GRID DESCRIPTION

CTV V

Model Domain

Two separate static geological models, one for the Upper Injection Zone and one for the Lower Injection Zone, were developed using Schlumberger's Petrel software. Petrel is a commonly used software in the petroleum industry for exploration and production. It allows users to incorporate seismic and well data to construct reservoir models and visualize reservoir simulation results. The bottom surface of the Upper Injection Zone model and the top surface of the Lower Injection zone model are consistent between models. Model domain information is summarized in **Table 1**.

The static geologic models served as input to the two corresponding simulation models. The Upper Injection Zone geo-cellular and simulation grids used the same Tartan grid, with an average resolution of 494 feet in the x direction and 518 feet in the y direction. The Lower Injection Zone static geologic grid used a uniform geo-cellular grid with a resolution of 250 feet by 250 feet and an average thickness of 19 feet. This grid was used for property distribution. The properties were then upscaled to a Tartan grid for the simulation model, with varying resolutions in the horizontal directions (average of 426 feet in the x direction and average of 487 feet in the y direction), and an average layer thickness of 19 feet. The top four layers in the Lower Injection Zone model are the Internal Barrier, and all underlying layers are part of the Lower Injection Zone. **Figures 1a and 1b** depict the simulation grids. The model grids are aligned northeast-southwest [redacted] parallel to the depositional trend of the injection zones. The lateral model boundaries were generally defined as open boundaries [redacted]

The open-hole logs have a half-foot resolution, and a constant vertical cell height of 19 feet was utilized over the model domain to generate grid layers as shown in **Figure 2**. The 19-foot cell height provides the vertical resolution necessary to capture significant lithologic heterogeneity (sand versus shale) which helps to ensure accurate upscaling of log data and distribution of reservoir properties in the static model. **Figure 3** shows a comparison of open-hole log data for a well within the AoR and the associated upscaled logs for both the Upper Injection Zone and Lower Injection Zone Models.

Table 1. Model domain information

a) Upper Injection Zone

Coordinate System	State Plane		
Horizontal Datum	North American Datum (NAD) 27		
Coordinate System Units	Feet		
Zone	Zone 2		
FIPSZONE	0402	**ADSZONE**	3301
Coordinate of X min	[redacted]	**Coordinate of X max**	[redacted]
Coordinate of Y min	[redacted]	**Coordinate of Y max**	[redacted]
Elevation of Bottom of Domain	[redacted]	**Elevation of Top of Domain**	[redacted]

b) Lower Injection Zone

Coordinate System	State Plane		
Horizontal Datum	North American Datum (NAD) 27		
Coordinate System Units	Feet		
Zone	Zone 2		
FIPSZONE	0402	**ADSZONE**	3301
Coordinate of X min	[redacted]	**Coordinate of X max**	[redacted]
Coordinate of Y min	[redacted]	**Coordinate of Y max**	[redacted]
Elevation of Bottom of Domain	[redacted]	**Elevation of Top of Domain**	[redacted]

[redacted]

Figure 1a. Plan view of the Upper Injection Zone model boundary and geo-cellular grid used to define the CO_2 plume extent and associated project AoR.

[redacted]

Figure 1b. Plan view of the Lower Injection Zone model boundary and geo-cellular grid used to define the CO_2 plume extent and associated project AoR.

[redacted]

Figure 2. Static model grid layering of the Injection Zones. Stratigraphic units have an open boundary in all directions.

[redacted]

Figure 3. Well [redacted] upscaled logs versus open-hole logs.