QGIS Application - Bug report #20753
WKT output is wrong for EMPTY geometries

2018-12-07 01:50 PM - Johannes Kroeger

Status:	Open		
Priority:	Normal		
Assignee:			
Category:	Geometry		
Affected QGIS version:	3.5(master)	**Regression?:**	No
Operating System:		**Easy fix?:**	No
Pull Request or Patch supplied:	No	**Resolution:**	
Crashes QGIS or corrupts data:	No	**Copied to github as #:**	28573

Description

QGIS geometries' asWkt() method returns "GeometryType ()" or simple an empty string '' instead of "GeometryType EMPTY" for empty geometries.

http://www.opengeospatial.org/standards/sfa defines for example for a POINT:

    <empty set> ::= EMPTY

    <point text> ::= <empty set> | <left paren> <point> <right
    paren>

From my understanding this means that an empty Point would be represented as "POINT EMPTY".
QGIS however represents it as empty string ''.

    >>> p = QgsGeometry.fromWkt('POINT EMPTY')
    >>> p.isEmpty()
    True
    >>> p.asWkt()
    ''

History

#1 - 2018-12-07 02:07 PM - Johannes Kroeger

Actually, it looks like something weird is being created for empty geometries. They all have geometry type 3?

    >>> for type in "POINT", "LINESTRING", "POLYGON", "GEOMETRYCOLLECTION", "MULTIPOINT":
    >>>   type = type + " EMPTY"
    >>>   g = QgsGeometry.fromWkt(type)
    >>>   print(type)
    >>>   print(g.type())
    >>>   print(g)
    >>>   print(g.asWkt())
    POINT EMPTY
    3
    <QgsGeometry: >

    LINESTRING EMPTY

3

<QgsGeometry: >

POLYGON EMPTY

3

<QgsGeometry: >

GEOMETRYCOLLECTION EMPTY

3

<QgsGeometry: >

MULTIPOINT EMPTY

3

<QgsGeometry: >

#2 - 2019-01-28 11:23 AM - Loïc BARTOLETTI

I think there are several issues raised in the ticket.

First of all I think your reasoning is right, there is missing information on empty geometries. For example, postgis returns "POINT EMPTY" when creating such a geometry.

There is indeed an isEmpty method that could be used for geometries except when there are points since the method always returns false. By creating a point by QgsPoint(), it should be able to return " POINT EMPTY " and not QgsPoint(0, 0) as it is today.

For me it's interesting to have an empty point, but I wonder if it's a bug to fix or if it's bigger (aka for QGIS 4)?

#3 - 2019-01-29 09:31 AM - Loïc BARTOLETTI

related issues #19190 and #20754