

ภาคผนวกที่ 5

เอกสาร Detection Limit ของรายการทดสอบ

การตรวจวิเคราะห์คุณภาพอากาศ (Air Quality Analysis)

(ประเภทตัวอย่าง : อากาศในบรรยากาศโดยทั่วไป - Ambient Air Quality)

| Items | Parameter | Method | Reference Method / Analytical Technique | Air Volume | Sampling Rate / Period | LOQ / Range | Unit | Decimal point | Remark |
|-------------------------------|-------------------------------------|---|--|------------------------------|--|-------------|----------------------------|---------------|---|
| แผนปฏิบัติการภาคสนาม | | | | | | | | | |
| 1 | Sulfur Dioxide (SO ₂) | UV Fluorescence Method | U.S. EPA EQSA-0292-084 / Sulfur Dioxide Analyzer | - | 24 hrs (1 hr avg.) | 0.001 - 10 | ppm | 3 | |
| 2 | Nitrogen Dioxide (NO ₂) | Chemiluminescence Method | U.S. EPA RFCA-0995-108 / Nitrogen Dioxide | - | 24 hrs (1 hr avg.) | 0.001 - 10 | ppm | 3 | |
| 3 | Carbon Monoxide (CO) | Non-Dispersive Infrared Photometric Method | U.S. EPA 40 CFR Part 50 Appendix C / Carbon | - | 24 hrs (8 hr avg.) | 0.1 - 100 | ppm | 1 | |
| 4 | Ozone (O ₃) | UV Fluorescence Method | U.S. EPA 40 CFR Part 50 Appendix D / Ozone | - | 24 hrs (1 hr avg.) | 0.001 - 10 | ppm | 3 | |
| 5 | Sound (Leq, Lmin, Lmax, Ldn, Lp) | Integrated Sound Level Method | ISO 1996-1 / Sound Level meter | - | 24 hrs (1 hr avg.) | 40 - 140 | dB (A) | 1 | |
| 6 | Wind Speed & Wind Direction | Wind Speed & Wind Direction Sensor | ASTM D 4480-93 / WS/WD Equipment | - | - | - | - | - | Wind speed & Wind direction Diagram |
| ส่วนงานทดสอบพื้นฐาน | | | | | | | | | |
| 1 | Total Particulate Matter (TSP) | Gravimetric Method | U.S. EPA Method Part 50 / Gravimetric Method | - | - | - | mg / m ³ ppm | 2 | |
| 2 | PM10 | Gravimetric Method | U.S. EPA Method Part 50 / Gravimetric Method | - | - | - | mg / m ³ ppm | 2 | |
| 3 | PM2.5 | Gravimetric Method | U.S. EPA Method Part 50 / Gravimetric Method | - | - | 200 | mg / m ³ | - | |
| ส่วนงานเครื่องมือทดสอบ | | | | | | | | | |
| 1 | Ammonia (NH ₃) | Impingement Absorption, Colorimetric Method | APHA 401 / Spectrophotometer | 288 L | 0.2 L/min (24 hrs) | 0.01 | mg / m ³ | 2 | |
| 2 | Sulfur Dioxide (SO ₂) | Pararosaniline Method | U.S. EPA 40 CFR Part 50 Appendix A / Spectrophotometer | 288 L | 0.2 L/min (24 hrs) | 0.01 | mg / m ³ | 2 | |
| 3 | Aluminium (Al) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 4 | Antimony (Sb) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 5 | Arsenic (As) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 6 | Barium (Ba) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 7 | Cadmium (Cd) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 8 | Calcium (Ca) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 9 | Chromium (Cr) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |

| Items | Parameter | Method | Reference Method / Analytical Technique | Air Volume | Sampling Rate / Period | LOQ / Range | Unit | Decimal point | Remark |
|-------|----------------|-------------------------------|--|------------------------------|--|--------------|----------------------------|---------------|---|
| 10 | Copper (Cu) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 11 | Iron (Fe) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 12 | Lead (Pb) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 13 | Magnesium (Mg) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 14 | Manganese (Mn) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 15 | Mercury (Hg) | Filtration, AAS Method | U.S. EPA Method IO-3.4 / High Volume - AAS | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 16 | Nickel (Ni) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 17 | Potassium (K) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 18 | Sodium (Na) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 19 | Tin (Sn) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 20 | Titanium (Ti) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 21 | Vanadium (V) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 22 | Zinc (Zn) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 23 | Selenium (Se) | Filtration, ICP-OES Method | U.S. EPA Method IO-3.4 / High Volume - ICP-OES | 1,590 – 2,447 m ³ | 39-60 ft ³ /min (24 hrs) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat. No. GA55 8 x 10 " |
| 24 | Acetone | Sorbent Adsorption, GC Method | ASTM D 3687-95 / GC-FID | 144 L | 0.10 L/min (24 hrs) | 0.14 0.06 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-01 |
| 25 | Benzene | Sorbent Adsorption, GC Method | ASTM D 3687-95 / GC-FID | 144 L | 0.10 L/min (24 hrs) | 0.12 0.04 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-02 |
| 26 | Cyclohexanone | Sorbent Adsorption, GC Method | ASTM D 3687-95 / GC-FID | 144 L | 0.10 L/min (24 hrs) | 0.16 0.04 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-04 |

| Items | Parameter | Method | Reference Method / Analytical Technique | Air Volume | Sampling Rate / Period | LOQ / Range | Unit | Decimal point | Remark |
|-------|---------------------------------------|--------------------------------|---|------------|---------------------------|--------------|----------------------------|------------------|------------------------|
| 27 | Ethanol (Ethyl alcohol) | Sorbent Adsorption, GC' Method | ASTM D 3687-95 / GC-FID | 288 L | 0.10 L/min (24 hrs) | 0.14 0.07 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-05 |
| 28 | Ethylacetate | Sorbent Adsorption, GC' Method | ASTM D 3687-95 / GC-FID | 144 L | 0.10 L/min (24 hrs) | 0.32 0.09 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-06 |
| 29 | Ethylbenzene | Sorbent Adsorption, GC' Method | ASTM D 3687-95 / GC-FID | 144 L | 0.10 L/min (24 hrs) | 0.15 0.03 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-07 |
| 30 | Hexane | Sorbent Adsorption, GC' Method | ASTM D 3687-95 / GC-FID | 144 L | 0.10 L/min (24 hrs) | 0.32 0.09 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-08 |
| 31 | Isopropanol (Isopropyl alcohol) ; IPA | Sorbent Adsorption, GC' Method | ASTM D 3687-95 / GC-FID | 288 L | 0.10 L/min (24 hrs) | 0.14 0.06 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-09 |
| 32 | Methanol (Methyl alcohol) | Sorbent Adsorption, GC' Method | ASTM D 3687-95 / GC-FID | 144 L | 0.10 L/min (24 hrs) | 0.07 0.05 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-10 |
| 33 | Methyl Ethyl Ketone (MEK) | Sorbent Adsorption, GC' Method | ASTM D 3687-95 / GC-FID | 144 L | 0.10 L/min (24 hrs) | 0.14 0.05 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-11 |
| 34 | Styrene | Sorbent Adsorption, GC' Method | ASTM D 3687-95 / GC-FID | 144 L | 0.10 L/min (24 hrs) | 0.16 0.04 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-12 |
| 35 | Toluene | Sorbent Adsorption, GC' Method | ASTM D 3687-95 / GC-FID | 144 L | 0.10 L/min (24 hrs) | 0.15 0.04 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-13 |
| 36 | Xylene | Sorbent Adsorption, GC' Method | ASTM D 3687-95 / GC-FID | 144 L | 0.10 L/min (24 hrs) | 0.15 0.03 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-14 |
| 37 | Methylcyclohexane | Sorbent Adsorption, GC' Method | NIOSH 1500 (P.1-8) / PS pump / GC-FID | 2-23 L | 0.10 L/min (1 hr) | 0.32 0.08 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-01 |
| 38 | Methyl acetate | Sorbent Adsorption, GC' Method | NIOSH 1458 (P.1-8) / PS pump / GC-FID | 0.2-10 L | 0.10 L/min (1 hr) | 0.61 0.20 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-01 |
| 39 | Diethyl Ether or Ethyl Ether | Sorbent Adsorption, GC' Method | NIOSH 1610 (P.1-4) / PS pump / GC-FID | 0.25-3 L | 0.01-0.20 L/min (1 hr) | 0.12 0.04 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-01 |
| 40 | Methyl tert-Butyl Ether (MTBE) | Sorbent Adsorption, GC' Method | NIOSH 1615 (P.1-4) / PS pump / GC-FID | 2-96 L | 0.01-0.20 L/min (1 hr) | 0.13 0.04 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-01 |
| 41 | Dichloromethane | Sorbent Adsorption, GC' Method | NIOSH 1005 (P.1-4) / PS pump / GC-FID | 0.5-2.5 L | 0.01-0.20 L/min (1 hr) | 0.23 0.07 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-01 |
| 42 | 1-Butanol / n-butyl alcohol | Sorbent Adsorption, GC' Method | NIOSH 1401 (P.1-4) / PS pump / GC-FID | 2-10 L | 0.01-0.20 L/min (1 hr) | 0.17 0.06 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-01 |
| 43 | 2-Butanol / sec-butyl alcohol | Sorbent Adsorption, GC' Method | NIOSH 1401 (P.1-4) / PS pump / GC-FID | 2-10 L | 0.01-0.20 L/min (1 hr) | 0.17 0.06 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-01 |

| Items | Parameter | Method | Reference Method / Analytical Technique | Air Volume | Sampling Rate / Period | LOQ / Range | Unit | Decimal point | Remark |
|-------|-------------------------------|--------------------------------|--|------------|---------------------------|----------------|----------------------------|------------------|---|
| 44 | Isobutyl alcohol (IBA) | Sorbent Adsorption, GC' Method | NIOSH 1401 (P.1-4) / PS pump / GC-FID | 2-10 L | 0.01-0.20 L/min (1 hr) | 0.17 0.06 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-01 |
| 45 | Methyl Isobutyl Ketone (MIBK) | Sorbent Adsorption, GC' Method | OSHA 1004(P.1-27) / PS pump / GC-FID | 0.25-12L | 0.10 L/min (1 hr) | 0.14 0.03 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-01 |
| 46 | Ketones | Sorbent Adsorption, GC' Method | NIOSH 2555 (P.1-5) / PS pump / GC-FID | 0.5-10L | 0.01-0.20 L/min (1 hr) | 0.14 0.06 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-01 |
| 47 | n-Butyl acetate | Sorbent Adsorption, GC' Method | NIOSH 1450 (P.1-6) / PS pump / GC-FID | 1-10L | 0.01-0.20 L/min (1 hr) | 0.38 0.08 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-01 |
| 48 | n-Pentane | Sorbent Adsorption, GC' Method | NIOSH 1500 (P.1-8) / PS pump / GC-FID | - | 0.01-0.20 L/min (1 hr) | 0.11 0.04 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-01 |
| 49 | Chloroform | Sorbent Adsorption, GC' Method | NIOSH 1003 (P.1-7) / PS pump / GC-FID | 1-50L | 0.01-0.20 L/min (1 hr) | 0.21 0.04 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-01 |
| 50 | Chlorobenzene | Sorbent Adsorption, GC' Method | NIOSH 1003 (P.1-7) / PS pump / GC-FID | 1.5-40L | 0.01-0.20 L/min (1 hr) | 0.19 0.04 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-01 |
| 51 | Formaldehyde | Sorbent Adsorption, GC' Method | NIOSH 2541 (P.1-5) / PS pump / GC-FID | 1-36L | 0.01-0.10 L/min (1 hr) | 0.01 0.01 | mg / m ³ ppm | 2 | SKC Cat. No. 226-118 |
| 52 | Hydrogen chloric | Sorbent Adsorption, IC' Method | OSHA ID-174SG / PS pump / IC | 1-7.5 L | 0.20 L/min (24 hr) | 0.015 0.010 | mg / m ³ ppm | 3 | SKC Cat. No. 226-10-03 |
| 53 | Hydrogen Bromide | Sorbent Adsorption, IC' Method | OSHA ID165SG / PS pump / IC | 1-96 L | 0.20 L/min (24 hr) | 0.033 0.010 | mg / m ³ ppm | 3 | SKC Cat. No. 226-10-03 |
| 54 | Sulfuric Acid | Sorbent Adsorption, IC' Method | OSHA ID165SG / PS pump / IC NIOSH 7908 / PS pump / IC | 1-96 L | 0.20 L/min (24 hr) | 0.040 0.010 | mg / m ³ ppm | 3 | SKC Cat. No. 226-10-03 Filter (PTFE) |
| 55 | Phosphoric Acid | Sorbent Adsorption, IC' Method | OSHA ID165SG / PS pump / IC NIOSH 7908 / PS pump / IC | 1-96 L | 0.20 L/min (24 hr) | 0.040 0.010 | mg / m ³ ppm | 3 | SKC Cat. No. 226-10-03 Filter (PTFE) |
| 56 | Nitric | Sorbent Adsorption, IC' Method | OSHA ID165SG / PS pump / IC | 1-96 L | 0.20 L/min (24 hr) | 0.026 0.010 | mg / m ³ ppm | 3 | SKC Cat. No. 226-10-03 |
| 57 | Chlorine | Sorbent Adsorption, IC' Method | OSHA ID-202 / PS pump / IC | 14 L | 0.20 L/min (24 hr) | 0.029 0.010 | mg / m ³ ppm | 3 | 0.02% KI in Buffer solution |
| 58 | Ammonia (NH ₃) | Sorbent Adsorption, IC' Method | NIOSH 6016 / PS pump / IC | 12 L | 200 L/min (120min) | 0.200 0.280 | mg / m ³ ppm | 3 | SKC Cat. No. 226-10-06 |
| 59 | Hydrogen fluoride | Sorbent Adsorption, IC' Method | OSHA ID165SG / PS pump / IC | 60 L | 200 L/min (60min) | 0.008 0.010 | mg / m ³ ppm | 3 | SKC Cat. No. 226-10-03 |

เอกสารอ้างอิง

1. Method of Air Sampling and Analysis, APHA Intersociety Committee, 2017
2. NIOSH Manual of Analytical Methods (NMAM)
3. Code of Federal Regulation, U.S. EPA, 40 CFR Part 50, Part 60, 2000
4. Occupational Health and Safety Management System(OSHA) Analytical Methods Manual
5. International Standard Organization, ISO 11204:1995
6. Compendium of Methods for Determination of Inorganic Compound in Ambient Air, U.S. EPA, 1999
7. Annual Book of ASTM Standard, Section 11, 2001

การตรวจวิเคราะห์คุณภาพอากาศ (Air Quality Analysis)

ประเภทตัวอย่าง : อากาศในปล่องระบาย - Stack Air Quality

ตารางที่ 1 สรุปข้อกำหนดการเก็บตัวอย่างและความสามารถในการทดสอบตัวอย่างของห้องปฏิบัติการ **ตามที่ขึ้นทะเบียนกับกรมอุตสาหกรรม**
(ประเภทตัวอย่าง : อากาศในปล่องระบาย - Stack Air Quality)

| Items | Parameter | Method | Reference Method / Analytical Technique | Air Volume | Sampling Rate / Period | LOQ / Range | Unit | Decimal point | Remark |
|----------------------------------|---|---|--|---------------------|----------------------------|--------------|----------------------------|---------------|-------------------------------------|
| เมทริกซ์ปฏิบัติการภาคสนาม | | | | | | | | | |
| 1 | Smoke density (Opacity) | Ringelmann' s method | U.S. EPA Method 9 / Ringelmann' s Chart | - | - | - | % | 2 | |
| 2 | Oxide of Nitrogen | Chemiluminescence Method | U.S. EPA Method 7E / Nitrogen dioxide Analyzer | - | - | 0.1 - 100 | ppm | 1 | ใช้ Dilution Probe ร่วมในการตรวจวัด |
| 3 | Sulfur Dioxide | UV Fluorescence Method | U.S. EPA Method 6C / Sulfur dioxide Analyzer | - | - | 0.4 - 100 | ppm | 1 | ใช้ Dilution Probe ร่วมในการตรวจวัด |
| 4 | Carbon Monoxide | Bag,Non-Dispersive Infrared Method | U.S. EPA method 10 / Carbon monoxide analyzer | - | - | 0.1 - 100 | ppm | 1 | ใช้ Dilution Probe ร่วมในการตรวจวัด |
| ช่วงงานทดสอบพื้นฐาน | | | | | | | | | |
| 1 | Hydrogen Sulfide (H ₂ S) | Absorption, Iodometric Method | U.S. EPA Method 11 / Iodometric | | | 8.0 6.0 | mg / m ³ ppm | 1 | |
| 2 | Sulfur Dioxide (SO ₂) | Absorption Barium Thorin Titrimetric Method | U.S. EPA Method 6 / Titration | 0.03 m ³ | Isokinetic (30 min) | 3.4 1.3 | mg / m ³ ppm | 1 | |
| 3 | Sulfuric acid (H ₂ SO ₄) | Isokinetic, Barium Thorin Titrimetric Method | U.S. EPA Method 8 / Titration | 0.9 m ³ | Isokinetic (30 min) | 0.05 0.01 | mg / m ³ ppm | 2 | |
| 4 | Total Particulate Matter (TSP) | Isokinetic, Sampling / Gravimetric Method | U.S. EPA Method 5 / Gravimetric Method | - | - | 0.1 | mg / m ³ | 1 | |
| ช่วงงานเครื่องมือทดสอบ | | | | | | | | | |
| 1 | Oxide of Nitrogen (Nitrogen Dioxide ; | Chemical Absorption, Colorimetric Method | U.S. EPA Method 7 / Spectrophotometer | 2.0 L | Non-Isokinetic (30 min) | 2.0 1.0 | mg / m ³ ppm | 1 | |
| 2 | Xylene | Sorbent Adsorption, Gas Chromatography Method | U.S. EPA Method 18 / GC-FID | 0.21 m ³ | 0.7 L/min (30 min) | 2.05 0.47 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 3 | Vanadium (V) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-OES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 4 | Tin (Sn) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-OES | 0.9 m ³ | Isokinetic (30 min) | 0.010 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 5 | Selenium (Se) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-OES | 0.9 m ³ | Isokinetic (30 min) | 0.010 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |

| Items | Parameter | Method | Reference Method / Analytical Technique | Air Volume | Sampling Rate / Period | LOQ / Range | Unit | Decimal point | Remark |
|-------|------------------------------|--|---|----------------------|------------------------|-------------|---------------------|---------------|------------------------------------|
| 6 | Antimony (Sb) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.010 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 7 | Arsenic (As) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.010 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 8 | Cadmium (Cd) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 9 | Chromium (Cr) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 10 | Copper (Cu) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 11 | Cobalt (Co) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 12 | Lead and Inorganic Lead (Pb) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 13 | Manganese (Mn) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 14 | Nickel (Ni) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 15 | Mercury (Hg) | Isokinetic, Sampling,Cold Vapor Technique-AAS Method | U.S. EPA Method 101 / AAS | 0.053 m ³ | Isokinetic (1.5 L/min) | 0.0001 | mg / m ³ | 4 | Advantage MFS Cat No. GC5090 MM |

การตรวจวิเคราะห์คุณภาพอากาศ (Air Quality Analysis)

(ประเภทตัวอย่าง : อากาศในปล่องระบาย - Stack Air Quality)

ตารางที่ 2 สรุปข้อกำหนดการเก็บตัวอย่างและความสามารถในการทดสอบตัวอย่างของห้องปฏิบัติการ [ที่ป็นที่จัดขึ้นทะเบียนกับกรมโรงงานอุตสาหกรรม](#)

(ประเภทตัวอย่าง : อากาศในปล่องระบาย - Stack Air Quality)

| Items | Parameter | Method | Reference Method / Analytical Technique | Air Volume | Sampling Rate / Period | LOQ / Range | Unit | Decimal point | Remark |
|-------------------------------|-----------------------------------|---|--|--------------------|------------------------|-------------|---------------------|---------------|------------------------------------|
| แผนปฏิบัติการภาคสนาม | | | | | | | | | |
| 1 | Sampling and Traverse point | U.S. EPA Recommend (Method 1) | U.S. EPA Method 1 / Calculation | - | - | - | - | - | |
| 2 | Velocity and Volumetric Flow rate | | U.S. EPA Method 2 / Calculation | - | - | - | - | - | |
| 3 | Oxygen | Electrochemical Sensor | Modified U.S. EPA 3 / Electrochemical Sensor | - | - | 0-20.9 | % | 1 | |
| 4 | Moisture Content | | U.S. EPA Method 4 / Calculation | - | - | - | - | 2 | |
| 5 | Carbon dioxide (CO ₂) | Electrochemical Sensor | Modified U.S. EPA 3 / Electrochemical Sensor | - | - | 0-20.9 | % | 2 | |
| ส่วนงานทดสอบพื้นฐาน | | | | | | | | | |
| 1 | PM10,PM2.5 | Isokinetic, Sampling / Gravimetric Method | U.S. EPA Method 201A / Gravimetric Method | - | - | 0.1 | mg / m ³ | 1 | |
| ส่วนงานเครื่องมือทดสอบ | | | | | | | | | |
| 1 | Aluminium (Al) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 2 | Barium (Ba) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 3 | Calcium (Ca) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.100 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 4 | Iron (Fe) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 5 | Magnesium (Mg) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.100 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 6 | Beryllium (Be) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 7 | Silver (Ag) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |

| Items | Parameter | Method | Reference Method / Analytical Technique | Air Volume | Sampling Rate / Period | LOQ / Range | Unit | Decimal point | Remark |
|-------|--------------------------------------|---|---|---------------------|------------------------|--------------|----------------------------|---------------|------------------------------------|
| 8 | Sodium (Na) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.100 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 9 | Zinc (Zn) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 10 | Acetone | Sorbent Adsorption, Gas Chromatography Method | US. EPA Method 18 / GC-FID | 0.21 m ³ | 0.7 L/min (30 min) | 1.88 0.79 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 11 | Benzene | Sorbent Adsorption, Gas Chromatography Method | US. EPA Method 18 / GC-FID | 0.21 m ³ | 0.7 L/min (30 min) | 1.68 0.52 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 12 | Cyclohexanone | Sorbent Adsorption, Gas Chromatography Method | US. EPA Method 18 / GC-FID | 0.21 m ³ | 0.7 L/min (30 min) | 2.26 0.56 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 13 | Ethanol (Ethyl alcohol) | Sorbent Adsorption, Gas Chromatography Method | US. EPA Method 18 / GC-FID | 0.21 m ³ | 0.7 L/min (30 min) | 1.88 1.00 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 14 | Ethylbenzene | Sorbent Adsorption, Gas Chromatography Method | US. EPA Method 18 / GC-FID | 0.21 m ³ | 0.7 L/min (30 min) | 2.07 0.48 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 15 | Ethylacetate | Sorbent Adsorption, Gas Chromatography Method | US. EPA Method 18 / GC-FID | 0.21 m ³ | 0.7 L/min (30 min) | 4.32 1.20 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 16 | Hexane | Sorbent Adsorption, Gas Chromatography Method | US. EPA Method 18 / GC-FID | 0.21 m ³ | 0.7 L/min (30 min) | 4.23 1.20 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 17 | Isopropanol (Isopropyl alcohol), IPA | Sorbent Adsorption, Gas Chromatography Method | US. EPA Method 18 / GC-FID | 0.21 m ³ | 0.7 L/min (30 min) | 1.87 0.76 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 18 | Methanol (Methyl alcohol) | Sorbent Adsorption, Gas Chromatography Method | US. EPA Method 18 / GC-FID | 0.21 m ³ | 0.7 L/min (30 min) | 0.94 0.72 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 19 | Methyl Ethyl Ketone (MEK) | Sorbent Adsorption, Gas Chromatography Method | US. EPA Method 18 / GC-FID | 0.21 m ³ | 0.7 L/min (30 min) | 1.92 0.65 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 20 | Styrene | Sorbent Adsorption, Gas Chromatography Method | US. EPA Method 18 / GC-FID | 0.21 m ³ | 0.7 L/min (30 min) | 2.16 0.51 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 21 | Toluene | Sorbent Adsorption, Gas Chromatography Method | US. EPA Method 18 / GC-FID | 0.21 m ³ | 0.7 L/min (30 min) | 2.07 0.55 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |

| Items | Parameter | Method | Reference Method / Analytical Technique | Air Volume | Sampling Rate / Period | LOQ / Range | Unit | Decimal point | Remark |
|-------|--------------------------------|---|---|--------------------|---------------------------|---------------|----------------------------|---------------|------------------------------------|
| 22 | Methylcyclohexane | Sorbent Adsorption, Gas Chromatography Method | U.S.EPA Method18/SKC.Guide/ GC-FID | 2-23 L | 0.10 L/min (1 hr) | 4.02 1.00 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-09 |
| 23 | Diethyl Ether or Ethyl Ether | Sorbent Adsorption, Gas Chromatography Method | U.S.EPA Method18/SKC.Guide/ GC-FID | 0.25-3 L | 0.01-0.20 L/min (1 hr) | 11.88 3.92 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-09 |
| 24 | Methyl tert-Butyl Ether (MTBE) | Sorbent Adsorption, Gas Chromatography Method | U.S.EPA Method18/SKC.Guide/ GC-FID | 2-96 L | 0.01-0.20 L/min (1 hr) | 3.08 0.86 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-09 |
| 25 | Dichloromethane | Sorbent Adsorption, Gas Chromatography Method | U.S.EPA Method18/SKC.Guide/ GC-FID | 0.5-2.5 L | 0.01-0.20 L/min (1 hr) | 3.16 0.91 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-09 |
| 26 | 1-Butanol /n-butyl alcohol | Sorbent Adsorption, Gas Chromatography Method | U.S.EPA Method18/SKC.Guide/ GC-FID | 2-10 L | 0.01-0.20 L/min (1 hr) | 2.31 0.76 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-09 |
| 27 | 2-Butanol /sec-butyl alcohol | Sorbent Adsorption, Gas Chromatography Method | U.S.EPA Method18/SKC.Guide/ GC-FID | 2-10 L | 0.01-0.20 L/min (1 hr) | 2.31 0.76 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-09 |
| 28 | Isobutyl alcohol (IBA) | Sorbent Adsorption, Gas Chromatography Method | U.S.EPA Method18/SKC.Guide/ GC-FID | 2-10 L | 0.01-0.20 L/min (1 hr) | 2.29 0.76 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226-09 |
| 29 | Thallium (Tl) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.010 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 30 | Ketones | Sorbent Adsorption, Gas Chromatography Method | NIOSH2555 (P.1-5) / PS pump / GC-FID | 21 L | 0.70 L/min (1 hr) | 1.88 0.79 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 31 | n-Heptane | Sorbent Adsorption, Gas Chromatography Method | NIOSH1500 (P.1-8) / PS pump / GC-FID | 21 L | 0.70 L/min (1 hr) | 3.89 0.95 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 32 | n-Butyl acetate | Sorbent Adsorption, Gas Chromatography Method | NIOSH 1450(P.1-6) / PS pump / GC-FID | 21 L | 0.70 L/min (1 hr) | 4.75 1.00 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 33 | n-Pentane | Sorbent Adsorption, Gas Chromatography Method | NIOSH 1500(P.1-8) / PS pump / GC-FID | 21 L | 0.70 L/min (1 hr) | 1.50 0.51 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 34 | Chloroform | Sorbent Adsorption, Gas Chromatography Method | NIOSH1003 (P.1-7) / PS pump / GC-FID | 21 L | 0.70 L/min (1 hr) | 2.82 0.58 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |
| 35 | Chlorobenzene | Sorbent Adsorption, Gas Chromatography Method | NIOSH1003 (P.1-7) / PS pump / GC-FID | 21 L | 0.70 L/min (1 hr) | 2.64 0.57 | mg / m ³ ppm | 2 | SKC Cat. No. 226-09 |

| Items | Parameter | Method | Reference Method / Analytical Technique | Air Volume | Sampling Rate / Period | LOQ / Range | Unit | Decimal point | Remark |
|-------|-------------------|---|---|----------------------|------------------------|----------------|----------------------------|---------------|------------------------------------|
| 36 | Formaldehyde | Sorbent Adsorption, Gas Chromatography Method | NIOSH2541 (P.1-5) / PS pump / GC-FID | 21 L | 0.70 L/min (1 hr) | 0.31 0.25 | mg / m ³ ppm | 2 | SKC Cat. No. 226-118 |
| 37 | Hydrogen chloride | Sorbent Adsorption, IC Method | EPA Method 26A /IC | 0.12 m ³ | 1 L/min (30 min) | 0.015 0.010 | mg / m ³ ppm | 3 | 0.1 N H2SO4 / 0.1 N NaOH |
| 38 | Hydrogen fluoride | Sorbent Adsorption, IC Method | EPA Method 26A /IC | 0.12 m ³ | 1 L/min (30 min) | 0.012 0.015 | mg / m ³ ppm | 3 | 0.1 N H2SO4 / 0.1 N NaOH |
| 39 | Nitric | Sorbent Adsorption, IC Method | EPA Method 26A /IC | 0.029 m ³ | 1 L/min (30 min) | 0.026 0.010 | mg / m ³ ppm | 3 | 0.1 N H2SO4 / 0.1 N NaOH |
| 40 | Chlorine | Sorbent Adsorption, IC Method | EPA Method 26A /IC | 0.12 m ³ | 1 L/min (30 min) | 0.029 0.010 | mg / m ³ ppm | 3 | Milli-Q Water |
| 41 | Molybdenum (Mo) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 42 | Titanium (Ti) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 43 | Boron (B) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 44 | Silicon (Si) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.005 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 45 | Potassium (K) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.100 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |
| 46 | Phosphorus (P) | Isokinetic, Sampling,Digestion,ICP-OES Method | U.S. EPA Method 29 / ICP-AES | 0.9 m ³ | Isokinetic (30 min) | 0.100 | mg / m ³ | 3 | Advantage MFS Cat No. GC5090 MM |

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5. International Standard Organization, ISO 11204:1995
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การตรวจวิเคราะห์คุณภาพอากาศ (Air Quality Analysis)

| (ประเภทตัวอย่าง : อากาศในบริเวณการทำงาน - Workplace Air Quality) | | | | | | | | | | |
|--|--|--|--|------------|------------------------|-------------|---------------------|---------------|---------------------------------|-------------------|
| Items | Parameter | Sampling/Method | Reference Method / Analytical Technique | Air Volume | Sampling Rate / Period | LOQ / Range | Unit | Decimal point | Remark | Heavy Metal (TWA) |
| แบบปฏิบัติการภาคสนาม | | | | | | | | | | |
| 1 | Illumination | Lux Meter | IES C 1906 / Lux meter | | - | 0-5000 | lux | - | | |
| 2 | Sound (Leq, Lmin, Lmax, Ldn, Lp) | Integrated Sound Level Method | ISO 11202 / Sound Level Meter | | - | 40 - 140 | dB (A) | 1 | | |
| 3 | Noise Octave band | Integrated Sound Level Method | AS/NZS 4476 1997 / Sound Level Meter | | - | 40 - 140 | dB (A) | 1 | 1/3 Octave band 1/1 Octave band | |
| 4 | Noise dose | Integrated Sound Level Method | BS6402 / Noise Dosimeter | | - | 0 - 9999 | % Dose | 2 | | |
| 5 | Carbon Monoxide (CO) | Non-Dispersive Infrared Photometric Method | U.S. EPA 10 (P.1-5) / Carbon Monoxide Analyzer | | - | 0.1 - 100 | ppm | 1 | | |
| 6 | Ozone (O ₃) | UV Fluorescence Method | U.S. EPA method / Ozone Analyzer | | - | 0.1 - 100 | ppm | 2 | | |
| 7 | Heat Stress | WBGT Method | ACGIH / Grove + DI + Thermometer / calculation | - | - | 0 - 100 | oC | 2 | | |
| จำนวนทดสอบพื้นฐาน | | | | | | | | | | |
| 1 | Total Dust (TD) | Filtration, Gravimetric Method | NIOSH 0500 (P.1-3) / PS pump / Gravimetric | 7-133 L | 2 L/min (1 hr) | 0.8 | mg / m ³ | 1 | SKC Cat No. 225-8-01 | |
| 2 | Respirable Dust (RD) | Cyclone - Filtration, Gravimetric Method | NIOSH 0600 (P.1-3) / PS pump cyclone / Gravimetric | 20-400 L | 1.70 L/min (1 hr) | 0.5 | mg / m ³ | 1 | SKC Cat No. 225-8-01 | |
| 3 | NaOH | Acid-Base Titrimetric Method | NIOSH 7401(P.1-4) / PS pump / Titration | 70-1000 L | 1-4 L/min | 0.4 | mg / m ³ | 1 | SKC Cat No. 225-17- | |
| 4 | KOH | Acid-Base Titrimetric Method | NIOSH 7401(P.1-4) / PS pump / Titration | 70-1000 L | 1-4 L/min | 0.6 | mg / m ³ | 1 | SKC Cat No. 225-17- | |
| 5 | LiOH | Acid-Base Titrimetric Method | NIOSH 7401(P.1-4) / PS pump / Titration | 70-1000 L | 1-4 L/min | 0.2 | mg / m ³ | 1 | SKC Cat No. 225-17- | |
| จำนวนเครื่องมือทดสอบ | | | | | | | | | | |
| 1 | Ammonia | Impingement Absorption - Colorimetric Method | Modified NIOSH 6015(P.1-7) / Spectrophotometer | 0.1-96 L | 1 L/min (1 hr) | 0.01 | mg / m ³ | 2 | | |
| 2 | Nitrogen Dioxide | Impingement Absorption, Spectrophotometer Method | APHA 817(P.1-3) / Spectrophotometer | 7.5 - 10 L | 0.5 L/min (15-20 min) | 0.01 | ppm | 2 | | |
| 3 | Sulfur Dioxide | Impingement Absorption, Titrimetric Method | APHA 823(P.1-3) / Titration | 26 L | 0.21 L/min (2 hrs) | 0.30 | mg / m ³ | 2 | | |
| 4 | P,P'-diphenylmethane diisocyanate(MDI) (MDI) | Impingement Absorption, Spectrophotometer Method | APHA 831(P.1-3) / Spectrophotometer | 20 L | 1 L/min (20 min) | 0.002 | ppm | 2 | | |
| 5 | Aluminum (Al) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 5-100 L | 2 L/min (1 hr) | 0.004 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.001 |
| 6 | Antimony (Sb) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 50-2000 L | 2 L/min (1 hr) | 0.021 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.003 |

| Items | Parameter | Sampling/Method | Reference Method / Analytical Technique | Air Volume | Sampling Rate / Period | LOQ / Range | Unit | Decimal point | Remark | Heavy Metal (TWA) |
|-------|------------------------------|----------------------------|---|------------|------------------------|-------------|---------------------|---------------|-------------------|-------------------|
| 7 | Arsenic & Compound (as As) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 5-2000 L | 2 L/min (1 hr) | 0.021 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.003 |
| 8 | Barium (Ba) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 50-2000 L | 2 L/min (1 hr) | 0.004 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.001 |
| 9 | Cadmium & Compounds (as Cd) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 25-1500 L | 2 L/min (1 hr) | 0.004 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.001 |
| 10 | Calcium & Compounds (as Ca) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 20-400 L | 2 L/min (1 hr) | 0.208 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.026 |
| 11 | Chromium & Compounds (as Cr) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 5-1000 L | 2 L/min (1 hr) | 0.004 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.001 |
| 12 | Copper (Cu) (Dust & Fume) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 50-1500 L | 2 L/min (1 hr) | 0.004 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.001 |
| 13 | Iron & Compounds (as Fe) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 5-1000 L | 2 L/min (1 hr) | 0.004 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.001 |
| 14 | Lead (Pb) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 50-2000 L | 2 L/min (1 hr) | 0.004 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.001 |
| 15 | Magnesium (Mg) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 6-67 L | 2 L/min (1 hr) | 0.208 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.026 |
| 16 | Manganese (Mn) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 5-200 L | 2 L/min (1 hr) | 0.004 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.001 |
| 17 | Mercury (Hg) | Filtration - AAS Method | NIOSH 6009(P.1-5) / PS pump / AAS | 2 - 100 L | 0.2 L/min (1 hr) | 0.00002 | mg / m3 | 5 | SKC Cat No. 225-5 | 0.00001 |
| 18 | Nickel & Compounds (as Ni) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 5-1000 L | 2 L/min (1 hr) | 0.004 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.001 |
| 19 | Selenium (Se) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 13-2000 L | 2 L/min (1 hr) | 0.021 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.003 |
| 20 | Silver (Ag) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 250-2000 L | 2 L/min (2-17 hr) | 0.010 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.001 |
| 21 | Sodium (Na) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 13-2000 L | 2 L/min (1 hr) | 0.208 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.026 |
| 22 | Tin (Sn) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 5-1000 L | 2 L/min (1 hr) | 0.021 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.003 |
| 23 | Titanium (Ti) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 5-1000 L | 2 L/min (1 hr) | 0.004 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.001 |

| Items | Parameter | Sampling/Method | Reference Method / Analytical Technique | Air Volume | Sampling Rate / Period | LOQ / Range | Unit | Decimal point | Remark | Heavy Metal (TWA) |
|-------|---------------------------------------|-------------------------------|---|------------|------------------------|---------------|----------------------------|---------------|----------------------|-------------------|
| 24 | Vanadium (V) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 5-2000 L | 2 L/min (1 hr) | 0.004 | mg / m ³ | 3 | SKC Cat. No. 225-5 | 0.001 |
| 25 | Zinc & Compounds (Zn) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 5-2000 L | 2 L/min (1 hr) | 0.004 | mg / m ³ | 3 | SKC Cat. No. 225-5 | 0.001 |
| 26 | Acetone | Sorbent Adsorption, GC Method | NIOSH 1300 (P.1-5) / PS pump / GC-FID | 0.5-3 L | 0.10 L/min (30 min) | 13.17 5.54 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 27 | Benzene | Sorbent Adsorption, GC Method | NIOSH 1501(P.1-7) / PS pump / GC-FID | 5-30 L | 0.10 L/min (1 hr) | 2.93 0.92 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 28 | Cyclohexanone | Sorbent Adsorption, GC Method | NIOSH 1300(P.1-5) / PS pump / GC-FID | 1-10 L | 0.10 L/min (1 hr) | 3.96 0.99 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 29 | Ethanol (Ethyl alcohol) | Sorbent Adsorption, GC Method | NIOSH 1400(P.1-4) / PS pump / GC-FID | 12 L | 0.10 L/min (1 hr) | 3.29 1.75 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 30 | Ethylacetate | Sorbent Adsorption, GC Method | NIOSH 1457 (P.1-4) / PS pump / GC-FID | 0.1-10 L | 0.10 L/min (1 hr) | 7.21 2.00 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 31 | Ethylbenzene | Sorbent Adsorption, GC Method | NIOSH 1501 (P.1-7) / PS pump / GC-FID | 1-24 L | 0.10 L/min (1 hr) | 3.63 0.83 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 32 | Hexane | Sorbent Adsorption, GC Method | NIOSH 1500(P.1-8) / PS pump / GC-FID | 4 L | 0.10 L/min (1 hr) | 7.05 2.00 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 33 | Isopropanol (Isopropyl alcohol) ; IPA | Sorbent Adsorption, GC Method | NIOSH 1400(P.1-4) / PS pump / GC-FID | 12 L | 0.10 L/min (1 hr) | 3.28 1.33 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 34 | Methanol (Methyl alcohol) | Sorbent Adsorption, GC Method | OSHA 91(P.1-10) / PS pump / GC-FID | 1-5 L | 0.10 L/min (30 min) | 3.96 3.02 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 35 | Methyl Ethyl Ketone (MEK) | Sorbent Adsorption, GC Method | OSHA 1004(P.1-27) / PS pump / GC-FID | 0.25-12L | 0.10 L/min (1 hr) | 3.35 1.14 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 36 | Methyl Isobutyl Ketone (MIBK) | Sorbent Adsorption, GC Method | OSHA 1004(P.1-27) / PS pump / GC-FID | 0.25-12L | 0.10 L/min (1 hr) | 3.34 0.81 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 37 | Styrene | Sorbent Adsorption, GC Method | NIOSH 1501 (P.1-7) / PS pump / GC-FID | 1-24 L | 0.10 L/min (1 hr) | 3.78 0.89 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 38 | Toluene | Sorbent Adsorption, GC Method | NIOSH 1501 (P.1-7) / PS pump / GC-FID | 1-8 L | 0.10 L/min (1 hr) | 3.63 0.96 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 39 | Xylene | Sorbent Adsorption, GC Method | NIOSH 1501 (P.1-7) / PS pump / GC-FID | 2-23 L | 0.10 L/min (1 hr) | 3.58 0.83 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 40 | Cumene | Sorbent Adsorption, GC Method | NIOSH 1501 (P.1-7) / PS pump / GC-FID | 2-23 L | 0.10 L/min (1 hr) | 3.60 0.73 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |

| Items | Parameter | Sampling/Method | Reference Method / Analytical Technique | Air Volume | Sampling Rate / Period | LOQ / Range | Unit | Decimal point | Remark | Heavy Metal (TWA) |
|-------|---------------------------------------|-------------------------------|---|-------------|---------------------------|---------------|----------------------------|---------------|----------------------|-------------------|
| 41 | Methylcyclohexane | Sorbent Adsorption, GC Method | NIOSH 1500 (P.1-8) / PS pump / GC-FID | 2-23 L | 0.10 L/min (1 hr) | 7.23 1.80 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 42 | Methyl acetate | Sorbent Adsorption, GC Method | NIOSH 1458 (P.1-8) / PS pump / GC-FID | 0.2-10 L | 0.10 L/min (1 hr) | 9.09 3.00 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 43 | Diethyl Ether or Ethyl Ether | Sorbent Adsorption, GC Method | NIOSH 1610 (P.1-4) / PS pump / GC-FID | 0.25-3 L | 0.01-0.20 L/min (1 hr) | 11.88 3.92 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 44 | Methyl tert-Butyl Ether (MTBE) | Sorbent Adsorption, GC Method | NIOSH 1615 (P.1-4) / PS pump / GC-FID | 2-96 L | 0.01-0.20 L/min (1 hr) | 3.08 0.86 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 45 | Dichloromethane or Methylene chloride | Sorbent Adsorption, GC Method | NIOSH 1005 (P.1-4) / PS pump / GC-FID | 0.5-2.5 L | 0.01-0.20 L/min (1 hr) | 22.1 6.36 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 46 | 1-Butanol /n-butyl alcohol | Sorbent Adsorption, GC Method | NIOSH 1401 (P.1-4) / PS pump / GC-FID | 2-10 L | 0.01-0.20 L/min (1 hr) | 4.86 1.60 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 47 | 2-Butanol /sec-butyl alcohol | Sorbent Adsorption, GC Method | NIOSH 1401 (P.1-4) / PS pump / GC-FID | 2-10 L | 0.01-0.20 L/min (1 hr) | 4.86 1.60 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 48 | Isobutyl alcohol (IBA) | Sorbent Adsorption, GC Method | NIOSH 1401 (P.1-4) / PS pump / GC-FID | 2-10 L | 0.01-0.20 L/min (1 hr) | 4.81 1.59 | mg / m ³ ppm | 2 | SKC Cat. No. ST 226- | |
| 49 | Beryllium (Be) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 1250-2000 L | 2 L/min (1 hr) | 0.004 | mg / m ³ | 3 | SKC Cat. No. 225-5 | 0.001 |
| 50 | Cobalt (Co) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 25-2000 L | 2 L/min (1 hr) | 0.004 | mg / m ³ | 3 | SKC Cat. No. 225-5 | 0.001 |
| 51 | Molybdenum (Mo) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 5-67 L | 2 L/min (1 hr) | 0.004 | mg / m ³ | 3 | SKC Cat. No. 225-5 | 0.001 |
| 52 | Thallium (Tl) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 25-2000 L | 2 L/min (1 hr) | 0.021 | mg / m ³ | 3 | SKC Cat. No. 225-5 | 0.003 |
| 53 | Silicon (Si) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 5-1000 L | 2 L/min (1 hr) | 0.010 | mg / m ³ | 3 | SKC Cat. No. 225-5 | 0.001 |
| 54 | Potassium (K) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 5-1000 L | 2 L/min (1 hr) | 0.208 | mg / m ³ | 3 | SKC Cat. No. 225-5 | 0.026 |
| 55 | Ketones | Sorbent Adsorption, GC Method | NIOSH 2555 (P.1-5) / PS pump / GC-FID | 0.5-3.0 L | 0.01-0.20 L/min (1 hr) | 13.17 5.54 | mg / m ³ ppm | 2 | SKC Cat. No. 226-01 | |
| 56 | n-Heptane | Sorbent Adsorption, GC Method | NIOSH 1500 (P.1-8) / PS pump / GC-FID | - | 0.01-0.20 L/min (1 hr) | 6.97 1.70 | mg / m ³ ppm | 2 | SKC Cat. No. 226-01 | |
| 57 | n-Butyl acetate | Sorbent Adsorption, GC Method | NIOSH 1450(P.1-6) / PS pump / GC-FID | 1-10 L | 0.01-0.20 L/min (1 hr) | 8.55 1.80 | mg / m ³ ppm | 2 | SKC Cat. No. 226-01 | |

| Items | Parameter | Sampling/Method | Reference Method / Analytical Technique | Air Volume | Sampling Rate / Period | LOQ / Range | Unit | Decimal point | Remark | Heavy Metal (TWA) |
|-------|----------------------------|-------------------------------|--|------------|---------------------------|----------------|----------------------------|---------------|---|-------------------|
| 58 | n-Pentane | Sorbent Adsorption, GC Method | NIOSH 1500(P.1-8) / PS pump / GC-FID | - | 0.01-0.20 L/min (1 hr) | 2.63 0.89 | mg / m ³ ppm | 2 | SKC Cat. No. 226-01 | |
| 59 | Chloroform | Sorbent Adsorption, GC Method | NIOSH 1003 (P.1-7) / PS pump / GC-FID | 1-50 L | 0.01-0.20 L/min (1 hr) | 4.93 1.01 | mg / m ³ ppm | 2 | SKC Cat. No. 226-01 | |
| 60 | Chlorobenzene | Sorbent Adsorption, GC Method | NIOSH 1003 (P.1-7) / PS pump / GC-FID | 1.5-40L | 0.01-0.20 L/min (1 hr) | 4.63 1.00 | mg / m ³ ppm | 2 | SKC Cat. No. 226-01 | |
| 61 | Formaldehyde | Sorbent Adsorption, GC Method | NIOSH 2541 (P.1-5) / PS pump / GC-FID | 1-36L | 0.01-0.10 L/min (1 hr) | 0.12 0.10 | mg / m ³ ppm | 2 | SKC Cat. No. 226-118 ujđnu DL:1/2/24 | |
| 62 | Hydrogen chloride | Sorbent Adsorption, IC Method | OSHA ID-174SG / PS pump / IC | 100 L | 500 L/min (15 min) | 0.015 0.010 | mg / m ³ ppm | 3 | SKC Cat. No. 226-10- | |
| 63 | Hydrogen Bromide | Sorbent Adsorption, IC Method | OSHA ID165SG / PS pump / IC | 100 L | 200 L/min (60min) | 0.033 0.010 | mg / m ³ ppm | 3 | SKC Cat. No. 226-10- | |
| 64 | Sulfuric Acid | Sorbent Adsorption, IC Method | OSHA ID165SG / PS pump / IC NIOSH 7908 / PS pump / IC | 100 L | 200 L/min (60min) | 0.040 0.010 | mg / m ³ ppm | 3 | SKC Cat. No. 226-10- Filter (PTFE) | |
| 65 | Phosphoric Acid | Sorbent Adsorption, IC Method | OSHA ID165SG / PS pump / IC NIOSH 7908 / PS pump / IC | 100 L | 200 L/min (60min) | 0.040 0.010 | mg / m ³ ppm | 3 | SKC Cat. No. 226-10- Filter (PTFE) | |
| 66 | Ammonia (NH ₃) | Sorbent Adsorption, IC Method | NIOSH 6016 / PS pump / IC | 12 L | 200 L/min (120min) | 0.200 0.280 | mg / m ³ ppm | 3 | SKC Cat. No. 226-10- | |
| 67 | Nitric | Sorbent Adsorption, IC Method | OSHA ID165SG / PS pump / IC | 100 L | 200 L/min (60min) | 0.026 0.010 | mg / m ³ ppm | 3 | SKC Cat. No. 226-10- | |
| 68 | Chlorine | Sorbent Adsorption, IC Method | OSHA ID-202 / PS pump / IC | 60 L | 200 L/min (60min) | 0.029 0.010 | mg / m ³ ppm | 3 | 0.02% KI in Buffer | |
| 69 | Hydrogen fluoride | Sorbent Adsorption, IC Method | OSHA ID165SG / PS pump / IC | 60 L | 200 L/min (60min) | 0.008 0.010 | mg / m ³ ppm | 3 | SKC Cat. No. 226-10- | |
| 70 | Phosphorus (P) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 5-1000 L | 2 L/min (1 hr) | 0.208 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.026 |
| 71 | Boron (B) | Filtration, ICP-OES Method | NIOSH 7300(P.1-8) / PS pump / ICP-OES | 5-1000 L | 2 L/min (1 hr) | 0.010 | mg / m ³ | 3 | SKC Cat No. 225-5 | 0.001 |

ໂອກາດວິໄນຈິງ

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4. OSHA Analytical Methods Manual, 2nd Edition, U.S. Department of Labor, 1992
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6. Compendium of Methods for Determination of Inorganic Compound in Ambient Air, U.S. EPA., 1999
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การตรวจวิเคราะห์คุณภาพน้ำ – ภาคตะกอน (Water – Solid wastes Quality Analysis)

ตารางที่ 8 สรุปข้อกำหนดการเก็บตัวอย่างและความสามารถในการทดสอบตัวอย่างของห้องปฏิบัติการ ตามที่ขึ้นทะเบียนกับกรมโรงงานอุตสาหกรรม

(ประเภทตัวอย่าง : ดิน)

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (g) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|---|---|--|-----------|-----------------|------|------|-------------|---------------|--------|
| 1 | Arsenic (As) | Digestion,ICP-OES Method | US EPA SW 846 Method 3050B / ICP-OES | Plastic | 500 | 2.50 | 5.00 | mg/kg as As | 2 | |
| 2 | Antimony (Sb) | Digestion,ICP-OES Method | US EPA SW 846 Method 3050B / ICP-OES | Plastic | 500 | 2.50 | 5.00 | mg/kg as Sb | 2 | |
| 3 | Barium (Ba) | Digestion,ICP-OES Method | US EPA SW 846 Method 3050B / ICP-OES | Plastic | 500 | 0.50 | 1.00 | mg/kg as Ba | 2 | |
| 4 | Beryllium (Be) | Digestion,ICP-OES Method | US EPA SW 846 Method 3050B / ICP-OES | Plastic | 500 | 0.50 | 1.00 | mg/kg as Be | 2 | |
| 5 | Cadmium (Cd) | Digestion,ICP-OES Method | US EPA SW 846 Method 3050B / ICP-OES | Plastic | 500 | 0.10 | 0.15 | mg/kg as Cd | 2 | |
| 6 | Chromium (Cr) | Digestion,ICP-OES Method | US EPA SW 846 Method 3050B / ICP-OES | Plastic | 500 | 0.50 | 1.00 | mg/kg as Cr | 2 | |
| 7 | Hexavalent Chromium (Cr ⁶⁺) | Digestion,Colorimetric Method | US EPA SW 846 Method 3060A,7196A / Spectrophotometer | Plastic | 500 | 0.40 | 2.00 | mg/kg as Cr | 3 | |
| 8 | Lead (Pb) | Digestion,ICP-OES Method | US EPA SW 846 Method 3050B / ICP-OES | Plastic | 500 | 0.50 | 1.00 | mg/kg as Pb | 2 | |
| 9 | Manganese (Mn) | Digestion,ICP-OES Method | US EPA SW 846 Method 3050B / ICP-OES | Plastic | 500 | 0.50 | 1.00 | mg/kg as Mn | 2 | |
| 10 | Mercury (Hg) | Digestion,Cold Vapor Technique-AAS Method | US EPA SW 846 Method 7471B / AAS | Plastic | 500 | 0.10 | 0.20 | mg/kg as Hg | 4 | |
| 11 | Nickel (Ni) | Digestion,ICP-OES Method | US EPA SW 846 Method 3050B / ICP-OES | Plastic | 500 | 0.50 | 1.00 | mg/kg as Ni | 2 | |
| 12 | Selenium (Se) | Digestion,ICP-OES Method | US EPA SW 846 Method 3050B / ICP-OES | Plastic | 500 | 2.50 | 5.00 | mg/kg as Se | 2 | |
| 13 | Silver (Ag) | Digestion,ICP-OES Method | US EPA SW 846 Method 3050B / ICP-OES | Plastic | 500 | 1.00 | 2.50 | mg/kg as Ag | 2 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (g) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|--|---|--|-----------|-----------------|-------|-------|-------------|---------------|--------|
| 14 | Trivalent Chromium (Cr ³⁺) | Digestion,ICP-OES; Filtration,Colorimetric Method;Calculation | US EPA SW 846 Method 3060A,7196A / Spectrophotometer | Plastic | 500 | 0.40 | 2.00 | mg/k as Cr | 3 | |
| 15 | Vanadium (V) | Digestion,ICP-OES Method | US EPA SW 846 Method 3050B / ICP-OES | Plastic | 500 | 0.50 | 1.00 | mg/kg as V | 2 | |
| 16 | Zinc (Zn) | Digestion,ICP-OES Method | US EPA SW 846 Method 3050B / ICP-OES | Plastic | 500 | 0.50 | 1.00 | mg/kg as Zn | 2 | |
| 17 | Volatile organic compounds;VOC | | | Glass | 50 | | | | | |
| 1 | - Acetone | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 2 | - Benzene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 3 | - Bromodichloromethane | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 4 | - Bromoform | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 5 | - Butanol | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 6 | - Carbon disulfide | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 7 | - Carbon tetrachloride | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 8 | - Chlorobenzene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 9 | - Chlorodibromomethane | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 10 | - Chloroform | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 11 | - 1,2-Dichlorobenzene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (g) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|---|------------------------|---|-----------|-----------------|-------|-------|-------|---------------|--------|
| 12 | - 1,3-Dichlorobenzene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 13 | - 1,4-Dichlorobenzene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 14 | - 1,1-Dichloroethane | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 15 | - 1,2-Dichloroethane | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 16 | - 1,1-Dichloroethylene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 17 | - cis-1,2-Dichloroethylene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 18 | - trans-1,2-Dichloroethylene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 19 | - 1,2-Dichloropropane | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 20 | - 1,3-Dichloropropane | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 21 | - Ethylbenzene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 22 | - n-Hexane | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.010 | 0.010 | mg/kg | 3 | |
| 23 | - Methylene Chloride or Dichloromethane | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 24 | - Methyl tert-butyl ether | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 25 | - Naphthalene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 26 | - Nitrobenzene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (g) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|-----------------------------|------------------------|---|-----------|-----------------|-------|-------|-------|---------------|--------|
| 27 | - Styrene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 28 | - 1,1,2,2-Tetrachloroethane | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 29 | - Tetrachloroethylene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 30 | - Toluene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 31 | - 1,2,4-Trichlorobenzene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 32 | - 1,1,1-Trichloroethane | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 33 | - 1,1,2-Trichloroethane | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 34 | - Trichloroethylene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 35 | - 1,3,5-Trimethylbenzene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 36 | - Vinyl acetate | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 37 | - Vinyl Chloride | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 38 | - m-Xylene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 39 | - o-Xylene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 40 | - p-Xylene | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |
| 41 | - Xylene Total | Purge-and-Trap / GC-MS | US EPA SW 846 Method 5035A and 8260D | Glass | 50 | 0.005 | 0.010 | mg/kg | 3 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (g) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|-----------------------------------|-------------------------------|---|-----------|-----------------|-------|-------|-------|---------------|--------|
| 18 | Semivolatile organic compounds #1 | | | Glass | 2500 | | | | | |
| 1 | Acenaphthene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 2 | Anthracene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.500 | mg/kg | 3 | |
| 3 | Benzo[a]anthracene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 4 | Benzo[b]fluoranthene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 5 | Benzo[k]fluoranthene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 6 | Benzo[a]pyrene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.500 | mg/kg | 3 | |
| 7 | Benzo[ghi]perylene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 8 | Bis(2-chloroethyl) ether | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 9 | Bis(2-ethylhexyl) phthalate | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.500 | mg/kg | 3 | |
| 10 | Butyl benzyl phthalate | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 11 | Carbazole | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 12 | p-Chloroaniline | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.500 | 1.250 | mg/kg | 3 | |
| 13 | 2-Chlorophenol | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 14 | Chrysene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (g) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|---------------------------|-------------------------------|---|-----------|-----------------|-------|-------|-------|---------------|--------|
| 15 | Dibenz[a,h]anthracene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 16 | Di-n-butyl phthalate | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 17 | 2,4-Dichlorophenol | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.500 | mg/kg | 3 | |
| 18 | Diethyl Phthalate | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 19 | 2,4-Dimethylphenol | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.500 | mg/kg | 3 | |
| 20 | 2,4-Dinitrotoluene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.500 | mg/kg | 3 | |
| 21 | 2,6-Dinitrotoluene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.500 | mg/kg | 3 | |
| 22 | Di-n-octyl phthalate | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.500 | mg/kg | 3 | |
| 23 | Fluoranthene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 24 | Fluorene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 25 | Hexachlorobenzene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 26 | Hexachloro-1,3-butadiene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 27 | Hexachlorocyclopentadiene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 28 | Hexachloroethane | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 29 | Indeno[1,2,3-cd]pyrene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.500 | mg/kg | 3 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (g) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|---------------------------|-------------------------------|---|-----------|-----------------|-------|-------|-------|---------------|--------|
| 30 | Isophorone | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 31 | 2-Methylphenol (o-Cresol) | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.500 | mg/kg | 3 | |
| 32 | 2-Methylnaphthalene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 33 | N-Nitrosodi-n-propylamine | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 34 | Phenanthrene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 35 | Phenol | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 36 | Pyrene | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.250 | mg/kg | 3 | |
| 37 | 2,4,5-Trichlorophenol | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.500 | mg/kg | 3 | |
| 38 | 2,4,6-Trichlorophenol | Ultrasonic Extraction / GC-MS | US EPA SW 846 Method 3550C and 8270E | Glass | 2500 | 0.125 | 0.500 | mg/kg | 3 | |

การตรวจวิเคราะห์คุณภาพน้ำ - ภาคตะกอน (Water – Solid wastes Quality Analysis)

ตารางที่ 7 สรุปข้อกำหนดการเก็บตัวอย่างและความสามารถในการทดสอบตัวอย่างของห้องปฏิบัติการ ตามที่ขึ้นทะเบียนกับกรมโรงงานอุตสาหกรรม

(ประเภทตัวอย่าง : ภาคตะกอน คำนวณประเภทเรื่องสิ่งปนเปื้อนที่ไม่ใช่แก๊ส และ ดิน)

จำนวน : ส่วนงานเครื่องมือทดสอบ

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (g) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|----------------|---|--|-----------|-----------------|--------------|--------------|---------------------------|---------------|--------|
| 1 | Antimony (Sb) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.05 2.50 | 0.10 5.00 | mg/l as Sb mg/kg as Sb | 2 | |
| 2 | Arsenic (As) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.05 2.50 | 0.10 5.00 | mg/l as As mg/kg as As | 2 | |
| 3 | Barium (Ba) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.01 0.50 | 0.02 1.00 | mg/l as Ba mg/kg as Ba | 2 | |
| 4 | Beryllium (Be) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.01 0.50 | 0.02 1.00 | mg/l as Be mg/kg as Be | 2 | |
| 5 | Cadmium (Cd) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.01 0.10 | 0.02 0.15 | mg/l as Cd mg/kg as Cd | 2 | |
| 6 | Chromium (Cr) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.01 0.50 | 0.02 1.00 | mg/l as Cr mg/kg as Cr | 2 | |
| 7 | Cobalt (Co) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.01 0.50 | 0.02 1.00 | mg/l as Co mg/kg as Co | 2 | |
| 8 | Copper (Cu) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.01 0.50 | 0.02 1.00 | mg/l as Cu mg/kg as Cu | 2 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (g) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|---|---|--|-----------|-----------------|--------|--------|-------------|---------------|--------|
| 9 | Hexavalent Chromium (Cr ⁶⁺) | Colorimetric Method/ Spectrophotometer Alkaline Digestion,Colorimetric Method/ Spectrophotometer | SW 846 Method 7196A / Spectrophotometer US EPA SW 846 Method 3060A and 7196A / Spectrophotometer | Plastic | 500 | 0.003 | 0.050 | mg/l as Cr | 3 | |
| | | | | | | 0.40 | 2.00 | mg/kg as Cr | 2 | |
| 10 | Lead (Pb) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.01 | 0.02 | mg/l as Pb | 2 | |
| | | | | | | 0.50 | 1.00 | mg/kg as Pb | | |
| 11 | Mercury (Hg) | Waste Extraction, Cold Vapor Technique-AAS Method Digestion,Cold Vapor Technique-AAS Method | US EPA SW 846 Method 1310A and Standard Method part 3112 B / AAS US EPA SW 846 Method 3050B and 7471B / AAS | Plastic | 500 | 0.0005 | 0.0010 | mg/l as Hg | 4 | |
| | | | | | | 0.10 | 0.20 | mg/kg as Hg | 2 | |
| 12 | Molybdenum (Mo) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.01 | 0.02 | mg/l as Mo | 2 | |
| | | | | | | 0.50 | 1.00 | mg/kg as Mo | | |
| 13 | Nickel (Ni) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.01 | 0.02 | mg/l as Ni | 2 | |
| | | | | | | 0.50 | 1.00 | mg/kg as Ni | | |
| 14 | Selenium (Se) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.05 | 0.10 | mg/l as Se | 2 | |
| | | | | | | 2.50 | 5.00 | mg/kg as Se | | |
| 15 | Silver (Ag) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.02 | 0.05 | mg/l as Ag | 2 | |
| | | | | | | 1.00 | 2.50 | mg/kg as Ag | | |
| 16 | Thallium (Tl) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.05 | 0.10 | mg/l as V | 2 | |
| | | | | | | 2.50 | 5.00 | mg/kg as V | | |
| 17 | Vanadium (V) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.01 | 0.02 | mg/l as V | 2 | |
| | | | | | | 0.50 | 1.00 | mg/kg as V | | |
| 18 | Zinc (Zn) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.01 | 0.02 | mg/l as Zn | 2 | |
| | | | | | | 0.50 | 1.00 | mg/kg as Zn | | |

การตรวจวิเคราะห์คุณภาพน้ำ – ภาคตะกอน (Water – Solid wastes Quality Analysis)

ตารางที่ 9 สรุปข้อกำหนดการเก็บตัวอย่างและความสามารถในการทดสอบตัวอย่างของห้องปฏิบัติการ ที่ไม่ได้ขึ้นทะเบียนกับกรมโรงงานอุตสาหกรรม (ประเภทตัวอย่าง : ภาคตะกอน ตามประกาศเรื่องสิ่งปฏิกูลที่ไม่ใช่แล้ว)

ส่วนงาน : ส่วนงานเครื่องมือทดสอบ

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|----------------|---|--|-----------|------------------|-------|-------|-------------|---------------|--------|
| 1 | Aluminium (Al) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.05 | 0.10 | mg/l as Al | 2 | |
| | | | | | | 2.50 | 5.00 | mg/kg as Al | 2 | |
| 2 | Boron (B) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.01 | 0.02 | mg/l as B | 2 | |
| | | | | | | 0.50 | 1.00 | mg/kg as B | 2 | |
| 3 | Calcium (Ca) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.05 | 0.10 | mg/l as Ca | 2 | |
| | | | | | | 25.0 | 50.0 | mg/kg as Ca | 1 | |
| 4 | Iron (Fe) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.02 | 0.03 | mg/l as Fe | 2 | |
| | | | | | | 1.00 | 1.50 | mg/kg as Fe | 2 | |
| 5 | Magnesium (Mg) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.05 | 0.10 | mg/l as Mg | 2 | |
| | | | | | | 25.0 | 50.0 | mg/kg as Mg | 1 | |
| 6 | Manganese (Mn) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.01 | 0.02 | mg/l as Mn | 2 | |
| | | | | | | 0.50 | 1.00 | mg/kg as Mn | 2 | |
| 7 | Potassium (K) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.50 | 1.00 | mg/l as K | 2 | |
| | | | | | | 25.00 | 50.00 | mg/kg as K | 2 | |
| 8 | Silicon (Si) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.02 | 0.05 | mg/l as Si | 2 | |
| | | | | | | 1.00 | 2.50 | mg/kg as Si | 2 | |
| 9 | Sodium (Na) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.50 | 1.00 | mg/l as Na | 2 | |
| | | | | | | 25.0 | 50.0 | mg/kg as Na | 1 | |
| 10 | Strontium (Sr) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.01 | 0.02 | mg/l as Sr | 2 | |
| | | | | | | 0.50 | 1.00 | mg/kg as Sr | 2 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|----------------|---|--|-----------|------------------|---------------|---------------|---------------------------|---------------|--------|
| 11 | Tin (Sn) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.05 2.50 | 0.10 5.00 | mg/l as Sn mg/kg as Sn | 2 2 | |
| 12 | Titanium (Ti) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.01 0.50 | 0.02 1.00 | mg/l as Ti mg/kg as Ti | 2 2 | |
| 13 | Phosphorus (P) | Waste Extraction , ICP-OES Method Digestion,ICP-OES Method | US EPA SW 846 Method 1310A and 6010C / ICP-OES US EPA SW 846 Method 3050B and 6010C / ICP-OES | Plastic | 500 | 0.50 25.00 | 1.00 50.00 | mg/l as Ti mg/kg as Ti | 2 2 | |

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การตรวจวิเคราะห์คุณภาพน้ำ – ภาคตะกอน (Water – Solid wastes Quality Analysis)

ตารางที่ 6 สรุปขั้นตอนการเก็บตัวอย่างและความสามารถในการทดสอบตัวอย่างของห้องปฏิบัติการ ที่มีสถานะเป็นห้องปฏิบัติการมาตรฐาน

(ประเภทตัวอย่าง : น้ำ, น้ำเสีย,น้ำใต้ดิน, น้ำเพื่ออุปโภค, น้ำประปา, น้ำผิวดิน, น้ำบาดาล และน้ำทะเล)

ส่วนงาน : ส่วนงานเครื่องมือทดสอบ

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|--|---------------------------|--|-----------|------------------|-------|-------|---|---------------|--------|
| 1 | Antimony (Sb) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.05 | 0.10 | mg/l as Sb | 2 | |
| 2 | Aluminium (Al) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.05 | 0.10 | mg/l as Al | 2 | |
| 3 | Boron (B) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.01 | 0.02 | mg/l as B | 2 | |
| 4 | Calcium (Ca) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.50 | 1.00 | mg/l as Ca | 2 | |
| 5 | Cadmium (Cd) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.002 | 0.003 | mg/l as Cd | 3 | เพิ่ม |
| 6 | Cobalt (Co) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.01 | 0.02 | mg/l as Co | 2 | |
| 7 | Color | Spectrophotometric Method | Standard Method part 2120 C / Spectrophotometer | Plastic | 500 | 0.50 | 1.00 | Pt-Co | 2 | |
| 8 | Iron (Fe) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.02 | 0.03 | mg/l as Fe | 2 | |
| 9 | Lead (Pb) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.005 | 0.010 | mg/l as Pb | 3 | เพิ่ม |
| 10 | Magnesium (Mg) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.50 | 1.00 | mg/l as Mg | 2 | |
| 11 | Molybdenum (Mo) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.01 | 0.02 | mg/l as Mo | 2 | |
| 12 | Nitrite (NO ₂ ⁻) | Colorimetric Method | Standard Method part 4500-NO ₂ ⁻ B / Spectrophotometer | Plastic | 500 | 0.003 | 0.030 | mg/l as NO ₂ ⁻ | 3 | |
| 13 | Nitrite-Nitrogen (NO ₂ ⁻ -N) | Colorimetric Method | Standard Method part 4500-NO ₂ ⁻ B / Spectrophotometer | Plastic | 500 | 0.001 | 0.010 | mg/l as NO ₂ ⁻ -N | 3 | |
| 14 | Nitrate (NO ₃ ⁻) | Colorimetric Method | Standard Method part 4500-NO ₃ ⁻ B / Spectrophotometer | Plastic | 500 | 0.09 | 0.44 | mg/l as NO ₃ ⁻ | 2 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|--------------------------------------|--------------------------------------|--|-----------|------------------|-------|-------|----------------------------|---------------|--------|
| 15 | Nitrate-Nitrogen (NO_3^-) | Colorimetric Method | Standard Method part 4500- NO_3^- B / Spectrophotometer | Plastic | 500 | 0.02 | 0.10 | mg/l as NO_3^- -N | 2 | |
| 16 | Potassium (K) | Direct Aspiration-AAS Method | Standard Method part 3111 B / AAS | Plastic | 500 | 0.008 | 0.025 | mg/l as K | 3 | |
| 17 | Potassium (K) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.50 | 1.00 | mg/l as K | 2 | |
| 18 | Selenium (Se) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.05 | 0.10 | mg/l as Se | 2 | |
| 19 | Silica (SiO_2) | Molybdosilicate Method | Standard Method part 4500- SiO_2 C / Spectrophotometer | Plastic | 500 | 1.00 | 2.00 | mg/l as SiO_2 | 2 | |
| 20 | Silicon (Si) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.02 | 0.05 | mg/l as Si | 2 | |
| 21 | Silver (Ag) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.02 | 0.05 | mg/l as Ag | 2 | |
| 22 | Sodium (Na) | Direct Aspiration-AAS Method | Standard Method part 3111 B / AAS | Plastic | 500 | 0.005 | 0.050 | mg/l as Na | 3 | |
| 23 | Sodium (Na) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.50 | 1.00 | mg/l as Na | 2 | |
| 24 | Sodium Absorption Ratio (SAR) | Calculation,Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.50 | 1.00 | - | 2 | |
| 25 | Strontium (Sr) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.01 | 0.02 | mg/l as Sr | 2 | |
| 26 | Tin (Sn) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.05 | 0.10 | mg/l as Sn | 2 | |
| 27 | Titanium (Ti) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.01 | 0.02 | mg/l as Ti | 2 | |
| 28 | Thallium (Tl) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.05 | 0.10 | mg/l as Tl | 2 | |
| 29 | Vanadium (V) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.01 | 0.02 | mg/l as V | 2 | |
| 30 | Phosphate (PO_4^{3-}) | Ascorbic Acid Method | Standard Method part 4500- PO_4^{3-} B/ Spectrophotometer | Plastic | 500 | 0.03 | 0.46 | mg/l as P | 2 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|--------------------------------|--------------------------------|--|-----------|------------------|------|------|----------------------------|---------------|--------|
| 31 | Phosphorus (P) | Ascorbic Acid Method | Standard Method part 4500-P B/ Spectrophotometer | Plastic | 500 | 0.05 | 0.15 | mg/l as PO_4^{3-} | 2 | |
| 32 | Sulfate (SO_4^{2-}) | Turbidimetric Method | Standard Method part 4500- SO_4^{2-} E/ Spectrophotometer | Plastic | 500 | 1.50 | 5.00 | mg/l as SO_4^{2-} | 2 | |
| 33 | Surfactant | Anionic Surfactants as MBAS | Standard Method Part 5540 C / Spectrophotometer | Plastic | 500 | 0.35 | 0.40 | mg/l as MBAS | 2 | |
| 34 | Surfactant (LAS) | Anionic Surfactants as MBAS | Standard Method Part 5540 C / Spectrophotometer | Plastic | 1000 | 0.08 | 0.10 | mg/l as MBAS | 2 | ไม่พบ |
| 35 | Fluoride (F^-) | Ion-Selective Electrode Method | Standard Method part 4500-F- C/ Spectrophotometer | Plastic | 100 | 0.20 | 0.50 | mg/l as F^- | 2 | |
| 36 | Gold (Au) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.02 | 0.05 | mg/l as Au | 2 | |
| 37 | Phosphorus (P) | Digestion,ICP-OES Method | Standard Method part 3030F,3120 B / ICP-OES | Plastic | 500 | 0.50 | 1.00 | mg/l as P | 2 | |
| 38 | Chlorine (Residual) | Spectrophotometric Method | Standard Method part 4500-Cl G / Spectrophotometer | Plastic | 500 | 0.03 | 0.05 | mg/l as Cl_2 | 2 | |

การตรวจวิเคราะห์คุณภาพน้ำ – กากตะกอน (Water – Solid wastes Quality Analysis)

ตารางที่ 5 สรุปข้อกำหนดการเก็บตัวอย่างและความสามารถในการทดสอบตัวอย่างของห้องปฏิบัติการ ตามที่ขึ้นทะเบียนกับกรมโรงงานอุตสาหกรรม

(ประเภทตัวอย่าง : น้ำใต้ดิน)

ส่วนงาน : ส่วนงานเครื่องมือทดสอบ

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|--|--|--|-----------|------------------|--------|--------|--------------------------|---------------|--------|
| 1 | Antimony (Sb) | Digestion,ICP-OES Method | Standard Method part3030F and 3120 B / ICP-OES | Plastic | 500 | 0.05 | 0.10 | mg/l as Sb | 2 | |
| 2 | Arsenic (As) | Continuous Hydride Generation-ICP-OES Method | Standard Method part3030F and 3120 B / ICP-OES | Plastic | 500 | 0.0010 | 0.0020 | mg/l as As | 4 | |
| 3 | Arsenic (As) | Continuous Hydride Generation-AAS Method | Standard Method Part 3114 B and 3114 C / AAS | Plastic | 500 | 0.0005 | 0.0020 | mg/l as As | 4 | |
| 4 | Barium (Ba) | Digestion,ICP-OES Method | Standard Method part3030F and 3120 B / ICP-OES | Plastic | 500 | 0.02 | 0.03 | mg/l as Ba | 2 | |
| 5 | Beryllium (Be) | Digestion,ICP-OES Method | Standard Method part3030F and 3120 B / ICP-OES | Plastic | 500 | 0.005 | 0.01 | mg/l as Be | 2 | |
| 6 | Cadmium (Cd) | Digestion,ICP-OES Method | Standard Method part3030F and 3120 B / ICP-OES | Plastic | 500 | 0.002 | 0.003 | mg/l as Cd | 3 | |
| 7 | Chromium (Cr) | Digestion,ICP-OES Method | Standard Method part3030F and 3120 B / ICP-OES | Plastic | 500 | 0.02 | 0.03 | mg/l as Cr | 2 | |
| 8 | Cyanide (CN ⁻) | Distillation, Colorimetric Method | Standard Method part 4500 CN ⁻ C, E/ Spectrophotometer | Plastic | 500 | 0.008 | 0.020 | mg/l | 3 | |
| 9 | Chromium Hexavalence (Cr ⁶⁺) | Filtration, Colorimetric Method | Standard Method part 3500-Cr B/ Spectrophotometer | Plastic | 500 | 0.003 | 0.050 | mg/l as Cr ⁶⁺ | 3 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|--|--|---|-----------|------------------|--------|--------|------------|---------------|--------|
| 10 | Lead (Pb) | Digestion,ICP-OES Method | Standard Method part3030F and 3120 B / ICP-OES | Plastic | 500 | 0.005 | 0.010 | mg/l as Pb | 3 | |
| 11 | Manganese (Mn) | Digestion,ICP-OES Method | Standard Method part3030F and 3120 B / ICP-OES | Plastic | 500 | 0.02 | 0.03 | mg/l as Mn | 2 | |
| 12 | Mercury (Hg) | Cold Vapor Atomic Absorption Spectrometric Method | Standard Method part 3112 B / AAS | Plastic | 500 | 0.0005 | 0.0010 | mg/l as Hg | 4 | |
| 13 | Nickel (Ni) | Digestion,ICP-OES Method | Standard Method part 3030F and 3120 B / ICP-OES | Plastic | 500 | 0.02 | 0.03 | mg/l as Ni | 2 | |
| 14 | Phenols | Distillation, Direct Photometric Method | Standard Method part 5530 D / Spectrophotometer | Plastic | 500 | 0.002 | 0.005 | mg/l | 3 | |
| 15 | Silver (Ag) | Digestion,ICP-OES Method | Standard Method part 3030F and 3120 B / ICP-OES | Plastic | 500 | 0.02 | 0.05 | mg/l as Ag | 2 | |
| 16 | Trivalent Chromium (Cr ³⁺) | Digestion, Direct Aspiration-AAS Method; Filtration, Colorimetric Method; Calculation | Standard Method part 3500-Cr B & part 3111B / AAS | Plastic | 500 | 0.05 | 0.10 | mg/l | 2 | |
| 17 | Trivalent Chromium (Cr ³⁺) | Digestion,ICP-OES Method; Filtration, Colorimetric Method; Calculation | Standard Method part 3500-Cr B & part 3120B / ICP-OES | Plastic | 500 | 0.02 | 0.03 | mg/l | 2 | |
| 18 | Vanadium (V) | ICP-OES Method | Standard Method part 3030F and 3120 B / ICP-OES | Plastic | 500 | 0.01 | 0.02 | mg/l as V | 2 | |
| 19 | Zinc (Zn) | Digestion,ICP-OES Method | Standard Method part 3030F and 3120 B / ICP-OES | Plastic | 500 | 0.02 | 0.03 | mg/l as Zn | 2 | |
| 20 | Selenium (Se) | Continuous, Hydride Generation/AAS | Standard Method part 3030F, 3114 B and 3114C | Plastic | 500 | 0.0005 | 0.0020 | mg/l | 4 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|----------------------------------|-----------------------|---|-----------|------------------|---------|---------|------|---------------|--------|
| 21 | Volatile organic compounds;VOC#1 | Purge-and-Trap /GC-MS | Standard Method part 6200B | Glass | 40 *4 | | | | | |
| 1 | - Benzene | | | | | 0.00025 | 0.00050 | mg/l | 5 | |
| 2 | - Bromodichloromethane | | | | | 0.00050 | 0.00050 | mg/l | 5 | |
| 3 | - Bromoform | | | | | 0.00050 | 0.00050 | mg/l | 5 | |
| 4 | - Carbon tetrachloride | | | | | 0.00025 | 0.00025 | mg/l | 5 | |
| 5 | - Chlorobenzene | | | | | 0.00025 | 0.00050 | mg/l | 5 | |
| 6 | - Chlorodibromomethane | | | | | 0.00050 | 0.00100 | mg/l | 5 | |
| 7 | - 1,2-Dichlorobenzene | | | | | 0.00025 | 0.00050 | mg/l | 5 | |
| 8 | - 1,3-Dichlorobenzene | | | | | 0.00025 | 0.00025 | mg/l | 5 | |
| 9 | - 1,4-Dichlorobenzene | | | | | 0.00025 | 0.00025 | mg/l | 5 | |
| 10 | - 1,1-Dichloroethane | | | | | 0.00025 | 0.00025 | mg/l | 5 | |
| 11 | - 1,2-Dichloroethane | | | | | 0.00025 | 0.00050 | mg/l | 5 | |
| 12 | - 1,1-Dichloroethylene | | | | | 0.00025 | 0.00050 | mg/l | 5 | |
| 13 | - cis-1,2-Dichloroethylene | | | | | 0.00050 | 0.00050 | mg/l | 5 | |
| 14 | - trans-1,2-Dichloroethylene | | | | | 0.00025 | 0.00050 | mg/l | 5 | |
| 15 | - 1,2-Dichloropropane | | | | | 0.00025 | 0.00050 | mg/l | 5 | |
| 16 | - 1,3-Dichloropropane | | | | | 0.00025 | 0.00050 | mg/l | 5 | |
| 17 | - Ethylbenzene | | | | | 0.00025 | 0.00050 | mg/l | 5 | |
| 18 | - Methyl tert-butyl ether | | | | | 0.00025 | 0.00050 | mg/l | 5 | |
| 19 | - Naphthalene | | | | | 0.00025 | 0.00100 | mg/l | 5 | |
| 20 | - Nitrobenzene | | | | | 0.00025 | 0.00025 | mg/l | 5 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|----------------------------------|-------------------------------|---|-----------|------------------|---------|---------|------|---------------|--------|
| 21 | - Styrene | Purge-and-Trap /GC-MS | Standard Method part 6200B | Glass | 40 *4 | 0.00050 | 0.00100 | mg/l | 5 | |
| 22 | - 1,1,2,2-Tetrachloroethane | | | | | 0.00050 | 0.00050 | mg/l | 5 | |
| 23 | - Tetrachloroethylene | | | | | 0.00025 | 0.00050 | mg/l | 5 | |
| 24 | - Toluene | | | | | 0.00025 | 0.00050 | mg/l | 5 | |
| 25 | - 1,2,4-Trichlorobenzene | | | | | 0.00025 | 0.00050 | mg/l | 5 | |
| 26 | - 1,1,1-Trichloroethane | | | | | 0.00025 | 0.00025 | mg/l | 5 | |
| 27 | - 1,1,2-Trichloroethane | | | | | 0.00025 | 0.00050 | mg/l | 5 | |
| 28 | - Trichloroethylene | | | | | 0.00025 | 0.00050 | mg/l | 5 | |
| 29 | - 1,3,5-Trimethylbenzene | | | | | 0.00025 | 0.00100 | mg/l | 5 | |
| 30 | - Vinyl acetate | | | | | 0.00050 | 0.00100 | mg/l | 5 | |
| 31 | - Vinyl Chloride | | | | | 0.00025 | 0.00025 | mg/l | 5 | |
| 32 | - m-Xylene | | | | | 0.00025 | 0.00100 | mg/l | 5 | |
| 33 | - o-Xylene | | | | | 0.00025 | 0.00100 | mg/l | 5 | |
| 34 | - p-Xylene | | | | | 0.00025 | 0.00100 | mg/l | 5 | |
| 35 | - Xylene Total | | | | | 0.00075 | 0.00100 | mg/l | 5 | |
| 22 | Volatile organic compounds;VOC#2 | Purge-and-Trap / GC-MS Method | Standard Method part 6200B | Glass | 40 *4 | | | | | |
| 1 | - Acetone | | | | | 0.00100 | 0.00100 | mg/l | 5 | |
| 2 | - Butanol | | | | | 0.00100 | 0.00100 | mg/l | 5 | |
| 3 | - Carbon disulfide | | | | | 0.00200 | 0.00500 | mg/l | 5 | |
| 4 | - Chloroform | | | | | 0.00100 | 0.00200 | mg/l | 5 | |
| 5 | - n-Hexane | | | | | 0.00100 | 0.00200 | mg/l | 5 | |
| 6 | - Dichloromethane | | | | | 0.00200 | 0.00200 | mg/l | 5 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|-----------------------------------|--|---|-----------|------------------|--------|--------|------|---------------|--------|
| 23 | Semivolatile organic compounds #1 | Liquid-Liquid Extraction / GC-MS (SM: 6410B) | Standard Method part 6410B | Glass | 2500 | | | | | |
| 1 | Acenaphthene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 2 | Anthracene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 3 | Benz[a]anthracene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 4 | Benzo[b]fluoranthene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 5 | Benzo[k]fluoranthene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 6 | Benzo[a]pyrene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 7 | Benzo[ghi]perylene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 8 | Bis(2-chloroethyl) ether | | | | | 0.0005 | 0.0100 | mg/l | 4 | |
| 9 | Bis(2-ethylhexyl) phthalate | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 10 | Butyl benzyl phthalate | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 11 | Carbazole | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 12 | p-Chloroaniline | | | | | 0.0005 | 0.0100 | mg/l | 4 | |
| 13 | 2-Chlorophenol | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 14 | Chrysene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 15 | Dibenz[a,h]anthracene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 16 | Di-n-butyl phthalate | | | | | 0.0005 | 0.0100 | mg/l | 4 | |
| 17 | 2,4-Dichlorophenol | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 18 | Diethyl Phthalate | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 19 | 2,4-Dimethylphenol | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 20 | 2,4-Dinitrotoluene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|-----------------------------------|--|---|-----------|------------------|--------|--------|------|---------------|--------|
| 21 | 2,6-Dinitrotoluene | Liquid-Liquid Extraction / GC-MS (SM: 6410B) | Standard Method part 6410B | Glass | 2500 | 0.0005 | 0.0010 | mg/l | 4 | |
| 22 | Di-n-octyl phthalate | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 23 | Fluoranthene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 24 | Fluorene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 25 | Hexachlorobenzene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 26 | Hexachloro-1,3-butadiene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 27 | Hexachlorocyclopentadiene | | | | | 0.0005 | 0.0100 | mg/l | 4 | |
| 28 | Hexachloroethane | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 29 | Indeno[1,2,3-cd]pyrene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 30 | Isophorone | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 31 | 2-Methylphenol (o-Cresol) | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 32 | 2-Methylnaphthalene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 33 | N-Nitrosodi-n-propylamine | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 34 | Phenanthrene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 35 | Phenol | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 36 | Pyrene | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 37 | 2,4,5-Trichlorophenol | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 38 | 2,4,6-Trichlorophenol | | | | | 0.0005 | 0.0010 | mg/l | 4 | |
| 24 | Semivolatile organic compounds #2 | Liquid-Liquid Extraction / GC-MS (SM: 6410B) | Standard Method part 6410B | Glass | 2500 | 0.030 | 0.050 | µg/l | 3 | |
| 1 | Aldrin | | | | | 0.030 | 0.050 | µg/l | 3 | |
| 2 | Chlordane | | | | | 0.030 | 0.050 | µg/l | 3 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|--------------------|--|---|-----------|------------------|-------|-------|------|---------------|--------|
| 3 | DDD | Liquid-Liquid Extraction / GC-MS (SM: 6410B) | Standard Method part 6410B | Glass | 2500 | 0.030 | 0.050 | µg/l | 3 | |
| 4 | DDE | | | | | 0.030 | 0.050 | µg/l | 3 | |
| 5 | DDT | | | | | 0.030 | 0.050 | µg/l | 3 | |
| 6 | Dieldrin | | | | | 0.030 | 0.050 | µg/l | 3 | |
| 7 | Endosulfan | | | | | 0.030 | 0.050 | µg/l | 3 | |
| 8 | Endrin | | | | | 0.050 | 0.100 | µg/l | 3 | |
| 9 | Heptachlor | | | | | 0.030 | 0.050 | µg/l | 3 | |
| 10 | Heptachlor epoxide | | | | | 0.030 | 0.050 | µg/l | 3 | |
| 11 | alpha - BHC | | | | | 0.020 | 0.050 | µg/l | 3 | |
| 12 | beta - BHC | | | | | 0.030 | 0.050 | µg/l | 3 | |
| 13 | gamma - BHC | | | | | 0.030 | 0.050 | µg/l | 3 | |
| 14 | Methoxychlor | | | | | 0.030 | 0.050 | µg/l | 3 | |

การตรวจวิเคราะห์คุณภาพน้ำ – ภาคตะกอน (Water – Solid wastes Quality Analysis)

ตารางที่ 4 สรุปข้อกำหนดการเก็บตัวอย่างและความสามารถในการทดสอบตัวอย่างของห้องปฏิบัติการ **ตามที่ขึ้นทะเบียนกับกรมโรงงานอุตสาหกรรม**

(ประเภทตัวอย่าง : น้ำเสีย(ขึ้นทะเบียนกรมโรงงานฯ), น้ำน้ำเพื่ออุปโภค, น้ำประปา, น้ำผิวดิน, น้ำบาดาล และน้ำทะเล)

ส่วนงาน : ส่วนงานเครื่องมือทดสอบ

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|--|---|--|-----------|------------------|--------|--------|--------------------------|---------------|--|
| 1 | Arsenic (As) | Continuous Hydride Generation-AAS Method | Standard Method Part 3114 B / AAS | Plastic | 500 | 0.0005 | 0.0020 | mg/l as As | 4 | น้ำทะเล MDL/LOQ = 1.00/2.00 ug/l |
| 2 | Barium (Ba) | Digestion,ICP-OES Method | Standard Method part3030F and 3120 B / ICP-OES | Plastic | 500 | 0.02 | 0.03 | mg/l as Ba | 2 | น้ำทะเล MDL/LOQ = 20/30 ug/l |
| 3 | Cadmium (Cd) | Digestion,ICP-OES Method | Standard Method part3030F and 3120 B / ICP-OES | Plastic | 500 | 0.02 | 0.03 | mg/l as Cd | 2 | น้ำทะเล MDL/LOQ = 20/30 ug/l น้ำดื่ม MDL/LOQ = 0.002/0.003 mg/l |
| 4 | Chromium (Cr) | Digestion,ICP-OES Method | Standard Method part3030F and 3120 B / ICP-OES | Plastic | 500 | 0.02 | 0.03 | mg/l as Cr | 2 | น้ำทะเล MDL/LOQ = 20/30 ug/l |
| 5 | Color | ADMI Weighted-Ordinate Spectrophotometer Method | Standard Method part 2120 F / Spectrophotometer | Plastic | 500 | 10 | 20 | ADMI | 0 | |
| 6 | Chromium Hexavalence (Cr ⁶⁺) | Filtration,Colorimetric Method | Standard Method part 3500-Cr B / Spectrophotometer | Plastic | 500 | 0.003 | 0.050 | mg/l as Cr ⁶⁺ | 3 | น้ำทะเล MDL/LOQ = 3.00/50.0 ug/l |
| 7 | Copper (Cu) | Digestion,ICP-OES Method | Standard Method part3030F and 3120 B / ICP-OES | Plastic | 500 | 0.02 | 0.03 | mg/l as Cu | 2 | น้ำทะเล MDL/LOQ = 20/30 ug/l |
| 8 | Cyanide (CN ⁻) | Distillation, Colorimetric Method | Standard Method part 4500 CN- C,E/ Spectrophotometer | Plastic | 500 | 0.008 | 0.020 | mg/l | 3 | น้ำทะเล MDL/LOQ = 8/20 ug/l |
| 9 | Formaldehyde | Distillation, Colorimetric Method | คู่มือวิเคราะห์น้ำเสีย,สมาคมวิศวกรรมสิ่งแวดล้อมแห่งประเทศไทย | Plastic | 100 | 0.20 | 0.50 | mg/l | 2 | |
| 10 | Lead (Pb) | Digestion,ICP-OES Method | Standard Method part3030F and 3120 B / ICP-OES | Plastic | 500 | 0.02 | 0.03 | mg/l as Pb | 2 | น้ำทะเล MDL/LOQ = 20/30 ug/l น้ำดื่ม MDL/LOQ = 0.005/0.010 mg/l |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|----------------|---|---|-----------|------------------|------|------|------|---------------|--------|
| | - DDT | Liquid-Liquid Extraction Gas Chromatography | Standard Method part 6410B/GC-MS | Glass | 2500 | 0.03 | 0.05 | ug/l | 2 | |
| | - Endrin | | | | | 0.05 | 0.10 | ug/l | 2 | |
| | - Methoxychlor | | | | | 0.03 | 0.05 | ug/l | 2 | |

การตรวจวิเคราะห์คุณภาพน้ำ – ภาคตะกอน (Water – Solid wastes Quality Analysis)

ตารางที่ 3 สรุปข้อกำหนดการเก็บตัวอย่างและความสามารถในการทดสอบตัวอย่างของห้องปฏิบัติการ ที่ไม่ได้ขึ้นทะเบียนกับกรมโรงงานอุตสาหกรรม

(ประเภทตัวอย่าง : น้ำ, น้ำเสีย, น้ำเพื่ออุปโภค, น้ำประปา, น้ำผิวดิน, น้ำบาดาล และน้ำทะเล)

ส่วนงาน : ส่วนงานทดสอบพื้นฐาน

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|---------------------------------------|-------------------------------------|--|-----------|------------------|-----|-------|----------------------------|---------------|--------|
| 1 | Acidity | Titration Method | Standard Method part 2310 B / Titration | Plastic | 50 | - | 20.00 | mg/l as CaCO ₃ | 1 | |
| 2 | M-Alkalinity | Titration Method | Standard Method part 2320 B / Titration | Plastic | 50 | - | 20.00 | mg/l as CaCO ₃ | 1 | |
| 3 | P-Alkalinity | Titration Method | Standard Method part 2320 B / Titration | Plastic | 50 | - | 20.00 | mg/l as CaCO ₃ | 1 | |
| 4 | Ammonia Nitrogen (NH ₃ -N) | Distillation and Titrimetric Method | Standard Method part 4500-NH ₃ -N / Titration | Plastic | 500 | | 2 | mg/l as NH ₃ -N | 1 | |
| 5 | Calcium Hardness | EDTA Titrimetric Method | Standard method part 3500-Ca B / Titration | Plastic | 100 | - | 3.0 | mg/l as CaCO ₃ | 1 | |
| 6 | Chloride (Cl ⁻) | Argentometric Method | Standard Method part 4500-Cl B / Titration | Plastic | 50 | - | 5.0 | mg/l as Cl ⁻ | 1 | |
| 7 | Chlorine (Residual) | DPD Colorimetric Method | Standard Method part 4500-Cl G / Test kit | Plastic | 500 | - | 0.1 | mg/l as Cl ₂ | 1 | |
| 8 | Chlorine (Total) | DPD Colorimetric Method | Modified Standard Method part 4500-Cl G / Test kit | Plastic | 500 | - | 0.1 | mg/l as Cl ₂ | 1 | |
| 9 | Fixed Solids (FS) | Dried at 550 °C | Standard Method part 2540 E / Gravimetric | Plastic | 200 | - | 30.0 | mg/l | 1 | |
| 10 | Hardness | EDTA Titrimetric Method | Standard Method part 2340 C / Titration | Plastic | 100 | - | 6.0 | mg/l as CaCO ₃ | 1 | |
| 11 | Magnesium (Mg) | Calculation Method | Standard Method part 3500-Mg / Calculation | Plastic | 100 | - | 0.70 | mg/l as Mg | 1 | |
| 12 | Magnesium Hardness | Calculation Method | Standard Method part 3500-Mg / Calculation | Plastic | 100 | - | 3.0 | mg/l as CaCO ₃ | 1 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|--|--------------------------------|--|-----------|------------------|------|------|---------------------------------------|---|--------------------------|
| 13 | Mix Liquor Suspended Solids (MLSS) | Dried at 103-105 °C | Standard Method part 2540 C / Gravimetric | Plastic | 200 | - | 5 | mg/l | 1 | |
| 14 | Mix Liquor Volatile Suspended Solids (MLVSS) | Dried at 550 °C | Standard Method part 2540 E / Gravimetric | Plastic | 200 | - | 5 | mg/l | 1 | |
| 15 | Organic Nitrogen | Macro-Kjeldahl Method | Standard Method part 4500-N _{org} / Titration | Plastic | 500 | - | 5 | mg/l as NH ₃ -N | 1 | Org-N = TKCN-(Ammonia-N) |
| 17 | Conductivity | Laboratory Method | Standard Method part 2510 B | Plastic | 200 | - | 0.1 | us/cm | หัตถ์หน่วย 2 ตำแหน่ง/หัตถ์สิบ 1ตัวหนึ่ง | อ่านจากเครื่อง |
| 18 | Salinity | Electrical Conductivity Method | Standard Method part 2520 B / Conductivity meter | Plastic | 100 | - | 0.01 | ppt | หัตถ์หน่วย 2 ตำแหน่ง/หัตถ์สิบ 1ตัวหนึ่ง | อ่านจากเครื่อง |
| 19 | Sludge Volume Index (SV ₃₀) | Volumetric Method | Standard Method part 2540 F / Volumetric | Plastic | 1000 | - | 0.1 | ml/l | 1 | |
| 20 | Sulfite | Titrimetric Method | Standard Method part 4500-SO ₃ ²⁻ B / Titration | Plastic | 200 | - | 2.00 | mg/l as SO ₃ ²⁻ | 2 | |
| 21 | Total Dissolved Solids (TDS) | Dried at 103-105 °C | Modified Standard Method part 2540 B / Gravimetric | Plastic | 200 | - | 25 | mg/l | 0 | |
| 22 | Turbidity | Nephelometric Method | Standard Method part 2130 B / Turbidity meter | Plastic | 50 | 0.01 | 0.01 | NTU | หัตถ์หน่วย 2 ตำแหน่ง/หัตถ์สิบ 1ตัวหนึ่ง | NTU=FTU=ซีลีลาซอก |
| 23 | Volatile Fatty Acid | Titrimetric Method | คู่มือวิเคราะห์น้ำเสีย สมาคมวิศวกรรมสิ่งแวดล้อมแห่งประเทศไทย / Titration | Plastic | 200 | - | 1.00 | mg/l | 1 | |
| 24 | Volatile Solids (VS) | Dried at 550 °C | Standard Method part 2540 E / Gravimetric | Plastic | 200 | | 3.0 | mg/l | 1 | |
| 25 | Volatile Suspended Solids (VSS) | Dried at 550 °C | Standard Method part 2540 E / Gravimetric | Plastic | 200 | | 3.0 | mg/l | 1 | |
| 26 | Dissolved Oxygen(DO) | Azide Modification | Standard Method part 4500-O C/Titration | Plastic | 300 | - | 0.3 | mg/l | 1 | |

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|---|---|--|------------|------------------|-----|-----|--------------------------|-----------------|---|
| | จำนวนจุลินทรีย์วิทยา | | | | | | | | | |
| 1 | Benthos | Counting Chamber Method | Standard Method part 10500 B / Counting | จุลินทรีย์ | - | - | - | ind/m ² | 0 | รายงานค่าสูงสุด =Not found |
| 2 | Escherichia Coli Bacteria (E.coli) | MPN Test | Standard Method part 9221 F / Fluorogenic Substrate , MPN | Glass | 250 | - | - | MPN:100 ml | ตามตาราง MPN- | รายงานค่าสูงสุด 1.1 (น้ำดื่ม) / 1.8 (น้ำ) |
| 3 | Total Coliform | MPN Test | Standard Method part 9221 B / Fermentation Technique , MPN | Glass | 250 | - | - | MPN:100 ml | ตามตาราง MPN- | รายงานค่าสูงสุด 1.1 (น้ำดื่ม) / 1.8 (น้ำ) |
| 4 | Thermotolerant coliforms (Fecal Coliform) | MPN Test | Standard Method part 9221 E /Thermotolerant Coliform , MPN | Glass | 250 | - | - | MPN:100 ml | ตามตาราง MPN- | รายงานค่าสูงสุด 1.1 (น้ำดื่ม) / 1.8 (น้ำ) |
| 5 | Heterotrophic Bacteria (Total Bacteria) | Heterotrophic plate count (Standard Plate Count Method) | Standard Method part 9215 B / Pour plate | Glass | 250 | 1 | 1 | Colonies/cm ³ | 0 | *Heterotrophic plate count = Standard plate Count |
| 6 | Phytoplankton | Counting Chamber Method | Standard Method part 10200 F / Counting | Plastic | - | - | - | Cell / l | 0 | รายงานค่าสูงสุด =Not found |
| 7 | Zooplankton | Counting Chamber Method | Standard Method part 10200 G / Counting | Plastic | - | - | - | ind./l | 0 | รายงานค่าสูงสุด =Not found |
| 8 | S.Aureus | Enrichment | Standard Method part 9213 B | Glass | 1000 | - | - | - | รายงาน พบ/ไม่พบ | รายงานค่าสูงสุด =Not found |
| 9 | Salmonella sp. | Membrane Filter | Standard Method part 9260 B | Glass | 1000 | - | - | - | รายงาน พบ/ไม่พบ | รายงานค่าสูงสุด =Not found |
| 10 | Clostridium perfringens | Compendium 2003,Chapter 34 | Compendium 2003,Chapter 34 | Glass | 1000 | - | - | - | รายงาน พบ/ไม่พบ | รายงานค่าสูงสุด =Not found |

การตรวจวิเคราะห์คุณภาพน้ำ – ภาคตะกอน (Water – Solid wastes Quality Analysis)

ตารางที่ 1 สรุปข้อกำหนดการเก็บตัวอย่างและความสามารถในการทดสอบตัวอย่างของห้องปฏิบัติการ **ศูนย์ปฏิบัติการขยะอินทรีย์อินทรีย์โรงงานอุตสาหกรรม**
(ประเภทตัวอย่าง : น้ำเสีย(ขยะอินทรีย์โรงงานฯ), น้ำ,น้ำเพื่ออุปโภค, น้ำประปา, น้ำผิวดิน, น้ำบาดาล และน้ำทะเล)

ส่วนงาน : ส่วนงานทดสอบพื้นฐาน

| Items | Parameter | Method | Reference Method / Analytical Technique | Container | sample size (ml) | MDL | LOQ | Unit | Decimal point | Remark |
|-------|---|---|---|------------|------------------|-----|----------|--------------------------|---------------|--------|
| 1.1 | Biochemical Oxygen Demand (BOD ₅) | 5-Day BOD Test, Membrane Electrode Method | Standard Method part 5210 B, 4500-O G / DO meter | Plastic | 1000 | - | 2.0 | mg/l | 1 | |
| 1.2 | Biochemical Oxygen Demand (BOD ₅) | 5-Day BOD Test, Azide Modification Method | Standard Method part 5210 B, 4500-O C / Titration | Plastic | 1000 | - | 2.0 | mg/l | 1 | |
| 2.1 | Chemical Oxygen Demand (COD) | In-house Method | Standard Method part 5220 C / Titration | Plastic | 100 | - | 40 | mg/l as O ₂ | 0 | |
| 2.2 | Chemical Oxygen Demand (COD) | Titrimetric, Closed Reflux Method | Standard Method part 5220 C / Titration | Plastic | 100 | - | 40 | mg/l as O ₂ | 0 | |
| 3 | Free Chlorine | Iodometric Method | Standard Method part 4500-B / Titration | Plastic | 100 | - | 0.50 | mg/l | 2 | |
| 4 | Total Dissolved Solids (TDS) | Dried at 180 °C | Standard Method part 2540 C / Gravimetric | Plastic | 200 | - | 25 | mg/l | 0 | |
| 5.1 | Grease&Oil | In-house Method | Standard Method part 5520 B / Gravimetric | Glass | 1000 | - | 3.0 | mg/l | 1 | |
| 5.2 | Grease&Oil | Partition Gravimetric Method | Standard Method part 5520 B / Gravimetric | Glass | 1001 | - | 3.0 | mg/l | 1 | |
| 6 | Sulfide (S ₂ ⁻) | ZnS Precipitation Iodometric Method | Standard Method part 4500-S ²⁻ F / Titration | BOD bottle | 300 | - | 0.50 | mg/l as H ₂ S | 2 | |
| 7 | pH | Electrometric Method | Standard Method part 4500 H ⁺ / pH meter | Plastic | 50 | - | 3.0-12.0 | - | 1 | |

| | | | | | | | | | | |
|----|-------------------------------------|-------------------------------------|---|------------|------|---|------|----------------------------|---|--|
| 8 | Total Suspended Solids (TSS) | Dried at 103-105 °C | Standard Method part 2540 D / Grvimetric | Plastic | 1000 | - | 5 | mg/l | 0 | |
| 9 | Temperature | Laboratory and Field Method | Standard Method part 2550 B / Thermometer | at field | | - | 1 | °C | 0 | |
| 10 | Total Kjeldahl Nitrogen (TKN) | Macro-Kjeldahl Method | Standard Method part 4500-N _{org} / Titration | Plastic | 500 | - | 5 | mg/l as NH ₃ -N | 0 | |
| 11 | Hydrogen Sulfide (H ₂ S) | ZnS Precipitation Iodometric Method | Standard Method part 4500-S ²⁻ F / Titration | BOD bottle | 300 | - | 0.53 | mg/l as H ₂ S | 2 | |