



**Plant Name and Location**  
Oklahoma City, OK

## Conveying Crax at Valley Proteins Rendering Plant in Oklahoma City, OK

### General Description of the Application

Valley Proteins (formerly known as Capital City Processors) in Oklahoma City, OK is a rendering facility that processes used cooking oil from restaurants and food processors along with inedible meat products from beef processors in Kansas and Oklahoma. After the cooking and fat separation processes, the "cracklings" or "crax," are further processed by additional moisture removal and grinding into meal. Crax are a high source of protein, minerals and residual fat that is used as an additive in animal foods.

Valley Proteins purchased the Oklahoma City and several other facilities in late 2016 from another protein conversion company. A new cooker and some upgrades to the facility had been made over the last few years, but most of the conveying equipment needed to be replaced. Valley Proteins and KWS have a great working relationship and KWS has solved many material handling problems at Valley Proteins plants all over the US.

### Design Parameters of Application

- Product type:** Crax (Damp and Sluggish)
- Material Density:** 50 Lbs. per Cubic Foot
- Conveyor System Capacity:** 282 Cubic Feet per Hour
- Moisture Content:** Approximately 55-Percent Solids
- Duty:** 24 Hours per day, 7 Days per Week

### Advantages Provided by KWS

A team from KWS, led by the Ag By-Products Manager with over 40 years' industry experience, visited the facility and met with the Valley Proteins Plant Manager and Project Manager to determine the exact needs of the plant. While onsite, the KWS team gathered dimensional information on the existing equipment to determine solutions and recommend replacement conveyors which would resolve their issues.



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### Special Features of the KWS Design

The new KWS Press Auger screw conveyor utilized 3/8-inch thick flights that were continuously welded on both sides of schedule 80 pipe with 3-bolt shafts. The screws were close-coupled and clocked to create a continuous helix. The drive unit was upsized to accommodate overload conditions without damage. The troughs, covers and end plates were manufactured from 304 stainless steel to prevent rust and corrosion. Abrasion resistant (AR-235) liners were added to the troughs as a wear surface to provide longer life.

The new KWS Vertical Discharge screw conveyor consists of a horizontal feeder screw with a transition to a vertical screw conveyor that elevates the Crax approximately 13-feet to a load out screw conveyor. The new KWS Vertical Discharge screw conveyor was manufactured with the same construction features as the new KWS Press Auger screw conveyor. There were several other new KWS screw conveyors for the project used to transfer Crax from screw conveyors and other process equipment.

Dodge MTA (Motorized Torque Arm) reducers were used on all the screw conveyors to eliminate belt drives. Dodge MTA reducers are helical/bevel, right-angle, beltless Torque-Arm reducers used for demanding industrial applications. Due to a heavy-duty AGMA rated design, the Dodge MTA reducers provide twice the service life when compared to other reducers.

### Testimonial

"I appreciate your assistance. The new and redesigned KWS equipment will give longer life with increased productivity! We have at least 6 more screw conveyors to buy from KWS."

- Ruben Trevino, Plant Manager - Valley Proteins - Oklahoma City, OK



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