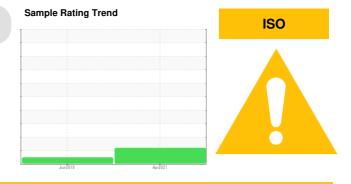
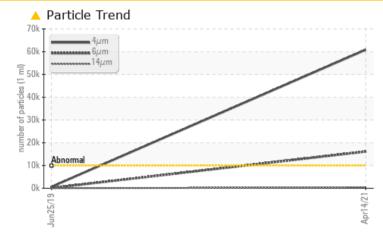
# **PROBLEM SUMMARY**



### OP6G1 Component Thrust Bearing Fluid R&O OIL ISO 46 (--- GAL)

Machine Ic

## COMPONENT CONDITION SUMMARY



## 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. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) R&O OIL ISO 46. Please confirm. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

# PROBLEMATIC TEST RESULTS

THODELW/THO TEC	THEODEIO				
Sample Status			ABNORMAL	NORMAL	
Particles >4µm	ASTM D7647	>10000	<u> </u>	612	
Particles >6µm	ASTM D7647	>2500	🔺 16150	110	
Particles >14µm	ASTM D7647	>160	<u> </u>	11	
Oil Cleanliness	ISO 4406 (c)	>20/18/14	<b>A</b> 23/21/16	16/14/11	
PrtFilter					no image

Customer Id: ONTKEE Sample No.: WC0560598 Lab Number: 02423566 Test Package: IND 2



To manage this report scan the QR code

*To discuss the diagnosis or test data:* Kevin Marson +1 (289)291-4644 x4644 Kevin.Marson@wearcheck.com

*To change component or sample information:* Gloria Gonzalez +1 (289)291-4643 x4643 <u>gloria.gonzalez@wearcheck.com</u>

RECOMMENDED ACTIONS							
Action	Status	Date	Done By	Description			
Change Filter			?	We recommend you service the filters on this component.			
Resample			?	We recommend an early resample to monitor this condition.			
Alert			?	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.			
Information Required			?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.			

## HISTORICAL DIAGNOSIS

#### 25 Jun 2019 Diag: Kevin Marson



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. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) R&O OIL ISO 46. Please confirm. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.





# **OIL ANALYSIS REPORT**

Sample Rating Trend

#### Machine Id **OP6G1** Component **Thrust Bearing** Fluic R&O 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. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) R&O OIL ISO 46. Please confirm. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

#### Wear

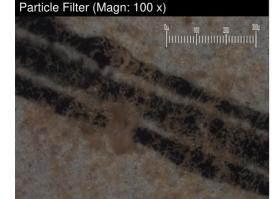
All component wear rates are normal.

#### Contamination

Particles >14µm are abnormally high. Particles >4µm are abnormally high. Particles >6µm are abnormally high.

#### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



Report Id: ONTKEE [WCAMIS] 02423566 (Generated: 11/22/2023 11:51:27) Rev: 1

SIS REPORT		g			ISO	
SAMPLE INFORMATION	method	Junž019 limit/base	Apr2021	history1	history	2

SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0560598	WC	
Sample Date		Client Info		14 Apr 2021	25 Jun 2019	
Machine Age	hrs	Client Info		0	0	
Oil Age	hrs	Client Info		0	0	
Oil Changed		Client Info		N/A	N/A	
Sample Status				ABNORMAL	NORMAL	
-			11 11 11			
CONTAMINATION	N	method	limit/base	current	history1	history2
Water		WC Method	>2	NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>85	<1	2	
Chromium	ppm	ASTM D5185(m)		0	0	
Nickel	ppm	ASTM D5185(m)		0	0	
Titanium	ppm	ASTM D5185(m)		0	0	
Silver	ppm	ASTM D5185(m)		<1	0	
Aluminum	ppm	ASTM D5185(m)	>40	<1	<1	
Lead	ppm	ASTM D5185(m)	>60	<1	<1	
Copper	ppm	ASTM D5185(m)	>7	<1	<1	
Tin	ppm	ASTM D5185(m)	>40	<1	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	<1	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base	current <1	history1 0	history2
	ppm ppm					history2 
Boron		ASTM D5185(m)	5	<1	0	history2  
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	5 5	<1 0	0	history2   
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5	<1 0 0	0 0 0	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5 5	<1 0 0 0	0 0 0 <1	
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 5	<1 0 0 0 0	0 0 <1 <1	
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 5 5	<1 0 0 0 0 <1	0 0 <1 <1 <1	
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 5 5 5 5 100	<1 0 0 0 0 <1 2	0 0 <1 <1 <1 <1 2	
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 5 5 5 100 25	<1 0 0 0 0 <1 2 2	0 0 <1 <1 <1 <1 2 2	
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 5 5 5 100 25	<1 0 0 0 <1 2 2 2106	0 0 <1 <1 <1 <1 2 2 2 1898	
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 5 5 5 100 25 1500	<1 0 0 0 <1 2 2 2106 <1	0 0 () () () () () () () () () () () () ()	
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)	5 5 5 5 5 100 25 1500 Iimit/base	<1 0 0 0 <1 2 2 2106 <1 current	0 0 2 3 3	      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)	5 5 5 5 5 100 25 1500 Iimit/base	<1 0 0 0 <1 2 2 2106 <1 <i>current</i> 3	0 0 () () () () () () () () () () () () ()	      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 5 5 100 25 1500 Iimit/base >20	<1 0 0 0 <1 2 2106 <1 2106 <1 2106 <1 2	0 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 5 5 100 25 1500 Iimit/base >20	<1 0 0 0 <1 2 2 2106 <1 2 2106 <1 2 2106 <1 3 3 <1 3	0 0 () () () () () () () () () () () () ()	      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 5 100 25 1500 25 1500 <b>iimit/base</b> >20 <b>iimit/base</b>	<1 0 0 0 ( 1 2 2 2106 <1 2 2106 <1 2 2106 <1 2 1 2 106 <1 2 2 106 <1 2 2 106 <1 2 2 106 <1 2 2 106 <1 2 2 106 <1 2 2 106 ( 10 10 ( 10) 10) 10 ( 10) 10) 10 ( 10) 10) 10 ( 10) 10) 10 ( 10) 10) 10 ( 10) 10) 10 ( 10) 10) 10 ( 10) 10) 10 10 ( 10) 10) 10 ( 10) 10) 10 ( 10) 10) 10 ( 10) 10) 10 ( 10) 10) 10) 10 ( 10) 10) 10 ( 10) 10) 10 ( 10) 10) 10 ( 10) 10) 10 ( 10) 10) 10) 10 ( 10) 10) 10) 10 10 10 10 10 10 10 10 10 10 10 10 10	0 0 () () () () () () () () () () () () ()	     history2  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 5 100 25 1500 25 1500 <b>limit/base</b> >20 <b>limit/base</b> >20	<1 0 0 0 3 4 1 2 2 2 106 <1 2 2106 <1 2 106 <1 3 3 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	0 0 () () () () () () () () () () () () ()	     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 D5185(m)	5 5 5 5 100 25 1500 25 1500 imit/base >20 imit/base >20 imit/base >20	<1 0 0 0 (1) 2 2 2106 <1 current 3 <1 <1 <1 <1 current 60830 ▲ 60830	0 0 0 <1 <1 2 2 1898 0 history1 3 0 0 0 history1 612 110	      history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647	5 5 5 5 100 25 1500 25 1500 imit/base >20 imit/base >20 imit/base >20	<1 0 0 0 <1 2 2106 <1 current 3 <1 <1 <1 <1 current 4 60830 ▲ 16150 ▲ 366	0 0 0 <1 <1 2 2 2 1898 0 <b>history1</b> 3 0 0 0 <b>history1</b> 612 110 11	       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 ASTM D7647	5 5 5 5 100 25 1500 25 1500 Iimit/base >20 Iimit/base >20 S 10000 >2500 >160 >40	<1 0 0 0 3 4 2 2 2106 <1 2 2106 <1 3 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	0 0 0 <1 <1 2 2 2 1898 0 <b>history1</b> 3 0 0 0 <b>history1</b> 612 110 11 2	       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 5 5 100 25 1500 25 1500 <b>imit/base</b> >20 <b>imit/base</b> >20 <b>imit/base</b> >20 <b>i</b> mit/base >20 20 20 20 20 20 20 20 20 20 20 20 20 2	<1 0 0 0 3 4 2 2 2106 <1 2 2106 <1 2 3 <1 <1 <1 <1 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 <1 <1 2 2 2 1898 0 <b>history1</b> 3 0 0 <b>history1</b> 612 110 11 2 0	      history2  history2  history2

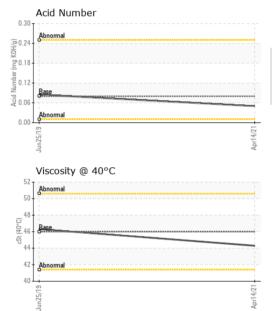
Contact/Location: Thelma Neudorf - ONTKEE



# **OIL ANALYSIS REPORT**

91,520 T	ticle Count	T <sup>26</sup>
22,880 Severe		-24
30,720 Abnom	and a second sec	-22 8
7,680		20 18 16 14 12 10
1,920-		-18
480-		-16 g
120-		-14
30-		-12 8
8-		10
2-		-8
0. 4µ	6μ 14μ 21μ	38µ 71µ
70k T	4μm 6μm	
60k   50k   30p   40k   50k   30k   50k	14μm	
E 50k - 300 40k - 30k - 20k - 10k - Abno	14µm	
50k	14µm	(2)H Judy

FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.08	0.05	0.085	
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	
Precipitate	scalar	Visual*	NONE	NONE	NONE	
Silt	scalar	Visual*	NONE	NONE	NONE	
Debris	scalar	Visual*	NONE	NONE	NONE	
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	
Appearance	scalar	Visual*	NORML	NORML	NORML	
Odor	scalar	Visual*	NORML	NORML	NORML	
Emulsified Water	scalar	Visual*	>2	NEG	NEG	
Free Water	scalar	Visual*		NEG	NEG	
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	46	44.3	46.3	
SAMPLE IMAGES	3	method	limit/base	current	history1	history2



SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					no image
Bottom					no image
PrtFilter					no image

	Laboratory	: WearCheck - C8-	1175 Appleby Lin	e, Burlington, ON L7L 5H9	Ontario Power Generation	
	Sample No.	: WC0560598	Received	: 26 May 2021	KENORA PRODUCTION CENTRE, 200-60 FOURTEENTH ST N.	
ISO 17025:2017	Lab Number	: 02423566	Diagnosed	: 27 May 2021	KENORA, ON	
Accredited	Unique Number	: 5227066	Diagnostician	: Kevin Marson	CA P9N 4M9	
Laboratory	Test Package	: IND 2 ( Additional	Tests: BottomAn	alysis, FilterPatch, PrtCou	nt) Contact: Thelma Neudorf	
To discuss this	s sample report, o	contact Customer Se	rvice at 1-800-26	8-2131.	thelma.neudorf@opg.com	
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.						