

The drainage records were provided by the Drainage Services Department in GeoJSON format by using the coordinate system WGS 84.

1 Box Culvert/Tunnel Path (Sewage / Storm Water)

Geometry Object Information

	Member	Value
1	type	LineString
2	coordinates	Array of Positions in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CELL_NUM	Number	Y	No. of Cells in Box Culvert/Tunnel Path
3	WIDTH	Number	N	Width (mm)
4	HEIGHT	Number	N	Height (mm)
5	FEAT_NUM	String	Y	Identify of Box Culvert/Tunnel
6	SHAPE	String	Y	Shape of Box Culvert/Tunnel
7	TYPE	String	Y	Box Culvert / Tunnel

Resource File

Resource	File Name
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Box Culvert/Tunnel Path (Sewage)	Box_Culvert_OR_Tunnel_(Sewage).json
Box Culvert/Tunnel Path (Storm Water)	Box_Culvert_OR_Tunnel_(Storm_Water).json

2 Box Culvert/Tunnel Polygon (Sewage / Storm Water)

Geometry Object Information

	Member	Value
1	type	Polygon
2	coordinates	Array of Positions in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	FEAT_NUM	String	Y	Identify of Box Culvert/Tunnel Polygon

Resource File

Resource	File Name
Box Culvert/Tunnel Polygon (Sewage)	Box_Culvert_OR_Tunnel_Polygon_(Sewage).json
Box Culvert/Tunnel Polygon (Storm Water)	Box_Culvert_OR_Tunnel_Polygon_(Storm_Water).json

3 Catchpit

Geometry Object Information

	Member	Value
1	type	Point
2	coordinates	Position in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CL	Number	N	Cover Level (mPD)
3	FEAT_NUM	String	Y	Identify of Catchpit

Resource File

Resource	File Name
Catchpit	Catchpit.json

4 Chamber (Sewage / Storm Water)

Geometry Object Information

	Member	Value
1	type	Polygon
2	coordinates	Array of Positions in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CL	Number	N	Cover Level (mPD)
3	IL	Number	N	Invert Level (mPD)
4	FEAT_NUM	String	Y	Identify of Chamber

Resource File

Resource	File Name
Chamber (Sewage)	Chamber_(Sewage).json
Chamber (Storm Water)	Chamber_(Storm_Water).json

5 Channel

Geometry Object Information

	Member	Value
1	type	LineString
2	coordinates	Array of Positions in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	WIDTH	Number	N	Cover Level (mPD)
3	HEIGHT	Number	N	Invert Level (mPD)
4	FEAT_NUM	String	Y	Identify of Channel
5	SHAPE	String	Y	Shape of Channel

Resource File

Resource	File Name
Channel	Channel.json

6 Combined Manhole

Geometry Object Information

	Member	Value
1	type	Point
2	coordinates	Position in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CL	Number	N	Cover Level (mPD)
3	FEAT_NUM	String	Y	Identify of Combined Manhole

Resource File

Resource	File Name
Combined Manhole	Combined_Manhole.json

7 Drop-Shaft

Geometry Object Information

	Member	Value
1	type	Polygon
2	coordinates	Array of Positions in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CL	Number	N	Cover Level (mPD)
3	FEAT_NUM	String	Y	Identify of Drop-Shaft

Resource File

Resource	File Name
Drop-Shaft	Drop-Shaft.json

8 Inlet

Geometry Object Information

	Member	Value
1	type	Point
2	coordinates	Position in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CL	Number	N	Cover Level (mPD)
3	FEAT_NUM	String	Y	Identify of Inlet

Resource File

Resource	File Name
Inlet	Inlet.json

9 Interface Valve Chamber

Geometry Object Information

	Member	Value
1	type	Point
2	coordinates	Position in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CL	Number	N	Cover Level (mPD)
3	FEAT_NUM	String	Y	Identify of Interface Valve Chamber

Resource File

Resource	File Name
Interface Valve Chamber	Interface_Valve_Chamber.json

10 Multiple Pipes (Sewage / Storm Water)

Geometry Object Information

	Member	Value
1	type	LineString
2	coordinates	Array of Positions in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	WIDTH	Number	N	Width (mm)
3	HEIGHT	Number	N	Height (mm)
4	FEAT_NUM	String	Y	Identify of Multiple Pipes
5	SHAPE	String	Y	Shape of Multiple Pipes
6	US_IL	Number	N	Upstream Invert Level (mPD)
7	DS_IL	Number	N	Downstream Invert Level (mPD)

Resource File

Resource	File Name
Multiple Pipes (Sewage)	Multiple_Pipe_(Sewage).json
Multiple Pipes (Storm Water)	Multiple_Pipe_(Storm_Water).json

11 Multiple Rising Mains (Sewage / Storm Water)

Geometry Object Information

	Member	Value
1	type	LineString
2	coordinates	Array of Positions in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	WIDTH	Number	N	Width (mm)
3	HEIGHT	Number	N	Height (mm)
4	FEAT_NUM	String	Y	Identify of Rising Mains
5	SHAPE	String	Y	Shape of Rising Mains
6	US_IL	Number	N	Upstream Invert Level (mPD)
7	DS_IL	Number	N	Downstream Invert Level (mPD)

Resource File

Resource	File Name
Multiple Rising Mains (Sewage)	Multiple_Rising_Main_(Sewage).json
Multiple Rising Mains (Storm Water)	Multiple_Rising_Main_(Storm_Water).json

12 Oil / Petrol Interceptor

Geometry Object Information

	Member	Value
1	type	Point
2	coordinates	Position in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CL	Number	N	Cover Level (mPD)
3	FEAT_NUM	String	Y	Identify of Oil / Petrol Interceptor

Resource File

Resource	File Name
Oil / Petrol Interceptor	Oil_OR_Petrol_Interceptor.json

13 Outfall (Combined / Sewage / Storm Water)

Geometry Object Information

	Member	Value
1	type	Point
2	coordinates	Position in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CL	Number	N	Cover Level (mPD)
3	FEAT_NUM	String	Y	Identify of Outfall

Resource File

Resource	File Name
Outfall (Combined)	Outfall_(Combined).json
Outfall (Sewage)	Outfall_(Sewage).json
Outfall (Storm Water)	Outfall_(Storm_Water).json

14 Outlet

Geometry Object Information

	Member	Value
1	type	Point
2	coordinates	Position in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CL	Number	N	Cover Level (mPD)
3	FEAT_NUM	String	Y	Identify of Outlet

Resource File

Resource	File Name
Outlet	Outlet.json

15 Overflow (Combined / Sewage)

Geometry Object Information

	Member	Value
1	type	Point
2	coordinates	Position in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CL	Number	N	Cover Level (mPD)
3	FEAT_NUM	String	Y	Identify of Overflow

Resource File

Resource	File Name
Overflow (Combined)	Overflow_(Combined).json
Overflow (Sewage)	Overflow_(Sewage).json

16 Pipe (Combined / Sewage / Storm Water)

Geometry Object Information

	Member	Value
1	type	LineString
2	coordinates	Array of Positions in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	WIDTH	Number	N	Width (mm)
3	HEIGHT	Number	N	Height (mm)
4	FEAT_NUM	String	Y	Identify of Pipe
5	SHAPE	String	Y	Shape of Pipe
6	US_IL	Number	N	Upstream Invert Level (mPD)
7	DS_IL	Number	N	Downstream Invert Level (mPD)

Resource File

Resource	File Name
Pipe (Combined)	Pipe_(Combined).json
Pipe (Sewage)	Pipe_(Sewage).json
Pipe (Storm Water)	Pipe_(Storm_Water).json

17 Rising Main (Sewage / Storm Water)

Geometry Object Information

	Member	Value
1	type	LineString
2	coordinates	Array of Positions in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	WIDTH	Number	N	Width (mm)
3	HEIGHT	Number	N	Height (mm)
4	FEAT_NUM	String	Y	Identify of Rising Main
5	SHAPE	String	Y	Shape of Rising Main
6	US_IL	Number	N	Upstream Invert Level (mPD)
7	DS_IL	Number	N	Downstream Invert Level (mPD)

Resource File

Resource	File Name
Rising Main (Sewage)	Rising_Main_(Sewage).json
Rising Main (Storm Water)	Rising_Main_(Storm_Water).json

18 Sand Trap

Geometry Object Information

	Member	Value
1	type	Point
2	coordinates	Position in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CL	Number	N	Cover Level (mPD)
3	FEAT_NUM	String	Y	Identify of Sand Trap

Resource File

Resource	File Name
Sand Trap	Sand_Trap.json

19 Sewer Manhole

Geometry Object Information

	Member	Value
1	type	Point / Polygon
2	coordinates	Single Position or Array of Positions in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CL	Number	N	Cover Level (mPD)
3	FEAT_NUM	String	Y	Identify of Sewer Manhole

Resource File

Resource	File Name
Sewer Manhole	Sewer_Manhole.json

20 Sewer Terminal Manhole

Geometry Object Information

	Member	Value
1	type	Point
2	coordinates	Position in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CL	Number	N	Cover Level (mPD)
3	FEAT_NUM	String	Y	Identify of Sewer Terminal Manhole

Resource File

Resource	File Name
Sewer Terminal Manhole	Sewer_Terminal_Manhole.json

21 Storm Water Manhole

Geometry Object Information

	Member	Value
1	type	Point / Polygon
2	coordinates	Single Position or Array of Positions in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CL	Number	N	Cover Level (mPD)
3	FEAT_NUM	String	Y	Identify of Storm Water Manhole

Resource File

Resource	File Name
Storm Water Manhole	Storm_Water_Manhole.json

22 Storm Water Terminal Manhole

Geometry Object Information

	Member	Value
1	type	Point
2	coordinates	Position in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CL	Number	N	Cover Level (mPD)
3	FEAT_NUM	String	Y	Identify of Storm Water Terminal Manhole

Resource File

Resource	File Name
Storm Water Terminal Manhole	Storm_Water_Terminal_Manhole.json

23 Tapping Point (Sewage / Storm Water)

Geometry Object Information

	Member	Value
1	type	Point
2	coordinates	Position in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	CL	Number	N	Cover Level (mPD)
3	FEAT_NUM	String	Y	Identify of Tapping Point

Resource File

Resource	File Name
Tapping Point (Sewage)	Tapping_Point_(Sewage).json
Tapping Point (Storm Water)	Tapping_Point_(Storm_Water).json

24 Tunnel Protection Zone

Geometry Object Information

	Member	Value
1	type	Point
2	coordinates	Position in Longitude and Latitude

Properties Object Information

	Name	Type	Mandatory	Description
1	OBJECTID	Number	Y	Identify of Object
2	FEAT_NUM	String	Y	Identify of Tunnel Protection Zone

Resource File

Resource	File Name
Tunnel Protection Zone	Tunnel_Protection Zone_Polygon.json

Appendix I Sample GeoJSON

- Box Culvert/Tunnel Path (Sewage / Storm Water)

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "LineString",
        "coordinates": [
          [114.142238992643, 22.2891760455097],
          [114.142165389521, 22.2891963641389],
          [114.142081793946, 22.289220357043],
          [114.141969060574, 22.2892540720429],
          [114.141878722373, 22.2892822285159],
          [114.14177081644, 22.2893172056215],
          [114.141660137866, 22.289354622766],
          [114.141541594723, 22.2893964559068],
          [114.141423896822, 22.2894398181126],
          [114.141371871281, 22.2894595737932],
          [114.141324908301, 22.2894777877439]
        ]
      },
      "properties": {
        "OBJECTID": 1,
        "CELL_NUM": 2,
        "WIDTH": 2000,
        "HEIGHT": 3600,
        "FEAT_NUM": "FTP7000331",
        "SHAPE": "Circular",
        "TYPE": "Tunnel"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "LineString",
        "coordinates": [
          [114.142238992643, 22.2891760455097],
          [114.142165389521, 22.2891963641389],
          [114.142081793946, 22.289220357043],
          [114.141969060574, 22.2892540720429],
          [114.141878722373, 22.2892822285159],
          [114.14177081644, 22.2893172056215],
          [114.141660137866, 22.289354622766],
          [114.141541594723, 22.2893964559068],
          [114.141423896822, 22.2894398181126],
          [114.141371871281, 22.2894595737932],
          [114.141324908301, 22.2894777877439]
        ]
      },
      "properties": {
        "OBJECTID": 2,
        "CELL_NUM": 2,
        "WIDTH": 1200,
        "HEIGHT": 2400,
        "FEAT_NUM": "FTP7000331",
        "SHAPE": "Circular",
        "TYPE": "Tunnel"
      }
    },
    ...
  ]
}
```

- Box Culvert/Tunnel Polygon (Sewage / Storm Water)

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "Polygon",
        "coordinates": [
          [
            [114.20534943200005, 22.332071303000077],
            [114.20534942800009, 22.332051156000034],
            [114.20542349100003, 22.332050312000035],
            [114.20562659500001, 22.331848018000073],
            [114.20557123300011, 22.331448786000067],
            [114.20533907800007, 22.331128549000027],
            [114.20536659400011, 22.33117888000051],
            [114.20559406000007, 22.331436049000047],
            [114.205652009, 22.331854751000037],
            [114.20543423100003, 22.332070954000073],
            [114.20534943200005, 22.332071303000077]
          ]
        ]
      },
      "properties": {
        "OBJECTID": 1,
        "FEAT_NUM": "FBB4000700"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "Polygon",
        "coordinates": [
          [
            [114.2054889740001, 22.329345055000033],
            [114.20546288000003, 22.329329156000028],
            [114.20545972600007, 22.329284275000077],
            [114.2054630020001, 22.329166615000076],
            [114.20547798200005, 22.329036635000023],
            [114.20549668400008, 22.328977183000063],
            [114.2055216120001, 22.328982543000052],
            [114.20552502800001, 22.329026287000033],
            [114.20551117700006, 22.329171374000055],
            [114.20551183500004, 22.329255630000034],
            [114.20550863800008, 22.329289495000069],
            [114.2054889740001, 22.329345055000033]
          ]
        ]
      },
      "properties": {
        "OBJECTID": 2,
        "FEAT_NUM": "FBB4000703"
      }
    },
    ...
  ]
}
```

- Catchpit

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "Point",
        "coordinates": [114.135169591187, 22.3340140154325]
      },
      "properties": {
        "OBJECTID": 1,
        "CL": null,
        "FEAT_NUM": "SCH4011320"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "Point",
        "coordinates": [114.134834705517, 22.3343851894583]
      },
      "properties": {
        "OBJECTID": 2,
        "CL": null,
        "FEAT_NUM": "SCH4011321"
      }
    },
    {
      "type": "Feature",
      "id": 3,
      "geometry": {
        "type": "Point",
        "coordinates": [114.042302475151, 22.3608597489267]
      },
      "properties": {
        "OBJECTID": 3,
        "CL": 5.54,
        "FEAT_NUM": "SCH4010609"
      }
    },
    ...
  ]
}
```

- Chamber (Sewage / Storm Water)

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "Polygon",
        "coordinates": [[[114.04442095361, 22.4646390205836], [114.044426203302, 22.4646665044461], [114.044372418559, 22.4646733234052], [114.044368227924, 22.4646458404107], [114.04442095361, 22.4646390205836]]]]],
      "properties": {
        "OBJECTID": 1,
        "CL": 5.35,
        "IL": null,
        "FEAT_NUM": "FCH1002100"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "Polygon",
        "coordinates": [[[114.044224645772, 22.4646137276796], [114.044264891058, 22.4646428116044], [114.044244836994, 22.4646634115601], [114.044201637475, 22.4646349121784], [114.044224645772, 22.4646137276796]]]]],
      "properties": {
        "OBJECTID": 2,
        "CL": 5.35,
        "IL": null,
        "FEAT_NUM": "FCH1002101"
      }
    },
    ...
  ]
}
```

- Channel

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "LineString",
        "coordinates": [[114.058113056556, 22.4497948431901], [114.058230448845, 22.449685101346], [114.058319734882, 22.4495989353063], [114.058429152941, 22.4494981637112]]],
      "properties": {
        "OBJECTID": 1,
        "WIDTH": 600,
        "HEIGHT": null,
        "FEAT_NUM": "SUP1019857",
        "SHAPE": "U Shape"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "LineString",
        "coordinates": [[114.032481885676, 22.4382655046971], [114.03242005925, 22.4382706238539]]],
      "properties": {
        "OBJECTID": 2,
        "WIDTH": 600,
        "HEIGHT": null,
        "FEAT_NUM": "SUP1019537",
        "SHAPE": "U Shape"
      }
    },
    ...
  ]
}
```

- Combined Manhole

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "Point",
        "coordinates": [114.030115351981, 22.2095934588497]
      },
      "properties": {
        "OBJECTID": 1,
        "CL": 9.46,
        "FEAT_NUM": "CMH7000020"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "Point",
        "coordinates": [114.030365352608, 22.2092593112154]
      },
      "properties": {
        "OBJECTID": 2,
        "CL": 9.55,
        "FEAT_NUM": "CMH7000021"
      }
    },
    {
      "type": "Feature",
      "id": 3,
      "geometry": {
        "type": "Point",
        "coordinates": [114.030413499159, 22.2091981875563]
      },
      "properties": {
        "OBJECTID": 3,
        "CL": 9.36,
        "FEAT_NUM": "CMH7000022"
      }
    },
    ...
  ]
}
```

- Drop-Shaft

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "Polygon",
        "coordinates": [[[114.246656336825, 22.2687748194902], [114.246671747561, 22.2687846772316], [114.246679246053, 22.2687982522087], [114.246678820255, 22.2688153898282], [114.246670096504, 22.2688294792398], [114.246655162233, 22.2688387234957], [114.24663168783, 22.2688382480542], [114.246616959077, 22.2688295020792], [114.246609160096, 22.2688164517687], [114.246608258965, 22.268800915158], [114.246616936858, 22.2687847007904], [114.246632641449, 22.2687746628769], [114.246656336825, 22.2687748194902]]]]],
      "properties": {
        "OBJECTID": 1,
        "CL": null,
        "FEAT_NUM": "FSH7004880"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "Polygon",
        "coordinates": [[[114.231105561291, 22.2830974375154], [114.231121645249, 22.2831062436156], [114.231130973984, 22.2831184506868], [114.231132603039, 22.2831378353939], [114.231121663621, 22.2831538255916], [114.23110828893, 22.2831622639072], [114.231088965617, 22.2831632773926], [114.231071496322, 22.2831538423609], [114.231062120289, 22.2831387632292], [114.231063229214, 22.2831180931281], [114.231071477967, 22.2831062603849], [114.231085697367, 22.2830981994247], [114.231105561291, 22.2830974375154]]]]],
      "properties": {
        "OBJECTID": 2,
        "CL": null,
        "FEAT_NUM": "FSH7004881"
      }
    },
    ...
  ]
}
```

- Inlet

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "Point",
        "coordinates": [114.219790092834, 22.2291350684784]
      },
      "properties": {
        "OBJECTID": 1,
        "CL": 32.717,
        "FEAT_NUM": "SIH7004300"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "Point",
        "coordinates": [114.214772767634, 22.2250984184429]
      },
      "properties": {
        "OBJECTID": 2,
        "CL": 45.859,
        "FEAT_NUM": "SIH7004320"
      }
    },
    ...
  ]
}
```

- Interface Valve Chamber

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "Point",
        "coordinates": [114.178805493347, 22.3749595062572]
      },
      "properties": {
        "OBJECTID": 1,
        "CL": 5.16,
        "FEAT_NUM": "FIH4000200"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "Point",
        "coordinates": [114.256139268231, 22.2298366588369]
      },
      "properties": {
        "OBJECTID": 2,
        "CL": 3.34,
        "FEAT_NUM": "FIH7000002"
      }
    },
    ...
  ]
}
```

- Multiple Pipes (Sewage / Storm Water)

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "LineString",
        "coordinates": [[114.211633617463, 22.3195954299774], [114.211591734979, 22.3195421651223]]
      },
      "properties": {
        "OBJECTID": 1,
        "WIDTH": 225,
        "HEIGHT": null,
        "FEAT_NUM": "FMD4004700",
        "SHAPE": "Circular",
        "US_IL": null,
        "DS_IL": null
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "LineString",
        "coordinates": [[114.211591711346, 22.3195371824264], [114.211657175379, 22.3194831974355], [114.211657414406, 22.319483244804]]
      },
      "properties": {
        "OBJECTID": 2,
        "WIDTH": 225,
        "HEIGHT": null,
        "FEAT_NUM": "FMD4004701",
        "SHAPE": "Circular",
        "US_IL": null,
        "DS_IL": null
      }
    },
    ...
  ]
}
```

- Multiple Rising Mains (Sewage / Storm Water)

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "LineString",
        "coordinates": [[114.130779865395, 22.2031158144272], [114.130799475303, 22.2031664806406]]
      },
      "properties": {
        "OBJECTID": 1,
        "WIDTH": 150,
        "HEIGHT": null,
        "FEAT_NUM": "FPD7000058",
        "SHAPE": "Circular",
        "US_IL": 2.73,
        "DS_IL": 2.46
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "LineString",
        "coordinates": [[114.130779865395, 22.2031158144272], [114.130799475303, 22.2031664806406]]
      },
      "properties": {
        "OBJECTID": 2,
        "WIDTH": 150,
        "HEIGHT": null,
        "FEAT_NUM": "FPD7000058",
        "SHAPE": "Circular",
        "US_IL": 2.73,
        "DS_IL": 2.46
      }
    },
    ...
  ]
}
```

- Oil / Petrol Interceptor

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "Point",
        "coordinates": [114.12747433756, 22.5023322595413]
      },
      "properties": {
        "OBJECTID": 1,
        "CL": 8.23,
        "FEAT_NUM": "FPH1000040"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "Point",
        "coordinates": [114.002012234716, 22.4589352453312]
      },
      "properties": {
        "OBJECTID": 2,
        "CL": null,
        "FEAT_NUM": "FPH1000121"
      }
    },
    ...
  ]
}
```

- Outfall (Combined / Sewage / Storm Water)

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "Point",
        "coordinates": [113.864985211717, 22.2540026765594]
      },
      "properties": {
        "OBJECTID": 1,
        "CL": null,
        "FEAT_NUM": "COF7000200"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "Point",
        "coordinates": [113.862289824434, 22.2531744452978]
      },
      "properties": {
        "OBJECTID": 2,
        "CL": null,
        "FEAT_NUM": "COF7000180"
      }
    },
    ...
  ]
}
```

- Outlet

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "Point",
        "coordinates": [114.219848047846, 22.2292082032422]
      },
      "properties": {
        "OBJECTID": 1,
        "CL": 31.77,
        "FEAT_NUM": "SNF7005080"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "Point",
        "coordinates": [114.214847752164, 22.2250113896731]
      },
      "properties": {
        "OBJECTID": 2,
        "CL": 44.394,
        "FEAT_NUM": "SNF7005081"
      }
    },
    ...
  ]
}
```

- Overflow (Combined / Sewage)

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "Point",
        "coordinates": [113.864760050778, 22.2537546193786]
      },
      "properties": {
        "OBJECTID": 1,
        "CL": 1.96,
        "FEAT_NUM": "COH7000248"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "Point",
        "coordinates": [113.864915145843, 22.2540260380627]
      },
      "properties": {
        "OBJECTID": 2,
        "CL": 2.03,
        "FEAT_NUM": "COH7000249"
      }
    },
    ...
  ]
}
```

- Pipe (Combined / Sewage / Storm Water)

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "LineString",
        "coordinates": [[114.029383232417, 22.2091639687065], [114.02937238105, 22.2092186307013]]
      },
      "properties": {
        "OBJECTID": 1,
        "WIDTH": 300,
        "HEIGHT": null,
        "FEAT_NUM": "CWD7000600",
        "SHAPE": "Circular",
        "US_IL": 4.98,
        "DS_IL": 4.77
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "LineString",
        "coordinates": [[114.038085541752, 22.2852827633186], [114.038208039866, 22.2850465639162]]
      },
      "properties": {
        "OBJECTID": 2,
        "WIDTH": 375,
        "HEIGHT": null,
        "FEAT_NUM": "CWD7000751",
        "SHAPE": "Circular",
        "US_IL": 0.73,
        "DS_IL": 0.45
      }
    },
    ...
  ]
}
```

- Rising Main (Sewage / Storm Water)

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "LineString",
        "coordinates": [
          [114.17853872269, 22.375340572323],
          [114.178627121465, 22.3753687917811],
          [114.178632015344, 22.3753778945034],
          [114.178623869151, 22.3754067200527],
          [114.178606750843, 22.3754188572765],
          [114.178592642989, 22.3754630709162]
        ]
      },
      "properties": {
        "OBJECTID": 1,
        "WIDTH": 110,
        "HEIGHT": null,
        "FEAT_NUM": "FVD4000136",
        "SHAPE": "Circular",
        "US_IL": 5.08,
        "DS_IL": null
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "LineString",
        "coordinates": [
          [114.178592419671, 22.3754638023917],
          [114.178588011558, 22.3754765083983],
          [114.178581486679, 22.3754878869395],
          [114.178551338626, 22.3755728465084],
          [114.178539114126, 22.3755902936256],
          [114.17850768441, 22.3756825498687],
          [114.178512646278, 22.3756930432954],
          [114.178519355818, 22.3756948222405]
        ]
      },
      "properties": {
        "OBJECTID": 2,
        "WIDTH": 110,
        "HEIGHT": null,
        "FEAT_NUM": "FVD4000201",
        "SHAPE": "Circular",
        "US_IL": null,
        "DS_IL": null
      }
    },
    ...
  ]
}
```

- Sand Trap

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "Point",
        "coordinates": [114.108560184611, 22.3847450896308]
      },
      "properties": {
        "OBJECTID": 1,
        "CL": null,
        "FEAT_NUM": "SPH4001580"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "Point",
        "coordinates": [114.247587939913, 22.3550311467925]
      },
      "properties": {
        "OBJECTID": 2,
        "CL": 6.87,
        "FEAT_NUM": "SPH4001665"
      }
    },
    ...
  ]
}
```

- Sewer / Storm Water Manhole

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "Point",
        "coordinates": [114.237608637258, 22.3104956117921]
      },
      "properties": {
        "OBJECTID": 1,
        "CL": 91.25,
        "FEAT_NUM": "FMH4044860"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "Polygon",
        "coordinates": [[[114.242367071146, 22.4294708344369], [114.242374356344, 22.4294708314811], [114.242374359524, 22.4294776043309], [114.242367074325, 22.4294776072867], [114.242367071146, 22.4294708344369]]]
      },
      "properties": {
        "OBJECTID": 2,
        "CL": 11,
        "FEAT_NUM": "FSH4006860"
      }
    }
  ]
}
```

- Sewer / Storm Water Terminal Manhole

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "Point",
        "coordinates": [114.168347891086, 22.3186792446719]
      },
      "properties": {
        "OBJECTID": 1,
        "CL": 5,
        "FEAT_NUM": "FLH4007783"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "Point",
        "coordinates": [114.168527997848, 22.3178191168137]
      },
      "properties": {
        "OBJECTID": 2,
        "CL": 5.15,
        "FEAT_NUM": "FLH4007782"
      }
    }
  ]
}
```

- Tapping Point (Sewage / Storm Water)

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "id": 1,
      "geometry": {
        "type": "Point",
        "coordinates": [114.05399773887, 22.365267091075]
      },
      "properties": {
        "OBJECTID": 1,
        "CL": null,
        "FEAT_NUM": "FTH4003488"
      }
    },
    {
      "type": "Feature",
      "id": 2,
      "geometry": {
        "type": "Point",
        "coordinates": [114.054052102137, 22.3652593086903]
      },
      "properties": {
        "OBJECTID": 2,
        "CL": null,
        "FEAT_NUM": "FTH4003489"
      }
    }
  ]
}
```

- Tunnel Protection Zone

```
{ "type": "FeatureCollection", "features": [
  { "type": "Feature", "id": 1, "geometry": { "type": "Polygon", "coordinates": [[[114.130949935387, 22.3
220336539899], [114.122307679193, 22.3157994030651], [114.1216214101, 22.31643392817
61], [114.112721452906, 22.3080639313919], [114.113410545848, 22.3074280143375], [114.11
7138613788, 22.3109337722134], [114.13154439556, 22.3213197904551], [114.13094993538
7, 22.3220336539899]]]], "properties": { "OBJECTID": 1, "FEAT_NUM": "XRB4003881" } },
  { "type": "Feature", "id": 2, "geometry": { "type": "Polygon", "coordinates": [[[114.131036326941, 22.3
226671381066], [114.122343235355, 22.316401177877], [114.121617436361, 22.31707096318
56], [114.116003052387, 22.3117918262027], [114.11203559889, 22.3080609135768], [114.113
413774993, 22.3067890823138], [114.117461092055, 22.3105950624483], [114.123393519145
, 22.3148724488359], [114.13222526515, 22.321239408275], [114.131036326941, 22.3226671
381066]]]], "properties": { "OBJECTID": 2, "FEAT_NUM": "XRB4003882" } }
  ...
]
```