

Aug22/10

vor20/1

Dec28/09

8 ppm 6 4 0ct6/22 Jul7/08 Aug22/10 Dec28/09 Mar10/09 Feb2/07 Apr20/1

WEAR

RECOMMENDATION

Abnorma

Feb2/07

Jul7/08

10k

5k 0k

Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. 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.

Mar10/09

PROBLEMATIC TEST RESULTS

Oct6/22

Sample Status			SEVERE	ABNORMAL	ABNORMAL			
Particles >4µm	ASTM D7647	>5000	4 0135	1 5136	12655			
Particles >6µm	ASTM D7647	>1300	🔺 5467	2143	▲ 3399			
Oil Cleanliness	ISO 4406 (c)	>19/17/14	4 23/20/14	1 21/18/13	A 21/19/16			

Customer Id: SPE95BRA Sample No.: WC0796130 Lab Number: 02627363 Test Package: IND 2



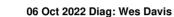
To manage this report scan the QR code

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 gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS							
Action	Status	Date	Done By	Description			
Change Filter			?	We recommend you service the filters on this component.			
Resample			?	Resample in 30-45 days to monitor this situation.			
Contact Required			?	Please contact your representative for information regarding the proper sampling kits for your service.			
Alert			?	NOTE: We recommend using IND 3 test kits,			
Check Breathers			?	The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather.			
Check Seals			?	Check seals and/or filters for points of contaminant entry.			

HISTORICAL DIAGNOSIS



The filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. All component wear rates are normal. Oil Cleanliness are abnormally high. Particles $>4\mu$ m are abnormally high. Particles $>6\mu$ m are notably high. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.





29 Aug 2011 Diag: Bill Quesnel

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition.All component wear rates are normal. Particles >14µm, particles >21µm, particles >38µm and particles >6µm are abnormally high. The condition of oil is suitable for further service.



20 Apr 2011 Diag: Wes Davis

Resample at the next service interval to monitor.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 condition of oil is suitable for further service.





OIL ANALYSIS REPORT

Area [114101] PRESS #2 BEFORE FILTERS

Hydraulic System

PETRO CANADA HYDREX AW 68 (20000 LTR)

DIAGNOSIS

Recommendation

Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. 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

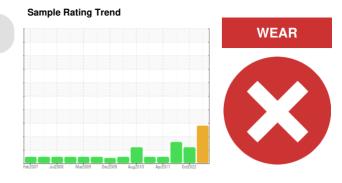
Copper ppm levels are noted. All other component wear rates are normal.

Contamination

There is a high amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition

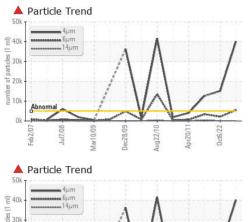
The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

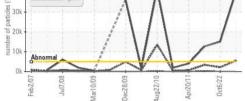


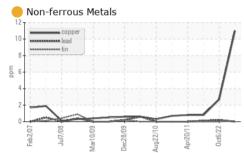
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0796130	WC0616923	WC22091247
Sample Date		Client Info		04 Apr 2024	06 Oct 2022	29 Aug 2011
Machine Age	yrs	Client Info		0	6	0
Oil Age	yrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	Filtered	N/A
Sample Status				SEVERE	ABNORMAL	ABNORMAL
CONTAMINATIC	N	method	limit/base	current	history1	history2
Water		WC Method	>0.05	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	2	4	<1
Chromium	ppm	ASTM D5185(m)	>20	0	0	0
Nickel	ppm	ASTM D5185(m)	>20	0	0	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>20	0	0	0
Lead	ppm	ASTM D5185(m)	>20	0	<1	<1
Copper	ppm	ASTM D5185(m)		11	3	<1
Tin	ppm	ASTM D5185(m)	>20	<1	0	0
Antimony	ppm	ASTM D5185(m)		0	<1	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		method	limit/base	current	history1	history2
	ppm	method ASTM D5185(m)	limit/base	current	history1 <1	history2 <1
Boron	ppm ppm		0			
Boron Barium		ASTM D5185(m)	0	<1	<1	<1
Boron Barium Molybdenum	ppm	ASTM D5185(m) ASTM D5185(m)	0 0 0	<1 0	<1 0	<1 0
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0	<1 0 0	<1 0 0	<1 0 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0 0	<1 0 0 0	<1 0 0 0	<1 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)	0 0 0 0	<1 0 0 0 <1	<1 0 0 0 0	<1 0 0 0 0
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)	0 0 0 0 0 50	<1 0 0 0 <1 19	<1 0 0 0 0 26	<1 0 0 0 0 131
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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 50 330	<1 0 0 <1 19 287	<1 0 0 0 0 26 328	<1 0 0 0 0 131 235
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 50 330 430	<1 0 0 <1 19 287 262	<1 0 0 0 26 328 285	<1 0 0 0 0 131 235 308
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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)	0 0 0 0 50 330 430	<1 0 0 <1 19 287 262 540	<1 0 0 0 26 328 285 602	<1 0 0 0 131 235 308 620
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)	0 0 0 0 50 330 430 760	<1 0 0 <1 19 287 262 540 <1	<1 0 0 0 26 328 285 602 <1	<1 0 0 0 131 235 308 620 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm S	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 50 330 430 760 limit/base	<1 0 0 <1 19 287 262 540 <1 current 0	<1 0 0 0 26 328 285 602 <1 history1	<1 0 0 0 131 235 308 620 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur Lithium	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) method ASTM D5185(m)	0 0 0 0 50 330 430 760 limit/base	<1 0 0 <1 19 287 262 540 <1 <i>Current</i>	<1 0 0 0 26 328 285 602 <1 history1 0	<1 0 0 0 0 131 235 308 620 <1 history2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	0 0 0 0 50 330 430 760 limit/base >15	<1 0 0 <1 19 287 262 540 <1 Current 0 0	<1 0 0 0 26 328 285 602 <1 history1 0 0	<1 0 0 0 131 235 308 620 <1 history2 0 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	0 0 0 0 50 330 430 760 >15 >20	<1 0 0 <1 19 287 262 540 <1 current 0 0 0	<1 0 0 0 26 328 285 602 <1 history1 0 0 0 1	<1 0 0 0 1 31 235 308 620 <1 history2 0 1 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANLII Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	0 0 0 0 50 330 430 760 limit/base >15 >20 limit/base	<1 0 0 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	<1 0 0 26 328 285 602 <1 history1 0 0 <1 history1	<1 0 0 0 1 31 235 308 620 <1 history2 0 1 0 0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	0 0 0 0 50 330 430 760 limit/base >15 >20 limit/base >5000	<1 0 0 4 1 19 287 262 540 <1 262 540 <1 262 540 <1 0 0 0 0 0	<1 0 0 0 26 328 285 602 <1	<1 0 0 0 1 31 235 308 620 <1 history2 0 1 0 1 0 history2 12655
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANLII Particles >4µm Particles >4µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647	0 0 0 0 50 330 430 760 760 1 mit/base >15 >20 1 mit/base >5000 >1300 >160	<1 0 0 3 1 19 287 262 540 <1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<1 0 0 0 26 328 285 602 <1 history1 0 0 <1 history1 15136 2143 69	<1 0 0 0 131 235 308 620 <1 history2 0 1 0 history2 12655 ▲ 3399 ▲ 354
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 ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 0 50 330 430 760 imit/base >15 20 imit/base >5000 >1300 >160 >40	<1 0 0 3 3 4 1 9 287 262 540 3 4 3 40 3 0 0 0 0 0 0 0 0 0 0 0 0 0	<1 0 0 0 2 6 328 2 8 5 602 3 2 8 602 3 1 0 0 0 3 1 0 0 3 1 0 1 1 1 1 1 3 1 6 9 2 1 4 3 1 5 1 3 6 9 2 5 5 1 4 3 1 5 1 3 6 9 1 2 5 1 4 3 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1	<1 0 0 0 131 235 308 620 <1 history2 0 1 0 history2 12655 3399 354 105
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANLII Particles >4µm Particles >4µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 0 50 330 430 760 imit/base >15 >20 imit/base >5000 >1300 >160 >40 >10	<1 0 0 3 3 4 1 9 287 262 540 4 3 40 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<1 0 0 0 2 6 328 2 8 5 602 3 2 8 602 3 1 1 1 1 1 1 1 1 1 3 1 3 1 3 1 3 1 3	<1 0 0 0 1 3 1 3 1 3 0 8 6 2 0 4 3 0 8 6 2 0 4 1 0 0 1 0 1 0 0 1 2 6 5 1 2 6 5 1 2 6 5 1 2 6 5 1 2 6 2 0 1 1 0 1 1 1 1 1 1 1 2 3 5 1 3 0 8 1 6 2 0 1 1 3 1 8 1 6 2 0 1 1 3 1 8 1 6 2 0 1 1 3 1 2 3 5 1 3 0 8 1 6 2 0 1 1 3 1 2 3 5 1 3 0 8 1 6 2 0 1 1 3 1 2 3 5 1 3 0 8 1 6 2 0 1 1 1 1 2 3 5 1 3 0 8 1 6 2 0 1 1 1 1 2 3 5 1 3 0 8 1 6 2 0 1 1 1 1 2 3 5 1 3 0 8 1 6 2 0 1 1 1 1 2 3 5 1 2 1 1 1 1 2 3 5 1 3 0 8 1 6 2 0 1 1 1 1 1 2 3 5 1 1 1 1 1 2 3 5 1 1 1 1 1 1 1 1 2 3 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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 ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 0 50 330 430 760 imit/base >15 20 imit/base >5000 >1300 >160 >40	<1 0 0 3 3 4 1 9 287 262 540 4 3 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<1 0 0 0 2 6 328 2 8 5 602 3 2 8 602 3 1 0 0 0 3 1 0 0 3 1 0 1 1 1 1 1 3 1 6 9 2 1 4 3 1 5 1 3 6 9 2 5 5 1 4 3 1 5 1 3 6 9 1 2 5 1 4 3 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1	<1 0 0 0 131 235 308 620 <1 history2 0 1 0 history2 12655 3399 354 105



OIL ANALYSIS REPORT







Acid Number

/ar10/09

Viscosity @ 40°C

ar28/00

0.7 0.60 (b/H0) 0.50

Ê 0.40

폍 0.30

0.10

0.00

80 75

(40°C)

-*3 6!

60 Abnorma

55

-eh2/07

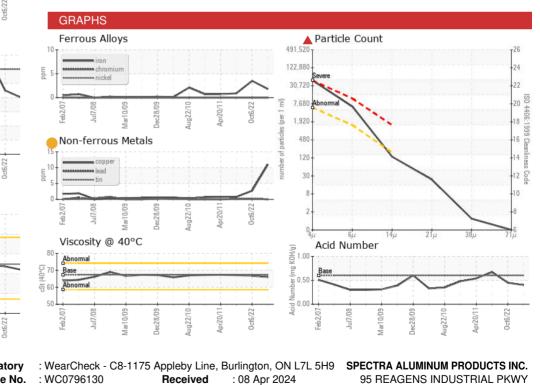
B

-ch2/0

Acid Nu 0.20 Bas

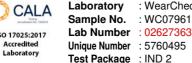
FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.60	0.40	0.45	0.671
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	VLITE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	VLITE
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*	>0.05	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)	67.4	66.0	66.8	67.2
SAMPLE IMAGES	;	method	limit/base	current	history1	history2
Color						

Bottom





/ar10/09



Apr20/11

Unique Number : 5760495 Test Package : IND 2

Received : 08 Apr 2024 Tested : 09 Apr 2024 Diagnosed : 09 Apr 2024 - Kevin Marson

95 REAGENS INDUSTRIAL PKWY BRADFORD, ON CA L3Z 2A4 Contact: Chris Mayr cmayr@spectraaluminum.com T: (905)778-8093 F: (905)778-8054

Report Id: SPE95BRA [WCAMIS] 02627363 (Generated: 04/09/2024 09:53:28) Rev: 1

1/22nm

ug22/10

pr20/1

Contact/Location: Chris Mayr - SPE95BRA