

1 Q. **Reference: Application**

2 Please provide a summary of all laboratory testing conducted by Hydro in the 2022 Capital
3 Budget Application to verify the need for asset replacement.

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6 A. Please refer to Table 1 for a listing of the testing completed in relation to certain projects
7 included in Newfoundland and Labrador Hydro’s 2022 Capital Budget Application.

Table 1: Laboratory Testing for Select Projects

| Test Completed | Test Type | Results | Project Proposed |
|-----------------------|---|---|--|
| Oil Quality Analysis | V100 Viscosity | Failed as there is fuel present in the oil | Diesel Genset Replacement Unit 2012 – L’Anse-au-Loup |
| Oil Quality Analysis | ASTM ¹ D3524 Environmental Dilution Test | Failed as there is fuel present in the oil | Diesel Genset Replacement Unit 2012 – L’Anse-au-Loup |
| Oil Quality Analysis | ASTM D 1275-06 Corrosive Sulphur Method B | Corrosive 4a | Grand Falls Frequency Converter T2: Oil refurbishment |
| Oil Moisture Analysis | ASTM D 1533-12 | 8 ppm ² at 19°C | Massey Drive GT1 Major Refurbishment: Transformer oil moisture reduction |
| Oil Moisture Analysis | ASTM D 1533-12 | 7 ppm at 25°C | Rocky Harbour T1 Major Refurbishment: Transformer oil moisture reduction |
| Oil Quality Analysis | ASTM D 924-15 ASTM D 971-20 | ASTM D 924-15: 8.76% Result: ASTM D 971-20: 29.2 mN/m ³ | Upper Salmon T1 Major Refurbishment: Oil processing |
| Oil Moisture Analysis | ASTM D 1533-20 | 10 ppm at 20°C | Western Avalon GT1 Major Refurbishment: Transformer oil moisture reduction |

¹ American Society for Testing and Materials (“ASTM”).

² Parts per million (“ppm”).

³ Millinewton per metre (“mN/m”).

| Test Completed | Test Type | Results | Project Proposed |
|---|----------------|---|--|
| Oil Moisture Analysis | ASTM D 1533-12 | 18 ppm at 39°C | Happy Valley T4: Install online oil dehydrator |
| Tapchanger Activity Signature Analysis ("TASA") | TJH2b TASA | TASA Assessment = 3 | Oxen Pond T3: Refurbish tap changer |
| Oil Dissolved Gas Analysis | ASTM D3612-17 | 116 ppm (V/V) ⁴ ethylene @ 273 Kelvin and 760 Torr | Hardwoods T4: Install online dissolved gas analysis monitor |
| Oil Dissolved Gas Analysis | ASTM D3612-17 | 90 ppm (V/V) ethylene @ 273 Kelvin and 760 Torr | Stephenville T3 Major Refurbishment: Install online dissolved gas analysis monitor |
| Oil Dissolved Gas Analysis | ASTM D3612-17 | 61 ppm (V/V) ethylene @ 273 Kelvin and 760 Torr | South Brook T1: Install online dissolved gas analysis monitor |

⁴ Volume per volume ("V/V").