# CR504.

# FIELD SERVICE RECORD

## Service No. 40035

| | | | | |
|---|---|---|---|---|
| **JOB CARD No.** | WARRANTY No: | | JOB No: | |
| **CUSTOMER DETAILS** | NAME: | Stem | | |
| | CONTACT: | Jake | PHONE: | |
| **MACHINE DETAILS** | MAKE: | 670GP | SERIAL No: | 1DW670GPHJSD697116 |
| | HOURS: | 777.6 | DATE: | 29 / 11 / 2019 |

**MACHINE FAULT/COMPLAINT**

Slight vibration at 1450 - 1550 Rpm

**CAUSE**

Unknown - would not fault ~~error~~ anything

**WORK COMPLETED**

Retorqued Cab and engine mounts
- Carried out misfire and cut-out tests
- Carried out radial run out measurement at balancer (0.1mm)
- Checked fluid levels and all mechanical components for
flattering or out of norm noises

- Sent back to work, see if problem develops (could not fault)

**SITE TRAVELLED TO:** Tenterhelt

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **KILOMETRES** | | | **PHOTOS** (circle) | | YES | NO | | |
| **TECHNICIAN NAME** | Sam Bastin | | E-OIL | — | LITRES | COOLANT | — | LITRES |
| | | | H-OIL | — | LITRES | GREASE | — | LITRES |
| **TECHNICIAN SIGNATURE** | | | G-OIL | — | LITRES | CONS | | $ |
| | | | Job Completed | YES NO | | Parts Returned | YES | NO |
| **TRAVEL** | Start: | Finish: | **REPAIR TIME** | | | Start: | Finish: | |

**JOB SITE CHECKLIST**

| HAZARD | YES | NO | CONTROLS |
|---|---|---|---|
| 1. Is machine on level ground | ✓ | | **IF NO** - move machine to suitable location |
| 2. Is machine in safe work area (away from other traffic) | ✓ | | **IF NO** - move machine/safety cones to be set up |
| 3. If using oxy/welder, is machine in non-flammable area | ✓ | | **IF NO** - move machine/fire extinguisher/hot permits if required |
| 4. Is machine on level ground | | ✓ | **IF YES** - use safety stands/blocks |
| 5. Is machine in confined work area with poor ventilation | | ✓ | **IF YES** - move machine |
| 6. Does job require working from height (above ground) | | ✓ | **IF YES** - use harness/man cage |
| 7. Is heavy lifting required | | ✓ | **IF YES** - use mechanical aid |
| 8. Are there any trip slip hazards (oil/fuel spill) | | ✓ | **IF YES** - move machine/clean spill |
| 9. Is correct PPE available | ✓ | | **IF NO** - obtain correct PPE/safety glasses |

**CONTACT OFFICE IF UNABLE TO COMPLETE REPAIRS**

**WORK ZONE HAZARD PRECAUTIONS/COMMENTS**

| | | |
|---|---|---|
| **OWNER/AGENT SIGNATURE** | | 29 / 11 / 19 |

Service Technician Sam C414CEE998

# Certificate of Analysis

| | | | |
|---|---|---|---|
| **DATE SAMPLED** | | 16-Feb-20 | 10-Jun-19 |
| **DATE RECEIVED** | | 30-Apr-20 | 18-Jun-19 |
| **DATE REPORTED** | | 30-Apr-20 | 19-Jun-19 |
| **TRIBOLOGY LABORATORY** | | Brisbane | Brisbane |
| SAMPLE NO. | | 10003508831 | 10003372660 |
| TRACKING NUMBER | | 29661101 | 25186651 |
| WORK ORDER NO. | | | |
| MACHINE | Hrs | 950 | 503 |
| COMPONENT | Hrs | 950 | 503 |
| OIL | Hrs | 950 | |
| OIL MAKE | | John Deere | John Deere |
| OIL TYPE | | Hy-Gard JDM J20C | Hy-Gard JDM J20C |
| OIL GRADE | | ISO 68 | ISO 68 |
| OIL ADDED | Ltrs | 2.0 | |
| FILTER | Hrs | 950 | |
| FILTER CHANGED | | Changed | |
| OIL CHANGED | | Not Changed | Not Changed |
| **Metals (ppm)** | | | |
| Aluminium (Al) | | <1 | 1 |
| Copper (Cu) | | 2 | 2 |
| Chromium (Cr) | | 2 | 2 |
| Iron (Fe) | | 6 | 3 |
| Lead (Pb) | | <1 | <1 |
| Tin (Sn) | | <1 | <1 |
| Nickel (Ni) | | <1 | 1 |
| **Contaminants and Additives (ppm)** | | | |
| Silicon (Si) | | 3 | 3 |
| Boron (B) | | <5 | 7 |
| Sodium (Na) | | 1 | <1 |
| Potassium (K) | | 2 | 2 |
| Phosphorus (P) | | 547 | 546 |
| Molybdenum (Mo) | | <1 | 1 |
| Magnesium (Mg) | | 1 | 1 |
| Calcium (Ca) | | 100 | 75 |
| Zinc (Zn) | | 707 | 734 |
| **Physical Tests** | | | |
| Water (%) (FTIR) | | <0.1 | <0.1 |
| Oxidation (Abs) (FTIR) | | 32.9 | 34.5 |
| Viscosity (cSt,40°C) | | 60 | 60 |
| PQ Index | | <10 | <10 |
| **Particle Count** | | | |
| ISO 4406 Code | | 19/15/11 | -- |
| ISO Clean 4 Micron (c) | | 19 | -- |
| ISO Clean 6 Micron (c) | | 15 | -- |
| ISO Clean 14 Micron (c) | | 11 | -- |

## Hydraulic System

**Unit No.** GR504

**Unit:**

**Make** John Deere
**Model** 670GP
**Serial No.** 1DW670GPHJD691114
**Capacity** 53.0 Ltrs
**Site** Yamba

**Compartment:**

**Name** Hydraulic System
**Make**
**Model**
**Serial No.**

**Customer:**

## DIAGNOSIS

All wear rates normal. Abrasive and other contaminant levels are acceptable. Viscosity within specified operating range. Action: As filter(s) already changed, resample next recommended service interval to further monitor.

Analysis undertaken on the sample as received.
Testing performed between Date Received and Date Reported unless otherwise specified.

**Normal**

LEGEND

Severe | Abnormal | Caution | Normal

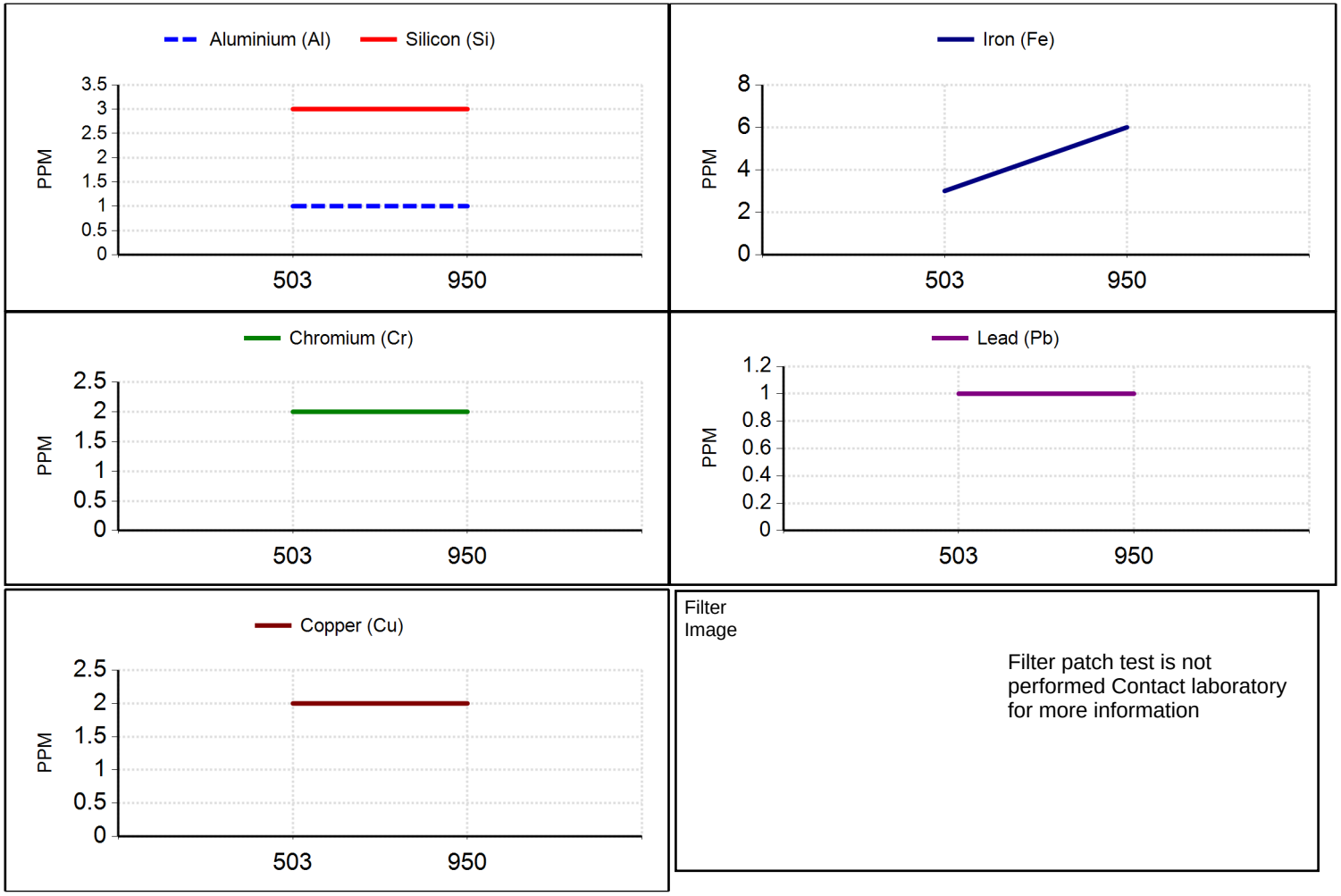
Right Solutions • Right Partner



**Authorized Signatory - Diagnostician:** Chris.Heselwood

# UIN 0701C61

10003508831




Filter Image

Filter patch test is not performed Contact laboratory for more information

0268 v1.10

This analysis report is dependent upon the accurate completion of the sample submission sheet and correct sampling techniques as advised. The analysis is intended as an aid only in predicting mechanical wear and should not be regarded as a substitute for proper servicing or mechanical inspection. The company does not accept any liability whatsoever in respect of any loss or damage (including loss of profits, economic or other

All test methods are determined by laboratory location, and customer requirements. Methods can be made available on request by contacting the testing laboratory.

Alarm limits are based on a combination of trend and OEM, client and/or ALS proprietary specifications. For more information please contact your testing laboratory.

# PLANT INSPECTION REPORT

Make: John Deere Model: 670 GP S/No.....
Unit/fleet No... GR504 SMU..... Date... 22-1-21

| | |
|---|---|
| **ROPS CANOPY (except for Road Trucks, Drills, Excavator)** | YES/NO |
| **Seat belts fitted?** | YES/NO |
| **All Safety Guards fitted?** | YES/NO |
| **Flashing lights working?** | YES/NO |
| **Fire extinguisher fitted and charged?** | YES/NO |
| **Reverse alarm operational?** | YES/NO |
| **All vehicle systems operational?** | YES/NO |

| Engine | Operational | Comments/ Action to undertaken |
|---|---|---|
| Water leaks | YES ☑ NO ☐ | |
| Radiator hose and clamps | YES ☑ NO ☐ | |
| Radiator core condition | YES ☑ NO ☐ | |
| Veebelt condition and adjustment | YES ☑ NO ☐ | |
| Fan hub bearings | YES ☐ NO ☐ | |
| Oil leaks | YES ☑ NO ☐ | |
| Air intake hoses and clamps | YES ☑ NO ☐ | |
| Air cleaner indicator level | YES ☑ NO ☐ | |
| Mountings | YES ☑ NO ☐ | |
| Battery condition | YES ☑ NO ☐ | |
| **Drive Train** | | |
| Transmission oil leaks | YES ☑ NO ☐ | |
| Wheel hub oil leaks | YES ☑ NO ☐ | |
| Wheel nuts and lock | YES ☑ NO ☐ | |
| Front and rear drive line condition | YES ☑ NO ☐ | |
| **Vehicle System** | | |
| Steering linkages | YES ☑ NO ☐ | |
| Articulation bearings and retainers | YES ☑ NO ☐ | |
| Main frame cracks | YES ☑ NO ☐ | |
| Air leaks | YES ☐ NO ☐ | |
| Drain air tanks | YES ☑ NO ☐ | |
| Hydraulic operation | YES ☑ NO ☐ | |
| Hydraulic oil leaks | YES ☑ NO ☐ | |
| Service/Park brake operation | YES ☑ NO ☐ | |
| **Cab** | | |
| Steps/Grab rail | YES ☑ NO ☐ | |
| General cab condition | YES ☑ NO ☐ | |
| Lights (Head, Tail and Dash) | YES ☑ NO ☐ | |
| Warning lights and gauges | YES ☑ NO ☐ | |
| Control linkages | YES ☐ NO ☐ | |
| Air conditioner operation | YES ☑ NO ☐ | |

# PLANT INSPECTION REPORT

**Tyre/Track Assessment**

New Drive tyres.

**Attachments Fitted/Included**

- Rippers all in good condition.

**Condition of Bucket, Bowl, Blade, Body:**

- Blade in good condition 50% on edge's.

**Other Comments:**

**Inspected by:** Jake **Signature:** J. Kelly
**Qualifications:** Mechanic **Date:** 22-1-21

**Certification by Responsible Person:**

I certify that the described plant is to the manufactures specifications and is being serviced and maintained by competent personnel to the manufacturers recommendations.

**Signature:** J. Kelly **Date:** 22-1-21
**Print Name:** Jake Kelly **Position:** workshop supervisor

**Asset:**
GR504 - John Deer 670GP Grader - 79591D

**Work Order:**
361

**Root Cause:**

**Description:**
5000 hours service

| VIN/SerialNo | Location | Hours | Kms | Priority | Fitter/s | Scheduled Start |
|---|---|---|---|---|---|---|
| | Unknown | 0 | 0 | Routine service | | 2022-11-23 |

| Item | Work Needed | Work Done | Extra | Status | Date Closed | Image |
|---|---|---|---|---|---|---|
| 1 | Check/Top Up Battery Electrolyte Level | | | Closed | 2023-11-23 00:00:00 | |
| 2 | Inspect Adjust V Belt Tension | | | Closed | 2023-11-23 00:00:00 | |
| 3 | Check/Top Up Coolant Levels | | | Closed | 2023-11-23 00:00:00 | |
| 4 | Check/Top Up Hydraulic Oil Level | | | Closed | 2023-11-23 00:00:00 | |
| 5 | Check/Top Up Diff Oil Levels | | | Closed | 2023-11-23 00:00:00 | |
| 6 | check auto greaser level and lines | | | Closed | 2023-11-23 00:00:00 | |
| 7 | check air intake hoses | | | Closed | 2023-11-23 00:00:00 | |
| 8 | Grease Drive Line Uiniversal Joints | | | Closed | 2023-11-23 00:00:00 | |
| 9 | Check/Top Up Transmission Oil Level | | | Closed | 2023-11-23 00:00:00 | |
| 10 | Drain Water/Sediment From Fuel/Water Separator | | | Closed | 2023-11-23 00:00:00 | |
| 11 | Drain Water/Sediment From Fuel Tank Drain Plug On Left Hand Side | | | Closed | 2023-11-23 00:00:00 | |
| 12 | Machine Safety Inspection | | | Closed | 2023-11-23 00:00:00 | |
| 13 | A Fire Extinguisher Has Been Fitted To The Machine | | | Closed | 2023-11-23 00:00:00 | |
| 14 | The Fire Extinguisher Is Within Inspection Date | | | Closed | 2023-11-23 00:00:00 | |
| 15 | A Seat Belt Has Been Fitted To The Machine | | | Closed | 2023-11-23 00:00:00 | |
| 16 | The Seat Belt Is In Good Condition & Can Be Adjusted Correctly | | | Closed | 2023-11-23 00:00:00 | |
| 17 | The Operator'S Seat Is In Good Condition, Is Fully Adjustable & Secure | | | Closed | 2023-11-23 00:00:00 | |
| 18 | The Machine Service Brake System Passes The Stall Test | | | Closed | 2023-11-23 00:00:00 | |
| 19 | The Machine Parking/Emergency Brake System Passes The Stall Test | | | Closed | 2023-11-23 00:00:00 | |
| 20 | Reverse/Travel Alarm Is Fitted & Functions Correctly | | | Closed | 2023-11-23 00:00:00 | |
| 21 | The Steering System Is Responsive | | | Closed | 2023-11-23 00:00:00 | |
| 22 | The Emergency Steering System Functions When | | | Closed | 2023-11-23 00:00:00 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Actuated | | | | | |
| 23 | Cabin Glass Is Secure & Free From Damage | | | Closed | 2023-11-23 00:00:00 | |
| 24 | No Active Fault Alarms Are Indiciated On The Monitor Panel | | | Closed | 2023-11-23 00:00:00 | |
| 25 | Rops/Fops Structure & Id Plate Are In Good Condition | | | Closed | 2023-11-23 00:00:00 | |
| 26 | All Lights, Indicators & Flashing Beacon Are Functional | | | Closed | 2023-11-23 00:00:00 | |
| 27 | All Guards & Covers Are In Place & Free From Damage | | | Closed | 2023-11-23 00:00:00 | |
| 28 | A Lockable Mechanism Has Been Fitted To The Isolator Switch | | | Closed | 2023-11-23 00:00:00 | |
| 29 | All Steps, Walkways & Handrails Are In Place & Free From Damage | | | Closed | 2023-11-23 00:00:00 | |
| 30 | Tyres Appear To Be Free From Sever Cuts & Damage | | | Closed | 2023-11-23 00:00:00 | |
| 31 | Emergency Stop Button Is Operational | | | Closed | 2023-11-23 00:00:00 | |
| 32 | Tyre Condition Report | | | Closed | 2023-11-23 00:00:00 | |
| 33 | Pos 1 Mm Psi | | | Closed | 2023-11-23 00:00:00 | |
| 34 | Pos 2 Mm Psi | | | Closed | 2023-11-23 00:00:00 | |
| 35 | Pos 3 Mm Psi | | | Closed | 2023-11-23 00:00:00 | |
| 36 | Pos 4 Mm Psi | | | Closed | 2023-11-23 00:00:00 | |
| 37 | Change Engine Oil 27ltr | | | Closed | 2023-11-23 00:00:00 | |
| 38 | Change Engine Oil Filter, Cup Open & Inspect | | | Closed | 2023-11-23 00:00:00 | |
| 39 | inspect and clean cooler cores | | | Closed | 2023-11-23 00:00:00 | |
| 40 | Take Oil Sample From Transmission | | | Closed | 2023-11-23 00:00:00 | |
| 41 | Take Oil Sample From Front Diff | | | Closed | 2023-11-23 00:00:00 | |
| 42 | Take Oil Sample From Rear Diff | | | Closed | 2023-11-23 00:00:00 | |
| 43 | Take Oil Sample From Hydraulic Tank | | | Closed | 2023-11-23 00:00:00 | |
| 44 | Change Hydraulic Oil Filter, Cup Open & Inspect | | | Closed | 2023-11-23 00:00:00 | |
| 45 | Change Fuel/Water Separator Element | | | Closed | 2023-11-23 00:00:00 | |
| 46 | Change Fuel Filter (No1) & Bleed Fuel System | | | Closed | 2023-11-23 00:00:00 | |
| 47 | Clean Engine Breather | | | Closed | 2023-11-23 00:00:00 | |
| 48 | replace fuel tank breather | | | Closed | 2023-11-23 00:00:00 | |
| 49 | Change Fuel Filter (No2) And Bleed Fuel System | | | Closed | 2023-11-23 00:00:00 | |
| 50 | adjust front axle wheel bearings | | | Closed | 2023-11-23 00:00:00 | |

**Asset:**
GR504 - John Deer 670GP Grader - 79591D

**Work Order:**
430

**Root Cause:**

**Description:**
5500 hours service

| VIN/SerialNo | Location | Hours | Kms | Priority | Fitter/s | Scheduled Start |
|---|---|---|---|---|---|---|
| | | 5487 | 22057 | Routine service | | 2023-03-12 |

| Item | Work Needed | Work Done | Extra | Status | Date Closed | Image |
|---|---|---|---|---|---|---|
| 1 | Check/Top Up Battery Electrolyte Level | | | Closed | 2023-03-17 00:00:00 | |
| 2 | Inspect Adjust V Belt Tension | | | Closed | 2023-03-17 00:00:00 | |
| 3 | Check/Top Up Coolant Levels | | | Closed | 2023-03-17 00:00:00 | |
| 4 | Check/Top Up Hydraulic Oil Level | | | Closed | 2023-03-17 00:00:00 | |
| 5 | Check/Top Up Diff Oil Levels | | | Closed | 2023-03-17 00:00:00 | |
| 6 | check auto greaser level and lines | | | Closed | 2023-03-17 00:00:00 | |
| 7 | check air intake hoses | | | Closed | 2023-03-17 00:00:00 | |
| 8 | Grease Drive Line Uiniversal Joints | | | Closed | 2023-03-17 00:00:00 | |
| 9 | Check/Top Up Transmission Oil Level | | | Closed | 2023-03-17 00:00:00 | |
| 10 | Drain Water/Sediment From Fuel/Water Separator | | | Closed | 2023-03-17 00:00:00 | |
| 11 | Drain Water/Sediment From Fuel Tank Drain Plug On Left Hand Side | | | Closed | 2023-03-17 00:00:00 | |
| 12 | Machine Safety Inspection | | | Closed | 2023-03-17 00:00:00 | |
| 13 | A Fire Extinguisher Has Been Fitted To The Machine | | | Closed | 2023-03-17 00:00:00 | |
| 14 | The Fire Extinguisher Is Within Inspection Date | | | Closed | 2023-03-17 00:00:00 | |
| 15 | A Seat Belt Has Been Fitted To The Machine | | | Closed | 2023-03-17 00:00:00 | |
| 16 | The Seat Belt Is In Good Condition & Can Be Adjusted Correctly | | | Closed | 2023-03-17 00:00:00 | |
| 17 | The Operator'S Seat Is In Good Condition, Is Fully Adjustable & Secure | | | Closed | 2023-03-17 00:00:00 | |
| 18 | The Machine Service Brake System Passes The Stall Test | | | Closed | 2023-03-17 00:00:00 | |
| 19 | The Machine Parking/Emergency Brake System Passes The Stall Test | | | Closed | 2023-03-17 00:00:00 | |
| 20 | Reverse/Travel Alarm Is Fitted & Functions Correctly | | | Closed | 2023-03-17 00:00:00 | |
| 21 | The Steering System Is Responsive | | | Closed | 2023-03-17 00:00:00 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 22 | The Emergency Steering System Functions When Actuated | | | Closed | 2023-03-17 00:00:00 | |
| 23 | Cabin Glass Is Secure & Free From Damage | | | Closed | 2023-03-17 00:00:00 | |
| 24 | No Active Fault Alarms Are Indiciated On The Monitor Panel | | | Closed | 2023-03-17 00:00:00 | |
| 25 | Rops/Fops Structure & Id Plate Are In Good Condition | | | Closed | 2023-03-17 00:00:00 | |
| 26 | All Lights, Indicators & Flashing Beacon Are Functional | | | Closed | 2023-03-17 00:00:00 | |
| 27 | All Guards & Covers Are In Place & Free From Damage | | | Closed | 2023-03-17 00:00:00 | |
| 28 | A Lockable Mechanism Has Been Fitted To The Isolator Switch | | | Closed | 2023-03-17 00:00:00 | |
| 29 | All Steps, Walkways & Handrails Are In Place & Free From Damage | | | Closed | 2023-03-17 00:00:00 | |
| 30 | Tyres Appear To Be Free From Sever Cuts & Damage | | | Closed | 2023-03-17 00:00:00 | |
| 31 | Emergency Stop Button Is Operational | | | Closed | 2023-03-17 00:00:00 | |
| 32 | Tyre Condition Report | | | Closed | 2023-03-17 00:00:00 | |
| 33 | Pos 1 Mm Psi | | | Closed | 2023-03-17 00:00:00 | |
| 34 | Pos 2 Mm Psi | | | Closed | 2023-03-17 00:00:00 | |
| 35 | Pos 3 Mm Psi | | | Closed | 2023-03-17 00:00:00 | |
| 36 | Pos 4 Mm Psi | | | Closed | 2023-03-17 00:00:00 | |
| 37 | Change Engine Oil 27ltr | | | Closed | 2023-03-17 00:00:00 | |
| 38 | Change Engine Oil Filter, Cup Open & Inspect | | | Closed | 2023-03-17 00:00:00 | |
| 39 | inspect and clean cooler cores | | | Closed | 2023-03-17 00:00:00 | |
| 40 | Take Oil Sample From Transmission | | | Closed | 2023-03-17 00:00:00 | |
| 41 | Take Oil Sample From Front Diff | | | Closed | 2023-03-17 00:00:00 | |
| 42 | Take Oil Sample From Rear Diff | | | Closed | 2023-03-17 00:00:00 | |
| 43 | Take Oil Sample From Hydraulic Tank | | | Closed | 2023-03-17 00:00:00 | |
| 44 | Change Hydraulic Oil Filter, Cup Open & Inspect | | | Closed | 2023-03-17 00:00:00 | |
| 45 | Change Fuel/Water Separator Element | | | Closed | 2023-03-17 00:00:00 | |
| 46 | Change Fuel Filter (No1) & Bleed Fuel System | | | Closed | 2023-03-17 00:00:00 | |
| 47 | Clean Engine Breather | | | Closed | 2023-03-17 00:00:00 | |

THE FLEET Office

| Work Order | Description | Created Date | Created Hrs | Created Kms | Completed | Priority | Fitter/s |
|---|---|---|---|---|---|---|---|
| 1125 | Circle wear part missing | 03/11/2023 | | | 17/11/2023 | To do when in workshop | |
| 942 | Blade slide adjustment | 05/09/2023 | | | 17/11/2023 | Minor defects | |
| 672 | Due for pm6000 | 03/07/2023 | | | 04/08/2023 | Routine service | |
| 642 | 6000 hours service | 23/06/2023 | 5949 | 24612 | 04/07/2023 | Routine service | |
| 441 | maintenance jobs | 20/03/2023 | 5494 | 22106 | 26/05/2023 | | |
| 440 | broken swivel hub | 20/03/2023 | 5494 | 22106 | 17/03/2023 | Equipment breakdown | Jake Kelly |
| 430 | 5500 hours service | 09/03/2023 | 5487 | 22057 | 17/03/2023 | Routine service | |
| 361 | 5000 hours service | 11/11/2022 | 4943 | 19413 | 23/11/2023 | Routine service | |
| 282 | 4500 hours service | 09/08/2022 | 4448 | 16977 | 18/08/2022 | Routine service | |

## WORKSHOP JOB CARD NO

1178

**TO BE HANDED IN WITH TIME SHEET**

## SCHEDULED MAINTENANCE

JOHN DEERE

| | | | | | |
|---|---|---|---|---|---|
| Date | 1-10-21 | Service Type | | Unit/Rego Number | GRADER |
| Odometer/Hr Meter | 3028 | Labour Hours | | Mechanic | RICHARD |

| Comments/Notes: | Position | Tread Depth |
|---|---|---|
| SERVICE 1000HRS. | | |
| RE-SEAL LIFT STRAP CYL | | |
| REPAIR EXHAUST LEAK AT TURBO | | |
| | | |
| | | |
| | | |
| | | |

**Further Repairs/Service Items to Be Completed (See Below)**

## REPAIR/SERVICE REQUEST

| | |
|---|---|
| Requested By | |

| Details: |
|---|
| |
| |
| |
| |
| |
| |

| | | | | | |
|---|---|---|---|---|---|
| Completed By | | Labour Hrs | | Date | |

| Notes: |
|---|
| |
| |
| |
| |
| |

**WORKSHOP JOB CARD NO**

1470

**TO BE HANDED IN WITH TIME SHEET**

## SCHEDULED MAINTENANCE

| | | | | | |
|---|---|---|---|---|---|
| Date | 6-7-22 | Service Type | | Unit/Rego Number | GR504 |
| Odometer/Hr Meter | 4,299 | Labour Hours | | Mechanic | Sam |

| Comments/Notes: | Position | Tread Depth |
|---|---|---|
| change fuel filters | | |
| change ~~trans~~ filters | | |
| change axel filter | | |
| change air filters + cab filters | | |
| replaced cannon switches | | |
| replaced blade slides | | |
| Replaced circle wear plates + adjusted | | |

Further Repairs/Service Items to Be Completed (See Below)

## REPAIR/SERVICE REQUEST

| | |
|---|---|
| Requested By | |

| Details: |
|---|
| needs hyd filter AT367840 |
| |
| |
| |
| |
| |

| | | | | | |
|---|---|---|---|---|---|
| Completed By | | Labour Hrs | | Date | |

| Notes: |
|---|
| |
| |
| |
| |
| |

HITACHI

Hitachi Construction Machinery (Australia) Pty Ltd

PROBE

| | | | |
|---|---|---|---|
| **Unit/Vehicle No.:** | GR04 | **Comp Name:** | Hydraulic System |
| **Unit Make:** | John Deere | **Comp Make:** | |
| **Unit Model:** | 670GP | **Comp Model:** | |
| **Unit Serial No.:** | 1DW670GPHJD691114 | **Comp Serial No.:** | |
| **Unit/Vehicle Site:** | Yamba | **System Capacity:** | |

**Caution**

LEGEND
- Severe
- Abnormal
- Caution
- Normal

| | | Current Sample | Last Sample | Previous Sample | Previous Sample | Guidelines | | LEGEND (gl) Guidelines (fr) Fluid Reference (*) No reference |
|---|---|---|---|---|---|---|---|---|
| **SAMPLE STATUS** | |  | | | | | | |
| LAB CHECK NO. | | 25186651 | | | | | | |
| TRACKING NUMBER | | | | | | | | |
| ANALYSIS NO. | | 10003372660 | | | | | | |
| SAMPLED DATE | | 10-Jun-19 | | | | | | |
| RECEIVED DATE | | 18-Jun-19 | | | | | | |
| REPORTED DATE | | 19-Jun-19 | | | | | | |
| MACHINE | Hrs | 503 | | | | | | |
| OIL | Hrs | | | | | | | |
| OIL MAKE | | Hy-Gard JDM J20 | | | | | | |
| OIL GRADE | | ISO 68 | | | | | | |
| OIL ADDED | | | | | | | | |
| OIL CHANGED | | No | | | | | | |
| FILTER | Hrs | | | | | | | |
| FILTER CHANGED | | | | | | | | |
| **Metals (ppm)** | | | | | | | | |
| Aluminium (Al) | | 1 | | | | 0 - 10 | (gl) | |
| Copper (Cu) | | 2 | | | | 0 - 20 | (gl) | |
| Chromium (Cr) | | 2 | | | | 0 - 10 | (gl) | |
| Iron (Fe) | | 3 | | | | 0 - 70 | (gl) | |
| Lead (Pb) | | <1 | | | | 0 - 12 | (gl) | |
| Tin (Sn) | | <1 | | | | 0 - 4 | (gl) | |
| Nickel (Ni) | | 1 | | | | 0 - 5 | (gl) | |
| **Contaminants and Additives (ppm)** | | | | | | | | |
| Silicon (Si) | | 3 | | | | 0 - 23 | (gl) | |
| Boron (B) | | 7 | | | | 6 | (fr) | |
| Sodium (Na) | | <1 | | | | 0 - 20 | (gl) | |
| Potassium (K) | | 2 | | | | 0 - 20 | (gl) | |
| Phosphorus (P) | | 546 | | | | 988 | (fr) | |
| Molybdenum (Mo) | | 1 | | | | 2 | (fr) | |
| Magnesium (Mg) | | 1 | | | | 102 | (fr) | |
| Calcium (Ca) | | 75 | | | | 3396 | (fr) | |
| Zinc (Zn) | | 734 | | | | 1152 | (fr) | |
| **Physical Tests** | | | | | | | | |
| Oxidation (Abs) (FTIR) | | 34.5 | | | | 8.9 | (fr) | |
| Viscosity (cSt,40°C) | | 60 | | | | 59 | (fr) | |
| Viscosity (cSt,100°C) | | 10.3 | | | | 9.4 | (fr) | |
| Viscosity Index (ASTM D2270) | | 161 | | | | 140 | (fr) | |
| PQ Index | | <10 | | | | 0 - 10 | (gl) | |
| Water ppm (by KF) | | 130 | | | | 0 - 750 | (gl) | |
| **Particle Count** | | | | | | | | |
| ISO 4406 Code | | -- | | | | 19/17/11 | (fr) | |
| ISO Clean 4 Micron (c) | | -- | | | | 10 - 23 | (gl) | |
| ISO Clean 6 Micron (c) | | -- | | | | 8 - 21 | (gl) | |
| ISO Clean 14 Micron (c) | | -- | | | | 6 - 16 | (gl) | |

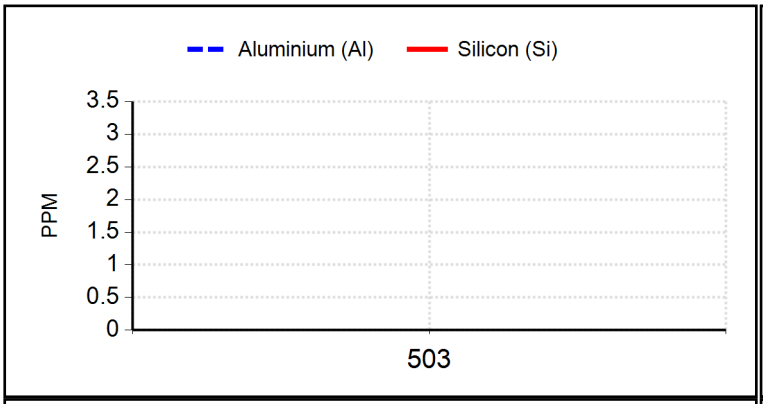
## DIAGNOSIS

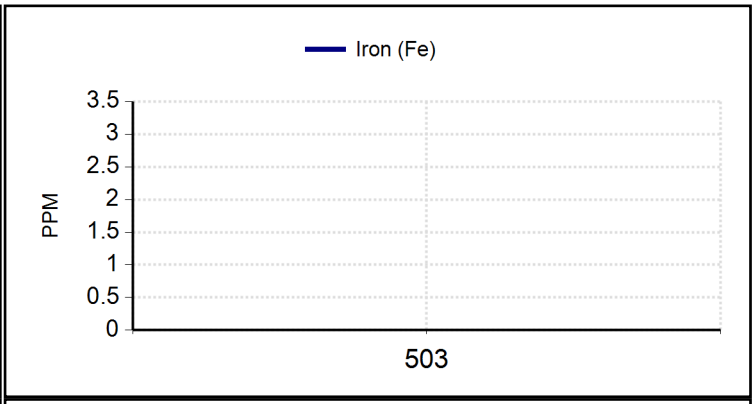
*Please contact your local Hitachi outlet for further explanation on non-normal samples*

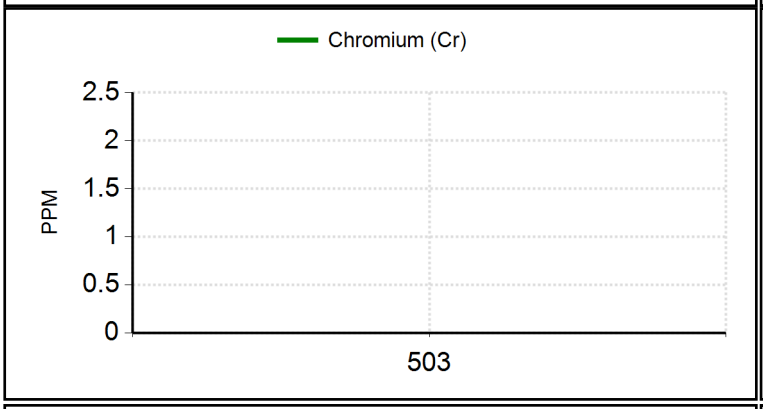
All wear levels appear within acceptable limits for first sample. Silicon level (dirt/sealant material) satisfactory. Water content acceptable. Viscosity within specified operating range. Action: Resample at next recommended interval to monitor and establish wear trend. NOTE: Advise check sampling procedure as sample contained visible dirt/debris.

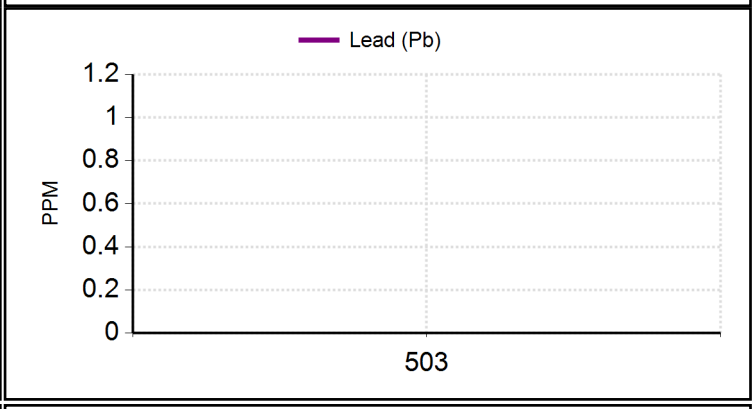
## PREVIOUS DIAGNOSIS

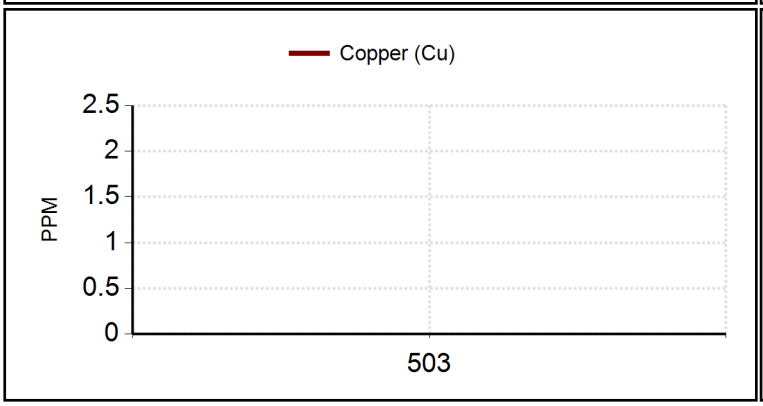
*"This analysis report is dependent upon the accurate completion of the sample submission sheet and correct sampling techniques as advised. The analysis is intended as an aid only in predicting mechanical wear and should not be regarded as a substitute for proper servicing or mechanical inspection. The company does not accept any liability whatsoever in respect of any loss or damage (including loss of profits, economic or other consequential loss or damage) however caused which may arise directly, or indirectly, as a result of the matters referred to in this analysis report."*




Filter Image

Filter patch test is not performed Contact laboratory for more information

## WORKSHOP JOB CARD NO

1491

**TO BE HANDED IN WITH TIME SHEET**

## SCHEDULED MAINTENANCE

| | | | | | |
|---|---|---|---|---|---|
| Date | 15-8-22 | Service Type | | Unit/Rego Number | GR504 |
| Odometer/Hr Meter | 4,489 hrs | Labour Hours | | Mechanic | Sam |

| Comments/Notes: | Position | Tread Depth |
|---|---|---|
| carry out 500hr service | | |
| change eng oil + filter | | |
| change fuel filters | | |
| fill up grease pot | | |
| Re seal LH steering ram | | |
| | | |
| | | |

**Further Repairs/Service Items to Be Completed (See Below)**

## REPAIR/SERVICE REQUEST

| | |
|---|---|
| Requested By | |

| Details: |
|---|
| |
| |
| |
| |
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| |

| | | | | | |
|---|---|---|---|---|---|
| Completed By | | Labour Hrs | | Date | |

| Notes: |
|---|
| |
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| |
| |

## WORKSHOP JOB CARD NO

0789

**TO BE HANDED IN WITH TIME SHEET**

## SCHEDULED MAINTENANCE

| | | | | | |
|---|---|---|---|---|---|
| Date | 16-1-20 | Service Type | repair | Unit/Rego Number | GR8005 |
| Odometer/Hr Meter | 885 | Labour Hours | | Mechanic | Jake/Sam/Brad |

| Comments/Notes: | Position | Tread Depth |
|---|---|---|
| adjust blade & circle. | | |
| fit GPS | | |
| repair grease lines. | | |
| new tyres fitted (Hamph) 11-1-20 | | |
| | | |
| | | |
| | | |

**Further Repairs/Service Items to Be Completed (See Below)**

## REPAIR/SERVICE REQUEST

| | |
|---|---|
| Requested By | |

| Details: |
|---|
| |
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| | | | | | |
|---|---|---|---|---|---|
| Completed By | | Labour Hrs | | Date | |

| Notes: |
|---|
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| |
| |

## WORKSHOP JOB CARD NO

1066

**TO BE HANDED IN WITH TIME SHEET**

## SCHEDULED MAINTENANCE

| | | | | | |
|---|---|---|---|---|---|
| Date | 17-9-20 | Service Type | 500hr | Unit/Rego Number | GR 504 |
| Odometer/Hr Meter | 1549 | Labour Hours | | Mechanic | Jake |

| Comments/Notes: | Position | Tread Depth |
|---|---|---|
| change eng oil & filter. | | |
| change fuel filters. | | |
| change Air filters. | | |
| clean cab filters. | | |
| check tandem & circle oils. | | |
| | | |
| | | |
| | | |

**Further Repairs/Service Items to Be Completed (See Below)**

## REPAIR/SERVICE REQUEST

| | |
|---|---|
| Requested By | |

| Details: |
|---|
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| | | | | | |
|---|---|---|---|---|---|
| Completed By | | Labour Hrs | | Date | |

| Notes: |
|---|
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HITACHI

Hitachi Construction Machinery (Australia) Pty Ltd

PROBE

| | | | |
|---|---|---|---|
| **Unit/Vehicle No.:** | GR04 | **Comp Name:** | Automatic Transmission |
| **Unit Make:** | John Deere | **Comp Make:** | |
| **Unit Model:** | 670GP | **Comp Model:** | |
| **Unit Serial No.:** | 1DW670GPHJD691114 | **Comp Serial No.:** | |
| **Unit/Vehicle Site:** | Yamba | **System Capacity:** | |

**Normal**

LEGEND
- Severe
- Abnormal
- Caution
- Normal

| | | Current Sample | Last Sample | Previous Sample | Previous Sample | Guidelines | | LEGEND (gl) Guidelines (fr) Fluid Reference (*) No reference |
|---|---|---|---|---|---|---|---|---|
| **SAMPLE STATUS** | | | | | | | | |
| LAB CHECK NO. | | 25185285 | | | | | | |
| TRACKING NUMBER | | | | | | | | |
| ANALYSIS NO. | | 10003372669 | | | | | | |
| SAMPLED DATE | | 10-Jun-19 | | | | | | |
| RECEIVED DATE | | 18-Jun-19 | | | | | | |
| REPORTED DATE | | 18-Jun-19 | | | | | | |
| MACHINE | Hrs | 503 | | | | | | |
| OIL | Hrs | | | | | | | |
| OIL MAKE | | Hy-Gard | | | | | | |
| OIL GRADE | | SAE 10W30 | | | | | | |
| OIL ADDED | | | | | | | | |
| OIL CHANGED | | No | | | | | | |
| FILTER | Hrs | Not Applicable | | | | | | |
| FILTER CHANGED | | | | | | | | |
| **Metals (ppm)** | | | | | | | | |
| Aluminium (Al) | | 3 | | | | 0 - 19 | (gl) | |
| Copper (Cu) | | 13 | | | | 0 - 120 | (gl) | |
| Chromium (Cr) | | <1 | | | | 0 - 9 | (gl) | |
| Iron (Fe) | | 34 | | | | 0 - 100 | (gl) | |
| Lead (Pb) | | <1 | | | | 0 - 15 | (gl) | |
| Tin (Sn) | | <1 | | | | 0 - 6 | (gl) | |
| Nickel (Ni) | | 1 | | | | 0 - 9 | (gl) | |
| **Contaminants and Additives (ppm)** | | | | | | | | |
| Silicon (Si) | | 5 | | | | 0 - 30 | (gl) | |
| Boron (B) | | <5 | | | | <5 | (fr) | |
| Sodium (Na) | | 10 | | | | 0 - 29 | (gl) | |
| Potassium (K) | | 2 | | | | 3 | (fr) | |
| Phosphorus (P) | | 989 | | | | 997 | (fr) | |
| Molybdenum (Mo) | | 1 | | | | <1 | (fr) | |
| Magnesium (Mg) | | 81 | | | | 102 | (fr) | |
| Calcium (Ca) | | 3222 | | | | 3467 | (fr) | |
| Zinc (Zn) | | 1166 | | | | 1111 | (fr) | |
| **Physical Tests** | | | | | | | | |
| Water (%) (FTIR) | | <0.1 | | | | 0 - 0.10 | (gl) | |
| Viscosity (cSt,40°C) | | 44 | | | | 60 | (fr) | |
| PQ Index | | <10 | | | | 0 - 49 | (gl) | |
| Oxidation (Abs) (FTIR) | | 13.4 | | | | 8.8 | (fr) | |

## DIAGNOSIS

*Please contact your local Hitachi outlet for further explanation on non-normal samples*

All wear levels appear within acceptable limits for first sample. Silicon level (dirt/sealant material) satisfactory. Water content acceptable. Viscosity within specified operating range. Action: Resample at next recommended interval to monitor and establish wear trend.

## PREVIOUS DIAGNOSIS

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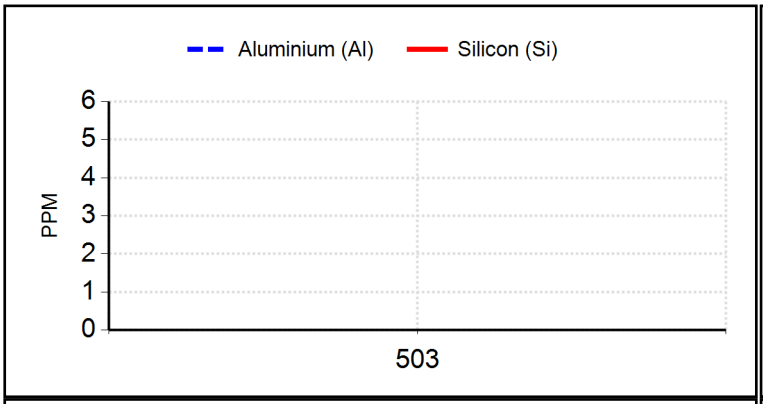


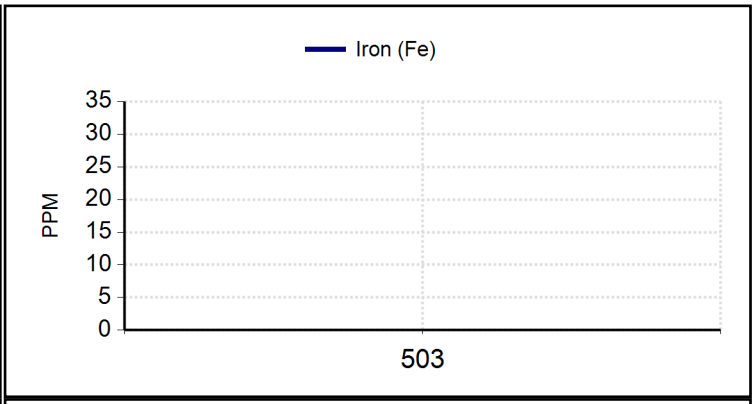


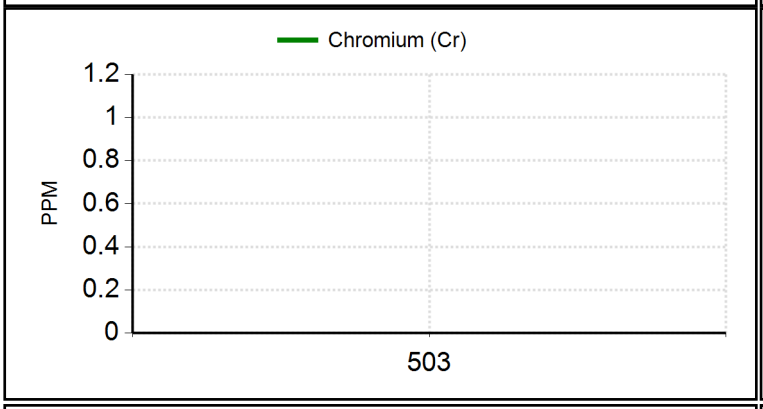


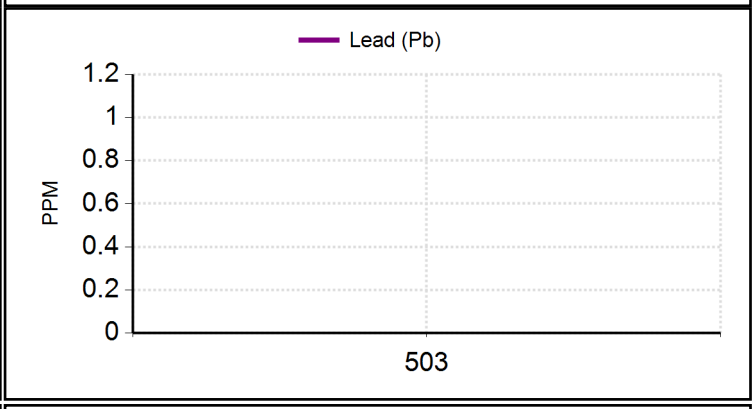


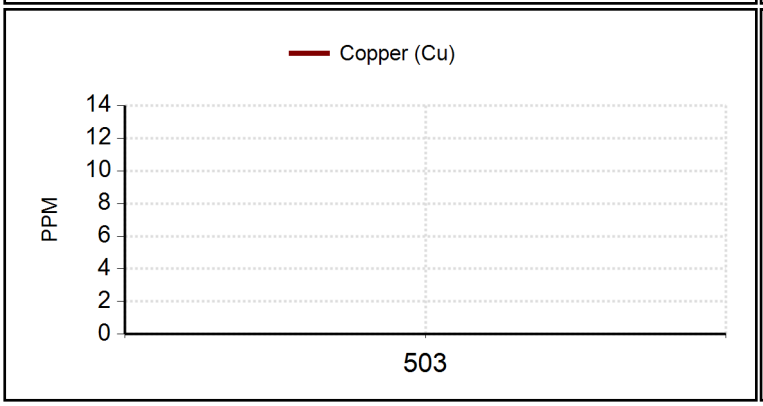


Filter Image

Filter patch test is not performed Contact laboratory for more information

HITACHI

Hitachi Construction Machinery (Australia) Pty Ltd

PROBE

| | | | |
|---|---|---|---|
| **Unit/Vehicle No.:** | GR04 | **Comp Name:** | Engine Single/Front |
| **Unit Make:** | John Deere | **Comp Make:** | |
| **Unit Model:** | 670GP | **Comp Model:** | |
| **Unit Serial No.:** | 1DW670GPHJD691114 | **Comp Serial No.:** | |
| **Unit/Vehicle Site:** | Yamba | **System Capacity:** | Ltrs |

**Abnormal**

LEGEND
- Severe
- Abnormal
- Caution
- Normal

| | | Current Sample | Last Sample | Previous Sample | Previous Sample | Guidelines | | LEGEND (gl) Guidelines (fr) Fluid Reference (*) No reference |
|---|---|---|---|---|---|---|---|---|
| **SAMPLE STATUS** | | | | | | | | |
| LAB CHECK NO. | | 24383026 | | | | | | |
| TRACKING NUMBER | | | | | | | | |
| ANALYSIS NO. | | 10003372704 | | | | | | |
| SAMPLED DATE | | 10-Jun-19 | | | | | | |
| RECEIVED DATE | | 18-Jun-19 | | | | | | |
| REPORTED DATE | | 18-Jun-19 | | | | | | |
| MACHINE | Hrs | 503 | | | | | | |
| OIL | Hrs | 250 | | | | | | |
| OIL MAKE | | Plus-50 II | | | | | | |
| OIL GRADE | | SAE 15W40 | | | | | | |
| OIL ADDED | Ltrs | | | | | | | |
| OIL CHANGED | | Yes | | | | | | |
| FILTER | Hrs | 250 | | | | | | |
| FILTER CHANGED | | Yes | | | | | | |
| **Metals (ppm)** | | | | | | | | |
| Aluminium (Al) | | 3 | | | | 0 - 30 | (gl) | |
| Nickel (Ni) | | 1 | | | | 0 - 4 | (gl) | |
| Copper (Cu) | | 8 | | | | 0 - 25 | (gl) | |
| Chromium (Cr) | | 1 | | | | 0 - 10 | (gl) | |
| Iron (Fe) | | 12 | | | | 0 - 50 | (gl) | |
| Lead (Pb) | | <1 | | | | 0 - 25 | (gl) | |
| Tin (Sn) | | <1 | | | | 0 - 3 | (gl) | |
| **Contaminants and Additives (ppm)** | | | | | | | | |
| Silicon (Si) | | 6 | | | | 0 - 21 | (gl) | |
| Boron (B) | | 85 | | | | 320 | (fr) | |
| Sodium (Na) | | 4 | | | | 0 - 30 | (gl) | |
| Potassium (K) | | <1 | | | | 0 - 30 | (gl) | |
| Phosphorus (P) | | 856 | | | | 877 | (fr) | |
| Molybdenum (Mo) | | 262 | | | | 244 | (fr) | |
| Calcium (Ca) | | 1369 | | | | 1283 | (fr) | |
| Magnesium (Mg) | | 734 | | | | 770 | (fr) | |
| Zinc (Zn) | | 974 | | | | 978 | (fr) | |
| **Physical Tests** | | | | | | | | |
| Water (%) (FTIR) | | <0.1 | | | | 0 - 0.20 | (gl) | |
| Soot (%) (FTIR) | | 0.5 | | | | 0 - 2.90 | (gl) | |
| Viscosity (cSt,100°C) | | 13.9 | | | | 15.6 | (fr) | |
| PQ Index | | 17 | | | | 0 - 10 | (gl) | |
| Oxidation (Abs) (FTIR) | | 17.2 | | | | 0 - 25 | (gl) | |
| Sulphation (Abs) (FTIR) | | 23.1 | | | | 0 - 30 | (gl) | |
| Fuel (% by G.C.) | | <0.1 | | | | 0 - 2 | (gl) | |
| Total Base Number (FTIR) | | 9.3 | | | | 3 - 15 | (gl) | |

## DIAGNOSIS

*Please contact your local Hitachi outlet for further explanation on non-normal samples*

Wear levels lower than 8 micron appear satisfactory. However, PQ Index number (ferrous material) abnormally high. Silicon level (dirt/sealant material) satisfactory. Water content acceptable. Fuel dilution satisfactory. Viscosity within specified operating range. Action: As oil already changed and if visible metal/debris was acceptable, Check for excessive engine knock at stall speed. Resample at a reduced service interval to monitor and establish wear trend.

## PREVIOUS DIAGNOSIS

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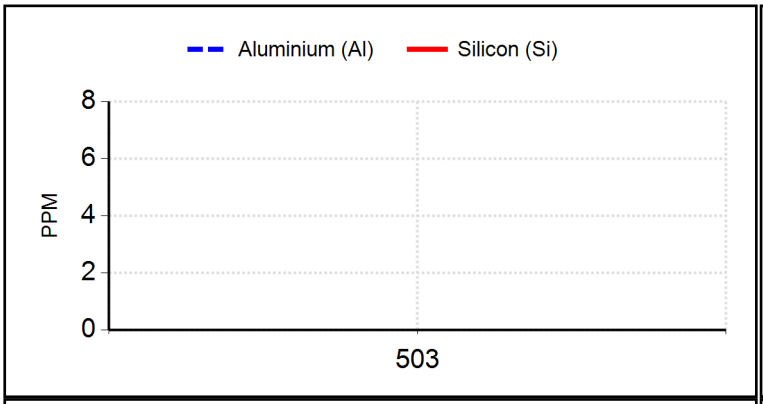


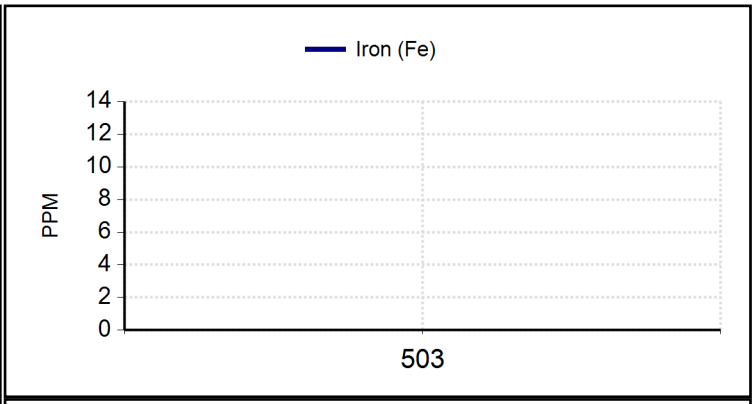


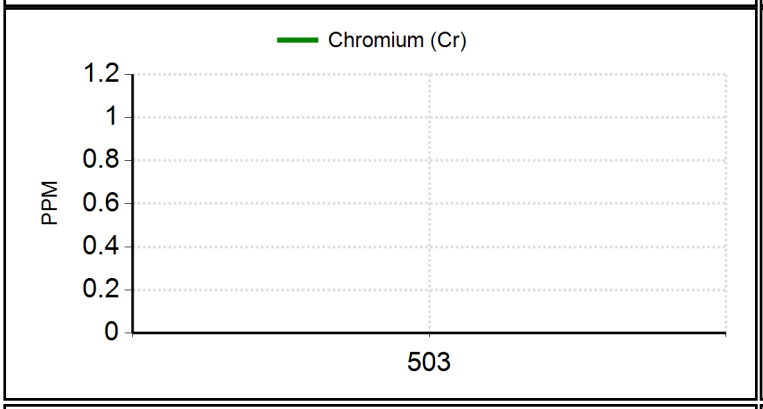


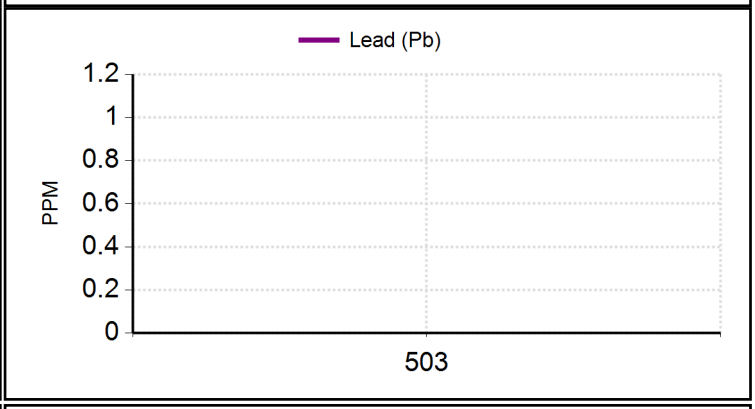


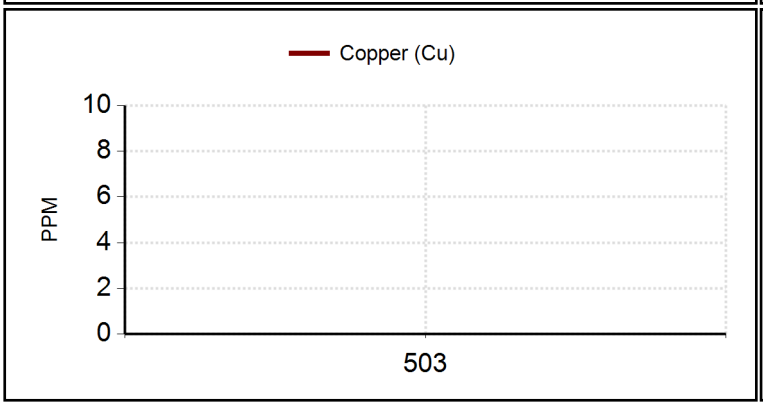


Filter Image

Filter patch test is not performed Contact laboratory for more information

HITACHI

Hitachi Construction Machinery (Australia) Pty Ltd

PROBE

| | | | |
|---|---|---|---|
| **Unit/Vehicle No.:** | GR04 | **Comp Name:** | Rear Differential |
| **Unit Make:** | John Deere | **Comp Make:** | |
| **Unit Model:** | 670GP | **Comp Model:** | |
| **Unit Serial No.:** | 1DW670GPHJD691114 | **Comp Serial No.:** | |
| **Unit/Vehicle Site:** | Yamba | **System Capacity:** | |

**Abnormal**

LEGEND
- Severe
- Abnormal
- Caution
- Normal

| | | Current Sample | Last Sample | Previous Sample | Previous Sample | Guidelines | | LEGEND |
|---|---|---|---|---|---|---|---|---|
| **SAMPLE STATUS** | | | | | | | | **(gl) Guidelines**<br>**(fr) Fluid Reference**<br>**(*) No reference** |
| LAB CHECK NO. | | 25169930 | | | | | | |
| TRACKING NUMBER | | | | | | | | |
| ANALYSIS NO. | | 10003372670 | | | | | | |
| SAMPLED DATE | | 16-Jun-19 | | | | | | |
| RECEIVED DATE | | 18-Jun-19 | | | | | | |
| REPORTED DATE | | 18-Jun-19 | | | | | | |
| MACHINE | Hrs | 503 | | | | | | |
| OIL | Hrs | | | | | | | |
| OIL MAKE | | Hy-Gard | | | | | | |
| OIL GRADE | | SAE 10W30 | | | | | | |
| OIL ADDED | | | | | | | | |
| OIL CHANGED | | No | | | | | | |
| FILTER | Hrs | Not Applicable | | | | | | |
| FILTER CHANGED | | | | | | | | |
| **Metals (ppm)** | | | | | | | | |
| Aluminium (Al) | | 3 | | | | 0 - 20 | (gl) | |
| Copper (Cu) | | 11 | | | | 0 - 49 | (gl) | |
| Chromium (Cr) | | 1 | | | | 0 - 14 | (gl) | |
| Iron (Fe) | | 802 | | | | 0 - 749 | (gl) | |
| Lead (Pb) | | 1 | | | | 0 - 14 | (gl) | |
| Tin (Sn) | | 1 | | | | 0 - 20 | (gl) | |
| Nickel (Ni) | | 1 | | | | 0 - 5 | (gl) | |
| **Contaminants and Additives (ppm)** | | | | | | | | |
| Silicon (Si) | | 5 | | | | 0 - 30 | (gl) | |
| Boron (B) | | <5 | | | | <5 | (fr) | |
| Sodium (Na) | | 5 | | | | 0 - 50 | (gl) | |
| Potassium (K) | | 1 | | | | 0 - 14 | (gl) | |
| Phosphorus (P) | | 979 | | | | 997 | (fr) | |
| Molybdenum (Mo) | | 2 | | | | <1 | (fr) | |
| Magnesium (Mg) | | 89 | | | | 102 | (fr) | |
| Calcium (Ca) | | 3293 | | | | 3467 | (fr) | |
| Zinc (Zn) | | 1155 | | | | 1111 | (fr) | |
| **Physical Tests** | | | | | | | | |
| Water (%) (FTIR) | | <0.1 | | | | 0 - 0.10 | (gl) | |
| Viscosity (cSt,40°C) | | 54 | | | | 60 | (fr) | |
| PQ Index | | 377 | | | | 0 - 499 | (gl) | |
| Oxidation (Abs) (FTIR) | | 13.7 | | | | 8.8 | (fr) | |

## DIAGNOSIS

*Please contact your local Hitachi outlet for further explanation on non-normal samples*

Iron level abnormal. All other wear levels within limits. Silicon level (dirt/sealant material) satisfactory. Water content acceptable. Viscosity within specified operating range. Action: Drain oil from unit if not already done and evaluate wear metal debris. Check for any abnormal vibration or noise of this unit. Resample at a reduced service interval to further monitor.

## PREVIOUS DIAGNOSIS

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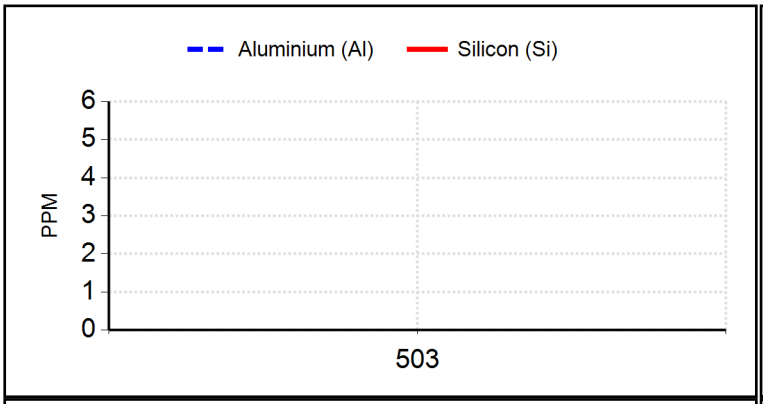
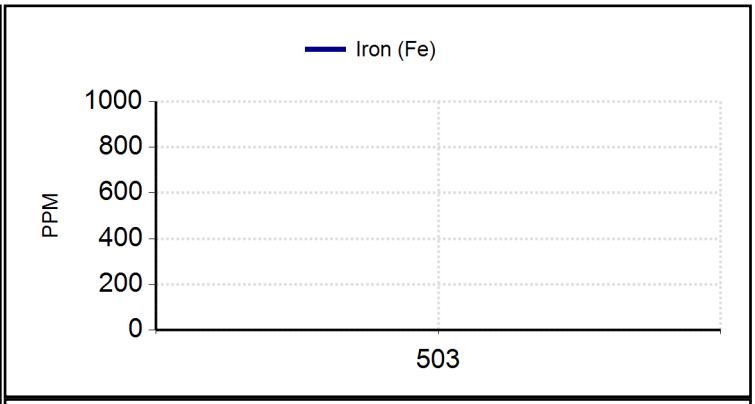
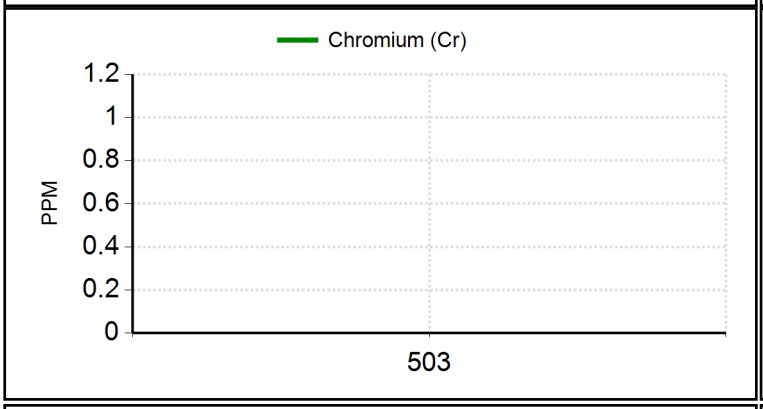
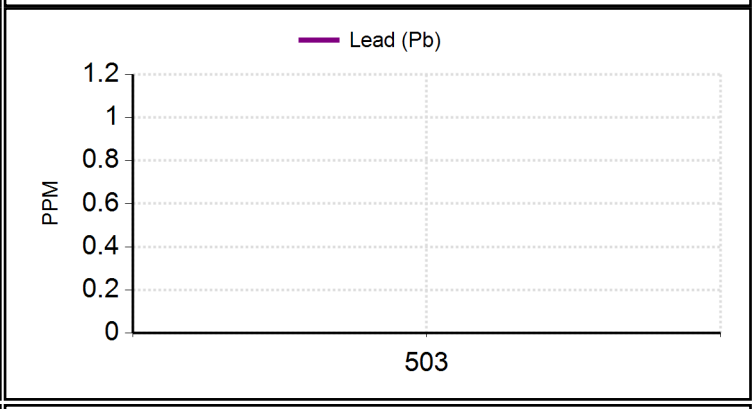
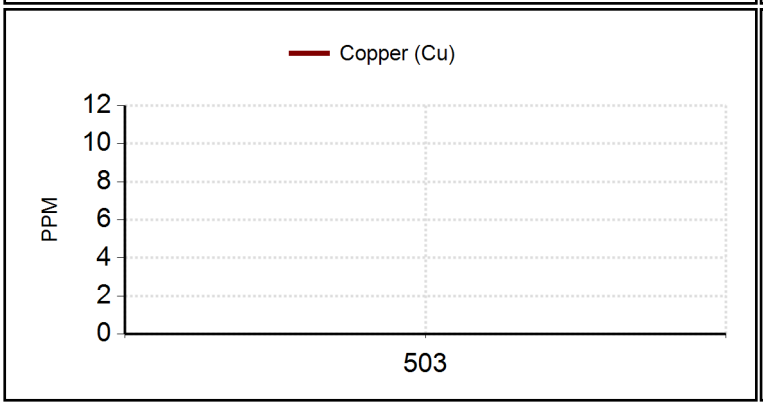



Filter Image

Filter patch test is not performed Contact laboratory for more information

0259 v1.5

# Certificate of Analysis

## UIN 0701C61

### Hydraulic System

**Unit No.** GR504

**Unit:**

| | |
|---|---|
| **Make** | John Deere |
| **Model** | 670GP |
| **Serial No.** | 1DW670GPHJD691114 |
| **Capacity** | 53.0 Ltrs |
| **Site** | Yamba |

**Compartment:**

| | |
|---|---|
| **Name** | Hydraulic System |
| **Make** | |
| **Model** | |
| **Serial No.** | |

**Customer:**

## DIAGNOSIS

Chromium wear rate elevated. All other wear levels lower than 8 micron appear satisfactory. Oil cleanliness rating exceeds considered recommended limit. Other contaminant levels acceptable. Viscosity within specified operating range. Action: As filters already changed and if filter debris was acceptable, advise check sampling procedure for possible source of contamination. Resample at a reduced service interval to further monitor.

NATA Accreditation No.825. Site No. 2024. *NATA accreditation covers the performance of this service.

| | | | |
|---|---|---|---|
| **DATE SAMPLED** | 18-Dec-20 | 16-Feb-20 | 10-Jun-19 |
| **DATE RECEIVED** | 22-Feb-21 | 30-Apr-20 | 18-Jun-19 |
| **DATE REPORTED** | 22-Feb-21 | 30-Apr-20 | 19-Jun-19 |
| **TRIBOLOGY LABORATORY** | Sydney | Brisbane | Brisbane |
| SAMPLE NO. | 10204890199 | 10003508831 | 10003372660 |
| TRACKING NUMBER | 41612927 | 29661101 | 25186651 |
| WORK ORDER NO. | | | |
| MACHINE Hrs | 2018 | 950 | 503 |
| COMPONENT Hrs | 2018 | 950 | 503 |
| OIL Hrs | 2018 | 950 | |
| OIL MAKE | John Deere | John Deere | John Deere |
| OIL TYPE | Hy-Gard JDM J20C | Hy-Gard JDM J20C | Hy-Gard JDM |
| OIL GRADE | ISO 68 | ISO 68 | ISO 68 |
| OIL ADDED Ltrs | | 2.0 | |
| FILTER Hrs | 500 | 950 | |
| FILTER CHANGED | Changed | Changed | |
| OIL CHANGED | Not Changed | Not Changed | Not Changed |
| **Metals (ppm)** | | | |
| *Aluminium (Al) | 5 | <1 | 1 |
| *Copper (Cu) | 3 | 2 | 2 |
| *Chromium (Cr) | 4 | 2 | 2 |
| *Iron (Fe) | 8 | 6 | 3 |
| *Lead (Pb) | 1 | <1 | <1 |
| *Tin (Sn) | 2 | <1 | <1 |
| *Nickel (Ni) | <1 | <1 | 1 |
| **Contaminants and Additives (ppm)** | | | |
| *Silicon (Si) | 7 | 3 | 3 |
| Boron (B) | <5 | <5 | 7 |
| *Sodium (Na) | <1 | 1 | <1 |
| *Potassium (K) | 2 | 2 | 2 |
| *Phosphorus (P) | 510 | 547 | 546 |
| *Molybdenum (Mo) | <1 | <1 | 1 |
| *Magnesium (Mg) | 2 | 1 | 1 |
| *Calcium (Ca) | 82 | 100 | 75 |
| *Zinc (Zn) | 714 | 707 | 734 |
| **Physical Tests** | | | |
| Water (%) (FTIR) | <0.1 | <0.1 | <0.1 |
| Oxidation (Abs) (FTIR) | 31.1 | 32.9 | 34.5 |
| Viscosity (cSt.40°C) | 56 | 60 | 60 |
| PQ Index | <10 | <10 | <10 |
| **Particle Count** | | | |
| *ISO 4406 Code | 22/21/18 | 19/15/11 | – |
| *ISO Clean 4 Micron (c) | 22 | 19 | – |
| *ISO Clean 6 Micron (c) | 21 | 15 | – |
| *ISO Clean 14 Micron (c) | 18 | 11 | – |

Analysis undertaken on the sample as received.
Testing performed between Date Received and Date Reported unless otherwise specified.

Caution

LEGEND

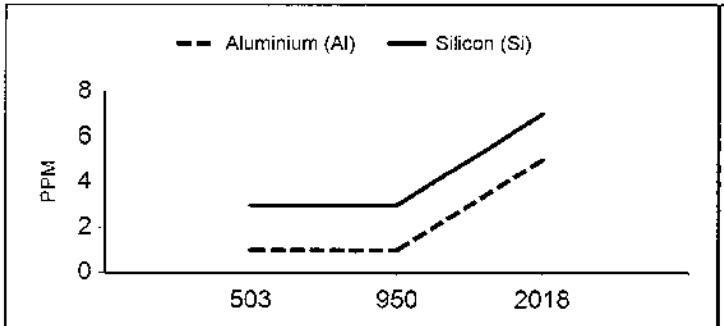
STOP Abnormal Caution Normal

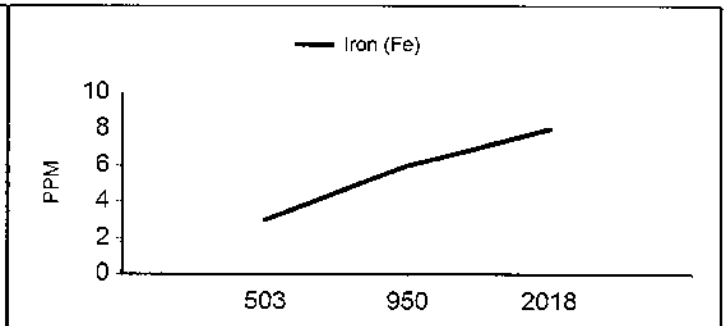
Right Solutions •

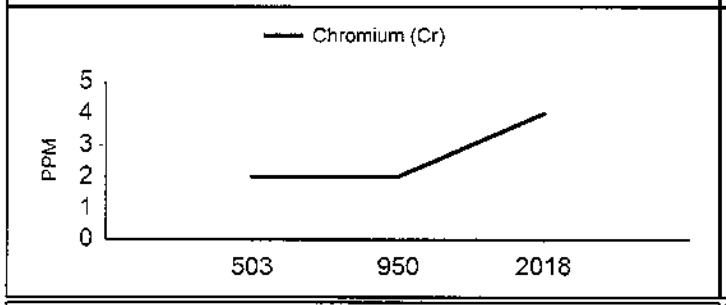
**Authorized Signatory - Diagnostician:** lawrence.ho

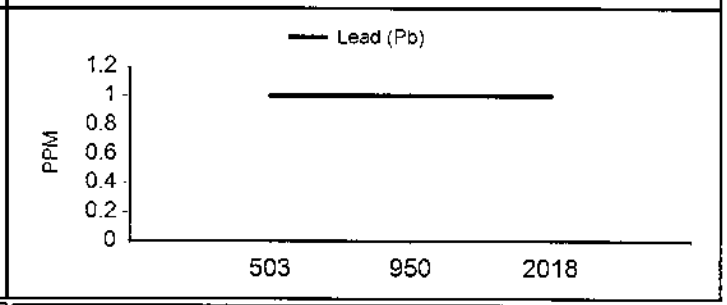
## UIN 0701C61

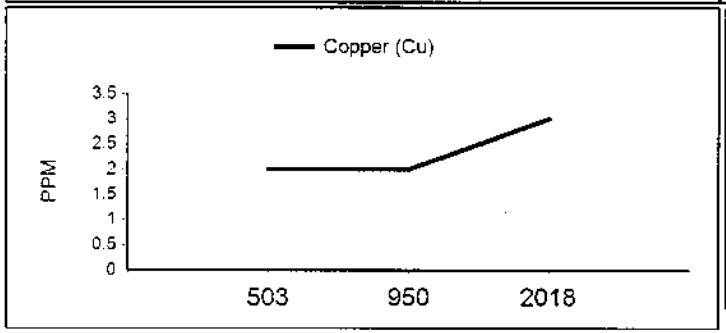
10204890199




Filter Image

Filter patch test is not performed Contact laboratory for more information

0269 v1.10

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**Europe**
Prague

**South America**
Santiago de Chile


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# Certificate of Analysis

## UIN 0701C5D

### Differential

**Unit No.** GR504

**Unit:**

| | |
|---|---|
| **Make** | John Deere |
| **Model** | 670GP |
| **Serial No.** | 1DW670GPHJD691114 |
| **Capacity** | 36.0 Ltrs |
| **Site** | Yamba |

**Compartment:**

| | |
|---|---|
| **Name** | Differential |
| **Make** | |
| **Model** | |
| **Serial No.** | |

## DIAGNOSIS

Copper level elevated. All other wear rates normal. Abrasive and other contaminant levels are acceptable. Please check recorded viscosity against requirements. Action: As oil and filters already changed and if filter debris was acceptable, resample at a reduced service interval to further monitor.

NATA Accreditation No.825. Site No. 2024. *NATA accreditation covers the performance of this service.

| | | | |
|---|---|---|---|
| **DATE SAMPLED** | 18-Dec-20 | 16-Feb-20 | 16-Jun-19 |
| **DATE RECEIVED** | 22-Feb-21 | 30-Apr-20 | 18-Jun-19 |
| **DATE REPORTED** | 23-Feb-21 | 30-Apr-20 | 18-Jun-19 |
| **TRIBOLOGY LABORATORY** | Sydney | Brisbane | Brisbane |

| | | | | |
|---|---|---|---|---|
| SAMPLE NO. | | 10204890439 | 10003508840 | 10003372670 |
| TRACKING NUMBER | | 41612911 | 29661107 | 25169930 |
| WORK ORDER NO. | | | | |
| MACHINE | Hrs | 2018 | 950 | 503 |
| COMPONENT | Hrs | 2018 | 950 | 503 |
| OIL | Hrs | 1000 | 300 | |
| OIL MAKE | | Valvoline | John Deere | John Deere |
| OIL TYPE | | Valvoline | Hy-Gard | Hy-Gard |
| OIL GRADE | | Unknown | SAE 10W30 | SAE 10W30 |
| OIL ADDED | Ltrs | | | |
| FILTER | Hrs | 500 | | |
| FILTER CHANGED | | Changed | | |
| OIL CHANGED | | Changed | Not Changed | Not Changed |
| **Metals (ppm)** | | | | |
| *Aluminium (Al) | | 1 | <1 | 3 |
| *Copper (Cu) | | 126 | 20 | 11 |
| *Chromium (Cr) | | 1 | 1 | 1 |
| *Iron (Fe) | | 383 | 301 | 802 |
| *Lead (Pb) | | 12 | 1 | 1 |
| *Tin (Sn) | | 3 | 2 | 1 |
| *Nickel (Ni) | | 1 | <1 | 1 |
| **Contaminants and Additives (ppm)** | | | | |
| *Silicon (Si) | | 5 | 5 | 5 |
| Boron (B) | | 71 | 52 | <5 |
| *Sodium (Na) | | 1 | 2 | 5 |
| *Potassium (K) | | 1 | <1 | 1 |
| *Phosphorus (P) | | 1002 | 1057 | 979 |
| *Molybdenum (Mo) | | 3 | <1 | 2 |
| *Magnesium (Mg) | | 22 | 22 | 89 |
| *Calcium (Ca) | | 2711 | 2951 | 3293 |
| *Zinc (Zn) | | 1037 | 1069 | 1155 |
| **Physical Tests** | | | | |
| Water (%) (FTIR) | | <0.1 | <0.1 | <0.1 |
| Viscosity (cSt,40°C) | | 55 | 64 | 54 |
| PQ Index | | 93 | 96 | 377 |
| Oxidation (Abs) (FTIR) | | 5.7 | 5.7 | 13.7 |

Analysis undertaken on the sample as received.
Testing performed between Date Received and Date Reported unless otherwise specified.

Caution

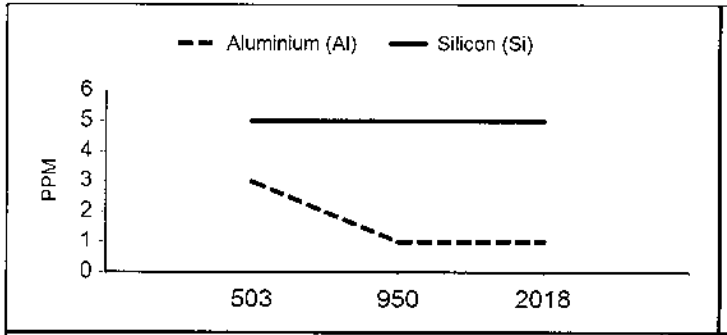
LEGEND: Stop, Abnormal, Caution, Normal

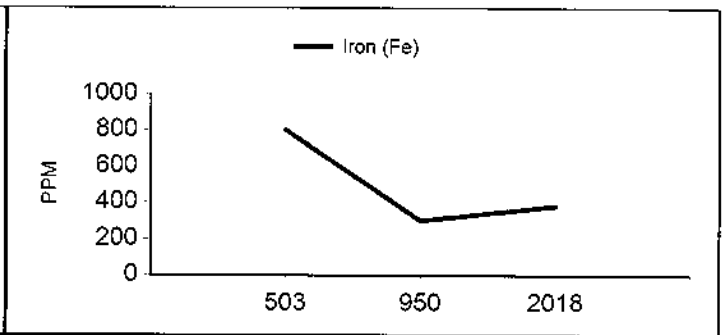
Right Solutions •

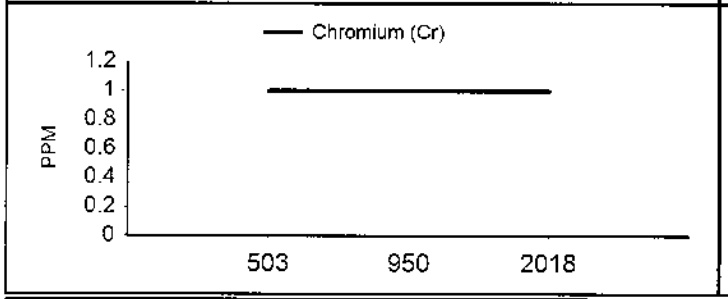
Authorized Signatory - Diagnostician: lawrence.ho

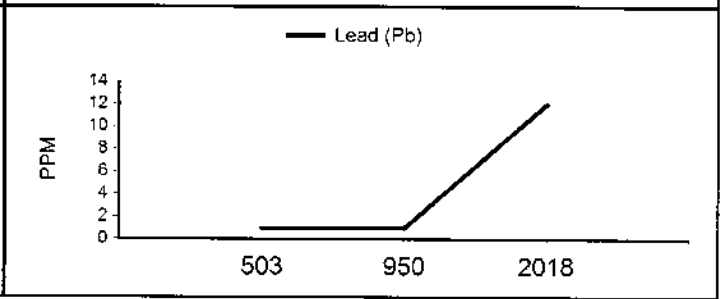
## UIN 0701C5D

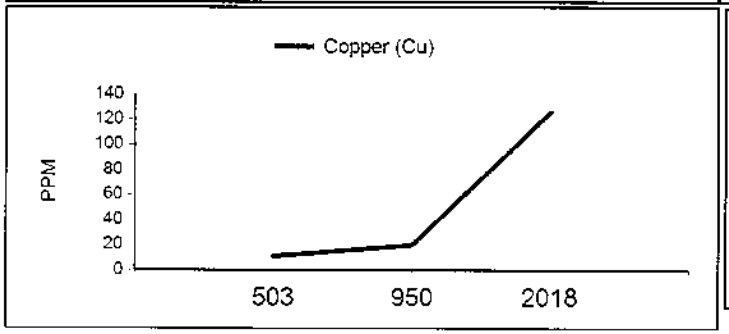
10204890439




Filter Image

Filter patch test is not performed Contact laboratory for more information

0268 V1.10

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Sparks, Nevada

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Edmonton, Alberta

**Europe**
Prague

**Southeast Asia**
Kuala Lumpur, Singapore

**South America**
Santiago de Chile


All test methods are determined by laboratory location, and customer requirements. Methods can be made available on request by contacting the testing laboratory.

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# Certificate of Analysis

## UIN 0701C60

### Final Drive

**Unit No.** GR504

**Unit:**

| | |
|---|---|
| **Make** | John Deere |
| **Model** | 670GP |
| **Serial No.** | 1DW670GPHJD691114 |
| **Capacity** | 78.0 Ltrs |
| **Site** | Yamba |

**Compartment:**

| | |
|---|---|
| **Name** | Tandem Left |
| **Make** | |
| **Model** | |
| **Serial No.** | |

## DIAGNOSIS

All wear rates normal. Heavy concentration of water present. Other contaminant levels acceptable. Viscosity within specified operating range. Action: Check all water access points (breathers/seals). As oil already changed, resample at a reduced service interval to further monitor. NATA Accreditation No.825. Site No. 2024. *NATA accreditation covers the performance of this service.

| | | | |
|---|---|---|---|
| **DATE SAMPLED** | | 15-Dec-20 | 16-Feb-20 |
| **DATE RECEIVED** | | 22-Feb-21 | 30-Apr-20 |
| **DATE REPORTED** | | 24-Feb-21 | 01-May-20 |
| **TRIBOLOGY LABORATORY** | | Sydney | Brisbane |
| SAMPLE NO. | | 10204890437 | 10003508847 |
| TRACKING NUMBER | | 41612906 | 29661085 |
| WORK ORDER NO. | | | |
| MACHINE | Hrs | 2018 | 950 |
| COMPONENT | Hrs | 2018 | 950 |
| OIL | Hrs | 2018 | 950 |
| OIL MAKE | | John Deere | John Deere |
| OIL TYPE | | Hy-Gard | Hy-Gard JDM J20C |
| OIL GRADE | | SAE 10W30 | SAE 10W30 |
| OIL ADDED | Ltrs | | |
| FILTER | Hrs | Not Applicable | |
| FILTER CHANGED | | | |
| OIL CHANGED | | Changed | Not Changed |
| **Metals (ppm)** | | | |
| *Aluminium (Al) | | 3 | <1 |
| *Copper (Cu) | | 9 | 6 |
| *Chromium (Cr) | | 1 | <1 |
| *Iron (Fe) | | 167 | 93 |
| *Lead (Pb) | | 1 | <1 |
| *Tin (Sn) | | 1 | 1 |
| *Nickel (Ni) | | <1 | 1 |
| **Contaminants and Additives (ppm)** | | | |
| *Silicon (Si) | | 10 | 7 |
| Boron (B) | | <5 | <5 |
| *Sodium (Na) | | 3 | 4 |
| *Potassium (K) | | 1 | 1 |
| *Phosphorus (P) | | 937 | 985 |
| *Molybdenum (Mo) | | 46 | 26 |
| *Magnesium (Mg) | | 95 | 96 |
| *Calcium (Ca) | | 3112 | 3305 |
| *Zinc (Zn) | | 1122 | 1125 |
| **Physical Tests** | | | |
| Water (%) (FTIR) | | 0.5 | 1.0 |
| Viscosity (cSt,40°C) | | 67 | 62 |
| PQ Index | | 148 | 194 |
| Oxidation (Abs) (FTIR) | | 11.5 | 12.1 |

Analysis undertaken on the sample as received.
Testing performed between Date Received and Date Reported unless otherwise specified.

Abnormal

LEGEND

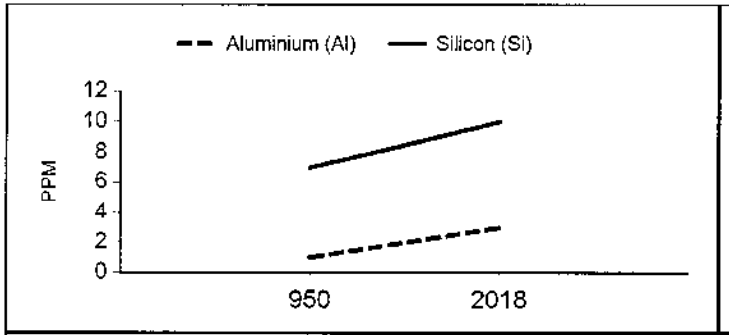
STOP Abnormal Caution Normal

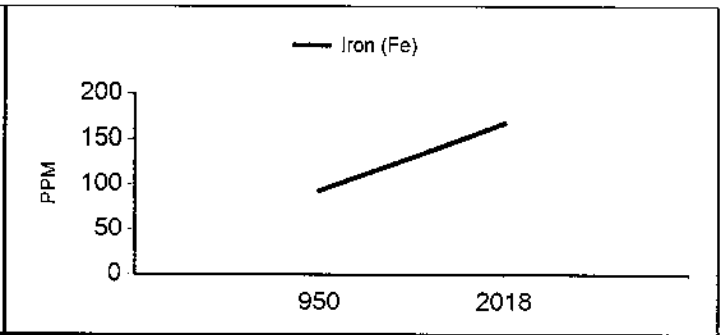
Right Solutions •

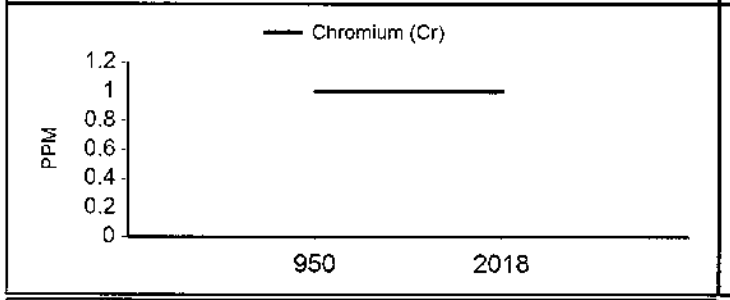
**Authorized Signatory - Diagnostician:** Antonio.Colangelo

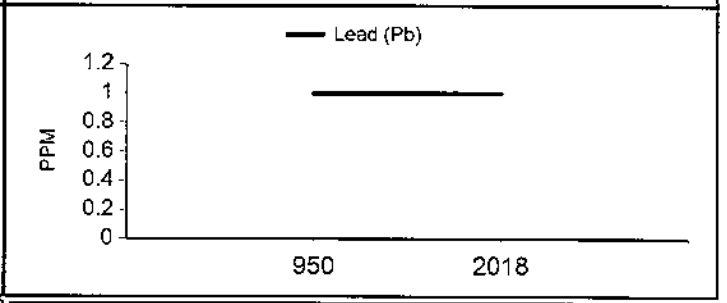
## UIN 0701C60

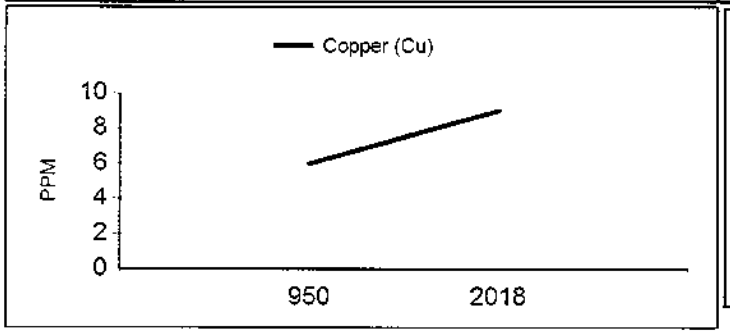
10204890437




Filter Image

Filter patch test is not performed Contact laboratory for more information

0269 v1.10

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# Certificate of Analysis

**UIN 0701C60**

**Final Drive**

**Unit No.** GR504

**Unit:**

**Make** John Deere
**Model** 670GP
**Serial No.** 1DW670GPHJD691114
**Capacity** 78.0 Ltrs
**Site** Yamba

**Compartment:**

**Name** Tandem Left
**Make**
**Model**
**Serial No.**

Customer:

## DIAGNOSIS

All wear rates normal. Heavy concentration of water present. Other contaminant levels acceptable. Viscosity within specified operating range. Action: Check all water access points (breathers/seals). As oil already changed, resample at a reduced service interval to further monitor. NATA Accreditation No.825. Site No. 2024. *NATA accreditation covers the performance of this service.

| | | | |
|---|---|---|---|
| **DATE SAMPLED** | | 15-Dec-20 | 16-Feb-20 |
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| **DATE REPORTED** | | 24-Feb-21 | 01-May-20 |
| **TRIBOLOGY LABORATORY** | | Sydney | Brisbane |
| SAMPLE NO. | | 10204890437 | 10003508847 |
| TRACKING NUMBER | | 41612906 | 29661085 |
| WORK ORDER NO. | | | |
| MACHINE | Hrs | 2018 | 950 |
| COMPONENT | Hrs | 2018 | 950 |
| OIL | Hrs | 2018 | 950 |
| OIL MAKE | | John Deere | John Deere |
| OIL TYPE | | Hy-Gard | Hy-Gard JDM J20C |
| OIL GRADE | | SAE 10W30 | SAE 10W30 |
| OIL ADDED | Ltrs | | |
| FILTER | Hrs | Not Applicable | |
| FILTER CHANGED | | | |
| OIL CHANGED | | Changed | Not Changed |
| **Metals (ppm)** | | | |
| *Aluminium (Al) | | 3 | <1 |
| *Copper (Cu) | | 9 | 6 |
| *Chromium (Cr) | | 1 | <1 |
| *Iron (Fe) | | 167 | 93 |
| *Lead (Pb) | | 1 | <1 |
| *Tin (Sn) | | 1 | 1 |
| *Nickel (Ni) | | <1 | 1 |
| **Contaminants and Additives (ppm)** | | | |
| *Silicon (Si) | | 10 | 7 |
| Boron (B) | | <5 | <5 |
| *Sodium (Na) | | 3 | 4 |
| *Potassium (K) | | 1 | 1 |
| *Phosphorus (P) | | 937 | 985 |
| *Molybdenum (Mo) | | 46 | 26 |
| *Magnesium (Mg) | | 95 | 96 |
| *Calcium (Ca) | | 3112 | 3305 |
| *Zinc (Zn) | | 1122 | 1125 |
| **Physical Tests** | | | |
| Water (%) (FTIR) | | 0.5 | 1.0 |
| Viscosity (cSt,40°C) | | 67 | 62 |
| PQ Index | | 148 | 194 |
| Oxidation (Abs) (FTIR) | | 11.5 | 12.1 |

Analysis undertaken on the sample as received.
Testing performed between Date Received and Date Reported unless otherwise specified.

Abnormal

LEGEND: STOP | Abnormal | Caution | Normal

Right Solutions •

**Authorized Signatory - Diagnostician:** Antonio.Colangelo

## UIN 0701C60

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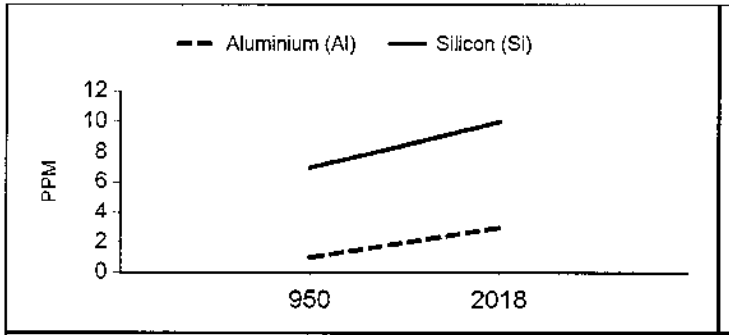


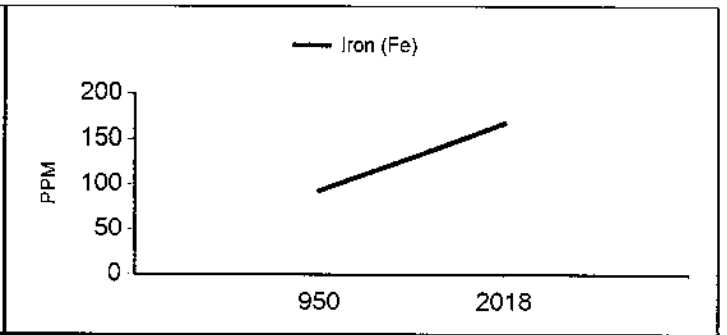


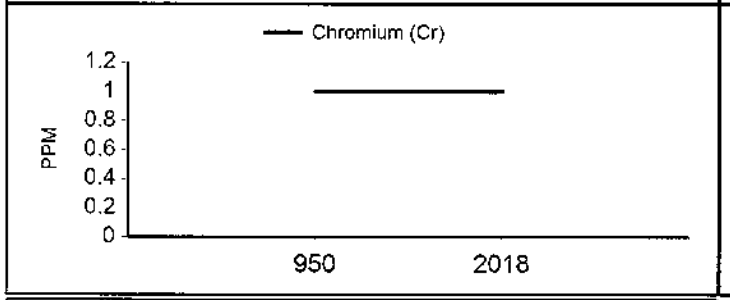


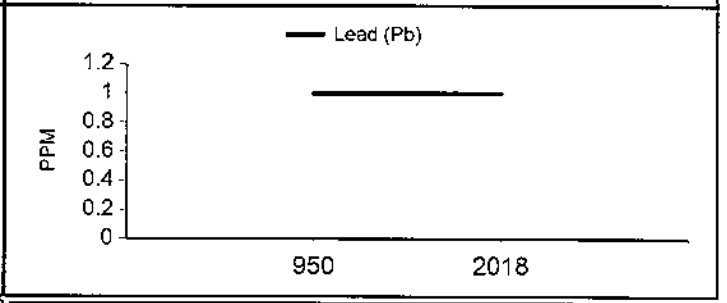


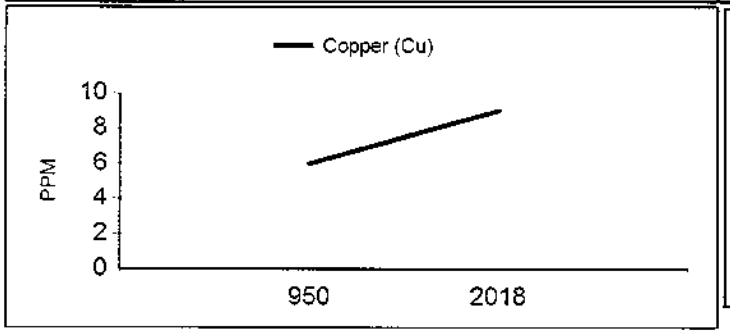


Filter Image

Filter patch test is not performed Contact laboratory for more information

0269 v1.10

This analysis report is dependent upon the accurate completion of the sample submission sheet and correct sampling techniques as advised. The analysis is intended as an aid only in predicting mechanical wear and should not be regarded as a substitute for proper servicing or mechanical inspection. The company does not accept any liability whatsoever in respect of any loss or damage (including loss of profits, economic or other consequential loss or damage) however caused which may arise directly, or indirectly, as a result of the matters referred to in this analysis report.


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Prague

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Santiago de Chile


All test methods are determined by laboratory location, and customer requirements. Methods can be made available on request by contacting the testing laboratory.

Alarm limits are based on a combination of trend and OEM, client and/or ALS proprietary specifications. For more information please contact your testing laboratory.