5185(m)	>20	37		
Vanadium         ppm         ASTM D5185(m)         0             Beryllium         ppm         ASTM D5185(m)         0             Cadmium         ppm         ASTM D5185(m)         0             ADDITIVES         method         limit/base         current         history1         hist           Boron         ppm         ASTM D5185(m)         5         <1	Tin	ppm	ASTM D5185(m)	>20	0		
Beryllium         ppm         ASTM D5185(m)         0            Cadmium         ppm         ASTM D5185(m)         0             ADDITIVES         method         limit/base         current         history1         history1           Boron         ppm         ASTM D5185(m)         5         <1             Barium         ppm         ASTM D5185(m)         5         <1             Molybdenum         ppm         ASTM D5185(m)         5         0             Maganese         ppm         ASTM D5185(m)         25         11             Magnesium         ppm         ASTM D5185(m)         200         42             Calcium         ppm         ASTM D5185(m)         300         378             Viance         ppm         ASTM D5185(m)         2500         1517             Sulfur         ppm         ASTM D5185(m)         2500         1517             CONTAMINANTS         method         limit/base         current	Antimony	ppm	ASTM D5185(m)		0		
Cadmium         ppm         ASTM D5185(m)         0             ADDITIVES         method         limit/base         current         history1         history1           Boron         ppm         ASTM D5185(m)         5         <1	Vanadium	ppm	ASTM D5185(m)		0		
ADDITIVES         method         limit/base         current         history1         history1           Boron         ppm         ASTM D5185(m)         5         <1	Beryllium	ppm	ASTM D5185(m)		0		
Boron         ppm         ASTM D5185(m)         5         <1             Barium         ppm         ASTM D5185(m)         5         <1	Cadmium	ppm	ASTM D5185(m)		0		
Barium         ppm         ASTM D5185(m)         5         <1	ADDITIVES		method	limit/base	current	history1	history2
Barium         ppm         ASTM D5185(m)         5         <1             Molybdenum         ppm         ASTM D5185(m)         5         0             Manganese         ppm         ASTM D5185(m)         5         0             Magnesium         ppm         ASTM D5185(m)         25         11             Calcium         ppm         ASTM D5185(m)         200         42             Calcium         ppm         ASTM D5185(m)         300         378             Phosphorus         ppm         ASTM D5185(m)         370         284             Sulfur         ppm         ASTM D5185(m)         2500         1517             Lithium         ppm         ASTM D5185(m)         2500         1517             CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185(m)         >15         <1	Boron	maa	ASTM D5185(m)	5	<1		
Molybdenum         ppm         ASTM D5185(m)         5         0             Manganese         ppm         ASTM D5185(m)         <<1	Barium		. ,		<1		
Magnesse         ppm         ASTM D5185(m)         <1             Magnesium         ppm         ASTM D5185(m)         25         11             Calcium         ppm         ASTM D5185(m)         200         42             Phosphorus         ppm         ASTM D5185(m)         300         378             Zinc         ppm         ASTM D5185(m)         370         284             Sulfur         ppm         ASTM D5185(m)         2500         1517             Lithium         ppm         ASTM D5185(m)         2500         1517             CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185(m)         >15         <1	Molvbdenum						
Magnesium         ppm         ASTM D5185(m)         25         11             Calcium         ppm         ASTM D5185(m)         200         42             Phosphorus         ppm         ASTM D5185(m)         300         378             Zinc         ppm         ASTM D5185(m)         370         284             Sulfur         ppm         ASTM D5185(m)         2500         1517             Lithium         ppm         ASTM D5185(m)         2500         1517             CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185(m)         >15         <1	•		. ,		<1		
Calcium         ppm         ASTM D5185(m)         200         42             Phosphorus         ppm         ASTM D5185(m)         300         378             Zinc         ppm         ASTM D5185(m)         370         284             Sulfur         ppm         ASTM D5185(m)         2500         1517             Lithium         ppm         ASTM D5185(m)         2500         1517             CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185(m)         >15         <1				25			
Phosphorus         ppm         ASTM D5185(m)         300 <b>378</b> Zinc         ppm         ASTM D5185(m)         370 <b>284</b> Sulfur         ppm         ASTM D5185(m)         2500 <b>1517</b> Lithium         ppm         ASTM D5185(m)         2500 <b>1517</b> CONTAMINANTS         method         limit/base         current         history1         hist           Silicon         ppm         ASTM D5185(m)         >15         <1	0		. ,				
Zinc         ppm         ASTM D5185(m)         370         284             Sulfur         ppm         ASTM D5185(m)         2500         1517             Lithium         ppm         ASTM D5185(m)         2500         1517             CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185(m)         >15         <1							
Sulfur         ppm         ASTM D5185(m)         2500         1517             Lithium         ppm         ASTM D5185(m)         2500         1517             CONTAMINANTS         method         limit/base         current         history1         history1         history1           Silicon         ppm         ASTM D5185(m)         >15         <1             Sodium         ppm         ASTM D5185(m)         >20         <1             Potassium         ppm         ASTM D5185(m)         >20         <1             Water         %         ASTM D6304*         >0.05         0.002			. ,				
Lithium         ppm         ASTM D5185(m)         <1            CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185(m)         >15         <1							
CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185(m)         >15         <1			. ,	2000			
Silicon         ppm         ASTM D5185(m)         >15         <1             Sodium         ppm         ASTM D5185(m)         3             Potassium         ppm         ASTM D5185(m)         >20         <1             Water         %         ASTM D6304*         >0.05         0.002				limit/bace			
Sodium         ppm         ASTM D5185(m)         3             Potassium         ppm         ASTM D5185(m)         >20         <1							history2
Potassium         ppm         ASTM D5185(m)         >20         <1             Water         %         ASTM D6304*         >0.05         0.002				>15			
Water         %         ASTM D6304*         >0.05         0.002							
ppm Water ppm ASTM D6304* >500 20	ppm Water	ppm	ASTM D6304*	>500	20		





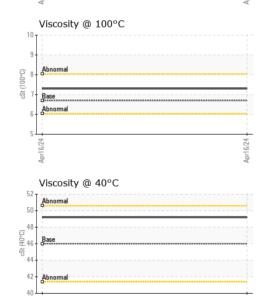


# **OIL ANALYSIS REPORT**









FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	282		
Particles >6µm		ASTM D7647	>640	97		
Particles >14µm		ASTM D7647	>160	8		
Particles >21µm		ASTM D7647	>40	2		
Particles >38µm		ASTM D7647	>10	1		
Particles >71µm		ASTM D7647	>3	1		
Oil Cleanliness		ISO 4406 (c)	>19/16/14	15/14/10		
FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.57	0.48		
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	49.2		
Visc @ 100°C	cSt	ASTM D7279(m)	6.7	7.3		
Viscosity Index (VI)	Scale	ASTM D2270*	97	108		
SAMPLE IMAGES	\$	method	limit/base	current	history1	history2
Color					no image	no image
Bottom					no image	no image



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Environmental 360 Solutions Ltd. CALA Sample No. : E30001902 Received : 19 Apr 2024 640 Victoria Street Lab Number : 02630222 Tested : 23 Apr 2024 Cobourg, ON ISO 17025:2017 Accredited Laboratory Unique Number : 5763354 Diagnosed : 25 Apr 2024 - Tatiana Sorkina CA K9A 5H5 Test Package : IND 2 (Additional Tests: KF, KV100, VI) Contact: Tatiana Sorkina tsorkina@e360s.ca To discuss this sample report, contact Customer Service at 1-905-372-2251. T: (800)263-3939 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. F: (905)373-4950

Report Id: CHECOB [WCAMIS] 02630222 (Generated: 04/25/2024 15:10:11) Rev: 1

Apr16/24

Contact/Location: Tatiana Sorkina - CHECOB