

US EPA ARCHIVE DOCUMENT

BASELINE ENVIRONMENTAL SITE ASSESSMENT

Performed in reference to the
Colorado Environmental Management System (EMS) Permit Pilot Project

Facility Assessed:
Murphy-Brown of Yuma
806 West 8th Avenue
Yuma, Colorado 80759
**Murphy-Brown
of Yuma**

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INTRODUCTION

This Baseline Environmental Site Assessment conducted by Enviro-Ag Engineering, Inc. (EAE) on Murphy-Brown of Yuma in Yuma County, Colorado was authorized by Ms. Phyllis Woodford of the Colorado Department of Public Health and Environment – Sustainability Program. A portion subject facilities was assessed on December 16, 2004, by Mr. Gary Chapman, P.E., representing EAE. Also present during the site assessment was Ms. Amy Hernandez of Murphy-Brown of Yuma. This assessment consisted of walk-through visits to the Horseshoe Sow Unit, Big Sky Nursery Unit, a portion of the Anchor Finishing Unit, and the shop/maintenance facility at the Seedorf facility. No other facilities were assessed, including the feedmill.

The purpose of this assessment is to provide information relating to environmental issues, historical activities and current operational protocols to serve as a baseline for the EMS Program for this facility. The scope of this assessment did not include any intrusive sampling and analysis of potential asbestos containing material (ACM), lead, water, soil or air. Reference to spills, leaks or media contamination (if any) is based on observations made during the site assessment or reports from persons interviewed or research of public records. The scope of this assessment did not include inquiry as to the status of any type of historical preservation, or endangered or threatened species that may be present in the surrounding area of the subject property. No certifications are made as part of this assessment as to the location of the property in relation to any flood areas.

Factual information regarding operations, conditions and historical data has been obtained from the site investigation; interviews with persons knowledgeable of the site, and; in part, from the current owner, and has been assumed by EAE to be correct and complete. Since the facts stated in this report are subject to professional interpretation, they could result in differing conclusions. Assumptions are made in this report based on information obtained from each of the differing types of swine operations that apply to all similar swine facilities owned and operated by Murphy-Brown of Yuma.

This report is prepared exclusively for the CDPHE and Murphy-Brown of Yuma; therefore, EAE is not responsible for conclusions, opinions, or recommendations made by third parties based on the data presented in this report.

FACILITY INFORMATION

Location Information

Murphy-Brown of Yuma is a large swine feeding operation with associated farm and rangeland occupying several sites in Yuma County, Colorado. Murphy-Brown owns and operates 25 swine feeding operations in western Yuma County. Murphy-Brown of Yuma's main offices are located at 806 West 8th Avenue in Yuma, Colorado.

Facility Operation

Murphy-Brown operates a 39,682 sow (permitted headcount) operation with associated nursery, growing and finishing facilities and markets approximately 210,000 of commercial swine annually. The operation involves breeding sows, birthing pigs, and raising and growing those pigs in nursery and finishing units. Feed rations developed and mixed for each type of pig is completed from a central feedmill facility in Yuma, Colorado. The feed is then delivered to each farm and placed in on-site feed storage bins on a daily basis.

A maintenance shop and truckwash are located approximately 16 miles southwest of Yuma, Colorado. This facility is central to a number of swine facilities and serves as an administrative and field office for employees. The truckwash allows facility trailers and trucks to be cleaned prior to transporting animals on and off site.

History of Ownership/Operation

The swine operations were originally constructed between 1994 and 1997 by Alliance Farms and Western Pork. Alliance Farms constructed and operated seven of the sow farms, four of the nursery farms, and one boar stud facility from their original construction until they were purchased in October of 2003 by Murphy-Brown of Yuma. Western Pork constructed and operated the remaining farms from their original construction until they purchased with Browns of Carolina and renaming the farms Central Plains. Browns of Carolina merged with Murphy Family Farms and later became known as Murphy-Brown a subsidiary of Smithfield Foods. The farms are permitted under Central Plains with the State of Colorado, but are doing business as Murphy-Brown of Yuma. There have been no significant headcount or facility modifications since their original construction.

Geographical Setting

The swine operations are located in western Yuma County, Colorado with farms being located as far as 13 miles northeast and 21 miles south of the City of Yuma. Each farm contains permitted farm ground adjacent to the farm for application of wastewater. A total of 5,390 acres are permitted with the CDPHE for agronomic disposal of wastewater. The farms lie within the watershed of the North Fork of the Republican River and the Arikaree River. The Badger site is the closest to the North Fork of the Republican River (>5 miles) and the Winger site is the closest to the Arikaree River (> 6 miles).

According to the Yuma County USDA-NRCS Soil Survey, all Murphy-Brown farms are located on the Valent and Julesburg-Haxtun-Manter soil complexes. These soil complexes are described as nearly level to steep undulating sandhill regions that are well drained to excessively drained sands and sandy loams.

The direction of prevailing winds is from the northwest during the fall and winter months. Winds in the later spring and summer are typically from the south.

Off-site Property Reconnaissance

Properties surrounding the three sites assessed are all similar in nature. Sage and grass covered sandhills and irrigated farmland surround the swine facilities. The remaining Murphy-Brown farms not visually assessed are surrounded by similar features, including dryland farmland based on information provided by Ms. Hernandez and the assessor's familiarity with the remaining farms and of Yuma County.

ANIMAL WASTE & WASTEWATER HANDLING

Confinement Areas

All swine are confined in enclosed barns. All of the barns at Murphy-Brown have typical pull plug flush systems with the exception of the Browns Nursery and Sunrise Sow which utilize flush tanks. Each of the swine buildings are constructed with slatted concrete floors or metal grates to allow the swine waste and spilled drinking water to fall beneath the floor to concrete manure storage pits. Manure and process water from the pits is drained manually at a specified time interval via a pull plug and directed to the waste storage impoundments via flow through underground piping.

The concrete pits in each barn are drained weekly to the storage ponds. Sites that contain multiple barns stagger their pit draining schedule so that the ponds are not “shocked” by unloading all barns on a single day. Once the pits are drained, they are recharged with wastewater from the storage ponds in an effort to reduce the demand for freshwater. Wastewater recharge is common to all Murphy-Brown sites with the exception of the Browns Nursery, Sunrise Sow, Anchor Finish, Box Turtle Sow, and the farrowing barns at Pheasant Run and Jackrabbit. The length of time it takes to recharge a pit depends on the pit size and the desired recharge depth. Polyvinyl chloride piping (PVC) is used to convey the wastewater to and from the storage ponds. PVC cleanouts are located on all gravity piping for periodic inspection and unplugging of piping. Lift stations exist at Outback Nursery and Sunrise Sow to transfer wastewater to the storage ponds. Each lift station contains two, 2 horsepower pumps.

Each type of barn (sow, nursery, finishing) have differing features to control air flow and temperatures through the barn. For example, six of the sow farms utilize curtains that raise and lower to maintain air flow and barn temperature while the remaining sow farms utilize cool cells. With a cool cell, the incoming air is pulled through a large baffle soaked with water. Other types of barns contain exhaust fans and heaters. According to facility personnel interviewed, the interiors of exhaust fans are cleaned weekly. The exterior of fans are typically cleaned annually. After each turn of animals in a room, all surfaces of the interior of the room are power washed and cleaned prior to the next set of animals to be confined. The rooms are typically allowed to dry for one day prior to pigs entering.

Adjacent to each barn are feed storage bins. These feed storage bins are filled with the feed produced at the feedmill in Yuma and pipes from the bins are directed to the interior of the barns to be placed in feed troughs for the animals. Spilled feed can accumulate beneath the bins at times and Murphy-Brown employees are instructed to remove the spilled feed daily to prevent rodent and pest infestation. Spilled feed is collected and placed in containers and disposed of in the dumpsters located on-site.

Each swine farm contains an office. The offices are equipped with male and female shower and bathroom facilities as employees are required to shower-in and shower-out of the facility daily to prevent the spread of any disease. All gray water and domestic sewage is disposed of through approved septic systems located on-site. No domestic sewage enters the storage ponds.

Impoundments

Murphy-Brown utilizes earthen ponds to store surface process water from the swine barns. These ponds were constructed such that all flow from the barns is by gravity, with the exception of those farms listed previously in this report. All wastewater inlets to the ponds are extended beneath the water level as required by state's Air Quality Control Commission's Regulation No. 2.

The ponds at Murphy-Brown are constructed with elevated berms such that runoff from adjacent areas is not allowed to enter the pond. Only that portion of precipitation that falls on the surface of the pond is retained. All wastewater storage ponds at Murphy-Brown have been surveyed for their as-built capacity by Enviro-Ag Engineering, Inc. in March 2004 at the request of Ms. Hernandez.

All but two ponds at Murphy-Brown are lined with soil liners. One pond at Hilltop is lined with HDPE while one pond at Sunrise Sow is lined with Bentomat, a bentonite-impregnated fabric. Erosion control exists on a number of the ponds. Ponds are inspected routinely by facility personnel and semi-annually by the Northeast Colorado Health Department. Pond erosion issues raised as the result of the NECHD inspections in 2003 prompted a corrective action response and repair plan by Murphy-Brown that was subsequently approved by the WQCD. All repairs were completed in accordance with the approved plan.

As required by the facility's Housed Commercial Swine Feeding Operation (HCSFO) water quality permit, quarterly water balances must be prepared to monitor seepage from the ponds. According to Ms. Hernandez, no problems have been noted with the quarterly water balances. Each pond is equipped with a pond depth gauge used by facility personnel to monitor water levels in the pond throughout the year. Depths in the pond in conjunction with metered water usage allow the facility to monitor when dewatering will be required throughout the year.

A truckwash pond exists at the maintenance facility that stores process water from truck and trailer cleaning activities. No Water Quality Control Division permit or exemption exists for this truckwash pond.

Manure Disposal

Liquid Manure

The primary means of disposal of wastewater from each of the farms is by evaporation. However, irrigated farmland is located adjacent to most farm facilitating the ability to land apply wastewater at agronomic rates. Murphy-Brown is permitted to land apply wastewater and residual solids to 5,390 acres of farm ground. Applications of wastewater occur primarily to corn and occasionally wheat, cover crops or sunflowers. As part of the quarterly monitoring for the farms, soils in the land application areas are sampled to depths in and beneath the agronomic root zone to monitor for downward migration of nutrients. Soils are typically sampled 90 days prior to crop planting and 90 days after harvest. Comparative concentration levels established by the facility's baseline sampling assist in monitoring nutrient movement and crop uptake. This helps to ensure that the land application fields are not burdened with excessive nutrients and that all soil samples in the quarterly monitoring reports meet the State's expectations.

Murphy-Brown owns two portable pumps (Godwin model and Gorman model) with generators to withdraw wastewater from the ponds during land application events. Both pumps are capable of pumping up to 1,500 gallons per minute. All center pivot sprinkler systems used for wastewater application have underground piping from the ponds to the pivot. No freshwater is placed in this wastewater line. Each pivot has a backflow prevention device to keep wastewater from entering freshwater lines.

Murphy-Brown follows strict guidelines when land applying wastewater as outlined in their Division-approved Swine Waste Management Plan (SWMP). The SWMP provides the bases for calculations of agronomic rates for various crops and specifies an intense sampling regime to document compliance with the WQCD-issued permit.

Solid Manure

Currently, solid manure produced in the barns is flushed to the storage ponds. Although Murphy-Brown is permitted to land apply residual swine solids, no State-approved application plan exists. It is anticipated that Murphy-Brown will have to implement a solids removal program within the next 5 to 15 years at several of the farms to due sludge accumulation.

UTILITY/SERVICE INFORMATION, CONSUMABLES & REGULATED SUBSTANCES

The following information is provided to reference the names of entities and facilities which provide various utilities and services to the feedyard. References may be made regarding consumptive values for some utilities. Records of that information is available either in the attachments to this document or at Murphy-Brown's main office. Where such records do not exist or were unavailable, it will be referenced as applicable.

Power

Power is supplied to all Murphy-Brown farms by Y W Electric Association of Akron. Actual 2004 power usage in kilowatts (by month) by each facility is included with this report.

Liquid Propane

Gemm Energy of Wray provides propane (for heating) to a portion of the Murphy-Brown farms. Actual 2004 propane consumption in gallons (by month) by each facility is included with this report.

Natural Gas

KN Energy of Yuma provides natural gas (for heating) to all Murphy-Brown farms. Actual 2004 natural gas consumption in gallons (by month) by each facility is included with this report.

Domestic Trash

Waste Management Services, Inc. of Sterling, Colorado removes domestic trash from the farms. Metal dumpsters are located on each property for trash disposal.

Domestic Sewage

Each farm contains a septic system to dispose of domestic sewage from the office and bathroom facilities.

Water

Murphy-Brown utilizes water from water wells drilled at each site. All commercial wells owned by Murphy-Brown are permitted with the State of Colorado Division of Water Resources. Depth to groundwater varies but averages approximately 150 feet for all farms. Water consumption values (per head basis) are included with this report.

As part of Murphy-Brown's CDPHE Water Quality Control Division permit, all monitoring wells are required to be sampled quarterly. In addition, those water wells used for irrigation on croplands that

receive wastewater are required to be sampled annually. Results of both testing requirements are included in Murphy-Brown's quarterly monitoring report.

Fuel

A 1,000 gallon diesel, 1,000 gallon gasoline and 250 gallon farm diesel above ground fuel storage tanks exist within a concrete secondary containment structure west of the maintenance shop at the Seedorf complex to provide fuel for facility vehicles. A Spill Prevention Countermeasure and Control Plan (SPCC Plan) exists for the fuel storage tanks on-site, however, the secondary containment structure has not been certified by a professional engineer as meeting the required dimensions of the SPCC plan.

Each farm has a diesel fueled generator on-site to provide power to the farm in the event of power failure. The generator is located in an enclosed shed adjacent to each farm. Each generator has a 500 gallon fuel storage tank. None of the tanks are located within a secondary containment structure. The generators are scheduled to run weekly for 30 minutes to ensure they function as designed.

Veterinary Supplies/Sharps

Veterinary supplies are provided to each farm from a central location in Missouri. Farm managers are responsible for ordering all necessary veterinary supplies, cleaning supplies and equipment and chemicals. Each farm has a designated medicinal storage area. Used medicine bottles and plastic syringes are placed in on-site dumpsters. Sharps are stored in labeled containers at each farm and hauled to the main office in Yuma for monthly pick up and disposal by a medical waste company.

Pest, Rodents & Weeds

Fly bait is placed inside of the barns to control flies. Rodents are controlled by placing rodent baits around the exterior of the barns. Murphy-Brown has a maintenance crew that routinely mows weeds and grassed areas surrounding each farm to eliminate breeding areas for vectors.

Mortalities

All mortalities are removed daily from the barns and placed at one location at each facility. All mortalities from all Murphy-Brown farms are delivered to a third party rendering facility that is centrally located between the facilities. Currently, this is the only means of mortality disposal implemented by Murphy-Brown.

Recyclables

Used Oil

Used oil from facility vehicles is stored in 55 gallon drums at the maintenance shop. Used oil is delivered to the City of Yuma and properly disposed. No used oil is kept on any of the farms.

Batteries

Used batteries from facility vehicles are stored at the maintenance shop and delivered to the City of Yuma and properly disposed when warranted.

Anti-freeze

As anti-freeze is changed from facility vehicles, the used anti-freeze is hauled to the City of Yuma and properly disposed.

Solvents/Cleaning Products

Each farm has a designated storage location for cleaning products and any other hazardous/regulated substances. All used chemical bottles are disposed of in dumpsters located on-site.

Other Hazardous Disposals

USTs

No USTs exist or ever have existed on any of the farm sites.

Trash Pits

No trash pits or landfills exist or ever have existed on any of the farm sites.

REGULATORY DISCUSSION

County Permit

Murphy-Brown of Yuma is currently authorized through the Yuma County Planning and Zoning Department with a Development Permit for confining and housing swine. The Development Permit was originally applied for in or around 1997.

State/Federal Operating Permit

Murphy-Brown of Yuma is authorized for operation under the state's Air Pollution Control Division and Water Quality Control Division's Housed Commercial Swine Feeding Operation operating permits. Both the air and waster permits are extremely detailed in nature and are site specific. For example, each of the permits detail which tracts of land are available for land application and include specific reporting, testing and monitoring on regular bases. Murphy-Brown submits all required testing and monitoring in a timely fashion and no major problems have been encountered with that reporting. Additional information regarding each of the permits can be reviewed in Murphy-Brown's main offices in Yuma.

Compliance History/Required Record Keeping

As stated above, Murphy-Brown enjoys a relatively clean compliance history and maintains all recordkeeping requirements dictated by their operating permits. Murphy-Brown employs the services of Livestock Engineering Solutions, Inc. to assist in permit submittals and required reports. Murphy-Brown has implemented a self-auditing program to document compliance with all regulations as they apply to the industry. Murphy-Brown has an EMS in place and is certified according to the ISO14001 standard. Farm managers and employees must follow strict protocols for all activities, which allow Murphy-Brown to be more efficient and reduce the number of incidents/accidents.

Dust/Odor

According to records compiled by the APCD, five odor complaints were filed against Western Pork from 2000 to 2001 by one individual. No other documented odor complaints are known to exist.

As required by the air permit, Murphy-Brown must conduct a minimum of two scentometry tests at each farm annually to document compliance with air regulations. Additionally, olfactometry (pond gas emissions) samples collected off of the pond surfaces are analyzed annually as required by the issued permits. No violations of those regulations has been documented since the permit was issued.

Maintenance crews clean the exterior of barns annually as well as routinely grade facility roads to minimize dust and odor transport off-site.

Public Perception/Relationship

According to Ms. Hernandez, Murphy-Brown enjoys a good relationship with neighbors. The majority of the farms are located in clusters well away from populated areas which minimize potential conflicts with the public.

Emergency Plans

Murphy-Brown has a written emergency plan for all aspects of the facility including wastewater spills, worker injuries, and power failures, among others. The written protocols are available at each farm office and contain contact information and chain of commands on responding to certain situations. Employees are routinely educated on the protocols and any updates/improvements made in the plan.