

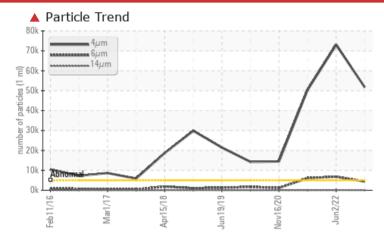


PROBLEM SUMMARY

Machine Id

BOTTLE/DRILL #4 Component Hydraulic System Fluid AW HYDRAULIC OIL ISO 32 (--- GAL)

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. 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. 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.

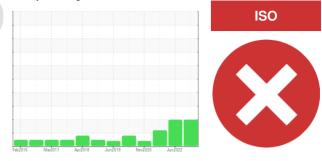
Customer Id: SUMBUR Sample No.: WC0931321 Lab Number: 02628022 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Wes Davis +1 905-569-8600 x223 wesd@wearcheck.ca

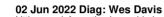
To change component or sample information: Gloria Gonzalez +1 (289)291-4643 x4643 gloria.gonzalez@wearcheck.com



| PROBLEMATIC TEST RESULTS | | | | | | | |
|--------------------------|--------------|-----------|-------------------|----------------|--------------|--|--|
| Sample Status | | | SEVERE | SEVERE | SEVERE | | |
| Particles >4µm | ASTM D7647 | >5000 | 4 51703 | A 72987 | ▲ 50397 | | |
| Particles >6µm | ASTM D7647 | >1300 | 🔺 4405 | 6804 | 6 102 | | |
| Oil Cleanliness | ISO 4406 (c) | >19/17/14 | 4 23/19/12 | ▲ 23/20/13 | ▲ 23/20/13 | | |

| 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. | | | |
| 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 | | | ? | Please specify the brand, type, and viscosity of the oil on your next sample. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. | | | |
| 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



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. 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. 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.All component wear rates are normal. Oil Cleanliness are severely high. Particles >4µm are severely high. Particles >6µm are abnormally 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.



view report

08 Dec 2021 Diag: Wes Davis



ISO

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. 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. 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.All component wear rates are normal. Particles >4µm are severely high. Particles >6µm are abnormally high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.





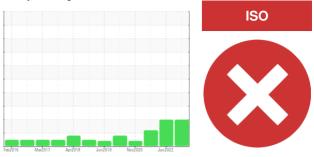
Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. 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.All component wear rates are normal. Particles >4µm are abnormally high. 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

BOTTLE/DRILL #4

Hydraulic System Fluid AW HYDRAULIC OIL ISO 32 (--- 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. 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. 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

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

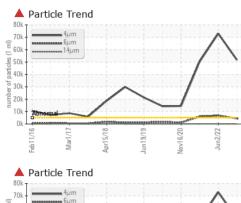
Fluid Condition

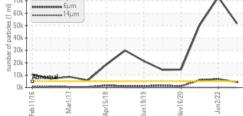
The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

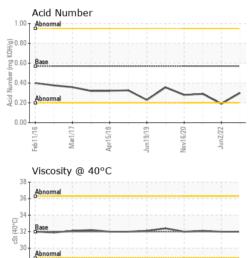
| SAMPLE INFORM | MATION | method | limit/base | current | history1 | history2 |
|--|---|--|--|--|---|---|
| Sample Number | | Client Info | | WC0931321 | WC0708615 | WC0651966 |
| Sample Date | | Client Info | | 09 Apr 2024 | 02 Jun 2022 | 08 Dec 2021 |
| Machine Age | days | Client Info | | 0 | 0 | 0 |
| Oil Age | days | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | SEVERE | SEVERE | SEVERE |
| CONTAMINATIO | 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 | 5 | 5 | 2 |
| Chromium | ppm | ASTM D5185(m) | >20 | 0 | <1 | <1 |
| Nickel | ppm | ASTM D5185(m) | >20 | 0 | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185(m) | >20 | 0 | 0 | <1 |
| Lead | ppm | ASTM D5185(m) | >20 | 0 | <1 | <1 |
| Copper | ppm | ASTM D5185(m) | >20 | 11 | 10 | 10 |
| Tin | ppm | ASTM D5185(m) | >20 | 0 | <1 | <1 |
| Antimony | ppm | ASTM D5185(m) | | 0 | 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 | 0 |
| | | | | | | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| ADDITIVES Boron | ppm | method ASTM D5185(m) | limit/base 5 | current | history1 2 | history2 <1 |
| | ppm ppm | | | | | |
| Boron | | ASTM D5185(m) | 5 | 1 | 2 | <1 |
| Boron Barium | ppm | ASTM D5185(m) ASTM D5185(m) | 5 5 | 1 <1 | 2 <1 | <1 <1 |
| Boron Barium Molybdenum | ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 5 5 | 1 <1 0 | 2 <1 0 | <1 <1 <1 |
| Boron Barium Molybdenum Manganese | ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | 5 5 5 | 1 <1 0 0 | 2 <1 0 0 | <1 <1 <1 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) | 5 5 5 25 | 1 <1 0 0 <1 | 2 <1 0 0 <1 | <1 <1 <1 0 <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 25 200 | 1 <1 0 0 <1 47 | 2 <1 0 0 <1 49 | <1 <1 <1 0 <1 49 |
| 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 25 200 300 | 1 <1 0 <1 47 333 | 2 <1 0 <1 49 364 | <1 <1 <1 0 <1 49 346 |
| 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 25 200 300 370 | 1 <1 0 0 <1 47 333 422 | 2 <1 0 <1 49 364 436 | <1 <1 <1 0 <1 49 346 424 |
| 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 25 200 300 370 | 1 <1 0 <1 47 333 422 874 | 2 <1 0 <1 49 364 436 856 | <1 <1 <1 0 <1 49 346 424 843 |
| 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 25 200 300 370 2500 | 1 <1 0 <1 47 333 422 874 <1 | 2 <1 0 <1 49 364 436 856 <1 | <1 <1 <1 0 <1 49 346 424 843 <1 |
| 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) | 5 5 25 200 300 370 2500 | 1 <1 0 <1 47 333 422 874 <1 current | 2 <1 0 0 <1 49 364 436 856 <1 history1 | <1 <1 <1 0 <1 49 346 424 843 <1 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) 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) | 5 5 25 200 300 370 2500 | 1 <1 0 <1 47 333 422 874 <1 <1 current 0 | 2 <1 0 0 <1 49 364 436 856 <1 history1 <1 | <1 <1 <1 0 <1 49 346 424 843 <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 | ASTM D5185(m) ASTM D5185(m) | 5 5 5 25 200 300 370 2500 limit/base >15 | 1 <1 0 <1 47 333 422 874 <1 Current 0 <1 | 2 <1 0 0 <1 49 364 436 856 <1 history1 <1 <1 | <1 <1 <1 0 <1 49 346 424 843 <1 history2 0 <1 |
| 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 5 200 300 370 2500 2500 limit/base >15 | 1 <1 0 <1 47 333 422 874 <1 <u>current</u> 0 <1 <1 <1 | 2 <1 0 0 <1 49 364 436 856 <1 history1 <1 <1 <1 <1 | <1 <1 <1 0 <1 49 346 424 843 <1 history2 0 <1 <1 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) | 5 5 5 25 200 300 370 2500 2500 imit/base >25 20 | 1 <1 0 <1 47 333 422 874 <1 <u>current</u> 0 <1 <1 <1 <u>current</u> | 2 <1 0 0 <1 49 364 436 856 <1 history1 <1 <1 <1 <1 <1 <1 <1 | <1 <1 <1 0 <1 49 346 424 843 <1 history2 0 <1 <1 <1 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 5 200 300 370 2500 2500 Imit/base >20 Imit/base >20 | 1 <1 0 <1 47 333 422 874 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 | 2 <1 0 0 <1 49 364 436 856 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 | <1 <1 <1 0 <1 49 346 424 843 <1 • • • • • • • • • • • • • • • • • • |
| 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 D5185(m) | 5 5 5 200 300 370 2500 2500 limit/base >20 limit/base >5000 >1300 >160 | 1 <1 0 <1 47 333 422 874 <1 Current 0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 < | 2 <1 0 0 <1 49 364 436 856 <1 history1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 | <1 <1 <1 0 <1 49 346 424 843 <1 history2 0 <1 <1 <1 history2 ∧ 50397 ▲ 50397 |
| 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 D7647 ASTM D7647 | 5 5 5 200 300 370 2500 2500 limit/base >20 limit/base >5000 >1300 >160 | 1 <1 0 <1 47 333 422 874 <1 Current 0 <1 <1 <1 <1 <1 <1 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <21 <23 | 2 <1 0 0 <1 49 364 436 856 <1 <1 istory1 <1 <1 <1 <1 <1 <1 <1 <1 <1 < | <1 <1 0 41 49 346 424 843 <1 |
| 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 25 200 300 370 2500 2500 imit/base >15 >20 imit/base >5000 >1300 >160 >40 | 1 <1 0 0 <1 47 333 422 874 <1 Current 0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 | 2 <1 0 0 <1 49 364 436 856 <1 1 istory1 istory1 istory1 | <1 <1 <1 0 49 346 424 843 <1 bistory2 0 <1 <1 <1 <1 bistory2 50397 ▲ 6102 58 5 |
| 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 | 5 5 5 25 200 300 370 2500 2500 imit/base >15 >20 imit/base >5000 >1300 >160 >40 >40 | 1 <100000000000000000000000000000000000 | 2 <1 0 0 <1 49 364 436 856 <1 history1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 | <1 <1 <1 0 49 346 424 843 <1 |



OIL ANALYSIS REPORT







21

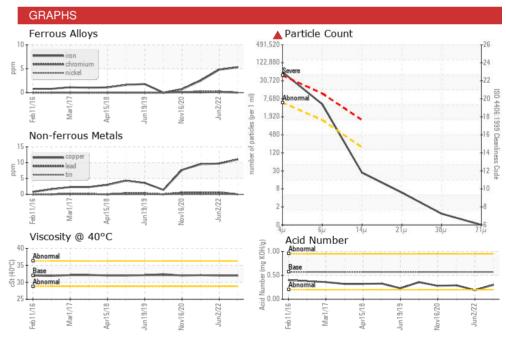
26

Feb11/16

Mar1/1

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|---------------|------------|---------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D974* | 0.57 | 0.30 | 0.19 | 0.29 |
| 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* | >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) | 32 | 32.0 | 32.0 | 32.1 |
| SAMPLE IMAGES | S | method | limit/base | current | history1 | history2 |
| Color | | | | | | |

Bottom



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 CALA Sample No. : WC0931321 Received : 10 Apr 2024 Lab Number : 02628022 Tested : 11 Apr 2024 ISO 17025:2017 Accredited Unique Number : 5761154 Diagnosed : 11 Apr 2024 - Wes Davis Laboratory Test Package : IND 2 To discuss this sample report, contact Customer Service at 1-800-268-2131.

Voestalpine Rotec Summo Corp. 4041 North Service Rd. Burlington, ON CA L7L 4X6 Contact: Dan Girotti dan.girotti@voestalpine.com T: (905)336-0014 F: (905)332-5941

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.

Report Id: SUMBUR [WCAMIS] 02628022 (Generated: 04/11/2024 08:32:46) Rev: 1

Vov16/20 -

lun19/19

pr15/18

Jun2/22 -

Contact/Location: Dan Girotti - SUMBUR Page 4 of 4