

# **OIL ANALYSIS REPORT**

#### Area **Turret [63682]** Machine Id

527-2 Secondary System (WH-167805) (S/N Sample Tag: NC-23600 WH-167805) Component Heat Transfer Fluid Fluid SHELL THERMIA B (--- GAL)

## DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Lubritest recommends using HTTFL sample kits for heat transfer fluids. Please contact us at 1-800-268-2131 and provide a purchase order for \$245 + HST in order to conduct additional testing (boiling points @ 10%, 50%, and 90%, percent boiling < 335°C, and solids) to determine the suitability for continued use. Please contact your representative for information regarding the proper sampling kits for your service.

## Wear

All component wear rates are normal.

#### 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 fluid is acceptable for the time in service (unconfirmed).

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PC0080676	PC0080219	PC
Sample Date		Client Info		23 Jun 2024	27 May 2024	18 Dec 2019
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	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Water		WC Method	>0.0601	NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>200	0	0	0
Chromium	ppm	ASTM D5185(m)	>21	0	0	0
Nickel	ppm	ASTM D5185(m)	>21	<1	0	0
Titanium	ppm	ASTM D5185(m)	>21	0	0	0
Silver	ppm	ASTM D5185(m)	>21	0	0	0
Aluminum	ppm	ASTM D5185(m)	>21	<1	0	0
Lead	ppm	ASTM D5185(m)	>21	0	0	0
Copper	ppm	ASTM D5185(m)	>21	<1	<1	<1
Tin	ppm	ASTM D5185(m)	>21	0	0	0
Antimony	ppm	ASTM D5185(m)	>21	<1	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)			0	0
oudinidini	ppin			0	0	0
ADDITIVES	ppin	method	limit/base	0 current	0 history1	0 history2
	ppm	. ,	limit/base	-	-	-
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base	current 0	history1 0	history2 <1
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185(m) ASTM D5185(m)	limit/base	current 0 0	history1 0 0	history2 <1 0
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	current 0 0 0	history1 0 0 0	history2 <1 0 0
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	current 0 0 0 0	history1 0 0 0 0	history2 <1 0 0 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method           ASTM D5185(m)           ASTM D5185(m)           ASTM D5185(m)           ASTM D5185(m)           ASTM D5185(m)           ASTM D5185(m)	limit/base	current 0 0 0 0 0 0	history1 0 0 0 0 <1	history2 <1 0 0 0 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	current           0           0           0           0           0           0           0           0           0           0           0           0           0           0           1	history1 0 0 0 0 <1 0	history2 <1 0 0 0 0 0 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185(m)	limit/base	Current 0 0 0 0 0 0 0 <1 261	history1 0 0 0 0 <1 0 273	history2 <1 0 0 0 0 0 0 <1 247
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185(m)	limit/base	Current 0 0 0 0 0 0 2 1 261 2	history1 0 0 0 0 <1 0 273 1	history2 <1 0 0 0 0 0 <1 247 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185(m)	limit/base	Current 0 0 0 0 0 0 0 2 61 2 676	history1 0 0 0 0 <1 0 273 1 683	history2 <1 0 0 0 0 0 0 0 0 2 47 2 47 2 603
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185(m)		Current 0 0 0 0 0 <1 261 2 676 <1	history1 0 0 0 0 <1 0 273 1 683 <1	history2 <1 0 0 0 0 <1 247 2 603 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185(m)	limit/base	Current 0 0 0 0 0 0 0 2 61 2 676 <1 2 0 76 <1	history1         0         0         0         0         0         273         1         683         <1         history1	<1         0 <t< th=""></t<>
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185(m)	limit/base	current           0           0           0           0           0           0           0           0           0           0           0           0           0           0           676           <1           current           0	history1           0           0           0           0           273           1           683           <1           history1	<1         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         <1         247         2         603         <1         history2         0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185(m)	limit/base >25 >21	Current           0           0           0           0           0           0           0           0           0           261           2           676           <1           Current           0           1	history1         0         0         0         0         0         273         1         683         <1         history1         0         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1	<1         0         0         0         0         0         0         0         0         0         <1         247         2         603         <1         history2         0         0         0         0         0         0         0         0         0         0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185(m)	limit/base >25 >21 >20	current           0           0           0           0           0           0           0           0           0           0           0           0           0           0           261           2           676           <1           0           1           <1	history1           0           0           0           0           0           273           1           683           <1           history1           0           1           0	<1         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         03         <1         history2         0         0         0         0         0         0         0         0         0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANL	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185(m)           ASTM D5185(m)	limit/base >25 >21 >20	current           0           0           0           0           0           0           0           0           0           0           0           0           0           0           <1           0           1           <1           current	history1         0         0         0         0         0         273         1         683         <1         history1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         history1	<1         0         0         0         0         0         0         0         0         0         247         2         603         <1         history2         0         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANL Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185(m)	limit/base >25 >21 >20 limit/base	current           0           0           0           0           0           0           0           0           0           261           2           676           <1           current           0           1           <1           current           2           1           <1           current           2           2	history1         0         0         0         0         0         273         1         683         <1         history1         0         1         0         1         683         <1         history1         0         1         0         1         0         14758	<1         0         0         0         0         0         0         0         0         0         247         2         603         <1         history2         0         0         0         0         0         11606
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANL Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method         ASTM D5185(m)	limit/base >25 >21 >20 limit/base >10240000	current           0           0           0           0           0           0           0           0           0           0           261           2           676           <1           current           0           1           <1           current           2           676           <1           current           2           6208	history1         0         0         0         0         0         273         1         683         <1         history1         0         1         0         1         683         <1         history1         0         1         0         1         0         14758         3694	<1         0         0         0         0         0         0         0         0         0         0         247         2         603         <1         history2         0         0         0         0         0         0         11606         2059
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANL Particles >4µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185(m)           ASTM D7647           ASTM D7647           ASTM D7647	limit/base >25 >21 >20 limit/base >10240000 >10240000	Current           0           0           0           0           0           0           0           0           0           0           0           0           <1           Current           0           1           <1           Current           2           676           <1           Current           2           6208           318	history1           0           0           0           0           0           273           1           683           <1           bistory1           0           1           683           <1           bistory1           0           1           0           1           0           1           0           14758           3694           193	<1         0         11606         2059         72
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANL Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method         ASTM D5185(m)         ASTM D7647         ASTM D7647         ASTM D7647         ASTM D7647	Iimit/base >25 >21 >20 Iimit/base >10240000 >10240000 >2560000	Current           0           0           0           0           0           0           0           0           0           <1           261           2           676           <1           Current           0           1           <1           Current           21972           6208           318           57	history1           0           0           0           0           0           0           0           0           273           1           683           <1           history1           0           1           0           1           0           1           0           1           0           1           0           1           0           13           3694           193           34	<1         0         11606         2059         72         20

Contact/Location: Josh Hynes - TERHAM



Jan21/13

Vug22/13

0ct14/14

## **OIL ANALYSIS REPORT**

FLUID DEGRADATION method

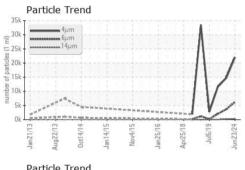
Acid Number (AN)

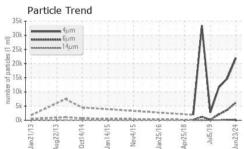
mg KOH/g ASTM D974\* 0.05

91,520 T	cle Cou	nt			<b>T</b> 26
22,880 -					-24
30,720					-22
7,680	-				20
1,920-					-18
480-		1			-16
120-			-		14
30-			1		-12
8 Abnormal					-20 -18 -16 -14 -12 -10
2				1	+8
					-
	6,4	14µ	21µ	38µ	71µ
0 4µ	0µ2	i ipe		o ope	Per
			27.1E	50µ	
Acid	Numbe				
Acid				30µ	
Acid					
Acid				400	
Acid	Numbe			400	
Acid	Numbe				
Acid	Numbe				
Acid	Numbe				

VISUAL		method	limit/base	current	history1	
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	VLITE	
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	
Appearance	scalar	Visual*	NORML	NORML	NORML	
Odor	scalar	Visual*	NORML	NORML	NORML	
Emulsified Water	scalar	Visual*	>0.0601	NEG	.2%	
Free Water	scalar	Visual*		NEG	NEG	
FLUID PROPE	RTIES	method	limit/base	current	history1	
Visc @ 40°C	cSt	ASTM D7279(m)	35.2	45.5	45.7	
SAMPLE IMAG	ES	method				
				- Diana		-

0.08





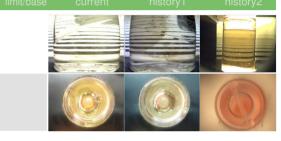
Bottom

Color

un23/24

kpr25/18

an25/16



0.09

0.092

NONE

NONE NONE

NONE

NONE

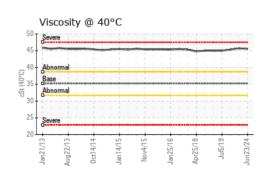
NONE NORML

NORML NEG

NEG

45.3

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 CALA : PC0080676 Sample No. Received : 24 Jun 2024 Lab Number : 02643737 Tested : 27 Jun 2024 ISO 17025:2017 Accredited Laboratory Unique Number : 5801276 Diagnosed : 27 Jun 2024 - Kevin Marson Test Package : MAR 2 (Additional Tests: PRTCOUNT, TAN Man) To discuss this sample report, contact Customer Service at 1-800-268-2131. 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.

Suncor - Terra Nova Projects Scotia Centre, 235 Water Strret St. John`s, NL CA A1C 1B6 Contact: Josh Hynes joshynes@suncor.com T: (709)778-3575 F: (709)724-2835

Report Id: TERHAM [WCAMIS] 02643737 (Generated: 06/27/2024 08:13:15) Rev: 1

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