# NATA
# ACCREDITED LABORATORY

**National Association of Testing Authorities, Australia**

(ABN 59 004 379 748)

has accredited

## HRL Technology Group Pty Ltd

## Non-Destructive Testing

following demonstration of its technical competence to operate in accordance with

## ISO/IEC 17025

This facility is accredited for the tests shown on the *Scope of Accreditation* issued by NATA

**Jennifer Evans**
Chief Executive Officer

Date of issue: 06 February 2020
Date of accreditation: 21 November 1995
Accreditation number: 561
Site number: 11459

# National Association of Testing Authorities, Australia
# SCOPE OF ACCREDITATION

## HRL Technology Group Pty Ltd
### NON-DESTRUCTIVE TESTING
| Accreditation Number: 561 | Site Number: 11459 |

**Address Details:**
The Gippsland Enterprise Centre
50 Northways Road
CHURCHILL, VIC 3842
AUSTRALIA
**Website:** www.hrlt.com.au

**Contact Details:**
Mr Matthew Baxter
+61(03) 51321562
mbaxter@hrl.com.au

**Availability:**Services available to external clients

Note: Not all of the columns of the scope of accreditation displayed include data.
The only data displayed is that deemed relevant and necessary for the clear description of the activities and services covered by the scope of accreditation.
Grey text appearing in a SoA is additional freetext providing further refinement or information on the data in the preceding line entry.

**ISO/IEC 17025 (2017)**
**Infrastructure and Asset Integrity**

| SERVICE | PRODUCT | DETERMINANT | TECHNIQUE | PROCEDURE | LIMITATION/RANGE |
|---|---|---|---|---|---|
| Non-destructive testing (NDT) - Material properties and internal integrity | Bonded metals; Rolled or wrought steel products; | Ultrasonic detection and characterisation of discontinuities | A-scan capability | | |
| | Welded joints - Ferritic materials | | A-scan capability; Automated phased array | | |

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| | | Ultrasonic detection and characterisation of discontinuities | capability (PAUT); Manual phased array capability (PAUT); | | |
| Non-destructive testing (NDT) - Product profile and corrosion mapping | Castings; Forgings; Metallic components; Metallic piping; Metallic plate; Metallic tubes - Ferromagnetic materials; Metallic tubes - Non-ferromagnetic materials; | Ultrasonic material profiling and characterisation of material loss | A-scan - Manual; Manual phased array capability (PAUT); | | |
| | | Ultrasonic material thickness - Spot or grid measurements | A-scan - Manual; Thickness meter; | | |
| Non-destructive testing (NDT) - Surface techniques | Metallic surfaces | Magnetic particle detection of discontinuities | AC magnetic flow; Coil; | | |
| | Metallic surfaces; Non-metallic surfaces; | Dye penetrant detection of discontinuities | Solvent removable; Water washable; | | |



---------- END OF SCOPE ----------

# NATA
# ACCREDITED LABORATORY

**National Association of Testing Authorities, Australia**

(ABN 59 004 379 748)

has accredited

## HRL Technology Group Pty Ltd
## Mechanical Testing

following demonstration of its technical competence to operate in accordance with

## ISO/IEC 17025

This facility is accredited for the tests shown on the *Scope of Accreditation* issued by NATA

**Jennifer Evans**
Chief Executive Officer

Date of issue: 04 September 2019
Date of accreditation:16 December 1965
Accreditation number: 561
Corporate Site Number: 554

# National Association of Testing Authorities, Australia
# SCOPE OF ACCREDITATION

## HRL Technology Group Pty Ltd
### MECHANICAL TESTING
| Accreditation Number: 561 | Site Number: 554 |

**Address Details:**
Level 1, Unit 4/677 Springvale Road
MULGRAVE, VIC 3170
AUSTRALIA
**Website:** www.hrlt.com.au

**Contact Details:**
Mr Trevor Layzell
+61(03) 95659854
tlayzell@hrl.com.au

**Availability:**Services available to external clients

Note: Not all of the columns of the scope of accreditation displayed include data.
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**ISO/IEC 17025 (2017)**
**Manufactured Goods**

| SERVICE | PRODUCT | DETERMINANT | TECHNIQUE | PROCEDURE | LIMITATION/RANGE |
|---|---|---|---|---|---|
| Material performance evaluation of metal products | Tubing/piping | Flattening properties | Not applicable | AS 11163:1991 | |
| | Springs | Compression | Not applicable | | in the range 0.1N to 500 kN |
| | Welded test specimens | Nick-break fracture | Macroscopic examination; Visual examination; | AS 2205.4.1 | |
| | | Tensile properties | All-weld-metal tensile; Tensile tests with control of strain rate, including yield stress and proof stress; | AS 1391, ASTM A370, E8 | 0.4 N to 500 kN |
| | | Tensile properties at elevated temperatures | All-weld-metal tensile; Tensile tests with control of strain rate, | AS 2291 | 0.4 N to 500 kN at elevated temperatures in the range ambient to |

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| | | | including yield stress and proof stress; | | 600°C |
| | | Hardness | Brinell; Rockwell - Scale B; Rockwell - Scale C; Vickers; | AS 1816.1 AS 1815.1 AS 1817.1 | Brinell - in the range 4.9 to 29.4 kN Vickers - in the range 9.8 to 980 N |
| | | Fillet-break fracture | Macroscopic examination; Visual examination; | AS 2205.4.2 | |
| | | Macroscopic examination | Macroscopic examination | AS 2205.5.1 | |
| | | Fracture toughness | Crack tip opening displacement | BS 7448 | Plane strain fracture toughness tests and crack opening displacement tests in bending mode, in the temperature range - 40°C to ambient |
| | | Bending properties | Longitudinal guided bend; Tongue bend; Transverse free bend; Transverse guided bend; Transverse joggle-butt wrap around bend; | AS 2205.3.1, .3.2, .3.3, .3.4, .3.5 | |
| | Prepared metallic test specimens | Fracture toughness | Crack tip opening displacement | BS 7448; AS 2205.7.3 | Plane strain fracture toughness tests and crack opening displacement tests in bending mode, in the temperature range - 40°C to ambient |
| | | Hardness | Brinell; Rockwell - Scale B; Rockwell - Scale C; Vickers; | AS 1816.1, AS 1815.1, AS 1817.1 | Brinell - 4.9 to 29.4 kN Vickers - 9.8 to 980 N |
| | | Bending properties | Transverse guided bend | AS 2505.1 | |
| | | | Tensile tests | | |

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|---|---|---|---|---|---|
| | | Through thickness | | EN 10164;<br>AS 3678;<br>AS 1548 | |
| | | Through thickness | | | |
| | | Tensile properties at elevated temperatures | Tensile tests with control of strain rate, including yield stress and proof stress | AS 2291 | 0.4 N to 500 kN at elevated temperatures in the range ambient to 600°C |
| | | Tensile properties | Tensile tests with control of strain rate, including yield stress and proof stress | AS 1391, ASTM A370, E8 | 0.4 N to 500 kN |
| Material performance evaluation of paint and related products | Industrial coatings | Thickness | Microscopic examination | microscope | |

**ISO/IEC 17025 (2017)**
**Materials**

| SERVICE | PRODUCT | DETERMINANT | TECHNIQUE | PROCEDURE | LIMITATION/RANGE |
|---|---|---|---|---|---|
| Metallic corrosion evaluation | Plating | Coating thickness | Microscopic examination | microscope | |
| | | Coating mass;<br>Coating thickness; | Dissolution - Strip, weigh and analytical;<br>Gravimetric;<br>Microscopic examination; | microscope<br>ASTM A90 | Weight of zinc coatings on ferrous articles<br>Average thickness by strip and weigh methods |
| | Austenitic, duplex and nickel-chromium alloys;<br>Chemical corrosion treatment materials;<br>Copper and copper alloys;<br>Ferrous | Pitting corrosion resistance | Corrodkote (CORR) | Corrosion resistance of stainless steels - pit depth (Method A) and mass loss to ASTM G48<br>AS 2331.3.7, ASTM B380 | |

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|---|---|---|---|---|---|
| | materials; Plating; | | | | |
| | | Salt spray resistance | Copper accelerated acetic acid salt spray (CASS); Neutral salt spray (NSS); | ASTM B368 and AS 2331.3.3 ASTM B117 and AS 2331.3.1 | |
| Metallographic evaluation of metals and alloys | Ferrous materials | Assessment of grain boundary cementite | | AS 1733, ASTM E112 | |
| | | Graphite type and distribution in cast irons | Microscopic examination | ISO 945-1 | |
| | | Depth of surface defects | Microscopic examination | | |
| | | Case depth and depth of decarburisation | Hardness traverse; Macroscopic examination; Microscopic examination; | AS 1982 | |
| | | Non-metallic inclusion content | Macroscopic examination; Microscopic examination; | AS 2087, ASTM E45 | |



---------- END OF SCOPE ----------

# NATA ACCREDITED
## Inspection Body

**National Association of Testing Authorities, Australia**

(ABN 59 004 379 748)

has accredited

## HRL Technology Group Pty Ltd
## Engineering Audits

following demonstration of its technical competence to operate in accordance with

## ISO/IEC 17020

As a Type A Inspection Body

This facility is accredited for the inspection activities shown on the *Scope of Accreditation* issued by NATA

**Jennifer Evans**
Chief Executive Officer

Date of issue: 29 May 2018
Date of accreditation: 1 July 2005
Accreditation number: 561
Corporate Site Number: 16028

# Scope of Accreditation

issued by

**National Association of Testing Authorities, Australia**

## Accreditation Number 561 HRL Technology Group Pty Ltd

**Site Number 16028** **Engineering Audits**

### Contact Summary


**Address**

Unit 4, Level 1, 677 Springvale Road

MULGRAVE
VIC 3170
AUSTRALIA

**Phone** +61 0395659930
**Mobile**
**Email** rodgers@hrl.com.au
**Web** www.hrlt.com.au
**Contact** Mr Richard Odgers
**Site Availability** Type A Inspection Body
**Site Supervision**


### Scope

**ISO/IEC 17020**

Infrastructure and Asset Integrity

| Service | Product | Determination | Technique | Procedure |
|---|---|---|---|---|
| Pressure plant, pipelines and equipment - Design verification | Boilers; Fired pressure vessels; Gas cylinders; Pressure piping; Unfired pressure vessels | Design verification | | AS 2030, AS 3920, AS 4041, AS 4343, AS/NZS 1200 (also covers relevant ASME Codes), EN 12953<br><br>(excluding CE mark provisions), EN 13445 (excluding CE mark provisions), EN 286.1, .2, .3, .4<br><br>NZ Code of Practice<br><br>and similar Standards |

**Limitation / Range**

Hazard levels: A, B, C, D, E

Modelling using AS 1210 for finite element analysis of pressure equipment designs

Covering the Morwell (Vic), Mulgrave (Vic) and Coopers Plains (Qld) offices

| | | | |
|---|---|---|---|
| Pressure plant, pipelines and equipment - Fabrication inspection | Boilers; Fired pressure vessels; Pressure piping; Unfired pressure vessels | Fabrication inspection | AS 1210, AS 3920, AS 4037, AS 4041, AS 4458, EN 286.1, .2, .3, .4; |

**Limitation / Range**

Hazard levels: A, B, C, D, E

Covering the Morwell (Vic), Mulgrave (Vic) and Coopers Plains (Qld) offices

| | | | |
|---|---|---|---|
| Pressure plant, pipelines and equipment - In-service inspection | Auxiliary vessels; Boilers; Buried or mounded pressure equipment; Compressed air containing vessels; Fired heaters or convection banks; Pressure piping; Pressure relief devices; Process vessels; Static low temperature vessels (below -10 degrees Celsius); Static storage vessels; Steam pressure vessels; Vessels with quick actuating closures; Water heaters | In-service inspection | AS/NZS 3788 |

**Limitation / Range**

Covering the Morwell (Vic), Mulgrave (Vic) and Coopers Plains (Qld) offices

| | | | |
|---|---|---|---|
| Pressure plant, pipelines and equipment - In-service inspection | Boilers; Pressure piping | In-service inspection | WTIA Guidance Note 15 (GN - 15 Replication and in-situ Metallography) |

**Limitation / Range**

Covering the Morwell (Vic), Mulgrave (Vic) and Coopers Plains (Qld) offices

| | | | |
|---|---|---|---|
| Pressure plant, pipelines and equipment - Inspection | Pressure equipment | Leak testing; Witnessing of hydrostatic tests | AS 4037 Section 17 |

**Limitation / Range**

Covering the Morwell (Vic), Mulgrave (Vic) and Coopers Plains (Qld) offices

# NATA
# ACCREDITED LABORATORY

**National Association of Testing Authorities, Australia**

(ABN 59 004 379 748)

has accredited

## HRL Technology Group Pty Ltd
## Environment and Process

following demonstration of its technical competence to operate in accordance with

## ISO/IEC 17025

This facility is accredited for the tests shown on the *Scope of Accreditation* issued by NATA

**Jennifer Evans**
Chief Executive Officer

Date of issue: 12 April 2019
Date of accreditation:30 September 1991
Accreditation number: 561

# National Association of Testing Authorities, Australia
# SCOPE OF ACCREDITATION

## HRL Technology Group Pty Ltd
### ENVIRONMENT AND PROCESS
| Accreditation Number: 561 | Site Number: 14658 |

**Address Details:**
Unit 4, level 1, 677 Springvale Road
MULGRAVE, VIC 3170
AUSTRALIA
**Website:** www.hrlt.com.au

**Contact Details:**
Mr Nick Miller
+61(03) 95659912
nmiller@hrl.com.au

**Availability:**Services available to external clients

Note: Not all of the columns of the scope of accreditation displayed include data.
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**ISO/IEC 17025 (2017)**
**Environment**

| SERVICE | PRODUCT | DETERMINANT | TECHNIQUE | PROCEDURE | LIMITATION/RANGE |
|---|---|---|---|---|---|
| Analysis for elements | Emissions - Industrial | Aluminium; Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Calcium; Chromium; Cobalt; Copper; Iron; Lead; Magnesium; Manganese; Mercury; Molybdenum; Nickel; Niobium; Phosphorus; Selenium; Silicon; Silver; Strontium; Sulfur; Thallium; Thorium; Tin; Titanium; Uranium; Vanadium; Zinc; Zirconium; | Atomic fluorescence spectroscopy (AFS) - Cold vapour; ICP-AES; | in-house 1.19 | |
| Analysis for physical and | Emissions - Stack | Hydrogen fluoride | | USEPA 26 | |

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| chemical characteristics | | | Ion selective electrode (ISE) | | |
| | | Chlorine; Hydrogen chloride; | ICP-AES | USEPA 26 | |

**ISO/IEC 17025 (2017)**
**Materials**

| SERVICE | PRODUCT | DETERMINANT | TECHNIQUE | PROCEDURE | LIMITATION/RANGE |
|---|---|---|---|---|---|
| Analysis of biofuels, hydrocarbon fuels and related fuel products | Solid reclaimed fuels (SRF) | Aluminium - Metallic | ICP-AES | CEN/TS 15412 | |
| | | Bromine; Chlorine; Fluorine; Iodine; Sulfur; | Classical; ICP-AES; | EN 15408:2011 | |
| | Refuse derived fuels (RDF) | Mechanical durability | Classical | Of pellets and briquettes using EN 15210-1:2009 and ISO 17831-1 | |
| | | Potassium - Water soluble; Water soluble chlorine; Water soluble sodium; | ICP-AES | EN 15105:2011 | |
| | | Bulk density | Classical | EN 15103:2009 and ISO 17828 | |
| | | Chlorine; Sulfur; | ICP-AES | ISO 16994:2015 | |
| | Refuse derived fuels (RDF); Solid reclaimed fuels (SRF); | Carbon; Hydrogen; Nitrogen; | Infrared (IR) | I.S EN ISO 16948:2015<br><br>I.S EN 15407:2011 | |
| | | Dimensions | Classical | EN 16127:2012 and ISO 17829 | |

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|---|---|---|---|---|---|
| | | Calorific value | Classical | EN 14918: 2009 and ISO DIS 18125<br>EN 15400:2011 | |
| | | Moisture | Classical | ISO 18134-2<br>CEN/TS15414-3:2010<br>EN 14774-3:2009 and ISO 18134-3<br>CEN/TS15414-3:2010 | |
| | | Biomass content | Accelerated oxidation method | EN 15440:2011 | |
| | | | classical | | |
| | | Ash | Classical | ISO 18122<br>EN 15403:2011 | |
| | | Particle size distribution | Classical | CEN/TS 15149-2<br>EN 16126:2012 | |
| | | Volatile matter | Classical | ISO 18123<br>EN 15402:2011 | |
| | | Aluminium; Antimony; Arsenic; Barium; Cadmium; Calcium; Chromium; Cobalt; Copper; Lead; Magnesium; Manganese; Mercury; Molybdenum; Nickel; | ICP-AES | I.S EN ISO 16967:2015<br>I.S EN ISO | |

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| | | Phosphorus; Potassium; Selenium; Silicon; Sodium; Strontium; Sulfur; Thallium; Tin; Titanium; Vanadium; Zinc; | | 16968:2015 | |
| | | | | EN 15410:2011; in-house HRL Method 1.12 | |
| | | | | DIN EN ISO 11885:2009 and EN 15411:2011 | |

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| Analysis of coals, coke, charcoal and related products | Carbon black; Coal; Coke; | Ash | Classical | ISO 1171 | |
| | Coal | Gross calorific value | Classical | AS 1038.5 (1998) | |
| | | Volatile matter | Classical | AS 2434.2 Part 2 - Volatile matter | |
| | | Proximate analysis | Classical | ISO 11246 | |
| | Coal; Coke; | Ash; Moisture; | Classical | AS 2434.1 Part 3, in-house 1.6 - Ash and moisture | |
| | | Moisture - Total | Classical | ISO 589 | |

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|---|---|---|---|---|---|
| | | Aluminium; Barium; Calcium; Iron; Magnesium; Manganese; Phosphorus; Potassium; Silicon; Sodium; Strontium; Sulfur; Titanium; Zinc; | ICP-AES | AS 1038.14.1 (2003) | |
| | | Ultimate analysis | Classical | AS 2434.6 | |
| | | Volatile matter | Classical | AS 1038.3 (2000) Section 4; in-house 1.10 Volatile matter ISO 562 | |
| | | Relative density (specific gravity) | Classical | AS 1038.21.1.1; in-house 1.23 - Relative density | |
| | | Sulfur - Total | Infrared (IR) | AS 1038.6.3.3 | |
| | | Chlorine; Sulfur; | ICP-AES | AS 1038.8.1; in-house 1.25 | |
| | | Aluminium; Barium; Calcium; Chromium; Cobalt; Copper; Iron; Magnesium; Manganese; Nickel; Phosphorus; Potassium; Silicon; Sodium; Strontium; Sulfur; Titanium; Vanadium; Zinc; | ICP-AES | in-house 1.12 | |
| | | Moisture | Classical | AS2434.8; in-house 1.6 - Ash and moisture<br>AS 2434.7; in-house 1.6 - Moisture<br>ISO 579<br>ISO 11722 | |
| | | Carbon; Hydrogen; Nitrogen; | Infrared (IR) | AS 1038.6.4; in-house 1.4 | |

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| Chemical analysis of reagents, salts and related compounds | Ferric sulfate | Antimony; Arsenic; Cadmium; Chloride; Chromium; Copper; Iron; Lead; Manganese; Mercury; Nickel; Selenium; Silver; Vanadium; Zinc; | Atomic absorption spectroscopy (AAS); Atomic absorption spectroscopy (AAS) - Cold vapour; ICP-AES; | In-house 1.18 | |
| | | Ferrous chloride; Free acid - As hydrochloric or sulfuric; Iron - Ferric; Iron - Ferrous; Solids - Suspended; Specific gravity; | Classical | ANSI/AWWA B406-14 | |
| | Atomised metallic aluminium | Antimony; Arsenic; Barium; Cadmium; Copper; Iron; Lead; Manganese; Mercury; Nickel; Selenium; Silver; | Atomic absorption spectroscopy (AAS); Atomic absorption spectroscopy (AAS) - Cold vapour; ICP-AES; | In-house 1.18 | |
| | Hydrated alumina | Antimony; Arsenic; Barium; Cadmium; Chromium; Copper; Iron; Lead; Manganese; Mercury; Nickel; Selenium; Silver; | Atomic absorption spectroscopy (AAS); Atomic absorption spectroscopy (AAS) - Cold vapour; ICP-AES; | In-house 1.18 | |
| | Polyaluminium chlorohydrate | Antimony; Arsenic; Barium; Cadmium; Chloride; Chromium; Copper; Iron; Lead; Manganese; Mercury; Nickel; Selenium; Silver; | Atomic absorption spectroscopy (AAS); Atomic absorption spectroscopy (AAS) - Cold vapour; ICP-AES; | In-house 1.18 | |
| | Magnetite (iron ore) | Antimony; Arsenic; Barium; Cadmium; Chromium; Copper; Lead; | Atomic absorption spectroscopy (AAS); Atomic absorption | In-house 1.18 | |

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| | | Manganese; Mercury; Nickel; Selenium; Silver; | spectroscopy (AAS) - Cold vapour; ICP-AES; | | |
| | Calcium hypochlorite | Aluminium; Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chloride; Chromium; Copper; Iron; Lead; Magnesium; Manganese; Mercury; Molybdenum; Nickel; Selenium; Silicon; Silver; Strontium; Sulfur; Thallium; Tin; Titanium; Vanadium; Zinc; | Atomic absorption spectroscopy (AAS); Atomic absorption spectroscopy (AAS) - Cold vapour; ICP-AES; | In-house 1.18 | |
| | | Chlorine - Available | Classical | ANSI/AWWA B300-10 | |
| | Sulfuric acid | Antimony; Arsenic; Barium; Cadmium; Chromium; Copper; Iron; Lead; Magnesium; Manganese; Mercury; Nickel; Selenium; Silver; | Atomic absorption spectroscopy (AAS); Atomic absorption spectroscopy (AAS) - Cold vapour; ICP-AES; | In-house 1.18 | |
| | | Sulfuric acid | Classical | ASTM E223 | |
| | Hydrochloric acid | Acidity | Classical | APHA 2310 | |
| | | Antimony; Arsenic; Barium; Cadmium; Chromium; Copper; Lead; Manganese; Mercury; Nickel; Selenium; Silver; | Atomic absorption spectroscopy (AAS); Atomic absorption spectroscopy (AAS) - Cold vapour; ICP-AES; | In-house 1.18 | |
| | Soda ash | Antimony; Arsenic; Barium; Chromium; Copper; Lead; | Atomic absorption spectroscopy (AAS); Atomic | In-house 1.18 | |

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| | | Manganese; Mercury; Nickel; | absorption spectroscopy (AAS) - Cold vapour; ICP-AES; | | |
| | | Apparent density; Sodium carbonate; | Classical | ANSI/AWWA B201-13 | |
| | Bulk washed salt | Antimony; Cadmium; Chromium; Lead; Manganese; Mercury; Nickel; | Atomic absorption spectroscopy (AAS); Atomic absorption spectroscopy (AAS) - Cold vapour; ICP-AES; | In-house 1.18 | |
| | Sodium hydroxide | Alkalinity; Sodium carbonate; Sodium hydroxide; | Classical | ANSI/AWWA B501-13 | |
| | | Aluminium; Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Copper; Iron; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Silver; Zinc; | Atomic absorption spectroscopy (AAS); Atomic absorption spectroscopy (AAS) - Cold vapour; ICP-AES; | In-house 1.18 | |
| | Ammonia | Specific gravity | Classical | APHA 2710 C | |
| | | Ammonia content; Specific gravity; Water content; | Classical | United States Pharmacopoeia USP23: NF18 (1994) | |
| | Aluminium sulfate | Antimony; Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Iron; Lead; Manganese; Mercury; Nickel; Phosphorus; Selenium; | Atomic absorption spectroscopy (AAS); Atomic absorption spectroscopy (AAS) - Cold vapour; ICP-AES; | In-house 1.18 | |

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| | | Silicon; Silver; Thallium; Tin; Vanadium; Zinc; | | | |
| | Aluminium sulfate; Hydrated alumina; Hydrochloric acid; Magnetite (iron ore); Polyaluminium chlorohydrate; Sulfuric acid; | Fluoride | Classical | APHA 4500-$F^-$ C | |
| | Aluminium sulfate; Polyaluminium chlorohydrate; | Colour | Classical | APHA 2120B | |
| | | Aluminium - Total (as alumina); Basicity; Specific gravity; | Classical | ANSI/AWWA B403-16 | |
| | Aluminium sulfate; Polyaluminium chlorohydrate; Sodium hydroxide; | Solids - Total suspended | Classical | APHA 2540 D | |
| | Aluminium sulfate; Ammonia; Polyaluminium chlorohydrate; | Turbidity | Classical | APHA 2130 | |
| | Aluminium sulfate; Ferric chloride; Ferric sulfate; Polyaluminium chlorohydrate; | pH | Classical | APHA 4500 $H^+$B | |
| | Ferric chloride | Ferrous chloride; Free acid - As hydrochloric or sulfuric; Iron - Ferric; Iron - Ferrous; Solids - Suspended; Specific gravity; | Classical | ANSI/AWWA B407-12 | |
| | | Aluminium; Antimony; Arsenic; Barium; Beryllium; Boron; | Atomic absorption spectroscopy (AAS); Atomic absorption | In-house 1.18 | |

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| | | Cadmium; Chloride; Chromium; Cobalt; Copper; Iron; Lead; Manganese; Mercury; Molybdenum; Nickel; Phosphorus; Selenium; Silver; Titanium; Vanadium; Zinc; | spectroscopy (AAS) - Cold vapour; ICP-AES; | | |
| | Ferric chloride; Magnetite (iron ore); | Cyanide | Classical | APHA 4500-CN | |
| | Sodium hypochlorite | Alkalinity; Chlorine - Available; | Classical | ANSI/AWWA B300-10 | |
| | | Aluminium; Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chloride; Chromium; Copper; Iron; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Silver; Zinc; | Atomic absorption spectroscopy (AAS); Atomic absorption spectroscopy (AAS) - Cold vapour; ICP-AES; | In-house 1.18 | |
| | Permanganates | Potassium permanganate | Classical | ANSI/AWWA B603-16 | |
| | | Aluminium; Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Copper; Iron; Lead; Mercury; Molybdenum; Nickel; Selenium; Silver; Zinc; | Atomic absorption spectroscopy (AAS); Atomic absorption spectroscopy (AAS) - Cold vapour; ICP-AES; | In-house 1.18 | |
| Safety evaluation for transport of bulk materials | Bulk combustible materials | Burning rate | Not applicable | ST/SG/AC.10/11 United Nations Recommendations on the Transport of | |

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| | | | | Dangerous, Goods - Manual of Tests and Criteria Test 33.2.1.4 Test method for Readily combustible solids | |
| | | Flammable gas emission rate | Not applicable | ST/SG/AC.10/11 United Nations Recommendations on the Transport of Dangerous, Goods - Manual of Tests and Criteria Test 33.4.1 Substances which in contact with water emit flammable gases | |
| | | Temperature rise of readily combustible solids due to self heating | Not applicable | ST/SG/AC.10/11 United Nations Recommendations on the Transport of Dangerous; Goods - Manual of Tests and Criteria Test 33.3.1.3.3 Self heating substances | |



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