

## **OIL ANALYSIS REPORT**

Sample Rating Trend







Machine Id S4 Component Hydraulic System Fluid NOT GIVEN (--- 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. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

#### 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 oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history 1	history 2
Sample Number		Client Info		PC0052117		
Sample Date		Client Info		05 Jul 2023		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
WEAR METAL	S	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185(m)	>20	2		
Chromium	ppm	ASTM D5185(m)	>10	0		
Nickel	ppm	ASTM D5185(m)	>10	<1		
Titanium	ppm	ASTM D5185(m)		0		
Silver	ppm	ASTM D5185(m)		0		
Aluminum	ppm	ASTM D5185(m)	>10	1		
Lead	ppm	ASTM D5185(m)	>20	4		
Copper	ppm	ASTM D5185(m)	>20	5		
Tin	ppm	ASTM D5185(m)	>10	<1		
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	history 1	history 2
Boron	ppm	ASTM D5185(m)		75		
Barium	ppm	ASTM D5185(m)		<1		
Molybdenum	ppm	ASTM D5185(m)		<1		
Manganese	ppm	ASTM D5185(m)		0		
Magnesium	ppm	ASTM D5185(m)		1		
Calcium	ppm	ASTM D5185(m)		58		
Phosphorus	ppm	ASTM D5185(m)		269		
Zinc	ppm	ASTM D5185(m)		98		
Sulfur	ppm	ASTM D5185(m)		790		
Lithium	ppm	ASTM D5185(m)		<1		
CONTAMINAN		method	limit/base	current	history 1	history 2
Silicon		ASTM D5185(m)	>15	<b>4</b>	- History I	
Sodium	ppm	ASTM D5185(m)	210	2		
Potassium	ppm	ASTM D5185(m)	>20	1		
FLUID CLEANL	INESS	method	limit/base	current	history 1	history 2
Particles >4µm		ASTM D7647	>5000	2279		
Particles >6µm		ASTM D7647	>1300	366		
Particles >14µm		ASTM D7647	>160	19		
Particles >21µm		ASTM D7647		6		
Particles >38µm		ASTM D7647	>10	1		
Particles >71µm		ASTM D7647		0		
Oil Cleanliness		ISO 4406 (c)	>19/17/14	18/16/11		
FLUID DEGRAD	ATION	method	limit/base	current	history 1	history 2
Acid Number (AN)	ma KOH/a			0.99		

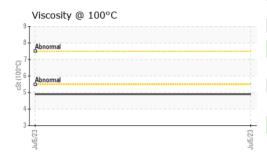
Acid Number (AN) mg KOH/g ASTM D974\* Report Id: TERHAM [WCAMIS] 02568255 (Generated: 07/07/2023 12:41:26) Rev: 1 0.99

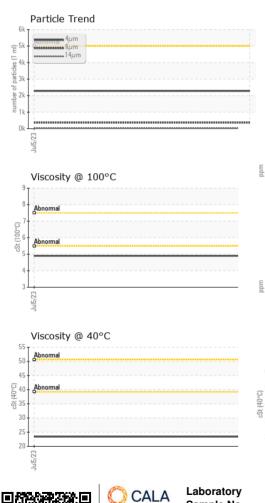
Contact/Location: Deanne Badcock - TERHAM



# **OIL ANALYSIS REPORT**







White Metal scalar Yellow Metal scalar Precipitate scalar Silt scalar Debris scalar Sand/Dirt scalar Appearance scalar Odor scalar Emulsified Water scalar Free Water scalar Free Water scalar Fill D PROPERTIES Visc @ 40°C cSt Visc @ 100°C cSt Visc @ 100°C cSt Visc @ 100°C cSt SAMPLE IMAGES Color Bottom GRAPHS Ferrous Alloys	Visual*         Visual         Visual*         AstM D7279(m)         ASTM D2270*         Method         Imethod         Imethod         Imethod	NONE NONE NONE NONE NORML >0.05 Iimit/base	NONE NONE NONE NONE NONE NORML NORML NEG Current 23.4 4.9 137 Current	       history 1   history 1  no image	      history 2  history 2 no image
Precipitate scalar Silt scalar Debris scalar Sand/Dirt scalar Appearance scalar Ddor scalar Emulsified Water scalar Free Water scalar FLUID PROPERTIES Visc @ 40°C cSt Visc @ 100°C cSt Viscosity Index (VI) Scale SAMPLE IMAGES Color Bottom GRAPHS Ferrous Alloys Mon-ferrous Metals	Visual* Visual* Visual* Visual* Visual* Visual* Visual* ASTM D7279(m) ASTM D7279(m)	NONE NONE NONE NORML >0.05 limit/base	NONE NONE NONE NORML NORML NEG Current 23.4 4.9 137 Current	      history 1  history 1 no image	     history 2  history 2 no image
Silt scalar Debris scalar Sand/Dirt scalar Appearance scalar Ddor scalar Emulsified Water scalar Free Water scalar Free Water scalar Free Water scalar FLUID PROPERTIES Visc @ 40°C cSt Visc @ 100°C cSt Visc @ 100°C cSt Visc @ 100°C cSt Color SAMPLE IMAGES Color Bottom GRAPHS Ferrous Alloys	Visual* Visual* Visual* Visual* Visual* Visual* Visual* ASTM D7279(m) ASTM D7279(m)	NONE NONE NORML NORML >0.05 limit/base	NONE NONE NORML NORML NEG NEG Current 23.4 4.9 137 Current	     history 1   history 1 no image	    history 2  history 2 no image
Debris       scalar         Sand/Dirt       scalar         Sand/Dirt       scalar         Sppearance       scalar         Sppearance       scalar         Stand/Dirt       scalar         Sppearance       scalar         Stand/Dirt       scalar         Sppearance       scalar         Stand       scalar         Free Water       scalar         Free Water       scalar         Free Water       scalar         Fisc @ 40°C       cSt         /isc @ 100°C       cSt         /isc @ 100°C       cSt         Scale       SAMPLE IMAGES         Color       Sottom         GRAPHS       Ferrous Alloys         Image: Specific Stress       Stress         Specific Stress       Stres         Specific Stress <td< td=""><td>Visual* Visual* Visual* Visual* Visual* ASTM D7279(m) ASTM D7279(m) ASTM D2270*</td><td>NONE NORML NORML &gt;0.05 limit/base limit/base</td><td>NONE NORML NORML NEG NEG Current 23.4 4.9 137 Current</td><td>    history 1   history 1 no image</td><td>    history 2  history 2 no image</td></td<>	Visual* Visual* Visual* Visual* Visual* ASTM D7279(m) ASTM D7279(m) ASTM D2270*	NONE NORML NORML >0.05 limit/base limit/base	NONE NORML NORML NEG NEG Current 23.4 4.9 137 Current	    history 1   history 1 no image	    history 2  history 2 no image
Sand/Dirt       scalar         uppearance       scalar         imulsified Water       scalar         iree Water       scalar         iree Water       scalar         iree Water       scalar         iree Water       cSt         irsc @ 100°C       cSt         iscosity Index (VI)       Scale         SAMPLE IMAGES       Scale         color       scatom         color       scatom         GRAPHS       scatom         Ferrous Alloys       scatom         uppearance       scatom         uppearance       scatom         uppearance       scatom         uppearance       scatom         uppearance       scatom         chromium       scatom         uppearance       scatom         uppear	Visual* Visual* Visual* Visual* Visual* ASTM D7279(m) ASTM D7279(m) ASTM D2270*	NONE NORML NORML >0.05 limit/base limit/base	NONE NORML NORML NEG Current 23.4 4.9 137 current	   history 1   history 1 no image	   history 2  history 2 no image
ppearance       scalar         odor       scalar         mulsified Water       scalar         ree Water       scalar         FLUID PROPERTIES       isc @ 40°C       cSt         isc @ 40°C       cSt         iscoaity Index (VI)       Scale         SAMPLE IMAGES       Scale         color       SAMPLE IMAGES         color       Scale         GRAPHS       Ferrous Alloys         Segen       incket         Non-ferrous Metals	Visual* Visual* Visual* Visual* Astm D7279(m) ASTM D7279(m) ASTM D2270*	NORML NORML >0.05 limit/base limit/base	NORML NORML NEG Current 23.4 4.9 137 Current	  history 1   history 1 no image	  history 2   history 2 no image
Odor       scalar         mulsified Water       scalar         ree Water       scalar         FLUID PROPERTIES         isc @ 40°C       cSt         iscoaity Index (VI)       Scale         SAMPLE IMAGES         color         cottom         GRAPHS         Ferrous Alloys         ion         ion         nickel	Visual* Visual* Visual* Mastm D7279(m) ASTM D7279(m) ASTM D2270*	NORML >0.05 limit/base limit/base	NORML NEG NEG 23.4 4.9 137 current	  history 1  history 1 no image no image	  history 2  history 2 no image
mulsified Water       scalar         ree Water       scalar         FLUID PROPERTIES         isc @ 40°C       cSt         isc @ 100°C       cSt         iscosity Index (VI)       Scale         SAMPLE IMAGES         color         cotom         GRAPHS         Ferrous Alloys         Same chromium         Size         Non-ferrous Metals	Visual* Visual* method ASTM D7279(m) ASTM D7279(m) ASTM D2270*	>0.05 limit/base limit/base	NEG NEG current 23.4 4.9 137 current	 history 1   history 1 no image	 history 2   history 2 no image
ree Water scalar FLUID PROPERTIES isc @ 40°C cSt iscosity Index (VI) Scale SAMPLE IMAGES color ottom GRAPHS Ferrous Alloys	Visual* method ASTM D7279(m) ASTM D7279(m) ASTM D2270*	limit/base limit/base	NEG current 23.4 4.9 137 current	history 1 history 1 history 1 no image no image	history 2 history 2 no image
FLUID PROPERTIES         isc @ 40°C       cSt         isc @ 100°C       cSt         iscosity Index (VI)       Scale         SAMPLE IMAGES         color         color         ottom         GRAPHS         Ferrous Alloys         iron         iron         nickel         Sign         Non-ferrous Metals	method ASTM D7279(m) ASTM D7279(m) ASTM D2270*	limit/base	current 23.4 4.9 137 current	history 1 history 1 no image no image	history 2   history 2 no image
iisc @ 40°C cSt iisc @ 100°C cSt iiscosity Index (VI) Scale SAMPLE IMAGES color ottom GRAPHS Ferrous Alloys Ferrous Alloys Mon-ferrous Metals	ASTM D7279(m) ASTM D7279(m) ASTM D2270*	limit/base	23.4 4.9 137 current	no image	  history 2 no image
isc @ 100°C cSt iscosity Index (VI) Scale SAMPLE IMAGES olor ottom GRAPHS Ferrous Alloys	ASTM D7279(m) ASTM D2270*	491,52	4.9 137 current	no image	 history 2 no image
iscosity Index (VI) Scale SAMPLE IMAGES olor ottom GRAPHS Ferrous Alloys	ASTM D2270*	491,52	137 current	no image	history 2
SAMPLE IMAGES olor ottom GRAPHS Ferrous Alloys		491,52	current	history 1 no image no image	history 2 no image
olor ottom GRAPHS Ferrous Alloys	method	491,52	Particle Count	no image no image	no image
ottom GRAPHS Ferrous Alloys iron iron iron nickel Non-ferrous Metals				no image	
ottom GRAPHS Ferrous Alloys				no image	
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GRAPHS Ferrous Alloys					no image
Ferrous Alloys				t	
Ferrous Alloys				t	
iron chromium nickel				t	
Non-ferrous Metals			20 T		20
Non-ferrous Metals		122.88			1 <sup>26</sup>
Non-ferrous Metals			-		-24
Non-ferrous Metals		30,72	Severe		+22
Non-ferrous Metals		7.65	30 Abnormal		20
Non-ferrous Metals		Jul5/23 per 1 ml)			720
		Inf Jac 1,92	20	•	-18
copper lead		atricle 48			-16
seeses lead				<b>`</b>	-14
tin		qm			+20 +18 +16 +14 +12
		- 3	30 -		-12
			8-		-10
/23		/23	2-		-8
Jul5/23		Jul5/23			
Viscosity @ 40°C			0 4μ 6μ	14μ 21μ	38µ 71µ
		<u>Ş</u> 1	Acid Number		
Abnormal		g KOH	.8 8		
Abnormal		Ű.	6		
		Acid Number (mg KOH(g) Acid Number (mg KOH(g)	.2		
m		Acid			
Jul5/23			.0 ++		
7		Jul5/23			L C

Diagnostician : Kevin Marson

St. John`s, NL CA A1C 1B6 Contact: Deanne Badcock dbadcock@suncor.com T: (709)778-3843 F: (709)724-2784

ISO 17025:2017 Accredited Laboratory 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.

Sample No. Lab Number

Unique Number : 5605301

Test Package : MAR 2 (Additional Tests: KV100, TAN Man, VI)