IOGCC Chairman's Stewardship Awards 2021 Submitted by the Railroad Commission of Texas

Padre Island National Seashore Well Plugging and Site Remediation Project

Railroad Commission of Texas in partnership with the National Park Service/Padre Island National Seashore, AAA Well Services, LLC., E-Tech Environmental and Safety Services, and funded by the RESTORE Council

Environmental Partnership Award

The Environmental Partnership Award recognizes innovative projects led by non-industry organizations with the cooperation and participation of industry.

Provide a brief explanation of the project

Padre Island National Seashore separates the Gulf of Mexico from the Laguna Madre, one of a few hypersaline lagoons in the world, protecting 70 miles of coastline, dunes, prairies, and wind tidal flats. Working in coordination with the National Park Service at Padre Island National Seashore, with funding from the RESTORE Council, the Railroad Commission partnered with AAA Well Services, LLC and E-Tech Environmental and Safety Services to plug 10 abandoned gas wells, and an associated abandoned water supply well. Two of the gas wells were drilled in 1968, with the remaining eight gas wells drilled from 2002 to 2008; the wells were abandoned in 2012 and orphaned in 2013. The project also removed surface equipment at five well pads and two tank battery sites.

Describe the purpose of the project

Plugging the wells eliminated the potential for contamination resulting in protection of water quality in the adjacent waterways, improved habitat for dependent wildlife including endangered and migratory species, and improved visitor safety, meeting the RESTORE Council's goal to fund on-the-ground restoration activities in key watersheds across the Gulf. The collaborative work helped provide jobs for oil and gas workers, and ensured that future generations of visitors are able to enjoy a natural treasure in Texas.

Figure 1: Wellhead

Explain the process taken to complete the project

Plugging operations consisted of removing the tubing, packer, and other completion equipment; pumping cement across producing zones; and placing cement plugs at various depths to protect freshwater zones. Finally, a cement plug was set at the surface to cap the well, and wellhead equipment is cut off. A permanent abandonment marker was placed to identify the well's location as appropriate.

Removal of surface equipment, including tank batteries, followed. This work included vacuuming liquid product from storage tanks, and removing the tanks and associated production equipment such as heater/treaters and meter runs.

Describe any contributions made to the environment

Orphaned gas wells located within the Padre Island National Seashore posed environmental risks, which included: increased hazards to natural resources during hurricane season, resource damage from release of petroleum products due to missing or deteriorating pressure control equipment, subsurface contamination of groundwater absent proper well plugging, personal injury, property damage from release of pressurized and highly flammable fluids and continued loss of habitat from surface disturbances. While proper plugging of wells and reclamation of well and tank battery sites involved relatively small land areas, they represented significant sources of petroleum pollution that could impact groundwater, springs and seeps, and surface water. Elimination of the potential for contamination from these abandoned wells resulted in protection of water quality in the adjacent waterways and improved habitat for dependent wildlife including endangered and migratory species.

Figure 2: Tank Battery site

Describe what has been accomplished

Before work began on site, the Railroad Commission worked with the National Park Service to secure funding from the RESTORE Council to implement this project. During the application process wells were first prioritized by age, with older wells having a higher priority due to concern of wellbore integrity. The gas wells were under high pressure and there was concern that overtime the corrosive environment of the wellbores would lead to a loss of wellbore integrity. There was also concern that leaks and spills of product downhole into groundwater and contaminants may be pushed to the surface due to pressurization.

After the RESTORE Council awarded funds for the project, the Railroad Commission initiated a contracting process that resulted in partnership with AAA Well Services, LLC and E-Tech Environmental and Safety Services to implement well plugging and site remediation activities.

On January 12, 2021, AAA Well Service built a temporary road to access wells located behind the primary dunes on the Gulf side of the island within the park. A well plugging rig arrived at the site along with other necessary plugging equipment. The first well was completed on January 28, 2021. Ten gas wells were plugged by March 29, 2021. The eleventh well—a water supply well used for oil and gas

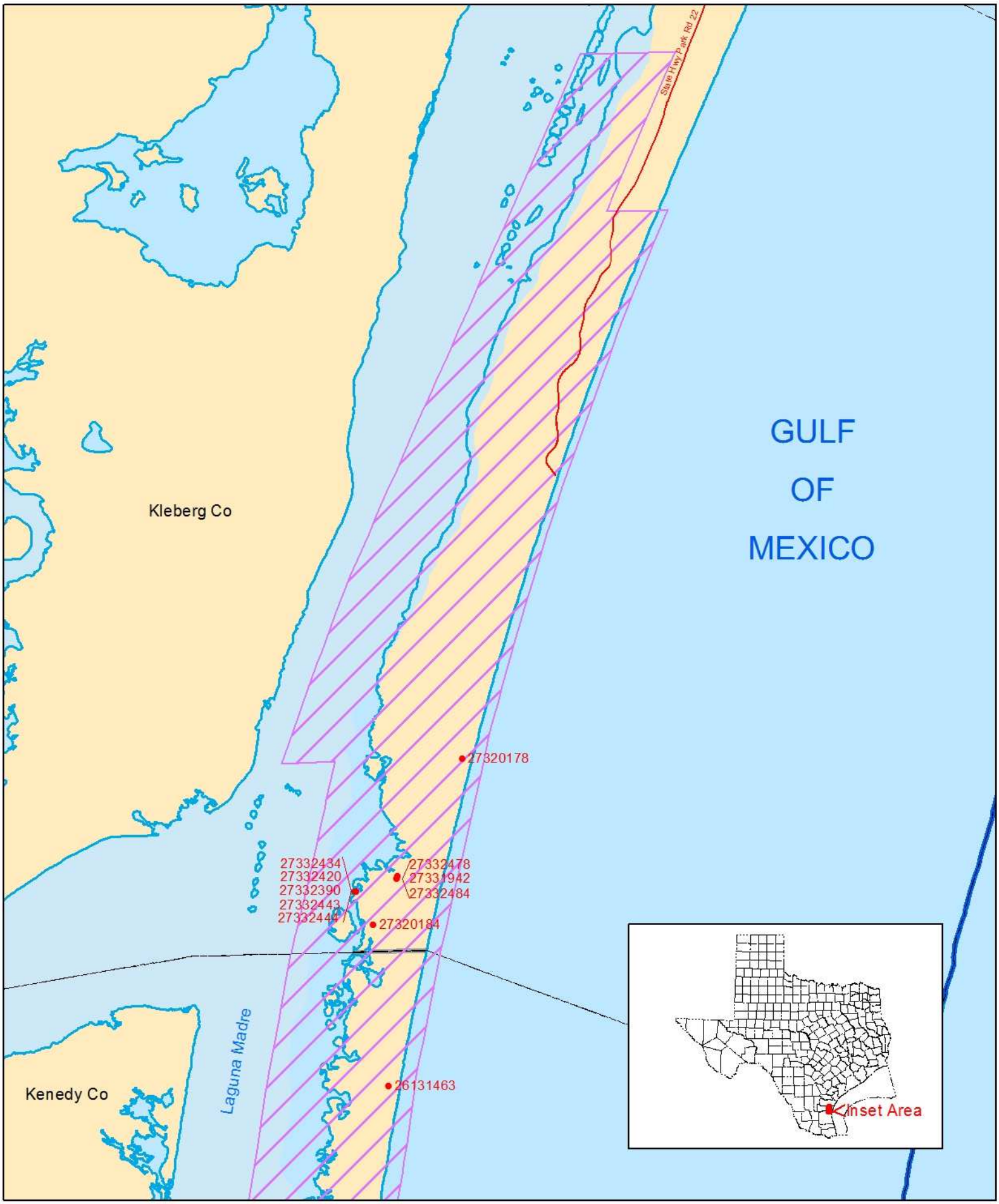
activities at the site—was plugged on March 31, 2021, with the final cut and cap activities taking place on April 5, 2021.

Well	API #	Completion Date
Well on the South Sprint Pad –		
1) State Tract 980S-#1	42-273-20178	9/23/1968
Well on the A4 Pad –		
2) Dunn-McCampbell A4 Gas Well	42-273-20184	11/13/1968
Wells on the A3/A8 Pad –		
3) Dunn-McCampbell #A8 Gas Well	42-273-31942	5/15/1985
4) State Tract 991-S #1 Gas Well	42-273-32478	4/4/2008
5) Dunn-McCampbell 11A Gas Well	42-273-32484	5/20/2008
Wells on the shared Peach pad –		
6) Peach #1 Gas Well	42-273-32390	8/25/2004
7) Peach #4ST Gas Well	42-273-32434	3/2006
8) Peach #5 Gas Well	42-273-32444	3/2006
9) Peach #6 Gas Well	42-273-32443	3/2006
10) Peach #7C/7T Gas Well	42-273-32420	2/11/2008
Well on the Lemon Pad –		
11) State Tract 1008S-#1	42-273-31463	2/23/2008

On April 6, 2021, E-Tech moved in to begin cleanup activities at the South Sprint site with all fluids—basic sediment and water—removed from the tanks by the end of the second day. Work continued as crews purged lines and began demolition for removal of surface equipment. After seven days, the crew moved remediation activities to the Dunn-McCampbell site where work began removing a platform. The platform walls were much larger than anticipated and were buried to a depth of approximately ten feet. After three days the crew moved on to the Peach site, where a very large concrete platform was discovered. The platform was unearthed and successfully removed, without the need for additional heavy equipment. The crew moved to the Lemon site to complete clean up efforts; following two days with recovering scrap metal and a vacuum truck removing liquids the project demobilized on April 27, 2021 with all site remediation work completed. On August 11, 2021 the crew returned to excavate pipe and remove two remaining well heads completing the project.

Should additional funding become available in the future, the National Park Service will remove imported surface materials used to construct the well tank battery pads and access roads and restore surface habitat to its coastal prairie state.

Figure 3: Coastal Prairie—Future State upon completion of habitat restoration



PROJECT RESTORE

KLEBERG / KENEDY CO AREA

Feb 2018

Legend

- Abandoned Well
- Padre Island National Seashore Park
- Road

Railroad Commission of Texas
Oil and Gas Division
GIS Well Mapping

Disclaimer:
This map was generated by the Geographic Information System of the Railroad Commission of Texas. Base map information was obtained directly from U.S. Geological Survey 7.5 minute quadrangle maps. Oil and gas well data and pipeline data were obtained from public records of the Railroad Commission. The mapping system from which this map was produced is currently under development. This map is intended solely for the internal use of the Railroad Commission, which makes no claims as to its accuracy or completeness.