

High-Volume Receiver

NEW LOOP TRACK, HANDLING EQUIPMENT EMPTIES 110-CAR TRAIN IN 10-1/2 HOURS



Grain Handling Inc.
Division of Agri-Northwest
Plymouth, WA • 509-734-5040

Founded: 1984
Storage capacity: 4.7 million bushels at one location
Annual volume: 15-20 million bushels
Annual sales: \$2.5 million
Number of employees: 6
Crops handled: Corn, hard red spring and white wheat
Services: Grain handling and merchandising, corn dry milling

Key personnel:

- Bill Hill, operations manager
- Rhonda Giusti, accountant
- Stewart Bance, electrical technician
- Gary Brown, maintenance superintendent
- James Jundt, operator foreman
- Don Isom, operator
- Scott Brown, operator

Supplier List

Bearing sensors.. The Rolfes Co.
Bucket elevator Schlager Inc.
Catwalk The Haskins Co.
Contractor The Haskins Co.
Contractor (track) Railworks Track Systems Inc.
Control system. Townsend Electric
Conveyors (belt) Hi Roller Conveyors
Conveyors (drag) ... InterSystems Inc.
Elevator buckets Tapco Inc.
Engineering Keigley & Co.
Gate opener Calbrandt Inc.
Leg belting Goodyear
Magnets .. Industrial Magnetics Inc.
Millwright The Haskins Co.
Motion sensors 4B Components Ltd.
Scale controls Compu-Watt Weighing Systems Inc.
Valves Keigley & Co.



Grain Handling LLC's 3.7-million-bushel grain receiving terminal at Plymouth, WA, recently received an upgrade that more than doubled receiving capacity. Photos by Bruce Selyem.

With rapid growth in beef and dairy production in recent years, the demand for grain to feed those cattle numbers outstrips



View along a new 40,000-bph Hi Roller enclosed belt conveyor back toward the head section of a new 40,000-bph Schlager receiving leg.



Portion of a 7,400-foot loop track runs through a 40-foot-deep culvert beneath the facility's truck entrance road.

the production capacity of eastern Washington agriculture.

That's both a boon and a challenge for grain receivers in the region such as Grain Handling Inc. in Plymouth, WA, the grain handling division of Agri-Northwest.

The 4.7-million-bushel terminal along a Burlington Northern Santa Fe (BNSF) main line had only enough capacity for about 60 covered hopper cars along five parallel siding tracks and limited receiving capacity. "We had an older switch engine operated by remote control, and we could handle only eight or 10 cars at a time," says Operations Manager Bill Hill. "We could only receive at 15,000 bph, so it would take us 18 hours to unload 54 cars."

That wasn't fast enough to meet demand

or avoid demurrage charges, so in 2003, the privately-held company began an upgrade to handle 110-car unit trains from the Midwest and unload them within the BNSF's 15-hour limit. The upgrade included construction of a new 7,400-foot loop track and 40,000-bph receiving equipment.

Grain Handling hired Keigley & Co., Spokane, WA (800-333-4889), as the conveying design firm on the project and The Haskins Co., Spokane (509-535-2978), as the general building contractor on-site. Railworks Track Systems Inc., Chehalis, WA (360-262-9444), built the loop track.

Construction got underway in February 2003 and was completed in June. Cost of the project is confidential.

Loop Track

The configuration and topography of the Grain Handling site, between the BNSF line and the Columbia River, presented some challenges in constructing the loop track. Since the BNSF requires a grade no greater than



Bill Hill

0.5% on loop tracks, a deep excavation had to be made for a portion of the track, and the track runs through a culvert beneath the facility's truck entrance road.

Railworks utilized standard, bolted 136-lb. heavy-duty track, in order to handle

high-cube covered hoppers, and concrete ties for durability.

Hill notes that the loop track allows the facility to unload a 110-car train in a single, continuous pass, utilizing BNSF engines.

Grain Receiving

The Haskins crew installed a covered 65-foot-long mechanical rail receiving pit for unloading railcars. Inside the receiving shed, a rail-mounted Calbrandt gate opener alongside the track opens hopper gates.

The pit empties onto a 40,000-bph InterSystems drag conveyor. The stream from this conveyor joins a grain

stream from an existing rail pit, and a series of 40,000-bph Hi Roller enclosed belt conveyors carries grain to a new 40,000-bph Schlagel leg.

The leg is outfitted with two rows of Tapco 20x8 heavy-duty low-profile buckets mounted on a 43-inch Goodyear Supreme belt. The leg also is equipped with a CompuWatt continuous weighing system, which measures power consumption of the leg motor to calculate bushels-per-hour receiving rate and accumulated weight. "It's not legal for trade," Hill comments, "but it's a useful inventory management tool."

At the top of the leg, grain drops through a Keigley two-way valve and onto a series of 40,000-bph Hi Roller enclosed belts running to the west of the scale tower. The new belts access two 600,000-bushel bins to the west of the scale tower.

"I can't say a bad thing about the project. It's been perfect out of the box," says Hill, who adds that the facility now can unload a 110-car unit train in about 10-1/2 hours.

Ed Zdrojewski, editor

Reprinted from the July/August 2004 Issue of GRAIN JOURNAL