

SAB1 G10

OIL ANALYSIS REPORT

NORMAL



SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0933959	WC0764623	WC0864658
Sample Date		Client Info		03 Jul 2024	15 May 2024	21 Dec 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	ATTENTION
CONTAMINATIC	N	method	limit/base	current	history1	history2
Water		WC Method	>2	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>85	2	2	2
Chromium	ppm	ASTM D5185(m)	>20	0	0	0
Nickel	ppm	ASTM D5185(m)	>20	<1	0	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>40	<1	<1	<1
Lead	ppm	ASTM D5185(m)	>60	<1	0	<1
Copper	ppm	ASTM D5185(m)	>7	<1	<1	<1
Tin	ppm	ASTM D5185(m)	>40	0	0	<1
Antimony	ppm	ASTM D5185(m)		0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0
ADDITIVES			11 1. 11			
ADDITIVES		method	limit/base	current	history1	history2
	ppm	ASTM D5185(m)	limit/base	current	history1 0	history2 0
Boron	ppm ppm					
Boron Barium		ASTM D5185(m)		<1	0	0
Boron Barium Molybdenum	ppm	ASTM D5185(m) ASTM D5185(m)	0	<1 0	0	0
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0	<1 0 0	0 0 0	0 0 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0	<1 0 0 0	0 0 0 0	0 0 0 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0	<1 0 0 0 0	0 0 0 0 0	0 0 0 0 0
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)	0 0 0 0 2.4	<1 0 0 0 0 <1	0 0 0 0 0 <1	0 0 0 0 <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)	0 0 0 0 2.4	<1 0 0 0 0 <1 9	0 0 0 0 0 <1 8	0 0 0 0 <1 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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)	0 0 0 0 2.4	<1 0 0 0 0 <1 9 2	0 0 0 0 0 <1 8 2	0 0 0 0 <1 9 2
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) ASTM D5185(m)	0 0 0 0 2.4	<1 0 0 0 <1 9 2 1280	0 0 0 0 0 <1 8 2 2 1268	0 0 0 0 <1 9 2 1451 <1 +istory2
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)	0 0 0 0 2.4 0	<1 0 0 0 <1 9 2 1280 <1 2 1280 5	0 0 0 0 0 <1 8 2 1268 <1 2 1268 <1 1 2 68 4	0 0 0 0 <1 9 2 1451 <1 * 1451 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm 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) ASTM D5185(m)	0 0 0 2.4 0	<1 0 0 0 <1 9 2 1280 <1	0 0 0 0 <1 8 2 1268 <1 2 1268	0 0 0 0 <1 9 2 1451 <1 +istory2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm spm	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) method ASTM D5185(m)	0 0 0 2.4 0	<1 0 0 0 <1 9 2 1280 <1 2 1280 5	0 0 0 0 0 <1 8 2 1268 <1 2 1268 <1 1 2 68 4	0 0 0 0 <1 9 2 1451 <1 * 1451 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm sc	ASTM D5185(m) ASTM D5185(m)	0 0 0 2.4 0 imit/base >20 imit/base	<1 0 0 0 () 0 () 1 2 1 2 1 2 8 0 () 1 2 1 2 8 0 () 1 2 1 2 1 2 8 0 () 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	0 0 0 0 0 (1 8 2 1268 2 1268 <1 history1 4 0 <1 history1	0 0 0 0 <1 9 2 1451 <1 bistory2 6 0 <1 bistory2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm sc	ASTM D5185(m) ASTM D5185(m)	0 0 0 2.4 0 imit/base >20 imit/base >20	<1 0 0 0 (0 (1 9 2 1280 <1 2 1280 <1 5 0 (1 2 (1280) <1 (1280) <1 (1280) <1 (1280) <1 (1280) <1 (1280) <1 (1280)(1280)(1280)(1280)(1280)(1280)(1280)(1280)(1280)(1280)(128)	0 0 0 0 <1 8 2 1268 <1 1 268 <1 1 268 <1 1 268 <1	0 0 0 0 <1 9 2 1451 <1 <i>history2</i> 6 0 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLII Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm sc	ASTM D5185(m) ASTM D5185(m)	0 0 0 2.4 0 imit/base >20 imit/base	<1 0 0 0 () 0 () 1 2 1 2 1 2 8 0 () 1 2 1 2 8 0 () 1 2 1 2 1 2 8 0 () 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	0 0 0 0 0 (1 8 2 1268 2 1268 <1 history1 4 0 <1 history1	0 0 0 0 2 1451 <1 bistory2 6 0 <1 bistory2 11902 240
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLII Particles >4µm Particles >6µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm sc	ASTM D5185(m) ASTM D5185(m)	0 0 0 2.4 0 2.4 0 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	<1 0 0 0 (0 (1 9 2 1280 <1 2 1280 <1 5 0 (1 2 (1280) <1 (1280) <1 (1280) <1 (1280) <1 (1280) <1 (1280) <1 (1280)(1280)(1280)(1280)(1280)(1280)(1280)(1280)(1280)(1280)(128)	0 0 0 0 0 1 2 1 8 2 1 2 6 8 2 1 2 6 8 2 1 2 6 8 2 1 2 6 8 2 1 2 6 8 4 0 4 0 2 1 1 2 6 8 2 1 2 6 8 2 1 2 6 8 2 1 2 6 8 2 1 1 8 1 2 6 1 2 1 1 8 1 2 1 1 8 1 2 1 1 2 6 1 2 1 1 2 6 1 2 1 1 2 6 1 2 1 1 2 6 1 2 1 1 2 6 1 2 1 1 2 6 1 2 1 1 2 6 1 1 1 1	0 0 0 0 2 1451 <1 5 1451 <1 6 0 <1 history2 6 1 192 1 192
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANLII Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm sc	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 2.4 0 0 2.4 0 0 0 0 0 0 0 0 0 0 0 0 0	<1 0 0 0 -1 9 2 1280 <1 Current 5 0 <1 Current 4851 74 2 1	0 0 0 0 0 1 2 1 8 2 1 2 68 2 1 2 68 2 1 2 68 2 1 2 68 4 0 3 1 0 9 58 10 3 3	0 0 0 0 3 3 4 1 9 2 1 4 5 1 4 5 1 4 5 1 4 5 1 4 5 1 5 1 5 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLII Particles >4µm Particles >4µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm sc	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 2.4 0 2.4 0 1 1 1 1 1 1 1 1 1 1 1 1 1	<1 0 0 0 0 0 2 1 9 2 1280 <1 1 8 0 0 <1 1 8 0 <1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 1 2 1 8 2 1268 2 1268 2 1268 2 1 2 6 3 1 2 0 3 1 0 3 1 0 3 1 1	0 0 0 0 3 1 4 1 4 5 1 4 5 1 4 5 1 4 5 1 6 0 3 1 1 9 2 1 4 5 1 4 5 1 6 0 3 1 1 9 2 1 4 5 1 5 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANLII Particles >4µm Particles >6µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm sc	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 2.4 0 0 2.4 0 0 0 0 0 0 0 0 0 0 0 0 0	<1 0 0 0 -1 9 2 1280 <1 Current 5 0 <1 Current 4851 74 2 1	0 0 0 0 0 1 2 1 8 2 1 2 68 2 1 2 68 2 1 2 68 2 1 2 68 4 0 3 1 0 9 58 10 3 3	0 0 0 0 3 3 4 1 9 2 1 4 5 1 4 5 1 4 5 1 4 5 1 4 5 1 4 5 1 5 1

Thrust Bearing Fluid ESSO TERESSO ISO 46 (4250 LTR)

DIAGNOSIS

Area SAB1 Machine Id

Recommendation

Resample at the next service interval to monitor. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

Wear

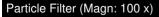
Component wear rates appear to be normal (unconfirmed).

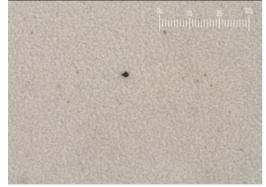
Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Fluid Condition

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



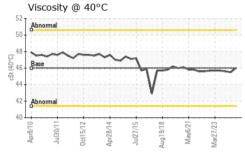


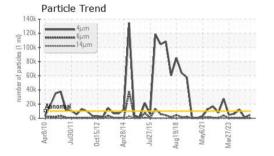
Report Id: ONTQUE [WCAMIS] 02645487 (Generated: 07/09/2024 16:54:22) Rev: 1



OIL ANALYSIS REPORT

Particle	Count			т26
880 Severe				-24
Abnormal				-22 8
680				-20 06:1999 Cleanliness Code -14 12 Cleanliness Code -14 12 Cleanliness Code
480	(C)			-18 1999 C
120				14 Clean
30-				-12
8-				-10 6
33	-	-		+8
2-		of the local division in which the local division in which the local division in which the local division is not the local division in the local division		
0 4µ 6 Acid Nu	μ 14μ mber	21µ	38µ	71µ
ο 4μ 6 Acid Nu		21µ	38µ	
ο 4μ 6 Acid Nu		21µ	38µ	
ο 4μ 6 Acid Nu		21µ	38µ	
ο 4μ 6 Acid Nu		Zݵ	38µ	
0 4μ 6 Acid Nu		21/µ	38µ	
0.44 0.20 0.48 0.24 0.24 0.24 0.00 0.24		~~~	38µ	
ο 4μ 6 Acid Nu		21/µ	38µ	





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FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.02	0.11	0.09	0.13
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
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	NONE	NONE	NONE
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*	>2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	46	46.0	45.5	45.6
SAMPLE IMAGES	5	method	limit/base	current	history1	history2
			3		25.0	×

Color

Bottom

PrtFilter



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **Ontario Power Generation** CALA Sample No. : WC0933959 Received : 04 Jul 2024 NIAGARA PLANT GROUP,, 14000 NIAGARA PKWY Lab Number : 02645487 Tested : 09 Jul 2024 NIAGARA ON THE LAKE, ON ISO 17025:2017 Accredited Laboratory : 09 Jul 2024 - Kevin Marson Unique Number : 5803026 Diagnosed CA LOS 1J0 Test Package : IND 2 (Additional Tests: BottomAnalysis, FilterPatch, PrtFilter, TAN Man) Contact: Michael Brochu To discuss this sample report, contact Customer Service at 1-800-268-2131. mike.brochu@opg.com T: (905)357-0322 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)374-5466

Report Id: ONTQUE [WCAMIS] 02645487 (Generated: 07/09/2024 16:54:22) Rev: 1

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