

WESTERN

— TEXAS COLLEGE —

PETROLEUM TECHNOLOGY

March 2014 Newsletter

March signals the third spring for WTC's Petroleum Technology program and more projects were accomplished. Students got down in the trenches to work; however, instead of placing conduit for Electrical or the Ethernet cable connections this time, the students placed the components of the Impressed Cathodic Protection (ICP) into the trenches dug earlier in the semester with the Vermeer Trenching attachment.



(Above) Instructor Dana Fahnrapp directing student Polad Garyylev on the placement of his ICP unit at the edge of the inner core lab area.

Local business Chemplex, Inc. gave the students a site tour. Chemplex, Inc. makes and mixes the chemicals used in the downhole process of Petroleum Production. The site tour included a demonstration of the various processes on site, as well as a lecture on the chemical nature of the uses of Guar Gum as a suspension agent being used in hydraulic fracturing "Fracing". Currently, most Guar Gum is produced in India; however, the North Texas climatic conditions which favor the growth of cotton also allows Guar beans to thrive.



(Above) Students of the Petroleum Technology program are touring the outside storage and staging area of the Snyder, Chemplex plant.



(Left) Dr. Ed Vinson, a scientist with Chemplex gives a talk and presentation on the properties of down hole production fluids, specifically Guar Gum.

(Right) Dr. Ed Vinson injects a sample of Guar Gum with a fluid to demonstrate the consistency of the product. Daniel Escabedo (left) and Polad Garylev (right) intently observe.



Students also performed lab experiments associated with the ICP lab. One of these was an “Electroplating” experiment. Electroplating is a similar process to ICP, but instead of just protecting a piece of metal, the metal has an extra layer of a different metal added to it.



(Left) Aluminum block which has been electroplated with copper from a copper sulfate solution.

The Wind, Solar, and Turfgrass and Landscape Management programs joined Petroleum Technology for a specialized learning seminar taught by Mr. Mike Kszyminski, of GeoShack, Ft. Worth, Texas on GPS data collection.



(Above) Students and faculty attending the training event for use of the TOPCON HiPer II unit.

The students moved to the 39-acre field lab for the rest of the day's events. While it is March, mornings can still be cold. By the afternoon, the field lab location warmed up. The field site work initially involved setting up the base unit. Students then moved to different locations around the field lab to collect data points.



(Above) Students setting up the base station of the GPS Unit.



(Left) One of the data points collected by the students was at the opposite ends of the Slab for the Polaris Hands on Trainer.

(Right) Data points were collected at the base of the guide wires of the meteorology tower. The data collected throughout the day can be utilized to make an updated field map. For example see <http://www.wtc.edu/uploads/ProcessTech/newsletters/2015/January.pdf>

