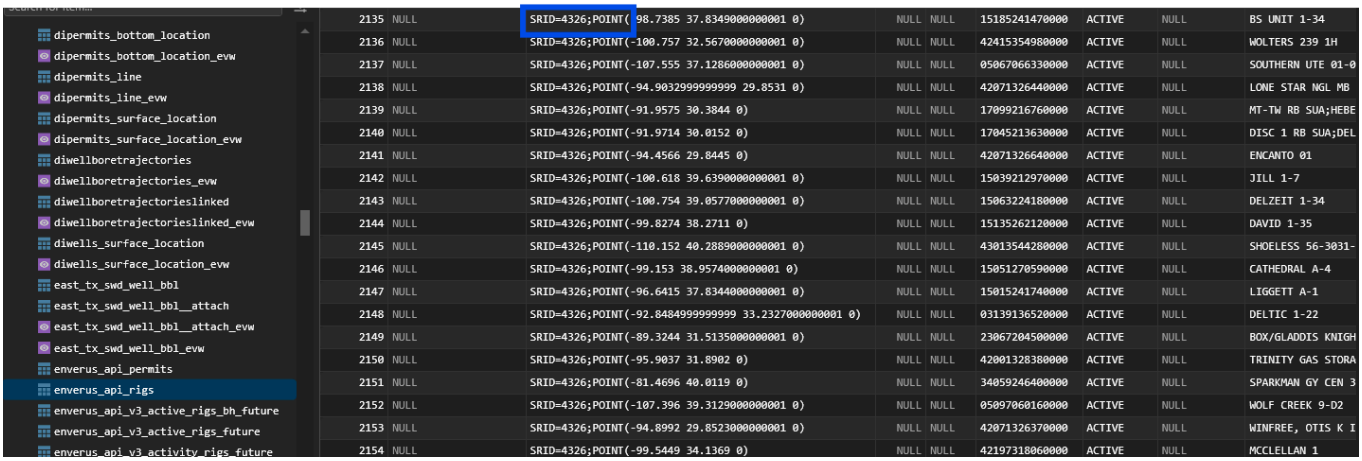
The Enverus API gives points and lines an SRID of 4326 we use 3875



In PostGIS and other geospatial contexts, 4326 and 3857 are Spatial Reference System Identifiers (SRIDs) that represent specific coordinate reference systems (CRSs).

- **EPSG:4326 (WGS 84 Geographic Coordinate System)**:
- This is what the ENverus API Uses
  - This is a geographic coordinate system (GCS), meaning it uses latitude and longitude to define locations on a spherical or ellipsoidal model of the Earth (specifically, the WGS84 ellipsoid).
  - Units are in degrees.
  - It's commonly used for storing and referencing global data, especially with GPS data, and is the default for PostGIS and GeoJSON.
- **EPSG:3857 (WGS 84 / Pseudo-Mercator or Web Mercator)**:
  - This is what we uses at Select!
  - This is a projected coordinate system (PCS), meaning it projects the WGS84 geographic coordinates onto a flat, two-dimensional surface using the Mercator projection.
  - Units are in meters.
  - It's widely used in web mapping applications like Google Maps, OpenStreetMap, and many web mapping libraries, as it allows for easy tile generation and consistent display across different zoom levels.
  - While convenient for display, it introduces distortion in area and shape, especially at higher latitudes, and is generally not recommended for precise measurements or calculations.

1. Enable PostGIS Extension

First, ensure PostGIS is installed and enabled in your database:

Sql

```
CREATE EXTENSION postgis;
```

2. Transform Geometry to Web Mercator (EPSG:3857)

You can use the `ST_Transform` function to convert geometries to the Web Mercator projection:

Sql

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```
SELECT ST_Transform(geom, 3857) AS web_mercator_geom FROM your_table;
```

- `geom`: The geometry column in your table.
- `3857`: The SRID for Web Mercator.

3. Example: Insert Point in Web Mercator

If you want to insert a point in Web Mercator:

Sql

```
INSERT INTO your_table (geom) VALUES
(ST_Transform(ST_SetSRID(ST_MakePoint(-82.5515, 35.5951), 4326), 3857));
```

- `ST_MakePoint`: Creates a point with longitude and latitude.
- `ST_SetSRID`: Assigns the SRID (4326 for WGS84).
- `ST_Transform`: Converts the point to Web Mercator (EPSG:3857).

4. Querying Data in Web Mercator

To retrieve data in Web Mercator:

Sql

```
SELECT ST_AsText(ST_Transform(geom, 3857)) AS web_mercator_geom FROM your_table;
```