Commonwealth of Pennsylvania
Department of Environmental Protection
Air Quality Program
February 24, 2015

Subject: Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster County
Plan Approval Application No. 36-05158A

To: William R. Weaver WRW 2/24/15
Regional Manager, Air Quality

Thru: Tom Hanlon TJH 2/24/15
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Introduction/Facility Description

A Plan Approval (PA) Application was received on June 27, 2012 from Perdue Grain & Oil Seed, LLC (Perdue) for the installation of a grain elevator in Conoy Township, Lancaster County. Subsequently, Perdue submitted a PA Application on August 13, 2012 for the installation of a soybean oil extraction facility at the same location. The two operations will be adjacent to the Lancaster County Solid Waste Management Authority (LCSWMA) facility.

Each facility was to be permitted in separate phases, Phase 1 & Phase 2. The phased permitting/construction would have allowed Perdue to receive, handle, dry, and store soybeans by the soybean harvest season of Fall 2013, while the Phase 2 processing operations, if approved, were being constructed. This would have, in turn, allowed Perdue to establish the market that will ultimately be served by the Phase 2 processing operations.

Plan Approval No. 36-03189A was issued for the grain elevator's installation/operation on March 29, 2013. Perdue subsequently requested the PA DEP withdraw the plan approval via an April 16, 2013 letter. Additionally, the letter went on to state that Perdue would submit the Phase 1 application as an amendment to the Phase 2 application. In accordance with Perdue's request, the PA DEP formally revoked PA 36-03189A on March 17, 2013. Consequently, Perdue provided a revised application on June 4, 2013 to combine the grain elevator and soybean oil extraction operations into one plan approval. Furthermore, Perdue provided further revisions to the application on November 4th and 12th, 2014.

The proposed grain elevator (Refer to Attachments for a process flow diagram of the process) will consist of the following equipment:

1) One (1) enclosed truck receiving area containing 2 pits
    a. The receiving area is rated at 600 tph and will be controlled by a 30,000 acfm Airlanco Model 236RLP10 baghouse or equivalent.
2) Four (4) 30,000 bushel storage bins (wet grain)
    a. The bins will be manufactured by GSI, Chief, Brock, or equivalent and will be equipped with collapsible fabric filters. Air displacement from filling the bins is expected to be 300 cfm.
3) Two (2) Hayes-Stolz scalper screens
    a. The screens will be fully enclosed; however, miscellaneous dust pick-up points will be controlled by the Airlanco baghouse.
4) Two (2) 4,800 bushel/hr Shanzer Model 8P7 column dryers
    a. Each dryer will be indirectly heated using steam.
    b. Approximately 50 percent of the exhaust air will be recirculated back into the dryer. The recirculated air will be cleaned with screens (size 24 mesh) and an internal cyclone. The mesh will be cleaned by mechanical scraping with vacuum assist.

   c. The upper warm air fan will have an airflow of approximately 215,000 cfm. The lower cool air fan will have an airflow of approximately 105,000 cfm.
5) Four (4) 500,000 bushel storage bins (dry grain)
   a. The bins will be manufactured by GS, Chief, Brock, or equivalent.
6) Grain loadout operations

A maximum of 766,500 tons of soybeans per year will be delivered to the facility by truck and off-loaded into one of two enclosed grain receiving pits. Dust associated with the truck receiving area will be controlled by the grain baghouse. The soybeans will be sampled, analyzed and weighed before being sent to the wet grain storage bins. Since the wet grain storage bins can be filled relatively quickly, resulting in the displacement of a significant volume of air, the vents will be equipped with collapsible fabric filters to minimize fugitive emissions of dust.

From the wet grain storage tanks, the soybeans will pass through one of two scalper screens to remove foreign material such as sticks, stems, pods, dirt, and other debris. The totally enclosed scalper screens will not be emission sources themselves; however, miscellaneous dust pick up points associated with the processing system will be sent to the grain baghouse for control. The soybeans will then proceed to one of two column grain dryers where the moisture content of the soybeans will be reduced to approximately 10%. The dryers will be indirectly heated by steam.

From the grain dryers, the dried soybeans will be sent to the grain storage bins for storage and tempering prior to preparation for oil extraction. A gravity-fed truck loadout spout is located in the process prior to the soybeans entering the soybean preparation operations and is typically only used to remove off-spec soybeans from the process.

Based on receiving and processing 766,500 tpy soybeans and shipping 127,750 tpy off-spec soybeans offsite, the grain elevator's potential-to-emit (PTE) emissions are estimated at:

Table 1: PTE Emissions from Grain Elevator

Pollutant	PTE Emissions (tpy)
PM	62.92
PM_{10}	16.20
$PM_{2.5}$	2.77

The proposed soybean oil extraction facility (Refer to Attachments for a process flow diagram of the process) will consist of the following equipment:

1) A 72.9 tph soybean preparation area containing the following equipment and will be controlled by five (5) 12,500 acfm Airlanco model 236/158RLP8 baghouses or equivalent:
   a. One (1) Rotex 822GC or equivalent cleaner screen
   b. One (1) 10' square x 20' height Highland or equivalent whole bean tank. The capacity of the tank is 75 tons.
   c. One (1) 10' square x 20' height Highland or equivalent cracked bean tank. The capacity of the tank is 75 tons.
   d. Three (3) Roskamp 12 x 52 or equivalent cracking rolls
   e. Six (6) Cantrell 241D or equivalent primary separation tables
   f. Two (2) Triple S Model T-20 or equivalent secondary separation tables
2) One (1) 68.5 tph Crown Iron Works Model 95-7 or equivalent bean conditioner
   a. The conditioner utilizes steam to heat the soybeans and will be controlled by one of the five 12,500 Airlanco model 236/158RLP8 baghouses or equivalent baghouses in the soybean preparation area.
3) Five (5) 68.5 tph Roskamp 28 x 62 or equivalent flaking rolls. The rolls will be controlled by an 18,000 acfm Aircon model HE-54 or equivalent cyclone.
4) A 68.5 tph soybean oil extraction process containing the following equipment which are controlled by a 500 acfm Desmet counter-current packed bed mineral scrubber:

   a. One (1) Desmet 372 RE Reflex oil extractor
   b. One (1) Desmet Dimax DT-4000 desolventizer-toaster
5) One (1) 59 tph Desmet meal dryer
   a. The dryer utilizes steam to dry the soybeans and will be controlled by a 23,540 acfm Kice model CK-108 or equivalent cyclone.
6) One (1) 59 tph Desmet 4-deck meal cooler controlled by a 23,540 acfm Kice model CK-108 or equivalent cyclone.
7) A 55 tph meal screening and grinding area consisting of the following and will be controlled by a 12,500 acfm Airlanco model 188RLP8 or equivalent baghouse:
   a. One (1) Rotex Model 581 or equivalent screener
   b. Two (2) Roskamp Model 4424 or equivalent grinder hammermills
8) A 4.7 tph mill feed (hull) grinding consisting of the following equipment and will be controlled by a 7,000 acfm Airlanco model 124RLP8 or equivalent baghouse:
   a. One (1) custom fabricated hull conditioner
   b. Two (2) Roskamp Model 4424 or equivalent hull grinders
9) Four (4) CST or equivalent storage bins. The bins will be equipped with bin vent filters.
10) One (1) Lamco/Intersystems or equivalent 4-bin cluster (10' square x 40' height). The 300 ton tank will be equipped with bin vent filters.
11) A 100 tph loadout area consisting of one (1) CST or equivalent 4-bin cluster (20' square x 20' height). The area will be controlled by a 30,000 acfm Airlanco model 236RLP12 or equivalent baghouse. In addition to the loadout area, loadout operations will include an 200' x 80' x 42' (LxWxH) meal storage/loadout building. Meal will be transported to the building via fully enclosed conveyors. Truck loading operations will only occur when the doors and/or flexible strips are in the closed position.
12) Three (3) Chief CB 12-16 or equivalent storage bins. Each bin has a capacity of 1,500 tons and will be equipped with collapsible bin vent filters.
13) Two (2) 20,000 gallon Highland Tank or equivalent hexane storage tanks. Breathing and working losses will be vented to and controlled by the mineral oil scrubber.
14) Temporary portable emergency boiler(s). The boiler(s) will have a total heat input of 85.0 mmBtu/hr and will be fired on No.2 fuel oil.

A maximum of 638,750 tons of soybeans per year (on an as received basis) will be processed by the oil extraction facility. Soybeans from the 500,000 bushel storage bins are first sent to the soybean day tanks for staging and metering. Soybeans are then conveyed to the preparation building where they are cleaned and cracked into smaller pieces by cracking rolls at a maximum rate of 1,750 tons per day. The throughput capacity of the extraction facility is bottlenecked by the capacity of the cracking rolls. The hulls are then separated by aspiration. The removed hulls are ground for use in animal feed (mill feed) and subsequently stored, loaded, and shipped off-site via truck. The cracked bean pieces are then sent to the bean conditioner where they are conditioned with steam to make the bean pieces pliable. The pieces are conveyed to smooth flaking rolls where the bean pieces are pressed into thin flakes.

The soybean flakes are then "washed" with hexane solvent in a countercurrent extractor. The process produces a solvent/soybean oil mixture and solvent-laden flakes. The solvent/oil mixture is then desolventized by exposure to heat and steam in the distillation system. The evaporated solvent vapor/steam mixture is then condensed via a 21 ton water chilling system. The condensed solvent is then separated from the steam condensate and reused in the process. A portion of the hexane that remains after distillation and condensation is removed by a mineral oil scrubber. The soybean oil will be stored for subsequent loadout and shipment off-site via truck.

The solvent-laden flakes exiting the extractor are desolventized in the desolventizer-toaster (DT). Steam will be used to evaporate the solvent contained in the flakes. The DT will also heat the flakes to make them usable for animal feed (meal). The solvent/steam vapor will also be condensed by the chilling system. The condensed solvent will be separated from the steam condensate and reused in the process. A portion of the hexane that remains after condensation will be removed by the mineral oil scrubber.

The meal leaving the DT then passes to the meal dryer where excess moisture will be removed by heat. Next, the meal will be sent to the meal cooler where ambient air will be used to cool the meal. The meal will then be

screened and ground for use as animal feed and subsequently stored, loaded and shipped off-site via truck. Meal storage will take place in either the storage bins or the meal storage building.

In the rare event the LCSWMA unexpectedly shuts down, Perdue will bring portable temporary boiler(s) onsite to supply the necessary steam load for the process. The boiler(s) will be fired on No.2 fuel oil and will have a maximum heat input of 85.0 mmBtu/hr. If temporary boilers are required, they are expected to operate no more than 672 hours per year.

Based on processing 638,750 tpy soybeans, an n-hexane concentration in the solvent of 50%, a No.2 fuel oil sulfur content of 0.0015% by weight (15 ppm), and a maximum operation of 672 hr/yr for the emergency boiler(s), the extraction facility's potential-to-emit (PTE) is estimated to be:

Table 2: PTE Emissions Due to Oil Extraction Operations & Temp Boiler

Pollutant	PTE Emissions (tpy)
PM	115.42
PM_{10}	28.53
$PM_{2.5}$	5.28
SOx	0.04
CO	1.02
NOx	4.08
VOC	208.05
Single HAP (n-hexane)	104.01
Combined HAPs	104.02
CO_2	4,549.20
N_2O	0.05
CH_4	0.01
CO_2e	4,565.87

Total PTE emissions of the project are estimated to be (Refer to Attachments for each source's PTE):

Table 3: PTE Emissions from the Project

Pollutant	PTE Emissions from Project (tpy)		
	Grain Elevator	Soybean Oil Extraction	*TOTAL*
PM	62.92	115.42	***178.34***
PM_{10}	16.20	28.53	***44.73***
$PM_{2.5}$	2.77	5.28	***8.05***
SOx	-	0.04	***0.04***
CO	-	1.02	***1.02***
NOx	-	4.08	***4.08***
VOC	-	208.05	***208.05***
Single HAP (n-hexane)	-	104.00	***104.01***
Combined HAPs	-	104.02	***104.02***
CO_2	-	4,549.20	***4,549.20***
N_2O	-	0.05	***0.05***
CH_4	-	0.01	***0.01***
CO_2e	-	4,565.87	***4,565.87***

Emissions Calculations

I concur with all supplied calculation methodology as provided in the application. An example for each source's calculation is listed below.

Grain Elevator

Source ID 101, Grain Receiving & Processing

Particulate emissions from grain receiving and processing operations were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 9.9.1, "Grain Elevator & Processing" and the following information.

Hourly Grain Handling Rate	600 tph
Maximum Yearly Grain Handling Rate	766,500 tpy
Capture Efficiency	90.0%
Control Efficiency (Manufacturer's Guarantee)	99.9%

Hourly particulate emissions – grain receiving (stack)

$$600\frac{ton}{hr}\times 0.035\frac{lb}{ton}\times 0.9\times(1-0.999)=0.02\frac{lb}{hr}PM$$

Hourly particulate emissions – grain cleaning (stack)

$$600\frac{ton}{hr}\times 0.061\frac{lb}{ton}\times(1-0.999)=0.04\frac{lb}{hr}PM$$

Hourly particulate emissions (fugitive)

$$600\frac{ton}{hr}\times 0.035\frac{lb}{ton}\times(1-0.90)=2.10\frac{lb}{hr}PM$$

Annual particulate emissions – grain receiving (stack)

$$766{,}500\frac{ton}{yr}\times 0.035\frac{lb}{ton}\times 0.9\times(1-0.999)\times\frac{ton}{2000\ lb}=0.01\frac{ton}{yr}PM$$

Annual particulate emissions – grain cleaning (stack)

$$766{,}500\frac{ton}{yr}\times 0.061\frac{lb}{ton}\times(1-0.999)\times\frac{ton}{2000\ lb}=0.02\frac{ton}{yr}PM$$

Annual particulate emissions (fugitive)

$$766{,}500\frac{ton}{yr}\times 0.035\frac{lb}{ton}\times(1-0.90)\times\frac{ton}{2000\ lb}=1.34\frac{ton}{yr}PM$$

Source ID 102, Wet Grain Storage Bins

Particulate emissions from the wet grain storage bins were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 9.9.1, "Grain Elevator & Processing" and the following information.

Hourly Grain Handling Rate	600 tph
Maximum Yearly Grain Handling Rate	766,500 tpy
Control Efficiency	99.0%

Hourly particulate emissions

$$600\frac{ton}{hr}\times 0.025\frac{lb}{ton}\times(1-0.99)=0.15\frac{lb}{hr}PM$$

Annual particulate emissions

$$766{,}500\frac{ton}{yr}\times 0.025\frac{lb}{ton}\times(1-0.99)\times\frac{ton}{2000\ lb}=0.09\frac{ton}{yr}PM$$

Source IDs 103 & 104, Grain Dryer Nos. 1 & 2

Particulate emissions from each grain dryer were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 9.9.1, "Grain Elevator & Processing" and the following information.

Hourly Grain Handling Rate	144 tph
Maximum Yearly Grain Handling Rate	383,250 tpy
Recirculated Air Percent	50%
Control Efficiency	90.0%

Hourly particulate emissions

$$144\frac{ton}{hr}\times 0.22\frac{lb}{ton}\times 0.5+144\frac{ton}{hr}\times 0.22\frac{lb}{ton}\times 0.5\times(1-0.9)=17.42\frac{lb}{hr}PM$$

Annual particulate emissions

$$[383{,}250\frac{ton}{yr}\times 0.22\frac{lb}{ton}\times 0.5+383{,}250\frac{ton}{yr}\times 0.22\frac{lb}{ton}\times 0.5\times(1-0.9)]\times\frac{ton}{2000\ lb}=23.19\frac{ton}{yr}PM$$

Source ID 105, Grain Storage Bins

Particulate emissions from the grain storage bins were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 9.9.1, "Grain Elevator & Processing" and the following information.

Hourly Grain Handling Rate	600 tph
Maximum Yearly Grain Handling Rate	766,500 tpy

Hourly particulate emissions

$$600\frac{ton}{hr}\times 0.025\frac{lb}{ton}=15.00\frac{lb}{hr}PM$$

Annual particulate emissions

$$766{,}500\frac{ton}{yr}\times 0.025\frac{lb}{ton}\times\frac{ton}{2000\ lb}=9.58\frac{ton}{yr}PM$$

Source ID 106, Grain Loadout

Particulate emissions from grain loadout were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 9.9.1, "Grain Elevator & Processing" and the following information.

Hourly Grain Handling Rate	120 tph
Maximum Yearly Grain Handling Rate	127,750 tpy

Hourly particulate emissions

$$120\frac{ton}{hr}\times 0.086\frac{lb}{ton}=10.32\frac{lb}{hr}PM$$

Annual particulate emissions

$$127{,}750\frac{ton}{yr}\times 0.086\frac{lb}{ton}\times\frac{ton}{2000\ lb}=5.49\frac{ton}{yr}PM$$

Oil Extraction

Source ID 031, Temporary Portable Boiler(s)

Combustion emissions from the temporary boiler(s) were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 1.3, "Fuel Oil Combustion" and the following information.

Heat Input (mmBtu/hr)	85.0
Heat Content (btu/gal)	140,000
Sulfur Content by Weight	0.0015%
Maximum Yearly Use (hr/yr)	672

Hourly & annual NOx emissions from No.2 fuel oil combustion

$$\frac{20\ \ lb}{1000\ gal}\times\frac{1\ \ gal}{140{,}000\ btu}\times 85.0e6\ \ \frac{Btu}{hr}=12.14\frac{lb}{hr}\times 672\ \ \frac{hr}{yr}\times\frac{ton}{2000\ lb}=4.08\ \ tpy$$

Emission factor for SOx emissions from No.2 fuel oil combustion

$$EF=142S+2S=(142\times 0.0015)+(2\times 0.0015)=0.216\frac{lb\ \ SOx}{gal}$$

Source ID 201, Soybean Preparation

Particulate emissions from the soybean preparation were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 9.9.1, "Grain Elevator & Processing", Section 9.11.1, "Vegetable Oil Processing" and the following information.

Hourly Grain Handling Rate	72.9 tph
Maximum Yearly Grain Handling Rate	638,750 tpy
Control Efficiency (Manufacturer's Guarantee)	99.9%

Hourly particulate emissions

$$72.9\frac{ton}{hr}\times 0.435\frac{lb}{ton}\div 0.1\times(1-0.999)=0.32\frac{lb}{hr}PM$$

Annual particulate emissions

$$638{,}750\frac{ton}{yr}\times 0.435\frac{lb}{ton}\div 0.1\times(1-0.999)\times\frac{ton}{2000\ lb}=1.39\frac{ton}{yr}PM$$

Note: AP-42 emission factor based on cyclone control. Uncontrolled emission factor assumed 90% cyclone control efficiency, based on EPA-452/F-03-005, Air Pollution Control Technology Fact Sheet, Cyclones.

Source ID 202, Bean Conditioning

Particulate emissions from the bean conditioning were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 9.11.1, "Vegetable Oil Processing" and the following information.

Hourly Grain Handling Rate	68.5 tph
Maximum Yearly Grain Handling Rate	600,425 tpy
Control Efficiency (Manufacturer's Guarantee)	99.9%

Hourly particulate emissions

$$68.5\frac{ton}{hr}\times 0.01\frac{lb}{ton}\div 0.1\times(1-0.999)=0.01\frac{lb}{hr}PM$$

Annual particulate emissions

$$600{,}425\frac{ton}{yr}\times 0.01\frac{lb}{ton}\div 0.1\times(1-0.999)\times\frac{ton}{2000\ lb}=0.03\frac{ton}{yr}PM$$

Note: AP-42 emission factor based on cyclone control. Uncontrolled emission factor assumed 90% cyclone control efficiency, based on EPA-452/F-03-005, Air Pollution Control Technology Fact Sheet, Cyclones.

Source ID 203, Flaking Rolls

Particulate emissions from the flaking rolls were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 9.11.1, "Vegetable Oil Processing" and the following information.

Hourly Grain Handling Rate	68.5 tph
Maximum Yearly Grain Handling Rate	600,425 tpy

Hourly particulate emissions

$$68.5\frac{ton}{hr}\times 0.037\frac{lb}{ton}=2.53\frac{lb}{hr}PM$$

Annual particulate emissions

$$600{,}425\frac{ton}{yr}\times 0.037\frac{lb}{ton}\times\frac{ton}{2000\ lb}=11.11\frac{ton}{yr}PM$$

Note: AP-42 emission factor based on cyclone control. Cyclone manufacturer guarantee corresponds to emission factor utilized.

Source ID 204, Extraction Process

VOC and hexane emissions from the extraction process were based on the VOC emissions in Perdue's 6/4/13 revision to the plan approval application. The emission calculations utilized a throughput of 525,000 tons soybeans per year, a solvent loss ratio (SLR) of 0.140 gallon of solvent per ton of soybeans processed, an n-hexane content of 50%, and a solvent density of 5.66 lb/gal. Potential VOC and n-hexane emissions were estimated to be 208.01 & 104.00 tpy, respectively. These values were subsequently used in the Air Toxics/Risk Assessment Modeling. See "Air Toxics/Risk Assessment Modeling" Section below.

Annual facility VOC emissions

$$525{,}000\frac{ton}{yr}\times 0.140\frac{gal}{ton}\times 5.66\frac{lb}{gal}\times\frac{ton}{2000\ lb}=208.01\frac{ton}{yr}VOC$$

Annual facility hexane emissions

$$525{,}000\frac{ton}{yr}\times 0.140\frac{gal}{ton}\times 5.66\frac{lb}{gal}\times\frac{ton}{2000\ lb}\times 0.50=104.00\frac{ton}{yr}n-hexane$$

Furthermore, VOC and hexane emissions from individual extraction process points were estimated using the following information.

Mineral Oil Scrubber Stack	3.48%
Crude Meal Fugitive	39.25%
Crude Oil Fugitive	12.92%
Equipment Leaks	7.95%
Wastewater	0.05%

Note: Emission percentages derived from EPA Air Docket A-97-59, Document IV-B-6

Annual VOC emissions from scrubber stack

$$208.01\frac{ton}{yr}\ VOC \times 0.0348 = 7.24\frac{ton}{yr}VOC$$

Annual n-hexane emissions from scrubber stack

$$104.00\frac{ton}{yr}\ n-hexane \times 0.0348 = 3.62\frac{ton}{yr}n-hexane$$

Subsequently, Perdue submitted a revision to the application on 11/12/14 to revise the soybean throughputs of the extraction operations. The maximum tonnage of soybeans processed by the extraction operations were increased to 638,750 tpy. Although the facility has increased the facility's throughput capacity, potential emissions will not change since the facility will be limited to facility-wide emission limits of 208.05 tpy VOC & 104.01 tpy n-hexane (emissions include temporary boiler emissions).

Source ID 205A, Meal Dryer

VOC, hexane and particulate emissions from the meal dryer were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 9.11.1, "Vegetable Oil Processing" and the following information.

Hourly Grain Handling Rate	59 tph
Maximum Yearly Grain Handling Rate	479,063 tpy
Percentage of facility solvent loss	
Meal Dryer Stack	24.24%

Note: Emission percentage derived from EPA Air Docket A-97-59, Document IV-B-6

Hourly particulate emissions

$$59\frac{ton}{hr} \times 0.18\frac{lb}{ton} = 10.62\frac{lb}{hr}PM$$

Annual particulate emissions

$$479{,}063\frac{ton}{yr} \times 0.18\frac{lb}{ton} \times \frac{ton}{2000\ lb} = 43.12\frac{ton}{yr}PM$$

Annual VOC emissions from dryer stack

$$208.01\frac{ton}{yr}\ VOC \times 0.2424 = 50.42\frac{ton}{yr}VOC$$

Annual n-hexane emissions from dryer stack

$$104.00\frac{ton}{yr}\ n-hexane\ \times 0.2424 = 25.21\frac{ton}{yr}n-hexane$$

Source ID 205B, Meal Cooler

VOC, hexane and particulate emissions from the meal cooler were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 9.11.1, "Vegetable Oil Processing" and the following information.

Hourly Grain Handling Rate	59 tph
Maximum Yearly Grain Handling Rate	479,063 tpy
Percentage of facility solvent loss	
Meal Cooler Cyclone Stack	12.12%

Note: Emission percentage derived from EPA Air Docket A-97-59, Document IV-B-6

Hourly particulate emissions

$$59\frac{ton}{hr}\times 0.19\frac{lb}{ton}=11.21\frac{lb}{hr}PM$$

Annual particulate emissions

$$479{,}063\frac{ton}{yr}\times 0.19\frac{lb}{ton}\times\frac{ton}{2000\ lb}=45.51\frac{ton}{yr}PM$$

Annual VOC emissions from dryer stack

$$208.01\frac{ton}{yr}\ VOC\times 0.1212=25.21\frac{ton}{yr}VOC$$

Annual n-hexane emissions from dryer stack

$$104.00\frac{ton}{yr}\ n-hexane\ \times 0.1212=12.61\frac{ton}{yr}n-hexane$$

Source ID 206, Meal Screening & Grinding

Particulate emissions from meal screening and grinding operations were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 9.11.1, "Vegetable Oil Processing" and the following information.

Hourly Grain Handling Rate	55 tph
Maximum Yearly Grain Handling Rate	479,063 tpy
Control Efficiency (Manufacturer's Guarantee)	99.9%

Hourly particulate emissions

$$55\frac{ton}{hr}\times 0.34\frac{lb}{ton}\div 0.1\times(1-0.999)=0.19\frac{lb}{hr}PM$$

Annual particulate emissions

$$479{,}063\frac{ton}{yr}\times 0.34\frac{lb}{ton}\div 0.1\times(1-0.999)\times\frac{ton}{2000\ lb}=0.81\frac{ton}{yr}PM$$

Note: AP-42 emission factor based on cyclone control. Uncontrolled emission factor assumed 90% cyclone control efficiency, based on EPA-452/F-03-005, Air Pollution Control Technology Fact Sheet, Cyclones.

Source ID 207, Mill Feed (hull) Grinding

Particulate emissions from mill feed grinding were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 9.11.1, "Vegetable Oil Processing" and the following information.

Hourly Grain Handling Rate	4.74 tph
Maximum Yearly Grain Handling Rate	41,519 tpy
Control Efficiency (Manufacturer's Guarantee)	99.9%

Hourly particulate emissions

$$4.74\frac{ton}{hr}\times 0.20\frac{lb}{ton}\div 0.1\times(1-0.999)=0.01\frac{lb}{hr}PM$$

Annual particulate emissions

$$41{,}519\frac{ton}{yr}\times 0.20\frac{lb}{ton}\div 0.1\times(1-0.999)\times\frac{ton}{2000\ lb}=0.04\frac{ton}{yr}PM$$

Note: AP-42 emission factor based on cyclone control. Uncontrolled emission factor assumed 90% cyclone control efficiency, based on EPA-452/F-03-005, Air Pollution Control Technology Fact Sheet, Cyclones.

Source ID 208, Meal/Mill Feed Storage Bins (4 bin tanks)

Particulate emissions from meal/mill feed storage operations were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 9.9.1, "Grain Elevator & Processes" and the following information.

Hourly Grain Handling Rate	59.74 tph
Maximum Yearly Grain Handling Rate	520,582 tpy
Control Efficiency	99.0%

Hourly particulate emissions

$$59.74\frac{ton}{hr}\times 0.025\frac{lb}{ton}\times(1-0.99)=0.01\frac{lb}{hr}PM$$

Annual particulate emissions

$$520{,}582\frac{ton}{yr}\times 0.025\frac{lb}{ton}\times(1-0.99)\times\frac{ton}{2000\ lb}=0.06\frac{ton}{yr}PM$$

Source ID 209, Meal/Mill Feed Loadout Tank

Particulate emissions from meal/mill feed loadout tank were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 9.9.1, "Grain Elevator & Processing" and the following information.

Hourly Grain Handling Rate	59.74 tph
Maximum Yearly Grain Handling Rate	520,582 tpy
Control Efficiency	99.0%

Hourly particulate emissions

$$59.74\frac{ton}{hr}\times 0.025\frac{lb}{ton}\times(1-0.99)=0.01\frac{lb}{hr}PM$$

Annual particulate emissions

$$520{,}582\frac{ton}{yr}\times 0.025\frac{lb}{ton}\times(1-0.99)\times\frac{ton}{2000\ lb}=0.06\frac{ton}{yr}PM$$

Source ID 210, Meal Loadout Area

Particulate emissions from the meal loadout area were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 9.11.1, "Vegetable Oil Processing" and the following information.

Hourly Grain Handling Rate	100 tph
Maximum Yearly Grain Handling Rate	425,250 tpy
Control Efficiency	99.9%

Note: Bay loadout will be conducted in a fully enclosed (doors and/or plastic strips) structure with aspiration, therefore, capture efficiency assumed to be 100%. Additionally, storage/building loadout will be conducted in a fully enclosed (doors and/or plastic strips) structure, therefore, fugitive emissions assumed to be zero.

Hourly particulate emissions

$$100\frac{ton}{hr}\times 0.27\frac{lb}{ton}\times(1-0.999)=0.03\frac{lb}{hr}PM$$

Annual particulate emissions

$$520{,}582\frac{ton}{yr}\times 0.27\frac{lb}{ton}\times(1-0.999)\times\frac{ton}{2000\ lb}=0.07\frac{ton}{yr}PM$$

Source ID 211, Soybean Day Tanks (3 tanks)

Particulate emissions from the seed silo tanks were estimated using emission factors from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 9.9.1, "Grain Elevator & Processing" and the following information.

Hourly Grain Handling Rate	72.92 tph
Maximum Yearly Grain Handling Rate	638,750 tpy
Control Efficiency	99.0%

Hourly particulate emissions

$$72.92\frac{ton}{hr}\times 0.025\frac{lb}{ton}\times(1-0.99)=0.02\frac{lb}{hr}PM$$

Annual particulate emissions

$$638{,}750\frac{ton}{yr}\times 0.025\frac{lb}{ton}\times(1-0.99)\times\frac{ton}{2000\ lb}=0.08\frac{ton}{yr}PM$$

Source ID 212, Hexane Storage Tanks (2 tanks)

VOC & hexane losses from the storage tanks were calculated using US EPA Tanks 4.09D and a control efficiency of 99%.

Source ID 302, Soybean Oil Extraction Facility Roadways

Particulate emissions from paved roads were calculated using the following equation from US EPA's AP-42, Compilation of Air Pollutant Emission Factors, Section 13.2.1.3 – "Paved Roads". The equation calculates emissions on a daily basis.

$$E_{ext} = \left[k(sL)^{0.91} \times (W)^{1.02}\right] \times \left(1 - \frac{P}{4N}\right)$$

Where:

Eext = annual or other long-term average emission factor in the same units as *k*,
k = particle size multiplier for particle size range and units of interest,
sL = road surface silt loading (grams per square meter) (g/m^2),
W = average weight (tons) of the vehicles traveling the road, and
P = number of "wet" days with at least 0.254 mm (0.01 in) of precipitation during the averaging period,
N = number of days in the averaging period (e.g., 365 for annual, 91 for seasonal, 30 for monthly).

Facility used the following
k = 0.011 lb/VMT for PM
0.0022 lb/VMT for PM_{10}
0.00054 lb/VMT for $PM_{2.5}$
sL = 1.1 g/m^2,
W = 34 tons
P = 140 days
N = 365 for annual

PM emission factor for inbound/outbound truck traffic

$$E_{PM} = \left[0.011\frac{lb}{VNMT}\left(1.1\frac{g}{m^2}\right)^{0.91}(34\ tons)^{1.02}\right]\left(1 - \frac{140\ days}{4\times 365\ days}\right) = 0.396\frac{lb\ PM}{VMT}$$

Additionally, the following breakdown by truck type was used for emission estimations:

Truck Type	Maximum Annual Number of Trucks (trucks/yr)	Approximate Total Miles Traveled Onsite (roundtrip) (mi/truck)
Soybean Haul	39,525	1.1
Meal Haul	19,163	0.76
Oil Haul	4,727	0.74
Hull Haul	1,845	0.76
Hexane Haul	11	0.74

Estimated fugitive PM emissions from inbound/outbound truck traffic

$$0.396\frac{lb\ PM}{VMT} \times 62{,}950\frac{mi}{yr} \times \frac{ton}{2000\ lb} = 12.46\frac{ton}{yr}$$

Applicable Requirements

The proposed facility will not be located in an air basin or in an Environmental Justice Area. The project is subject to Nonattainment New Source Review (NNSR) since there will be a resulting significant increase in VOC emissions (> 50 tpy). The project is not subject to Prevention of Significant Deterioration (PSD). See "PSD/NSR Applicability" section below for applicability determination.

Grain Elevator

The grain elevator will be subject to 40 CFR 60, Subpart DD—Standards of Performance for Grain Elevators since the storage capacity will be greater than 1 million bushels. The facility will be required to conduct the performance testing (PM & opacity) as specified under 40 CFR 60.303. The dryers will not be required to meet the applicable opacity limit under Subpart DD since the screens will have perforations no greater than 0.094 inches.

Grain elevator operations are subject to 25 Pa Code §123.13 for particulate emissions, §123.41 for visible air contaminants and §123.31 for malodorous air contaminants. However, compliance with 40 CFR 60, Subpart DD satisfies the requirements of 25 Pa Code §123.13. Additionally, compliance with the more stringent visible emission limits established by General Permit No.15 for feed mills (feed mills operate types of sources common to grain elevators) satisfies the requirements of §123.41.

Oil Extraction

The soybean extraction facility will be subject to 40 CFR 63, Subpart GGGG— National Emission Standards for Hazardous Air Pollutants: Solvent Extraction for Vegetable Oil Production. The facility's operations are subject to 25 Pa Code §123.13 for particulate emissions, §123.41 for visible air contaminants, and §123.31 for malodorous air contaminants. Source Ids 201, 203, 205A, 205B, & 206 are subject to 40 CFR Par 64 – Continuous Assurance Monitoring (CAM) requirements due to particulate matter emissions.

The temporary boiler(s) is/are subject to 25 Pa Code §123.11 for particulate matter and 25 Pa Code §123.22 for sulfur dioxide emissions from combustion sources. Since the temporary boiler(s) will be limited to operating no more than 672 hours in any consecutive 12-month period and will have potential SO_2 emissions less than 0.06 lb/mmBtu, the boiler(s) is/are not subject to 40 CFR 60, Subpart Dc or 40 CFR 63, Subpart DDDDD. The boiler(s) meet(s) each respective regulatory definition of "temporary boiler". The potential SO_2 emissions rate is estimated to be 0.002 lb/mmBtu.

40 CFR 60, Subpart Dc defines "temporary boiler" as:

Temporary boiler means a steam generating unit that combusts natural gas or distillate oil with a potential SO_2 emissions rate no greater than 26 ng/J (0.060 lb/MMBtu), and the unit is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A steam generating unit is not a temporary boiler if any one of the following conditions exists:

(1) The equipment is attached to a foundation.

(2) The steam generating unit or a replacement remains at a location for more than 180 consecutive days. Any temporary boiler that replaces a temporary boiler at a location and performs the same or similar function will be included in calculating the consecutive time period.

(3) The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.

(4) The equipment is moved from one location to another in an attempt to circumvent the residence time requirements of this definition.

40 CFR 63, Subpart DDDDD defines "temporary boiler" as:

Temporary boiler means any gaseous or liquid fuel boiler that is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A boiler is not a temporary boiler if any one of the following conditions exists:

(1) The equipment is attached to a foundation.

(2) The boiler or a replacement remains at a location within the facility and performs the same or similar function for more than 12 consecutive months, unless the regulatory agency approves an extension. An extension may be granted by the regulating agency upon petition by the owner or operator of a unit specifying the basis for such a request. Any temporary boiler that replaces a temporary boiler at a location and performs the same or similar function will be included in calculating the consecutive time period.

(3) The equipment is located at a seasonal facility and operates during the full annual operating period of the

seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.

(4) The equipment is moved from one location to another within the facility but continues to perform the same or similar function and serve the same electricity, steam, and/or hot water system in an attempt to circumvent the residence time requirements of this definition.

In accordance with 40 CFR 60.110b(d)(8), the solvent storage tanks are not subject to 40 CFR 60, Subpart Kb. The tanks are included in the applicable sources subject to 40 CFR 63, Subpart GGGG. The storage tanks are subject to 25 Pa Code §129.57.

Best Available Technology (BAT)

BAT is defined as equipment, devices, methods or techniques as determined by the Department which will prevent, reduce or control emissions of air contaminants to the maximum degree possible and which are available or may be made available.

Grain Elevator

The facility supplied a Top-Down Best Available Technology (BAT) Analysis that addressed controlling particulate emissions from the grain handling operations. Perdue examined the following control technologies:

1) Baghouses
2) Cyclones
3) Wet scrubbers
4) Electrostatic precipitators

Although all of the control technologies are technically feasible, the use of a baghouse resulted as the most cost effective option. Therefore, the use of a baghouse on grain receiving/processing operations with an emission limit of 0.01 gr/dscf shall be considered BAT. In addition, the use of collapsible filters on the wet storage bins (Source Id 102) shall be considered BAT.

Furthermore, Perdue evaluated controls for particulate from the grain dryers. The use of column dryers heated indirectly by steam, internal screens with perforations less than 0.094 inches, and recirculating exhaust air which is cleaned by internal screens (size 24 mesh) and a cyclone shall be considered BAT.

DEP notes that grain loadout operations at other similar facilities are typically uncontrolled. Furthermore, the Maximum Available Control Technology (MACT) regulation for Prepared Feeds Manufacturing, found at 40 CFR Part 63, Subpart DDDDDDD, prescribes the same sort of Best Management Practice (BMP) controls for grain loadouts as has been included by DEP as BAT in the original Perdue Phase 1 plan approval. Nevertheless, Perdue evaluated controlling particulate emissions from the loadout by: 1) enclosing the loadout area and 2) enclosing the loadout area and directing captured emissions to a baghouse. Although both options were technically feasible, neither was deemed to be cost effective, when based on PM_{10} or $PM_{2.5}$ emissions, which would more than double the cost per ton of pollutant controlled, compared to what Perdue submitted, which was based on PM (coarse particulate).

Since the grain elevator's potential-to-emit emissions were based on a throughput of 766,500 tpy soybeans, a throughput limit at this level will be established. Finally, the facility will incorporate the use of Iowa's Department of Natural Resources Best Management Practices (BMPs) for Grain Elevators to ensure proper operation and compliance with all applicable requirements. These BMPs will be incorporated under Section C of the permit.

Oil Extraction

Perdue supplied a Top-Down Best Available Technology (BAT) Analysis that addressed controlling particulate emissions from Source Ids 203, 205A & 205B with the following control technologies:

1) Baghouses
2) Cyclones
3) Wet scrubbers

4) Electrostatic precipitators (ESPs)

Due to the low airflows of each source and the moist nature of each exhaust, the use of ESPs & baghouses are not technically feasible. Although the use of cyclones and scrubbers are technically feasible, cyclones offer a more cost effective option. Therefore, the use of high-efficiency cyclones with an emission limit of 0.02 gr/dscf shall be considered BAT. This limit is based on the emission limit found in PA DEP's General Permit No.15 for feed mills (feed mills operate types of particulate emitting sources found in extraction operations i.e. cleaning & screening machines, storage silos, etc.).

Perdue also supplied a Top-Down Best Available Technology (BAT) Analysis that addressed controlling particulate emissions from Source Ids 201, 202, 206, 207, & 210 with the following control technologies:

1) Baghouses
2) Cyclones
3) Wet scrubbers
4) Electrostatic precipitators

Although all of the control technologies are technically feasible, the use of a baghouse resulted as the most cost effective option. Therefore, the use of a baghouse on each source and an emission limit of 0.01 gr/dscf shall be considered BAT. This limit is based on the manufacturer guarantee (Airlanco).

Additionally, the use of collapsible bin vent filters on Source Ids 208, 209 & 211 and a 10% opacity limit, not to be exceeded at any time, shall be considered BAT.

Since the soybean extraction facility's potential-to-emit emissions were based on a throughput of 638,750 tpy soybeans, a throughput limit at this level will be established. Finally, the BMPs incorporated under Section C of the permit will to ensure proper operation and compliance with all applicable requirements for particulate emitting soybean handling operations.

DEP has determined that the particulate fugitive emissions from the facility are expected to be of minor significance with respect to causing air pollution, due to the fact that the BAT analysis was conducted, and due to the projected $PM_{2.5}$ emissions being small (3.39) in comparison to the major source threshold for $PM_{2.5}$, and due to the plan approval limiting visible fugitive emissions to specific opacity levels based on BAT requirements. Total $PM_{2.5}$ emissions (both fugitive and stack together, including roadway emissions) projected for the soybean oil extraction operations is 8.05 tpy.

The facility's Lowest Achievable Emission Rate (LAER) determination shall satisfy BAT for VOC emissions. See "LAER" section below.

Mandatory Greenhouse Gas Reporting Regulations (40 CFR Part 98)

The proposed facility is not subject to the requirements specified in 40 CFR Part 98, as per 40 CFR Section 98.2 because the facility will not emit greater than 25,000 metric tons of CO_2e tpy.

Continuous Assurance Monitoring (CAM) (40 CFR Part 64)

The following sources are subject to CAM for particulate because each is subject to an emission limit, uses a control device to achieve compliance with the emission limit and has a potential pre-control device emissions greater than the major source threshold for particulate (100 tpy):

1) Source Id 201, Soybean Preparation Process – controlled by five (5) baghouses
2) Source Id 203, Flaking Rolls – controlled by a cyclone
3) Source Id 205A, Meal Dryer – controlled by a cyclone
4) Source Id 205B, Meal Cooler – controlled by a cyclone
5) Source Id 206, Meal Grinding and Screening – controlled by a baghouse

CAM requirements will include daily pressure drop and weekly visible emission readings/recordings across each control device.

PSD/NSR Applicability

The proposed facility will be located in the Ozone Transport Region (i.e. nonattainment for NOx & VOC) and in Lancaster County, an area classified as nonattainment for $PM_{2.5}$ and SO_2 & NOx (precursors to the formation of $PM_{2.5}$).

Support Facility Determination

The facility will be adjacent to the Lancaster County Solid Waste Management Authority (LCSWMA) Resource Recovery Facility (RRF). LCSWMA will supply steam & process water for the grain dryers and extraction operations. Steam condensate, used process water, and plant washdown water will be sent back to LCSWMA for reuse. Although the extraction facility will rely on LCSWMA to supply utilities (steam & water), LCSWMA is not a support facility for Perdue. Therefore, Perdue is not required to account for emissions originating from LCSWMA for PSD/NSR applicability. This determination is based on the following:

1) LCSWMA is not increasing production in order to supply the steam demand from Perdue. The extraction operations will utilize "waste steam" in that the steam being used by Perdue would have previously been vented to the atmosphere. Furthermore, in the unlikely event that LCSWMA would be unable to provide steam to the extraction facility for a short time, Perdue will have the ability to hook-up a portable, truck-mounted steam plant.
2) The two facilities will not share any production intermediates, products, byproducts, manufacturing equipment, or air pollution control equipment.
3) All air emission sources and air pollution control equipment at the grain elevator & extraction facility will be owned and operated exclusively by Perdue.
4) The two facilities do not have common executive officers or boards. Additionally, the facilities will not have common workforces, plant management, or security, nor will the employees and managers of one facility be involved with the other facility. The two facilities will not share administrative functions such as payroll, employee benefits, health plans, retirement funds, or insurance coverage.

As such, since the facility by itself is not defined as a "major stationary source" (i.e. the facility does not have the potential to emit 250 tons per year or more of a regulated NSR pollutant nor is the facility one of 28 source categories), the project is not subject to Prevention of Significant Deterioration (PSD).

The project is subject to Nonattainment New Source Review (NNSR) since there will be a resulting significant increase in VOC emissions (> 50 tpy). The facility will be subject to Lowest Achievable Emission Rate (LAER) and emission offset requirements; both are discussed in detail below. Perdue will be required to obtain emission reduction credits (ERCs) prior to the start-up of the facility.

Table 4: PTE Emissions from Proposed Project and NSR/PSD Applicability

Pollutant	Major Facility Threshold (tpy)	PTE Emissions (tpy)	Subject to NNSR/PSD Permitting?
Nonattainment New Source Review (NNSR)			
Ozone – NOx	100	4.08	No
Ozone – VOCs	50	208.05	*Yes*
$PM_{2.5}$	100	8.05	No
$PM_{2.5}$ Precursor - SOx	100	0.04	No
$PM_{2.5}$ Precursor - NOx	100	4.08	No
Prevention of Significant Deterioration (PSD)			
CO	250	1.02	No
NOx	250	4.08	No
SOx	250	0.04	No
PM	250	178.34	No
PM_{10}	250	44.73	No
$PM_{2.5}$	250	8.05	No
VOCs	250	208.05	No
CO_2e	100,000	4,565.87	No

Lowest Achievable Emission Rate (LAER)

EPA & PA DEP define LAER as the more stringent rate of emissions based on the following: (1) The most stringent emissions limitation which is contained in the implementation plan of any State for such class or category of stationary source, unless the owner or operator of the proposed stationary source demonstrates that such limitations are not achievable; or (2) The most stringent emissions limitation which is achieved in practice by such class or category of stationary sources. As stated in EPA's "New Source Review Workshop Manual - Prevention of Significant Deterioration and Nonattainment Area Permitting, draft October 1990", "*Several technological considerations are involved in selecting LAER. The LAER is an emissions rate specific to each emissions unit including fugitive emissions sources. The emissions rate may result from a combination of emissions-limiting measures such as (1) a change in the raw material processed, (2) a process modification, and (3) add-on controls.*"

This application represents the first LAER evaluation of VOC emissions from a soybean solvent extraction facility either within the Commonwealth of Pennsylvania or the United States; furthermore, Pennsylvania's State Implementation Plan (SIP) does not contain an emission limitation for the soybean solvent extraction source category. As such, this LAER analysis is based on review of the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) database, state PSD air permitting actions, knowledge of existing soybean solvent extraction facilities and analysis of the potential to transfer technology from other industries.

The following VOC emission points exist at a typical soybean extraction facility:

- Exhaust from mineral oil scrubber system/main vent;
- Exhaust from the meal dryer cyclone stack;
- Exhaust from the meal cooler cyclone stack;
- Fugitive residual losses from crude soybean meal;
- Fugitive residual losses from crude soybean oil;
- Fugitive evaporative losses from equipment leaks;
- Fugitive breathing and working losses from the hexane storage tanks;
- Fugitive evaporative losses from process wastewater collection; and
- Fugitive losses from process start-up and shutdowns

As such, the LAER analysis evaluated the following add-on control devices for controlling emissions from the main vent, the meal dryer stack and the meal cooler stack. Each is discussed in detail below.

1) Biofiltration
2) Carbon Adsorption
3) Thermal Incineration (RTO & Cat Ox)
4) Flares
5) Absorption
6) VOC Concentrators
7) Best Management Practices

Biofiltration

Biofilters use naturally occurring microorganisms to treat air containing organic compounds and odorous substances such as reduced sulfur compounds. The microorganisms grow on the surface of a biofilter media such as soil or compost. Contaminated air is piped into the media where the contaminants are absorbed into the microbial film. The organisms use the contaminants as a food source, destroying them in the process.

The application of biofiltration technology has been limited for hexane removal. A biofilter system continuously changes based on environmental conditions, nutrient loadings and microbial growth. Knowledge is not available to assess the long-term reliability of the system in a case such as this. For these reasons, this technology is eliminated from further consideration as LAER for the mineral oil scrubber, the meal dryer and cooler.

Carbon Adsorption

Adsorption is employed to remove VOC from gas streams, and has the added benefit of providing solvent recovery. Physical adsorption occurs when gas molecules passing through a bed of solid particles are selectively held there by mechanisms such as weak van der Waals forces, chemical bonding or electrostatic attraction. During adsorption, a gas molecule is held by physical attraction and releases energy known as "heat of adsorption". Adsorbed substances are typically removed ("desorbed") from the adsorbent by heating with steam or hot combustion gases, or by reducing the pressure.

Available adsorbents include activated carbon, silica gel, activated alumina, synthetic zeolites, fuller's earth, and other clays. This LAER analysis is oriented toward the use of activated carbon, a commonly used adsorbent for VOCs. Five types of adsorption equipment are used in collecting gases: (1) fixed regenerable beds; (2) disposable/rechargeable canisters; (3) traveling bed adsorbers; (4) fluid bed adsorbers; and (5) chromatographic baghouses. Of these, the most commonly used in air pollution control are fixed-bed systems and canister types. Typical commercially available carbon adsorption systems can achieve between 95 and 99 percent control efficiency for emission streams.

Carbon adsorption is no longer used to control VOC emissions in soybean oil extraction facilities for technical and safety reasons. According to Perdue "*Carbon adsorption systems were applied rather widely to the final vent stream from solvent extraction plants in the late 1940s and early 1950s. In the late 1950s, mineral oil absorption systems began to replace carbon units. The aerosol oil in the mineral oil absorber exhaust and the PM and PM_{10} in the meal dryer & cooler exhausts causes fouling of the carbon bed. Also, soybeans naturally contain small amounts of sulfur compounds, which also cause fouling of the carbon bed. Although the PM/PM_{10} concentration in the meal dryer & cooler exhausts can be reduced by a high efficiency filtration system, the aerosol oils and sulfur compounds cannot be similarly removed.*

Carbon adsorbers are not considered a feasible VOC control option for soybean oil extraction facilities because they create a risk of fire and/or explosion. The adsorption of hexane onto carbon is an exothermic reaction. Increases in the concentration of the inlet stream will cause additional heat to build up in the carbon bed. Under optimum conditions, the air movement through the bed will remove the heat via convection. However, if channeling occurs in the carbon bed, or if the increase in concentration is too large (as in an upset condition), the bed can over heat to the point of auto-ignition. Good design and control can eliminate overheating of the carbon bed under normal operating conditions. However, during an upset or when the equipment or controls fail, the vent gas stream characteristics (hexane concentration and volumetric flow rates) may suddenly and significantly change. A sudden influx of hexane solvent loading in to a carbon adsorber could result in overheating the carbon bed. Under these conditions, a carbon adsorber unit becomes a potential source of ignition." The DEP concurs with Perdue's assessment. The Oklahoma Department of Environmental Quality & the Missouri Department of Natural Resources have concluded the same results for carbon adsorption in various permitting reviews for soybean oil extraction facilities.

Because of the technical and safety concerns, carbon adsorption is eliminated from further consideration as LAER for the mineral oil scrubber, the meal dryer and cooler.

Oxidation (Regenerative Thermal Oxidizer (RTO) or Catalytic Oxidizer (Cat Ox))

VOC vapors (such as hexane) can be destroyed by incineration. A regenerative thermal oxidizer (RTO) is an incinerator with a set of refractory beds that store heat. Three beds are commonly used in a regenerative system. One of the beds is used to pre-heat the inlet gas stream, the second is used to transfer the heat of combustion from the treated gas stream, and the third is in a purge cycle. Catalytic incinerators are similar to thermal/recuperative incinerators, except that the gas, after passing through the flame area, then passes through a catalyst bed. The catalyst allows oxidation to occur at a lower reaction temperature than normal thermal units. Outlet temperatures for catalytic incinerators are typically lower than RTOs, thus allowing for less fuel to be used. RTOs and catalytic incinerators can achieve VOC destruction efficiencies that exceed 95 percent.

RTOs and incineration systems can not be used to control VOC emissions in oilseed oil extracting facilities for both technical and safety reasons. First, the exhaust from the mineral oil absorber includes small amounts of oil in

aerosol form. The aerosol oil causes carbonization and degradation of the packing in an RTO, thereby leading to a loss of heat transfer. Degrading the packing and losing heat transfer will make the RTO less effective. Therefore, an RTO on the outlet of the mineral oil absorber to control VOC emissions is technically infeasible. Second, the exhaust from the meal dryer & cooler includes particulate matter which would cause plugging of the of the heat exchange media surface. This plugging would cause the RTO or Cat Ox to become ineffective. Although particulate matter could be removed upstream via add-on controls; the control device would not result in all of the particulate to be removed. Therefore, an RTO or Cat Ox to control VOC emissions from the meal dryer & cooler is technically infeasible.

In addition to the technical problems associated with a RTO/Cat Ox, incineration is not feasible due to safety reasons. The national Fire Protection Agency (NFPA) standards for solvent extraction plants require that any flame operations, such as RTOs, be located at least 100 feet from the process area. These standards also require potential ignition sources be equipped with approved devices to prevent flashbacks into the process area. The inherent presence of fugitive hexane vapors at the plant and the presence of an open flame from an RTO or Cat Ox present an unacceptable risk of explosion and fire hazard. Furthermore, variations in flow and solvent concentrations during normal operation, normal shutdown procedures, process upsets, and malfunctions may result in near Lower Explosive Limit (LEL) conditions in the vent exhaust and increase the risk of explosion.

There are currently no RTOs or catalytic oxidizers in operation at any soybean extraction plant in the United States. In February 2007, Missouri's Department of Natural Resources (MDNR), Air Conservation Commission issued construction permit number 022007-004 to Prairie Pride, Inc. (PPI) for a soybean processing facility that included solvent extraction. The permit contained a condition that required Prairie Pride to utilize a thermal oxidizer for the control of VOCs from the mineral oil scrubber. The decision to use an RTO for VOC control was Prairie Pride's decision, and not based on an NSR/PSD determination. Subsequently in September 2007 and prior to the facility's construction, Prairie Pride requested that the MDNR remove the RTO installation requirement. Prairie Pride's rationale was:

> *Since the submittal of the last application (November 2006), PPI experienced a change in the engineering firm responsible for plant design. After further discussion with current design engineers, National Fire Protection Association (NFPA) board members and experts in the soybean processing industry, PPI had been convinced that the safety hazards presented by the RTO outweigh the minimal VOC reduction that would be achieved...process upsets and malfunctions, in addition to normal shutdown procedures can result in near lower explosive limit (LEL) condition at the RTO...*

As such, MDNR issued amended permit number 062008-006 in June 2008 that superseded the 2/2007 permit and removed the requirement to install/operate an RTO.

Therefore, due to technical and safety concerns, the use of an RTO or Cat Ox is eliminated from further consideration as LAER for the mineral oil scrubber, the meal dryer and cooler.

Flares

Flares employ direct combustion to destroy VOCs and are capable of achieving high levels of VOC destruction. Types of flares include elevated, steam-assisted, air-assisted, non-assisted, pressure assisted, and enclosed ground flares.

According to Perdue, "*For the main vent, the volumetric flow and VOC concentration can increase suddenly during process shutdowns or upsets as vapors within solvent-laden process equipment are ventilated rapidly. The vent gas stream entering the main vent may increase suddenly from less than 20% of the LEL for hexane and approach the LEL range. The potential for sudden changes in hexane concentrations above its LEL makes the main vent gas stream a greater fire and explosion hazard if being discharged to a VOC combustion control device.*" DEP concurs that a fire/explosion risk exists at these conditions.

Regarding the meal dryer and cooler vents, Perdue asserts "*One operating parameter necessary for demonstrating a flare's 98% VOC destruction efficiency is maintaining the minimum net heat content of the vent gas stream*

greater than 200 btu/scf for a non-assisted flares or 300 btu/scf for steam- or air-assisted flares. For vent gas streams with a low concentration of VOCs, supplemental fuel, most typically natural gas, must be added to the vent gas stream in order to achieve the minimum net heating value for proper combusting in the flame. The net heating value for the combined meal dryer and cooler vent is less than 1 btu/scf. Thus, one cubic foot of natural gas (assuming a net heating value of 1,000 but/scf) will be required for every 2-4 cubic feet of vent gas stream sent to the flare. Considering that the volumetric flow rate of the combined meal dryer and cooler vents is approximately 47,000 cfm, the amount of natural gas required would range from 11,725 to 23,500 cfm, or consuming more than 700 mmbtu/hr. Combusting this magnitude of natural gas would actually generate a far larger quantity of secondary emissions of NOx, CO & GHGs than the potential quantity of VOC emissions reduced from the vent gas stream itself. " DEP concurs with Perdue's assessment for maintaining the minimum heat content (See 40 CFR 60.18(c)(3)(ii)) and supplemental fuel requirement.

Therefore, due to energy/environment, technical & safety concerns, the use of a flare is eliminated from further consideration as LAER for the mineral oil scrubber, the meal dryer and cooler.

Absorption (packed bed mineral oil scrubber)

Packed-bed scrubbers consist of a chamber containing layers of shaped packing material (rings, saddles, etc.) that provide a large surface area for liquid-particle contact. Scrubbing liquid flows through the bed, creating a thin film on the packing. The pollutant to be absorbed must be soluble in the fluid. Absorption is enhanced by increased surface area of the packing material, higher liquid to gas ratios, and higher concentrations in the gas stream.

According to Perdue "*There are no known technical or safety factors precluding the use of absorption to minimize VOC emissions on the main vent. A mineral oil scrubbing system is the exclusive application of control technology within the soybean solvent extraction industry. Virtually, every main vent is equipped with a mineral oil scrubber to minimize VOC emissions.*"

As stated by Perdue "*For the meal dryer and cooler vents, a mineral oil absorption system is not technically feasible to minimize VOC emissions. A mineral oil absorption system works best on vent streams with high VOC concentrations, such as in the thousands of ppmv range. Based on the VOC emission characteristics of the meal dryer and cooler vents, the estimated total VOC concentration in the exhaust vent stream is around 100 ppmv or less. Thus, a mineral oil absorption system will not be effective in further reducing the VOC concentrations in the meal dryer and cooler vents.*" DEP concurs with this assessment (See EPA-452/F-03-015, Air Pollution Control Technology, Fact Sheet, Packed-Bed/Packed-Tower Wet Scrubber)

As such, the use of a mineral oil scrubber on the main vent is considered LAER. However, due to technical issues, the use of a mineral oil scrubber on the meal dryer and cooler vent is eliminated from further consideration as LAER.

VOC Concentrators

VOC concentrators use adsorption technology in combination with oxidation technology. Concentrators pass contaminated air through an adsorbent (e.g., activated carbon, zeolite, polymer, etc.) wherein the VOCs are adsorbed and the exhaust air is cleaned of any VOCs. A portion of the adsorbent is then heated to remove/destroy the VOCs and to regenerate the adsorbent for reuse.

There are two general types of VOC concentrators: 1) rotary and 2) fixed-bed. Rotary concentrators pass the pollutant-laden air through a rotating adsorbent wheel to remove the VOCs from the contaminated vent stream. After passing through the rotor, the cleaned air is discharged into the atmosphere. The rotor turns continuously, transporting adsorbed VOCs into a regeneration zone. There, the VOCs are removed by a small heated air stream that is 5-10% of the process air volume. The regenerated adsorbent is then rotated back into the process air stream. The concentrate is typically sent to a small thermal oxidizer where the VOCs are converted to water vapor and CO_2. Alternatively, the concentrated VOC airstream can be refrigerated in order to condense and recover the VOC.

Fixed-bed concentrators use several beds of adsorbent to remove organics from the contaminated streams. The vent gas stream is first routed into one or more of the fixed-bed adsorption units while one of the fixed-beds is being thermally regenerated. The concentrated VOC vent stream is then routed to a thermal oxidizer.

There are no soybean solvent extraction facilities that use VOC concentrators to control VOC emissions. VOC concentrators are not a feasible option since they suffer from the same flaws as carbon adsorbers (See "Carbon Adsorption" section above). Therefore, due to technical and safety concerns, the use of VOC concentrators are eliminated from further consideration as LAER for the mineral oil scrubber, the meal dryer and cooler.

The LAER analysis further evaluated the following non-add-on-control methods for controlling stack and fugitive emissions. Each is discussed in detail below.

1) Facility-Wide Solvent Loss Ratio (SLR)
2) Leak Detection and Repair (LDAR) Program
3) Storage Tank Fugitives

Facility-Wide Solvent Loss Ratio (SLR)

As part of its LAER evaluation, Perdue reviewed and analyzed several types of information sources to determine LAER for VOC emissions from soybean extraction facilities. Perdue evaluated the following sources of information to identify the most stringent emission limitations achieved in practice by soybean solvent extraction facilities – EPA's RBLC; state air permit limitations; EPA's data and analysis in support of the National Emission Standards for Hazardous Air Pollutants: Solvent Extraction for Vegetable Oil Production, 40 CFR Subpart GGGG; negotiated settlements of PSD permitting enforcement actions by EPA/Department of Justice against key vegetable oil producers; and state-of-the-art process design/technology from Desmet Ballestra. The list of soybean oil extraction facility-wide SLRs determinations/limits can be found in the Attachments.

There were several permits issued with a lower SLR limit than Perdue's proposal; however, Perdue asserts there are issues with those permitted SLRs. Each is described below.

(1) *Louis Dreyfus, Claypool, Indiana* – the facility was issued Permit No. 085-21297-00102 on 1/24/06. The permit contained an SLR of 0.134 gal/ton soybean processed. However, on 11/2/11, the facility was issued Permit No. 085-29971-00102 to increase the facility's SLR limit to 0.141 gal/ton soybeans. The reason for the increase was that the facility was having difficulty meeting the lower SLR.

(2) *Ultra Soy of America, South Milford, Indiana* – the facility was issued a Permit No. 087-24953-00069 on 4/14/08 and contained an SLR limit of 0.134 gal/ton soybeans. However, the facility was never constructed.

(3) *Prairie Pride, Deerfield, Missouri* – the facility was issued Permit No. 062008-006 on 6/12/08. The permit included two SLR limits. The first, an SLR limit of 0.115 with the use of an RTO. The second, an SLR of 0.125 without the use of an RTO. Shortly after construction in 2010, the Prairie Pride facility was shut-down and entered bankruptcy proceedings. In 2011, Archer Daniels Midland (ADM) acquired the facility and reportedly commenced operations in late 2011 and has been, according to Perdue, operating at diminished capacity. Therefore, Perdue contends, an SLR of 0.125 has not been shown to be achievable when operating at or near the facility's design capacity.

The Department concurs with Perdue's claims under (1) & (2) above; however, Perdue's assertion of diminished capacity and ADM not meeting the 0.125 gal/ton soybeans SLR limit cannot be confirmed. An October 24, 2013 phone conversation with Michelle Bublitz, Division Environmental Manager for ADM, revealed the facility has not exceeded the SLR limit nor has it curtailed production in order to meet the SLR since ADM has taken over the facility. Subsequently, review of ADM's annual emission reports did not reveal any exceedances of the SLR limit. Furthermore, the facility's 2012 annual emission report revealed a total of 584,640 tons soybeans were unloaded at the facility. Based on the facility's front-end capacity of 2,000 tons of soybeans per day (PTE = 730,000 tpy), this equates to the facility operating at approximately 80% capacity. This operating capacity is comparable to historical operating capacities of similar sized solvent extraction facilities.

As such, after review of the RBLC/permitted limits, Perdue initially proposed a SLR of 0.140 gal/ton soybean processed, based on a 12-month rolling average. The proposed rate is based on Desmet's performance guarantee of 0.132 gal/ton soybean processed plus a margin-of-safety of 0.008 gal/ton. The margin reflects the average variation within a 95% confidence level (i.e. two (2) standard deviations above and below the mean solvent loss) among Perdue's three operating solvent extraction plants and two relatively new, large processing facilities for which historical solvent loss data was publicly available, Cargill, Kansas City, MO and Ag Processing, Sergeant Bluff, IA

The Department does not believe the proposed SLR limit of 0.140 gal/ton soybeans, based on a 12-month rolling total, satisfies LAER. The proposed limit is based on a limit and not on the lowest emission rate achieved in practice. Consequently, in order to ascertain the lowest achievable emission rate achieved in practice, the Department conducted a review of oilseed extraction facility operations across the country.

First, a list of extraction facilities was obtained from the *National Oilseed Processors Association's* website. The document was titled *National Oilseed Processors Association, Oilseed Processing Plants*, and was dated 6/3/13 (Refer to Attachments). From this list, each facility's throughput capacity was obtained from applicable state/federal issued permits. Facilities having a throughput capacity two (2) times or less than that of Perdue's proposed extraction plant (525,000 tpy soybeans) and constructed after 1990 were evaluated further for actual emissions and production. The list of facilities, throughput capacities and permitted limits can be found in the Attachments. Subsequently, annual emission reports for the select facilities were acquired from the respective state environmental agencies. The annual reports provided data to determine facility SLR values, based on a calendar year. There were three (3) facilities in particular that revealed annual SLR values which never exceeded 0.113 gal/ton soybeans. They are: (1) Ag Processing (AGP), Emmetsburg, Iowa, (2) Ag Processing, Hastings, Nebraska and (3) Archer Daniels Midland (ADM), Deerfield, Missouri. Calculated SLR values for the three facilities can be found in the Attachments. Consequently, a statistical analysis was conducted on the annual SLR values in order to determine an SLR to satisfy LAER. The average annual SLR from the three facilities was 0.087 gal/ton soybeans with a standard deviation of 0.015 gal/ton soybeans.

Based on the above, the Department has derived an SLR limit of 0.125 gal/ton soybeans as being appropriate for LAER. The 0.125 gal/ton soybean limit is based on the statistical analysis of the three best performing facilities above and allows for a margin-of-safety for the various fluctuations that occur during the oilseed extraction process. Various fluctuations include, but are not limited to, bean quality, operator, ambient conditions, etc. The margin reflects the average variation between a 95% and 99.7% confidence level (i.e. between two (2) and three (3) standard deviations). It should be noted that upon subsequent discussions with the Department and further review by Perdue, Perdue now acknowledges that an SLR of 0.125 gal/ton soybeans is an appropriate LAER limit, provided that an allowance is made for an initial shakedown period for a newly constructed facility. Based on the fact that this is a brand new facility and after review of other permitted facilities, DEP concurs that an initial shakedown for the startup of the new plant is warranted in this case.

Furthermore, because LAER is applicable to each emission unit, specific VOC emission limits for main emission process units in the oil extraction process, one of which is controlled by the mineral oil scrubber, are required. As such, the following VOC emissions limits will be established:

- Extraction Process: Stack ID S204 limit – 0.028 lb/ton of soybean.
- Meal Dryer: Stack ID S205A Limit – 0.203 lb/ton of soy bean.
- Meal Cooler: Stack ID S205B Limit – 0.102 lb/ton of soy bean.
- Source ID 204 - 7.24 tons per year, based on any consecutive 12-month period.
- Source ID 205A – 50.42 tons per year, based on any consecutive 12-month period.
- Source ID 205B – 25.21 tons per year, based on any consecutive 12-month period.

Note: The above emission limits are based on an SLR of 0.140 gal/ton soybeans which was used for the site-specific risk assessment.

Leak Detection and Repair (LDAR) Program

Since fugitive emissions are anticipated to constitute a major portion of the VOC emissions from the facility, a leak detection and repair (LDAR) program can have a significant impact on fugitive emissions from oilseed solvent extraction processes. The leak detection portion of an LDAR program involves routine, systematic inspection of pumps, piping, duct work, enclosed conveyors, valves, flanges, seals, sight glasses and process equipment. Inspections can be conducted visually, by flammable gas monitor, by monitoring process parameters, by listening for audible signs of a leak, etc. By pro-actively finding hexane leaks and promptly completing repairs, fugitive emissions are minimized.

There are specific regulatory LDAR requirements contained in EPA's new source performance requirements for organic chemical manufacturing plants, petroleum refineries, polymer manufacturing plants and natural gas processing plants. EPA has not promulgated an LDAR rule that specifically applies to soybean solvent extraction processes. Consequently, Perdue will be required to develop an LDAR program specific to this installation/source-category. Therefore, in accordance with Perdue's proposed LDAR and the PA DEP's "Model LDAR Conditions for NG Transmission Stations" document, the minimum elements of Perdue's LDAR program shall include:

(a) Audible, Visual, Olfactory (AVO) sensory detection method performed on plant equipment containing hexane daily.
(b) Install and continuously operate fixed-location flammable gas monitors or other leak detection monitoring devices approved by the Department in the solvent extraction area set to go off at 500 ppmv.
(c) Daily inspections/recording of fixed gas monitors.
(d) Initial and annual leak checks of equipment containing hexane using a Department approved gas analyzer or other detection and monitoring device that conforms to the requirements listed in Method 21 of 40 CFR Part 60, Appendix A.

As such, the implementation of a site-specific LDAR program, as described above, shall be considered a component of the LAER determination for this facility.

Hexane Storage Tanks

Perdue has proposed to capture and control the breathing and working losses from the hexane storage tanks. Captured solvent losses will be vented and recovered by the mineral oil scrubber. The capture and recovery of storage tank breathing and working losses shall be considered as a LAER measure for those emissions.

Alternative Control Options

In assessing technology transfer and available control alternatives, Perdue reviewed the following alternative non-hexane soybean extraction technologies.

Mechanical Pressing (including Cold Pressing)

Mechanical extraction of oil is accomplished by exerting sufficient force on the oilseed to rupture the cells and force the oil from the seed to "escape." Extraction is accomplished by compressing the oilseed in a container that has small perforations, either round or slotted, that allows the liquid component to leave. This operation may be done in either a batch or continuous process. "Typical capacities of mechanical pressing operations range from less than 1 ton to 50 tons per day" ("Mechanical Extraction Processing Technology for Biodiesel." - *EXtension*. N.p., n.d. Web. 21 Feb. 2014. <http://www.extension.org/pages/26911/mechanical-extraction-processing-technology-for-biodiesel>.).

Prior to the widespread use of hexane solvent extraction, mechanical pressing was the method of choice. "There were a number of reasons that solvent extraction (particularly hexane) systems replaced mechanical pressing systems for soy oil removal during the 1940s. Many of these reasons could be foreseen by the 1930s and 1940s (Stewart et al. 1932; Horvath 1927 and 1938a; Goldberg 1952). "First, solvent extraction gave higher yields of oil. While mechanical pressing systems recovered only 70-80% of the oil present in the soybean (leaving 4-6% oil in the presscake), solvent systems were able to recover about 95% of the oil (leaving only 0.5-1% in the meal).... Second, solvent systems had a larger processing capacity. Third, solvent systems, run at relatively high capacities, produced oil and meal at lower cost, largely because of lower labor and overhead costs. Fourth, solvent systems

used less energy. And fifth, they gave oil that many considered to be superior in quality since it had superior bleaching qualities, lower refining losses, reduced susceptibility to rancidity, and better retention of fat-soluble vitamins." (William Shurtleff and Akiko Aoyagi (2007). *History of Soybeans and Soyfoods: 1100 B.C. to the 1980s.* <http://www.soyinfocenter.com/HSS/soybean_crushing6.php>).

Therefore, in accordance with the items mentioned above, mechanical pressing is not a viable option for large capacity, continuous processing operations that produce relatively large quantities of oil and low fat, high protein meal and is eliminated from further consideration as LAER.

Supercritical CO_2

Supercritical carbon dioxide (CO_2) is a fluid state of carbon dioxide where the chemical is held at or above its critical temperature and critical pressure. The chemical essentially adopts properties between a gas and a liquid (i.e. a supercritical fluid). The relatively low temperature associated with a CO_2 extraction process and the stability of CO_2 allows certain compounds to be extracted with little damage to, or contamination of, the extracted compounds.

Currently, no large scale oilseed processing facility, typically those processing over 1,000 tons per day of material, is utilizing supercritical CO_2 extraction. Supercritical CO_2 extraction is used in small scale extractions of "high value" products such as hops, essential oils, and perfumes which typically process less than 50 tons per day of material. The main reason for this is that supercritical CO_2 is only fully miscible with edible oil at pressures reaching 5,000 psig. By comparison, hexane solvent is fully miscible with edible oil at atmospheric pressure.

According to Perdue's application "*The required wall thickness of vessels to operate at 5,000 psig is extraordinary when they become large in scale. For this reason, it is not economically feasible to consider supercritical CO_2 extraction for large commodity oilseed processing. Also, for continuous supercritical CO_2 extraction to be possible, a device is needed to continuously feed the extractor, with 0 psig pressure in and 5,000 psig pressure out; and another device is needed to continuously discharge the extractor with 5,000 psig in and 0 psig out. Few feeding or discharging devices can work continuously and, at the same time, seal against a 5,000 psig pressure differential, especially at a large capacity. If the feeding and discharge devices do not form an adequate seal, then CO_2 escapes, and the working pressure is lost. The larger the feeding devices become for high product flow rates, the more difficult it is to form such a high pressure seal. As a result, supercritical CO_2 extraction is restricted to relatively low feed rates of oilseeds which can be relatively simple and robust open/close devices such as valves.*

Desmet Ballestra, one of the largest suppliers of process equipment to extract edible oils, and several other equipment providers conducted research on utilizing screw presses as continuous feeding and discharge devices for supercritical CO_2 extraction. The screw presses could not safely and continuously provide a 5,000 psig pressure differential to seal the extractor inlet and outlet. The best that could be achieved was approximately 1,000 psig to 3,000 psig. In those cases, the CO_2 was liquid but not supercritical. This allowed the CO_2 to displace some oil with liquid CO_2 but not truly "solvent extract" the oil. The residual oil content in the meal continuously extracted could only be reduced to about 3%, not nearly down to the levels of 0.5-1% readily achievable with hexane solvent extraction, or with true batch supercritical solvent extraction. As a result, the supercritical CO_2 extraction process could not meet the commodity meal specifications required for low fat, high protein meal."

The DEP concurs with Perdue's claims since various published scientific papers come to the same conclusion. One such example states the following: "*Although supercritical carbon dioxide (SC-CO2) has been studied as a replacement for hexane extraction of oilseeds (1,2) and SC-CO2 extractions have many advantages over hexane extraction (3), SC-CO2 is not currently economically viable for large-scale oilseed processing. This is due to the low bulk value of seed oils, high capital costs of SC-CO2 extraction, and the inconvenience of batch processing large quantities of solid materials such as soybeans under high pressure (4).*" (Eller, Fred J., S.L. Taylor, and M.S.S Curren. "Use of Liquid Carbon Dioxide." *Journal of the American Oil Chemists' Society* 81.10 (2004): 989-92. Print.)

Consequently, in accordance with the reasons discussed above, supercritical CO_2 extraction is not a viable option for large capacity, continuous processing operations and is eliminated from further consideration as LAER.

Non-Hexane Solvent Extraction

According to Perdue "*Over the years, interest in non-hexane solvent extraction has led to investigation of the use of primarily alcohol-based solvents, such as ethanol, isopropyl alcohol, n-propanol, and alcohol/water mixtures. Although these alternatives contain no HAPs, the solvents are still VOCs. The family of alcohol solvents has a number of shortcomings when compared to hexane solvent. First, alcohol solubility with soybean oil is lower, and alcohol absorbs water from the soybean flakes, making the alcohol even less oil soluble. Therefore, it is not possible to achieve an oil yield comparable to utilizing hexane solvent. Second, the alcohols extract a portion of the sugars from the soybean, and therefore, the soybean oil stream becomes contaminated with sugars. Separating sugars from the oil is capital and energy intensive, degrades the oil quality, and reduces yield due to separation inefficiencies. Third, alcohol has a higher level of solvent retention when the meal leaves the extractor, thus increasing the energy required to desolventize the meal. Fifth, alcohol has a much higher specific heat, thus increasing the energy required to desolventize both the meal and the oil. Sixth, separating alcohol from process water requires energy intensive rectification, whereas hexane and water are separated by simple gravity decantation, thus alcohol has a much higher solvent recovery energy cost.*"

Review of various publications on utilizing non-hexane solvents resulted in the same deduction as Perdue; non-hexane solvents are not feasible for commercial use. Therefore, since there is no commercial use of the technology and for the reasons stated above, non-hexane solvent extraction is not a viable option and is eliminated from further consideration as LAER.

Send Vent Gas Streams to LCSWMA

Perdue evaluated sending vent gas streams from the soybean solvent extraction process to the LCSWMA for combustion in the Resource Recovery Facility (RRF). Vent gas streams such as the meal dryer and cooler vents were considered for use as supplemental combustion air in the municipal waste incinerator at the RRF. However, the high moisture content in the combined meal dryer and cool vents would result in Perdue sending more than 80 tons of water per day to the LSCWMA RRF for incineration. Subsequently, the RRF would have to burn additional fuel in order to effectively vaporize the water received in the air stream. The increase in waste combustion would ultimately result in emission increases of criteria pollutants from the RRF. Additionally, fine particulate matter in the combined dryer and cooler vents will become sticky and glue-like once in contact with water and will begin to accumulate within the ductwork. Steam tracing, as a method to keep the vent gas stream above its dew point, would have the potential to cause a fire due to the overheating of the accumulated particulate matter within the ductwork.

Therefore, due to technical, environmental and safety concerns, process vent gases controlled by LCSWMA is eliminated from further consideration as LAER for the mineral oil scrubber, the meal dryer and cooler.

Capture of Fugitive VOC Emissions from Meal Handling

As the meal exits the dryer and coolers, the meal is conveyed back to the meal preparation building for further processing and handling. Any residual solvent remaining in the meal at this point will be lost to the atmosphere as a fugitive VOC emission source. The meal preparation building has estimated dimensions of 120' long x 80' wide x 30' high, equating to an air volume of 288,000 cubic feet. NFPA Standard 36, Section 5.3.1, recommends a minimum of six (6) air changes per hour for extractor buildings. Based on the NFPA's recommended air changes per hour, the exhaust design CFM requirement would be 28,800 cfm. This high airflow and low concentration air stream could not be controlled by a mineral oil scrubber (see "Absorption" section above) nor could the airstream be controlled by an incineration device (see "Oxidation" discussion above).

Furthermore, fugitive VOC emissions resulting from residual solvent in the soybean meal is a slow, but eventual process since the solvent is not present solely on the surface of the meal product, but rather adsorbed onto and into the cellular structure of the meal product. Consequently, there are both technical and safety concerns in trying to capture and concentrate fugitive VOC emissions from residual solvent in the meal.

Therefore, since there is no facility within the soybean solvent extraction industry that uses hoods and/or enclosures to capture fugitive VOC emissions from residual solvent loss from meal processing and handling operations and

due to the reasons stated above, the capture of fugitive VOC Emissions from meal handling operations is not a viable option and is eliminated from further consideration as LAER.

Table 5: Summary of LAER Determinations

Emission Source	LAER Equipment, Method, System or Technique
Facility-Wide Solvent Loss	- Solvent Loss Ratio of 0.125 gal/ton soybeans processed, after an appropriate plant shakedown period. - Facility-wide VOC emission limit of 208.05 tpy
Extraction Process	- Condensation for solvent recovery - Uncondensed vapors routed to mineral oil scrubber - Main Vent Stack – 0.028 lb VOC/ton soybeans - Meal Dryer Stack – 0.203 lb VOC/ton soybeans - Meal Cooler Stack – 0.102 lb VOC/ton soybeans - Source ID 204 – 7.24 tpy VOC - Source ID 205A – 50.42 tpy VOC - Source ID 205B – 25.21 tpy VOC - The n-hexane concentration of the extraction solvent shall not exceed 50% by weight.
Solvent Storage Tanks	- Breathing and working losses routed to mineral oil scrubber
Process, Fugitive	- Leak Detection and Repair (LDAR) Program
Temporary Boiler(s)	- Good combustion practices - Heat input & fuel usage limits

Emission Reduction Credits (ERCs)

Since the facility is located in the Ozone Transport Region and in accordance with 25 Pa Code §127.210, Perdue is required to offset VOC emissions at a rate of 1.15:1 for stack emissions and at a rate of 1.3:1 for fugitive emissions. Furthermore, Perdue will be required to obtain ERCs corresponding to the facility's maximum allowable VOC emissions of 208.05 tons. Therefore, based on the project's VOC PTE stack emissions of 82.91 tpy VOC and the project's VOC PTE fugitive emissions of 125.14 tpy VOC, Perdue will need to acquire a total of 258.04 tons of VOC offsets.

VOC Offsets were calculated as follows:

$$82.91\frac{ton}{year}VOC \times 1.15 + 125.14\frac{ton}{year}VOC \times 1.3 = 258.03\frac{ton}{yr}VOC$$

Alternative Siting Analysis

In accordance with 25 Pa. Code Section 127.205(5), Perdue is required to conduct an analysis of alternative sites (ASA), sizes, production processes and environmental control techniques for the proposed project, which demonstrates that the benefits of the proposed facility significantly outweigh the environmental and social costs imposed within this Commonwealth as a result of its location, construction or modification. Perdue initially submitted an ASA on August 13, 2012 and subsequently revised it on June 4, 2013.

According to Perdue's ASA, "*Perdue first became interested in developing the Soybean Facility in south-central Pennsylvania due to the fact that soybean farming is a significant regional and state-wide industry that currently is constrained by the absence within the Commonwealth of any soybean processing facilities. From 2006 to 2012, annual revenue from Pennsylvania's soybean industry grew from $90,000,000 to $350,000,000, while soybean exports grew from $44,000,000 to more than $138,000,000.*"

Furthermore, Perdue states that agriculture and food production, including soybean production, is identified as one of eleven "Targeted Industry Clusters" by The Pennsylvania Department of Labor and Industry because of its potential for growth or overall importance to the stability of the state's economy. A targeted industry cluster includes industries closely linked by common products, labor pools, technologies, supplier chains and training

needs. Clusters take on strategic importance because activities that benefit one group member will generally help other members of the cluster.

Perdue's proposed facility will be located close to the geographic center of the region's soybean farming industry and is sized according to yearly soybean production data from immediate and surrounding counties. Specifically, the facility will be within 50 miles of seven (7) of the top ten (10) soybean producing counties and within 100 miles of eight (8) of the top ten (10) soybean producing counties in Pennsylvania. Additionally, Perdue anticipates the facility will process soybeans from Delaware, New Jersey and New York.

Alternative Sites

Perdue evaluated locating the proposed facility at/near three alternative sites in York County, Pennsylvania; however, they were excluded from further consideration for the reasons stated below. Those facilities included:

1) **P.H. Glatfelter (PHG), Spring Grove** - PGH operates a kraft paper mill with power and steam generation capabilities. However, there were limiting factors after reviewing the site. First, it was questionable as to whether or not PHG could produce sufficient quantities of steam to meet Perdue's requirements. Second, the closest site in proximity to PHG was approximately ½ mile away. If indeed PHG had the ability to provide the necessary steam load, the proximity factor would have required Perdue to purchase excess steam in order to compensate for heat loss in the pipeline. This additional cost would ultimately increase the facility's annual operating costs. Therefore, PHG was not considered further.
2) **Magnesita Refractories (Magnesita), York** - Magnesita produces refractory materials with very high temperatures but the facility does not have the capability to produce steam. Significant modifications would have been required in order for the ability to produce steam at the facility and would have significantly increased development costs. As a result, Magnesita was eliminated from consideration
3) **West Manchester Corporate Center (WMCC), York** - WMCC's business park did not have the required lot available for the proposed facility. If the business park did indeed have a sufficiently sized lot for Perdue's requirements, the location did not have any steam generation capabilities and would require Perdue to install boilers in order to generate steam. As such, due to the lot constraints and the absence of an existing steam source, WMCC was not considered further.

According to Perdue, the proposed site *"...will eliminate the need to transport soybeans out of the region to processing facilities located out of-state and will also eliminate the need to ship soybean oil, meal or hulls back to the region to be used in animal feed (soybean meal and hulls) or biofuels (soybean oil) applications."* Therefore, the proposed facility will provide a direct economic benefit to soybean producers and feed manufacturers by reducing transportation and shipping costs.

As identified by Perdue, the proposed site is permitted use within the Industrial Zone as defined in the Conoy Township, Lancaster County Official Zoning Ordinance. The facility will be sited on land currently used for industrial purposes by the Lancaster County Solid Waste Management Authority Resource Recovery Facility. There are no wetlands that exist within the property boundaries. The facility is not located in a floodplain as indicated by the Federal Emergency Management Agency (FEMA) floodplain maps. Based on the Pennsylvania Natural Diversity Inventory (PNDI) records and consultation with appropriate state agencies, there are no anticipated adverse impacts to endangered, threatened or special concern species at the site. The site will require minimal tree removal during the facility's construction. Furthermore, the areas of the site to be developed do not have steep slopes (generally less than 10%), thereby reducing the environmental impacts from erosion and runoff.

Consequently, the proposed location provides Perdue a centrally located site within the region's soybean farming industry and a site location that can provide the required amount of steam for the grain dryers/solvent extraction process.

Alternative Production Process/Control Technologies

In Perdue's ASA, the facility evaluated alternative soybean oil extraction processes. Those processes/technologies included: 1) Non-Hexane Solvent Extraction, 2) Mechanical Pressing (including Cold Pressing), 3) Supercritical CO_2, 4) Send Vent Gas Streams to LCSWMA, and 5) Capture of Fugitive VOC Emissions from Meal Handling. A description of each alternative process/control technology is described under the "LAER" section above.

Consequently, each alternative process evaluated is not feasible for large capacity, continuous commercial operations.

Benefits

Perdue asserts the project will provide regional soybean farmers with economic benefits. As noted above, with decreased trucking distances, transportation costs decrease, resulting in better soybean prices for regional farmers. The soybean facility will become an anchor for Pennsylvania agriculture, benefiting grain farmers, feed mills, animal producers, biodiesel producers, and truck transporters. It is anticipated that the project will directly affect more than 2,500 Pennsylvania farm families and indirectly affect 5,500 additional farmers. The price to local farmers, for the soybeans they grow, will improve and the cost of soybean meal will decrease.

Perdue estimates the soybean facility will create 35 direct full-time new jobs and will bring economic benefit to the community, both during construction and during operation. Furthermore, Perdue anticipates the facility will create approximately 140 indirect full-time new jobs as a result of support/supplier industries and secondary industries attracted by the project, such as truck drivers, mechanics, and various technicians. The direct financial benefit from new wages is projected to be $1.4 million annually and the indirect benefits from the new transportation services is projected to be $15.2 million annually. In addition, both direct and indirect local and state tax revenues will increase.

Primary (Direct) Environmental Impacts

Perdue states "*The direct environmental impacts of the project are associated with air emissions, truck traffic, noise, and visual impact...The main impact due to the project will be air emissions.... It is estimated that the VOC emission rate would emit less than 1% of the total Lancaster County annual VOC emissions (U.S EPA, 2008 Emissions Inventory).... To address concerns regarding the facility's emission levels, Perdue conducted an Air Dispersion Modeling and Health Risk Assessment as a supplement to the plan approval application. The modeling/risk assessment demonstrate that the potential n-hexane emissions from the proposed facility will yield n-hexane concentrations in ambient air substantially below any documented levels of concern.*" See "Air Toxics/Risk Assessment Modeling" Section below.

Perdue claims that another direct impact to nearby communities and residents will be truck traffic. Perdue conducted a traffic impact assessment that resulted in the following recommendations and conclusions:

1) LCSWMA currently holds a PA Department of Transportation (PennDOT) Highway Occupancy Permit (HOP) for a Medium Volume Driveway. Based on existing and projected traffic volumes, the existing LCSWMA driveway will still be compliant with the current approved PennDOT HOP.
2) Based on the current geometric conditions, the existing LCSWMA driveway meets the required Minimum Safe Stopping Sight Distances (MSSD) as defined in PA Code, Title 67, Transportation, Chapter 441, Access to and Occupancy of Highways by Driveways and Local Roads, Section 441.8.h.
3) The results of the capacity analyses indicates that the LCSWMA driveway intersection currently operates at acceptable levels of service and will continue to operate at acceptable levels of service in the 2018 design year "build" conditions.
4) Analyses of the auxiliary turn lane based on the current PennDOT methodology determined that the existing 265 feet left turn lane into LCSWMA is "more" than adequate and that no right turn lane into the driveway would be warranted.
5) The crash analysis also indicates that there were no reportable crashes for a five (5) year period starting from January 1, 2006 through December 31, 2010 for 500 feet in either direction of the LCSWMA driveway and PA Route 441.

Overall, the results of the analyses indicate that the existing LCSWMA driveway can facilitate the proposed traffic expected to be generated by the proposed soybean facility without the need for any type of geometric improvements or modifications to the existing driveway.

Finally, Perdue expects that the noise from the facility itself will not be a concern, given the nature of the operation and the equipment proposed to be utilized. Perdue asserts that since the facility will be located in the Industrial

Zone of Conoy Township, substantial setbacks are required to protect adjoining residences and minimize noise & visual impacts.

Secondary (Indirect) Environmental Impacts

Perdue asserts "*the project will not necessitate the construction of new community resources or infrastructure, nor will it require improvements to existing community resources or infrastructure such as schools, housing, businesses, and roads.*"

Social Costs

According to Perdue's ASA "*The social costs include the primary (direct) and secondary (indirect) environmental of the facility which are discussed above, and the economic impacts to the Commonwealth and its citizens since Perdue has applied for and was awarded a Pennsylvania Redevelopment Assistance Capital Program (RACP) grant for a portion of the project. The RACP is a Commonwealth grant program administered by the Office of the Budget for the acquisition and construction of regional economic, cultural, civic, and historical improvement projects.*

Given current economic conditions in portions of Pennsylvania, the priority of the program is to focus limited available capital funding on those projects that display significant potential for improving economic growth and the creation of jobs. The Office of the Budget requires information and documentation indicating a project's estimated economic impact and the potential for job creation, and the RACP application must demonstrate the regional and/or multi-jurisdictional positive economic impact of the project. Additionally, all grants awarded through the RACP must be for projects included in one or more of the Capital Budget Project Itemization Acts passed by the General Assembly and signed into law by the Governor. For this project, the RACP grant is providing financial assistance for overall site development work and the construction of the grain elevator portion of the facility, exclusively. With the exception of the RACP grant funds, all of the economic risks of the project will be assumed by Perdue."

ASA Conclusion

The ASA demonstrates that the benefits of the proposed facility significantly outweigh the environmental and social costs imposed as a result of its location and construction. The ASA fulfills the substantive requirements of the PA DEP's Document No. 275-2101-017, "Alternative Analysis Required for Proposed Major New or Modified Facilities (Draft)".

Air Toxics/Risk Assessment Modeling

Although not required for this application, Perdue conducted risk assessment modeling. Consequently, the DEP's Air Quality Modeling Section performed an independent air quality analysis for a risk assessment on the proposed facility. As stated in the February 20, 2015 DEP memorandum regarding *Air Quality Modeling an Hexane Risk Evaluation Perdue Agribusiness, Conoy Township, Lancaster County, Pennsylvania,* "The DEP's Air Toxics and Risk Assessment Section performed an independent risk assessment and found no unacceptable risks from the operations." (Refer to Attachments for DEP Air Quality Modeling and Hexane Risk Evaluation memorandums)

Notifications

The application was deemed "administratively complete" on August 23, 2012. The application's completeness determination was not affected by Perdue's subsequent revisions to the application. Conoy Township & Lancaster County received municipal notification on August 13, 2012. The latest Compliance History Form was received August 13, 2012.

This Plan Approval Application is subject to the DEP's Land Use Policy since the project will occur on an existing non-permitted area. The proposed project is consistent with the county comprehensive plan and the local zoning ordinance. It should be noted that Perdue received a height variance for the facility's extraction building.

A Pennsylvania Natural Diversity Inventory (PNDI) search was conducted on November 29, 2011. Search results indicated potential impacts from the PA Game Commission and the PA Fish and Boat Commission. Both agencies were notified of the impacts via a December 5, 2011 letter. The PA Fish and Boat Commission determined there

were no adverse impacts of the proposed project via a December 27, 2011 letter. The PA Game Commission determined there were no adverse impacts of the proposed project via a February 28, 2012 letter.

A Cultural Resource Notice was received by the PA Historical & Museum Commission on July 2, 2012. The barn and pump house currently located on the property do not pose any concerns. The Bureau for Historic Preservation responded via a July 30, 2012 letter stating "...no historic buildings, structures, districts, or objects will be affected by this project." However, the letter also indicated that site 36LA1484 lies within the project area and a determination of significance (Phase II Archaeological Investigation) must be conducted. A Phase II report was completed and submitted by Perdue. Via an October 31, 2012 letter, the Bureau for Historic Preservation responded concerning site 36LA1484:

> *We do not concur that 36LA1484 is not eligible for the National Register; rather, we find that the eligibility of the site as a whole cannot be determined because the southern part where buried and potentially intact Aeolian deposits were found during the Phase I survey is outside of the APE. Consequently, this area was not tested for the current project*
>
> *The portion of the site that lies within the current APE contains a low density of artifacts in plowed and eroded context and would not contribute to the eligibility of the site, should any future determination of eligibility be conducted. Therefore, the location of the current APE and buffer zone requires no additional testing. If plans should change and the APE is enlarged or relocated, additional testing will be necessary.*

Public Comments:

The following is a chronology of public comment activity regarding this project:

12/13/12: DEP held a public hearing regarding the Perdue project at the Hellam Fire Company Hall in response to written requests from over 35 persons. The hearing covered both the Phase 1 and Phase 2 Perdue air applications, as well as a Tanks application for two hexane storage tanks associated with Phase 2.

The requests for the public hearing were from citizens in Lancaster and York Counties, from State Rep. Keith Gillespie, who represents Hellam Township, from Martin C. Reed, Vice Chairman of the Hellam Township Board of Supervisors, from Corina Mann, Hellam Township Manager, from Douglas Sloat of the Hellam Township Planning Commission, and from August Mack Environmental on behalf of a local business called Nissley Vineyards. Hellam Township is located immediately across the Susquehanna River from the proposed Perdue site.

Prior to the hearing, DEP received a letter from Mr. Matthew J. Creme, Jr., the solicitor for Conoy Township, Lancaster County. In his letter, Mr. Creme objected to the location of the hearing as well as to the date, which conflicted with the Conoy Township's Board of Supervisors meeting.

About 90 people attended the 12/13/12 public hearing. 20 persons presented oral testimony. Of those testifying, seven also submitted written comments at the hearing, and one person who did not testify orally also submitted written comments at the hearing. Also DEP received approximately 50 written public comment documents before or after the public hearing. Some of these documents were signed by more than one person. Some persons submitted more than one written comment document.

Persons with particular known affiliations who testified in opposition to the proposed Perdue projects at the public hearing were: Michael Martin, Chair of the Hellam Township Board of Supervisors; Judy Nissley of Nissley Vineyards; Fred Smeltzer, Hellam Township Fire Chief; Kevin Stewart of the American Lung Association; Dr. Warren Evans, President of the Horn Farm Center for Agriculture Education which is located in Hellam Township, June Evans of the Hellam Township Environmental Advisory Council and the Horn Farm Center Board of Directors; and Stephen Wolf of the Hellam Township Board of Supervisors, the Horn Farm Center Board of Directors, York County Local Government Advisory Committee (chairman) and the York County Association of Second Class Township Supervisors (vice president),

Most of the requests for a public hearing were accompanied by additional comment in opposition to the overall project. Public opposition to the overall project has also been aired in the press. Although the public opposition has been primarily focused on the health effects of hexane and VOC emissions associated with the Phase 2 portion of the project, numerous objections were also raised with regard to Phase 1. These objections generally focused around 1.) alleged miscellaneous errors in the Phase 1 application, and 2.) the impropriety of splitting out Phase 1 into a separate project, as this is alleged to be an impermissible circumvention of certain permitting requirements, and 3.) concerns regarding the emission of particulates from Phase 1, and how such emissions might interact with local thermal inversions or with emissions from other existing nearby significant air pollution sources.

1/25/13: Perdue submitted responses to certain of the public comments related to the Phase 1 portion of the project.

2/26/13: August Mack, on behalf of Nissley Vineyards, submitted responses to Perdue's 1/25/13 response submittal.

3/29/13: DEP issued the Perdue Phase 1 plan approval, after considering the comments raised during the comment period and the public hearing.

4/2/13: August Mack, on behalf of Nissley Vineyards, submitted comments on the grain elevator's siting analysis and requested a new public comment period and public hearing.

4/16/13: Perdue submitted to DEP a request to revoke the Phase 1 plan approval.

4/17/13: DEP, at Perdue's request, revoked the Phase 1 plan approval.

4/22/13: Conoy Township Commissioners sent a letter to DEP expressing support for the Perdue project, and requesting that any future public hearings be held in Conoy Township. (The 12/13/12 public hearing was held in Hellam Township.)

6/4/13: Perdue submitted a significant revision to the Phase 2 plan approval application. The revision incorporated the Phase 1 elements of the project, and also included a revised analysis of Lowest Achievable Emission Rate (LAER). The LAER level proposed for the key performance indicator known as solvent loss ratio (SLR) was 0.140 gallons of solvent lost per ton of soybeans processed (gal/ton). It should be noted that this was a 15% reduction from the SLR originally proposed in the 8/13/12 Phase 2 application. The original proposal was an SLR of 0.165 gallons/ton.

6/10/13: Perdue submitted to DEP an Air Dispersion Modeling and Health Risk Assessment Report, addressing the proposed emissions of hexane from the project. This study was done voluntarily by Perdue in response to public concerns about the project, and was not required by regulation.

6/25/13: The Hellam Township Manager sent DEP a letter requesting that DEP publish in the PA Bulletin a notice of the 6/4/13 revision to the Perdue application.

7/13/13: DEP published in the PA Bulletin a notice of the 6/4/13 revision to the Perdue application.

August 2013: DEP received 19 letters, from residents of Lancaster and York Counties, including from the Hellam Township Board of Supervisors, requesting a public hearing on the 6/4/13 revision to the Perdue application. DEP also received a letter dated 8/7/13 from the Conoy Township solicitor, opposing another public hearing, but nonetheless requesting that if another hearing is held, that it be held in Conoy Township.

8/19/13: LCSWMA submitted a letter to DEP in support of the Perdue project, and urging DEP to promptly approve it, as proposed by Perdue.

11/25/13: August Mack, on behalf of Nissley Vineyards, requested a meeting with PA DEP and submitted comments on Perdue's revisions to PA 36-05158A.

November 2014: Perdue submitted several revisions to the Phase 2 plan approval application. The revisions documented the changes in emissions based on a solvent loss ratio (SLR) of 0.125 gallons of solvent lost per ton of soybeans processed (gal/ton) and increased production throughputs to the grain elevator and extraction operations.

12/15/14: Rep. Ravid Hickernell (98th District) submitted a letter to DEP requesting that the reportedly upcoming public hearing be held within Conoy Township, since the Perdue facility is proposed to be built in Conoy Township.

The various comment documents described above are included as attachments to this memo. DEP has prepared a spreadsheet with an evaluation of the comments received which is found as an attachment to this memo. Having reviewed the application and the public comments on it, I recommend that the draft Plan Approval No. 36-05158A be released for public comment.

Also, DEP has determined that it is appropriate to hold another public hearing on this project, as the proposal has materially changed since the last public hearing was held.

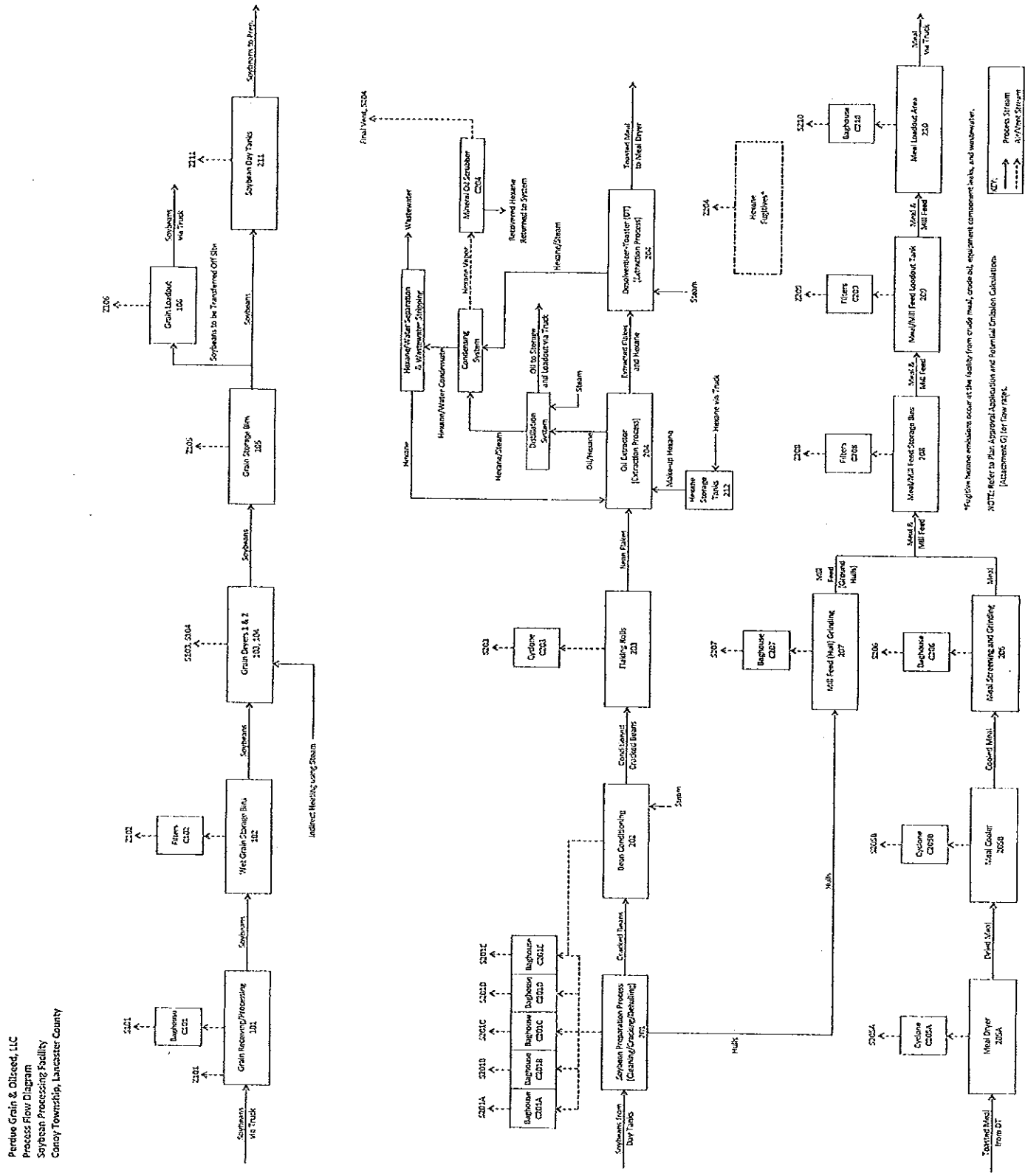
Cc: SCRO, 36-05158A
Lancaster District
Permits
EPA

Table of Contents for Attachments to DEP's Perdue Review Memo Dated 2/24/15

Item	Description	Page # (top right)
A	Process Flow Diagrams	1
B	Potential to Emit (PTE) from Individual Sources	2
C	U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) Results/Permitted SLR Limit Summary	3
D	List of Oilseed Extraction Facilities per National Oilseed Processors Association, Oilseed Processing Plants Document Dated 6/3/13	4
E	Throughput Capacities/Limits for List of Oilseed Extraction Facilities	5
F	Solvent Loss Ratio (SLR) Values for the Three (3) Select Facilities	8
G	List of Public Commenters	9
H	DEP Evaluation of Public Comments on the Application	12
I	DEP Modeling Memo and Modeling Comment Memo	67
J	DEP Risk Assessment Memo	98
K	Written comments received by DEP's Air Program prior to the 12/13/12 public hearing	113
L	Public hearing sign-in sheet	195
M	Transcript of 12/13/12 public hearing	201
N	Written comments received by DEP's Air Program during the 12/13/12 public hearing	308
O	Written comments received by DEP's Air Program in 2012 after the 12/13/12 public hearing	338
P	Air-related written comments received by DEP's Tanks Program	351
Q	Written comments received in 2012 by DEP's Air Program specifically referencing Perdue's Phase 2 application	360
R	Written comments received in early 2013 by DEP's Air Program regarding the Perdue applications	429
S	Written comments received regarding the revised, combined Phase 1/Phase 2 Perdue application submitted 6/4/13	445
T	Miscellaneous updates/additional information provided by Perdue with regard to the current plan approval application	516

Perdue Grain Oil Seed, LLC - PA 36-05158A
Process Flow Diagrams

[1]



Perdue Grain Oil Seed, LLC - PA 36-05158A
Individual Source's Potential to Emit (PTE)

GRAIN ELEVATOR OPERATIONS

Source ID	Unit Description	PM	PM_{10}	$PM_{2.5}$	SOx	CO	NOx	VOC	Hexane	Formaldehyde	Total HAPs	CO_2	N_2O	CH_4	CO_2e
101	Grain Receiving & Grain Processing (stk)														
	- Stack Emissions	0.0355	0.0157	0.0027											
	- Fugitive Emissions	1.3414	0.2989	0.0498											
102	Wet Grain Storage Bins (4 bin tanks)	0.0958	0.0241	0.0042											
103	Grain Dryer No.1	23.1866	5.7967	0.9907											
104	Grain Dryer No.2	23.1866	5.7967	0.9907											
105	Grain Storage Bins (4 bin tanks)	9.5813	2.4145	0.4216											
106	Grain Loadout	5.4933	1.3524	0.3130											
	GRAIN ELEVATOR TOTALS	**62.92**	**16.20**	**2.77**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

SOYBEAN OIL EXTRACTION OPERATIONS

Source ID	Unit Description	PM	PM_{10}	$PM_{2.5}$	SOx	CO	NOx	VOC	Hexane	Formaldehyde	Total HAPs	CO_2	N_2O	CH_4	CO_2e
031	Temporary Prtable Emergency Boiler(s)	0.6732	0.4692	0.3162	0.0441	1.0200	4.0800	0.0408		0.0124	0.0155	4,549.20	0.0530	0.0106	4,565.87
201	Soybean Preparation Process	1.3893	0.3473	0.0590											
202	Bean Conditioning	0.0300	0.0075	0.0013											
203	Flaking Rolls	11.1079	2.7770	0.4721											
204	Extraction Process (Final Vent Emissions)														
	- Final Vent Emissions							7.2370	3.6185		3.6185				
	- Fugitive Emissions - Crude Meal							81.6334	40.8167		40.8167				
	- Fugitive Emissions - Crude Oil							26.8667	13.4333		13.4333				
	- Fugitive Emissions - Equipment Leaks							16.5333	8.2667		8.2667				
	- Fugitive Emissions - Wastewater							0.1033	0.0517		0.0517				
205A	Meal Dryer	43.1156	10.7789	1.8324				50.4208	25.2104		25.2104				
205B	Meal Cooler	45.5109	11.3777	1.9342				25.2104	12.6052		12.6052				
206	Meal Grinding and Screening	0.8144	0.2036	0.0346											
207	Mill Feed (Hull) Grinding	0.0415	0.0104	0.0018											
208	Meal/Mill Feed Storage Bins (3 bin tanks)	0.0651	0.0164	0.0029											
209	Meal/Mill Feed Loadout Tank	0.0651	0.0164	0.0029											
210	Meal Loadout Area	0.0703	0.0176	0.0030											
211	Soybean Day Tanks (3 tanks)	0.0798	0.0201	0.0035											
212	Hexane Storage Tanks (2 tanks)							0.0091	0.0045		0.0045				
301	Soybean Processing Facility Roadways	12.4553	2.4911	0.6114											
	EXTRACTION TOTALS	**115.42**	**28.53**	**5.28**	**0.04**	**1.02**	**4.08**	**208.05**	**104.01**	**0.01**	**104.02**	**4,549.20**	**0.05**	**0.01**	**4,565.87**
	PROJECT TOTALS	***178.34***	***44.73***	***8.05***	***0.04***	***1.02***	***4.08***	***208.05***	***104.01***	***0.01***	***104.02***	***4,549.20***	***0.05***	***0.01***	***4,565.87***

[2]

Perdue Grain Oil Seed, LLC - PA 36-05158A
RBLC Search/Permitted SLR Limits Summary

Facility Name	Location	RBLC ID	Permit Date	Control Method	Solvent Loss Ratio (SLR) (gal/ton soybeans)	Source Of Information
CONAGRA	Morristown, IN		8/14/1998	-	0.16	-
CENTRAL SOYA COMPANY INC	Huron, OH	OH-0251 (final)	11/29/2001	condenser/absorber	0.2	RACT/BACT/LAER Clearinghouse
CENEX HARVEST STATES COOP	Fairmont, MN	-	11/30/2001	mineral oil system	0.2	TV OP: 09100059-007
CARGILL	Tippencanoe, IN	IN-0097	12/3/2001	mineral oil scrubber	0.145	RACT/BACT/LAER Clearinghouse
MINNESOTA SOYBEAN PROCESSORS	Brewster, MN	-	12/19/2002	-	0.2	-
ARCHER DANIELS MIDLAND	Lancaster, SC	SC-0118	11/14/2003	-	Soybean Extractor - 108.64 lb hexane/hr	RACT/BACT/LAER Clearinghouse
CENTRAL SOYA CO	Bellevue, OH	-	11/28/2003	condenser/absorber	0.2	TV OP: P0087229
CARGILL OIL SEEDS	Sidney, OH	OH-0282	11/28/2003	mineral oil system	0.146	RACT/BACT/LAER Clearinghouse
BUNGE NORTH AMERICA	Morristown, IN	-	5/14/2004	condenser/absorber	0.2; reduced to 0.16 per Consent Decree	TV OP: T001-31996-00005
ARCHER DANIELS MIDLAND	Mankato, MN	MN-0065 (final)	6/28/2005	mineral oil scrubber	0.15	RACT/BACT/LAER Clearinghouse
LOUSI DREYFUS AG IND	Claypool, IN	-	1/24/2006	condenser/absorber	0.134	TV OP: T085-29197-00102
CARGILL	Lafayette, IN	-	8/28/2006	condenser/absorber	0.2	TV OP: T157-25200-00038
CARGILL	Kansas City, MO	-	8/28/2006	condenser/absorber	0.165, 0.140 when operating < 90% capacity	Construction Permit 1140
BUNGE NORTH AMERICA	Council Bluffs, IA	-	1/29/2007	mineral oil scrubber	0.178; 0.16 per Consent Decree	TV OP: 02-TV-017R1-M001
BUNGE NORTH AMERICA	Pottawattamie, IA	IA-0085	1/29/2007	condenser/absorber	0.178	RACT/BACT/LAER Clearinghouse
PRAIRIE PRIDE	Eve, MO	-	2/6/2007	condenser/absorber	0.125 (w/out RTO); 0.115 (w/RTO)	Permit to Construct: 02 2007-004
AG PROCESSING	St. Joseph, MO	MO-0073	5/16/2007	condenser/absorber	0.145	RACT/BACT/LAER Clearinghouse
ARCHER DANIELS MIDLAND	Polk, IA	IA-0094	4/7/2008	mineral oil scrubber	0.1712	RACT/BACT/LAER Clearinghouse
PRAIRIE PRIDE	Eve, MO	-	6/12/2008	condenser/absorber	0.125	Permit to Construct: 06 2008-006
ARCHER DANIELS MIDLAND FREMONT	Dodge, NE	NE-0048	10/29/2008	-	0.165	RACT/BACT/LAER Clearinghouse
ARCHER DANIELS MIDLAND	Mexico, MO	MO-0082	10/5/2010	evaporators, condesers, mineral oil absorbtion system, LDAR	0.15; 0.171 during SSM periods	RACT/BACT/LAER Clearinghouse
AG PROCESSING SERGEANT BLUFF	Sergeant Bluff, IA	IA-0103	7/24/2012	mineral oil scrubber	0.145	RACT/BACT/LAER Clearinghouse

[3]

NATIONAL OILSEED PROCESSORS ASSOCIATION
OILSEED PROCESSING PLANTS

ALABAMA
Bunge North America, Inc. – Decatur
Cargill, Inc. – Guntersville

ARKANSAS
Riceland – Stuttgart

GEORGIA
Archer Daniels Midland Co. – Valdosta
Cargill, Inc. – Gainesville

ILLINOIS
Archer Daniels Midland Co.
– Decatur East, Decatur West,
Quincy East, Quincy West
Bunge North America, Inc. – Cairo
Cargill, Inc. – Bloomington
Incobrasa Industries, Ltd. – Gilman

INDIANA
Archer Daniels Midland Co. – Frankfort
Bunge North America, Inc. – Decatur, Morristown
Cargill, Inc. – Lafayette
Consolidated Grain & Barge – Mt. Vernon
Louis Dreyfus Commodities – Claypool

IOWA
Ag Processing, Inc. a cooperative
- Eagle Grove, Emmetsburg, Manning, Mason
City, Sergeant Bluff, Sheldon
Archer Daniels Midland Co. – Des Moines
Bunge North America, Inc. – Council Bluffs
Cargill, Inc.
– Cedar Rapids (2 plants), Iowa Falls, Sioux City
CHS – Creston

KANSAS
Archer Daniels Midland Co. – Goodland
Bunge North America, Inc. – Emporia
Cargill, Inc. – Wichita

KENTUCKY
Owensboro Grain Company, LLC – Owensboro

LOUISIANA
Bunge North America, Inc. – Destrehan

MARYLAND
Perdue Grain & Oilseed, LLC – Salisbury

MICHIGAN
Zeeland Farm Soya – Zeeland

MINNESOTA
Ag Processing Inc. – Dawson
Archer Daniels Midland Co. – Mankato, Red Wing
CHS – Fairmont, Mankato
Northstar Agri Industries – Kennedy

MISSOURI
Ag Processing, Inc. a cooperative – St. Joseph
Archer Daniels Midland Co. – Deerfield, Mexico
Cargill, Inc. – Kansas City

NEBRASKA
Ag Processing Inc. a cooperative – Hastings
Archer Daniels Midland Co. – Fremont, Lincoln

NORTH CAROLINA
Cargill, Inc. – Fayetteville, Raleigh
Perdue Grain & Oilseed, LLC – Cofield

NORTH DAKOTA
Archer Daniels Midland Co. – Enderlin, Velva
Cargill, Inc. – West Fargo

OHIO
Archer Daniels Midland Co. – Fostoria
Bunge North America, Inc. – Delphos, Bellevue
Cargill, Inc. – Sidney

SOUTH CAROLINA
Archer Daniels Midland Co. – Kershaw

VIRGINIA
Perdue Grain & Oilseed, LLC - Chesapeake

6/3/2013

Perdue Grain Oil Seed, LLC - PA 36-05158A
Oilseed Extraction Facilites in USA

State	Facility	Location	THROUGHPUTS						Limits					NOTES	INSTALLATION INFO
			(tph)	(tpd)	(tpy)	(bu/hr)	(bu/day)	(bu/yr)	VOC Loss (gal/ton)	Solvent (gal/yr)	Soybean Thruput (tpy)	Soybean Thruput (bu/y)	VOC Limit (tpy)		
PENNSYLVANIA	Perdue Grain & Oilseed, LLC	Coney Twp	63	1,500	525,000	2,083	50,000	17,500,000	0.14	73,500	525,000	17,500,000	208.0	5.66 lb/gal density	
100%	larger facility than Perdue's		125	3,000	1,050,000	4,167	100,000	35,000,000							
ALABAMA	Bunge North America, Inc.	Decatur							0.19 per consent decree						
	Cargill, Inc.	Guntersville			1,042,440									thru per design cap cited in COA	Per 4/24/59 article in he Gadsen Times - Allied Mills was to be expanding operations in Guntersville - 1960 startup; Cargill purchased Allied Mills in 2002, however, don't know if this facility was included
ARKANSAS	Riceland	Stuttgart	114	2,740	1,000,000				0.2		1,000,000		593.3		began operating 1962*
GEORGIA	Archer Daniels Midland Co.	Valdosta	125	3,000	1,095,000				0.2		1,095,000				
	Cargill, Inc.	Gainesville			990,000				0.175 per consent decree				518.1	thru per design cap cited in COA	per 324, Soybean Digest.1968 - Cargill also recently constructed a plant in Georgia, at Gainesville.*
ILLINOIS	Archer Daniels Midland Co.	Decatur East					100,000	25,550,000	0.2			25,550,000	3,992.0	East/West sites combined into (1) TV	built in 1969*
		Decatur West							0.2						
		Quincy East						28,500,000	0.2			28,500,000	724.2	East/West sites combined into (1) TV	Was Quincy Soy Products - facility layoffs in 1988; ADM purchased in 1998; went through modernization per 6/1999 article - http://www.grainnet.com/articles/ADM_Announces_Upgrade_at_Quincy_Soybean_Plant-4009.html#article
		Quincy West							0.2				1354 both		
	Bunge North America, Inc.	Cairo							0.2				1,871.6		
	Cargill, Inc.	Bloomington					60,600	20,200,000	0.2			20,200,000	855.0		unloading pre-1973; extractor modified 1995; flake stripper replaced 2003; purchsed facility 1/1985 from Ralston Purina*
	Incobrasa Industries, Ltd.	Gilman	92					27,000,000	0.2			27,000,000	350.3		
INDIANA	Archer Daniels Midland Co.	Frankfort	150	3,600	1,314,000	5,000	120,000	43,800,000	0.179		1,314,000				
	Bunge North America, Inc.	Decatur	110						0.15						was Central Soya, founded in 1934 per http://www.answers.com/topic/central-soya-company-inc; sold to Bunge ~1/2003
		Morristown			1,902,996				0.16 per consent decree		1,902,996			thru limit is combined for A & B plants	
	Cargill, Inc.	Lafayette	101	2,412	821,250	3,350			0.175		821,250				fuel storage tanks constructed 1960; PSD permit rec 2001; purchsed facility 1/1985 from Ralston Purina*
	Consolidated Grain & Barge	Mt. Vernon	105		940,240				0.2		940,240				Per Co. website "The CGB Soybean Plant was built in 1997 in Mt. Vernon, Indiana, as an expansion through vertical integration"
	Louis Dreyfus Commodities	Claypool	197	4,716	1,686,300	6,550	157,200		0.134		1,686,300			SLR revised to 0.141; RBLC has thru limit of 2,251,836 tpy from 9/2012 decision	
IOWA	Ag Processing, Inc.	Eagle Grove	154	3,690	1,346,850				0.2						
		Emmetsburg	88	2,100	766,500				0.2				246.0	246 tpy limit is also for hexane loss; thru is for flaking	began operating 10/1997*
		Manning	75		657,000				0.2		657,000				purchased plant 12/1985 from Agri Ind*
		Mason City	63		547,500				0.2		547,500		290.8		purchased plant 12/1985 from Agri Ind*
		Sergeant Bluff	167	4,000	1,095,000		133,333	36,500,000	0.145	158,775	1,095,000		448.5		
		Sheldon	77						0.2		788,400	26,280,000		limits are for bean cleaning	purchased plant 9/1983, previously Land O Lakes*
	Archer Daniels Midland Co.	Des Moines	144		1,259,980			41,999,333	0.1712		1,259,980		709.0	TV has 0.175, RBLC has 0.1712; dryer/conditioner limited to 143 tph	
	Bunge North America, Inc.	Council Bluffs	281	6,750	2,460,000	9,375	225,000	82,000,000	0.178; 0.16 per COA		2,460,000				
	Cargill, Inc.	Cedar Rapids East		2,760	1,007,400		92,000	33,580,000	0.168 per consent decree	169,460	1,007,400		474.5	bu/day thru is for crush rate	In May 1945, Cargill purchased the Honeymead Products Co. in Cedar Rapids, Iowa.*; per http://www.cargill.com/news/releases/2012/NA3053815.jsp "CEDAR RAPIDS, Iowa – 5 January 2012 – Cargill will invest approximately $20 million this summer to modernize its soybean crushing plant on the east side of Cedar Rapids"
		Cedar Rapids SW	50						0.2	92,107	438,000		257.9	soybean limit is for crush rate	purchased in 1945 from Honeymead*
		Iowa Falls	119	2,850	1,040,250		95,000		0.17	160,354			453.0		previously Ralston Purina; Cargill purchased in 1985*
		Sioux City			1,642,500				0.175				887.0		
	CHS	Creston		600					0.2	87,788			248.0	Hexane usage may be credited at the rate of 0.41 lbs hexane per ton seed processed	per http://www.ucda.us/business/majorEmployers.asp - Creston Bean Processing LLC constructed in 1998, CHS, Inc. purchased Creston Bean Processing in 2012. The plant can produce up to 600 tons of meal or white flakes daily
KANSAS	Archer Daniels Midland Co.	Goodland							0.34 per consent decree					processes sunflower/canola seeds per website	
	Bunge North America, Inc.	Emporia							0.16 per consent decree					plant temp closed per 5/2013 article, will reopen for full harvest; NO FURTHER INFO CAN BE OBTAINED	
	Cargill, Inc.	Wichita			770,000				0.175 per consent decree						purchased in 1960 from Soy Rich Co*
KENTUCKY	Owensboro Grain Company, LLC	Owensboro					100,000							"company crushes over 100,000 bushels of soybeans daily" per company website	per Co website "Then, in 1940, the company expanded to include soybean processing".

State	Facility	Location	THROUGHPUTS						Limits					NOTES	INSTALLATION INFO
			(tph)	(tpd)	(tpy)	(bu/hr)	(bu/day)	(bu/yr)	VOC Loss (gal/ton)	Solvent (gal/yr)	Soybean Thruput (tpy)	Soybean Thruput (bu/y)	VOC Limit (tpy)		
LOUISIANA	Bunge North America, Inc.	Destrehan							0.19 per consent decree					per 3/2004 article - Bunge will temporarily idle production at its soybean processing facility in Destrehan, La., in early March. The export elevator at Destrehan will continue to operate. NO FURTHER INFO CAN BE OBTAINED	
MARYLAND	Perdue Grain & Oilseed, LLC	Salisbury		100			3,300							Partnered with East Carolina Oilseed Processors, LLC - expanded operations at the facility from the current 100 tons (3,300 bushels) of crushing capacity per day to 250 tons (8,300 bushels) per day; expansion added expeller presses; crushing capacity 600 tpd.	Perdue's two crushing plants has capacity of 700 tpd*; 569, J. of the American Oil Chemists' Soc.1985 - "building oil refineries next to their soybean crushing plants are Perdue Inc. of Salisbury, Maryland,"*
MICHIGAN	Zeeland Farm Soya	Zeeland		1,050	383,250		28,000		0.15		383,250			Processes over 28,000 bushels of soybeans a day per website	opened soybean processing plant next to elevators in 1996 per http://www.gvsu.edu/cms3/assets/BCCBDF7C-D330-90F6-E6E276B6DF2BA28A/GRBJ%20-%20Creating%20a%20market%20for%20soybean%20in%20West%20MI.pdf
MINNESOTA	Ag Processing Inc.	Dawson			854,100				0.2	149,470	854,100			limit is based on "as received"	previously Land O Lakes, began operating 3/1980*
	Archer Daniels Midland Co.	Mankato			245,375			8,179,167	0.15		245,375				built in 1930s, 1960 GTA purchases plant from Honeymead*
		Red Wing							0.35/0.30 per consent decree					processes canola/flax/sunflower seed;	
	CHS	Fairmont			825,000			27,500,000	0.2		825,000	27,500,000	1,361.0	limit is based on "as received"	2002 April--Harvest States division of CHS Cooperatives breaks ground at the construction site of its second soybean crushing facility just outside Fairmont, Minnesota. Note: Production start-up is scheduled for early Oct. 2003 and a community open-house is planned for early September. This plant will be able to crush more than 220,000 bushels/day of soybeans. Situated on 26 acres of a larger 200-acre site, the plant will start with 40 new employees*
		Mankato			1,533,000				0.2		1,533,000				
	Northstar Agri Industries	Kennedy		2,000					0.25					FACILITY ONLY PROCESSES CANOLA	
MISSOURI	Ag Processing, Inc.	St. Joseph	83	2,000		2,778	120,000		0.145						began operating 9/1983*
	Archer Daniels Midland Co.	Decatur (was Prairie Pride)	83	2,000		2,778	66,667		0.125						PP began producing biodiesel in late 2007 and processing soybeans in August 2008 per news article
		Mexico	88	2,100		2,917	70,000		0.15; 0.171 during SSM periods						began operating 1/1985*
	Cargill, Inc.	Kansas City		6,063	2,212,995		202,100	73,766,500	0.165, 0.140 when operating < 90% capacity		2,212,995		1,006.0	2011 actual VOC emissions - 177 tpy; permit has tiered SLR limits - one op < 90% and another op > 90% capacity; PSD for expansion in 2006	
NEBRASKA	Ag Processing Inc.	Hastings	106	2,550	930,750				0.2				492.0	PA issued 9/27/04 (have 4/17/06 permit) for expansion (went from 246 tpy VOC limit); tph thru is from annual report for cracking/flaking	began operating 6/1999*
	Archer Daniels Midland Co.	Fremont	150		713,700				0.165	117,761	713,700			limit stated is for amt processed; also limited to 729,300 as received	The facility was originally constructed in 1956 per TV
		Lincoln	92	2,200	803,000				0.185					PA #078C issued 6/23/01 for replacing flakers. Etc.; flaking capacity went from 1,530 tpd to 2,200 tpd; 6/2008 permit limits crush capacity to 4,670 tpd & total crushed shall no exceed 1,705,000 tpy	PSD rec 8/1995 for increasing thru capacity
NORTH CAROLINA	Cargill, Inc.	Fayetteville			1,095,372				0.19				622.0	n-hexane limits = vapor recov system - 188.7 lb/day; cooler - 107.8 lb/day; dryer - 1509 lb/day; thru per design cap cited in COA	
		Raleigh			930,750				0.19				656.0	n-hexane limits = vapor recov system - 74.6 lb/day; dryer - 298.4 lb/day; extraction fugitives - 159.9 lb/day; thru per design cap cited in COA	previously Ralston Purina; Cargill purchased in 1985*; built in the 1960s per http://www.soyinfocenter.com/HSS/ralston_purina.php
	Perdue Grain & Oilseed, LLC	Cofield			324,000				0.2				250.0	thru # is max from reported actual values; n-hexane limits = vapor recov system - 302.4 lb/day; cooler - 100.8 lb/day; dryer - 489.6 lb/day; extraction fugitives - 547.2 lb/day	Perdue's crushing plant has capacity of 600 tpd*
NORTH DAKOTA	Archer Daniels Midland Co.	Enderlin		3,000					0.2					3,000 is thruput limit; also limited to < 0.9 SLR	
		Velva			1,000,000				0.33 per consent decree		1,000,000			processes canola seed	
	Cargill, Inc.	West Fargo	56	1,500					0.25				475.0	PA has facility limit of 394.2 tpy & 0.23 gal/ton process; process canola/sunflower/flax seeds	

[9]

State	Facility	Location	THROUGHPUTS						Limits					NOTES	INSTALLATION INFO
			(tph)	(tpd)	(tpy)	(bu/hr)	(bu/day)	(bu/yr)	VOC Loss (gal/ton)	Solvent (gal/yr)	Soybean Thruput (tpy)	Soybean Thruput (bu/y)	VOC Limit (tpy)		
OHIO	Archer Daniels Midland Co.	Fostoria			2,502,857				0.175 per consent decree					thru is for meal loadout	
	Bunge North America, Inc.	Bellevue			785,045				0.2	285,400	785,045		811.0	limit is for meal thru	built by Central Soya 1961 per http://www.manta.com/c/mm2bk3t/adm
		Dolphos		2,160					0.2		647,875		365.0	thruput is for amt crushed; limit is for soybean received; also has 531,258 tpy meal thru limit	acquired by Central Soya 1966, formerly Soya Products Co. per http://www.manta.com/c/mm2bk3t/adm
	Cargill, Inc.	Sidney		4,500			150,000		0.146				340.0	TV has SLR 0.143	
SOUTH CAROLINA	Archer Daniels Midland Co.	Kershaw	54	1,290		1,792	43,000						475.8	thrus from RBLC info	assuming this is as old as other ADM facilities
VIRGINIA	Perdue Grain & Oilseed, LLC	Chesapeake	125	3,000					0.2		574,218				purchased from Cargill in 1/2000 per http://www.grainnet.com/articles/cargill_to_sell_grain_elevators_soybean_plant_to_perdue_farms-5901.html; "The Norfolk facility was opened in 1959 by Cargill"

facilities 2x greater than Perdue

facilities 2x greater than Perdue & newer than 1990

* RED indicates values stated in RBLC determinations or throughputs/limits in various permits/Black values are calculated from this value.

*History of Cooperative Soybean Processing in the United States (google ebook)

[7]

	Year	VOC Emissions (tpy)	Solvent Loss (gal/yr)	Soybean Received (tpy)	SLR (gal/ton)
Ag Processing (AGP) - Emmetsburg, Iowa	2000	146.48	51,852	587,845	0.088
	2001	194.07	68,697	687,089	0.100
	2002	188.56	66,746	685,637	0.097
	2003	146.65	51,910	651,188	0.080
	2004	139.88	49,514	595,274	0.083
	2005	126.04	44,616	667,625	0.067
	2006	110.70	39,186	669,232	0.059
	2007	161.33	57,107	689,441	0.083
	2008	127.86	45,260	624,378	0.072
	2009	101.22	35,830	588,250	0.061
	2010	103.63	36,683	532,273	0.069
	2011	121.55	43,027	563,606	0.076
	2012	135.91	48,110	618,117	0.078
	2013	143.39	50,758	656,399	0.077
Ag Processing (AGP) - Hastings, Nebraska	2000	142.14	50,315	606,121	0.083
	2001	164.39	58,191	695,964	0.084
	2002	190.31	67,367	673,170	0.100
	2003	205.53	72,755	705,670	0.103
	2004	194.54	68,862	721,440	0.095
	2005	189.07	66,928	710,984	0.094
	2007	244.45	86,532	799,124	0.108
	2008	216.35	76,583	795,440	0.096
	2009	254.75	90,176	796,559	0.113
	2010	239.40	84,742	817,396	0.104
	2011	202.30	71,612	788,572	0.091
	2012	256.91	90,940	866,740	0.105
	2013	234.80	83,116	879,496	0.095
Archer Daniels Midland (ADM) - Deerfield, Missouri	2012	157.53	55,961	550,479	0.102
	2013	101.40	36,021	595,559	0.060

[6]

List of Commenters on
Plan Approval Application No. 36-05158A for Perdue Grain Oil Seed, LLC

Commenter #	Last Name	First Name(s)	Middle Initial	Honorific	Title	Position	Organization	Address 1	Address 2	e-mail (if no mailing address)	written or oral?	Date on Letter	Date Received by DEP
Written comments received by DEP's Air Program prior to the public hearing													
1	Read	Martin	C.	Mr.		Vice Chair	Hellam Township Board of Supervisors	624 Woodsview Lane	Hellam, PA 17406-9342		written	10/23/2012	10/24/2012
2	Mann	Corina		Ms.		Manager	Hellam Township	44 Walnut Springs Road	York, PA 17406		written	10/22/2012	10/31/2012
3	Gillespie	Keith	J.	The Hon.		Representative 47th D	PA House of Representatives	PO Box 202047	Harrisburg, PA 17120-2047		written	10/31/2012	11/1/2012
4	Snyder	Katinn		Ms.				5335 Lincoln Highway	Hellam, PA 17406		written	10/31/2012	11/5/2012
5	Sifford	Verna	E.	Ms.				4543 Cherry Lane	Hellam, PA 17406		written	11/1/2012	11/5/2012
6	Koster	Phyllis		Ms.				183 Accomac Road	York, PA 17406		written		
7	Oughton	Robert		Mr.				183 Accomac Road	York, PA 17406		written		11/5/2012
8	Snyder	Nellie		Ms.				101 Fryaville Road	Hellam, PA 17406		written	10/29/2012	11/6/2012
9	King	Richard	L.	Mr.				5860 N. River Drive	York, PA 17406		written	11/4/2012	11/6/2012
10	Wolf	Elizabeth		Ms.				585 Kreutz Creek Road	York, PA 17406		written		
11	Wolf	Stephen	D.	Mr.				585 Kreutz Creek Road	York, PA 17406		written	11/4/2012	11/6/2012
12	Peters	Kristie		Ms.				6165 Nora Lane	York, PA 17406		written	11/5/2012	11/6/2012
13	Holland	Ealora		Ms.				4185 Druck Valley Road	Hellam, PA 17406		written	11/1/2012	11/7/2012
14	Evans	Robert	W.	Mr.				7152 Roundtop Lane	Wrightsville, PA 17368		written	11/3/2012	11/7/2012
15	Evans	Warren	H.	Mr.				7160 Roundtop Lane	Wrightsville, PA 17368		written	11/3/2012	11/7/2012
16	Patton	Renee		Ms.				7152 Roundtop Lane	Wrightsville, PA 17368		written	11/3/2012	11/7/2012
17	Evans	June		Ms.		Chair	Hellam Township Environmental Advisory C	7160 Roundtop Lane	Wrightsville, PA 17368		written	11/4/2012	11/7/2012
18	Peters	Wesley		Mr.				6165 Nora Lane	York, PA 17406		written	11/5/2012	11/7/2012
19	Winand	Elizabeth	G.	Ms.		Co-Owner	Shanks Mare Outfitters	2092 Long Level Road	Wrightsville, PA 17368		written	11/5/2012	11/7/2012
20	Sloat	Douglas	E.	Mr.			Hellam Township Planning Commission	487 Kreutz Creek Road	York, PA 17406		written	11/5/2012	11/8/2012
21	Sloat	Mary Beth		Ms.				487 Kreutz Creek Road	York, PA 17406		written	11/5/2012	11/8/2012
22	Nissley	John	R.	Mr.				160 Wickersham Road	Bainbridge, PA 17502		written	11/7/2012	11/8/2012
23	Lehman	Garry		Mr.				4923 Pleasant Valley Road	Hellam, PA 17406		written	11/2/2012	11/9/2012
24	Trimmer	Melinda		Ms.				471 Fryaville Road	York, PA 17406		written	11/8/2012	11/9/2012
25	Trimmer	Todd		Mr.				471 Fryaville Road	York, PA 17406		written	11/8/2012	11/9/2012
26	Ziegler	William		Mr.				1030 East River Drive	Wrightsville, PA 17368		written	11/7/2012	11/9/2012
27	Bromer	Carol		Ms.				402 Stackstown Road	Marietta, PA 17547		written	11/8/2012	11/9/2012
28	Bromer	Nick		Mr.				402 Stackstown Road	Marietta, PA 17547		written	11/8/2012	11/9/2012
29	Kauffman	Catherine	F.	Ms.				165 Wickersham Road	Bainbridge, PA 17502		written	11/8/2012	11/9/2012
30	Mann	Corina		Ms.		Manager	Hellam Township	44 Walnut Springs Road	York, PA 17406		written	11/9/2012	11/9/2012
31	Miranda	Karen		Ms.				645 West Main Street	Mount Joy, PA 17552		written	10/8/2012	11/13/2012
32	Eisener	Patricia		Ms.				78 Sun Lane	Millersville, PA 17551		written	11/8/2012	11/13/2012
33	Livingston	Jeff		Mr.				6104 Lincoln Highway	Wrightsville, PA 17368		written	11/8/2012	11/13/2012
34	Richman	Irwin		Mr.	Ph.D.			866 Stackstown Road	Bainbridge, PA 17502		written		
35	Richman	M.	Susan	Ms.	Ph.D.			866 Stackstown Road	Bainbridge, PA 17502		written	11/9/2012	11/13/2012
36	May	Barbara		Ms.				100 Red Fox Road	Millersville, PA 17551		written	11/11/2012	11/13/2012
37	May	John	S.	Mr.				100 Red Fox Road	Millersville, PA 17551		written	11/11/2012	11/13/2012
38	Burcat	Joel	R.	Mr.	Esq.		Saul Ewing LLP	Two North Second Street	Harrisburg, PA 17101		written		
39	Burkett	Susan	M.	Ms.	ASP	Principal Engineer	August Mack Environmental	941 Wheatland Avenue, Suite 202	Lancaster, PA 17603		written		
40	Clark	Richard	D	Mr.	Ph.D.	Chair, Department of	Millersville University	PO Box 1002	Millersville, PA 17551-0302		written		
41	Nissley	Judy					Nissley Vineyards	140 Vintage Drive	Bainbridge, PA 17502		written	11/12/2012	11/13/2012
42	Mann	Corina		Ms.		Manager	Hellam Township	44 Walnut Springs Road	York, PA 17406		written	11/12/2012	11/14/2012
43	Crème	Matthew	J.	Mr.	Jr. Esq.		Nikolaus & Hohenadel, LLP	212 North Queen Street	Lancaster, PA 17603		written	11/21/2012	11/26/2012
Written comments received by DEP's Air Program in 2012 after the public hearing													
44	Lemay	Pat		Ms.				78 Sun Lane	Millersville, PA 17551		written	12/13/2012	12/17/2012

[10]

List of Commentors on
Plan Approval Application No. 36-05158A for Perdue Grain Oil Seed, LLC

Commentor #	Last Name	First Name(s)	Middle Initial	Honorific	Title	Position	Organization	Address 1	Address 2	e-mail (if no mailing address)	written or oral?	Date on Letter	Date Received by DEP
45	Reed	Martin	C.	Mr.		Vice Chair	Hellam Township Board of Supervisors	624 Woodview Lane	Hellam, PA 17406-9342		written	12/14/2012	12/17/2012
46	The Bleecker Family							29 Froelich Avenue	Mountville, PA 17554		written	12/14/2012	12/17/2012
47	Malinak	Lynn		Ms.				241 Marietta Avenue, Apt. D	Mt. Joy, PA 17552		written	12/15/2012	12/17/2012
48	Williams	Holly		Ms.				159 E. King St., Apt 311	Lancaster, PA 17602		written	12/15/2012	12/17/2012
49	Crème	Matthew	J.	Mr.	Jr., Esq.		Nikolaus & Hohenadel, LLP	212 North Queen Street	Lancaster, PA 17603		written	12/17/2012	12/18/2012
50	Kushner	Rich		Mr.				573 Essex St.	Marietta, PA 17547		written	12/19/2012	12/18/2012
51	Kontor	Phyllis		Ms.				183 Accomac Road	York, PA 17406		written		
52	Oughton	Robert		Mr.				183 Accomac Road	York, PA 17406		written		12/18/2012
Air-related written comments received by DEP's Tanks Program													
53	Petrask	Kevin		Mr.				185 Covered Bridge Road	Elizabethtown, PA 17022		written	12/13/2012	12/13/2012
54	Smith	Daron		Mr.						daronjsmith@gmail.com	written	12/14/2012	12/14/2012
55	Hale	Robert		Mr.				737 Sunset Road	Wrightsville, PA 17368		written	12/16/2012	12/16/2012
56	Shultz	William		Mr.						bubbashultz@verizon.net	written	12/16/2012	12/16/2012
57	Reed	Martin	C.	Mr.		Vice Chair	Hellam Township Board of Supervisors	624 Woodview Lane	Hellam, PA 17406-9342		written	12/14/2012	12/17/2012
58	Williams	Holly		Ms.				159 E. King St., Apt 311	Lancaster, PA 17602		written	12/15/2012	12/17/2012
59	Payan	Maria		Ms.						payanm@zoominternet.net	written	12/17/2012	12/17/2012
60	Trimmer	Todd		Mr.				471 Fryeville Road	York, PA 17406		written	12/17/2012	12/17/2012
Written and oral comments received by DEP's Air Program during the 12/13/12 public hearing													
61	Martin	Michael	C.	Mr.		Chair	Hellam Township Board of Supervisors	44 Walnut Springs Road	York, PA 17406		oral	at hearing	at hearing
62	Martin	Michael	C.	Mr.		Chair	Hellam Township Board of Supervisors	44 Walnut Springs Road	York, PA 17406		written	at hearing	at hearing
63	Evans	June		Ms.		Chair	Hellam Township Environmental Advisory C	7160 Roundtop Lane	Wrightsville, PA 17368		oral	at hearing	at hearing
64	Evans	June		Ms.		Chair	Hellam Township Environmental Advisory C	7160 Roundtop Lane	Wrightsville, PA 17368		written	at hearing	at hearing
65	Nissley	Judy		Ms.				140 Vintage Drive	Bainbridge, PA 17502		oral	at hearing	at hearing
66	Nissley	Judy		Ms.				140 Vintage Drive	Bainbridge, PA 17502		written	at hearing	at hearing
67	Bromer	Carol		Ms.				402 Stackstown Road	Marietta, PA 17547		oral	at hearing	at hearing
68	Bromer	Nick		Mr.				402 Stackstown Road	Marietta, PA 17547		oral	at hearing	at hearing
69	Burkholder	Dean		Mr.				1865 River Road	Marietta, PA 17547		oral	at hearing	at hearing
70	Ericson	Jennifer		Ms.				1080 Lambley Road	Landisville, PA 17538		oral	at hearing	at hearing
71	Evans	Warren	H.	Mr.				7160 Roundtop Lane	Wrightsville, PA 17368		oral	at hearing	at hearing
72	Evans	Warren	H.	Mr.				7160 Roundtop Lane	Wrightsville, PA 17368		written	at hearing	at hearing
73	May	Barbara		Ms.				100 Red Fox Road	Millersville, PA 17551		oral	at hearing	at hearing
74	May	Barbara		Ms.				100 Red Fox Road	Millersville, PA 17551		written	at hearing	at hearing
75	May	Barbara		Ms.				100 Red Fox Road	Millersville, PA 17551		written	at hearing	at hearing
76	Baer	Tammy		Ms.				PO Box 21991	York, PA 17406		oral	at hearing	at hearing
77	Lemey	Pat		Ms.				78 Sun Lane	Millersville, PA 17551		oral	at hearing	at hearing
78	Smeltzer	Fred		Mr.		Fire Chief	Hellam Township	44 Walnut Springs Road	York, PA 17406		oral	at hearing	at hearing
79	Smeltzer	Fred		Mr.		Fire Chief	Hellam Township	44 Walnut Springs Road	York, PA 17406		written	at hearing	at hearing
80	Izzo	Steve		Mr.				11079 Gumtree Road	Brogue, PA 17309		oral	at hearing	at hearing
81	Wolf	Stephen	D.	Mr.				585 Krautz Creek Road	York, PA 17406		oral	at hearing	at hearing
82	Grove	Seth		Mr.				820 Stackstown Road	Marietta, PA 17547		oral	at hearing	at hearing
83	Ebert	John		Mr.				4819 Tracey School Road	York, PA 17406		oral	at hearing	at hearing
84	Heller	Jane		Ms.				1819 Idylwyld Road	York, PA 17406		oral	at hearing	at hearing
85	King	Richard	L.	Mr.				5860 N. River Drive	York, PA 17406		oral	at hearing	at hearing
86	King	Richard	L.	Mr.				5860 N. River Drive	York, PA 17406		written	at hearing	at hearing
87	Logan	Annette		Ms.				5874 River Drive	York, PA 17406		oral	at hearing	at hearing
88	Stewart	Kevin		Mr.			American Lung Association	720 Rohrer Road	Lancaster, PA 17603		oral	at hearing	at hearing

[11]

List of Commenters on
Plan Approval Application No. 36-05158A for Perdue Grain Oil Seed, LLC

Commenter #	Last Name	First Name(s)	Middle Initial	Honorific	Title	Position	Organization	Address 1	Address 2	e-mail (if no mailing address)	written or oral?	Date on Letter	Date Received by DEP
89	Hoffman	Barbara	L.	Ms.				520 Chimney Rock Road	York, PA 17406		written	at hearing	at hearing
Written comments received in 2012 by DEP's Air Program specifically referencing Perdue's Phase 2 application													
90	Burkett	Susan	M.	Ms.	ASP	Principal Engineer	August Mack Environmental	941 Wheatland Avenue, Suite 202	Lancaster, PA 17603		written	12/17/2012	12/17/2012
91	Mann	Corina		Ms.		Manager	Hellam Township	44 Walnut Springs Road	York, PA 17406		written	12/14/2012	12/17/2012
Written comments received in early 2013 by DEP's Air Program regarding the Perdue applications													
92	Burkett	Susan	M.	Ms.	ASP	Principal Engineer	August Mack Environmental	941 Wheatland Avenue, Suite 202	Lancaster, PA 17603		written	2/26/2013	2/26/2013
93	Burkett	Susan	M.	Ms.	ASP	Principal Engineer	August Mack Environmental	941 Wheatland Avenue, Suite 202	Lancaster, PA 17603		written	4/2/2013	4/2/2013
Written comments received regarding the revised, combined Phase 1/Phase 2 Perdue application submitted 6/4/13													
94	Mann	Corina		Ms.		Manager	Hellam Township	44 Walnut Springs Road	York, PA 17406		written	6/25/2013	6/27/2013
95	Burcat	Joel	R.	Mr.	Esq.		Saul Ewing LLP	Two North Second Street	Harrisburg, PA 17101		written	6/28/2013	7/2/2013
96	Bockis	Andrew	T.	Mr.	Esq.		Saul Ewing LLP	Two North Second Street	Harrisburg, PA 17101		written	7/19/2013	7/22/2013
97	Mann	Corina		Ms.		Manager	Hellam Township	44 Walnut Springs Road	York, PA 17406		written	8/1/2013	8/5/2013
98	Mann	Corina		Ms.		Manager	Hellam Township	44 Walnut Springs Road	York, PA 17406		written	8/2/2013	8/5/2013
99	Bromer	Nick		Mr.				402 Stackstown Road	Marietta, PA 17547		written	8/3/2013	8/6/2013
100	Evans	Warren	H.	Mr.				7160 Roundtop Lane	Wrightsville, PA 17368		written	8/5/2013	8/6/2013
101	Evans	June		Ms.		Chair	Hellam Township Environmental Advisory C	7160 Roundtop Lane	Wrightsville, PA 17368		written	8/5/2013	8/6/2013
102	Snyder	Katina		Ms.				5335 Lincoln Highway	Hellam, PA 17406		written	8/5/2013	8/7/2013
103	Patton	Lugrisia		Ms.				618 Hamilton Street	Lancaster, PA 17602		written		8/7/2013
104	Patton	Kwan		Mr.				618 Hamilton Street	Lancaster, PA 17602		written		8/7/2013
105	Snyder	Nellie		Ms.				101 Fryeville Road	Hellam, PA 17406		written	8/6/2013	8/8/2013
106	Crème	Matthew	J.	Mr.	Jr., Esq.		Nikolaus & Hohenadel, LLP	212 North Queen Street	Lancaster, PA 17603		written	8/7/2013	8/8/2013
107	Lehman	Garry		Mr.				4923 Pleasant Valley Road	Hellam, PA 17406		written	8/7/2013	8/12/2013
108	Sloat	Douglas	E.	Mr.			Hellam Township Planning Commission	487 Kreutz Creek Road	York, PA 17406		written	8/8/2013	8/12/2013
109	Sloat	Mary Beth		Ms.				487 Kreutz Creek Road	York, PA 17406		written	8/8/2013	8/12/2013
110	Kostar	Phyllis		Ms.				183 Accomac Road	York, PA 17406		written		
111	Oughton	Robert		Mr.				183 Accomac Road	York, PA 17406		written	8/8/2013	8/12/2013
112	Holland	Falora		Ms.				4185 Druck Valley Road	Hellam, PA 17406		written	8/8/2013	8/12/2013
113	Burkett	Susan	M.	Ms.	ASP	Principal Engineer	August Mack Environmental	941 Wheatland Avenue, Suite 202	Lancaster, PA 17603		written	8/9/2013	8/12/2013
114	Bromer	Carol		Ms.				402 Stackstown Road	Marietta, PA 17547		written	8/9/2013	8/13/2013
115	Livingston	Debra		Ms.				6104 Lincoln Highway	Wrightsville, PA 17368		written	8/4/2013	8/15/2013
116	Nissley	Judy		Ms.			Nissley Vineyards	140 Vintage Drive	Bainbridge, PA 17502		written	8/14/2013	8/16/2013
117	Warner	James	D.	Mr.		CEO	LCSWMA	1299 Harrisburg Pike, PO Box 4425	Lancaster, PA 17604		written	8/19/2013	8/19/2013
118	Lemay	Pat		Ms.				78 Sun Lane	Millersville, PA 17551		written		8/19/2013
119	Kushner	Rich		Mr.				573 Essex St.	Marietta, PA 17547		written		8/19/2013
120	Logan	Annette		Ms.				5874 River Drive	York, PA 17406		written	8/19/2013	8/23/2013
121	Burkett	Susan	M.	Ms.	ASP	Principal Engineer	August Mack Environmental	941 Wheatland Avenue, Suite 202	Lancaster, PA 17603		written	11/25/2013	11/26/2013
122	Hickernell	David	S.	The Hon.		Representative 98th D	PA House of Representatives	PO Box 202098	Harrisburg, PA 17120-2098		written	12/12/2014	12/15/2014

[12]

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

Section A: Comments previously addressed for the Perdue Phase 1 application, re-evaluated, where applicable, in the context of the combined project (Phase 1 + Phase 2)				
#	Comment	Commenter #	Category	Response
1	DEP should hold a public hearing on one or both proposed Perdue projects, in order to accept public input in an "open microphone" format. Some commenters also expressed an interest that the public hearing include a question and answer component.	1-25, 27-37, 39, 41	Overall Permitting Issues	In response to numerous commenters requesting a public hearing, a public hearing was held on 12/13/12 regarding this draft plan approval, and two related applications. The public hearing was held at the Hellam Fire Company Hall at 163 East Market Street in Hellam, PA. Additionally, because the applications have been combined and revised, DEP plans to hold another public hearing once the draft permit is ready for public review and comment.
2	The public hearing for the Perdue applications is scheduled to occur in a municipality other than the "host" municipality of Conoy Township. Furthermore, the hearing is scheduled to conflict with the Conoy Township Board of Supervisors meeting on 12/13. This "denies the Conoy Township Supervisors an opportunity to appear and to testify at the public hearing, as well as to hear testimony from others who may choose to present oral, public comment on this application. Conoy Township's residents are equally inconvenienced by the scheduling. This scheduling constitutes a denial of an opportunity to be heard by those most directly affected by this application and offends administrative due process be accorded Conoy Township's supervisors and its residents.	43	Overall Permitting Issues	The public hearing was held in Hellam because of substantial public interest in this project in that community, coupled with the proximity of parts of Hellam Township to the proposed project site. DEP believes that the hearing site was reasonably close enough to Conoy Township to allow for convenient participation of individuals from that area. DEP further observes that the Conoy Township solicitor was present at the public hearing. Furthermore, in response to public requests, DEP plans to hold the second public hearing (as noted in the response to Comment 1, above) in Conoy Township.
3	Conoy Township requests that this hearing be re-scheduled to a Conoy Township location at a date and time that does not conflict with the previously publicly advertised meetings of the Conoy Township Board of Supervisors.	43	Overall Permitting Issues	See the response to Comment 2 (public hearing).
4	I'm a little disappointed that I'm over here tonight instead of my own township (Conoy).	69	Overall Permitting Issues	See the response to Comment 2 (public hearing).
5	We believe that that information should be made available to the public for their review prior to asking for action on air quality permits and those things. We don't want to sort of find out after the fact more information that pertains to a particular facility that would then give us a much better picture about what the true risks are.	88	Overall Permitting Issues	DEP has followed the statutory public notice procedures with regard to this application, and has taken the extra measure of posting the application and review materials for this project on DEP's website.
6	One commenter states that he has received no notice whatsoever of what is proposed.	9	Overall Permitting Issues	See the response to Comment 5 (public notice).
7	I don't believe that the best solutions are done through an adversarial process. The best solutions are done in questions and answers and proper respectful conversation. Certainly the Lung Association wants to support the finding of a good solution here that does recognize the environmental and respiratory health needs of this community.	88	Overall Permitting Issues	DEP concurs with this comment.
8	Considering the PA State Grant, which will fund 15% of the total estimate of the entire project, they are not going to act as a "good neighbor" without government oversight (one commenter). The grant being given to Perdue from the state for this project should ensure that the best available protections for the residents of PA are being used (another commenter).	45, 51-52, 57	Overall Permitting Issues	DEP is committed to providing appropriate permit review oversight to all projects, whether or not they are related to a grant.
9	Will DEP require Perdue to complete the Phase II archaeological studies requested by PHMC?	17	Overall Permitting Issues	Based on information provided by Perdue in an email dated 1/25/13 . . . *"The Phase II archaeological study and report have been completed and submitted to PHMC. PHMC issued a clearance letter dated October 31, 2012 for the project. In the letter, the PHMC concluded that, "Therefore, the location of the current APE [Area of Potential Effect] and buffer zone requires no additional testing. If plans should change and the APE is enlarged or relocated, additional testing will be necessary."*
10	At the public hearing on 12/13/12, no person presented any testimony asserting or suggesting that there is any regulation with which Perdue has not complied.	49	Overall Permitting Issues	DEP is responsible for making determinations regarding Perdue's regulatory compliance for air quality issues. This comment response document, and the accompanying permit review materials provide a record of DEP's determinations.
11	All that may be asked to this applicant is that it complies with applicable regulation. This is the standard to which Conoy Township has held this applicant in matters under its jurisdiction, and Conoy Township expects DEP will do the same.	49	Overall Permitting Issues	DEP concurs with the general concept expressed in this comment.
12	I understand that Perdue must only propose to comply with applicable regulations for the permit process.	55	Overall Permitting Issues	See the response to Comment 11 (regulatory applicability).
13	We also recognize that this is an area where we have multiple sources and because of that and other things there's an issue of environmental justice that starts to become clear here.	88	Overall Permitting Issues	The term "environmental justice" has a precise application in an environmental permitting context. In that context, the proposed project is not in a defined environmental justice area. Nevertheless, DEP recognizes the commenter's concern regarding multiple air pollution sources located in the same area. This concern is discussed further below with regard to comments under the heading "Public Health and Welfare."

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
14	Certainly the issues of multiple sources, not only industrial, but also transportation orientated need to be considered. We've heard about the trains, we've heard about the truck trips necessary to supply the facilities.	88	Overall Permitting Issues	Perdue has conducted an Alternative Siting Analysis (ASA) as required by the 25 Pa. Code Chapter 127, Subchapter E, updated on 6/4/13, which addresses alternative sites, sizes, production processes and environmental control techniques for the proposed facility, and which asserts that the benefits of the proposed facility significantly outweigh the environmental and social costs imposed within this Commonwealth as a result of its location, construction or modification. DEP has reviewed this analysis and concurs that the ASA demonstrates that the benefits of the proposed facility significantly outweigh the environmental and social costs imposed as a result of its location and construction. Furthermore, Perdue has submitted an update, dated 11/6/14, to its traffic study which concludes that *"the daily driveway traffic under the proposed increased production rate will still be less than half of the allowable volume for a PennDOT Medium Volume Driveway."*
15	August Mack has significant experience in permitting facilities and they have found literally dozens of errors in calculations, emissions and understatements in Perdue's applications. These errors all serve to whitewash the risks from the Perdue plant.	65-66	Overall Permitting Issues	DEP has reviewed the August Mack comments in detail. DEP's responses to these comments can be found elsewhere in the comment and response document.
16	For the reasons stated in their comments already submitted August Mack Environmental concludes that the Perdue applications should be denied.	65-66	Overall Permitting Issues	See the response to Comment 15 (August Mack concerns).
17	Why is DEP allowing Perdue to break the project up into two phases? Does this circumvent any regulations, including PSD or NSR?	4-5, 9-20, 22, 24, 26-30, 32-37, 39, 41-42, 61-62, 67-68	Overall Permitting Issues	Although the project was originally proposed in two phases, Perdue ultimately elected to combine the two phases into one permit application, via a permit revision dated 6/4/13.
18	If there is something planned for this location, opportunity for public comment needs to be received and allowed, prior to piecemeal approval for various facets an a undetermined end product.	9	Overall Permitting Issues	DEP addressed this comment by holding a single public hearing on both the Phase 1 and Phase 2 aspects of the project. The two phases have since been combined into one application, and a second public hearing is planned for the draft permit.
19	The project should not be divided into two phases because land development approval of the project was done as one application, with no separation of phases for the grain elevator and soybean oil extraction facility.	30	Overall Permitting Issues	See the response to Comment 17 (merging of two project phases into one application).
20	The project should not be divided into two phases because a variance has already been obtained from the Conoy Township Zoning Hearing Board for the grain elevator to exceed the height limitations of that township's zoning ordinance, indicating a larger than usual grain elevator to service the anticipated soybean volume for the hexane in the soybean oil extraction process.	30	Overall Permitting Issues	See the response to Comment 17 (merging of two project phases into one application).
21	The project should not be divided into two phases because dust from the grain elevator operation, added to the hexane VOC emissions, represent a negative health impact on the human respiratory tract and the additive effects must be considered as a whole.	30	Overall Permitting Issues	See the response to Comment 17 (merging of two project phases into one application).
22	The project should not be divided into two phases because all previous testimony and presentations by Perdue to various governmental entities, including the Lancaster County Emergency Preparedness Committee (LEPC) treated the application as one, with no proposed phasing.	30	Overall Permitting Issues	See the response to Comment 17 (merging of two project phases into one application).
23	The project should not be divided into two phases because notice was provided in the 10/25/12 issued of the PA Bulletin (Vol. 42, No. 43) that Perdue has applied to PADEP for a permit for two aboveground storage tanks storing 40,000 gallons of hexane (SSIP Application No. 12021). These tanks will be used in the soybean extraction process, not the grain elevator portion of the facility.	30	Overall Permitting Issues	See the response to Comment 17 (merging of two project phases into one application).
24	I can't even imagine why this plant is even being considered.	80	Overall Permitting Issues	This plant is being considered because Perdue has filed a plan approval application with DEP for it. DEP is required by law and policy to review and make decisions regarding plan approval applications.
25	DEP should have a conscience, and act morally, and deny this project in its entirety.	45, 57	Overall Permitting Issues	DEP is required by law to review plan approval applications such as Perdue's in accordance with established laws and regulations. DEP takes seriously its obligations to do this.
26	Please realize your obligation, your burden, to reject Perdue.	47	Overall Permitting Issues	See the response to Comment 25 (DEP responsibility).
27	And I would also suggest that the DEP, while these are probably very good people, they're probably, you know, influenced by forces well beyond their control and certainly beyond ours, you know.	80	Overall Permitting Issues	See the response to Comment 25 (DEP responsibility).
28	I do not envy you in your position as the pressure from the Governor's Office (or other sources) must be tremendous	45, 57, 84	Overall Permitting Issues	See the response to Comment 25 (DEP responsibility).
29	I realize you guys' job here is to, you know, present Perdue in the best possible light because your work depends on it. It's your income.	80	Overall Permitting Issues	See the response to Comment 25 (DEP responsibility).

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
30	I no longer believe the DEP is here to protect us. I think the DEP is here to protect corporations from us. Time and time again the regulations aren't good enough to protect us or they're not enforced and it no longer seems like a coincidence to me.	80	Overall Permitting Issues	See the response to Comment 25 (DEP responsibility).
31	If this is allowed to go forward as proposed, it will be another example of how greed has overcome the moral imperative of protecting the health, safety and welfare of the people of this commonwealth.	51-52	Overall Permitting Issues	See the response to Comment 25 (DEP responsibility).
32	I don't know whether the results of this hearing are going to have any effect on the decision DEP makes. I'll be highly surprised if they do.	80	Overall Permitting Issues	See the response to Comment 25 (DEP responsibility).
33	I have been at other public hearings like this one, with everyone at the hearing opposed to the project, and all the permits were approved anyway.	80	Overall Permitting Issues	See the response to Comment 25 (DEP responsibility).
34	DEP has stood strong in the past, even when political maneuvering, attempted to rubber stamp activity, which was environmentally detrimental. We expect no less in the present.	86	Overall Permitting Issues	See the response to Comment 25 (DEP responsibility).
35	I know with working with DEP that they do consider everything.	82	Overall Permitting Issues	See the response to Comment 25 (DEP responsibility).
36	If Perdue is unwilling or unable to meet stringent environmental conditions during the planning phases of this project, then we should be asking what kind of responses will be forthcoming once they are up and running.	86	Overall Permitting Issues	See the response to Comment 25 (DEP responsibility).
37	Did Perdue indicate any willingness to control emissions above what is required by the law? If not, I am opposed to the plant. There is a moral obligation here. If the plant ultimately goes on line in compliance with just what is required this will be a factor in my purchase of their products.	55	Overall Permitting Issues	See the responses to Comments 11 (regulatory applicability) and 25 (DEP responsibility).
38	DEP should insist that concern for the health and safety of the area's residents come first, as indicated in its stated mission, when and if they approve Perdue's air quality permit applications for this project.	63-66	Public Health and Welfare	See the response to Comment 25 (DEP responsibility).
39	I just ask DEP to protect my family and/or the public.	69-70, 73-75, 77, 82-83, 85-86	Public Health and Welfare	See the response to Comment 25 (DEP responsibility).
40	I think companies should expand using their own funds, and do it without exception safely and environmentally friendly.	56	Public Health and Welfare	See the response to Comment 25 (DEP responsibility).
41	Air emissions from one or both phases of the project may generally be harmful to public health	1-37, 39, 41-42, 44-48, 50-52, 55, 57-81, 83-89	Public Health and Welfare	DEP has reviewed this application in accordance with applicable laws, regulations and policies. These are intended to provide appropriate public health protections.
42	That the residents of PA are being asked to pay to have the quality of their air degraded, is astonishing	51-52	Public Health and Welfare	See the response to Comments 41 (public health) and 191 (state grant).
43	There is no number of jobs that would offset the damage this pollution will cause.	70	Public Health and Welfare	See the response to Comment 41 (public health).
44	I am seriously thinking of leaving the area due to the existing air quality problems in this area.	46	Public Health and Welfare	See the response to Comment 41 (public health).
45	It makes me very angry to think that I have to consider moving away from the United States of America in order to have my grandchildren grow up in a toxic free community.	76	Public Health and Welfare	See the response to Comment 41 (public health).
46	Provided the proposed Perdue facility does not pose risks to the health of our residents and to our environment, Hellam Township does not stand in opposition to it.	61-62	Public Health and Welfare	See the response to Comment 41 (public health).
47	I am not against this plant one bit, and am not concerned about the air quality in regards to being able to breathe it.	53	Public Health and Welfare	See the response to Comment 41 (public health).
48	In comparison with TMI, I don't believe a Perdue plant will pose a major safety risk.	53	Public Health and Welfare	See the response to Comment 41 (public health).
49	I want Perdue to tell me we know beyond a shadow of a doubt that you're going to be okay and that we're not going to pollute your air. I want to know the DEP is going to know that our air is not going to get worse. I want to know that Perdue is going to take genuine responsibility for our air quality and I don't want it based on belief.	73	Public Health and Welfare	See the response to Comment 41 (public health).
50	DEP has not required Perdue to show beyond a reasonable doubt that the grain elevator will be built and operated in such a manner as to prevent the emission of any particulates which are harmful to many individuals, including the most vulnerable among us– children, the elderly, and people with respiratory problems, and people with compromised immune systems.	6-8, 10-12, 14-18, 20, 22, 27-29, 32, 34-35, 44	Public Health and Welfare	See the response to Comment 41 (public health).

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
51	The emissions from the facility may have uniquely significant public health impacts due to the local topography, weather patterns and frequent temperature inversions.	2, 4, 8-19, 23-25, 39, 41, 45, 47, 57, 61-68, 70-72, 74-75, 81, 85-86, 88	Public Health and Welfare	DEP understands the commenters' genuine concern about this matter, but does not believe that credible, pollutant-specific evidence has been advanced by the commenters to support this assertion. See also the responses to Comment 61 (nonattainment) and 72 (hexane risk assessment). Comment 61 also references the responses to Comments 52 (other nearby sources), 71 (relative increase in ozone precursors) and 76 (PM emission/attainment issues).
52	Air emissions from the proposed project, coupled with emissions from other nearby industrial sources, may be dangerous to public health.	9-12, 14-18, 20-21, 27-29, 32, 34-35, 39, 41, 44-47, 51-52, 57, 61-68, 71-76, 85-88	Public Health and Welfare	DEP understands the commenters' genuine concern about this matter, but does not believe that credible, pollutant-specific evidence has been advanced by the commenters to support this assertion. See also the responses to Comment 61 (nonattainment) and 72 (hexane risk assessment). Comment 61 also references the responses to Comments 52 (other nearby sources), 71 (relative increase in ozone precursors) and 76 (PM emission/attainment issues).
53	Then we also have individuals who enjoy the recreation of swimming, fishing, hiking, boating and hunting. What of their safety with regard to the proposed Perdue facility?	85-86	Public Health and Welfare	See the response to Comment 41 (public health).
54	We have a lot of wildlife in that area. They can use some protection from this, too, because they don't even know what's happening, nor do we.	87	Public Health and Welfare	See the response to Comment 41 (public health).
55	The proposed siting of the Perdue facility is flawed due to a lack of regional planning	9, 85-86	Public Health and Welfare	See the response to Comment 14 (alternative siting analysis).
56	Will this plant emit any odors, especially those that will linger?	53	Public Health and Welfare	Perdue has stated in an email dated 3/10/14: "*Perdue does not expect odors to be a concern. Based on Perdue's experience at its other facilities, if any odors are detectable, they will be a feed/grain type of odor. The Plan Approval will contain conditions prohibiting malodors beyond the project property line.*" DEP concurs with this assessment.
57	Is Conoy and the surrounding area going to be synonymous with bad smells?	53	Public Health and Welfare	See the response to Comment 56 (odors).
58	Industrial sounds, smells, emissions and lighting from the Conoy Township side of the river can be overbearing and very intrusive on the Hellam Township side of the river.	85-86	Public Health and Welfare	See the response to Comment 14 (alternative siting analysis).
59	While one may look across the Susquehanna River and see trees on the York County side, we look back across and see unshielded lights, hear industrial noise and experience emissions from increasing numbers of stacks.	85-86	Public Health and Welfare	See the responses to Comments 14 (alternative siting analysis), 41 (public health), 52 (other nearby sources), 56 (odors), 71 (relative increase in ozone precursors) and 76 (PM emission/attainment issues).
60	When I travel to Virginia Beach, I pass Perdue chicken processing plants and the smell is absolutely horrible.	53	Public Health and Welfare	See the response to Comment 56. Also, it should be noted that the proposed facility is not a chicken processing plant, but rather is a soybean processing facility.
61	It is problematic from a public health standpoint, for this project to be approved to occur in an EPA designated nonattainment area.	37, 39, 41-42, 44-47, 51-52, 57, 59-66, 70-75, 77, 80, 85-86, 88	Public Health and Welfare	DEP has followed the nonattainment new source review regulations in its review of this project. These regulations were crafted with public health protections in mind. See also the responses to Comments 52 (other nearby sources), 71 (relative increase in ozone precursors) and 76 (PM emission/attainment issues).
62	York and Lancaster County are rated poor for air quality as it stands today. I do not want to add to that problem.	25, 36	Public Health and Welfare	See the response to Comment 61 (nonattainment), which also references the responses to Comments 52 (other nearby sources), 71 (relative increase in ozone precursors) and 76 (PM emission/attainment issues).
63	Even if the extra pollution from Perdue is below cut-off levels, it will be contributing to an already serious problem.	46	Public Health and Welfare	See the response to Comment 61 (nonattainment), which also references the responses to Comments 52, 71 (relative increase in ozone precursors) and 76 (PM emission/attainment issues).
64	Why isn't DEP looking at ways to clean up our air, instead of seriously considering adding more pollutants?	74-75	Public Health and Welfare	See the responses to Comments 24 (DEP responsibility) and 61, which also references the responses to Comments 52 (other nearby sources), 71 (relative increase in ozone precursors) and 76 (PM emission/attainment issues).
65	If the DEP was protecting us, then why is it that we already have such bad air pollution and they're considering even more, you know? What protection is there really taking place?	80	Public Health and Welfare	See the responses to Comments 24 (DEP responsibility) and 61, which also references the responses to Comments 52 (other nearby sources), 71 (relative increase in ozone precursors) and 76 (PM emission/attainment issues).
66	According to a report by the U.S. Congress's Office of Technology Assessment, gas field ozone (related in PA to Marcellus Shale activities) has created a large air pollution problem that can spread up to 200 miles beyond the immediate region where gas is being produced. Gas drilling operations also produce inhalable ten micron particulate matter. This, in combination with other sources in the lower Susquehanna Valley, may be dangerous to public health.	61-62	Public Health and Welfare	See the response to Comment 61 (nonattainment), which also references the responses to Comments 52, 71 (relative increase in ozone precursors) and 76 (PM emission/attainment issues).
67	It seems there are some very legitimate questions regarding the legality of the $8.75 million grant that Governor Corbett authorized for the proposed Perdue plant. Some of the concerns are related to the fact that the plant would severely exacerbate existing very poor air quality conditions.	61-62	Public Health and Welfare	See the responses to Comments 51 (site-specific health impacts) and 191 (state grant).

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
68	The NSR and PSD regulations, if applied to both Perdue projects, would require air modeling studies, and would offer much greater protection of human health and the environment.	10-12, 14-19, 24, 32, 34-35, 37	Public Health and Welfare	See the response to Comments 17 (merging of two project phases into one application) and 142 (PSD/LAER). Furthermore, the NSR and PSD regulations do not in this case require air modeling to be conducted; however, Perdue has conducted risk assessment modeling for hexane as part of their application.
69	Adding the impacts of the grain elevator and oil extraction operation, considering the notable increases in PM10's, the impact of over 90 inbound truckloads of soybeans arriving daily, the lower Susquehanna River Valley will become both a dangerous and undesirable place to live.	45, 57	Public Health and Welfare	See the responses to Comments 52 (other nearby sources) and 76 (PM emission/attainment issues).
70	The emissions of particulates from the proposed project, coupled with emissions from other nearby sources such as Brunner Island and the Lancaster Incinerator, may be dangerous to public health, especially since we are already in an EPA-designated non-attainment area for PM2.5 micron lung-damaging particulate emissions. Will DEP require Perdue to evaluate the cumulative health impacts of particulate pollutants, and revise their applications accordingly	6-7, 10-12, 14-18, 20, 22, 25, 27-29, 32, 34-35, 61-62	Public Health and Welfare	See the response to Comment 76 (PM emission/attainment issues).
71	Has DEP accessed the cumulative air quality impacts of existing nearby air pollution sources such as Brunner Island, the Armstrong Ceiling Plant and the Lancaster Incinerator?	45, 57	Public Health and Welfare	The potential emissions of all criteria air pollutants from the Perdue facility are 1% of the reported 2013 criteria pollutant emissions from the three other facilities cited in this comment. The potential emissions of ozone precursor air pollutants (VOC and NOx) from the Perdue facility are 2% of the reported 2013 ozone precursor emissions from the three other facilities cited in this comment.
72	Has the EPA or the DEP conducted any health risk studies to determine how this plant's emissions will impact Lancaster and York County residents, especially given the unique nature of our area and the thermal inversions that magnify the pollution and keep it down to where we can breathe at?	70	Public Health and Welfare	Please refer to DEP modeling, modeling public comment, and risk assessment memos, all dated 2/20/15, for a discussion of the hexane risk assessment that was performed in association with this application.
73	I can't believe that an air pollution risk study regarding this facility, if it has been conducted, would find that this plant is going to help our air quality. It's only going to make it worse.	70	Public Health and Welfare	See the response to Comment 72 (hexane risk assessment).
74	The smokestacks in the Susquehanna River valley in the vicinity of the proposed Perdue plant (and, by implication, of the proposed Perdue facility as well) reach skyward, but they're about on level with our hills in Hellam Township. They're shooting these stacks way up into the air, but we're looking down onto them and into them.	85-86	Public Health and Welfare	See the responses to Comments 71 (relative increase in ozone precursors) and 72 (hexane risk assessment).
75	Do you have charts of cumulative emission data and prevailing wind direction from the many other pollution sources already at this location?	85-86	Public Health and Welfare	See the responses to Comments 52 (other nearby sources), 71 (relative increase in ozone precursors) and 72 (hexane risk assessment) and 230 (meteorological data)
76	Will DEP require that Perdue carry out an air modeling screening study of PM10 and PM2.5 air pollutants, taking into consideration the numerous temperature inversions that are known to occur in the vicinity of the proposed soybean facility?	15, 17	Public Health and Welfare	DEP does not believe it is necessary to require that Perdue carry out an air modeling screening study of PM10 and PM2.5 air pollutants, given that proposed PM10/PM2.5 levels are, respectively, less that one half, and less than one tenth, of major source levels. Furthermore, it should be noted that Pennsylvania has submitted to EPA a PM2.5 attainment plan and redesignation request for Lancaster County. Also, on 12/8/14, EPA approved Pennsylvania's requests to redesignate the Harrisburg-Lebanon-Carlisle-York nonattainment areas to attainment for the 1997 annual and 2006 24-hour PM2.5 national ambient air quality standards (NAAQS).
77	Everyone has the right to know what they may be exposed to, the maximum and average concentrations, the accompanying risks from a particular facility.	88	Public Health and Welfare	See the responses to Comments 71 (relative increase in ozone precursors) and 72 (hexane risk assessment).
78	Once a community has been made aware of air concentrations and risks, then they can make informed choices as to the costs and benefits.	88	Public Health and Welfare	See the responses to Comments 71 (relative increase in ozone precursors) and 72 (hexane risk assessment).
79	We need to have adequate information on which to base our decisions and that information should include enough information to understand what the risks may be and what the proper kinds of controls may be, what the costs for those controls are and a proper kind of a dialogue. Any kind of good neighbor approaching a community should have that kind of dialogue. I encourage that kind of dialogue.	88	Public Health and Welfare	DEP concurs with the concepts expressed in this comment.
80	Best Available Technology needs to be employed for the Perdue projects.	9, 42, 44-45, 50-52, 57, 63-64, 67-68, 77, 85-86	BAT/LAER/NNSR Issues	DEP regulations require that Best Available Technology (BAT), and Lowest Achievable Emission Rate (LAER) be employed in the design and construction of the equipment at this facility. DEP is responsible to determine, on a case-by-case basis, what constitutes BAT and LAER for each applicable project. DEP has done so in this case, and is requiring the use of BAT and LAER at this installation.
81	The fact that there is available technology that could mitigate the amount of pollutants that will be expelled into the already poor quality air, and that these methods are not being used, is outrageous.	51-52, 67-68	BAT/LAER/NNSR Issues	See the response to Comment 80 (BAT/LAER evaluation).

[17]

#	Comment	Commenter #	Category	Response
82	If these folks have the opportunity to spend a little more money and make it safer, then that's what should happen.	84	BAT/LAER/NNSR Issues	See the response to Comment 80 (BAT/LAER evaluation).
83	DEP is not in a position maybe to make these kind of decisions [about BAT/LAER/control technology].	84	BAT/LAER/NNSR Issues	See the response to Comment 80 (BAT/LAER evaluation).
84	I expect someone has run cost projections on emission control above and beyond statute. Where might I find such an analysis?	55	BAT/LAER/NNSR Issues	Cost projections for certain scenarios are presented in the application for this project.
85	All NSR requirements, including LAER, emission offsets, and alternative site analysis, must be applied to both phases of the Perdue project.	39, 41	August Mack Phase 1 Comments	DEP concurs with this statement. See also the response to Comment 17 (merging of two project phases into one application).
86	DEP did not require the NSR alternative site analysis when reviewing Perdue's Phase 1 application. Any alternative site analysis conducted after the Phase 1 facility is constructed would be biased toward the project's current location.	39, 41	August Mack Phase 1 Comments	See the response to Comment 17 (merging of two project phases into one application).
87	The Phase 1 application should be denied as an impermissible circumvention due to the lack of the alternative site analysis.	39, 41	August Mack Phase 1 Comments	See the response to Comment 17 (merging of two project phases into one application).
88	Nissley Vineyards has contracted with Professor Richard D. Clark, Ph.D. of Millersville University to conduct a study of temperature inversions along the Susquehanna River centered on the location of the proposed Perdue facility. This study indicates temperature inversions on 313 days in 2011 (86% of days), which was an average year. More inversions might be expected in a warmer year. These temperature inversions prevent air pollutants from dispersing, and the study indicates that "areas immediately downwind of an air pollution source can be significantly affected by deletrious air quality for long durations."	39, 41	August Mack Phase 1 Comments	See the responses to Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).
89	Short duration inversions have little consequence on air quality since they are often weak and easily disrupted by multiple atmospheric conditions.	38, 39, 40, 41	August Mack Phase 1 Comments	See the response to Comment 88 (inversions), which references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data) .
90	Medium duration (lasting 4-8 hours) and long duration (>= 9 hours or extending from sunset to sunrise) inversions can have a significant impact on air quality by trapping pollutants. Under these conditions, winds are usually calm or no more than a few meters per second. Consequently, area immediately downwind of a pollution source can be significantly affected by deleterious air quality for long durations - until mixing fumigates and replenishes the air. Low-lying areas such as valleys, where under clear sky conditions can be subject to strong and low-lived inversions, are particularly susceptible.	38, 39, 40, 41	August Mack Phase 1 Comments	See the response to Comment 88 (inversions), which references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data) .
91	293 out of a total of 519 inversions in the study area were "short"; 130 were "medium"; 96 were "long".	38, 39, 40, 41	August Mack Phase 1 Comments	See the response to Comment 88 (inversions), which references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data) .
92	The total number of inversion hours in the study area in 2011 was 2,459, which was 28.07 of the total hours in the year. The total number of inversion days in the study are in 2011 was 313.	38, 39, 40, 41	August Mack Phase 1 Comments	See the response to Comment 88 (inversions), which references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data) .
93	The number of days in 2011 having "short" inversions was 56.5%; the number of days having "medium" inversions was 25.0%; the number of days having "long" inversions was 18.5%.	38, 39, 40, 41	August Mack Phase 1 Comments	See the response to Comment 88 (inversions), which references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data) .
94	Stronger inversions last longer unless synoptic or mesoscale systems displace the atmospheric condition that establishes them. Long lasting inversions, in this analysis those that are medium or long duration, have the potential to trap pollutants for that duration near the surface; calm to light winds will prevent significant transport in strong inversions causing pollutant concentrations to become elevated in the vicinity of the source, especially when the source stack is short and confined within the depth of the inversion.	38, 39, 40, 41	August Mack Phase 1 Comments	See the response to Comment 88 (inversions), which references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data) .
95	Using the Millersville University climate archive (1914-2011), it was determined that 2011 was normal in temperature in comparison of the decade from 2001-2010 and would likely have a frequency of inversions typical of other years based on temperature alone; precipitation was above normal in 2011 compared to 2001- 2010, in March and April, and could have contributed to the fewer inversions observed during these months.	38, 39, 40, 41	August Mack Phase 1 Comments	See the response to Comment 88 (inversions), which references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data) .

[18]

#	Comment	Commenter #	Category	Response
96	There are concerns with air pollution in the are of the proposed facility including nonattainment with the 2008 8-hour ozone standard of 0.075 ppm.	39, 41	August Mack Phase 1 Comments	The Federal Clean Air Act establishes preconstruction permit requirements for new or modified major facilities. The nonattainment NSR program applies in areas that do not meet the NAAQS. Attainment designations for Pennsylvania are contained in Title 40, Part 81, Section 339. The Department's NSR regulation (25 Pa. Code. Chapter 127, Subchapter E) implement the Federal NSR requirements. An owner or operator of a new or modified major facility must determine whether the NSR regulation is applicable to the new or modified facility prior to submitting a plan approval application. The Department has reviewed Perdue's application and has conducted an NSR applicability determination. Also, while Lancaster and York Counties are currently designated as moderate nonattainment for ozone, based on certain past monitored results, DEP notes that the certified 2013 ozone design values for both counties for 2013, and the preliminary ozone design values for 2014 meet or fall below the level of the ozone NAAQS (75 ppb).
97	There are concerns with air pollution in the are of the proposed facility including nonattainment with the 2006 PM2.5 24-hour standard of 35 ug/m3, and the PM2.5 annual standard of 15 ug/m3.	39, 41	August Mack Phase 1 Comments	See the response to Comment 76 (PM emission/attainment issues).
98	The proposed emission of VOC from the proposed facility is 4 tons below the 250-ton-per-year PSD threshold.	39, 41	August Mack Phase 1 Comments	This figure has been modified to 208 tons VOC per year in Perdue's application revision dated 6/4/13.
99	Due to the unique air characteristics of the area, as well as the 246 tpy proposed emissions of VOC, DEP should request that Perdue provide information on how the source will not prevent or adversely affect the attainment or maintenance of ambient air quality standards per 25 Pa. Code 127.12(a)(6).	39, 41	August Mack Phase 1 Comments	DEP has concluded that ambient modeling for ozone is not needed in this case, and that Perdue's contributions to local ozone precursors do not merit invocation of the provisions in 25 Pa. Code 127.12(a)(6), (7) or (9). See the responses to Comments 71 (relative increase in ozone precursors), 88 (inversions), 96 (ozone monitoring data) and 98 (revised hexane emissions). Comment 88 (inversions) also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).
100	Due to the unique air characteristics of the area, as well as the 246 tpy proposed emissions of VOC, DEP should request that Perdue provide a plan of action for reduction of emissions during each forecast level specified in 25 Pa. Code 137.3(1) thereby preventing an emergency due to the effects of the pollutants on the health of persons in accordance with 25 Pa. Code 127.12(a)(7).	39, 41	August Mack Phase 1 Comments	See the response to Comment 99 (Section 127.12 issues), which references the responses to Comments 71 (relative increase in ozone precursors), 88 (inversions), 96 (ozone monitoring data) and 98 (revised hexane emissions). Comment 88 also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).
101	Due to the unique air characteristics of the area, as well as the 246 tpy proposed emissions of VOC, DEP should request that Perdue provide a plan for dealing with air pollution emergencies in accordance with 25 Pa. Code 127.12(a)(9).	39, 41	August Mack Phase 1 Comments	See the response to Comment 99 (Section 127.12 issues), which references the responses to Comments 71 (relative increase in ozone precursors), 88 (inversions), 96 (ozone monitoring data) and 98 (revised hexane emissions). Comment 88 also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).
102	The permit application should be denied because Perdue has not addressed the concerns in 25 Pa. Code 127.12(a)(6), (7) and (9).	39, 41	August Mack Phase 1 Comments	See the response to Comment 99 (Section 127.12 issues), which references the responses to Comments 71 (relative increase in ozone precursors), 88 (inversions), 96 (ozone monitoring data) and 98 (revised hexane emissions). Comment 88 also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).
103	**Phase 1 application:** Page 1: the type of review selected is NSPS and NESHAPS. This is incorrect. The form should also indicate that Phase 1 is subject to NSR and PSD review. This is needed in order to be consistent with Attachment C which states that that the facility is a single project consisting of two distinct operations, and Attachment H, which says the overall project will be subject to NSR.	39, 41	August Mack Phase 1 Comments	See the response to Comment 17 (merging of two project phases into one application).
104	Grain Receiving & Processing: Page 4, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information: The flow diagram in Attachment F does not include all of the requested information including:	39, 41	August Mack Phase 1 Comments	See below.
105	i. Gaseous, liquid and solid flow rates	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: "*Although not shown on the flow diagram, gaseous, liquid, and solid flow rates are provided in the Plan Approval Application's Attachment G (Potential Emission Calculations) for each source.*" The DEP agrees and the information stated in Attachment G fulfills these requirements.
106	ii. The amount of raw material charged to the process in tons/hour at rated capacity	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: "*Although not shown on the flow diagram, the amount of raw material charged to the process is provided in the Plan Approval Application's Attachment G (Potential Emission Calculations) for each source.*" DEP concurs that Perdue has provided the necessary information.
107	iii. The specific locations of where contaminants are controlled are not shown on the diagram, specifically the location of collection hoods or other pickup points	39, 41	August Mack Phase 1 Comments	The location of control equipment is provided on the process flow diagram (Attachment F to the Plan Approval Application)

[19]

#	Comment	Commenter #	Category	Response
108	iv. A description of collection hoods design, airflow and capture efficiency for emissions vented through Baghouse C101 and Filters C102 is not provided.	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: "*Collection hoods are not part of the process; therefore their associated design is not provided in the application.*" DEP concurs with this statement. Supplemental information was supplied by Perdue to DEP regarding air flow in relationship to filter design.
109	Grain Receiving & Processing: Page 4, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information: The applicant indicates that the pressure drop on the baghouse will be read weekly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the baghouse should be continuously monitored. This requirement for continuous monitoring should be incorporated into Section D, permit condition #004 on page 18 of the proposed Plan Approval.	39, 41	August Mack Phase 1 Comments	Weekly monitoring of baghouse pressure drops is typical for other facilities regulated by DEP and is appropriate given the nature of the project's equipment. The facility will be required to conduct daily visible emission readings.
110	Grain Receiving & Processing: Page 4, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information: The applicant does not identify and describe all fugitive emission points but indicates that "fugitive particulate matter emissions will be negligible" but no information on the capture efficiency of the collection hoods that duct emissions to the baghouse is provided to support this claim of negligible fugitive emissions. Perdue should be required to prove that fugitive emissions will be negligible or the permit should be denied.	39, 41	August Mack Phase 1 Comments	DEP has determined that the particulate fugitive emissions from the facility are expected to be of minor significance with respect to causing air pollution, due to the fact that the BAT analysis was conducted, and due to the projected fugitive emissions being small in comparison to the major source threshold for PM/PM10/PM2.5. BAT controls being imposed on grain receiving and processing include a baghouse, bin vent filters, emission limits and best management practices.
111	Wet Grain Storage Bins: Page 6, Process Form, Section B - Processes Information, Item 4. Process Storage Vessels B. For Solids indicates a capacity of 900 tons but does not clarify that this is 900 tons for each storage bin as on Page 5, Item 1. Source Information specifies the capacity as "30,000 bushels (each)". Information available from the Ohio State University (www.online.ag.ohiostate.edu) indicates that a bushel of soybeans is assigned a weight of 60 pounds making the capacity of each bin 900 tons (each). The capacity (tons), turnover per year in tons, and turnover per day in tons should be corrected to indicate that these numbers are for each bin or corrected to reflect the total for all four (4) bins of 3,600 tons, 28,800 tons per day, and 10,512,000 tons per year. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	Although each bin has a 900-ton storage capacity, the plan approval will contain a federally enforceable condition limiting the annual throughput of the grain elevator operations. Grain elevator operations will be limited to 766,500 tons of soybeans per consecutive 12-month period.
112	Wet Grain Storage Bins: Page 7, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information. The applicant indicates that weekly visual observation of the bin vent filters will be conducted to check for the presence of visible fugitive emissions. As the facility will operate 24 hours per day, 7 days per week the visual observation should be performed on a daily basis. This requirement for daily monitoring should be incorporated into a permit condition in Section D, page 20 of the proposed Plan Approval.	39, 41	August Mack Phase 1 Comments	The plan approval includes daily visible emission monitoring for the Wet Grain Storage Bins.
113	Grain Dryer No.1: Page 8, Process Form, Section B - Processes Information, Item 1. Source Information specifies a 4,800 bushel capacity. The capacity of the storage bins and grain dryers does not appear to equate as it appears that much more grain will be received at the facility than will be processed in the grain dryers with no explanation of the discrepancy. Perdue should be required to clarify this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	The receiving of grain is an intermittent process, which may involve the storage of grain received before drying to accommodate system design. Grain elevator operations will be limited to processing a maximum of 766,500 tons of soybeans per consecutive 12-month period.
114	Grain Dryer No.1: Page 8, Process Form, Section B - Processes Information, Item 2. Fuel specifies a BTU content for propane of 91,500 BTUs per gallon. The U.S. Environmental Protection Agency's Compilation of Air Pollutant Emission Factors (AP-42) specifies a BTU content for propane of 90,500 BTU/gallon. This comment also applies to Grain Dryer No. 2 on Page 11. Perdue should be required to clarify this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	The correct heat content was used in the application and calculations. Footnote (a) of US EPA AP-42, Table 1.5 states to use 91,500 btu/gal for propane. However, in accordance with Perdue's 6/2013 revision to the application, the dryers will no longer be heated with natural gas or propane. The dryers will be solely heated indirectly by steam provided from the Lancaster County Solid Waste Management Authority facility.
115	Grain Storage Bins: Page 14, Process Form, Section B - Processes Information, Item 1. Source Information specifies a 500,000 bushel capacity for each bin. The capacity of these storage bins does not appear to equate to the earlier capacities.	39, 41	August Mack Phase 1 Comments	See response to Comment 113 (grain elevator soybean throughput limitation).

[20]

#	Comment	Commenter #	Category	Response
116	Grain Storage Bins: In addition on Page 15, Process Form, Section B - Processes Information, Item 4. Process Storage Vessels B. For Solids indicates a capacity of 15,000 tons but does not clarify that this is 15,000 tons for each storage bin as on Page 14, Item 1. Source Information specifies the capacity as "500,000 bushels (each)". Information available from the Ohio State University (www.online.ag.ohiostate.edu) indicates that a bushel of soybeans is assigned a weight of 60 pounds making the capacity of each bin 15,000 tons (each). The capacity (tons), turnover per year in tons, and turnover per day in tons should be corrected to indicate that these numbers are for each bin or corrected to reflect the total for all four (4) bins of 60,000 tons, 240,000 tons per day, and 87,600,000 tons per year.	39, 41	August Mack Phase 1 Comments	See response to Comment 113 (grain elevator soybean throughput limitation).
117	Grain Storage Bins: Page 16, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that weekly visual observation of the bin tank vents will be conducted to check for the presence of visible emissions. As the facility will operate 24 hours per day, 7 days per week the visual observation should be performed on a daily basis. This requirement for daily monitoring should be incorporated into a permit condition in Section D, page 23 of the proposed Plan Approval.	39, 41	August Mack Phase 1 Comments	The plan approval includes daily visible emission monitoring for the Grain Storage Bins.
118	Grain Loadout: Page 17, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that fugitive emissions will occur during grain loadout. As with grain receiving and processing, grain loadout should be located within a building and ducted to a baghouse to control particulate matter emissions. Perdue should be required to correct this deficiency in its permit application with the required modifications incorporated in the proposed Plan Approval.	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: "*As indicated on page 17, Section B.1 of the Plan Approval Application, grain loadout is typically only used for the purpose of transporting soybeans off-site. It is not part of normal operations when the grain elevator is supplying soybeans to the soybean oil extraction process.*" DEP concurs. It should be noted that the grain elevator encompasses similar operations to those regulated under General Permit GP15 - Feed Mills. The BAT for loading operations in the GP15 does not include the use of enclosed buildings. DEP believes the use of the Best Management Practices that are incorporated in the draft plan approval will appropriately minimize fugitive emissions.
119	Facility Roadways: Page 22, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that daily visual observations of facility roadways will be performed. As the facility will operate 24 hours per day, 7 days per week the visual observation should be performed on an hourly basis. This requirement for daily monitoring should be incorporated into a permit condition in Section D, page 25 of the proposed Plan Approval along with specific requirements for including method and frequency for when dust control measures will be implemented on facility roadways.	39, 41	August Mack Phase 1 Comments	DEP believes that daily monitoring is adequate in this case, and is consistent with, or more stringent than, the monitoring requirements of other similar grain facilities.
120	Section C - Air Cleaning Device: Page 23 provides maximum emission rates for PM, PM10, and PM2.5 and indicates the Calculation/Estimation Method is provided in Attachment G.	39, 41	August Mack Phase 1 Comments	See below responses to Comments 121-140.
121	a.1. The calculations in Attachment G for 101 - Grain Receiving and Processing are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum grain handling rate of the source which is specified as 600 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 2 of the application but indicates that only 630,000 tons per year will be processed for a processing time of only 1,050 hours per year. The emission calculations should be revised to indicate emissions based on processing of 600 tons per hour for 8,760 hours per year which equals 5,256,000 tons annually.	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: "*In a given hour, the Grain Receiving/Processing source could process 600 tons per hour; however, there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all. As opposed to limiting hours of operation and in the interest of operational flexibility, Perdue has requested and accepted a 12-month soybean throughput limitation for the facility*". DEP concurs with this approach The Plan Approval Application estimates the maximum potential short-term (lb/hr) emissions on the maximum hourly throughput rate. Furthermore Perdue has requested a 12-month soybean throughput limitation of 766,500 tons per year, thereby limiting long-term (12-month) emissions. As such, the plan approval will include a federally enforceable annual throughput limit for grain elevator operations of 766,500 tons per year, based on a 12 month rolling total.
122	a.2. A limit of 630,000 tons of soybean receipt has been included in the proposed Plan Approval although processing at the rated capacity will result in the grain receiving occurring over just 44 days. Perdue should be required to explain how their operations will be conducted based on the rated capacity of the equipment and the soybean limit.	39, 41	August Mack Phase 1 Comments	See response to Comment 121 (grain elevator soybean throughput limitation).

[21]

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
123	b.1. The calculations in Attachment G for 102- Wet Grain Storage Bins are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 900 tons capacity and 2,520,000 tons per year turnover per bin (on Page 6 of the application) or 2,800 tons per hour per bin or 11,200 tons per hour (for the four bins). The emission calculations should be revised to indicate emissions based on processing of 11,200 tons per hour for 8,760 hours per year which equals 98,112,000 tons annually.	39, 41	August Mack Phase 1 Comments	See response to Comment 121 (grain elevator soybean throughput limitation).
124	b.2. No capacity for the wet grain storage bins is included in the proposed Plan Approval nor is any throughput or operating hour limitation. As the rated capacity of this equipment differs from grain receiving, separate limitations need to be established.	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: "*In a given hour, the Wet Grain Storage Bins could accept 600 tons per hour; however, there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all. Maximum hourly and maximum annual throughput limitations are constrained by the Grain Receiving/Processing source. As opposed to limiting hours of operation and in the interest of operational flexibility, Perdue has requested and accepted a 12-month soybean throughput limitation for the facility.*" DEP concurs with this approach. The Plan Approval Application estimates the maximum potential short-term (lb/hr) emissions on the maximum hourly throughput rate. Furthermore Perdue has requested a 12-month soybean throughput limitation of 766,500 tons per year, thereby limiting long-term (12-month) emissions. As such, the plan approval will include a federally enforceable annual throughput limit for grain elevator operations of 766,500 tons per year, based on a 12 month rolling total.
125	b.3. In addition, documentation of the control efficiency (99%) of the wet grain storage bin filters is not provided. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	Based on information provided by Perdue in an email dated 1/25/13 . . ."*A control efficiency of 99% for the wet grain storage bin filters is a generally accepted efficiency for fabric filters. As an example, in its "Statement of Legal and Factual Basis" dated July 1, 2010, Virginia DEQ lists an efficiency of 99% for the fabric filters associated with the grain storage silos (bins) at Perdue's Chesapeake, Virginia facility.*" DEP concurs with this approach.
126	c.1. The calculations in Attachment G for emissions due to grain processing in 103 - Grain Dryer No. 1 and 104 - Grain Dryer No. 2 are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 144 tons per hour and operation for 8,760 hours per year as indicated on Pages 8 and 11 of the application but indicates that only 315,000 tons per year will be processed in each dryer for a processing time of only 2,187.5 hours per year per dryer. Note, the fuel combustion calculations for the dryers are based on fuel consumption and operation 8,760 hours per year. The emission calculations due to grain processing in the dryers should be revised to indicate emissions based on processing of 144 tons per hour for 8,760 hours per year per dryer.	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: "*As provided in the Potential Emission Calculations attachment to the Plan Approval Application, the maximum potential short-term (lb/hr) emissions are based on the maximum hourly throughput rate. In a given hour, each Grain Dryer could process 144 tons of soybeans per hour; however, there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all. The maximum hourly throughput limitation is constrained by the scalper that feeds each Grain Dryer.*" DEP concurs with this approach. Perdue has requested a 12-month soybean throughput limitation of 766,500 tons per year, thereby limiting long-term (12-month) emissions. As such, the plan approval will include a federally enforceable annual throughput limit for grain elevator operations of 766,500 tons per year, based on a 12 month rolling total.
127	c.2. In addition, documentation of the PM control efficiency (90%) claimed due to the internal configuration of the dryer is not provided. AP-42 specifies a lower emission rate from column dryers which Perdue has used in their application. This lower emission factor takes into account the lower emissions from the type of dryer Perdue will be installing and an additional control efficiency is not applicable to the use of a column dryer.	39, 41	August Mack Phase 1 Comments	See response to Comment 146 (dryer control efficiency).
128	c.3. If the dryers' internal configuration is providing 90% PM control then approximately 684.24 lbs per day of particulate matter will be accumulating in each dryer which would create a combustible dust and explosion hazard.	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: "*Regarding the dryer's internal configuration, any controlled PM that is collected is recirculated into the process; it does not accumulate in the dryer. Perdue has extensive experience operating this type and model of dryer at one of Perdue's existing facilities.*" DEP concurs that this response adequately addresses this comment.
129	c.4.The dryers should be connected to an air pollution control device (i.e., baghouse, dust collector, etc.) for particulate matter control and to prevent the build-up of combustible dust.	39, 41	August Mack Phase 1 Comments	See response to Comments 146 (dryer control efficiency) and 147 (dryer control).
130	c.5. In addition, the emission calculations for the dryers should be revised. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	For the reasons stated in the responses to Comments 146 (dryer control efficiency) and 147 (dryer control), no deficiencies exist. Emission calculations are deemed by the Department to be correct.
131	c.6. Although PADEP's technical memorandum reflects that only 50% of the air stream is controlled, and includes revised emission calculations provided by Perdue, no documentation of the 90% controls of this 50% air stream has been provided.	39, 41	August Mack Phase 1 Comments	See response to Comment 146 (dryer control efficiency).

[22]

#	Comment	Commenter #	Category	Response
132	d.1. The calculations in Attachment G for emissions due to propane combustion in 103 - Grain Dryer No.1 and 104 - Grain Dryer No.2 - are based on a fuel heating value of 91,500 BTU/gallon. The emission factor source cited, U.S. EPA AP-42, Section 1.5, Table 1.5-1, 07/2008 specifies a typical heating value of propane is 90,500 BTU/gallon. No information is provided for the use of the 91,500 BTU/gallon fuel heating value.	39, 41	August Mack Phase 1 Comments	See response to Comment 114 (propane usage).
133	d.2. In addition, no information is provided to substantiate the assumption that low NOx burners for propane combustion will provide a similar reduction in NOx emissions as low NOx burners for natural gas combustion.	39, 41	August Mack Phase 1 Comments	See response to Comment 114 (propane usage).
134	d.3. Documentation of the use of the 91,500 BTU/gallon fuel heating value and emission rates for low NOx burners for propane combustion should be provided or the emissions calculations should be revised to utilize at heating value of 90,500 BTU/gallon and the actual emission factor for NOx for propane combustion of 13 lbs per 1000 gallons of fuel. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	See response to Comment 114 (propane usage).
135	e.1. The calculations in Attachment G for 105 - Grain Storage Bins are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 500,000 bushels (15,000 tons) capacity and 2,520,000 tons per year turnover per bin (on Pages 14 and 15 of the application) or 300 tons per hour per bin or 1,200 tons per hour (for the four bins).	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: "*...there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all. As opposed to limiting hours of operation and in the interest of operational flexibility, Perdue has requested and accepted a 12-month soybean throughput limitation for the facility.*" DEP concurs with this approach. Perdue has requested a 12-month soybean throughput limitation of 766,500 tons per year, thereby limiting long-term (12-month) emissions. As such, the plan approval will include a federally enforceable annual throughput limit for grain elevator operations of 766,500 tons per year, based on a 12 month rolling total.
136	e.2. The emission calculations should be revised to indicate emissions based on processing of 1,200 tons per hour for 8,760 hours per year which equals 10,512,000 tons annually. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	See response to Comment 135 (grain elevator soybean throughput limitation).
137	e.3. No capacity for the wet grain storage bins is included in the proposed Plan Approval not is any throughput or operating hour limitation. As the rated capacity of this equipment differs from grain receiving, separate limitations need to be established.	39, 41	August Mack Phase 1 Comments	See response to Comment 124 (grain elevator soybean throughput limitation).
138	f.1. The calculations in Attachment G for 106 - Grain Loadout are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 120 tons per hour (the maximum and rated capacity) and operation for 8,760 hours per year as indicated on Page 17 of the application but indicates that only 72,000 tons per year will be processed for a processing time of only 600 hours per year.	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: "*In a given hour, Grain Loadout could process 120 tons per hour; however, there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all since Grain Loadout is not part of normal operations. The loadout would only be utilized to remove off-spec soybeans from the process, if necessary.*" DEP concurs that this response adequately addresses this comment. Also, in accordance with Perdue's 11/2014 application revision, the facility anticipates a 12-month soybean throughput maximum of 127,750 tons per year for Grain Loadout.
139	f.2. The emission calculations should be revised to indicate emissions based on processing of 120 tons per hour for 8,760 hours per year which equals 1,051,200 tons annually. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	See response to Comment 138 (grain elevator soybean throughput limitation).
140	f.3. No capacity for the wet grain storage bins is included in the proposed Plan Approval not is any throughput or operating hour limitation. As the rated capacity of this equipment differs from grain receiving, separate limitations need to be established.	39, 41	August Mack Phase 1 Comments	See response to Comment 124 (grain elevator soybean throughput limitation).
141	Section D - Additional Information: Page 26 indicates that the project will not be subject to NSR, however Perdue states in Attachment C, Project Description that the facility is a single project consisting of two (2) distinct operations: Phase I (soybean grain elevator) and Phase II (soybean extraction operation) as well as in Attachment H, BAT Evaluation that the overall project will be subject to NSR requirements.	39, 41	August Mack Phase 1 Comments	See response to Comment 17 (merging of two project phases into one application).
142	The permit application does not include an appropriate "topdown" Best Available Control Technology (BACT) Analysis along with the use of lowest achievable emission rate (LAER) and an analysis of alternate sites to fulfill the NSR requirements.	39, 41	August Mack Phase 1 Comments	See the response to Comment 17 (merging of two project phases into one application). The overall project is not subject to Prevention of Significant Deterioration (PSD), therefore, BACT requirements do not apply. The overall project is subject to Non-Attainment New Source Review (NNSR) and LAER requirements for VOC. A LAER determination including an Alternative Siting Analysis was submitted in Perdue's June 2013 revision to the application.
143	The permit should be denied for the above reason.	39, 41	August Mack Phase 1 Comments	See the response to Comment 142 (PSD/LAER).

[23]

#	Comment	Commenter #	Category	Response
144	Section D - Additional Information: Page 26 indicates the Best Available Technology (BAT) demonstration is provided in Attachment H.	39, 41	August Mack Phase 1 Comments	See below.
145	a. As Perdue states in Attachment C, Project Description that the facility is a single project consisting of two (2) distinct operations: Phase I (soybean grain elevator) and Phase II (soybean extraction operation) and in Attachment H, BAT Evaluation that the overall project will be subject to NSR requirements this BAT demonstration should be revised to reflect a "top-down" Best Available Control Technology (BACT) analysis. This would include a search of the reasonably available control technology (RACT)/BACT/LAER clearing house for available control technologies, a ranking of the technologies based on control efficiencies, and an economic analysis including the cost per ton of pollutant removed. These elements were not included. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	See the response to Comment 142 (PSD/LAER).
146	b.1. Perdue indicates that column dryers were selected as they have a lower PM emission rate. Perdue has used this lower PM emission rate as part of the emission calculations provided in Attachment G. However, Perdue has also claimed a PM control efficiency (90%) due to the internal configuration of the dryers in addition to using the lower emission rate. No documentation on the PM control efficiency of the dryers is included with the application. The U.S. EPA's compilation of air pollutant emission factors specifies a lower emission rate from column dryers which takes into account the lower emissions from the type of dryer Perdue will be installing and an additional control efficiency is not applicable to the use of the dryer	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: "*The dryer's internal configuration consisting of screen airs and a cyclone is typically considered a PM control device. As an example, in its "Statement of Legal and Factual Basis" dated July 1, 2010, Virginia DEQ lists an efficiency of 95% for the screen airs and associated cyclone within the same dryer model at Perdue's Chesapeake, Virginia facility.*" DEP concurs with the statement that the internal configuration can be considered a control device. See EPA-450/3-73-003a Emissions Control In The Grain And Feed Industry Volume I – Engineering And Cost Study. Since U.S. EPA AP-42 emission factors from column dryers do not account for air recirculation controlled by an internal cyclone and based on EPA-452/F-03-005, Air Pollution Control Technology Fact Sheet, Cyclones, DEP believes a control device efficiency of 90% for 50% of the recirculated air is justified.
147	b.2. During PADEP' s review of the application, Perdue revised their emission estimates for the dryers to reflect that only 50% of the air stream was controlled but still provided no documentation of the 90% control efficiency. The dryers should be connected to an air pollution control device (i.e., baghouse, dust collector, etc.) for particulate matter control and to prevent the build-up of combustible dust. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	See response to Comment 146 (dryer control efficiency). Additionally, in accordance with EPA's proposed amendments to the Standards of Performance for Grain Elevators published in Federal Register Volume 79, Number 131 (Wednesday, July 9, 2014), FR Doc No: 2014-15868: "*Emissions from grain dryers are fugitive in nature. It is not possible to fully enclose grain dryers and vent PM emissions to a control device because of the large size of the dryer, the way that PM is emitted (through the side walls of the dryer rather than from a stack or vent), and because the dryer needs sufficient air flow to work properly and an enclosure would restrict the airflow. Therefore, there are no add-on controls that can be applied to control PM emissions from these dryers.*"
148	Section D - Additional Information: Page 27 information on emissions increases and decreases of VOCs and NOx are not provided even though Perdue states in Attachment C, Project Description that the facility is a single project consisting of two (2) distinct operations: Phase I (soybean grain elevator) and Phase II (soybean extraction operation) as well as in Attachment H, BAT Evaluation that the overall project will be subject to NSR requirements.	39, 41	August Mack Phase 1 Comments	See the response to Comment 17 (merging of two project phases into one application).
149	Emission reduction credit offsets are not identified, a LAER demonstration is not provided, and an analysis of alternate sites is not provided.	39, 41	August Mack Phase 1 Comments	See response to Comments 142 (PSD/LAER) and 14 (alternative siting analysis). The Plan Approval will contain appropriate conditions requiring Perdue to secure 258.03 tons of VOC ERCs prior to the facility's initial start-up.
150	In addition, Title 25 of the Pennsylvania Code Chapter (25 Pa. Code §) 127.203a(a) requires the owner or operator to calculate a net emission increase is accordance with 25 Pa. Code §127.203a(a)(ii), if the emission increase from a project equals or exceeds the applicable emissions rate that is "significant" as defined in 25 Pa. Code §121.1. Emissions from Phase 1 exceed the "significant" emissions rate for PM-I0 and PM2.5 with revised emission calculations (See Specific Comment 11). Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	Federally enforceable throughput limits will be established to limit the facility's potential emissions. Additionally, the project does not exceed PM10 or PM2.5 thresholds for PSD or NNSR.
151	Section F - Flue and Air Contaminant Emission: Pages 29 to 34 information on the maximum emission rate of the following sources is not provided:	39, 41	August Mack Phase 1 Comments	See below.
152	a. 101 - Grain Receiving & Processing: See Specific Comment 11.a	39, 41	August Mack Phase 1 Comments	Short-term (hourly) emission rates, based on the maximum hourly processing rate and long-term (annual) emission rates are included as enforceable Plan Approval throughput limitations: 766,500 tpy soybeans for grain elevator operations and 638,750 tpy soybeans for extraction operations. See Attachment G, Emission Calculations.
153	b. 102 - Wet Grain Storage Bins: See Specific Comment 11.b	39, 41	August Mack Phase 1 Comments	See the response to Comment 152 (soybean throughput limitations).

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
154	c. 103 - Grain Dryer No.1 and 104 - Grain Dryer No.2 - Grain Dryer No. 2: See Specific Comment 11.c	39, 41	August Mack Phase 1 Comments	See the response to Comment 152 (soybean throughput limitations).
155	d. 105 - Grain Storage Bins: See Specific Comment 11.d	39, 41	August Mack Phase 1 Comments	See the response to Comment 152 (soybean throughput limitations).
156	e. 106 - Grain Loadout: See Specific Comment 11.e	39, 41	August Mack Phase 1 Comments	See the response to Comment 152.
157	Section F - Flue and Air Contaminant Emission: Pages 29 to 33 specific information has not been provided including the following. Perdue should be required to correct these deficiencies in its permit application:	39, 41	August Mack Phase 1 Comments	See below.
158	a. Does stack height meet Good Engineering Practice (GEP) (Page 29)	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: *"Since air dispersion modeling was not required for PM emissions from this source, GEP stack height information was not provided in the application."* DEP concurs that this response is acceptable. Also, see the response to Comment 72 (hexane risk assessment), and particularly the response to Comment 2 in the public comment memo accompanying DEP's hexane air dispersion modeling memo.
159	b. Stack exhaust volume, temperature, and moisture information (Pages 30 to 33).	39, 41	August Mack Phase 1 Comments	Based on information provided by Perdue in an email dated 1/25/13, *"Bin vent stack exhaust flow data and grain dryer stack exhaust flow data were submitted in supplemental information to DEP."* DEP concurs that this has been done. It should be noted that Perdue provided this information via a 9/17/12 email. A copy of this email is, and has been, available for public review.
160	Addendum A - Source Applicable Requirements and Addendum 1 - Method of Compliance Worksheets - It does not appear that all applicable requirements pertaining to each source have been included on Addendum A and Addendum 1 based on information provided by Perdue in Attachment D - Applicable Requirements. Applicable requirements that should be evaluated and included are as follows. Perdue should be required to correct these deficiencies in its permit application.	39, 41	August Mack Phase 1 Comments	See the responses to Comments 161-165.
161	a. 40 Code of Federal Regulations (CFR) Part 60.8 and 60.303	39, 41	August Mack Phase 1 Comments	The requirements were addressed during the technical review of the plan approval application and included in the draft Plan Approval.
162	b. 25 Pa. Code §121 - General Provisions	39, 41	August Mack Phase 1 Comments	See the response to Comment 161 (applicable requirements).
163	c. 25 Pa. Code §122 - National Performance Standards for New Stationary Sources	39, 41	August Mack Phase 1 Comments	See the response to Comment 161 (applicable requirements).
164	d. 25 Pa. Code §127 - Construction, Modification, Reactivation, and Operation of Sources. Note, applicability of this regulation should be evaluated based on revised emission calculations (See Specific Comment 11) based on the maximum capacities of the sources to be permitted.	39, 41	August Mack Phase 1 Comments	See the response to Comment 161 (applicable requirements). Applicability was based on emissions in Perdue's 11/12/14 application revision.
165	e. 25 Pa. Code §129.57 - Storage tanks less than or equal to 40,000 gallons capacity containing VOCs.	39, 41	August Mack Phase 1 Comments	See the response to Comment 161 (applicable requirements).
166	Attachment B - Facility Site Map - The facility site map provided with the application does not include information on four (4) additional wet grain storage bins that would be part of Source ID 102 and six (6) additional, 500,000 million bushel grain tanks that would be part of Source ID 105 and are specified as plans for future expansion on an engineering drawing titled Zoning Exhibit for Perdue Grain and Oilseed, LLC Soybean Processing Facility dated Feb. 29, 2012 that was presented at a public hearing before the Zoning Hearing Board of Conoy Township on March 22, 2012. Perdue should clarify their plans for future expansion with regard to their air permit requirements prior to PADEP issuing the Plan Approval for Phase I.	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: *"Perdue does not have current plans for full build-out of the additional grain storage tanks as indicated on the Zoning Exhibit. In the future, should Perdue develop such plans, the proper DEP permit applications will be filed to seek approval for such plans."* DEP concurs that this assertion adequately addresses this comment.
167	Attachment C - Project Description and Attachment D Applicable Requirements: Perdue indicates that the overall project will be subject to NSR but that the NSR requirements will be addressed in the Phase 2 application. If the overall project will be subject to NSR then NSR must be addressed in both the Phase 1 and Phase 2 Plan Approval Applications.	39, 41	August Mack Phase 1 Comments	See the response to Comment 17 (merging of two project phases into one application).
168	The permit should be denied for the above reason.	39, 41	August Mack Phase 1 Comments	See the response to Comment 17 (merging of two project phases into one application).

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
169	Attachment E - Process Description: a. The process description indicates that the soybeans will pass through two (2) enclosed scalper screens to remove foreign material such as sticks, stems, pods, dirt, and other debris. The totally enclosed scalper screens will not be emission sources themselves; however, miscellaneous dust pick up points with the processing system will be sent to the grain baghouse for control. If dust is generated from the scalper screens requiring miscellaneous dust pick up points that are sent to the grain baghouse for control then these scalper screens are an emission source and should be included as part of the emission calculations, on the appropriate application forms, and as an emission source in the proposed Plan Approval.	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: *"As indicated in the Plan Approval Application, the enclosed cleaner scalper screens are a component of the Grain Receiving/Processing Source. Emission estimates are consistent with U.S. EPA AP-42 Section 9.9.1 emission factors and methodology. The emission estimates for Grain Receiving/Processing include the combined emission factors from "Grain receiving" and "Headhouse and grain handling" as provided in AP-42 Table 9.9.1-1. This is due to the fact that the overall system (grain receiving, handling (drag conveyance, legs, turnhead, etc.), and the enclosed cleaner scalper screens) is aspirated to the single Grain Receiving/Processing Baghouse."* DEP concurs, based on this, that the scalper screens ought not be treated as a separate emissions source.
170	In addition, the soybean screening process is identified as an air emission source by Perdue in Attachment I, County and Municipal Notifications. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	See the response to Comment 169 (scalper screens).
171	Attachment E - Process Description: b. The process description indicates that as Source ID 102 the wet grain storage bin tanks can be filled relatively quickly, resulting in the displacement of a significant volume of air, the vents will be equipped with collapsible fabric filters to minimize fugitive emissions of dust. Source ID 105 grain storage bins should also be equipped with collapsible fabric filters on the bin vents as the annual precontrol emissions in tons per year specified for Source ID 105 in Attachment G are the same as the annual precontrol emissions in tons per year specified for Source ID 102. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: *"As provided in AP-42, Table 9.9.1-1, there is only one (1) set of PM/PM10/PM2.5 emission factors available for estimating "Storage bin (vent)" emissions, regardless of bin capacity or maximum bin filling rate. Given that the ID 105 large bins are of a different size configuration and loading rate as compared to the smaller wet grain ID 102 bins, it is not practical to utilize collapsible fabric filters on the ID 105 bins. As per the draft Plan Approval, the bins are required to be observed for visible emissions."* DEP concurs with this approach.
172	Attachment J - General Information Form: a. On page 3 of 7, Project Information Item 1. Perdue indicates "Yes" that they have informed the surrounding community and addressed any concerns prior to submitting the application to the PADEP. Previous questions and concerns raised by Nissley Vineyards have not been addressed including questions submitted in writing on the following dates: i. May 26, 2010, ii. December 28, 2011, iii. A handout distributed as Perdue's Open House on April 26, 2012, and iv. June 18, 2012.	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: *"Perdue has undertaken extensive efforts to reach out to the local community through, among other things, an open house and presentations to municipalities, the agricultural community and local and county emergency responders. The project was also the subject of public land use proceedings before Conoy Township and Lancaster County. Perdue has attempted to address the concerns of Nissley Vineyards through various means, including having Ms. Judy Nissley tour a similar facility in Maryland and meetings with the Nissleys and their consultants. Despite these efforts, Perdue has been unable to address the Nissleys' concerns to their satisfaction. Moreover, there is no regulatory requirement that Perdue do so prior to issuance of the Plan Approval."* DEP notes that concerns which the commenters believe were unaddressed by Perdue have been referred by the commenters to DEP, and are included elsewhere in this comment and response document. DEP has comprehensively considered and addressed all public comments in its review.
173	Attachment J - General Information Form: b. On page 3 of 7, Project Information Item 2. Perdue provides information on project funding but does not include the grant expiration date. The grant contract expires on November 30, 2016 and the project is required to be completed within the term of the contract.	39, 41	August Mack Phase 1 Comments	Perdue has stated in an email dated 1/25/13: *"The grant contract expires on November 30, 2016; the information pertaining to project funding through ARCAP is public knowledge and is available for review."* DEP concurs that this response adequately addresses this comment.
174	The application submitted by Perdue is extremely deficient and should be denied as a result of the numerous inaccuracies, especially Perdue's failure to address the circumvention requirements of 25 Pa. Code § 127.216.	39, 41	August Mack Phase 1 Comments	DEP has concluded that, to the extent that certain of the August Mack comments may have merit, the most appropriate way to address them, rather than to deny the plan approval, is to have Perdue provide additions and corrections to its application. Perdue has done this. See also the response to Comment 17 (merging of two project phases into one application).
175	It is eminently clear, from public statements made by Perdue Grain & Oil Seed, LLC (Perdue), Lancaster County Commissioners, Lancaster County Solid Waste Authority, and even the plan approval application itself, that the ultimate business plan for Perdue is the installation of a grain elevator and a soybean oil extraction plant.	42	Hellam Township Phase 1 Comments	See the response to Comment 17 (merging of two project phases into one application).
176	It is further admitted by both DEP and Perdue, that the total facility will be a major source of VOCs in a presumed non-attainment area, subject to New Source Review (NSR).	42	Hellam Township Phase 1 Comments	The overall project, Phase 1 & 2, will be major for VOC emissions, and is therefore subject to NNSR.

[26]

#	Comment	Commenter #	Category	Response
177	One requirement for a new or modified source that triggers NSR is that the applicant must conduct an alternative site analysis. DEP has not indicated in its review memo that this was in fact conducted or that DEP concurred in any determination that the selected site's location met the harms/benefit requirements of the regulation. And while there may be a legitimate reason for Perdue to develop this project in two phases, the failure to address the alternate site analysis for the entire project is a circumvention of this requirement, whether intended or not. If DEP does not require this analysis for Phase 1 of the project, a legitimate investigation of alternative sites is circumvented by virtue of the argument (after the fact) that placing the extraction plant next to the elevator results in transportation savings and results in the least harms, thereby totally corrupting a legitimate alternative site investigation. DEP must insist on this analysis prior to issuing the Phase I plan approval.	42	Hellam Township Phase 1 Comments	See the response to Comment 14 (alternative siting analysis).
178	Additionally, since the public has not had an opportunity to review DEP's analysis of this issue, a revised draft permit with an updated technical review memo should be issued with another 30-day comment period.	42	Hellam Township Phase 1 Comments	See the response to Comments 14 (alternative siting analysis) and 17 (merging of two project phases into one application).
179	There are additional areas of concern in the draft plan approval relating to particulate emission limits and the verification of those limits, which are included below.	42	Hellam Township Phase 1 Comments	See below.
180	The first source listed in the draft plan approval, the grain receiving and processing (Source 101) has emission limits based on Chapter 123 regulations and in Source Group 01, limits based on New Source Performance Standards (NSPS). Nowhere in the draft plan approval or in the review memo are limits established under Best Available Technology (BAT) requirements as required under Chapter 127. Chapter 123 regulations and NSPS limits are not BAT determinations.	42	Hellam Township Phase 1 Comments	Perdue has stated in an email dated 1/25/13: *"DEP has established a BAT emission level for sources similar to Perdue's grain elevator operation in General Plan Approval GP-15. GP-15 specifies the BAT emission level as 0.02 gr/dscf. Perdue has proposed a more restrictive limit of 0.01 gr/dscf and believes this limitation to satisfy BAT."* DEP concurs that BAT for similar operations are established under GP15.
181	Additionally, the potential-to-emit (PTE) on this source is improperly determined. The review memo agrees with Perdue's estimate of a 99.9% control efficiency of the baghouse without any requirement to verify or test this hypothesis. The vendor guarantee of 99.9% cannot be taken seriously since it is given independent of any inlet loading. Any knowledgeable baghouse vendor is aware that percentage removals can only be guaranteed based on an inlet loading. In contrast the permit limits for this source are 0.02 gr/dscf under the Chapter 123 regulation and 0.01 gr/dscf under the NSPS.	42	Hellam Township Phase 1 Comments	Perdue has stated in an email dated 1/25/13: *"As provided in the Plan Approval Application, the baghouse manufacturer guarantees that based on 2 micron and larger dust particles, the baghouse will have a 99.9% or better mass efficiency rating on the dust laden incoming gas stream, and that emissions will not exceed 0.01 gr/dscf. Given that the baghouse manufacturer is aware of the type of emission source being controlled, the manufacturer has an indication of the typical expected inlet loading characteristics for this type of emission source and has guaranteed the control efficiency. Using the regulatory limit of 0.01 gr/dscf and the design airflow will yield an allowable emission rate in pounds per hour which is not necessarily the source's potential to emit on an annual basis."* DEP concurs with the use of 99.9% control factor. This is based on a capture efficiency of 100% since unloading will be conducted with bay doors closed and an air draw will be used. This is supported by Texas Commission on Environmental Quality Grain Elevators Guidance Document, Reference (d), Choke Feed with Aspiration. The plan approval will contain requirements that require the doors to be closed during all unloading operations and for the facility to perform stack testing on the source to determine compliance with the gr/dscf limit.
182	The review memo states that the air flow through the grain baghouse is 30,000 ACFM. While the review memo doesn't give the SCFM through the baghouse, the fact that this is moving ambient air allows one to assume the actual flow is fairly close to the standard flow for purposes of estimating the PTE of this source. Using 30,000 SCFM and 0.01 gr/dscf, the more stringent of the two limits, a PTE of 11.3 tons per year of particulate matter (PM) is indicated. Contrast this with the Perdue's estimate of a PTE of 0.03 tons per year based on unverified and unenforceable assumptions.	42	Hellam Township Phase 1 Comments	Perdue has stated in an email dated 1/25/13: *"Emissions were estimated based on this annual throughput limit, published EPA AP-42 emission factors, and a manufacturer guaranteed control efficiency. There will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all. As opposed to limiting hours of operation and in the interest of operational flexibility, Perdue has requested and accepted a 12-month soybean throughput limitation for the facility."* DEP concurs with this approach. As such, the plan approval will include a federally enforceable annual throughput limit for grain elevator operations of 766,500 tons per year, based on a 12 month rolling total.
183	The review memo should be revised to establish a PTE that is actually enforceable. If Perdue wishes to use the 99.9% control, the permit must require actual demonstration of this in practice.	42	Hellam Township Phase 1 Comments	See the response to Comment 181 (grain receiving baghouse efficiency).
184	There are more serious issues with the grain dryers. Again DEP fails to establish BAT emission limits on the largest source of particulate emissions in this plan approval. The uncontrolled emissions, by Perdue's own estimate, make this source major for PM, yet DEP imposes no limits or testing requirements on these dryers but just assumes the Perdue estimated control of 90%.	42	Hellam Township Phase 1 Comments	See the response to Comment 146 (dryer control efficiency). DEP's General Plan Approval and/or General Operating Permit (BAQ-GPA/GP-15) establishes BAT emission levels for grain elevator operations. Since the emissions from the grain dryers are fugitive, they are subject to the 10% BAT opacity limit established by the GP-15. Furthermore, the use of column dryers heated indirectly by steam, internal screens with perforations less than 0.094 inches, and recirculating exhaust air which is cleaned by internal screens (size 24 mesh) and a cyclone will be considered BAT.

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
185	BAT must be established and enforceable conditions must be included to test these sources to ensure they are below major source thresholds.	42	Hellam Township Phase 1 Comments	The dryers will be required to conduct opacity testing in accordance with EPA Method 9.
186	If periodic testing is not included, the minor source status of the grain elevator is not practically enforceable, contrary to DEP and EPA regulations.	42	Hellam Township Phase 1 Comments	See the response to Comment 185 (dryer testing).
187	And on a final note, due to the strong interest of Hellam Township and its citizens on these permits, we hereby request that the permit applications and related documents be posted in the Community Information section of the regional web page.	42	Hellam Township Phase 1 Comments	In response to this comment, DEP has posted the relevant materials on DEP's website.
188	The proposed project will surely affect the water quality in the river.	26	Additional Issues	See the response to Comment 14 (alternative siting analysis).
189	We have the richest farmland in the state right here in PA. I think that is a treasure we need to take seriously and preserve.	76	Additional Issues	See the response to Comment 14 (alternative siting analysis).
190	If this county is already known as having problems, environmental problems, let's think about what that does to the value of our property	84	Additional Issues	See the response to Comment 14 (alternative siting analysis).
191	It was inappropriate for the Commonwealth to give a large grant of money to Perdue for this project.	80-81, 84-86	Additional Issues	This comment goes beyond the scope of this application.
192	Has Perdue done the phase 1 environmental study and the geotechnical environmental study that was required as a condition of their large state grant related to the proposed facility?	67-68	Additional Issues	See the response to Comment 193 (tank installation planning).
193	I believe that it is premature and inappropriate for Perdue representatives to talk about jobs and money to Conoy Township officials and the media when they have not yet submitted a thorough analysis of the potential health and environmental impacts of the proposed facility as is required by DEP regulations that deal with the proposed hexane storage tanks on this site (25 Pa. Code Section 245.235(b)). Unless this information is supplied to the DEP I request that DEP deny Perdue's applications for phase one, phase two plan and approval of the application and for their above ground storage tank permit.	71-72	Additional Issues	This comment addresses an issue related to the proposed storage of hexane. DEP storage tank program personnel have provided the following response: *"As part of its planning for this project, Perdue conducted a geologic hazards evaluation for the proposed stormwater management facilities at the site. The results of this investigation were provided to the Department in a "Carbonate Hazard Report" sealed by a Professional Geologist. Perdue also conducted an investigation regarding soils and geotechnical concerns. The investigation included field exploration consisting of a test-boring program. The results of this investigation were provided to the Department in a "Preliminary Geotechnical Engineering Report" sealed by both a Professional Engineer and a Professional Geologist. Perdue also indicated that the tanks will be installed with a concrete containment structure to contain possible releases. This containment, coupled with the double-walled tanks that Perdue is proposing to install, will provide tertiary containment of the tank systems."*
194	Those who are concerned about the environmental implications of the Perdue project should contact their elected representatives about it.	84	Additional Issues	DEP concurs that citizens are free to contact their elected representatives about issues, such as this one, that concern them.
195	Perdue's good record of lost time injuries at one of its other plants may reflect positively on its applications for the proposed Conoy Township facility.	69	Additional Issues	See the response to Comment 14 (alternative siting analysis).
196	The proposed Perdue plant may have positive benefits, such as jobs or access for farmers.	60-61, 65-66, 69	Additional Issues	See the response to Comment 14 (alternative siting analysis).
197	The ~35 jobs is no tradeoff for the negative impacts of this project.	45, 57, 70, 84	Additional Issues	See the response to Comment 14 (alternative siting analysis).
198	Some of the jobs provided by the Perdue plant may be low paying.	67-68	Additional Issues	See the response to Comment 14 (alternative siting analysis).
199	Area farmers will continue to enjoy a market for their soybean crops without Perdue located here in Southcentral PA.	45, 57	Additional Issues	See the response to Comment 14 (alternative siting analysis).
Section B: Comments related to, or specifically submitted with reference to, the combined Perdue project (Phase 1 + Phase 2)				
200	Perdue is planning to release an estimated 245 tons of hexane gas into the air each year. This is almost five times the allowed maximum limit.	70	Overall Permitting Issues	The application was revised on 11/12/14 to reflect current proposed throughputs of the facility including VOC emissions. Proposed VOC emissions from the project are 208.05 tons per year, thereby subjecting the project to meet LAER requirements. The comment is incorrect that this exceeds any maximum limit.
201	If you grant this permit, what will happen when Perdue emits more than the 245 tons they've estimated? Their Caulfield, North Carolina site currently emits 264 tons of hexane gas per year.	70	Overall Permitting Issues	DEP is responsible to enforce limits in plan approvals that DEP grants to regulated entities such as Perdue.
202	As a citizen, I reserve my right to sue for toxic effects of materials such as hexane released by Perdue, and hereby enter into the public record that there exist rights of citizens to seek damages for tort of a known toxic substance released by water, land or air and that this right is not to be mitigated or dismissed by legal means in advance.	89	Overall Permitting Issues	DEP does not offer legal advice to private individuals about their legal options.
203	Why have the executives of Perdue not considered the risk to their reputation of using hexane?	89	Overall Permitting Issues	The motives of Perdue with regards to its reputation are beyond the scope an air quality plan approval application review.

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
204	The figures provided by Perdue as to the amount of hexane that will be released have been revised multiple times, as has the hexane rate of recovery. Many of the provided figures conflict with the 7,000 gallons per month of hexane that Perdue has stated will be trucked to the plant every month. In at least one document Perdue has stated that it will release 220,000 pounds of hexane per year into the atmosphere.	61-62	Overall Permitting Issues	The application was revised on 11/12/14 to reflect current proposed throughputs of the facility including solvent loss from the facility. Solvent delivery to the facility is estimated at 74,800 gal/yr or roughly one truck load per month.
205	There is a total of 84,000 gallons of hexane delivered to the plant a year, 40,000 gallons stored. That would seem a little high to me that if you're only using 7,000 gallons a month why you would have to keep 40,000 gallons on hand in above ground storage tanks.	81	Overall Permitting Issues	See the response to Comment 204. Perdue has stated in an email dated 3/10/14: "*The nominal amount routinely stored in the tanks would be approximately 5,000 gallons*" and also that "*The sizing of the (2) 20,000 gallon tanks is to ensure enough capacity to store the total amount of hexane contained within the entire processing system, should a system purge or shutdown be required. The average amount of hexane that will be kept in the tanks under normal operating circumstances would be approximately 4,000 to 5,000 gallons (total including both tanks).*" DEP concurs that this response adequately addresses this comment.
206	How many tons of hexane will be brought onto this proposed site in a year's time?	85-86	Overall Permitting Issues	See response to Comment 204. Based on a solvent density of 5.66 lb/gal, 74,800 gal/yr equates to 211.7 tons.
207	How much hexane will be used and released in a 24 hour period?	85-86	Overall Permitting Issues	Perdue has stated in an email dated 3/10/14: "*The amount of hexane released per 24-hour period will vary from day-to-day due to the variability of the constituents of the soybeans. As the process stabilizes after start-up, there should be less variability in solvent emissions.*" The DEP concurs with this assessment.
208	Is hexane going to be evaporated, vented, scrubbed or disposed of and what percentages?	85-86	Overall Permitting Issues	There are several routes of hexane emissions from the extraction process. Based on the Vegetable Oil NESHAP Model MACT Plant Emissions, it was estimated that 3.48% of the total emissions is emitted from the mineral oil scrubber stack, 24.24% of the total emissions are from the meal dryer stack, 12.12% of the total emissions are from the meal cooler stack, 39.25% of the total emissions evaporate from the crude meal, 12.92% of the total emissions evaporate from the crude oil, 7.95% of the total emissions from equipment leaks, and 0.05% of the total emissions evaporate from wastewater.
209	How did you obtain your data for hexane and what is your reliability factor for this data?	85-86	Overall Permitting Issues	Perdue has stated in an email dated 3/10/14: "*The data was compiled from a number of sources, including professional consultants, EPA databases, and Perdue's operational experience.*" DEP concurs that this response adequately addresses this comment.
210	Where did you say that you were venting or allowing the hexane to escape to?	85-86	Overall Permitting Issues	See response to Comment 208 (hexane emission points).
211	Who and what is the source of the hexane and what is the pathway of its journey to arrive at this proposed location?	85-86	Overall Permitting Issues	Perdue has stated in an email dated 3/10/14: "*Various suppliers will deliver hexane solvent to the facility by tanker truck. The suppliers will adhere to federal, state and local transport requirements.*" DEP concurs that this response adequately addresses this comment.
212	Where and what on and offsite monitoring is proposed with these releases [of hexane]?	85-86	Overall Permitting Issues	As a condition of the plan approval the facility will be required to employ a Leak Detection and Repair (LDAR) Program. The LDAR Program will include (a) Audible, Visual, Olfactory (AVO) sensory detection method performed on plant equipment containing hexane daily, (b) Install and continuously operate fixed-location flammable gas monitors or other leak detection monitoring devices approved by the Department in the solvent extraction area set to go off at 500 ppmv, (c) Daily inspections/recording of fixed gas monitors, & (d) Initial and annual leak checks of equipment containing hexane using a Department approved gas analyzer or other detection and monitoring device that conforms to the requirements listed in Method 21 of 40 CFR Part 60, Appendix A.
213	Why has DEP not made it a requirement to monitor the health effects of a toxin (hexane) released into the air directly? Why is Perdue not required to monitor hexane release effects?	89	Overall Permitting Issues	See the response to Comment 72 (hexane risk assessment). Also, Perdue has stated in an email dated 3/10/14, that: "*See Section 9.6 of the revised LAER Evaluation that discusses the fixed-location flammable gas monitors that will be used in the solvent extraction area to continuously monitor the hexane concentration in air.*"
214	If hexane monitoring is required, what will be the standard for testing, and who will do the testing?	89	Overall Permitting Issues	See the response to Comment 212 (LDAR).
215	If such hexane testing is not required, then there must exist alternative measurement of the toxic effects that there will be a tracking, either informal or formal, of these effects, with release of this information to the public.	89	Overall Permitting Issues	See the response to Comment 212 (LDAR).
216	The emissions of hexane from the proposed project may be dangerous to public health	9, 25, 36, 44, 46-4	Public Health and Welfare	See the response to Comment 72 (hexane risk assessment).
217	If DEP does not require Perdue to install the mineral scrubbers, what guarantee can you give citizens that they will not be adversely affected by the hexane discharge from the plant?	74-75	Public Health and Welfare	See the response to Comment 72 (hexane risk assessment).
218	Perdue does not want to pay for any studies exploring the health risks of hexane, which is already listed by the EPA as a hazardous air pollutant.	75	Public Health and Welfare	See the response to Comment 72 (hexane risk assessment).

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
219	We talk about hexane being a very toxic gas and how it can cause cancer, but we have TMI sitting just miles away from us that has caused cancer to many loved ones in this area, yet no one can fight such a large corporation.	82	Public Health and Welfare	See the response to Comment 72 (hexane risk assessment). Also, the TMI facility is not the subject of this application.
220	User information related to hexane states close neighbors are not desirable around such facilities.	85-86	Public Health and Welfare	See the response to Comment 72 (hexane risk assessment).
221	In the era of known catastrophic environmental events, it simply makes no common sense to use such a toxin as hexane in any form near food substance, or to release it into the air.	89	Public Health and Welfare	See the response to Comment 72 (hexane risk assessment).
222	Because humans vary widely in their susceptibility to chemical exposure due to age, gender, genetics and poor existing health, it cannot be presumed that even a low level exposure to a chemical such as hexane is risk free unless there are sufficient data to contradict this assumption.	71-72	Public Health and Welfare	See the response to Comment 72 (hexane risk assessment).
223	To my knowledge, there have been no — there have been few, if any, serious public health studies of human populations exposed to various levels of hexane emissions around soybean extraction plants.	71-72	Public Health and Welfare	See the response to Comment 72 (hexane risk assessment).
224	Will this plant put hexane or another toxin in the river?	89	Public Health and Welfare	Perdue has stated in an email dated 3/10/14: "*The proposed facility will not discharge into the Susquehanna River.*" DEP concurs that this response adequately addresses this comment..
225	Perdue emitting hexane into the air, as proposed, is not really much different than if they were dumping gasoline on people's properties.	68	Public Health and Welfare	See the response to Comment 72 (hexane risk assessment).
226	Compared with hexane, there are other commonly used hazardous substances in our society, such as gasoline, MEK and Roundup, also have risks.	69	Public Health and Welfare	DEP acknowledges the comment, but notes that the listed substances other than hexane are not at issue with this application.
227	The additional emissions of hexane in this proposed project, could be harmful to public health when considered cumulatively with Pennsylvania's already compromised air quality.	36	Public Health and Welfare	See the responses to Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), and 96 (ozone monitoring data) .
228	The footnotes in section D, page 72 of Perdue's phase two plant approval application state that the Department may request additional information to evaluate the application such as air quality modeling and a plan for air pollution emergencies.	71-72	Public Health and Welfare	DEP has requested and received the information it believes is necessary to proceed with processing this application.
229	In view of the potential health hazards caused by smog I would ask the DEP to require that Perdue carry out an air modeling screening study on the hexane emissions released from their proposed plant in Conoy Township.	71-72	Public Health and Welfare	See the response to Comment 72 (hexane risk assessment).
230	I recommend that you don't to Lancaster Airport to get meteorological data for the hexane air modeling study. Go to Bainbridge because that's where the temperature inversions are.	71	Public Health and Welfare	See the response to Comment 72 (hexane risk assessment), and particularly the response to Comment 1 in the public comment memo accompanying DEP's air dispersion modeling memo.
231	The hexane air modeling study should take into consideration the effect of the numerous temperature inversions and high levels of nitrous oxide that are known to occur in the region around the proposed new plant.	71-72	Public Health and Welfare	With regard to meteorology, see the response to Comment 72 (hexane risk assessment), and particularly the response to Comment 1 in the public comment memo accompanying DEP's air dispersion modeling memo. With regard to cumulative effect of other pollutants such as nitrous oxide, see the responses to Comments 71 (relative increase in ozone precursors) and 96 (ozone monitoring data).
232	Where can we see air modeling specifically related to seasonal and weather patterns specifically related to where the hexane will be dispersed?	85-86	Public Health and Welfare	See the response to Comment 72 (hexane risk assessment), and particularly the response to Comment 1 in the public comment memo accompanying DEP's air dispersion modeling memo.
233	Mr. Black of Perdue indicated with respect to the hexane modeling and risk assessment that their consultant will conduct this model using EPA protocols. Well, our position is that that model should be conducted in advance of requesting the assessment. We know that topography in an area is a critical issue and so that's something that must be included in any kind of proper modeling. Local meteorological data should be used.	88	Public Health and Welfare	See the response to Comment 72 (hexane risk assessment).
234	My understanding is that there will be chronic exposure from any permitted hexane emissions that are trapped close to the ground or inversions.	65-66	Public Health and Welfare	See the response to Comment 72 (hexane risk assessment).
235	If we are lucky, perhaps a hexane air modeling study in the case of Perdue will help us to avoid the type of deadly smog that hung over Donora, Pennsylvania out near Pittsburgh in 1948 due to a severe temperature inversion.	71-72	Public Health and Welfare	See the response to Comment 72 (hexane risk assessment).

[30]

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
236	Perdue has not considered using readily available technology to reduce hexane emissions.	36	BAT/LAER/NNSR Issues	In accordance with LAER requirements, all control methodologies were evaluated. These include add-on controls, process design and technology transfer and available control alternatives, including mechanical pressing, supercritical CO2, & non-hexane solvent extraction. Add-on controls other than those proposed by Perdue, as well as technology transfer alternatives, were eliminated due to technical or safety issues. Refer to Perdue's LAER analysis revised 6/2013.
237	Better capture and control equipment would enable Perdue to greatly reduce the toxic hexane emissions and set a new industry standard nationally for the required lowest achievable emission rate (LAER) for these toxic emissions.	71-72	BAT/LAER/NNSR Issues	The proposed facility will employ the latest state of the art equipment to ensure VOC emissions are minimized. Furthermore, the facility will have its solvent loss ratio (SLR) limited in accordance with DEP's LAER determination.
238	The question does remain about why the plant should emit so much hexane in this day and age. This hardly seems to me what should be permitted under LAER	88	BAT/LAER/NNSR Issues	See the response to Comment 237 (LAER).
239	The major part of the hexane emission from this plant would come from the meal dryer oven, which has no equipment on it to remove hexane emissions and allows 80 percent or up to 250 tons of the total emissions from the plant to be dumped in the air that we breathe.	71-72	BAT/LAER/NNSR Issues	See the responses to Comments 208 (hexane emission points), 236 (LAER evaluation), 249 (scrubbed sources), 328 (mineral oil scrubber infeasibility for dryer/cooler) and 454 (lack of meal dryer scrubbers at other facilities).
240	Our township officials and residents are not fooled by Perdue produced misleading statements to the press that they are removing most of the hexane from the air by using a scrubber on the part of the extraction process that removes residual hexane from soybean oil. This scrubber removes 99 percent of the hexane from the oil, but only 20 percent of the hexane emissions from the total plant.	71-72	BAT/LAER/NNSR Issues	See response to Comment 208 (hexane emission points).
241	My concern is how DEP could possibly allow hexane to be emitted into our environment from the proposed Perdue facility, when the technology exists to remove or recycle that substance.	50	BAT/LAER/NNSR Issues	See the response to Comment 236 (LAER evaluation).
242	Given that hexane is a neurotoxin and given that Lancaster County is already a non-attainment zone due to the toxic emissions that already exist here, why would you not require Perdue to really use the best available technology to minimize the adverse effects of its emissions?	77	BAT/LAER/NNSR Issues	See the response to Comment 237 (LAER).
243	I believe, that we can have both clean air and farm related jobs if Perdue agrees to follow all existing DEP regulations which require them to install equipment that will capture or control toxic hexane emissions at key points in their soybean extraction process.	71-72	BAT/LAER/NNSR Issues	See the responses to Comments 236 (LAER evaluation) and 237 (LAER).
244	Please require them to capture all the hexane. I am trying to protect my family and neighbors and future generations who have a right to clean air.	60	BAT/LAER/NNSR Issues	See the response to Comment 237 (LAER).
245	Given the large grant that PA gave to Perdue, additional scrubbers (other appropriate technology) could be installed to eliminate or severely reduce the amount of hexane emitted from this proposed facility.	60, 63-64, 67-68,	BAT/LAER/NNSR Issues	See the response to Comment 236 (LAER evaluation).
246	In terms of the ventilated product whether it's in buildings and so forth or whether it's the drying process where the heat is generated to dry it out, will that (hexane) be going to the atmosphere?	83	BAT/LAER/NNSR Issues	See response to Comment 208 (hexane emission points).
247	There is a concern with the unscrubbed meal dryer. That is a critical issue that needs to be addressed properly.	88	BAT/LAER/NNSR Issues	See the responses to Comments 208 (hexane emission points), 236 (LAER evaluation), 249 (scrubbed sources), 328 (mineral oil scrubber infeasibility for dryer/cooler) and 454 (lack of meal dryer scrubbers at other facilities).
248	I ask why DEP is not requesting the use of an appropriate scrubber to act as a safeguard for citizens?	89	BAT/LAER/NNSR Issues	See the responses to Comments 208 (hexane emission points), 236 (LAER evaluation), 249 (scrubbed sources), 328 (mineral oil scrubber infeasibility for dryer/cooler) and 454 (lack of meal dryer scrubbers at other facilities).
249	I was relieved to hear that there were mineral scrubbers that can remove the hexane, almost all of it, from the air. But then I learned that Perdue doesn't want to do that. DEP should require Perdue to install the mineral scrubbers.	73-75	BAT/LAER/NNSR Issues	The oil extraction and desolventizer-toaster encompass a mineral oil scrubber in their design and operation.
250	There's scrubbing technologies there. It can be done right. We shouldn't have to worry about it. EPA [DEP] should do their job and be responsible and make sure it's done right.	83	BAT/LAER/NNSR Issues	See the responses to Comments 208 (hexane emission points), 236 (LAER evaluation), 249 (scrubbed sources), 328 (mineral oil scrubber infeasibility for dryer/cooler) and 454 (lack of meal dryer scrubbers at other facilities).
251	According to a recent newspaper article, Perdue has rebutted all request related to scrubbers and requests for hexane containment	85-86	BAT/LAER/NNSR Issues	See the responses to Comments 208 (hexane emission points), 236 (LAER evaluation), 249 (scrubbed sources), 328 (mineral oil scrubber infeasibility for dryer/cooler) and 454 (lack of meal dryer scrubbers at other facilities).
252	Will the hexane storage tanks have to require a venting condition to atmosphere, or to another secondary vessel?	83	BAT/LAER/NNSR Issues	Working losses from the tanks will be captured, routed to and controlled by the mineral oil scrubber. The plan approval will contain a condition requiring this control method.
253	It is inappropriate for Perdue to buy pollution credits from somewhere else in order to pollute at their proposed Conoy Township location.	67-68, 85-86	BAT/LAER/NNSR Issues	The law mandates that pollution credits be obtained for certain projects. DEP is responsible to ensure that any pollution credits are properly obtained in accordance with the law.

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
254	We need to begin taking steps to improve our air quality. Allowing Perdue to dump this much hexane and allowing them to purchase air quality credits is not the way to do it.	60	BAT/LAER/NNSR Issues	See the response to Comment 253 (emission credits).
255	Given that the air pollution is right here in Lancaster and York Counties, how would Perdue's buying pollution credits from a business in another state, or even next door, mitigate the pollution problem that already exists here?	44, 77	BAT/LAER/NNSR Issues	See the response to Comment 253 (emission credits).
256	DEP should not allow any harmful substance to be released by "buying credits." I am appalled that you would even consider this.	50	BAT/LAER/NNSR Issues	See the response to Comment 253 (emission credits).
257	Just because another company is greedy enough, in this case Lancaster County Solid Waste Management Authority, to sell their environmental credits to Perdue that doesn't mean we have to allow it.	70	BAT/LAER/NNSR Issues	See the response to Comment 253 (emission credits).
258	Other alternative extraction methods exist. We believe that when all costs are considered, and especially when health risks, explosion risks and environmental risks are included, hexane based extraction is neither a least cost nor a least risk extraction mechanism.	61-62	Alternatives Analysis Issues	See the response to Comment 14 (alternative siting analysis).
259	I would hope you will urge Perdue to find an alternative method for processing their soybeans, one that is safe for everyone young and old.	70	Alternatives Analysis Issues	See the response to Comment 14 (alternative siting analysis).
260	I ask why DEP is not requesting the use of a cold press? It is not clear the reasoning for selecting this sort of plant when a cold press plant would serve the purpose. What is the reason for selection of this sort of plant?	89	Alternatives Analysis Issues	See the response to Comment 14 (alternative siting analysis).
261	There are risks posed by residual hexane that is in the soybeans — the soybean oil and the soybean byproducts, some of which is directly consumed by humans and some of which is fed to farm animals being raised for human consumption including chickens.	61-62	Alternatives Analysis Issues	See the response to Comment 14 (alternative siting analysis).
262	The benefits of the Perdue facility to local farmers would exist even if the soybean oil processing portion of the facility were not constructed.	61-62	Alternatives Analysis Issues	See the response to Comment 14 (alternative siting analysis). Perdue has also stated in an email dated 3/10/14: *"While local farmers will still have markets for soybeans if Perdue's facility is not built, their profits will be reduced by increased transportation costs associated with shipping soybeans to out-of-state processing facilities. As explained in the revised Alternatives Analysis in the revised Plan Approval Application, there is not enough local processing capacity to handle local soybean production."*
263	Are there other methods for obtaining the oil that are significantly less harmful to human health and the environment?	59	Alternatives Analysis Issues	See the response to Comment 14 (alternative siting analysis).
264	There is a risk of explosions from the proposed use of hexane at this facility.	59, 61, 65-66, 70-	Explosion and Accidental Release Issues	This comment addresses an issue related to the proposed storage of hexane. DEP storage tank program personnel have provided the following response: *"Fire and explosion are a concern with the storage of any flammable liquid. Storage tank regulations (§ 245.612, relating to performance and design standards) require tank systems to be designed, constructed, and installed in accordance with an appropriate current code of practice such as National Fire Protection Association (NFPA) 30 (Flammable and Combustible Liquids Code) and NFPA 36 (Standard for Solvent Extraction Plants). However, primary oversight of fire, explosion, and safety issues is handled by the Pennsylvania Department of Labor & Industry (L & I), through their Flammable and Combustible Liquids program and associated installation permitting process. While system design and installation will be reviewed and permitted by L & I, Perdue has informed the Department that they intend to install thermally-protected, double-walled aboveground steel tanks built to the Underwriters Laboratory (UL)-2085 standard. UL-2085 tanks are constructed to meet or exceed requirements including a two-hour fire test, ballistics/projectile test, vehicle impact test, hose stream test, pool fire test, and interstitial communication test. The interstitial area between the inner and outer walls of the tanks will be filled with insulating material that protects the inner tank in the unlikely event of a fire or extreme heat. In addition, all aboveground storage tanks storing flammable or combustible liquids are required to be equipped and maintained with emergency tank venting. Emergency vents are designed to be vapor tight except in the instance of high tank pressures, such as the heating of a tank due to fire. If tank pressure escalates, the emergency vent will open to relieve pressure on the tank."*
265	There may be public health concerns due to potential accidents at the facility.	9	Explosion and Accidental Release Issues	See the response to Comment 264 (tank design).
266	There have been hexane explosions at numerous other soybean facilities in this and other countries.	59, 70	Explosion and Accidental Release Issues	See the response to Comment 264 (tank design).

[32]

#	Comment	Commenter #	Category	Response
267	Combustible facilities such as the one proposed have already resulted in accident and injury with reports readily available on the internet.	89	Explosion and Accidental Release Issues	See the response to Comment 264 (tank design).
268	We know explosions happen and we know the hexane tanks that will be used are DEP regulated and approved, but we know that accidents happen and we cannot control everything 100 percent of the time.	82	Explosion and Accidental Release Issues	See the response to Comment 264 (tank design).
269	There's a risk of acute exposure should an explosion or accidental release of hexane occur during a thermal inversion.	65-66	Explosion and Accidental Release Issues	See the response to Comment 264 (tank design).
270	The use of hexane for soybean oil extraction may pose a risk to future workers at the proposed Perdue facility.	61-62	Explosion and Accidental Release Issues	The purview of DEP's review of this application is limited to offsite impacts, rather than onsite impacts.
271	Hexane can land on water and from what I've read it will stay on the water for several days before it sinks. This could result in water pollution.	81	Explosion and Accidental Release Issues	See the response to Comment 264 (tank design).
272	With regard to hexane storage/explosions, the proposed Perdue location is adjacent to a consistently operated mass burn facility.	85-86	Explosion and Accidental Release Issues	See the response to Comment 264 (tank design).
273	With regard to hexane storage/explosions, how many trains will pass this site daily?	85-86	Explosion and Accidental Release Issues	See the response to Comment 264 (tank design).
274	With regard to hexane storage/explosions, how many trash trucks visit and idle at this mass burn facility?	85-86	Explosion and Accidental Release Issues	See the response to Comment 264 (tank design). Also, idling trucks shall comply with Act 124 of 2008: Diesel-Powered Motor Vehicle Idling.
275	With regard to hexane storage/explosions, this seems such an odd location to site a refinery of this nature.	85-86	Explosion and Accidental Release Issues	See the response to Comment 14 (alternative siting analysis).
276	There is a freight train that goes by at least every hour all night long. It's been mentioned that they carry things that could affect and mix with the nitrous oxide and hexane if there was a derailment.	87	Explosion and Accidental Release Issues	See the response to Comment 264 (tank design).
277	We've heard about the trains, we've heard about the truck trips necessary to supply the facilities. The associated hazards with respect to any accidents that might occur with respect to any of those kinds of sources, those are critical issues as well.	88	Explosion and Accidental Release Issues	Perdue has stated in an email dated 3/10/14: "*Rail will not be used to transport soybeans to the facility or finished products from the facility. To the extent that any transportation related release occurs at the facility, it will be addressed through the Facility's response plans in coordination with local emergency responders. Any incidents related to transportation of materials and products off-site will be handled addressed through local emergency management plans.*" DEP concurs that this response adequately addresses this comment.
278	I am concerned about hexane tank setbacks, and their proximity to each other.	59	Explosion and Accidental Release Issues	This comment addresses an issue related to the proposed storage of hexane. DEP storage tank program personnel have provided the following response: *"The storage tank program regulations do not include setback requirements for permitted storage tanks or facilities. Setbacks for tanks storing flammable and combustible liquids are governed by the Pennsylvania Department of Labor & Industry (L & I). An installation permit is required by L & I for the hexane storage tanks, and L & I will ensure that proper setback and tank spacing requirements are followed."*
279	How will the hexane be arriving at the site?	85-86	Explosion and Accidental Release Issues	See the response to Comment 211 (tanker truck hexane delivery).
280	Will hexane containment be in double walled containment vehicles during shipping and on site?	85-86	Explosion and Accidental Release Issues	This comment addresses an issue related to the proposed storage of hexane. DEP storage tank program personnel have provided the following response: *"The shipment of hexane via motor vehicle is regulated by the U.S. Department of Transportation, similar to the shipment of gasoline. The storage of hexane on site is required by regulation (§245.612(d)) (relating to performance and design standards) to have both secondary and emergency containment. This can be accomplished through the use of double-walled tanks, or by constructing a containment area around the tanks."*
281	Will any of the residual hexane be transported off site? If so, where to and by what method?	85-86	Explosion and Accidental Release Issues	Perdue has stated in an email dated 3/10/14: "*A small residual amount of hexane remains in the meal and oil that is shipped off-site by truck.*"

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
282	Will a risk management plan be required for the hexane tanks?	78-79	Explosion and Accidental Release Issues	This comment addresses an issue related to the proposed storage of hexane. DEP storage tank program personnel have provided the following response: *"While a risk management plan is not specifically required, § 245.603(b) (relating to general storage tank facility requirements) of the storage tank program regulations states that the responsibility of an owner/operator of an aboveground storage tank facility is "to assure that appropriate security measures and procedures based on the facility location are established and implemented to protect the environment and the public. These security measures may include, but are not limited to, fencing, lighting, access control, locked entrances and securing of valves, drains and dispensers.""* Additionally, Perdue has stated in an email dated 3/10/14: *"The hexane storage tanks will be included in the facility's Spill Prevention Response (SPR) Plan; Spill, Prevention, Control, and Countermeasure (SPCC) Plan; and OSHA Process Safety Management (PSM) Plan."*
283	How does this plant propose to mitigate the safety concern with regard to explosions from hexane?	89	Explosion and Accidental Release Issues	See the response to Comment 264 (tank design).
284	How does Perdue intend to ensure the community that it will not simply abandon us in the event of a serious event, such as a hexane explosion.	89	Explosion and Accidental Release Issues	See the response to Comment 332 (coordination with local emergency responders).
285	There are community concerns about this facility being located here and what kind of training would be done in case of an emergency related to the hexane storage and use.	59	Explosion and Accidental Release Issues	See the response to Comment 332 (coordination with local emergency responders).
286	How does this plant account for the increased need for services provided in the event of a catastrophic hexane explosion?	89	Explosion and Accidental Release Issues	See the response to Comment 332 (coordination with local emergency responders).
287	Will spill prevention and preparative response plans be required for the hexane tanks?	78-79	Explosion and Accidental Release Issues	See the response to Comment 282 (safety plans).
288	Will the risk management plan for the hexane tanks include safety and security training, plant facility training, security by chain link fencing of suitable height with barbed wire and cameras, limited access points guarded by trained personnel and security cameras, appropriate identification badges for all employees and vendors going in and out of the plant, security level outside lighting at night, identification and enforcement of restricted activity areas, security for parking of all tankers remaining on the facility overnight, blast resistant measures for all critical plant operations and tank storage areas, requirement of Chemical Security and Vulnerability Assessment by the U.S. Department of Homeland Security with assistance with the U.S. Department of Agriculture?	78-79	Explosion and Accidental Release Issues	Perdue has stated in an email dated 3/10/14: *"Hexane is not a Chemical of Interest for purposes of the Department of Homeland Security's Chemical Facility Anti-Terrorism Standards."* Please also see the responses to Comments 264 (tank design), 277 (hexane transportation), 282 (safety plans), 482 (incident response), 519 (emergency response plan), 539 (safety measures) and 540 (coordination with local emergency responders).
289	Both terrorism, domestic and foreign, is a reality in our world today with flammable liquids — with a flammable liquid facility of this magnitude. The old adage of an ounce of prevention is worth a pound of cure cannot be more appropriate in a situation like we have today.	78-79	Explosion and Accidental Release Issues	See the response to Comment 288, which also references the responses to Comments 264 (tank design), 277 (hexane transportation), 282 (safety plans), 482 (incident response), 519 (emergency response plan), 539 (safety measures) and 540 (coordination with local emergency responders).
290	Based on standard MSDS publications hexane is very reactive with chlorine, bromine and fluorine. Now, I know that Norfolk Southern Railway runs tank cars up and down the river on a regular basis. In case there was a derailment would there be a collision of these tanker cars with these other chemicals that's highly reactive with [hexane]. That should be considered. I'd like to know that there's precautions being put into play for that.	83	Explosion and Accidental Release Issues	Perdue has stated in an email dated 3/10/14: *"Hexane will not be transported to the facility by rail. The Norfolk Southern rail line is approximately 700 feet downslope from the extraction building and 775 feet downslope from the hexane storage tanks."* DEP concurs that this response adequately addresses this comment. In addition, see the response to Comment 282 (safety plans).
291	User information related to hexane includes data relating to isolation from railroads and truck traffic along with the potential for flash explosions.	85-86	Explosion and Accidental Release Issues	See the responses to Comments 277 (hexane transportation), 280 (hexane containment), 282 (safety plans), and 290 (no rail transport of hexane).
292	Karst topography and sinkholes may cause problems for the Perdue project, due to collapses of equipment, including hexane storage tanks, and the associated risk of explosions.	9-12, 14-20, 23, 2	Explosion and Accidental Release Issues	See response to Comment 193 (tank installation planning).
293	Petitions for facilities with combustible substances should never be considered in this area due to sinkholes.	89	Explosion and Accidental Release Issues	See response to Comment 193 (tank installation planning).
294	We cannot control these sinkholes and as much geotextile work we do in the ground, you cannot predict exactly where every sinkhole will occur.	82	Explosion and Accidental Release Issues	See response to Comment 193 (tank installation planning).

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
295	Will the DEP require Perdue to provide an analysis of soil and related to safety for the installation of these tanks?	78-79	Explosion and Accidental Release Issues	See response to Comment 193 (tank installation planning).
296	1. Public Hearing and Draft Permit. Nissley Vineyards requests a public "microphone" hearing on this application, so that all concerned residents can present their comments to PADEP and all other residents and may hear all comments at the same time.	90	August Mack Phase 2 Comments	See response to Comment 1 (public hearing).
297	a. Nissley Vineyards also requests that should PADEP determine not to deny Perdue's permit application at this stage, PADEP issue a "Draft Permit" and that the public be given an opportunity to comment on the Draft Permit and its specific terms.	90	August Mack Phase 2 Comments	For applications such as this one, DEP is required by law to provide a draft plan approval for public comment prior to final action on the plan approval.
298	2. Prevention of Significant Deterioration (PSD). Perdue indicates in Attachment D, Applicable Requirements that the federal PSD requirements are not applicable to the project as the calculated potential to emit (PTE) is anticipated to be less than the 250 tons per year threshold that is applicable to this type of facility. Perdue calculates the facility-wide volatile organic compound (VOC) emissions to be 248.65 tons. Based on our calculations and this comment submittal (Specific comment No. 14), the actual emissions will exceed 250 tons, thus subjecting the facility to PSD requirements including ambient impact modeling and an additional impacts analysis. As a result, the PSD requirements will apply and the application should be denied.	90	August Mack Phase 2 Comments	Based on the proposed VOC emissions (208 tpy), the project is not subject to PSD. The plan approval will contain a 208 tpy VOC emission limit to ensure the facility does not become subject to PSD.
299	a. Emission Calculations. The following emission calculations are believed to be incorrect or incomplete:	90	August Mack Phase 2 Comments	See below.
300	VOC emissions from Grain Dryer No. 1 and Grain Dryer No. 2 which use a propane heating value of 91,500 British Thermal Units (BTUs/hour) instead 90,500 BTUs/hour specified in the U.S. Environmental Protection. Agency's Compilation of Air Pollutant Emission Factors (AP-42).	90	August Mack Phase 2 Comments	See response to Comment 114 (propane usage).
301	In addition, Perdue indicated in a meeting on June 15, 2012 that 400,000,000 cubic feet of natural gas would be used in the Grain Dryers but the emission calculations are not based on this amount.	90	August Mack Phase 2 Comments	In accordance with Perdue's 6/2013 revision to the application, the dryers will no longer be heated with natural gas or propane. The dryers will be solely heated indirectly by steam provided from the Lancaster County Solid Waste Management Authority facility.
302	VOC emissions from boilers which are indicated as 1.46 tons in Attachment I but only 0.0455 tons in Attachment G.	90	August Mack Phase 2 Comments	The 1.46 tons in Attachment I, Alternative Siting Analysis, is based on Perdue operating natural gas fired boilers to supply the facility's entire steam load for 8,760 hr/yr. This is the worst case scenario and is used as a comparison to the projected actual use of the temporary boiler(s). The 0.0455 tons in Attachment G, Potential Emission Calculations, is for the temporary use (168 hr/yr) of the boilers to supply the steam load in the rare case that the steam supply from the Lancaster County Solid Waste Management Authority (LCSWMA) facility is interrupted. Perdue revised the application on 4/3/14 to increase the use of the temporary boiler(s) to 672 hr/yr.
303	Particulate Matter (PM), Particulate Matter less than ten (10) microns in diameter (PM-10), and Particulate Matter less than 2.5 microns in diameter (PM-2.5) emissions estimates are not based on operation 8,760 hours per year for the following sources: 202 - Bean Conditioning 203 - Flaking Rolls 205A Meal Dryer 205B Meal Dryer 206 Meal Screening and Grinding 207 Mill Feed (Hull) Grinding 209 Meal/Mill Feed Loadout Tank.	90	August Mack Phase 2 Comments	Perdue has requested a 12-month soybean throughput limitation of 638,750 tons per year for extraction operations, thereby limiting long-term (12-month) emissions. As such, the plan approval will include a federally enforceable annual throughput limit for extraction operations of 638,750 tons per year, based on a 12 month rolling total.
304	3. Hexane. The application includes two (2), 20,000 gallon, aboveground storage tanks (ASTs) that will be utilized to store hexane. The storage of hexane at this location is a concern due to its potential to adversely impact the environment, public health, public safety and air quality.	90	August Mack Phase 2 Comments	Please refer to the responses to the comments under Explosion and Accidental Release Issues, above.
305	a. Temperature inversions. Nissley Vineyards has retained Professor Richard D. Clark, Ph.D., Chair, Department of Earth Sciences, Millersville University to conduct a study of temperature inversions along the Susquehanna River centered on the location of the proposed Perdue facility. A copy of this study is provided in Attachment A. The results of this study indicate that temperature inversions occurred in this location on approximately 86% or 313 of the days in 2011.	90	August Mack Phase 2 Comments	See the response to Comment 88 (inversions). Comment 88 (inversions) also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).
306	According to Professor Clark, from the perspective of temperature, 2011 was an "average" year, so the number of inversions is what we would expect in an "average" temperature year. More inversions would be anticipated in a warmer year.	90	August Mack Phase 2 Comments	See the response to Comment 88 (inversions). Comment 88 (inversions) also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).

[35]

#	Comment	Commenter #	Category	Response
307	These temperature inversions prevent air pollutants from dispersing and the study indicates that "areas immediately downwind of a pollution source can be significantly affected by deleterious air quality for long durations".	90	August Mack Phase 2 Comments	See the response to Comment 88 (inversions). Comment 88 (inversions) also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).
308	There are concerns with air pollution in the area of the proposed Perdue facility including: Nonattainment with the 2008 8-hour Ozone Standard of 0.075 parts per million (ppm) Nonattainment with the 2006 PM2.& 24-hour Standard of 35 micrograms per cubic meter of air (ug/ m3) and PM2.5 Annual Standard of 15 ug/ m3.	90	August Mack Phase 2 Comments	See the responses to Comments 76 (PM emission/attainment issues) and 96 (ozone monitoring data).
309	Due to the unique air characteristics in this area of the Susquehanna River as well as the fact that Perdue claims that the overall project will allegedly emit 248.65 tons of VOCs, allegedly 1.35 tons below the PSD threshold of 250 tons specified in Title 40 Code of Federal Regulations (CFR) Part 52, PADEP should request the following from Perdue:	90	August Mack Phase 2 Comments	See below
310	A recalculation of emissions of VOCs on the basis of the comments contained in this letter.	90	August Mack Phase 2 Comments	The application was revised on 11/12/14 to reflect current proposed throughputs of the facility including VOC emissions.
311	Information on how the source will not prevent or adversely affect the attainment or maintenance of ambient air quality standards in accordance with Title 25 of the Pennsylvania Code §127.12(a)(6).	90	August Mack Phase 2 Comments	See the response to Comment 99 (Section 127.12 issues), which references the responses to Comments 71 (relative increase in ozone precursors), 88 (inversions), 96 (ozone monitoring data) and 98 (revised hexane emissions). Comment 88 also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).
312	A plan of action for the reduction of emissions during each forecast level specified in 25 Pa. Code §137.3(1) thereby preventing the occurrence of an emergency due to the effects of the pollutants on the health of persons in accordance with 25 Pa. Code §127.12(a)(7).	90	August Mack Phase 2 Comments	See the response to Comment 99 (Section 127.12 issues), which references the responses to Comments 71 (relative increase in ozone precursors), 88 (inversions), 96 (ozone monitoring data) and 98 (revised hexane emissions). Comment 88 also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).
313	A plan for dealing with air pollution emergencies in accordance with 25 Pa. Code §127.12(a)(9).	90	August Mack Phase 2 Comments	See the response to Comment 99 (Section 127.12 issues), which references the responses to Comments 71 (relative increase in ozone precursors), 88 (inversions), 96 (ozone monitoring data) and 98 (revised hexane emissions). Comment 88 also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).
314	The permit application should be denied since Perdue has not addressed and cannot adequately satisfy this important concern.	90	August Mack Phase 2 Comments	See the response to Comment 99 (Section 127.12 issues), which references the responses to Comments 71 (relative increase in ozone precursors), 88 (inversions), 96 (ozone monitoring data) and 98 (revised hexane emissions). Comment 88 also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).
315	b. Public Health. There are negative health effects associated with exposure to hexane. The exposure routes for humans are inhalation, ingestion and skin and/or eye contact. Target organs include eyes, skin, respiratory system and central and peripheral nervous systems. Symptoms from acute exposure include irritation of the eyes and nose, nausea, headache, dermatitis and dizziness. Chronic exposure includes peripheral neuropathy. per a study conducted by the National Institutes of Health in 1991, the most common and best characterized toxic response in humans exposed to hexane is the development of neuropathy.	90	August Mack Phase 2 Comments	See the response to Comment 72 (hexane risk assessment).
316	As hexane has a low vapor pressure, a release from the ASTs or process structure would readily evaporate resulting in airborne concentrations of hexane impacting neighboring properties including properties located in Conoy Township and Hellam Township across the Susquehanna River.	90	August Mack Phase 2 Comments	See the response to Comment 72 (hexane risk assessment).
317	The permit application should be denied since Perdue has not addressed and cannot adequately satisfy this important public· health concern.	90	August Mack Phase 2 Comments	See the responses to Comments 72 (hexane risk assessment) and 319 (explosion risk).
318	c. Safety Concerns/Explosion Hazard. Nissley Vineyards has retained Mr. Frank Chiappetta, President and Explosives Application Engineer with Blasting Analysis International, Inc. (BAI) to evaluate the safety concerns associated with the proposed hexane ASTs. A copy of the BAI report is provided in Attachment B. The results of this study indicate an explosion of the hexane tanks would result in:	90	August Mack Phase 2 Comments	See the response to Comment 264 (tank design). Also, Perdue has stated in an email dated 3/10/14: *"ENVIRON's Review of the BAI Report, which was submitted with the SSIP Application, concluded that 1) the incidents cited in the BAI Report were not representative of the proposed facility; 2) BAI did not consider the safety measures that will be incorporated in the design and operation of the facility; and 3) the separation distances cited by BAI were not calculated correctly."* DEP does not presently take a position on this disagreement between Environ and BAI. Nevertheless, DEP review of the SSIP application for the hexane tanks is intended to ensure that the tanks are appropriately constructed to minimize risks.
319	High velocity fragments (shrapnel) impacting neighboring properties resulting in death or serious injury to anyone hit by it as well as serious property damage to any structures that it encountered.	90	August Mack Phase 2 Comments	See the responses to Comments 264 (tank design) and 318 (explosion risk).

[36]

#	Comment	Commenter #	Category	Response
320	Multiple fires wherever any burning shrapnel/ debris landed.	90	August Mack Phase 2 Comments	See the responses to Comments 264 (tank design) and 318 (explosion risk).
321	The oil storage tank, which is situated only 40 feet away from the hexane storage tanks, most likely catching on fire and spewing out huge amounts of heavy smoke and toxic gases.	90	August Mack Phase 2 Comments	See the responses to Comments 264 (tank design) and 318 (explosion risk). Also, Perdue has stated in an email dated 3/10/14: "*BAI's assertions regarding the distances between the hexane storage tanks and the oil storage tank are based on the erroneous application of the Institute of Makers of Explosives (IME) minimum recommended safe separation distances. The IME recommendations apply to explosives (i.e. chemical compounds, mixtures or devices whose primary purpose is to function by explosion), and hexane is not an explosive. NFPA 30 and NFPA 36 standards address concerns such as those raised by BAI, and adherence to the NFPA standards will minimize the effects of any fire or explosion. The facility will be designed to meet the NFPA 30 and NFPA 36 requirements, including those relating to minimum separation distances, buffer zones and shell to shell spacing between tanks. See also Section 2.4 of the Review of BAI Report.*" DEP does not presently take a position on this disagreement between Environ and BAI. Nevertheless, DEP review of the SSIP application for the hexane tanks is intended to ensure that the tanks are appropriately constructed to minimize risks.
322	There is a large propane storage tank nearby on the adjacent Lancaster County Solid Waste Authority incinerator property. Depending on the mass and velocity of a projectile, it is possible to explode the propane tank on impact, causing another secondary large scale energetic explosion.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk) and 321 (tank separation distances).
323	Airblast (concussion) would occur from the explosion that in itself would kill or seriously injure people and would also cause serious damage to nearby properties. The overpressure effect could result in the destruction of nearby buildings which could inflict injury or death to anyone inside or near the building(s).	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk) and 321 (tank separation distances).
324	Because it is so close, it is expected that the incinerator complex would be seriously damaged from an explosion.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk) and 321 (tank separation distances).
325	In addition, BAI would expect windows in buildings as far as half a mile away to be blown out, which could also result in injury to anyone nearby.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk) and 321 (tank separation distances).
326	If there is a temperature inversion at the time of the explosion, the inversion layer will reflect the airblast energy back to ground elevation with a greater intensity and if there is an inversion at an appropriate height above the ground, with high-velocity directional winds, the inversion layer can be reflected back down to earth to break windows much farther away than half a mile with the possibility of a damage focal point 1 - 2 miles away. This is illustrated in the Figure provided as Attachment C.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk) and 321 (tank separation distances).
327	If a hexane explosion occurred, the resultant fires would result in noxious fumes (as occurred at other soybean processing facilities). For example, some of the gasses often resulting from hexane explosions are oxides of nitrogen. Exposure to these gasses with concentrations of only 0.03 to 0.05 % could be fatal 8 to 72 hours after exposure.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk) and 321 (tank separation distances).
328	d. Scrubbers. Due to the concerns with the use of hexane, Perdue should be required to install air pollution control devices (i.e., scrubbers) on all significant sources of VOC emissions at the proposed facility including the Meal Dryer which will emit 83.50 tons per year and the Meal Cooler which will emit 17.19 tons per year.	90	August Mack Phase 2 Comments	See the response to Comment 236 (LAER evaluation). This comment would appear to refer to mineral oil scrubbers, which are used for VOC control, rather than wet scrubbers, which are used for particulate control. Perdue's revised LAER analysis, submitted on 6/4/13, states on pages 45-46 that "*For the meal dryer and cooler vents, a mineral oil absorption system is not technically feasible to minimize VOC emissions. A mineral oil absorption system works best on vent streams with high VOC concentrations, such as in the thousands of ppmv range. Based on the VOC emission characteristics of the meal dryer and cooler vents, the estimated total VOC concentration in the exhaust vent stream is around 100 ppm or less. Thus, a mineral oil absorption system will not be effective in further reducing the VOC concentrations in the meal dryer and cooler vents.*" The discussion goes on to explain that particulate matter in the exhaust from the dryer/cooler will get trapped in the recirculating mineral oil, causing plugging and fouling of the system, preventing safe operation of the equipment, and causing more frequent process shutdowns. DEP concurs that these are valid reasons to deem a mineral oil absorption system to be technically infeasible in this case.
329	The permit application should be denied since Perdue has not addressed these safety concerns.	90	August Mack Phase 2 Comments	See the responses the comments immediately above.
330	4. Monitoring. Due to the concerns associated with ambient air quality in the vicinity of the facility including temperature inversions and a potential release of hexane, Perdue should be required to install monitors and continuously monitor for both hexane and VOCs at the property line.	90	August Mack Phase 2 Comments	See the response to Comment 212 (LDAR).

[37]

#	Comment	Commenter #	Category	Response
331	5. Emergency Preparedness. Due to safety concerns with the use of hexane at the facility Perdue should be required to prepare an emergency response plan that will include immediate and direct notification of all neighbors–by Perdue–within a one mile radius of the proposed plant in Conoy Township, Pennsylvania. The plan should include a warning system to be implemented by Perdue to warn nearby residents immediately, rather than rely solely on the local emergency response units (most of whom are volunteers), because valuable time would be lost for nearby residents in deciding to evacuate immediately, or to seal their homes by closing all windows/doors and turning off their A/C units until the danger has passed.	90	August Mack Phase 2 Comments	This comment addresses an issue related to the proposed storage of hexane. DEP storage tank program personnel have provided the following response: *"There is no requirement in Chapter 245 that would require Perdue to provide immediate and direct notification of all neighbors within one mile of the proposed plant. However, should a reportable release occur from the regulated tank systems, § 245.305 (relating to reporting releases) requires the tank owner to immediately notify the Department, the Pennsylvania Emergency Management Agency, the county emergency management agency, and downstream water users and municipalities within 20 miles downstream of the facility. Should a release occur that could potentially cause a fire or explosion hazard, the local fire authority must also be immediately notified."*
332	According to Perdue representatives, they plan to use the local emergency response units in dealing with such events. Perdue should take responsibility for this important aspect of emergency planning and response.	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: *"Perdue intends to coordinate and cooperate with local emergency responders, but it will not take any action that could impede the ability of those responders to implement response actions. The most efficient and effective means of handling potential incidents will be determined in consultation with local responders."* DEP believes that this response adequately addresses this comment.
333	Soybean Preparation Process: Page 4, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information	90	August Mack Phase 2 Comments	See below.
334	a. The flow diagram in Attachment F does not include all of the requested information including the following. Perdue should be required to correct this deficiency in its permit application.:	90	August Mack Phase 2 Comments	See below.
335	i. Gaseous, liquid and solid flow rates	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: *"Although not shown on the flow diagram, material flow rates, control device airflow, etc. are provided in the appropriate revised Plan Approval Application sections, the revised Potential Emission Calculations (Attachment G), and the revised LAER Evaluation (Attachment H)."* DEP concurs all the necessary information has been provided.
336	ii. The amount of raw material charged to the process in tons/hour at rated capacity	90	August Mack Phase 2 Comments	See the response to Comment 335 (process information).
337	iii. The specific locations of where contaminants are controlled are not shown on the diagram, specifically the location of collection hoods or other pickup points	90	August Mack Phase 2 Comments	See the response to Comment 335 (process information).
338	iv. A description of collection hoods design, airflow and capture efficiency for emissions vented through:	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: *"Although not shown on the flow diagram, a description of each control device, airflow rates, and capture/collection efficiencies are provided in the appropriate revised Plan Approval Application sections, the revised Potential Emission Calculations (Attachment G), and the revised LAER Evaluation (Attachment H)."* DEP concurs all the necessary information has been provided. Supplemental information was supplied by Perdue to DEP regarding air flow in relationship to filter design.
339	1. Baghouses C201A, C201B, C201C, C20tD, C201E, C206, C207 and C210	90	August Mack Phase 2 Comments	See the response to Comment 338 (capture/collection information).
340	2. Cyclones C202, C203, C205A, C205B	90	August Mack Phase 2 Comments	See the response to Comment 338 (capture/collection information).
341	3. Mineral Oil Scrubber C204	90	August Mack Phase 2 Comments	See the response to Comment 338 (capture/collection information).
342	4. Filters C208 and C209.	90	August Mack Phase 2 Comments	See the response to Comment 338 (capture/collection information).
343	b. The applicant indicates that the pressure drop on the baghouses will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the baghouse should be continuously monitored with continuous monitoring being incorporated into a permit condition.	90	August Mack Phase 2 Comments	Weekly monitoring of baghouse pressure drops is typical for other facilities regulated by DEP, and is appropriate given the nature of this equipment.
344	2. Bean Conditioning: Page 7, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information. The applicant indicates that the pressure drop on the high efficiency cyclone will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the high efficiency cyclone should be continuously monitored with continuous monitoring being incorporated into a permit condition.	90	August Mack Phase 2 Comments	In keeping with the weekly baghouse pressure drop monitoring and recording requirement for other sources at this facility, DEP also intends to specify a weekly interval for cyclone pressure drop monitoring and recording for this source.

[38]

#	Comment	Commenter #	Category	Response
345	3. Flaking Rolls: Page 10, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information. The applicant indicates that the pressure drop on the high efficiency cyclone will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the high efficiency cyclone should be continuously monitored with continuous monitoring being incorporated into a permit condition.	90	August Mack Phase 2 Comments	See the response to Comment 344 (weekly baghouse pressure drop monitoring).
346	4. Extraction Process: Page 13, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information:	90	August Mack Phase 2 Comments	See below.
347	a. The applicant indicates a written plan for demonstrating compliance with Title 40 Code of Federal Regulations (CFR) Part 63, Subpart GGGG , §63.2851 will be developed and implemented and the hexane recovery system will be operated and maintained per the manufacturer's instructions. As part of the Plan Approval application the facilities provided to monitor and record process operating conditions which may affect the emission of air contaminants are to be described fully. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*The required compliance plan elements are as referenced in Subpart GGGG and are not reproduced in the revised Plan Approval Application. Given Perdue's operation of its other existing soybean processing plants, Perdue has extensive experience in meeting the Subpart GGGG compliance plan requirements. A compliance plan meeting the Subpart GGGG requirements will be developed prior to facility start-up, as required by Subpart GGGG. Furthermore, Section 9.8 of the revised LAER Assessment (Attachment H) describes the monitoring/recordkeeping procedures.*" DEP concurs that this response adequately addresses this comment.
348	b. The applicant does not identify and describe all fugitive emission points but indicates that "fugitive hexane emissions will occur at various component fittings in the extraction process/hexane recovery system." Perdue should be required to prove that fugitive emissions will be negligible or the permit should be denied.	90	August Mack Phase 2 Comments	See the responses to Comments 71 (relative increase in ozone precursors), 72 (hexane risk assessment), 80 (BAT/LAER evaluation), 96 (ozone monitoring data) and 208 (hexane emission points). Based on these factors, DEP has determined that the hexane emissions in this case remaining after the imposition of BAT and LAER controls, including facility SLR, mineral oil scrubbers, hexane stack limits and LDAR, are of minor significance with regard to causing air pollution, and will not, on their own merits, be preventing or interfering with the attainment or maintenance of an ambient air quality standard.
349	c. The applicant indicates a Startup, Shutdown, and Malfunction (SSM) plan for demonstrating compliance with Title 40 Code of Federal Regulations (CFR) Part 63, Subpart GGGG , §63.2852 will be developed prior to startup. As part of the Plan Approval application a description of how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions is to be provided. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	See the response to Comment 347 (Subpart GGGG compliance plan).
350	5. Meal Dryer: a. Page 14, Process Form, Section B - Processes Information, Item 2 and Item 3. no information on fuel use or a burner for the meal dryer is provided. During a meeting in June 2012 representatives from Perdue indicated that drying in the meal dryer would be via steam. It does not appear that adequate information on how drying will be achieved in the meal dryer is provided in the event that steam becomes unavailable from the Lancaster County Solid Waste Management Authority (LCSWMA) incinerator including fuel usage and associated combustion emissions.	90	August Mack Phase 2 Comments	If the steam supply from the LCSWMA is interrupted, Perdue will be permitted to bring portable boiler(s) onsite to provide the steam load. The boiler(s) will be limited to an annual use of 672 hours per year.
351	b. Page 16, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that the pressure drop on the cyclone will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the cyclone should be continuously monitored with continuous monitoring being incorporated into a permit condition.	90	August Mack Phase 2 Comments	The meal dryer cyclone is subject to Continuous Assurance Monitoring (CAM) requirements. In accordance with CAM, Perdue will be required to monitor and record the pressure drop across the cyclone daily.
352	6. Meal Cooler: Page 19, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information: a. The applicant indicates that the pressure drop on the cyclone will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the cyclone should be continuously monitored with continuous monitoring being incorporated into a permit condition.	90	August Mack Phase 2 Comments	The meal cooler cyclone is subject to Continuous Assurance Monitoring (CAM) requirements. In accordance with CAM, Perdue will be required to monitor and record the pressure drop across the cyclone daily.
353	7. Meal Screening and Grinding: Page 22, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information: a. The applicant indicates that the pressure drop on the baghouse will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the baghouse should be continuously monitored with continuous monitoring being incorporated into a permit condition.	90	August Mack Phase 2 Comments	See the response to Comment 343 (weekly baghouse pressure drop monitoring).

[39]

#	Comment	Commenter #	Category	Response
354	8. Mill Feed (Hull) Grinding: Page 25, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information: a. The applicant indicates that the pressure drop on the baghouse will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the baghouse should be continuously monitored with continuous monitoring being incorporated into a permit condition.	90	August Mack Phase 2 Comments	See the response to Comment 343 (weekly baghouse pressure drop monitoring).
355	9. Meal/Mill Feed Storage Bins: Page 28, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that monthly visual observation of the bin vent filters will be conducted to check for the presence of visible emissions. As the facility will operate 24 hours per day, 7 days per week the visual observation should be performed on a daily basis. This requirement for daily monitoring should be incorporated into a permit condition.	90	August Mack Phase 2 Comments	Weekly visual emissions observations are typical for many other facilities regulated by DEP, and are appropriate here given the nature of the equipment.
356	10. Meal/Mill Feed Loadout Tank: Page 29, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that monthly visual observation of the tank vent filter will be conducted to check for the presence of visible emissions. As the facility will operate 24 hours per day, 7 days per week the visual observation should be performed on a daily basis. This requirement for daily monitoring should be incorporated into a permit condition.	90	August Mack Phase 2 Comments	See the response to Comment 355 (weekly opacity readings).
357	11. Meal Loadout Area: Page 34, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that that the pressure drop on the baghouse will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the baghouse should be continuously monitored with continuous monitoring being incorporated into a permit condition.	90	August Mack Phase 2 Comments	See the response to Comment 343 (weekly baghouse pressure drop monitoring).
358	12. Seed Silo Tanks: Page 35, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that monthly visual observation of the silo vents will be conducted to check for the presence of visible emissions. As the facility will operate 24 hours per day, 7 days per week the visual observation should be performed on a daily basis. This requirement for daily monitoring should be incorporated into a permit condition.	90	August Mack Phase 2 Comments	See the response to Comment 355 (weekly opacity readings).
359	13. Facility Roadways: Page 43, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that daily visual observations of facility roadways will be performed. According to Perdue's traffic study, 668 vehicles (mostly large trucks) will enter and exit the property daily. This has the potential for creating significant dust. As the facility will operate 24 hours per day, 7 days per week the visual observation should be performed on an hourly basis. This requirement for hourly monitoring should be incorporated into a permit condition with specific requirements including method and frequency for when dust control measures will be implemented on facility roadways.	90	August Mack Phase 2 Comments	Daily monitoring of facility roadways, as proposed by Perdue, is actually more frequent than is required for many other facilities of this type. DEP believes more frequent monitoring than daily is not necessary for this project.
360	Dust control measures should be implemented on a continuous basis to suppress any dust from vehicles.	90	August Mack Phase 2 Comments	DEP believes that the dust control requirements in 25 Pa. Code Section 123.1 are the appropriate standard to apply to roadway fugitives from this facility.
361	14. Section C - Air Cleaning Device: a. Page 44 provides maximum emission rates for PM, PM10, and PM2.5 for 201 - Soybean Preparation Process. The calculations in Attachment G for 201 - Grain Receiving and Processing are based on the back calculation of an uncontrolled emission factor assuming a 90% cyclone control efficiency. No documentation of a 90% cyclone control efficiency is provided in the application.	90	August Mack Phase 2 Comments	See the response to Comment 146 (dryer control efficiency).

[40]

#	Comment	Commenter #	Category	Response
362	b. Page 47 provides maximum emission rates for PM, PM10, and PM2.5 for 202 - Bean Conditioning. The calculations in Attachment G for 202 - Bean Conditioning Processing are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 59 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 5 of the application but indicates that only 493,500 tons will be processed for a processing time of only 8,364 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 59 tons per hour for 8,760 hours per year which equals 516,840 tons.	90	August Mack Phase 2 Comments	See the response to Comment 303 (extraction operations soybean throughput limitation).
363	In addition, documentation of the control efficiency (95%) of the high efficiency cyclone is not provided. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*This source is controlled by a baghouse. Documentation of the baghouse control efficiency is provided by the manufacturer and included in the revised BAT Evaluation (Attachment J).*" DEP concurs that this response adequately addresses this comment.
364	c. Page 50 provides maximum emission rates for PM, PM10, and PM2.5 for 203 - Flaking Rolls. The calculations in Attachment G for 203 - Flaking Rolls are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 59 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 5 of the application but indicates that only 493,500 tons will be processed for a processing time of only 8,364 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 59 tons per hour for 8,760 hours per year which equals 516,840 tons.	90	August Mack Phase 2 Comments	See the response to Comment 303 (extraction operations soybean throughput limitation).
365	In addition, documentation of the control efficiency (95%) of the high efficiency cyclone is not provided. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: *"Documentation of the cyclone control efficiency is provided by the manufacturer and included in the revised BAT Evaluation (Attachment J)."* DEP concurs that this response adequately addresses this comment.
366	d. Page 53 provides maximum emission rates for VOCs and n-Hexane for 204 - Extraction Process. Documentation of the control efficiency (99%) of the mineral oil scrubber is not provided. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*A 99% control efficiency is a generally accepted efficiency for a properly designed condensing/mineral oil scrubber system. Reference: Indiana DEM Technical Support Document (CP-129-8541-00039) for ConAgra, Marrs Township, Indiana that lists a control efficiency of 99.2%, and Iowa DNR Pre-construction Permit Application (2/22/2012) for Ag Processing, Sergeant Bluff, Iowa that lists a control efficiency of 99%+.*" DEP concurs that this response adequately addresses this comment.
367	e. Page 56 provides maximum emission rates for PM, PM10, VOC, PM2.5, and n-Hexane for 205A - Meal Dryer. The calculations in Attachment G for 205A - Meal Dryer are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 59 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 14 of the application but indicates that only 393,750 tons will be processed for a processing time of only 6,674 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 59 tons per hour for 8,760 hours per year which equals 516,840 tons.	90	August Mack Phase 2 Comments	See the response to Comment 303 (extraction operations soybean throughput limitation).
368	Documentation of the control efficiency (90%) of the cyclone is not provided.	90	August Mack Phase 2 Comments	See the response to Comment 365 (cyclone control efficiency).
369	In addition, emissions associated with fuel combustion in the dryer are not provided. During a meeting in June 2012 representatives from Perdue indicated that drying in the meal dryer would be via steam. It does not appear that adequate information on how drying will be achieved in the meal dryer if steam becomes unavailable from the LCSWMA incinerator including fuel usage and associated combustion emissions has been provided in the application. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	See the response to Comment 350 (temporary boilers).

[41]

#	Comment	Commenter #	Category	Response
370	f. Page 59 provides maximum emission rates for PM, PM10, VOC, PM2.s, and n-Hexane for 205B - Meal Cooler. The calculations in Attachment G for 205B - Meal Cooler are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 59 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 17 of the application but indicates that only 393,750 tons will be processed for a processing time of only 6,674 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 59 tons per hour for 8,760 hours per year which equals 516,840 tons.	90	August Mack Phase 2 Comments	See the response to Comment 303 (extraction operations soybean throughput limitation).
371	Documentation of the control efficiency (90%) of the cyclone is not provided. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	See the response to Comment 365 (cyclone control efficiency).
372	g. Page 62 provides maximum emission rates for PM, PM10, and PM2.5 £or 206 - Meal Screening and Grinding. The calculations in Attachment G for 206 - Meal Screening and Grinding are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 47 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 20 of the application but indicates that only 393,750 tons will be processed for a processing time of only 8,378 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 47 tons per hour for 8,760 hours per year which equals 411,720 tons. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	See the response to Comment 303 (extraction operations soybean throughput limitation).
373	h. Page 65 provides maximum emission rates for PM, PM10, and PM2.5 for 207 - Mill Feed (Hull) Grinding. The calculations in Attachment G for 207 - Mill Feed (Hull) Grinding are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 3.75 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 23 of the application but indicates that only 31,500 tons will be processed for a processing time of only 8,400 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 3.75 tons per hour for 8,760 hours per year which equals 32,850 tons. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	See the response to Comment 303 (extraction operations soybean throughput limitation).
374	i. Page 68 provides maximum emission rates for PM, PM10, and PM2.5 for 208 - Meal Loadout Area. The calculations in Attachment G for 208 - Meal Loadout Area are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 1,314 tons per day turnover (54.75 tons per hour) and operation for 8,760 hours per year as indicated on Page 26 and 27 of the application but indicates that only 425,250 tons will be processed for a processing time of only 7,767 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 54.75 tons per hour for 8,760 hours per year which equals 479,610 tons. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	See the response to Comment 303 (extraction operations soybean throughput limitation).
375	j. Attachment G also includes emissions for boilers in the event that steam is not available from the LCSWMA incinerator. The alternative siting analysis in Attachment I specifies 1.46 tons of VOCs would be emitted from natural gas-fired boilers if Perdue would be required to generate their own steam as opposed to using excess steam from the neighboring LCSWMA incinerator. However, Perdue indicated that only 0.0455 tons of VOCs would be generated from boilers in Attachment G. Perdue should be required to correct this deficiency in its permit application	90	August Mack Phase 2 Comments	See the response to Comment 302 (boiler discrepancy).

[42]

#	Comment	Commenter #	Category	Response
376	15. Section D - Additional Information: Page 71 indicates that the project will not be subject to PSD. Perdue calculates the facility-wide VOC emissions to be 248.65 tons. Based on this comment submittal (Specific comment No. 14), revised emission calculations should be prepared which will result in an increase in the facility-wide VOC emissions to above the 250 ton threshold thus subjecting the facility to PSD requirements including ambient impact modeling and an additional impacts analysis.	90	August Mack Phase 2 Comments	See the response to Comment 298 (VOC cap).
377	16. Section D - Additional Information: Page 71 indicates the Best Available Technology (BAT) demonstration is provided in Attachment J. The permit application does not include an appropriate "top-down" Best Available Control Technology (BACT) Analysis. This would include a search of the reasonably available control technology (RACT)/BACT /LAER clearing house for available control technologies for both particulate matter and volatile organic compounds (VOCs), a ranking of the technologies based on control efficiencies, and an economic analysis including the cost per ton of pollutant removed. These elements were not included. Therefore the application should be denied.	90	August Mack Phase 2 Comments	See the response to Comment 142 (PSD/LAER).
378	17. Section D - Additional Information: Page 71 indicates the Lowest Achievable Emission Rate (LAER) demonstration is provided in Attachment H. The LAER demonstration does not consider vegetable oil production utilizing non-solvent extraction methods which result in lower emission rates.	90	August Mack Phase 2 Comments	See the response to Comment 236 (LAER evaluation).
379	In addition, Perdue's LAER demonstration proposes a facility-wide solvent loss limit of 0.165 gallons of solvent per ton of soybeans processed (gal/ton). This solvent loss limit is higher than the solvent loss limits for eight (8) of the facilities identified in the LAER demonstration which include: 0.16 gal/ ton for Bunge North America in Morristown, Indiana; 0.16 gal/ ton for ConAgra in Morristown, Indiana; 0.15 gal/ ton for Archer Daniels Midland in Mexico, Missouri; 0.15 gal/ton for Archer Daniels Midland in Mankato, Minnesota; 0.146 gal/ton for Cargill Oil Seeds in Sidney, Ohio; 0.145 gal/ton for Ag Processing in St. Joseph, Missouri; 0.134 gal/ton for Louis Dreyfus Ag. Ind. in Claypool, Indiana; 0.125 gal/ ton for Prairie Pride in Eve, Missouri.	90	August Mack Phase 2 Comments	In accordance with LAER, a solvent loss ratio of 0.125 gallons of solvent per ton soybeans processed will be imposed, to be applicable following an initial shakedown period for a newly constructed facility.
380	In addition, no method of control is evaluated for the solvent losses from the meal dryer. Therefore the application should be denied.	90	August Mack Phase 2 Comments	See the response to Comment 236 (LAER evaluation).
381	18. Section D - Additional Information: Page 71 indicates the Analysis of Alternative Sites is provided in Attachment L. The Analysis of Alternative Sites does not specifically identify any alternative sites that were considered by Perdue.	90	August Mack Phase 2 Comments	The Alternatives Analysis (Attachment I) in the 6/2013 revision to the application addresses alternative sites that were considered.
382	No information on the environmental or social costs associated with selection of the proposed site are included in the analysis such as the issues with public safety, air emissions and temperature inversions, and explosion hazards detailed in this comment submission. Therefore the application should be denied.	90	August Mack Phase 2 Comments	The Alternatives Analysis (Attachment I) in the 6/2013 revision to the application addresses the environmental and social impacts.
383	In addition, the alternative siting analysis specifies 1.46 tons of VOCs would be emitted from natural gas-fired boilers if Perdue would be required to generate their own steam as opposed to using excess steam from the neighboring LCSWMA incinerator. Perdue included emissions from temporary boilers in their emissions calculations provided as Attachment G. However, Perdue indicated incorrectly that only 0.0455 tons of VOCs would be generated from the temporary boilers.	90	August Mack Phase 2 Comments	See the response to Comment 302 (boiler discrepancy).
384	19. Section F - Flue and Air Contaminant Emission: Specific information has not been provided as to whether the stack height(s) meet Good Engineering Practice (GEP) on Pages 77, 79, 80, 83, 84, and 86. 20.	90	August Mack Phase 2 Comments	See the response to Comment 72 (hexane risk assessment), and particularly the response to Comment 6 in the public comment memo accompanying DEP's air dispersion modeling memo.

[43]

#	Comment	Commenter #	Category	Response
385	Addendum A - Source Applicable Requirements and Addendum 1 - Method of Compliance Worksheets - Perdue has failed to include all applicable requirements pertaining to each source on Addendum A and Addendum 1 based on information provided by Perdue in Attachment D - Applicable Requirements. Applicable requirements that should be evaluated and included are: a. 25 Pa. Code §121 - General Provisions and b. 25 Pa. Code §127 - Construction, Modification, Reactivation, and Operation of Sources. Note, applicability of this regulation should be evaluated based on revised emission calculations (See Specific Comment 14). Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	Perdue - Perdue has stated in an email dated 3/10/14: "*Generally, Chapter 121 (General Provisions) contains requirements of an administrative nature, as opposed to the specific limitations, monitoring, testing, reporting, recordkeeping, and work practice standards included in Addendum A/Addendum 1. These general provisions are typically referenced/included in all Plan Approvals issued by the Department. Chapter 127 (Construction, Modification, Reactivation and Operation of Sources) is addressed in Addendum A/Addendum 1 of the revised Plan Approval Application, specifically §127.205(1) relating to LAER. The applicability and non-applicability of pertinent sections of Chapter 127 is addressed in Attachment D (Applicable Requirements) of the revised Plan Approval Application.*" DEP concurs with Perdue's response. The submitted forms are satisfactory to the DEP.
386	21. Attachment B - Facility Site Map - The facility site map provided with the application does not include information on four (4) additional wet grain storage bins that would be part of Source ID 102 and six (6) additional, 500,000 million bushel grain tanks that would be part of Source ID 105 and are specified as plans for future expansion on an engineering drawing titled Zoning Exhibit for Perdue Grain and Oilseed, LLC Soybean Processing Facility dated Feb. 29,2012 that was presented at a public hearing before the Zoning Hearing Board of Conoy Township on March 22, 2012. Perdue should clarify their plans for future expansion with regard to their air permit requirements.	90	August Mack Phase 2 Comments	See the response to Comment 166 (Perdue future plans).
387	In addition, the facility site map also excludes equipment for degumming that one might expect to find at an oil extraction facility. Perdue should clarify their plans for use of such equipment and the VOCs that would be emitted during the operation of that equipment.	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*If utilized at the facility, degumming of the oil would be performed using hydration in a centrifuge. At this point, the oil has already undergone stripping to remove hexane and has been sent to crude storage. Hexane emissions, if any, would be de minimis and already accounted for in the emissions total.*" DEP concurs that this response adequately addresses this comment.
388	22. Attachment D - Applicable Requirements: a. Perdue indicates that compliance with the particulate matter emission limits of 25 Pa. Code §123.13 will be demonstrated by maintaining emission calculations. Perdue is proposing the use of air pollution control equipment including baghouses, cyclones, and filters to control particulate matter and has claimed specific control efficiencies for the specified control equipment. Perdue should be required to perform a facility-wide stack test to ensure compliance with particulate matter emission limits and verify the claimed control device efficiencies. The stack test requirement should be included as a permit condition.	90	August Mack Phase 2 Comments	The plan approval will contain appropriate stack testing provisions.
389	b. Perdue indicates that the federal PSD are not applicable to the project as the calculated PTE is anticipated to be less than the 250 tons per year threshold that is applicable to this type of facility. Perdue calculates the facility-wide VOC emission to be 248.65 tons. Based on this comment submittal, revised emission calculations should be prepared as specified in Comment 14. This will show an increase in the facility-wide VOC emissions to above the 250 ton threshold thus subjecting the facility to PSD requirements including ambient impact modeling and an additional impacts analysis. As a result, the PSD requirements will apply and the application should be denied.	90	August Mack Phase 2 Comments	See the response to Comment 298 (VOC cap).
390	23. Attachment M - General Information Form: a. On page 3 of 7, Project Information Item 1. Perdue indicates "Yes" that they have informed the surrounding community and addressed any concerns prior to submitting the application to the PADEP. Despite Perdue's incorrect assertion, previous questions and concerns raised by residents have not been addressed to those residents including questions submitted in writing on the following dates i. May 26, 2010 (A copy has been included as Attachment D) ii. December 28, 2011 (A copy has been included as Attachment E) iii. A handout distributed at Perdue's Open House on April 26, 2012 (A copy has been included as Attachment F) iv. Questions dated June 18, 2012 that were submitted to Perdue in writing following a meeting between Nissley Vineyards and Perdue on June 15, 2012 have not been answered despite Perdue's assurance that they would provide answers to the questions that they were unable to answer during that meeting. (A copy has been included as Attachment G).	90	August Mack Phase 2 Comments	See the response to Comment 172 (GIF form).

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
391	b. On page 3 of 7, Project Information Item 2. Perdue provides information on project funding but does not include the grant expiration date. The grant contract expires on November 30, 2016 and the project is required to be completed within the term of the contract.	90	August Mack Phase 2 Comments	See the response to Comment 173 (ARCAP grant).
392	c. On page 5 of 7, Coordination Information Item 7.0 Perdue indicates that the project will not involve the construction and operation of industrial waste treatment facilities. However, the process flow diagram provided as Attachment F includes a hexane/water separation and wastewater stripping process.	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: *"The process wastewater/hexane undergoes separation and is recycled for reuse in the process."* DEP concurs that this response adequately addresses this comment.
393	The application submitted by Perdue is extremely deficient and should be denied as important concerns related to adversely affecting the environment, public health, public safety and air quality have not been and cannot be adequately addressed.	90	August Mack Phase 2 Comments	DEP does not concur with this comment, for the reasons laid out in this comment and response document, and in the plan approval review memo.
394	Moreover, even if additional information was provided by Perdue, the application should still be denied. The emission of more than 248 tons of VOCs from this location including more than 245 tons of hexane emissions along with the storage of 40,000 gallons of hazardous hexane at this site is an environmental hazard, a safety hazard, and a public health hazard.	90	August Mack Phase 2 Comments	See the response to Comment 393 (application adequacy).
395	The only way this facility would be acceptable would be if it eliminated the use of hexane.	90	August Mack Phase 2 Comments	See the response to Comment 236 (LAER evaluation) and 393 (application adequacy).
Attachment A of August Mack Phase 2 Comment Letter: Millersville University Temperature Inversion Report dated 11/12/12				
	This report was also submitted as part of the August Mack Letter dated 11/12/12 regarding the Perdue Phase 1 application. The conclusions drawn from the report with regard to the Perdue projects are addressed in the responses to both of the August Mack letters (above).			
Attachment B of August Mack Phase 2 Comment Letter: Blasting Analysis International, Inc. Report dated 9/7/12				
396	I have some serious concerns regarding the safety of nearby homeowners, travelers, employees and businesses should an accidental explosion occur at the Perdue facilities in terms of shrapnel, fire and toxic fumes.	90	August Mack Phase 2 Comments	See the responses to Comments 264 (tank design) and 321 (tank separation distances).
397	It is our understanding that the Perdue plant will be storing hexane in two adjacent storage tanks, each holding 20,000 gallons for a total of 40,000 gallons, and that the plant will be using 30,000 gallons of hexane at any one time in the process (we have been told by Perdue that there will be a maximum of 40,000 gallons on site at any one time).	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*The sizing of the (2) 20,000 gallon tanks is to ensure enough capacity to store the total amount of hexane contained within the entire processing system, should a system purge or shutdown be required. The average amount of hexane that will be kept in the tanks under normal operating circumstances would be approximately 4,000 to 5,000 gallons (total including both tanks).*" DEP concurs that this response adequately addresses this comment.
398	Hexane is highly explosive and even facilities using hexane that have been well-maintained have suffered from catastrophic explosions.	90	August Mack Phase 2 Comments	See the response to Comment 264 (tank design).
399	I met with a number of Perdue representatives on June 15, 2012 to discuss these concerns. Although the Perdue representatives have promised to get back to us, no information has been provided to date regarding their explosion hazard assessments, emergency plans or standard operating procedures to protect nearby residential homeowners, travelers (on River Road) and businesses, in the event of an accidental explosion.	90	August Mack Phase 2 Comments	See the responses to Comments 264 (tank design), 282 (safety plans), and 331 (emergency notification), and 332 (coordination with local emergency responders).
400	Recent Soybean Manufacturing Plant Explosions Using Hexane. Unfortunately, explosions in the manufacturing of soybean oil using hexane are not uncommon. [Examples cited are AG Processing Inc. in Sioux City, Iowa (2003), the Minnesota Soybean Processors plant (May, 2009), a plant in Formosa Brazil (March, 2009), Arkansas Ricelands Food Plant (2006), Ag Processing Inc. plant (2003), Canadian CanAmera Foods plant (2002), and Indiana Central Soya plant (1994).]	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), 321 (tank separation distances) and 543 (process safety).
401	Generally speaking, the causes for explosions at soybean processing plants are from heat sources such as open flames, hexane spillages, and inadequate supervisor/employee training.	90	August Mack Phase 2 Comments	See the response to Comment 543 (process safety).

[45]

#	Comment	Commenter #	Category	Response
402	Case History of Damages, Injuries and Deaths Caused by a Massive Chemical Explosion. A very well documented hydroxylamine plant explosion, which occurred in the Lehigh Valley, PA during 1999, provides a clear example of what can be expected in the surrounding community from a massive chemical explosion. It was believed a hydroxylamine tank holding 9,000 gallons exploded during the distilling process from a nearby hot plate or Bunsen burner.	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*The Lehigh Valley incident is not representative of a potential hexane incident and, is therefore, not relevant. The U.S. Chemical Safety Board's investigation of the incident notes that hydroxylamine, the chemical involved in the Lehigh Valley incident, is an oxygenated derivative of ammonia and its properties are very different than those of hexane. Among other things, hydroxylamine is unstable and explosive when concentrated at high temperatures and is thermally unstable. The incident occurred when hydroxylamine in a process tank and associated piping explosively decomposed due to high concentrations and temperatures. In addition, see Section 2.3 of the Review of BAI Report submitted with the SSIP Application.*" The Department concurs that the Lehigh Valley incident was related to a process and chemical different than proposed by Perdue.
403	While hexane is not the same as hydroxylamine, for comparison of an explosion they are very similar.	90	August Mack Phase 2 Comments	See the response to Comment 402 (Lehigh Valley incident).
404	Since the density of hydroxylamine is 1.21 g/cc and the density of hexane is 0.66 g/cc, the 9,000 gallon tank of hydroxylamine would be more or less equivalent to a hexane explosion of approximately 18,000 gallons. The Purdue plant in contrast will be using up to 30,000 gallons of hexane in their process, or housing up to 40,000 gallons of hexane in their two storage tanks. Thus, a hexane explosion from the proposed Perdue plant will be much more devastating than what occurred at the hydroxylamine plant explosion.	90	August Mack Phase 2 Comments	See the response to Comment 402 (Lehigh Valley incident).
405	Some important observations in the aftermath of the hydroxylamine plant explosion were:	90	August Mack Phase 2 Comments	See below.
406	Facility was a two-story steel and concrete structure with a 40,000 square foot area.	90	August Mack Phase 2 Comments	See the response to Comment 402 (Lehigh Valley incident).
407	Explosion left a 4 foot crater on cement floor	90	August Mack Phase 2 Comments	See the response to Comment 402 (Lehigh Valley incident).
408	Blew out 3 @ 25 feet concrete containment walls, which collapsed the building.	90	August Mack Phase 2 Comments	See the response to Comment 402 (Lehigh Valley incident).
409	5 fatalities, plus 14 serious injuries.	90	August Mack Phase 2 Comments	See the response to Comment 402 (Lehigh Valley incident).
410	Explosion sent metal studs, concrete pieces and insulation several hundred yards in all directions.	90	August Mack Phase 2 Comments	See the response to Comment 402 (Lehigh Valley incident).
411	Some debris (insulation) was found up to 5 miles away.	90	August Mack Phase 2 Comments	See the response to Comment 402 (Lehigh Valley incident).
412	Explosion was heard up to 10 miles away.	90	August Mack Phase 2 Comments	See the response to Comment 402 (Lehigh Valley incident).
413	Windows were blown out in nearby office buildings.	90	August Mack Phase 2 Comments	See the response to Comment 402 (Lehigh Valley incident).
414	Force caused cracks in wall of adjacent building, which was located 100 yards away.	90	August Mack Phase 2 Comments	See the response to Comment 402 (Lehigh Valley incident).
415	Explosion broke windshields and caved roofs on at least 30 cars in the parking lot.	90	August Mack Phase 2 Comments	See the response to Comment 402 (Lehigh Valley incident).
416	Many windows in nearby homes were shattered.	90	August Mack Phase 2 Comments	See the response to Comment 402 (Lehigh Valley incident).
417	Safe Distances for Chemical (Reactive) Explosions. Figure 1 illustrates a plan view of the proposed Purdue plant property perimeter, approximate location of the two 20,000 gallon storage tanks, and distances to various points of concern ill the event of an accidental explosion.	90	August Mack Phase 2 Comments	See the response to Comment 264 (tank design).
418	Hexane weighs approximately 5.6 lbs/gal. Thus, one of the 20,000 gallon storage tanks would weigh approximately 112,000 lbs. Based on the Perdue layout of the plant facilities dated February 29, 2012, the two 20,000 gallon tanks show a separation distance of only 5 feet.	90	August Mack Phase 2 Comments	See the response to Comment 264 (tank design).
419	Because these tanks are in the open, they would be considered as being unbarricaded and more likely one would cause a sympathetic explosion of the other if one of the tanks exploded.	90	August Mack Phase 2 Comments	See the response to Comment 264 (tank design).
420	According to the IME (Institute Makers of Explosives) in Publication No.2, "The American Table of Distances for Storage of Explosive Materials", June, 1991, the hexane tanks should be separated by a minimum distance of 430 feet, to eliminate a sympathetic explosion if one of the hexane storage tanks exploded.	90	August Mack Phase 2 Comments	See the response to Comment 264 (tank design).

[46]

#	Comment	Commenter #	Category	Response
421	In the case of only a 5 foot separation, it is a certainty that if one of the 20,000 gallon hexane tanks exploded, the second 20,000 gallon tank would also explode.	90	August Mack Phase 2 Comments	See the response to Comment 264 (tank design).
422	Tables 1 and 2 list the minimum safe distances recommended by the 1ME for a 20,000 and 40,000 gallon hexane explosion, respectively. [refer to table in letter for details]	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
423	The main difference between an explosive detonation and a hexane explosion is the degree of small fragments created at the source. I would expect that the explosion effects regarding how far the fragments or shrapnel are thrown would be similar.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
424	In reference to Figure I, the main points of public concern around the hexane storage tanks are listed in Table 3. [refer to table in letter for details]	90	August Mack Phase 2 Comments	See the response to Comment 264 (tank design).
425	The distances coded in red in Table 3 designate unsafe distances from the hexane storage tanks. Note that even if the two 20,000 gallon hexane storage tanks were separated by a safe distance of 430 ft., a single 20,000 gallon hexane tank explosion could still result ill serious injuries, death and/or property damage to the nearby public.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
426	The minimum safe distance to cover all points of concern from a 20,000 to 30,000 gallon hexane explosion is 2,000 ft. The minimum safe distance to cover all points of concern from a 40,000 gallon hexane explosion is 2,155 ft.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
427	Opinions Regarding the Effects of an Explosion of Hexane. In the event of an accidental hexane explosion, I would expect the following consequences:	90	August Mack Phase 2 Comments	See below.
428	1. High velocity fragments (shrapnel) will be thrown in all directions. If there were an explosion of the fully loaded hexane storage tanks, shrapnel would be formed from the tanks themselves.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
429	If the soybean processing plant (loaded with 30,000 gallons of hexane) were to explode, the plant container and building itself would become shrapnel that would be thrown a similar distance.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
430	The shrapnel alone from such an explosion would have disastrous consequences. This shrapnel would be projected to Route 441 and beyond, to the neighboring homes and to the incinerator complex. The shrapnel would cause death or serious injury to anyone who was hit by it. In addition, the shrapnel would cause serious property damage to any structures that it encountered.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
431	2. Multiple fires would be expected wherever any burning shrapnel/debris fell on.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
432	3. The oil storage tank, which is situated only 40 ft. away from the hexane storage tanks, would most likely catch on fire and spew out huge amounts of heavy smoke and toxic gases.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
433	4. BAI understands that there is a large propane storage tank nearby on the adjacent incinerator property. Depending on the mass and velocity of a projectile, it is also possible to explode the propane tank on impact, causing another secondary large scale energetic explosion.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
434	5. Airblast (concussion) would occur from the explosion that in itself would kill or seriously injure people and would also cause serious damage to nearby properties.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
435	The overpressure effect could result in the destruction of nearby buildings which could inflict injury or death to anyone inside or near the building(s).	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
436	Because it is so close, I would expect that the incinerator complex would be seriously damaged from an explosion.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
437	In addition, I would expect windows in buildings as far as half a mile away to be blown out, which could also result in injury to anyone nearby.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
438	6. If a hexane explosion occurred, I would expect the explosion to set off fires giving off noxious deadly fumes (as occurred at other soybean processing facilities). For example, some of the gasses often resulting from hexane explosions are oxides of nitrogen. Exposure to these gasses with concentrations of only 0.03 to 0.05% could be fatal 8 to 72 hours after exposure.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).

[47]

#	Comment	Commenter #	Category	Response
439	Recommendations. In view of the serious potential dangers to the public, BAI makes the following recommendations:	90	August Mack Phase 2 Comments	See below.
440	1. Perdue should perform a full explosion hazard assessment before proceeding with their plans, and to make their findings available to the public.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
441	2. An emergency response plan needs to be prepared by Perdue that will include immediate and direct notification of all neighbors within a one mile radius of the plant. The plan should include a warning system to be implemented by Perdue to warn nearby residents immediately, rather than rely solely on the local emergency response units, because valuable time would be lost for nearby residents in deciding to evacuate immediately, or to seal their homes by closing all windows/doors and turning off their A/C units until the danger has passed.	90	August Mack Phase 2 Comments	See the responses to Comments 282 (safety plans), and 331 (emergency notification) and 332 (coordination with local emergency responders).
442	According to Perdue representatives, they plan to use the local emergency response units in dealing with such events. As of June 15, 2012, Perdue was not planning to directly notify neighbors in the event of any emergency at the plant. Instead, they were planning to rely on local authorities. It is not clear how and/or when nearby neighbors would be warned of the dangers and precious time would be lost while Perdue communicated with the emergency responders who would then have to communicate with the community. Perdue should take responsibility for this important aspect of planning.	90	August Mack Phase 2 Comments	See the responses to Comments 282 (safety plans), 331 (emergency notification), 332 (coordination with local emergency responders), 443 (local emergency planning), 539 (safety measures) and 540 (coordination with local emergency responders).
443	3. Conoy Township and Lancaster County need to update both their emergency plans and training for emergency responders to deal with a potential explosion hazard from the Perdue facility.	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*The Lancaster County Local Emergency Planning Committee is required by Section 203(k) of the Hazardous Material and Emergency Response Act to prepare plans that deal with all aspects of emergency response and update the plans, as necessary. The county is also required by Section 209 (e) of the law to organize or contract for a hazardous material response team or participate in a regional response team. The commenter did not provide any documentation for why it believes that the local emergency plans do not adequately address the facility or why it believes the hazardous material response team is not properly trained to respond to any incident that may occur at the facility. In any event, Perdue has met with the Lancaster County Emergency Planning Committee and Conoy Township first responders and will coordinate its own facility response plans and procedures with the two bodies.*" DEP concurs that this response adequately addresses this comment.
444	4. If Perdue cannot satisfy the minimum safe distances to all points of concern, the options would be to either bury the two 20,000 gallon storage tanks and the process section of the plant which requires the use of 30,000 gallons of hexane, or to relocate the entire plant facilities elsewhere.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
Attachment C of August Mack Phase 2 Comment Letter: Figure - Effect of Altitude Temperature Profile on Airblast Propagation				
	This figure is referenced in support of Comment 326.			
Attachment D of August Mack Phase 2 Comment Letter: Resident Questions to Perdue Dated May 26, 2010				
445	1. With an ever-increasing public demand for organic, chemical-free foods, it would seem that soybean oil and the animal feed produced by the expeller method would have a better market and carry Perdue AgriBusiness farther into the future than those produced by the solvent extraction method. Recent concerns about hexane found in veggie burgers will most likely grow over time and include other soy products. Can you explain why you prefer to build a plant that uses hexane solvent rather than expeller extraction methods?	90	August Mack Phase 2 Comments	The expeller method is not a viable option for large capacity, continuous processing operations that produce relatively large quantities of oil and low fat, high protein meal. See discussion on mechanical expeller extraction in the 6/2013 revision to the plan approval application.
446	2. Please comment on the perception that using the expeller method would give large savings by eliminating the need for:	90	August Mack Phase 2 Comments	See the response to Comment 445 (expeller method).
447	a. Hexane purchase and delivery.	90	August Mack Phase 2 Comments	See the response to Comment 445 (expeller method).
448	b. Hexane storage tanks.	90	August Mack Phase 2 Comments	See the response to Comment 445 (expeller method).
449	c. A distillation and hexane recovery system: evaporators, stripping columns, condensers and solvent/water separators.	90	August Mack Phase 2 Comments	See the response to Comment 445 (expeller method).
450	d. Mineral oil scrubber.	90	August Mack Phase 2 Comments	See the response to Comment 445 (expeller method).
451	e. Desolventizer-toaster (D-T).	90	August Mack Phase 2 Comments	See the response to Comment 445 (expeller method).

[48]

#	Comment	Commenter #	Category	Response
452	f. Complex, automatic safety control systems to prevent release of toxic levels of hexane to the outside air in the event of operator errors or equipment failures	90	August Mack Phase 2 Comments	See the response to Comment 445 (expeller method).
453	g. Purchase of pollution credits.	90	August Mack Phase 2 Comments	See the response to Comment 445 (expeller method).
454	3. Can you cite any examples of current state of the art soybean extraction plants that use scrubbers on their meal dryer?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*At present, there are no soybean facilities operating with scrubbers on the meal dryer.*" DEP has no evidence to contradict this statement.
455	Do they recover the hexane from these scrubbers?	90	August Mack Phase 2 Comments	See the response to Comment 454 (lack of meal dryer scrubbers at other facilities).
456	4. According to current industry-wide standards, is the proposed soybean extraction plant considered a state of the art plant with respect to hexane emissions?	90	August Mack Phase 2 Comments	Yes
457	Are there other plants owned by other corporations that emit less hexane than that proposed by Perdue (0.15 gallons of hexane per ton of soybeans processed)? Please cite examples.	90	August Mack Phase 2 Comments	Yes. Similar facilities considered by DEP as part of its LAER determination for Perdue are: Ag Processing, (Emmetsburg, Iowa), Ag Processing, (Hastings, Nebraska) and Archer Daniels Midland, (Deerfield, Missouri).
458	5. For a new solvent extraction plant built in Lancaster County or York County, an area with already degraded air quality and prone to temperature inversions, would you consider installing a scrubber on the meal dryer, or vent the dryer through a common vent header to the planned mineral oil scrubber and solvent recovery system?	90	August Mack Phase 2 Comments	See the responses to Comments 236 (LAER evaluation), 328 (mineral oil scrubber infeasibility for dryer/cooler) and 454 (lack of meal dryer scrubbers at other facilities).
459	Advantages of such control appear to be:	90	August Mack Phase 2 Comments	See below.
460	a. Recapturing expensive hexane, at a cost savings of millions of dollars over five to ten years.	90	August Mack Phase 2 Comments	See the responses to Comments 236 (LAER evaluation), 328 (mineral oil scrubber infeasibility for dryer/cooler) and 454 (lack of meal dryer scrubbers at other facilities).
461	b. Reducing the number of pollution credits needed.	90	August Mack Phase 2 Comments	See the responses to Comments 236 (LAER evaluation), 328 (mineral oil scrubber infeasibility for dryer/cooler) and 454 (lack of meal dryer scrubbers at other facilities).
462	c. Protecting the public from toxic exposure to hexane especially during temperature inversions. Highly vulnerable populations would include young children, pregnant women, persons with already compromised neurological systems and the elderly.	90	August Mack Phase 2 Comments	See the responses to Comments 236 (LAER evaluation), 328 (mineral oil scrubber infeasibility for dryer/cooler) and 454 (lack of meal dryer scrubbers at other facilities).
463	d. Gaining excellent public relations exposure as a result of voluntarily installing equipment that would help protect the public. (Note: This advantage would be even greater if the expeller method is used.)	90	August Mack Phase 2 Comments	See the responses to Comments 236 (LAER evaluation), 328 (mineral oil scrubber infeasibility for dryer/cooler) and 454 (lack of meal dryer scrubbers at other facilities).
464	6. Please explain the costs involved with installing a scrubber for the meal dryer or venting the meal dryer through the planned mineral oil scrubber.	90	August Mack Phase 2 Comments	See the responses to Comments 236 (LAER evaluation), 328 (mineral oil scrubber infeasibility for dryer/cooler) and 454 (lack of meal dryer scrubbers at other facilities).
465	7. Given the fact that the site proposed for your soybean crush plant is underlain with limestone geology and prone to random sinkholes, how would you prevent aquifer contamination in the event of an unanticipated hexane spill caused by the ground collapsing into a sinkhole cavern?	90	August Mack Phase 2 Comments	See the response to Comment 193 (tank installation planning).
466	Would this risk be eliminated by using the expeller method?	90	August Mack Phase 2 Comments	See the response to Comment 445 (expeller method).
467	8. Do you plan to buttress any large structures/equipment you use on this site with pilings to prevent them from collapsing into sinkhole caverns?	90	August Mack Phase 2 Comments	See the response to Comment 193 (tank installation planning).
468	9. What type of coolant is used for cooling the mash after drying?	90	August Mack Phase 2 Comments	The meal is cooled using ambient air.
469	How much coolant is used per year and how will it be stored?	90	August Mack Phase 2 Comments	See the response to Comment 468 (ambient air cooling).
470	10. What are the estimated total VOC emissions from the plant in tons per year?	90	August Mack Phase 2 Comments	See the response to Comment 98 (revised hexane emissions).
471	What percent of the total VOC emissions come from the meal dryer?	90	August Mack Phase 2 Comments	See response to Comment 208 (hexane emission points).
472	11. Please specify the other types and estimated quantities of emissions.	90	August Mack Phase 2 Comments	See response to Comment 208 (hexane emission points).
473	12. Under Title 5 of the Clean Air Act, what type of emissions source permit will you seek: Minor, Synthetic Minor or Major?	90	August Mack Phase 2 Comments	The proposed facility will be required to obtain a Title V Operating Permit. The project is subject to LAER requirements.
474	13. What are the elements of a soybean crush plant that cause Homeland Security to require a fence around the plant?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*Fencing is required in operations such as wastewater treatment.*"
475	14. Why are pollution credits needed if your plant would not exceed the emissions standard for hexane (i.e., 0.2 gals. hexane/ton soybeans processed)?	90	August Mack Phase 2 Comments	Emission offsets are required because the project is a new facility located in a nonattainment area and is subject to the requirements of 25 Pa. Code §127.201 through §127.210.

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
476	13. How often is the plant shut down for maintenance?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*To the extent this is relevant to the Plan Approval Application, the plant is normally shut down once per year, but this may vary considering the equipment utilized and other operational concerns.*"
477	What type of maintenance?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*To the extent this is relevant to the Plan Approval Application, general inspection, cleaning, repair and replacement of equipment to ensure efficient operation of the extraction process.*"
478	How long is the typical maintenance shut down?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*To the extent this is relevant to the Plan Approval Application, shutdown can range from several days to several months, depending on the work performed.*"
479	14. Do you plan to install a gas-fired back-up boiler to use during planned interruptions (e.g., for maintenance) of the steam supply, to insure the reliability of steam service and to minimize the frequency and duration of steam outages?	90	August Mack Phase 2 Comments	See the response to Comment 350 (temporary boilers).
480	Will this back-up boiler be Included in your Air Permit Application?	90	August Mack Phase 2 Comments	The temporary boiler(s) are regulated in the plan approval under Source ID 031.
481	15. How will hexane emissions from the soybean extraction batches already in progress at the time of an unplanned plant shutdown be prevented from escaping from the proposed plant?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*In the event of a planned or an unplanned shutdown, the facility would adhere to the operating procedures outlined in its Process Safety Management Plan to suspend the extraction process, recover the hexane, and purge the facility to maintain safe conditions for workers and the public.*"
482	16. In the event of operator errors or equipment failures that result in releases of toxic levels of hexane that threaten public health and safety and are beyond the control of the inside plant operator/technician, who will provide the engineering expertise necessary to deal with unforeseen emergencies?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*The plant manager will be an engineer, and there will also be an Environmental Manager and emergency operations team. This team will be thoroughly trained in emergency response procedures in order to respond to incidents and work with local responders in the event of an incident. Perdue corporate personnel and outside engineering and technical consultants will also be available.*" DEP concurs that this response adequately addresses this comment.
483	Your suggestion that you would fly in an engineer from your plant in Salisbury would not be satisfactory if delays caused by adverse flying conditions prevented the arrival of an engineer at the plant in time to provide the expertise needed to deal with an emergency.	90	August Mack Phase 2 Comments	See the response to Comment 482 (incident response).
484	Would you be willing to retain a knowledgeable local engineer who can be on-call in the event of an unforeseen emergency?	90	August Mack Phase 2 Comments	See the response to Comment 482 (incident response).
485	17. Once you have selected this site, are you willing to have a public meeting to explain the plant and answer any questions?	90	August Mack Phase 2 Comments	See the response to Comment 2 (public hearing).
Attachment E of August Mack Phase 2 Comment Letter: Resident Questions to Perdue Dated December 28, 2011				
486	1. Do you plan to install a back-up generator so that in the event of a power outage the safety monitors will continue to function?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*The monitors are designed to continue to function until such time as the facility can be shutdown.*" Additionally, DEP notes that the project does not involve the installation of an emergency generator.
487	Could the VOC emission standards as set by the EPA and DEP be exceeded after a power outage occurs or at any time during any other plant malfunction?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*An emission limit exceedance could conceivably occur at any air emission facility due to a malfunction. All air emission facilities are required by 25 Pa. Code §127.442 to report the details of any such malfunction to the DEP.*" DEP concurs that malfunction reporting will be required in the draft plan approval.
488	If so how do you plan to prevent these emission standards from being exceeded?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*As discussed in the revised Plan Approval Application and as per the requirements of 40 CFR Part 63 Subpart GGGG, Perdue will maintain and comply with the provisions of a Startup, Shutdown, and Malfunction (SSM) Plan to minimize hexane emissions during any malfunction event.*" DEP concurs that this response adequately responds to this comment.
489	2. When we last met on May 11, 2010 you stated that 98% of the soybean oil produced by the plant will be used for food grade oil and 2% for biofuel. Do you have any immediate or future plans to produce biofuel at the proposed Conoy Township site?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*No. The facility will produce soybean mill, soybean oil, and millfeed which will be shipped offsite for any additional processing that is necessary.*"
490	If so, how many gallons of biofuel will be produced per year at this site?	90	August Mack Phase 2 Comments	The project does not include biodiesel manufacturing capabilities/equipment.
491	3. What safe-guards will you have in place to prevent explosions caused by hexane vapors?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*Perdue will provide safety training to its employees and implement process safety management, LDAR (leak detection and repair), and process monitoring systems to identify and address potential safety concerns.*" DEP concurs that this response adequately responds to this comment.
492	4. What kinds of insurance will you have for your planned facility in Conoy Township?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*This is irrelevant to the Plan Approval and SSIP applications. In any event, Perdue will maintain commercial general liability insurance at appropriate levels.*" DEP concurs that this response adequately responds to this comment.

[50]

#	Comment	Commenter #	Category	Response
493	In the event of a catastrophic explosion or fire at your facility, will your insurance cover injury or harm to persons and properties including the resource recovery facility?	90	August Mack Phase 2 Comments	See the response to Comment 492 (insurance coverage).
494	What will be the coverage limits in terms of distance from your facility and in terms of total dollars?	90	August Mack Phase 2 Comments	See the response to Comment 492 (insurance coverage).
495	Will this coverage include reimbursement to the Township for lost revenues in the event of a major shutdown or loss of the resource recovery facility due to an accident at your facility?	90	August Mack Phase 2 Comments	See the response to Comment 492 (insurance coverage).
Attachment F of August Mack Letter: "Perdue Open House Handout [by concerned citizens] Dated April 26, 2012"				
500	Benefits of the proposed plant: Create about 35 jobs, *(Ask Perdue for a list of jobs, pay scales and required skills.)*	90	August Mack Phase 2 Comments	See the response to Comment 14 (alternative siting analysis).
501	Provide potential spin-off jobs through expansion of soybean storage facilities in area	90	August Mack Phase 2 Comments	See the response to Comment 14 (alternative siting analysis). Also, Perdue has stated in an email dated 3/10/14: "*The project is expected to generate more than 150 construction jobs, as well as 500 additional jobs in crop production and transportation.*"
502	Provide opportunities for the local farming community.	90	August Mack Phase 2 Comments	See the response to Comments 14 (alternative siting analysis) and 501 (agricultural jobs).
503	Serious concerns about the proposed plant: The name "soybean crush plant" for the factory is somewhat misleading. The soybeans are crushed only in order to accomplish the main purpose of the plant, which is to extract oil from the beans. The oil is extracted with hexane, a highly explosive, nerve-damaging solvent derived from petroleum	90	August Mack Phase 2 Comments	See the response to Comment 236 (LAER evaluation).
504	Over 100 tons (238,000 pounds) of hexane per year will be permitted to be released into the outside air. This could lead to the potential accumulation of pockets of concentrations of hexane emissions during temperature inversions, which are known to occur in the Conoy area due to its river valley location.	90	August Mack Phase 2 Comments	See the response to Comment 72 (hexane risk assessment).
505	Installing a mineral scrubber on the meal drying oven would reduce the hazardous hexane emissions and could be paid for with a portion of the $8.75 million in your taxpayer money granted to Perdue by the State.	90	August Mack Phase 2 Comments	See the responses to Comments 236 (LAER evaluation), 328 (mineral oil scrubber infeasibility for dryer/cooler) and 454 (lack of meal dryer scrubbers at other facilities).
506	Perdue has no plans to install this scrubber.	90	August Mack Phase 2 Comments	See the responses to Comments 236 (LAER evaluation), 328 (mineral oil scrubber infeasibility for dryer/cooler) and 454 (lack of meal dryer scrubbers at other facilities).
507	Conoy Township officials should require that this scrubber be installed	90	August Mack Phase 2 Comments	See the responses to Comments 236 (LAER evaluation), 328 (mineral oil scrubber infeasibility for dryer/cooler) and 454 (lack of meal dryer scrubbers at other facilities).
508	Hexane by itself is a neurotoxin and is known to have harmful effects on humans. Overexposure is known to result in neuropathy, nerve damage, dermatitis, vision impairment and to affect the upper respiratory system. Hexane is listed by the EPA as a hazardous air pollutant.	90	August Mack Phase 2 Comments	See the responses to Comments 41 (public health), 52 (other nearby sources), 71 (relative increase in ozone precursors) and 72 (hexane risk assessment).
509	Perdue is not required to and does not plan to carry out any health risk studies of their hexane emissions	90	August Mack Phase 2 Comments	See the response to Comment 72 (hexane risk assessment).
510	The Perdue factory will be built next to the LCSWMA incinerator, which generates over ten million pounds of nitrous oxide per year. When hexane emissions from the soybean factory mix with nitrous oxide emissions from the incinerator in the presence of sunlight, smog/ozone is produced, making the air dangerous to breathe and leading to asthma attacks and other lung illnesses especially among children and the elderly. As recently reported, Lancaster County already has the 29th worst smog in the U.S.	90	August Mack Phase 2 Comments	See the response to Comments 52 (other nearby sources) and 71 (relative increase in ozone precursors).
511	Not controlling the emissions from this plant with a scrubber will make it even worse.	90	August Mack Phase 2 Comments	See the responses to Comments 208 (hexane emission points), 236 (LAER evaluation), 249 (scrubbed sources), 328 (mineral oil scrubber infeasibility for dryer/cooler) and 454 (lack of meal dryer scrubbers at other facilities).
512	Because the factory will be located in a major sinkhole area, onsite spills and storage of hexane (30,000 gallons) could threaten the safety of local water supplies. Perdue should be required to provide a hydrogeological study to insure that the location of this factory is safe.	90	August Mack Phase 2 Comments	See the response to Comment 193 (tank installation planning).
513	Hexane is highly explosive. In 2003, an explosion rocked a soybean processing factory in Iowa, injuring eight people - three critically - and sparked a fire that shut down the factory. Explosions at soybean processing plants have occurred as recently as 2009 in Minnesota and Kansas. This raises the question as to whether an explosion at the proposed Perdue factory could be a threat to the adjacent county incinerator and nearby neighbors.	90	August Mack Phase 2 Comments	See the response to Comment 264 (tank design).

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
514	Other Central PA businesses, such as Wenger's Feed Mill Inc. extract soybean oil without using a toxic, air polluting, explosion-prone, taxpayer-subsidized hexane extraction process.	90	August Mack Phase 2 Comments	See the response to Comments 14 (alternative siting analysis) and 445 (expeller method)
Attachment G of August Mack Letter: Nissley Vineyards Questions to Perdue Dated June 18, 2012				
515	1. Additional Document Requests: We understand that the following documents already exist. We would appreciate receiving copies of the following so that we may finalize our evaluation based on your documentation rather than speculation or conjecture:	90	August Mack Phase 2 Comments	The documents relating to the revised Plan Approval and SSIP Applications are available for public inspection and copying at the DEP Southcentral Region and the Division of Storage Tanks. Additionally, electronic copies of certain documents can be obtained at: http://www.portal.state.pa.us/portal/server.pt/community/southcentral_regional_office/13781/community_information/592731
516	1.1 The Environ representative (Stan Hayes?) indicated that he would provide us with the input parameters and the modeling results for the models that Environ has run, but he did not have them with him. Could you please provide this information?	90	August Mack Phase 2 Comments	See the response to Comment 72 (hexane risk assessment).
517	1.2 Perdue indicated that there is a Standard Operating Procedure (SOP) for hexane deliveries which includes a series of checks, grounding of the truck, chocking of the wheels, etc. A copy of this SOP was requested and Perdue indicated you would be willing to provide it. Please also provide the SOPs planned for use at the plant regarding hexane storage and usage.	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*When finalized, copies of the Standard Operating Procedures will be included in the SPCC and Spill Prevention Response Plans. The plans will be available for public inspection and copying at the offices of DEP and other governmental agencies.*" DEP concurs that this response adequately addresses this comment.
518	1.3 It is not clear that we have the latest plan view of plant facilities. Kindly provide the up-to-date plan.	90	August Mack Phase 2 Comments	See the response to Comment 515 (application materials posted on DEP website).
519	1.4 Perdue stated it is relying on local police, fire and emergency response units with which it will develop an emergency plan. We would like a copy of all the on-site and off-site emergency procedures, including any alarm signals and their meaning.	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*Once finalized, a copy of Perdue's Emergency Response Plan will be provided to local emergency response agencies and the Lancaster County Emergency Planning Committee. Members of the public can request copies of the plans from those agencies under the Pennsylvania Right to Know Law.*" DEP concurs that this response adequately addresses this comment.
520	1.5 Please provide the health risk assessment.	90	August Mack Phase 2 Comments	See the response to Comment 515 (application materials posted on DEP website).
521	1.6 We request a copy of the risk management plan regarding the use of hexane at the facility.	90	August Mack Phase 2 Comments	The facility is not subject to Risk Management Plan (RMP) requirements.
522	1.7 Please provide the stormwater management plan for the facility.	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*The stormwater management plan was approved by the Lancaster County Planning Commission and Lancaster County Conservation District and is available for public inspection and copying at the offices of those agencies.*"
523	Additional Questions. During our meeting on June 15, Perdue was not in a position to answer some questions or could not answer fully some questions. Some answers generated additional questions. We would very much appreciate answers to the following questions:	90	August Mack Phase 2 Comments	See below
524	2. Air. 2.1 What are the pre- and post-control potential PM/PM2.5 emissions, by source?	90	August Mack Phase 2 Comments	The application was revised on 11/12/14. The revisions include pre- and post-control emissions by source. See also the response to Comment 515 (application materials posted on DEP website).
525	2.2 What is the maximum hourly/daily throughput, and what is the limiting factor?	90	August Mack Phase 2 Comments	See the responses to Comments 152 (soybean throughput limitations) and Comment 515 (application materials posted on DEP website).
526	2.3 There seems to be some discrepancy on the potential emissions of hexane. Perdue's handout from the open house on April 26, 2012 indicates the facility will use less than 100,000 gallons of hexane per year. At our June 15 meeting, the Environ representative indicated that 15,000 gallons of hexane/yr was used in the health risk modeling. A Perdue representative at the meeting indicated hexane deliveries will occur once per month. That would mean 12 deliveries per year and if the delivery truck holds 6,000 gallons, then 72,000 gallons of hexane will be used (i.e., emitted each year). Can you clarify the amount of emission of hexane from the plant (actual AND potential).	90	August Mack Phase 2 Comments	See the responses to Comments 200 (proposed VOC emissions) 204 (hexane deliveries) and 206 (hexane delivery amounts).
527	2.4 When asked specifically what technologies were considered in the "top-down" BACT analysis for control of hexane emissions as well as other pollutants, Perdue indicated they would have to get back to us as the BACT was prepared by Rettew & Associates and no one from Rettew was at the meeting. Can you provide this information?	90	August Mack Phase 2 Comments	See the responses to Comments 142 (PSD/LAER) and 236 (LAER evaluation).
528	3. Health and Safety 3.1 Will the Perdue facility have dedicated Environmental, Health & Safety (EHS) personnel and a dedicated Incident Commander?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*The site will have an Environmental Manager in addition to an emergency operations team. This team will receive appropriate training, including incident command, so that it can respond to incidents and work with local and other responders in the event of an emergency.*" DEP concurs that this response adequately addresses this comment.

[52]

#	Comment	Commenter #	Category	Response
529	If so, which shift(s) will have EHS coverage?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*All shifts.*"
530	If not, where will the closest EHS professional be located (i.e. Salisbury, MD)?	90	August Mack Phase 2 Comments	See the response to Comment 529 (EHS coverage).
531	3.2 Where will the hexane monitors be located?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*See Section 9.6 of the revised LAER Evaluation that discusses the fixed-location flammable gas monitors that will be used in the solvent extraction area to continuously monitor the hexane concentration in the air.*"
532	3.3 What is the highest concentration of hexane that you have measured in the extraction buildings of other Perdue facilities while in operations?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*In the plants that have been tested, the test was conducted by individuals working in and around the process wearing personal exposure badges. The exposure was less than the PEL set by regulatory agencies.*"
533	3.4 Does Perdue have any hexane air monitoring data that is more recent than three years old?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*It is unclear whether the commenter is referring to emissions, ambient air or worker exposure data. In any event, relevant data is contained in the revised Plan Approval Application.*"
534	3.5 What is the most hexane that will be released from the facility at any one time?	90	August Mack Phase 2 Comments	See the response to Comment 98 (revised hexane emissions). Also, Perdue has stated in an email dated 3/10/14: "*Short-term maximum emissions of hexane at any one moment in time are dependent upon many factors including the quantity, type, and quality of soybeans being processed at that moment...*"
535	3.6 Is there/will there be a documented calibration process for the handheld air monitoring equipment that is utilized to test for hexane at the facility?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*Air monitoring equipment will be calibrated in accordance with manufacturer specifications and the calibration records will be maintained per OSHA and NFPA guidelines.*" DEP concurs that this response adequately addresses this comment.
536	3.7 Where was the highest concentration of hexane located in the Health Risk Assessment in reference to the offsite residences?	90	August Mack Phase 2 Comments	See the response to Comment 72 (hexane risk assessment).
537	3.8 Will the facility follow OSHA's Electrical Safety Standards for combustible dust for Class II (dust hazard), Division I (dust hazard continually present), Group G (grain, corn, flour, wood and plastics) hazards?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*The facility will adhere to all applicable OSHA electrical safety standards for combustible dust.*"
538	3.9 Will the facility follow OSHA's Electrical Safety Standards for flammable liquids?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*The facility will adhere to all applicable OSHA electrical safety standards for flammable liquids.*"
539	3.10 Will the facility develop an Emergency Preparedness Plan per OSHA's Process Safety Management Standard (29 CFR 1910.119).	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*The facility will develop an Emergency Preparedness Plan as outlined in and required under OSHA's Process Safety Management Standards.*"
540	3.11 What is Perdue willing to do to make the facility safer for the community?	90	August Mack Phase 2 Comments	See the responses to Comments 538 (OSHA standards) and 539 (safety measures). Also, Perdue has stated in an email dated 3/10/14: "*Perdue will adhere to all applicable safety requirements. In all of the communities where it operates Perdue works closely with local agencies to plan and implement emergency response measures. Local emergency planners and responders are invited to participate in facility training exercises and become familiar with facility layout and operations.*" DEP concurs that this response adequately addresses this comment.
541	4. Explosion hazard. 4.1 The Perdue representatives did not think an explosion of the two 20,000 gallon tanks of hexane was a likely release scenario. When asked what a realistic scenario would be and what realistic scenario Perdue had considered, Perdue's attorney responded that Perdue wanted to discuss this internally. Do you now have an answer for us?	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
542	4.2 Can you please provide for us the planned distance between the two 20,000 gallon hexane storage tanks, and distance from the storage tanks to the extraction building?	90	August Mack Phase 2 Comments	See the response to Comment 264 (tank design).
543	4.3 Perdue stated that the two 20,000 gallon hexane storage tanks did not constitute the most dangerous risk for an accidental explosion. Assuming this is the case, at what section of the process is the most dangerous risk?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*The greatest potential explosion risk is where there is an exceedance of the LEL in the presence of an ignition source. To avoid such risks, the facility will strictly adhere to OSHA Process Safety Management requirements and NFPA 30 and 36 Standards.*"
544	Can you provide the quantity of hexane usage in that particular unit operation, and in what section of the plant it is located?	90	August Mack Phase 2 Comments	See response to Comment 208 (hexane emission points).
545	We would also like to know if Perdue is planning to do a hazard assessment on any type of accidental explosion pertaining to nearby residential homeowners.	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
546	4.4 Perdue said it did not consider the impact of an accidental explosion on nearby surrounding residential homeowners. They relied only on complying with NFPA 30 regulations, but said they would look into this internally. Can you provide Perdue's assessment of this when it is completed?	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
547	4.5 At the meeting, Perdue was not in a position to discuss any impacts of an accidental detonation with the incinerator plant, particularly in regards to the large nearby propane tank used at the incinerator. Can you provide Perdue's assessment on this when it is completed?	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
548	4.6 Purdue mentioned that the plant structure where hexane was in active use was constructed with non-flammable steel, which was designed to contain debris from flying around in the event of an accidental explosion. Can you provide more details for this design?	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
549	4.7 Perdue mentioned that the two 20,000 gallon storage tanks could not be buried underground because they could not monitor for leaks. Can you provide more details on your rationale for this?	90	August Mack Phase 2 Comments	See the response to Comments 264 (tank design), 318 (explosion risk), and 321 (tank separation distances). Perdue has not provided DEP with a specific rationale why burying the tanks is infeasible. Nevertheless, they are not required to do so.
550	4.8 The distance between the two 20,000 gallon hexane storage tanks would be according to NFPA 30. Perdue indicated this distance had not yet been calculated. Wouldn't this distance be known since it would be used at other Perdue soybean processing plants? If so, can you please provide it?	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*The precise distance between the two tanks has not yet been finalized.*"
551	4.9 Please provide a name for the carriers, if known, that will be delivering hexane.	90	August Mack Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*This information is not relevant to the review of the Plan Approval or SSIP Applications. Any carrier that delivers hexane to the facility will have to adhere to all applicable standards for transportation of hexane.*" DEP concurs that the names of the carriers is not necessary for its review of this application.
552	By letter dated November 8, 2012, Hellam Township provided information opposing PA DEP's allowing Perdue to "phase" their application and we remain firm in our belief that that process circumvents the Air Pollution Control Act.	91	Hellam Township Phase 2 Comments	See the response to Comment 17 (merging of two project phases into one application).
553	In spite of our opposition to the process, we have previously provided comments on Phase 1 of the Perdue application by letter dated November 12, 2012, demonstrating areas where the application and the proposed permit were not compliant with DEP regulations.	91	Hellam Township Phase 2 Comments	DEP has addressed the Phase 1 comments as part of the Phase 1 plan approval review. DEP has also re-reviewed the Phase 1 comments in the context of the combined Phase 1/Phase 2 project review.
554	We now have reviewed the Phase 2 application and, based on discussions with our technical and legal consultants believe that this application significantly fails to meet the requirements of the Air Pollution Control Act or the regulations promulgated thereunder.	91	Hellam Township Phase 2 Comments	See the response to Comment 393 (application adequacy).
555	Major revisions are needed to the design of this facility and this application before DEP can consider granting a plan approval to Phase 2 of the project. Specific deficiencies are noted in the following paragraphs.	91	Hellam Township Phase 2 Comments	See the response to Comment 393 (application adequacy).
556	Fugitive Emissions: As a first point of discussion, Perdue either fails to understand DEP's fugitive emission regulations at § 123.1 or else purposefully attempts to dissemble on this requirement. The Perdue explanation of compliance with § 123.1 speaks solely to fugitive particulate matter from roadways, which is actually an exempted source under this section of the regulations. In actuality, this regulation prohibits all types of fugitive air contaminants, not just particulate, unless they are specifically exempted (as are the roadways) or unless the Department determines that the emissions, after appropriate control are of minor significance in causing air pollution.	91	Hellam Township Phase 2 Comments	DEP concurs that Section 123.1 applies to all species of fugitive emissions.
557	The Perdue application shows fugitive VOC emissions of 93 tons, nearly twice the level of a major VOC source.	91	Hellam Township Phase 2 Comments	As per the 6/2013 revision to the application, it is estimated the project's VOC PTE fugitive emissions are 125.14 tpy.
558	The fugitive VOC emissions alone from this facility would be the sixth highest in the County based on 2010 emission inventory data.	91	Hellam Township Phase 2 Comments	Each application is considered on a case-by-case basis. The relative ranking asserted in this comment does not have independent regulatory significance, nor has DEP confirmed whether it is correct.
559	The fugitive hexane situation is even more alarming with fugitive emissions of 42 tons, over four times the major source threshold for HAPs.	91	Hellam Township Phase 2 Comments	See the response to Comment 557 (VOC fugitive PTE).
560	Forty-two tons of hexane from fugitive emissions at a single source would exceed the entire hexane emissions both fugitive and stack, from all sources in each and every DEP region of the state, based on 2010 emissions data.	91	Hellam Township Phase 2 Comments	See the response to Comment 72 (hexane risk assessment).
561	The fugitive hexane emissions alone represent the largest single hexane source in the entire Commonwealth, by nearly a factor of four.	91	Hellam Township Phase 2 Comments	See the response to Comment 72 (hexane risk assessment).
562	Clearly fugitive emissions of this magnitude cannot be considered of minor significance with respect to causing air pollution.	91	Hellam Township Phase 2 Comments	See the response to Comment 348 (VOC/hexane fugitive emissions significance determination).

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
563	Further, DEP must determine that the fugitive emissions are of minor significance *after appropriate control.* Failure to control at all is not appropriate control. These emissions must be captured and controlled in order for the facility to be lawfully permitted. The application violates DEP regulations.	91	Hellam Township Phase 2 Comments	The appropriate control for emissions from this facility has been determined through the BAT and LAER evaluations.
564	LAER: Perdue's LAER analysis appears woefully inadequate. It appears to be little more than a cut and paste exercise based on Google searches with little understanding of the LAER requirements or the technical issues involving the control methods evaluated.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation).
565	The first major failure in Perdue's approach is their decision to conduct "this LAER Evaluation based on a facility-wide gallons of VOC per ton of soybeans processed emission limitation." That is an unlawful approach to LAER.	91	Hellam Township Phase 2 Comments	See the response to Comment 567 (facility vs. source LAER).
566	While the facility emissions are used to determine whether non-attainment new source (NNSR) review is triggered, as it is in this case, once NNSR becomes applicable, LAER must be applied to each new or modified source (§127.205(l).	91	Hellam Township Phase 2 Comments	See the response to Comment 567 (facility vs. source LAER).
567	Additionally EPA guidance published August 29, 1988 on LAER states that "each emissions unit must achieve the lowest possible emission rate". Consequently the Perdue LAER analysis is flawed in attempting to assess LAER on a facility wide basis. Each individual source of VOCs must be evaluated, those which have proposed controls as well as those that have no proposed controls.	91	Hellam Township Phase 2 Comments	The EPA guidance the commenter references also goes on to state: "*If some more effective LAER exists by controlling the entire facility (e.g., the entire building exhaust instead of units within the building), then the "facility-wide" LAER should be considered.*" In the case of Perdue's LAER determination, specific emission unit limitations in addition to a facility wide solvent loss ratio limit of 0.125 gal solvent per ton soybean processed (following an initial shakedown period for a newly constructed facility) have been determined to be LAER.
568	A general commitment to use BMP, which is basically what Perdue is proposing, is a far cry from LAER and is unacceptable.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation).
569	Secondly, Perdue fails to understand the technology transfer requirements of LAER. Perdue's LAER discussion makes much of the fact that there are no other soybean extraction plants using control technologies above what they have proposed in this application. This is irrelevant. EPA requirements on LAER require sources to evaluate "any sources that produce similar gas streams that could be controlled by the same or similar technology" in evaluating LAER technology.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation).
570	Similar gas stream control has been demonstrated by all of the technologies Perdue rejects.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation).
571	Biofiltration: Biofiltration is a relatively new approach to air pollution control but there are installed systems treating hydrocarbon contaminated waste streams, including solvent contaminated exhausts.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation).
572	Again the fact that they have not been installed in soybean processing plants is irrelevant to a LAER determination.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation).
573	Perdue admits that hexane is relatively easy to biodegrade yet argues that the bed size to control their emissions, (and we suppose they mean their facility emissions based on their incorrect interpretation of LAER), would be prohibitively large. They have given no evidence to suggest that that is true either for the entire facility or for individual sources.	91	Hellam Township Phase 2 Comments	See the response to Comments 236 (LAER evaluation) and 578 (biofilter issues).
574	EPA has published a technical paper on biofilters, *Using Bioreactors to Control Air Pollution* (EPA-456/R-03-003). EPA gives an example, in this document, of a biofilter controlling compost odors and treating 210,000 cfm in a biofilter bed area of approximately 200 feet by 200 feet. That is a relatively large air flow. The listed sources in the Perdue application that emit hexane have a combined air flow of only 39,500 cfm.	91	Hellam Township Phase 2 Comments	See the response to Comments 236 (LAER evaluation) and 578 (biofilter issues).
575	Additional flow would need to be added to capture the fugitive emissions from the extraction process, but that should be able to be easily accomplished within the 210,000 cfm total flow in the subject case.	91	Hellam Township Phase 2 Comments	See the response to Comments 236 (LAER evaluation) and 578 (biofilter issues).
576	And even if a biofilter were required of 200 feet by 200 feet, that scarcely rises to the level of technical infeasibility.	91	Hellam Township Phase 2 Comments	See the response to Comments 236 (LAER evaluation) and 578 (biofilter issues).
577	To eliminate this technology Perdue must show precisely why it is technically infeasible and provide some design details on what size the biofilter would have to be. Biofiltration cannot be eliminated on speculative assumptions.	91	Hellam Township Phase 2 Comments	See the response to Comments 236 (LAER evaluation) and 578 (biofilter issues).

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
578	Perdue goes on to describe the many challenges involved in running a biofilter system, and these are accurately characterized. However, difficulties in operating a biofilter do not make using one technically infeasible.	91	Hellam Township Phase 2 Comments	Biofiltration was removed from consideration as LAER because there is limited methodology or theory established to design for or predict the destruction efficiency that could be achieved for Perdue's proposed soybean plant, as there is no basis from which the long-term reliability of the system could be established. Biofiltration is not a technically proven control method for hexane emissions from solvent extraction plants.
579	They may suggest that while technically feasible, this technology is inferior to other more reliable alternatives, but that is an entirely different analysis, yet one that must also be included in the LAER analysis.	91	Hellam Township Phase 2 Comments	See the response to Comments 236 (LAER evaluation) and 578 (biofilter issues).
580	Carbon Adsorption: Perdue next analyzes the use of adsorbents, including carbon, and notes that this technology can remove between 95 and 99% of VOCs. These systems are widely used on a vast array of gas streams. Typically, challenges in a particular type of gas stream are addressed in the choice of adsorbents used.	91	Hellam Township Phase 2 Comments	See below.
581	Perdue mentions that many sorbents may be used but then sets up a straw man, activated carbon, and shoots that down without so much as a mention of alternative sorbents.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation). In an email dated 12/10/14, Perdue asserts, "*In general, statements made in the LAER evaluation regarding the advantages and disadvantages of activated carbon adsorption will apply similarly to the other identified types of adsorption materials such as: synthetic zeolite, polymetric resins, and activated alumina. Specifically, the need for large volumes of adsorption material, potential of channeling within a large adsorption bed, and plugging of the adsorption bed with fine particulate matter from the vegetable oil production process.*" DEP concurs that the issue of bed plugging is a valid concern, and that the issues with the sticky particulates in the air stream have been explored and explained in detail with regard to the RTO control option.
582	Perdue suggests that because adsorption on carbon is exothermic and hexane is flammable the technology is too dangerous to be used. This is absurd. All adsorption processes are exothermic and all VOCs are flammable to one degree or another. Perdue's arguments would suggest that the technology would never be used and it is in fact used quite commonly.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation). Perdue's revised LAER analysis points out that "*Carbon adsorption technology can accommodate some fluctuations in vent stream characteristics, but rapid increased VOC concentrations pose significant safety and fire hazard concerns. During process upsets or shutdowns, the VOC concentrations can increase rapidly and significantly. The sudden increase in VOC loading into a carbon adsorption system presents safety and fire hazards from the rapid build up of exothermic heat resulting from the heat adsorption onto the carbon media.*" DEP believes that this is a valid concern.
583	Carbon is probably not the ideal sorbent for many of the gas streams to be evaluated for LAER at this facility due to high moisture content in the exhaust. Bed fires are an obvious concern for all of these systems but a proper design and proper sorbent selection will eliminate or adequately manage this risk.	91	Hellam Township Phase 2 Comments	See the response to Comments 236 (LAER evaluation), 581 (non-carbon adsorbents), 582 (carbon adsorber issues) and 589 (hexane fluctuations).
584	EPA also has a technical manual on adsorption technology, *Choosing an Adsorption System for VOC: Carbon, Zeolite, or Polymers?* (EPA 456/F-99-004) which states "VOC and organic hazardous air pollutant emissions can be controlled, recovered, recycled, or concentrated for additional treatment by adsorption technology. This includes emissions from: dry cleaning, degreasing, paint spraying, solvent extracting ..."	91	Hellam Township Phase 2 Comments	DEP does not disagree with the generic assertion presented in this comment. Nevertheless, each application of VOC control technology requires case-by-case evaluation.
585	Absorption technology cannot be considered a technically infeasible technology based on the data provided in the Perdue application.	91	Hellam Township Phase 2 Comments	See the response to Comments 236 (LAER evaluation), 581 (non-carbon adsorbents), 582 (carbon adsorber issues) and 589 (hexane fluctuations).
586	Incineration: Perdue then turns to the most obvious control technology - incineration. Here, they discuss both regenerative thermal oxidation (RTO) and catalytic oxidation, and once again note the high control efficiencies available with these technologies.	91	Hellam Township Phase 2 Comments	See below.
587	On the RTO they argue that oil from the mineral oil scrubber or particulate from the meal dryer or cooler will either plug the RTO or cause a loss of heat transfer. Neither is an argument against technical infeasibility. Particulate (meal and oil) can be filtered prior to the RTO. Other facilities with similar exhaust characteristics are able to treat the gas and use an RTO.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation). It is unclear to DEP what "*other facilities with similar exhaust characteristics*" the commenter is referring to. Perdue, in its LAER analysis furthermore notes that even though the installation of baghouse particulate control was considered technically infeasible, nevertheless, Perdue investigated the cost of such installation, which also proved economically infeasible. Perdue points out on Page 52 of 6/4/14 Revised LAER Analysis, and DEP concurs, that "*While cost plays less of a role in LAER determinations than in BACT determinations, cost may be considered if emission limits based on levels achievable only with the subject control technology would be so expensive that no new plants could be built in that industry.*"
588	Interestingly, Perdue makes no specific statements as to why a catalytic oxidizer would be technically infeasible, but goes on to address safety issues for all types of incineration.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation). It appears to DEP that the same safety issues that apply to other types of incineration would also apply to catalytic incineration.
589	They argue that since hexane is highly flammable, incineration is not an acceptable option.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation). This comment mischaracterizes Perdue's argument. The issue is not flammability per se, but rather sudden fluctuations of hexane concentration in the ductwork, due to the nature of the process.

[56]

#	Comment	Commenter #	Category	Response
590	Explosion is an issue in all enclosed incineration systems, but it is an issue that is routinely managed. The lower explosive limit (LEL) for hexane is 1.1%. Typically a safety factor of 25% of LEL is used in incinerator design. In this case a design limit of 0.275% hexane would be protective against explosion hazard.	91	Hellam Township Phase 2 Comments	See the response to Comments 236 (LAER evaluation) and 589 (hexane fluctuations).
591	If we take Perdue's projected VOC emissions from the three non-fugitive sources (extraction process, meal dryer, and meal cooler) and distribute them equally over the year based on the flows for the three control systems, we find that the average concentrations of the three exhaust streams would be 0.2%, 0.01%, and 0.001% respectively. All of these are below the safety limit for enclosed incineration systems on average and can be monitored and if needed in the short term, diluted with ambient air to maintain operations below the safety level.	91	Hellam Township Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*Variations in flow and solvent concentrations during normal operation, normal shutdown procedures, process upsets, and malfunctions may result in near LEL conditions at the final vent exhaust and increase the risk of explosion. The most dangerous time for a soybean solvent extraction plant is during start-ups and shut-downs when the LEL threshold is crossed. It is during this time that plant equipment is in a solvent-rich environment and the risk of fire is highest.*" DEP concurs that this is a valid concern.
592	Perdue notes the existence of an NFPA standard for Solvent Extraction Plants (NFP A 36) and opines that the standard "does not appear to prohibit the use of incineration processes".	91	Hellam Township Phase 2 Comments	See the responses to Comments 236 (LAER evaluation) and 591 (hexane fluctuations).
593	Indeed, NFPA 36 has 28 pages of standards regarding safe operations of a solvent extraction plant, one paragraph of which addresses boilers and other open flame operations. The NFPA standard requires that open flames be located at least 100 feet from the extraction process. Clearly, Perdue cannot hide behind a fear of explosion regarding incineration when this is a minor issue in the NFPA standard, and one that is adequately addressed therein.	91	Hellam Township Phase 2 Comments	See the responses to Comments 236 (LAER evaluation) and 591 (hexane fluctuations).
594	In addition, Perdue fails to mention the most common type of incineration control - a flare.	91	Hellam Township Phase 2 Comments	See the responses to Comments 236 (LAER evaluation) and 591(hexane fluctuations). Perdue's 6/4/14 Revised LAER Analysis addresses the issues with flares, and concludes that they are also technically infeasible in this case for the same reasons as other incinerators.
595	Flares are used in natural gas well completions, (containing highly flammable gas), precisely as a safety feature. Flaring is an open combustion process that does not have an enclosed combustion chamber that can have an explosive environment. Flares also would not be subject to the plugging problems that Perdue worries about with the RTO.	91	Hellam Township Phase 2 Comments	See the responses to Comments 236 (LAER evaluation) and 591(hexane fluctuations) and 594 (flare infeasibility).
596	If Perdue is convinced that operational or safety issues compel them to avoid an RTO or catalytic oxidation system, a flare will provide the same level of control without these concerns.	91	Hellam Township Phase 2 Comments	See the responses to Comments 236 (LAER evaluation) and 591(hexane fluctuations) and 594 (flare infeasibility).
597	We also find it interesting that Perdue is so concerned about explosive conditions in the air exhaust from the mineral scrubber that they take *manual readings* of the hexane level in the exhaust air stream at the final vent fan every *two* (2) *hours* to ensure that the hexane concentration remains less than 20% of the LEL. And that if levels are found to be above the 20% threshold, immediate action will be taken to ascertain the probable cause and necessary corrective action will be taken, including the interruption of operations which could involve shutdown of the process. (Perdue Plan Approval Application, Attachment H, Page 8 of 9). We would humbly suggest that if the potential for explosion is a real danger, perhaps Perdue should investigate a real time process monitor for this parameter rather than relying on manual readings every two hours.	91	Hellam Township Phase 2 Comments	Perdue has stated in an email dated 3/10/14: "*To ensure that the solvent recovery system is functioning properly and that a negative pressure remains on system, Perdue will upgrade the process control system to provide continuous monitoring of the hexane concentration in the exhaust air stream at the final vent fan to ensure that the hexane concentration remains less than 20% of the Lower Explosive Limit (LEL).*"
598	Finally, Perdue notes that an incinerator would lead to increased energy consumption and the emission of more greenhouse gases. Neither factor is a component of a LAER analysis.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation). DEP agrees that energy consumption and GHG emissions are not factors to be considered in setting LAER; however, the use of an incinerator was not eliminated from LAER in this case due to these reasons.
599	LAER Summary: Purdue has not proven that biofiltration, adsorption, or incineration is a technically infeasible option for any of the sources at this facility.	91	Hellam Township Phase 2 Comments	DEP does not concur with this comment. See the response to Comment 236 (LAER evaluation), and the responses immediately above.
600	One of these technologies or an alternate control technology must be installed. The argument that no controls are possible on some of these sources doesn't even pass the BAT test, let alone LAER.	91	Hellam Township Phase 2 Comments	See the response to Comments 236 (LAER evaluation) and the responses immediately above.
601	Additionally, even the VOC sources that have controls must have the proposed controls evaluated to prove that they are in fact LAER, and as noted above, this must be done on a source by source basis.	91	Hellam Township Phase 2 Comments	See the response to Comments 236 (LAER evaluation) and 567 (facility vs. source LAER).

[57]

#	Comment	Commenter #	Category	Response
602	In every case where Perdue wants to argue that a particular control technology is infeasible they must provide precise gas stream details, including flows, temperatures, particulate loading if applicable, moisture content, temperature and VOC concentration, and give detailed reasons why a particular control cannot be installed on a particular source.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation). DEP believes that Perdue has provided the necessary amount of detail to support the LAER conclusions.
603	Furthermore, they cannot argue, as they have done here, that contaminants in the gas stream prevent the use of a control technology as LAER without investigating treatment of the gas stream to remove those contaminants.	91	Hellam Township Phase 2 Comments	See the responses to Comments 236 (LAER evaluation) and 587 (pre-RTO particulate filter).
604	As discussed above, LAER decisions are not based on what other similar plants have installed but rather on what is technically feasible	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation).
605	EPA evaluated enhanced controls on these types of facilities in a document entitled *"Economic Impact Analysis for the Final Vegetable Oil Processing NESHAP Final Report (EPA-452/R-OI-005* January 2001)". In that document EPA evaluated above the floor MACT controls. "For this option, plants would be required to install a fabric filter and catalytic incinerator to the combined exhaust from the meal dryer and cooler vents (Zukor and Snyder, 2000). The fabric filter is installed to remove excess particulate matter in the exhaust stream prior to entering the catalytic incinerator. The catalytic incinerator is capable of reducing the volume of HAP and VOC emissions in the exhaust stream by approximately 95 percent."	91	Hellam Township Phase 2 Comments	See the responses to Comments 236 (LAER evaluation) and 587 (pre-RTO particulate filter).
606	While EPA did not implement the "above the floor" option in the promulgated MACT standard, the analysis shows that filtration followed by catalytic incineration was a technically feasible control option over twelve years ago. Control of and would exempt the facility from NNSR. Without further data from Perdue, this is the LAER that DEP should impose.	91	Hellam Township Phase 2 Comments	See the responses to Comments 236 (LAER evaluation) and 587 (pre-RTO particulate filter).
607	Alternative Site Analysis: § *127.205(5) For a new or modified facility which meets the requirements of and is subject to this subchapter, an analysis shall be conducted of alternative sites, sizes, production processes and environmental control techniques for the proposed facility, which demonstrates that the benefits of the proposed facility significantly outweigh the environmental and social costs imposed within this Commonwealth as a result of its location, construction or modification.* The Perdue application is totally non responsive to the regulatory requirement.	91	Hellam Township Phase 2 Comments	See the response to Comment 14 (alternative siting analysis).
608	The intent of the regulation is to actually evaluate alternative sites in the particular, not just make generic statements that alternative sites were considered and found wanting.	91	Hellam Township Phase 2 Comments	See the response to Comment 14 (alternative siting analysis). Perdue's 6/4/14 revised siting analysis evaluates specific alternate sites.
609	Furthermore the regulation requires an evaluation of benefits and environmental and social costs (commonly called harms) from the proposed project and a determination that the benefits *significantly* outweigh the harms.	91	Hellam Township Phase 2 Comments	See the response to Comment 14 (alternative siting analysis).
610	This application doesn't even mention harms. One of the most obvious harms is the construction of a major source of VOCs in an area that already is treated as a non-attainment area for ozone and is upwind from areas of measured ozone exceedances.	91	Hellam Township Phase 2 Comments	See the response to Comment 14 (alternative siting analysis). Perdue's 6/4/14 revised siting analysis addresses both potential benefits and potential harms.
611	The way to mitigate this harm is to construct outside of non-attainment areas.	91	Hellam Township Phase 2 Comments	See the response to Comment 14 (alternative siting analysis). DEP does not concur that commenter's conclusion is the only way to mitigate the potential harm.
612	At a minimum, Perdue should evaluate an actual location for construction of this facility outside the ozone transport region and compare the harms to the Lancaster site.	91	Hellam Township Phase 2 Comments	See the response to Comment 14 (alternative siting analysis). Perdue's 6/4/14 revised siting analysis states that "*As the Northeast and Mid-Atlantic states are within the Northeast Ozone Transport Region, locating the proposed facility outside of the Northeast Ozone Transport Region is simply not an option if the processing needs of the Pennsylvania soybean farming industry are to be economically and timely served.*"
613	A second obvious harm to be investigated is the proposed emission of hexane ten times higher than the currently highest emitting source in PA and an emission higher than the total hexane currently being emitted in each region of DEP.	91	Hellam Township Phase 2 Comments	See the response to Comments 14 (alternative siting analysis) and 72 (hexane risk assessment).
614	Potential harms from hexane emissions include chronic and sub-chronic inhalation risks.	91	Hellam Township Phase 2 Comments	See the response to Comments 14 (alternative siting analysis) and 72 (hexane risk assessment).

[58]

#	Comment	Commenter #	Category	Response
615	Other environmental and social costs that should be evaluated include health and welfare and property impacts from all air emissions, including hexane; the potential for fire and explosion and the impact on local citizens quality of life; traffic impacts on surrounding roads, including risks to school buses; impacts to future development from consumption of a large amount of the air resource; noise of the facility; the potential for off-site odors; development of sinkholes on site and downstream; mosquito risks (including West Nile risks) from storm water ponds; aesthetics (building higher than normal zoning allows); and potential impacts to the Susquehanna River, both from groundwater withdrawal, sinkhole development, and potential discharges to the river.	91	Hellam Township Phase 2 Comments	See the response to Comments 14 (alternative siting analysis) and 610 (harms and benefits).
616	Another major societal cost of this project is any state grants, which are ultimately borne by the taxpayers of Pennsylvania for the benefit of private industry, and must be included as a societal cost of the project.	91	Hellam Township Phase 2 Comments	See the response to Comments 14 (alternative siting analysis) and 610 (harms and benefits).
617	Perdue must actually conduct these benefit-to-costs analyses and show the benefits significantly outweigh the costs, and they must include detailed analyses showing evaluation of actual alternative sites.	91	Hellam Township Phase 2 Comments	See the response to Comment 14 (alternative siting analysis).
618	A second major deficiency in the alternative analysis is the evaluation of alternative production processes. Perdue does briefly discuss the flash desolventizing process and correctly determines that that process has higher emissions than the one they are proposing. However there are other potential hexane-free extraction processes that could be employed, including supercritical C02, 10% IPA in water, 10% n-propanol in water, 10% ethanol in water, to name just a few.	91	Hellam Township Phase 2 Comments	See the responses to Comments 14 (alternative siting analysis), 236 (LAER evaluation) and 619 (alternative solvents).
619	These last three are all non-HAPS and the reduction of VOCs using predominantly water would greatly reduce the VOC emissions and eliminate the HAPs.	91	Hellam Township Phase 2 Comments	See the responses to Comments 14 (alternative siting analysis) and 236 (LAER evaluation). Also page 9 of Perdue's 6/4/14 revised siting analysis states that *"Due to the above disadvantages in comparison to hexane solvent extraction, no soybean facility would be able to effectively use alcohol as a solvent and remain competitive with similar soybean facilities utilizing hexane as a solvent."* DEP finds this reasoning persuasive.
620	The application must evaluate these alternative processes as well and any other alternative processes that could minimize the VOC and HAPs risks.	91	Hellam Township Phase 2 Comments	See the responses to Comments 14 (alternative siting analysis) and 236 (LAER evaluation).
621	Mr. Wayne Black, Environmental Director for Perdue Farms, Inc., was quoted as saying at a public hearing on December 13, 2012, that hexane is used in more than 90 percent of soybean processing plants today. Perdue must examine the technology used at the other 10% of the plants and determine if that has a greater benefit to harms ratio and also whether that technology could satisfy LAER requirements by virtue of less VOC emissions.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation).
622	It is understood that there will be decreased benefits from the use of these non-traditional solvents but they must be balanced against the reduced harms resulting from less VOC and HAP emissions.	91	Hellam Township Phase 2 Comments	See the responses to Comments 14 (alternative siting analysis), 236 (LAER evaluation) and 619 (alternative solvents).
623	It is not enough to simply say that they are more costly to implement. Cost data must be provided and compared to the decreased harms.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation). DEP believes that the information provided by Perdue is sufficient to support the conclusions reached.
624	To the extent Perdue's LAER implementation does not result in VOC emissions below 50 tons per year, these alternative processes would also need to be considered as LAER.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation).
625	In that situation these technologies would need to be implemented if they are technically feasible regardless of any increased costs of production.	91	Hellam Township Phase 2 Comments	See the response to Comment 236 (LAER evaluation).
626	Summary: Perdue's Phase 2 application should not be granted a plan approval under DEP or EPA regulations. It violates regulations for fugitive emissions, does not implement LAER control technology, or adequately analyze benefits and costs of this or alternative sites and processes. It must be amended to satisfactorily address these errors or be denied.	91	Hellam Township Phase 2 Comments	See the response to Comment 393 (application adequacy).
627	Comments on pages 1-5 and 8-11 of letter (see letter for details)	92	August Mack 2/26/13 Comments	The comments on pages 1-5 and 8-11 of letter were also submitted by the commenter to DEP with other submissions, and are addressed elsewhere in this comment and response document under the relevant submissions.
628	Page 6 of letter: The following specific comments pertain to the modeling protocol:	92	August Mack 2/26/13 Comments	See below.

[59]

#	Comment	Commenter #	Category	Response
629	a. The modeling protocol specifies that rural land use inputs will be utilized for dispersion coefficients determination. Dispersion coefficient determination of surface roughness length, albedo, and bowen ratio should be obtained from the AERSURFACE tool for input into the AERMOD model. The use of AERSURFACE to determine the dispersion coefficients should be included in the modeling protocol.	92	August Mack 2/26/13 Comments	See the response to Comment 72 (hexane risk assessment), and particularly the response to Comment 9 in the public comment memo accompanying DEP's air dispersion modeling memo.
630	b. The modeling protocol specifies that concentrations of n-hexane will be calculated at the locations of residential and sensitive receptors near the proposed facility. The receptor grid should cover a 50 kilometer (km) range with 100 meter (m) grid spacing near the facility boundary with distances increasing gradually outward to 1000 m at the 50 km distance.	92	August Mack 2/26/13 Comments	See the response to Comment 72 (hexane risk assessment), and particularly the response to Comment 10 in the public comment memo accompanying DEP's air dispersion modeling memo.
631	c. The modeling protocol specifies the use of meteorological data from Capital City Airport (KCXY) and Lancaster Airport (KLNS). Based on a temperature inversion study performed by Professor Richard D. Clark, PhD., Chair, Department of Earth Sciences, Millersville University under contract to Nissley Vineyards, meteorological data physically closer to the proposed location for the Perdue facility is available and should be utilized in any modeling conducted related to the proposed facility.	92	August Mack 2/26/13 Comments	See the response to Comment 72 (hexane risk assessment), and particularly the response to Comment 11 in the public comment memo accompanying DEP's air dispersion modeling memo.
632	d. The modeling protocol indicates that the assessment will be of the dispersion of n-hexane emissions. However, the facility-wide actual emissions of VOCs will be more than 250 tons. The modeling should be conducted to address ambient impact as well as health risks associated with both VOCs, and n-hexane emissions.	92	August Mack 2/26/13 Comments	The facility limit on VOC emissions is now proposed to be 208 tons per year. See also the response to Comment 99 (Section 127.12 issues), which references the responses to Comments 71 (relative increase in ozone precursors), 88 (inversions), 96 (ozone monitoring data) and 98 (revised hexane emissions). Comment 88 also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data). See also the responses to public comments on Page 8 of DEP's hexane risk assessment memo.
633	e. The modeling protocol does not include data on ambient concentrations of VOCs, and n-hexane for comparison.	92	August Mack 2/26/13 Comments	See the response to Comment 72 (hexane risk assessment), and particularly the responses to public comments on Page 8 of DEP's hexane risk assessment memo.
634	Page 7 of letter: f. The modeling protocol does not include information on VOCs as part of the risk assessment	92	August Mack 2/26/13 Comments	See the response to Comment 99 (Section 127.12 issues), which references the responses to Comments 71 (relative increase in ozone precursors), 88 (inversions), 96 (ozone monitoring data) and 98 (revised hexane emissions). Comment 88 also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).
635	g. The modeling protocol does not include VOC or n-hexane emissions from the following sources in Table 1: i. Grain Dryers No.1 and No.2 ii. Hexane Storage Tanks iii. Temporary Emergency Boilers	92	August Mack 2/26/13 Comments	See the response to Comment 72 (hexane risk assessment). DEP, in reviewing Perdue's modeling and risk assessment, has ensured that all allowable hexane emissions are accounted for in the model.
636	h. The modeling protocol specifies inaccurate building heights in Table 2. On the schematic drawing of the building profile that Perdue presented to the Conoy Township Zoning Hearing Board in March 2012 as Exhibit #2, the following elevations are listed: i. C - Bucket Elevator -148 it (equates to 45.11 meters) ii. D - Grain Tank - 101 ft (equates to 30.78 meters) iii. E - Dust Collector - 95 ft (equates to 28.96 meters) iv. F - Extraction Building - 90 ft (equates to 27.43 meters).	92	August Mack 2/26/13 Comments	See the response to Comment 72 (hexane risk assessment), and particularly the response to Comment 16 in the public comment memo accompanying DEP's air dispersion modeling memo.
637	i. The risk assessment section of the modeling protocol indicates a value of 700 micrograms per cubic meter (ug/m3) from the United States Environmental Protection Agency's (U.S. EPA's) Integrated Risk Information System (IRIS) will be utilized as it is the most stringent value. However, more stringent limits have been utilized including a value of 600 ug/m3 in the Provisional Peer Reviewed Toxicity Values (PPRTVs) derived by the U.S. EPA Superfund Health Risk Technical Support Center (STSC) for the U.S. EPA's Superfund program and 352 ug/m3 of total hexane as a State Acceptable Ambient Concentration for air toxics permitting by the Virginia Department of Environmental Quality (VADEQ). The most stringent limit should be utilized in the risk assessment.	92	August Mack 2/26/13 Comments	See the response to Comment 72 (hexane risk assessment), and particularly the responses to public comments on Pages 8-9 of DEP's hexane risk assessment memo.
638	j. As currently proposed, Perdue's model will inaccurately model the dispersion of n-hexane emissions and it should be revised or rejected.	92	August Mack 2/26/13 Comments	See the response to Comment 72 (hexane risk assessment).
639	The August Mack 4/2/13 letter addressed alleged deficiencies in the Alternative Sites Analysis that Perdue submitted to DEP on 3/11/13 in support of the Phase 1 Application.		August Mack 4/2/13 Comments	Since the time this comment letter was submitted, Perdue on 6/4/13 submitted a revised Alternative Sites Analysis. The commenter has since submitted comments on the revised ASA, to which DEP has responded elsewhere in this comment and response document.

[09]

#	Comment	Commenter #	Category	Response
640	We want to convey our position that the receipt of this application must be published in the Pa Bulletin in order to ensure all affected parties are aware of this new application. As you know, DEP routinely publishes permit actions in the Pa Bulletin and citizens rely on this publication as the official record of DEP actions. A review of recent notices regarding Perdue's air quality permitting efforts would give an incomplete picture of the current state of affairs. . . [A]nyone viewing the official legal record for this project would not be aware that Perdue had reapplied for a grain elevator plan approval. We believe that to satisfy the requirements of DEP's regulations and to remove any public confusion, notice of the new application for the grain elevator must appear in the PA Bulletin.	94	General Phase 2 Revision Comments	Although DEP does not concur that it is required to publish a PA Bulletin Notice as requested by this commenter, DEP nevertheless has concurred that such notice is a good idea in this case, given the complexity of the Perdue project, and the public interest in it. Therefore on 7/13/13, DEP published a notice of the 6/4/13 modification to the pending Perdue plan approval application in the PA Bulletin under the heading "*Plan Approval Applications Received under the Air Pollution Control Act (35 P.S. §§ 4001-4015) and 25 Pa. Code Chapter 127, Subchapter B that may have special public interest. These applications are in review and no decision on disposition has been reached.*" DEP also subsequently published notice of the revision of Perdue's application that occurred in submissions on 11/3/14 and 11/12/14. The notice was published in the PA Bulletin on 12/6/14.
641	I am writing to express concern that the Department's spokesperson, Lisa Kasianowitz, Community Relations Coordinator, appears to have become a cheerleader for Perdue and its pending permit applications. Since the Department currently is reviewing the application and, supposedly, no final determination has been made, one would think that the Department would comment very little on the applications and leave the public relations and spin to Perdue's highly paid public relations consultants (they seem to have a lot of them).	95	General Phase 2 Revision Comments	DEP hereby confirms that at the time this comment letter was written, the Perdue application was still under review, and no final decision had been made as to the approvability of the application, or the details of any potential permit.
642	Specifically, in response to questioning by a WGAL (TV-8) reporter for stories that ran on June 20, 2013, about the amount of hexane that would be emitted by the proposed Perdue factory, Ms. Kasianowitz said in response to whether the factory would emit 208 tons of hexane: "That is a drastic difference so we are trying to make sure that people understand that it is 104 tons of hexane that will be - that has a potential to be emitted - into the atmosphere." In fact, Ms. Kasianowitz is wrong. Perdue's application explicitly states that its factory will be emitting 208.01 tons of VOCs as "Total Hexane" into the atmosphere.	95	General Phase 2 Revision Comments	DEP concurs with the commenter's characterization of the emissions proposed in the revised Perdue application. In the interview, Ms. Kasianowitz was using the common term "hexane" to refer to emissions of "n-hexane", which is the species of hexane that is listed by EPA as a hazardous air pollutant. There are also other isomers of hexane that are not listed as hazardous air pollutants, but which are nonetheless classified as VOCs.
643	Aside from being extremely inaccurate, her statement clearly is designed to minimize public concerns about Perdue's factory for a permit that has not yet been issued. No one yet knows how much hexane the Department will allow to be emitted as no permits have been issued. It certainly makes members of the public feel better, however, when the Department makes comforting, albeit inaccurate, statements about the emissions.	95	General Phase 2 Revision Comments	See the responses to Comments 641 (review of application) and 642 (species of hexane).
644	In response to another question regarding whether or not Perdue's factory would be adding pollutants into the air of Lancaster County, Ms. Kasianowitz said: "Therefore they're technically not emitting any more emissions into the atmosphere than is already there." Again, Ms. Kasianowitz is wrong. Perdue will be emitting more emissions into the atmosphere. They admit so clearly in their plan approval application. We understand that if DEP allows them to do so, they will be buying emissions credits, but the Perdue factory will be emitting hexane, VOCs, particulate matter, carbon dioxide, and other contaminants into the atmosphere.	95	General Phase 2 Revision Comments	DEP concurs that if the Perdue application is approved, the Perdue facility would emit contaminants into the air from a source which did not previously exist. As the commenter notes, Ms. Kasianowitz was referring to the regulatory requirement for Perdue to obtain emission credits for certain proposed emissions.
645	Furthermore, if Perdue is permitted by DEP to utilize emissions credits, that may not result in a net increase of pollution on a regional or statewide basis, but that will be cold comfort to the people downwind of the stacks who are forced to breath the hexane, VOCs and particulates emitted into the atmosphere by the Perdue factory.	95	General Phase 2 Revision Comments	See the response to Comment 644 (emission credits).
646	Effectively, Ms. Kasianowitz-and by extension the Department whom she represents-is taking sides in this matter, long before the Department supposedly has made a decision in this case by issuing a permit. Of course, if the Department in fact has already made up its mind before the Department has done its own thorough review and accepted third party comments then the entire permit review process is a sham.	95	General Phase 2 Revision Comments	See the response to Comment 641 (review of application).
647	If Perdue wants to spin the amount and kind of hexane and other contaminants it will be dumping into the air or whether it will be emitting at all into the atmosphere, they can rely on their many highly paid PR consultants to try to influence public opinion. It is wrong for a DEP spokesperson (and by extension, her employer, the Department) to do so-especially before it has taken any action by issuing a plan approval.	95	General Phase 2 Revision Comments	See the response to Comment 641 (review of application).

[61]

#	Comment	Commenter #	Category	Response
648	The commenter requests to receive a copy of any proposed plan approval.	96, 98, 113	General Phase 2 Revision Comments	DEP intends to make a copy of the proposed plan approval available to all commenters.
649	The commenter requests that DEP hold a public hearing on the revised (6/4/13) Perdue application.	97, 99-105, 107-112, 114-116, 118-120	General Phase 2 Revision Comments	See the response to Comment 1 (public hearings).
650	The large quantities of hexane/VOC emissions proposed for the Perdue project may be harmful to human health or the environment, especially because of inversions and/or other nearby existing pollution sources, and/or Perdue's "pollution credits" not being local, and/or ozone nonattainment status, and/or particulate nonattainment status	99-105, 107-112, 114-116, 118-120	General Phase 2 Revision Comments	The issues included in this comment are addressed elsewhere in this Comment and Response document. See especially the responses to Comments 71 (relative increase in ozone precursors), 72 (hexane risk assessment), 76 (PM emission/attainment issues), 88 (inversions), 96 (current ozone monitoring values), 99 (ozone nonattainment), 253 (pollution credits). Comment 88 (inversions) also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).
651	If the proposed Perdue facility is built, it will reduce the values of neighboring properties.	99	General Phase 2 Revision Comments	See the response to Comment 14 (alternative siting analysis).
652	Perdue should be able to process soybeans without hexane.	99, 103, 104	General Phase 2 Revision Comments	See the responses to Comments 14 (alternative siting analysis), and 445 (expeller method)
653	Perdue has been given millions of dollars of our tax money for this project	99	General Phase 2 Revision Comments	See the response to Comment 14 (alternative siting analysis).
654	LCSWMA is illegally pushing this project, which is contrary to state law governing authorities. Authorities are not permitted to meddle in private concerns or go into business.	99	General Phase 2 Revision Comments	See the responses to Comments 8 (state grant) and 25 (DEP responsibility).
655	The commenter, on behalf of the Conoy Township Board of Supervisors, does not believe that another public hearing is required for the Perdue application. Nevertheless the commenter notes that if a second public hearing is held, that the Conoy Township Supervisors have offered to host the hearing, and that DEP should avail itself of this offer.	106	General Phase 2 Revision Comments	DEP plans to schedule the upcoming public hearing in Conoy Township, as requested.
656	You should also take into account that the Susquehanna River and Chesapeake Bay are already distressed. The emission from this plant will be washed into the river and to the bay as they settle on the ground, causing more stress on an already distressed Eco System.	108	General Phase 2 Revision Comments	See the response to Comment 224 (no discharge to river).
657	It is important to consider the synergistic effects of all pollutants on health in the region.	115	General Phase 2 Revision Comments	See the response to Comment 71 (relative increase in ozone precursors).
658	Perdue should be required to scrub all of the VOCs from their emissions.	116	General Phase 2 Revision Comments	See the response to Comment 80 (BAT/LAER evaluation) and 236 (LAER evaluation).
659	My family is very concerned about additional emissions from increased truck traffic and the potential for a serious explosion of the hexane. DEP ought to require Perdue to address these significant environmental concerns.	116, 119, 120	General Phase 2 Revision Comments	See the responses to Comments 14 (alternative siting analysis), 264 (tank design), 318 (explosion risk), and 321 (tank separation distances).
660	I understand that PADEP is reviewing the Perdue hexane extraction facility application under the guidelines of LAER (Lowest Achievable Emissions Rate). It is our belief that Perdue has lowered their proposed hexane release (.140 lbs/ton soybeans processed) to a rate lower than any other full-time operated hexane extraction facility in the United States.	117	General Phase 2 Revision Comments	See the response to Comment 379 (solvent loss ratio).
661	Notwithstanding this rate, I urge the PADEP to consider the fact that Perdue will have zero fossil emissions when providing heat in the processing and drying of soybeans. This is of course is due to their planned purchase of steam from our Waste-to-Energy . (WTE) Facility next door. From the beginning, it was the intention of Perdue to locate their soybean processing facility adjacent to an alternative source of heat. Not only did they achieve that with the current location, but the steam they will purchase from LCSWMA is from the Commonwealth's Alternative Energy Portfolio Standard (AEPS) list of renewable energy sources; waste-to-energy. I urge PADEP to consider the significant CO2, CO and NOX offsets that will be achieved through use of our steam and Perdue's strategic environmental decision to co-locate next to a clean renewable energy source.	117	General Phase 2 Revision Comments	DEP concurs that the items mentioned in this comment are relevant to the Alternative Siting Analysis. See the response to Comment 14 (alternative siting analysis).

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
662	I cannot emphasize how important it is for Perdue to receive approval from your. department in the very near future. The proposed facility has tremendous, broad community support in Conoy Township and throughout all of Lancaster County. The facility will create good paying jobs and help the entire agricultural industry in all of central Pennsylvania. LCSWMA use the additional energy revenue from Perdue to defray rising costs of operating our WTE Facility and help neutralize the downward trend in electricity sales; thus allowing us to keep tipping fees stable, which benefits all residents and businesses in Lancaster County.	117	General Phase 2 Revision Comments	See the response to Comments 14 (alternative siting analysis) and 661 (alternative siting analysis relevant issues).
663	When Pennsylvania is promoting PPP (public/private partnerships), there is no better example than a proposed private facility literally connected to a vital public asset for the good of the entire community.	117	General Phase 2 Revision Comments	See the response to Comments 14 (alternative siting analysis) and 661 (alternative siting analysis relevant issues).
664	The geology of the site is honeycombed with karst, and a collapse is imminent. The train tracks go right through that area and there are trains on the tracks every hour all night long. I am very concerned about the possibility of a killing accident or a collapse of the tanks at the plant.	120	General Phase 2 Revision Comments	See response to Comment 193 (tank installation planning), as well as the responses under the category, above, of Explosion and Accidental Release Issues.
665	The commenter understands that DEP will be holding another public hearing on the Perdue project, and requests that DEP hold the public hearing within the boundaries of Conoy Township where the proposed facility will be located. The commenter has been contacted by the Conoy Township Board of Supervisors, who also feel strongly that the hearing should be held in the Township.	122	General Phase 2 Revision Comments	See the response to Comment 655 (Conoy Township hearing).
666	We are aware that the Department routinely meets with parties who have substantial concerns and objections to permit applications. Nissley has presented substantial comments and we request a one-on-one meeting with the Department to discuss our comments and Nissley's concerns. This is different than a public meeting at which the Department receives commentary and does not respond at that public meeting. Our hope is to engage the Department in a dialogue about Perdue's permit application. We had previously requested a meeting with the Department and were refused. It was directly as a result of DEP's unreasonable refusal to meet with us that we were forced to request a meeting with EPA. Our client's preference is to meet with DEP, not other agencies. Consequently, we request a meeting with the Department to discuss our client's concerns.	119	August Mack Phase 2 Revision Comments	On 1/24/14, DEP met with the commenter, and the commenter's counsel and consultant. These parties explained in person to DEP their various concerns with the proposed Perdue project.
667	Page 2 of the referenced comment letter presents concerns regarding temperature inversions with regard to the proposed Perdue project.	119	August Mack Phase 2 Revision Comments	These concerns appear basically identical to concerns earlier submitted by the same commenter, and addressed elsewhere in this comment and response document in response to the previous submission(s).
668	**Ambient Impact Modeling**: Perdue contracted with Environ International Corporation (Environ) to conduct dispersion modeling due to the potential health risks of hexane emission concerns. The cover letter of the modeling protocol indicates that Perdue is voluntarily conducting this assessment of the potential health risks associated with hexane from the proposed facility. However, the modeling performed by Perdue did not include ambient impact modeling of all emissions sources in the area including the proposed facility or modeling of VOC emissions.	119	August Mack Phase 2 Revision Comments	See the response to Comment 72 (hexane risk assessment), and particularly the responses to public comments on Page 8 of DEP's hexane risk assessment memo.
669	Perdue calculates the facility-wide VOC emissions to be 208 tons. Perdue indicated in the Alternative Site Analysis (ASA) (Attachment I) that "the impact of the proposed plant on ozone formation in the surrounding region of Lancaster and York Counties is expected to be insignificant". However, Perdue has not conducted any ambient impact modeling on which to base this statement.	119	August Mack Phase 2 Revision Comments	See the response to Comment 99 (Section 127.12 issues), which references the responses to Comments 71 (relative increase in ozone precursors), 88 (inversions), 96 (ozone monitoring data) and 98 (revised hexane emissions). Comment 88 also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).

[63]

#	Comment	Commenter #	Category	Response
670	The ASA includes information that VOCs react to produce "ozone," or "smog, ... a regional air quality issue in much of the Northeastern United States, including in Southeastern Pennsylvania" as well as indicating that formation of ozone from VOCS forms over the course of "four (4) to six (6) hours or more" and that in this time period VOC emissions from the facility will have dispersed and will not cause ozone formation in Lancaster County. As previously presented in this comment submittal, temperature inversions occur 313 of 365 days per year in the vicinity of the proposed facility in an "average" temperature year and these inversions prevent pollutants from dispersing. In addition, information maintained by PADEP identifies that Ozone Action Days have been forecast in the southeast region of Pennsylvania since 2009 with warnings being issued to limit or curtail outdoor activity due to poor air quality.	119	August Mack Phase 2 Revision Comments	See the response to Comment 99 (Section 127.12 issues), which references the responses to Comments 71 (relative increase in ozone precursors), 88 (inversions), 96 (ozone monitoring data) and 98 (revised hexane emissions). Comment 88 also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).
671	In an area where temperature inversions are known to occur, where ground level ozone results in Ozone Action Days being declared and the population being warned to limit or curtail outdoor activity, ambient impact modeling is necessary to ensure that new sources of 208 tons of VOC emissions will not further degrade the air quality in the vicinity of the facility. As the application does not include ambient impact modeling, the application should be denied.	119	August Mack Phase 2 Revision Comments	See the response to Comment 99 (Section 127.12 issues), which references the responses to Comments 71 (relative increase in ozone precursors), 88 (inversions), 96 (ozone monitoring data) and 98 (revised hexane emissions). Comment 88 also references Comments 71 (relative increase in ozone precursors),72 (hexane risk assessment), 76 (PM emission/attainment issues) and 96 (ozone monitoring data).
672	**Air Dispersion Modeling and Health Risk Assessment:** Perdue contracted with Environ to conduct dispersion modeling due to the potential health risks of hexane emission concerns. The following concerns were noted following a review of the report of these modeling results dated June 2013:	119	August Mack Phase 2 Revision Comments	See below.
673	1. The maximum hourly rate used in the model was not specified in the report nor was it included in the data files obtained from PADEP of data used to perform the modeling. Therefore it is unclear if the modeling performed for acute exposure was based on the maximum hourly rate of hexane emissions from the Perdue facility.	119	August Mack Phase 2 Revision Comments	See the response to Comment 72 (hexane risk assessment), and particularly the response to Comment 19 in the public comment memo accompanying DEP's air dispersion modeling memo.
674	2. On page 28, Table 2 Structure Dimensions contains inaccurate building heights for the Extraction Building (18.59 meters) and Storage Tanks (18.31 meters). On the schematic drawing of the building profile that Perdue presented to the Conoy Township Zoning Hearing Board in March 2012 as Exhibit #2, the following elevations are listed: i. D - Grain Tank - 101 ft (equates to 30.78 meters) ii. F - Extraction Building - 90 ft (equates to 27.43 meters). As incorrect building heights were utilized in performing the modeling, the modeling should be re-run with the correct building heights.	119	August Mack Phase 2 Revision Comments	See the response to Comment 72 (hexane risk assessment), and particularly the response to Comment 20 in the public comment memo accompanying DEP's air dispersion modeling memo.
675	As currently conducted, Perdue's modeling inaccurately models the dispersion of n-hexane emissions and it should be rejected.	119	August Mack Phase 2 Revision Comments	See the response to Comment 72 (hexane risk assessment).
676	**Lowest Achievable Emission Rate (LAER):** (Attachment H) The LAER demonstration is provided in Attachment H. The LAER demonstration does not include any add-on control technology. All add-on control technologies identified were determined as technically infeasible with the exception of the use of a mineral oil scrubber on the main vent. However, not all of the reasons given that specific technology is technically infeasible are valid.	119	August Mack Phase 2 Revision Comments	See the response to Comment 80 (BAT/LAER evaluation).
677	Some of these reasons would be operational considerations or could be eliminated through the use of multiple technologies. For instance the use of mineral oil scrubber for the meal dryer vent and meal cooler vent is indicated as technically infeasible due to excess PM and low VOC concentrations.	119	August Mack Phase 2 Revision Comments	DEP concurs that these are key reasons given by Perdue for the technical infeasibility of this option.
678	A regenerative thermal oxidizer (RTO) was rejected as technically infeasible but was identified as a potential control option in the Vegetable Oil NESHAP.	119	August Mack Phase 2 Revision Comments	Due to the mention of RTO as a potential control option in the Vegetable Oil NESHAP, Perdue has performed additional analyses to demonstrate that it is not, in fact, technically feasible.
679	These technologies should be further evaluated with the use of both PM control and condensing of VOCs.	119	August Mack Phase 2 Revision Comments	DEP believes that an appropriate evaluation has been conducted.
680	In addition, the use of a RTO is deemed not economically feasible. However, the cost of a specific technology is not a consideration under LAER.	119	August Mack Phase 2 Revision Comments	See the responses to Comments 236 (LAER evaluation) and 587 (pre-RTO particulate filter).

[64]

#	Comment	Commenter #	Category	Response
681	The LAER should be revised to evaluate all technologies that could be utilized and appropriate add-on VOC control technology specified for use at this facility.	119	August Mack Phase 2 Revision Comments	DEP believes that an appropriate evaluation has been conducted.
682	**Emergency Response/Safety:** Page 4-5 of the referenced comment letter presents certain bulleted concerns regarding explosions/emergency response/safety with regard to the proposed Perdue project.	119	August Mack Phase 2 Revision Comments	These concerns appear basically identical to concerns earlier submitted by the same commenter, and addressed elsewhere in this comment and response document in response to the previous submission(s).
683	Due to safety concerns with the use of hexane at the facility, Perdue should be required to prepare an emergency response plan that will include immediate and direct notification of all neighbors–by Perdue–within a one mile radius of the proposed plant in Conoy Township, Pennsylvania. The plan should include a warning system to be implemented by Perdue to warn nearby residents immediately, rather than rely solely on the local emergency response units (most of whom are volunteers), because valuable time would be lost for nearby residents in deciding to evacuate immediately, or to seal their homes by closing all windows/ doors and turning off their air conditioning units until the danger has passed.	119	August Mack Phase 2 Revision Comments	See the response to Comment 332 (coordination with local emergency responders).
684	According to Perdue representatives, they plan to use the local emergency response units in dealing with such events. Perdue should take responsibility for this important aspect of emergency planning and response.	119	August Mack Phase 2 Revision Comments	See the response to Comment 332 (coordination with local emergency responders).
685	**Alternative Site Analysis (ASA) (Attachment I):** The ASA submitted with the Revised Application has been significantly modified to and addresses some of the concerns raised in comments submitted April 2, 2013 to PADEP on Perdue's Grain Elevator Site Analysis. However, the ASA submitted with the Revised Application still does not meet the requirements of 25 Pa. Code § 127.205(5) which states: ". . . an analysis shall *be conducted . . . which demonstrates that the benefits of the proposed facility significantly outweigh the environmental and social costs imposed within this Commonwealth as a result of its location, construction or modification."* The ASA does not provide a full comparison of the benefits as well as the environmental and social costs of the proposed facility versus the benefits as well as the environmental and social costs of the alternative sites evaluated.	119	August Mack Phase 2 Revision Comments	See the response to Comment 14 (alternative siting analysis).
686	Due to this absence of a full comparison, the requisite information has not been provided to allow the impacted public or other decision-makers to make an informed decision.	119	August Mack Phase 2 Revision Comments	See the response to Comment 14 (alternative siting analysis).
687	Perdue fails to grasp the detailed requirements of an ASA. An ASA is intended to be an exhaustive and thorough analysis of alternative sites, not a summary or conclusory statement. Each alternative site ought to be thoroughly evaluated. Pennsylvania Trout v. DEP, 863 A2d 93 (Pa. Commw. 2004). The evaluation cannot be a summary or a conclusion, but must be an exhaustive analysis of practical on-site and off-site alternatives. See, Pennsylvania Trout v. DEP, EHB Docket No. 2002-251-R (Adjudication, April 23, 2004), 2004 WL 1045408.	119	August Mack Phase 2 Revision Comments	See the response to Comment 14 (alternative siting analysis).
688	No information on benefits associated with any of the alternative sites evaluated is presented.	119	August Mack Phase 2 Revision Comments	See the response to Comment 14 (alternative siting analysis).
689	In addition, the sole environmental and economic benefit for selection of the proposed site, as well as lack of further consideration for any of the alternative sites, is the availability of steam from the neighboring Lancaster County Solid Waste Authority (LCSWA).	119	August Mack Phase 2 Revision Comments	See the response to Comment 14 (alternative siting analysis). Also, although the ability to use steam from LCSWMA was a significant factor in Perdue's analysis, DEP disagrees with the commenter's assertion that this is the "sole" benefit claimed by Perdue for the proposed site in Conoy Township.
690	The ASA does not provide any information on the current use of the steam from the LCSWA or how use by Perdue at the proposed location would be more socially and environmentally beneficial than the current use of that steam.	119	August Mack Phase 2 Revision Comments	The assertion in this comment is not correct. In fact, the ASA states on page 5, paragraph 2, that the steam is presently "*produced in excess by the RRF and vented to the atmosphere*."
691	Other benefits as well as environmental and social costs that should be considered, evaluated, and compared for the proposed site as well as alternative sites include public safety, air emissions and temperature inversions, and explosion hazards addressed in these comments.	119	August Mack Phase 2 Revision Comments	See the response to Comment 14 (alternative siting analysis).

Evaluation of Public Comments Regarding the Plan Approval Application No. 36-05158A for Perdue Grain Oilseed, LLC, Conoy Township, Lancaster County

#	Comment	Commenter #	Category	Response
692	The ASA report utterly fails to document that the benefits of the proposed facility significantly outweigh the environmental and social costs versus any of the potential alternative sites within the meaning of the regulations or the EHB's standard established in Pennsylvania Trout.	119	August Mack Phase 2 Revision Comments	See the response to Comment 14 (alternative siting analysis).
693	The ASA does not provide an analysis of the impact of increased traffic in the vicinity of the proposed location nor in the surrounding areas from which the soybeans will be shipped to the proposed grain elevator.	119	August Mack Phase 2 Revision Comments	See the response to Comment 14 (alternative siting analysis).
694	A traffic study was conducted by Rettew on behalf of Perdue and dated June 5, 2012, which clearly shows that there will be a dramatic increase in vehicular traffic in the area. This is not discussed as a project impact which would be detrimental to the area. Perdue's proposed operation will introduce literally thousands of truck trips every week onto rural and local roads. Perdue's ASA summarily addresses traffic only in regard to the capacity of the LCSWMA driveway and is entirely inadequate.	119	August Mack Phase 2 Revision Comments	See the response to Comment 14 (alternative siting analysis).
695	In addition, this traffic study was limited to traffic on Route 441 at the entrance to the proposed facility. However, "the proposed facility will receive, process, dry, store, and ship soybeans that are grown and harvested within Lancaster County and the surrounding region, consisting primarily of York, Berks, and Lebanon Counties and the states of New Jersey, New York, and Delaware." As the proposed facility will only accept soybeans via truck, a study of the increase in truck traffic throughout the area from which soybeans will be shipped is warranted including specific modeling of the particulate matter less than 2.5 microns in diameter (PM2,s) (a nonattainment pollutant in Lancaster County) and nitrous oxide emissions (a pre-cursor to ground level ozone (a nonattainment pollutant in Lancaster County) along the entire Route 441 access route from Columbia, PA to Middletown, PA.	119	August Mack Phase 2 Revision Comments	DEP does not believe that the regulations relevant to this application require an analysis of the traffic along the "*entire Route 441 access route from Columbia, PA to Middletown, PA*" as suggested in this comment. That stretch of road is about 19 miles long. The proposed Perdue facility location is about 11 miles from Middletown and 8 miles from Columbia.
696	In addition, an evaluation of the impact of the increased truck traffic on roadway infrastructure, specifically aging bridges in Lancaster County, which may result in the imposition of load limits, as well as the possibility of utilizing rail for shipments of raw materials to and finished products from the facility should be incorporated in the ASA.	119	August Mack Phase 2 Revision Comments	See the response to Comment 14 (alternative siting analysis).
697	The ASA indicates, "given the nature of the proposed facility's operations, other environmental impacts relating to water, waste, and land are expected to be minimal." The ASA fails to provide any details on these environmental impacts for the proposed facility or alternative sites nor is any analysis included to warrant selection of the proposed facility versus alternative sites based on these impacts.	119	August Mack Phase 2 Revision Comments	See the response to Comment 14 (alternative siting analysis).
698	The ASA discusses economic risks that Perdue is assuming in selecting the proposed location without mentioning or evaluating economic cost of the 8.75 million dollar grant to the Commonwealth of Pennsylvania or addressing the other social costs (i.e., degradation of air quality, public safety, and traffic).	119	August Mack Phase 2 Revision Comments	In fact, the ASA does address the referenced grant under Social Costs, and also addresses other costs
699	The ASA appears to give sole weight to Perdue's economic benefit at the expense of any other social or environmental costs.	119	August Mack Phase 2 Revision Comments	See the response to Comment 14 (alternative siting analysis). DEP does not concur with this characterization of the ASA.
700	As Perdue has failed to provide an alternative site analysis that demonstrates that the requirements have been met and from which an informed decision can be made, the Revised Application should be denied.	119	August Mack Phase 2 Revision Comments	See the response to Comment 14 (alternative siting analysis).
701	**Best Available Technology (BAT) Analysis (Attachment I):** The BAT Analysis includes best management practices (BMPs) for grain handling. Many of these BMPs are qualitative in nature. Specific quantitative requirements for BMPs should be incorporated in addition to the qualitative BMPs as follows:	119	August Mack Phase 2 Revision Comments	See below.
702	General Maintenance, Upkeep, and Repair: All grain handling and soybean processing operations will cease immediately if equipment or air pollution control equipment malfunctions occur that will result in excess emissions and will not be resumed until a remedy is implemented.	119	August Mack Phase 2 Revision Comments	DEP believes the term "cease immediately", as suggested here, is overly prescriptive, is not consistent with the requirements for other similar facilities, and does not recognize safety concerns which may preclude the "immediate" shutdown of equipment.
703	Clean internal and external areas, including floors, roofs and decks, daily during operations to minimize dust to the atmosphere when the facility is receiving, transferring, or loading out grain.	119	August Mack Phase 2 Revision Comments	DEP believes the use of the Best Management Practices that are incorporated in the draft plan approval, coupled with daily visible emission monitoring, will appropriately minimize fugitive emissions.

[99]

#	Comment	Commenter #	Category	Response
704	Clean the yard, ditches, and curbs daily during operations to minimize accumulation of grain, chaff, and grain dust.	119	August Mack Phase 2 Revision Comments	See the response to Comment 703 (BMPs).
705	Grain Handling Equipment: Grain handling equipment shall be cleaned daily, enclosed, or controlled to minimize visible dust emissions to the atmosphere when the equipment is being operated.	119	August Mack Phase 2 Revision Comments	See the response to Comment 703 (BMPs).
706	In addition, as Perdue indicates in the BAT that the Airlanco baghouses for control of particulate matter (PM) emissions from sources 201, 202, 206, 207, and 210 are guaranteed not to exceed 0.01 grains per dry standard cubic feet (gr/dscf) and this emission rate should be considered BAT for these sources as opposed to the emission rate of 0.04 gr/dscf in 25 Pa. Code §123.13(c)(1)(i).	119	August Mack Phase 2 Revision Comments	DEP concurs with this comment and has imposed a PM emission limit of 0.01 grains/dscf in the draft plan approval.
707	**Compliance Assurance Monitoring (CAM) Plan:** The CAM Plan for "Flaking Rolls" should be modified to increase the frequency of checks for the PM monitoring device on page 3 of 5 as follows:	119	August Mack Phase 2 Revision Comments	See below.
708	Record the pressure differential hourly during source operation	119	August Mack Phase 2 Revision Comments	DEP believes that daily differential pressure readings should provide reasonable assurance of compliance.
709	Check for visible emissions from the discharge from the cyclone stack once per shift during source operation.	119	August Mack Phase 2 Revision Comments	DEP believes that weekly visible emission checks should provide reasonable assurance of compliance.
710	Geologic Considerations: Specific geologic considerations identified in comments submitted November 26, 2012 to PADEP on Perdue's Site Specific Installation Permit (SSIP) Application and Spill Prevention Response (SPR) Plan and February 14, 2013 to the Susquehanna River Basin Commission (SRBC) on Perdue's Groundwater Withdrawal and Consumptive Use Application Pending/N01 #2012-071 and 2012-072 have not been addressed. (additional comments follow in the letter related to this topic).	119	August Mack Phase 2 Revision Comments	Since the commenter identifies these comments as being specifically related to Perdue's Site Specific Installation Permit (SSIP) Application and Spill Prevention Response (SPR) Plan, these comments have been provided to DEP staff reviewing those materials for their consideration.
711	Conclusion The application submitted by Perdue is deficient and should be denied until important concerns related to adversely affecting the environment, public safety, and air quality have been adequately addressed.	119	August Mack Phase 2 Revision Comments	See the response to Comment 393 (application adequacy).
712	Moreover, even if additional information was provided by Perdue, the emission of more than 208 tons of VOCs from this location including more than 104 tons of n-hexane emissions along with the storage of 40,000 gallons of hazardous hexane at this site is an environmental hazard, a safety hazard, and a public health hazard. The only way this facility would be acceptable would be if it eliminated the use of hexane.	119	August Mack Phase 2 Revision Comments	See the responses to Comments 14 (alternative siting analysis) and 393 (application adequacy).

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MEMO

TO Craig A. Evans, P.E.
Environmental Group Manager
Air Toxics and Risk Assessment Section
Division of Permits

FROM Andrew W. Fleck AWF
Environmental Group Manager
Air Quality Modeling Section
Division of Air Resource Management

DATE February 20, 2015

RE DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

The Pennsylvania Department of Environmental Protection (DEP) received a Plan Approval Application on August 13, 2012, from Perdue Grain & Oilseed, LLC (Perdue) for the proposed construction of a soybean processing facility in Conoy Township, Lancaster County. The DEP received revisions to Perdue's Plan Approval Application on June 4, 2013, and November 3, 2014.

The DEP received a modeling and risk assessment report[1] from Perdue on June 10, 2013, additional data files[2] to support this report on June 17, 2013, an addendum[3] to this report on April 3, 2014, and a supplemental memorandum[4] on January 13, 2015. The report, additional data files, addendum, and memorandum are collectively known as the "Perdue Report." The Perdue Report was prepared by ENVIRON International Corporation (ENVIRON) to support Perdue's Plan Approval Application. The Perdue Report evaluated the impact and health effects of commercial hexane, including normal hexane (n-hexane), expected to be emitted from Perdue's proposed facility.

Based on the Perdue Report, the DEP conducted air dispersion modeling to support its own inhalation risk assessment for Perdue's proposed facility. The DEP's air dispersion modeling

[1] ENVIRON, 2013a. Air Dispersion Modeling and Health Risk Assessment, Proposed Soybean Processing Facility in Lancaster County, PA. ENVIRON International Corporation, Emeryville and San Francisco, CA. June 2013.
[2] ENVIRON, 2013b. Letter and enclosed DVD from Ted Bowie, ENVIRON to John La Rosa, DEP. June 14, 2013.
[3] ENVIRON, 2014. Addendum to Air Dispersion Modeling and Health Risk Assessment, Proposed Soybean Processing Facility in Lancaster County, PA. ENVIRON International Corporation, Emeryville and San Francisco, CA. April 2014.
[4] ENVIRON, 2015. Sensitivity of HRA Results to Site Configuration Refinements. Memorandum from Stan Hayes and Ted Bowie, ENVIRON to Wayne Black, Perdue. January 12, 2015.

utilizes the U.S. Environmental Protection Agency's (EPA) recommended near-field dispersion model and is consistent with the EPA's relevant air quality modeling guidance. A summary of the DEP's air dispersion modeling is attached to this memorandum.

If you have any questions on the DEP's air dispersion modeling to support its inhalation risk assessment for Perdue's proposed facility, you may contact me by e-mail at afleck@pa.gov or by telephone at 717.783.9243.

Attachment

cc: Joyce Epps, BAQ Director
Krishnan Ramamurthy, BAQ Division of Permits
Virendra Trivedi, BAQ New Source Review Section
Brian Morgan, BAQ Air Toxics and Risk Assessment Section
William Weaver, Southcentral Region AQ Program
Thomas Hanlon, Southcentral Region AQ Program
Brian Wetzel, Southcentral Region AQ Program
Kirit Dalal, BAQ Division of Air Resource Management
John La Rosa, BAQ Air Quality Modeling Section
AQ Modeling Correspondence File

ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

I. Facility / Project Description

Perdue Grain & Oilseed, LLC (Perdue) proposes to construct a soybean processing facility in Conoy Township, Lancaster County. Perdue's proposed facility would process soybeans to produce soybean meal, soybean hull, and soybean oil. The soybean oil would be extracted using commercial hexane as the solvent. The commercial hexane solvent would contain, on average, 50% normal hexane (n-hexane).

II. Air Dispersion Modeling

The DEP received a modeling and risk assessment report[1] from Perdue on June 10, 2013, additional data files[2] to support this report on June 17, 2013, an addendum[3] to this report on April 3, 2014, and a supplemental memorandum[4] on January 13, 2015. The report, additional data files, addendum, and memorandum are collectively known as the "Perdue Report." The Perdue Report was prepared by ENVIRON International Corporation (ENVIRON) to support Perdue's Plan Approval Application for the proposed soybean processing facility. The Perdue Report evaluated the impact and health effects of commercial hexane, including n-hexane, expected to be emitted from Perdue's proposed facility.

Based on the Perdue Report, the DEP conducted air dispersion modeling of n-hexane emissions to support its own inhalation risk assessment for Perdue's proposed facility. The DEP's air dispersion modeling supports three inhalation risk scenarios: acute risk, chronic risk for the maximum exposed individual, and chronic risk for the maximum exposed worker.

All model input/output files and data associated with the DEP's air dispersion modeling, as well as all documents footnoted in this summary, are available on a disk upon request.

A. Model Selection

The DEP's air dispersion modeling of Perdue's proposed n-hexane emissions utilizes the American Meteorological Society / Environmental Protection Agency Regulatory Model

[1] ENVIRON, 2013a. Air Dispersion Modeling and Health Risk Assessment, Proposed Soybean Processing Facility in Lancaster County, PA. ENVIRON International Corporation, Emeryville and San Francisco, CA. June 2013.
[2] ENVIRON, 2013b. Letter and enclosed DVD from Ted Bowie, ENVIRON to John La Rosa, DEP. June 14, 2013.
[3] ENVIRON, 2014. Addendum to Air Dispersion Modeling and Health Risk Assessment, Proposed Soybean Processing Facility in Lancaster County, PA. ENVIRON International Corporation, Emeryville and San Francisco, CA. April 2014.
[4] ENVIRON, 2015. Sensitivity of HRA Results to Site Configuration Refinements. Memorandum from Stan Hayes and Ted Bowie, ENVIRON to Wayne Black, Perdue. January 12, 2015.

(AERMOD),[5,6,7,8] version 14134. The U.S. Environmental Protection Agency (EPA) recommends, based on extensive developmental and performance evaluation, AERMOD as the near-field dispersion model for a wide range of regulatory applications in all types of terrain and in cases where aerodynamic building downwash is important for the analysis.[9] AERMOD employs best state-of-practice parameterizations for characterizing the meteorological influences and dispersion.[10] A flowchart of the AERMOD Modeling System is provided in Figure 1.

B. Model Input

1. Control Pathway

a. Model Options

AERMOD is executed, for each risk scenario and meteorological dataset (see subsection II.B.4), with the option to calculate concentrations (CONC) for each combination of terrain option and receptor height option. Terrain options include elevated terrain (by default) and the non-default flat terrain (FLAT) option to address an issue identified by the EPA.[11] Receptor height options include ground-level receptor height (by default) and a flagpole receptor height (FLAGPOLE) option which specifies a value of 1.8 meters to account for human inhalation. In addition, AERMOD was executed with options to calculate concentrations for a 1-hour (1) averaging time to support the acute risk scenario and for the meteorological data period (PERIOD) to support both chronic risk scenarios.

AERMOD is executed again with the BETA option along with the combination of options described above. The BETA option allows AERMOD to use a meteorological dataset that was processed with the non-default surface friction velocity adjustment (ADJ_U*) option. The surface friction velocity adjustment option is discussed further in subsections II.B.4.c and II.C of this summary.

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[5] AERMOD downloaded from EPA website at http://www.epa.gov/ttn/scram/dispersion_prefrec.htm#aermod.
[6] EPA, 2004a. User's Guide for the AMS/EPA Regulatory Model – AERMOD. EPA-454/B-03-001. U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. September 2004.
[7] EPA, 2014a. Addendum – User's Guide for the AMS/EPA Regulatory Model – AERMOD. EPA-454/B-03-001. U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. May 2014.
[8] EPA, 2004b. AERMOD: Description of Model Formulation. EPA-454/R-03-004. U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. September 2004.
[9] EPA, 2005. Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions; Final Rule. 70 FR 68218. November 9, 2005. Subsection 4.2.2.
[10] Ibid. Subsection 4.1(d).
[11] EPA, 2009. AERMOD Implementation Guide. U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. March 19, 2009. Subsection 4.1.

b. Urban/Rural Dispersion Determination

AERMOD utilizes rural dispersion algorithms by default. In accordance with the EPA's guidance,[12] a land use procedure[13] was conducted by evaluating U.S. Geological Survey (USGS) National Land Cover Data (NLCD)[14] for 2006 within three kilometers of the Perdue's proposed facility. The NLCD 2006 categories were converted to Auer[15] land use types using the DEP's recommendations.[16] Rural land use accounts for 99.29% of the total area compared to urban land use which accounts for 0.71% of the total area. The land use procedure is summarized in Table 1. Furthermore, considering land cover and population density across the full modeling domain, there is no significant urban heat island effect to support the use of AERMOD's urban dispersion (URBAN) option.

2. Source Pathway

a. Source Characterization

The emissions of n-hexane from Perdue's proposed facility would be emitted to the atmosphere via three vents, a processing area, and an extraction building. Consistent with the Perdue Report, the three vents are characterized in AERMOD as typical point sources (i.e., unobstructed vertical releases) and the emissions of n-hexane from the processing area and the extraction building would be fugitive and are characterized in AERMOD as an area source and a volume source, respectively.

b. Source Location and Emission Parameters

The locations of Perdue's proposed n-hexane emission sources entered in AERMOD are consistent with the Perdue Report. The DEP, however, entered a single base elevation in AERMOD, assuming the ground at Perdue's proposed site would be regraded. This base elevation was calculated by averaging the USGS National Elevation Dataset (NED)[17] in the area which covers Perdue's emission sources and structures (see next subsection) of Perdue's proposed facility. The location and base elevation of Perdue's proposed n-hexane emission sources are listed in Table 2.

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[12] Ibid. Subsection 5.1.
[13] EPA, 2005. Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions; Final Rule. 70 FR 68218. November 9, 2005. Subsection 7.2.3(c).
[14] NLCD 2006 downloaded from Multi-Resolution Land Cover (MRLC) Consortium website at http://www.mrlc.gov/viewerjs/.
[15] Auer, Jr., A.H., 1978. Correlation of Land Use and Cover with Meteorological Anomalies. *Journal of Applied Meteorology*, 17(5): 636-643.
[16] DEP, 2011. Conversion of National Land Cover Data Category to Auer Land Use Type (Draft). May 6, 2011.
[17] NED with one-third arc-second resolution downloaded from Multi-Resolution Land Cover (MRLC) Consortium website at http://www.mrlc.gov/viewerjs/.

The emission rates of n-hexane entered in AERMOD are based on Perdue's estimated source apportionment of a facility-wide mass emission limit of 208 tons per year of volatile organic compounds (VOC), which would be commercial hexane. The commercial hexane solvent would contain, on average, 50% n-hexane. The emission rates and associated emission parameters for Perdue's proposed n-hexane emission sources are consistent with the Perdue Report, with the exception of the volume source release height. The emission rates and associated emission parameters entered in AERMOD for each point, area, and volume source are listed in Table 3A, Table 3B, and Table 3C, respectively.

c. Downwash

Direction-specific downwash parameters for Perdue's point sources (vents) are entered in AERMOD. The downwash parameters are calculated by the EPA's Building Profile Input Program modified for the Plume Rise Model Enhancements algorithms (BPIPPRM),[18,19,20,21,22] version 04274. The coordinates, base elevation, and release height of each point source (vent), as well as the coordinates, base elevation, and height of each structure expected to affect downwash, are entered in the BPIPPRM. These BPIPPRM input data are consistent with the Perdue Report with the exception of the height of the Extraction Building and the base elevations of the structures and point sources (vents). The structure heights entered in the BPIPPRM are listed in Table 4. A single base elevation, as described above, was entered in the BPIPPRM for all of Perdue's proposed structures and point sources (vents). A separate base elevation was entered in the BPIPPRM for the Lancaster County Solid Waste Management Authority's (LCSWMA) waste-to-energy building. The BPIPPRM results indicate that the proposed release heights of Perdue's point sources (vents) are fully creditable.

3. Receptor Pathway

a. Receptor Grid Development

AERMOD utilizes discrete receptors that vary for each risk scenario. For the acute risk scenario, receptors are placed along Perdue's proposed ambient air boundary (i.e., fence line) and extend beyond Perdue's proposed ambient air boundary a distance of 10 kilometers with decreasing density. For the chronic risk scenario for the maximum exposed individual, receptors are placed along Perdue's proposed property boundary (except that portion shared with the LCSWMA's

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[18] BPIPPRM downloaded from EPA website at http://www.epa.gov/ttn/scram/dispersion_related.htm#bpipprm.
[19] EPA, 1995. User's Guide to the Building Profile Input Program, Revised. EPA-454/R-93-038. U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. February 8, 1995.
[20] EPA, 2004c. User's Guide to the Building Profile Input Program, Revised. EPA-454/R-93-038. U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. April 21, 2004.
[21] Schulman, L.L., D.G. Strimaitis, and J.S. Scire, 1997. Addendum to ISC3 User's Guide: The PRIME Plume Rise and Building Downwash Model. Earth Tech, Inc., Concord, MA 01742. November 1997.
[22] Schulman, L.L., D.G. Strimaitis, and J.S. Scire, 2000: "Development and Evaluation of the PRIME Plume Rise and Building Downwash Model," *Journal of the Air & Waste Management Association*, 50, 378-390.

property boundary), and extend beyond Perdue's proposed property boundary and LCSWMA's property boundary a distance of 10 kilometers with decreasing density. For the chronic risk scenario for the maximum exposed worker, receptors are placed along and within the LCSWMA's property boundary. The extent and density of AERMOD's receptor domain is adequate to determine the location and magnitude of the maximum n-hexane concentration for each risk scenario. AERMOD's receptor grid is described in Table 5.

b. Terrain Preprocessing

Receptor elevations and hill height scales are calculated by AERMAP,[23,24,25] version 11103, using the USGS NED.[26] When the flat terrain (FLAT) option is selected in AERMOD's control pathway (see subsection II.B.1.a), receptor elevations and hill height scales in AERMOD's receptor pathway are ignored.

4. Meteorology Pathway

a. Brunner Island Dataset

AERMOD utilizes an hourly meteorological dataset from March 1, 1989, to December 6, 1993, a period of approximately 4 years and 9 months in length. This dataset, identified as the Brunner Island dataset, is derived from primary surface data measured near PPL's Brunner Island facility,[27] secondary surface data from Capital City Airport (KCXY) and Harrisburg International Airport (KMDT),[28] and upper air data from Washington Dulles International Airport (KIAD).[29] The Brunner Island meteorological site is located approximately 4.5 kilometers northwest, the KCXY site is located approximately 24.5 kilometers northwest, the KMDT site is located approximately 17.9 kilometers northwest, and the KIAD site is located approximately 140.5 kilometers south-southwest of Perdue's proposed facility. The meteorological site information for Brunner Island, KCXY/KMDT, and KIAD is summarized in Table 6A, Table 6B, and Table 6C, respectively. Collectively, the Brunner Island, KCXY/KMDT, and KIAD meteorological

[23] AERMAP downloaded from EPA website at http://www.epa.gov/ttn/scram/dispersion_related.htm#aermap.
[24] EPA, 2004d. User's Guide for the AERMOD Terrain Preprocessor (AERMAP). EPA-454/B-03-003. U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. October 2004.
[25] EPA, 2011. Addendum – User's Guide for the AERMOD Terrain Preprocessor (AERMAP). EPA-454/B-03-003. U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. March 2011.
[26] NED with one-third arc-second resolution downloaded from Multi-Resolution Land Cover (MRLC) Consortium website at http://www.mrlc.gov/viewerjs/.
[27] PPL, 2005. PPL Brunner Island Meteorological Data (August 26, 2005). Attachment to email from Alfred Ferullo, PPL to Timothy Leon Guerrero, DEP. August 30, 2005.
[28] KCXY and KMDT secondary surface meteorological data downloaded from NOAA/NCDC website at ftp://ftp.ncdc.noaa.gov/pub/data/noaa/.
[29] KIAD upper air meteorological data downloaded from NOAA/ERSL website at http://www.esrl.noaa.gov/raobs/.

data satisfy the EPA's recommendations[30] for use in AERMOD. After processing (see next subsection), these data allow AERMOD to construct a representative vertical structure of the planetary boundary layer within the modeling domain under both convective and stable conditions, including conditions associated with temperature inversions, in order to properly characterize plume transport and dispersion.

The Brunner Island, KCXY/KMDT, and KIAD meteorological data were processed with the AERMOD meteorological preprocessor (AERMET),[31,32,33] version 14134. In AERMET Stage 1, the Brunner Island wind speed threshold of 0.3 m/s was entered. KCXY and KMDT surface meteorological data in the Integrated Surface Data (ISD) format and KIAD upper air meteorological data in the Forecast Systems Laboratory (FSL) format were extracted. Also, the MODIFY option was used to fill missing temperatures in the KIAD upper air data with interpolated values. In AERMET Stage 3, the temperature data substitution (SUB_TT) and cloud cover data substitution (SUB_CC) options were selected. The upper air window (UAWINDOW) was set to -3 +1. Surface characteristics (noon-time albedo, Bowen ratio, and surface roughness length) values, representative of the Brunner Island surface meteorological site, were entered. These surface characteristics values were calculated by AERSURFACE,[34,35] version 13016, using USGS NLCD 1992.[36] AERSURFACE does not currently accept more recent NLCD; however, changes in land cover since 1992 would not significantly affect the surface characteristics values within the AERSURFACE domains. The following options were selected in AERSURFACE: default 1-kilometer radius and default twelve 30-degree sectors for surface roughness length, seasonal temporal resolution, non-airport site, and non-arid region. AERSURFACE was executed for each surface moisture condition (average, dry, and wet), assuming both no continuous snow cover and continuous snow cover during the winter season (i.e., AERSURFACE was executed six times). AERMET Stage 3 was then executed for each set of surface characteristics to produce six surface (.sfc) files. The final AERMET surface file was assembled by season based on estimates of surface moisture condition and snow cover during the meteorological data period. Surface moisture condition[37] was based on average precipitation

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[30] EPA, 2005. Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions; Final Rule. 70 FR 68218. November 9, 2005. Subsection 8.3 and Appendix A, subsection A.1(b)(2).

[31] AERMET downloaded from EPA website at http://www.epa.gov/ttn/scram/metobsdata_procaccprogs.htm#aermet.

[32] EPA, 2004e. User's Guide for the AERMOD Meteorological Preprocessor (AERMET). EPA-454/B-03-002. U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. November 2004.

[33] EPA, 2014b. Addendum – User's Guide for the AERMOD Meteorological Preprocessor (AERMET). EPA-454/B-03-002. U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. May 2014.

[34] AERSURFACE downloaded from EPA website at http://www.epa.gov/ttn/scram/dispersion_related.htm#aersurface.

[35] EPA, 2013. AERSURFACE User's Guide, Revised. EPA-454/B-08-001. U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. January 16, 2013.

[36] NLCD 1992 downloaded from Multi-Resolution Land Cover (MRLC) Consortium website at http://www.mrlc.gov/viewerjs/.

[37] DEP, 2014. Estimates of Surface Moisture Condition by Pennsylvania Climate Division Based on Precipitation Data for the 1981 – 2010 Climatological Period (Draft). July 8, 2014.

data for Pennsylvania Climate Division 3 from the National Climatic Data Center's (NCDC) nClimDiv dataset[38] using the EPA's guidance.[39] Snow cover was based on the NCDC's Local Climatological Data (LCD) for KCXY and KMDT.[40] The estimates of surface moisture condition and snow cover are listed in Table 7. The fully processed, AERMOD-ready Brunner Island dataset satisfies the DEP's data completeness recommendation for air dispersion modeling. Meteorological data completeness for the Brunner Island dataset is summarized in Table 8.

b. KCXY and KLNS Datasets

AERMOD also utilizes two hourly meteorological datasets, each 5 years (2009 – 2013) in length, derived from surface data for two nearby airports, KCXY and Lancaster Airport (KLNS),[41] and upper air data from KIAD.[42] The KCXY site is located approximately 24.5 kilometers northwest and the KLNS site is located approximately 30.1 kilometers east of Perdue's proposed facility. Due to these distances, the DEP does not believe the KCXY and KLNS datasets are as spatially representative of the modeling domain as the Brunner Island dataset; nonetheless, they do provide additional conservatism to the air dispersion modeling.

The KCXY and KLNS datasets are each processed with AERMET and AERSURFACE in a manner similar to the processing of the Brunner Island dataset with the following notable exceptions. For AERMET Stage 2, AERMINUTE,[43,44] version 14237, was utilized to process Automated Surface Observing System (ASOS) 1-minute wind data[45] to reduce calm and variable winds in the hourly wind data format. In AERMET Stage 3, the threshold wind speed (THRESH_1MIN) value was set to 0.5 meters per second, below which winds reported in the 1-minute ASOS data processed through AERMINUTE are considered calm. Also, in AERSURFACE, the airport site option was selected. The fully processed, AERMOD-ready meteorological datasets for KCXY and KLNS both satisfy the DEP's data completeness recommendation for air dispersion modeling.

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[38] Precipitation data downloaded from NOAA/NCDC website at ftp://ftp.ncdc.noaa.gov/pub/data/cirs/climdiv/.
[39] EPA, 2013. AERSURFACE User's Guide, Revised. EPA-454/B-08-001. U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. January 16, 2013. Subsection 2.2.
[40] Local Climatological Data downloaded from NOAA/NCDC website at http://www.ncdc.noaa.gov/IPS/lcd/lcd.html.
[41] KCXY and KLNS surface meteorological data downloaded from NOAA/NCDC website at ftp://ftp.ncdc.noaa.gov/pub/data/noaa/.
[42] KIAD upper air meteorological data downloaded from NOAA/ERSL website at http://www.esrl.noaa.gov/raobs/.
[43] AERMINUTE downloaded from EPA website at http://www.epa.gov/ttn/scram/metobsdata_procaccprogs.htm#aermet.
[44] EPA, 2014c. AERMINUTE User's Instructions. U.S. Environmental Protection Agency, Research Triangle Park, NC 27711.
[45] KCXY and KLNS ASOS 1-minute wind data downloaded from NOAA/NCDC website at ftp://ftp.ncdc.noaa.gov/pub/data/asos-onemin/.

c. Surface Friction Velocity Adjustment Option

Each meteorological dataset was also processed with the non-default surface friction velocity adjustment (ADJ_U*) option in AERMET Stage 3. This option adjusts the surface friction velocity during low wind speed stable meteorological conditions based on Qian and Venkatram (2011).[46]

d. Profile Base Elevation

The profile base elevation (PROFBASE) entered in AERMOD corresponds with the base elevation of the primary meteorological tower for each meteorological dataset.

5. Output Pathway

Output options for determining the maximum average concentration of n-hexane at each model receptor (PLOTFILE), as well as the overall maximum average concentration of n-hexane, for a 1-hour period and the entire meteorological data period, are entered in AERMOD.

C. Model Output (Results)

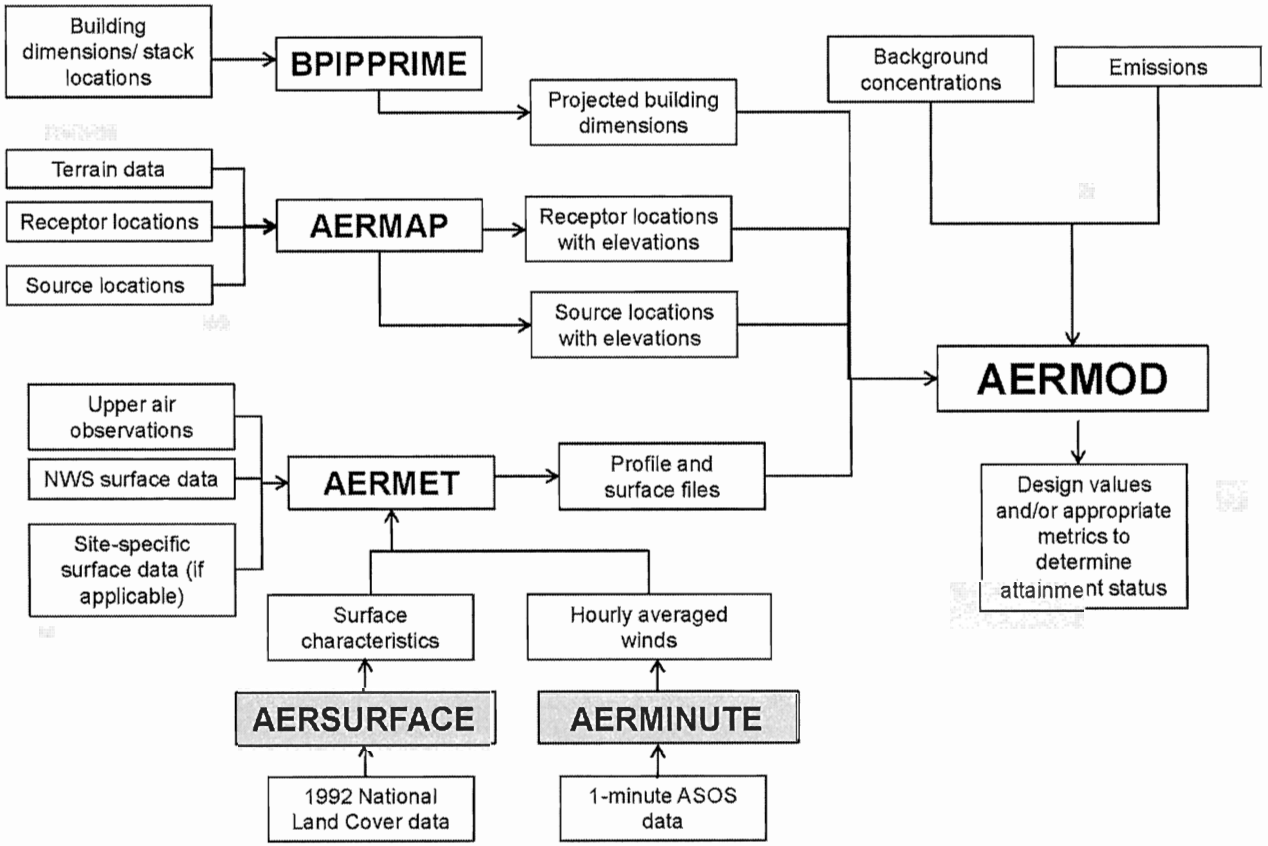
The n-hexane concentrations estimated by AERMOD for the acute risk, chronic risk for the maximum exposed individual, and chronic risk for the maximum exposed worker scenarios for Perdue's proposed facility are summarized in Table 9A, Table 10A, and Table 11A, respectively. The maximum concentrations of n-hexane are listed in these tables for each combination of meteorological dataset (Brunner Island, KCXY, and KLNS), terrain option (elevated and flat), and receptor height option (ground-level and flagpole). Commercial hexane concentrations may be estimated by multiplying the n-hexane concentrations in these tables by two.

The n-hexane concentrations estimated by AERMOD utilizing the non-default surface friction velocity adjustment option for the acute risk, chronic risk for the maximum exposed individual, and chronic risk for the maximum exposed worker scenarios for Perdue's proposed facility are summarized in Table 9B, Table 10B, and Table 11B, respectively. Based on the EPA's preliminary model performance evaluations,[47] the results of AERMOD utilizing this non-default option may represent more realistic estimates of concentrations. However, the EPA continues to evaluate model performance with this non-default option and any conclusions are subject to change.

[46] Qian, W., and A. Venkatram, 2011: "Performance of Steady-State Dispersion Models Under Low Wind-Speed Conditions," *Boundary Layer Meteorology*, 138, 475-491.
[47] EPA, 2014d. Webinar: AERMOD Modeling System Update. U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. August 12, 2014.

ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Figure 1 – AERMOD Modeling System Flowchart



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ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Table 1 – Land Use Procedure to Support Rural Dispersion Determination for Perdue Sources

National Land Cover Data 2006 Category			Auer Land Use Type		Rural / Urban Selection
Code	Description	Code Percent	Code	Description	
11	Open Water	17.28%	A5	Water Surfaces	Rural
12	Perennial Ice / Snow	0.00%	A5	Water Surfaces	Rural
21	Developed, Open Space	4.96%	A1	Metropolitan Natural	Rural
			R4	Estate Residential	Rural
22	Developed, Low Intensity	1.84%	R1	Common Residential	Rural
23	Developed, Medium Intensity	0.60%	R2	Compact Residential	Urban
24	Developed, High Intensity	0.11%	C1	Commercial	Urban
			I1	Heavy Industrial	Urban
			I2	Light – Moderate Industrial	Urban
			R3	Compact Residential	Urban
31	Barren Land	0.51%	A4	Undeveloped Rural	Rural
41	Deciduous Forest	21.16%	A4	Undeveloped Rural	Rural
42	Evergreen Forest	0.00%	A4	Undeveloped Rural	Rural
43	Mixed Forest	2.41%	A4	Undeveloped Rural	Rural
51	Dwarf Scrub	0.00%	A3	Undeveloped	Rural
52	Shrub / Scrub	2.87%	A3	Undeveloped	Rural
71	Grassland / Herbaceous	0.04%	A3	Undeveloped	Rural
81	Pasture / Hay	15.45%	A2	Agricultural Rural	Rural
82	Cultivated Crops	28.87%	A2	Agricultural Rural	Rural
90	Woody Wetlands	3.70%	A3	Undeveloped	Rural
			A4	Undeveloped Rural	Rural
			A5	Water Surfaces	Rural
95	Emergent Herbaceous Wetlands	0.22%	A3	Undeveloped	Rural
			A5	Water Surfaces	Rural

ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Table 2 – Location of Perdue Sources of n-Hexane

Source Description	Model ID	Source Type	Source Location[48]		Base Elevation
			UTM Easting	UTM Northing	
			meters	meters	meters (above mean sea level)
Main Vent	POINT_1	Point	360,051.24	4,436,931.46	103.42
Dryer Vent	POINT_2	Point	360,064.46	4,436,902.09	103.42
Cooler Vent	POINT_3	Point	360,068.43	4,436,900.77	103.42
Processing Area Fugitives	AREA	Area[49]	359,996.50	4,436,911.70	103.42
Extraction Building Fugitives	VOLUME	Volume[50]	360,059.20	4,436,930.50	103.42

[48] Source location expressed as Universal Transverse Mercator (UTM) coordinates for Zone 18N, referenced in North American Datum of 1983 (NAD 1983).
[49] Area source coordinates expressed as southwest corner of area source.
[50] Volume source coordinates expressed as horizontal center of volume source.

ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Table 3A – Model Emission Data for Perdue Point Sources of n-Hexane

Source Description	Model ID	Solvent Loss		Model Emission Rate	Release Height	Exit Temperature	Exit Velocity	Exit Inside Diameter
		tons/year	% total	grams/second	meters	Kelvin	meters/second	meters
Main Vent	POINT_1	3.62	3.48	1.0414E-01	21.34	305.37	2.91	0.20
Dryer Vent	POINT_2	25.21	24.24	7.2521E-01	12.19	333.15	26.00	0.74
Cooler Vent	POINT_3	12.61	12.13	3.6275E-01	12.19	316.48	26.00	0.74

Table 3B – Model Emission Data for Perdue Area Source of n-Hexane

Source Description	Model ID	Solvent Loss		Model Emission Rate	Release Height	X-side Length	Y-side Length	Orientation Angle	Initial Vertical Dimension
		tons/year	% total	grams/(second-meters^2)	meters	meters	meters	degrees	meters
Processing Area Fugitives	AREA	45.67	43.91	1.0885E-04	1.22	142.00	85.00	20.00	0.00

Table 3C – Model Emission Data for Perdue Volume Source of n-Hexane

Source Description	Model ID	Solvent Loss		Model Emission Rate	Release Height	Initial Lateral Dimension	Initial Vertical Dimension
		tons/year	% total	grams/second	meters	meters	meters
Extraction Building Fugitives	VOLUME	16.89	16.24	4.8587E-01	2.72[51,52]	6.63	2.53

[51] The release height of the Extraction Building Fugitives differs from the Perdue Report and is entered in AERMOD as the vertical center of the volume.
[52] EPA, 2004a. User's Guide for the AMS/EPA Regulatory Model – AERMOD. EPA-454/B-03-001. U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. September 2004. Subsection 3.3.2.2

ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Table 4 – Structure Height for Perdue Downwash Analysis

Structure Description	Structure ID	Structure Height
		meters
Extraction Building	EXTR	25.10[53,54]
Extraction Support Building	MCC	5.70
Associate Welfare Building	WELFARE	4.00
Maintenance Building	MAINT	5.80
Prep Building	PREP	24.40[55]
Meal Tank with Dust Collector	MEALDUST	36.30
Meal Tanks – Bank of 3	MEALTANK	25.90
Soybean Storage Tank 1	TANK1	30.80[56]
Soybean Storage Tank 2	TANK2	30.80[56]
Soybean Storage Tank 3	TANK3	30.80[56]
Soybean Storage Tank 4	TANK4	30.80[56]
Shanzer Grain Dryer	SHANZER	30.50
Storage Building	STOR	12.80
LCSWMA Facility	WEF	30.48

[53] The height of the Extraction Building differs from the Perdue Report and is conservatively entered in the BPIPPRM as the height of the roof's apex.
[54] EPA, 1985. Guideline for Determination of Good Engineering Practice Stack Height (Technical Support Document for the Stack Height Regulations), Revised. EPA-450/4-80-023R. U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. June 1985. Subsection 2.2.
[55] The height of the Prep Building is conservatively entered in the BPIPPRM as the height of the roof's ancillary equipment.
[56] The height of the Soybean Storage Tanks is conservatively entered in the BPIPPRM as the height of the roof's apex.

ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Table 5 – Model Receptor Grid Description

Risk Assessment Scenario	Model Receptor Filename	Receptor Spacing meters	Description of Receptor Location
Acute	PERDUE_AMBIENT_AIR_BOUNDARY.REC	10	Along Perdue ambient air boundary
	GRID_10M_ACUTE.REC	10	Discrete Cartesian grid beyond Perdue ambient air boundary to 0.6 kilometers
	GRID_EXTENDED.REC	50	Discrete Cartesian grid from 0.6 to 2 kilometers
		100	Discrete Cartesian grid from 2 to 5 kilometers
		500	Discrete Cartesian grid from 5 to 10 kilometers
Chronic – Maximum Exposed Individual	PERDUE_PROPERTY_BOUNDARY_ADJ.REC	10	Along Perdue property boundary, except portion shared with LCSWMA property boundary
	GRID_10M_CHRONIC_INDIVIDUAL.REC	10	Discrete Cartesian grid beyond Perdue property boundary and LCSWMA property boundary to 0.6 kilometers
	GRID_EXTENDED.REC	50	Discrete Cartesian grid from 0.6 to 2 kilometers
		100	Discrete Cartesian grid from 2 to 5 kilometers
		500	Discrete Cartesian grid from 5 to 10 kilometers
Chronic – Maximum Exposed Worker	LCSWMA_PROPERTY_BOUNDARY.REC	10	Along LCSWMA property boundary
	GRID_10M_CHRONIC_WORKER.REC	10	Discrete Cartesian grid within LCSWMA property boundary

ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Table 6A – Primary Surface Meteorological Measurement Site Information

Site name	Brunner Island
Data period (yyyy/mm/dd)	1989/03/01 – 1993/12/06
Location (Longitude, Latitude – NAD1983)	76.6762 degrees West, 40.1015 degrees North
Location (UTM – Zone 18N, NAD 1983)	357,129 meters East, 4,440,366 meters North
Elevation (Above Mean Sea Level)	97.5 meters
Tower measurement heights and variables	10.0 meters (temperature, wind speed, wind direction, and standard deviation of the horizontal wind direction (sigma-A))
SODAR measurement heights and variables	90 to 600 meters at 30-meter intervals (wind speed and wind direction)
Minimum wind speed threshold	0.3 meters/second

Table 6B – Secondary Surface Meteorological Measurement Site Information

	Secondary Surface Site 1	Secondary Surface Site 2
Site Name	Capital City Airport	Harrisburg International Airport
Call Sign / WBAN	KCXY / 14751	KMDT / 14711
Data Source	NOAA / NCDC	NOAA / NCDC
Data Format	ISD	ISD
Data Period (yyyy/mm/dd)	1989/03/01 – 1991/09/30	1991/10/01 – 1993/12/06
Location (Longitude, Latitude – NAD 1983)	76.8552 degrees West, 40.2184 degrees North	76.7726 degrees West, 40.1963 degrees North
Location (UTM – Zone 18N, NAD 1983)	342,141 meters East, 4,453,651 meters North	349,123 meters East, 4,451,047 meters North
Elevation (Above Mean Sea Level)	106 meters	94 meters
Variables	Sea level pressure, station pressure, ceiling height, and sky cover	Sea level pressure, station pressure, ceiling height, and sky cover

ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Table 6C – Upper Air Meteorological Measurement Site Information

Site Name	Washington Dulles International Airport
Call Sign / WBAN	KIAD / 93734
Data Source	NOAA / ESRL
Data Format	FSL
Data Period (yyyy/mm/dd)	1989/03/01 – 1993/12/06
Location (Longitude, Latitude – NAD 1983)	77.47 degrees West, 38.98 degrees North
Elevation (Above Mean Sea Level)	85 meters
Variables	Morning measurements from surface to first level above 5,000 meters of atmospheric pressure, dry bulb temperature, dew-point temperature, wind direction, and wind speed

ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Table 7 – Estimates of Surface Moisture Condition and Snow Cover at Brunner Island Meteorological Site

Year	Season[57]	Surface Moisture Condition	Snow Cover
1989	Spring	Wet	-----
1989	Summer	Wet	-----
1989	Autumn	Average	-----
1990	Winter	Dry	No
1990	Spring	Average	-----
1990	Summer	Average	-----
1990	Autumn	Dry	-----
1991	Winter	Average	No
1991	Spring	Dry	-----
1991	Summer	Average	-----
1991	Autumn	Dry	-----
1992	Winter	Dry	No
1992	Spring	Average	-----
1992	Summer	Average	-----
1992	Autumn	Average	-----
1993	Winter	Average	No
1993	Spring	Wet	-----
1993	Summer	Dry	-----
1993	Autumn	Wet	-----
1994	Winter	Wet	Yes

[57] Default months assigned to seasons (i.e., Winter is December (previous year), January, and February; Spring is March, April, and May; Summer is June, July, and August; Autumn is September, October, and November).

ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Table 8 – Summary of Completeness for Brunner Island Meteorological Dataset

	Quarter 1 (03/01 – 05/31)	Quarter 2 (06/01 – 08/31)	Quarter 3 (09/01 – 11/30)	Quarter 4 (12/01 – 02/28 or 02/29)	Year Average
	%	%	%	%	%
1989 – 1990	96.29	94.97	95.51	97.36	96.03
1990 – 1991	99.46	96.97	98.12	99.91	98.61
1991 – 1992	99.14	99.91	99.13	97.25	98.86
1992 – 1993	97.37	98.82	97.16	97.59	97.74
1993	98.23	99.28	97.48	-----	98.33
Quarter Average	98.10	97.99	97.48	98.03	

ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Table 9A – Summary of DEP's Air Dispersion Modeling Results for Acute Risk Scenario

Meteorological Dataset	Terrain Option	Receptor Height Option	Maximum 1-Hour n-Hexane Concentration	Location of Maximum Concentration (UTM Zone 18N, NAD 1983)		Distance / Direction of Maximum Concentration	Time of Maximum Concentration
				UTM Easting	UTM Northing		
			micrograms/meters^3	meters	meters	meters / direction	yyyy-mm-dd-hh
Brunner Island	Elevated	Ground-level	23,296.34881	359,970.86	4,436,956.77	101 / WNW	1989-03-11-03
		Flagpole	**24,168.29545**	359,958.78	4,436,929.31	106 / W	1989-04-14-05
	Flat	Ground-level	22,314.71487	359,976.00	4,437,020.00	135 / NW	1993-04-05-05
		Flagpole	20,864.48386	359,950.73	4,436,911.00	114 / W	1989-04-24-01
KCXY	Elevated	Ground-level	18,719.51768	359,962.81	4,436,938.46	103 / W	2009-10-20-19
		Flagpole	18,505.08469	359,958.78	4,436,929.31	106 / W	2012-12-10-20
	Flat	Ground-level	19,603.60515	359,986.96	4,436,993.39	108 / NW	2010-10-25-06
		Flagpole	16,432.44071	359,958.78	4,436,929.31	106 / W	2012-12-10-20
KLNS	Elevated	Ground-level	18,545.25569	359,962.81	4,436,938.46	103 / W	2009-03-24-24
		Flagpole	17,351.90166	359,958.78	4,436,929.31	106 / W	2010-12-18-19
	Flat	Ground-level	19,066.28831	359,995.01	4,437,011.69	116 / NW	2011-10-31-05
		Flagpole	15,924.76181	359,982.94	4,436,984.23	105 / NW	2012-12-15-03

ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Table 9B – Summary of DEP's Air Dispersion Modeling Results with Non-Default Surface Friction Velocity Adjustment Option for Acute Risk Scenario

Meteorological Dataset	Terrain Option	Receptor Height Option	Maximum 1-Hour n-Hexane Concentration	Location of Maximum Concentration (UTM Zone 18N, NAD 1983)		Distance / Direction of Maximum Concentration	Time of Maximum Concentration
				UTM Easting	UTM Northing		
			micrograms/meter^3	meters	meters	meters / direction	yyyy-mm-dd-hh
Brunner Island	Elevated	Ground-level	7,277.35764	359,970.86	4,436,956.77	101 / WNW	1990-01-10-03
		Flagpole	7,126.12836	359,954.76	4,436,920.15	109 / W	1989-12-05-24
	Flat	Ground-level	7,530.46627	359,995.01	4,437,011.69	116 / NW	1990-01-27-09
		Flagpole	7,060.72172	359,995.01	4,437,011.69	116 / NW	1990-01-27-09
KCXY	Elevated	Ground-level	9,173.81087	359,974.89	4,436,965.92	101 / WNW	2010-02-02-09
		Flagpole	8,416.62446	359,958.78	4,436,929.31	106 / W	2012-02-17-01
	Flat	Ground-level	9,914.84944	359,974.89	4,436,965.92	101 / WNW	2010-02-02-09
		Flagpole	8,895.48802	359,974.89	4,436,965.92	101 / WNW	2010-02-02-09
KLNS	Elevated	Ground-level	9,530.30062	359,962.81	4,436,938.46	103 / W	2011-12-25-09
		Flagpole	8,724.96367	359,958.78	4,436,929.31	106 / W	2011-12-25-09
	Flat	Ground-level	**10,349.88453**	359,978.91	4,436,975.08	102 / WNW	2011-12-14-09
		Flagpole	9,222.66650	359,978.91	4,436,975.08	102 / WNW	2011-12-14-09

ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Table 10A – Summary of DEP's Air Dispersion Modeling Results for
Chronic Risk Scenario for Maximum Exposed Individual

Meteorological Dataset	Terrain Option	Receptor Height Option	Maximum 5-Year n-Hexane Concentration	Location of Maximum Concentration (UTM Zone 18N, NAD 1983)		Distance / Direction of Maximum Concentration	Time of Maximum Concentration
				UTM Easting	UTM Northing		
			micrograms/meter^3	meters	meters	meters / direction	yyyy-mm-dd-hh
Brunner Island	Elevated	Ground-level	201.43807	360,344.43	4,436,820.37	297 / ESE	1989-03-01-01 – 1993-12-06-11
		Flagpole	186.05168	360,344.43	4,436,820.37	297 / ESE	
	Flat	Ground-level	**262.51849**	360,344.43	4,436,820.37	297 / ESE	
		Flagpole	228.80694	360,344.43	4,436,820.37	297 / ESE	
KCXY	Elevated	Ground-level	125.23080	360,421.85	4,436,982.87	363 / E	2009-01-01-01 – 2013-12-31-24
		Flagpole	122.81275	360,416.00	4,436,970.00	356 / E	
	Flat	Ground-level	126.95677	360,406.51	4,437,167.42	423 / NE	
		Flagpole	122.62017	360,415.81	4,437,163.76	429 / NE	
KLNS	Elevated	Ground-level	143.75587	359,866.00	4,436,840.00	213 / WSW	2009-01-01-01 – 2013-12-31-24
		Flagpole	139.65762	359,836.00	4,436,850.00	238 / WSW	
	Flat	Ground-level	186.50935	359,866.00	4,436,840.00	213 / WSW	
		Flagpole	171.03146	359,836.00	4,436,850.00	238 / WSW	

ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Table 10B – Summary of DEP's Air Dispersion Modeling Results with Non-Default Surface Friction Velocity Adjustment Option for Chronic Risk Scenario for Maximum Exposed Individual

Meteorological Dataset	Terrain Option	Receptor Height Option	Maximum 5-Year n-Hexane Concentration	Location of Maximum Concentration (UTM Zone 18N, NAD 1983)		Distance / Direction of Maximum Concentration	Time of Maximum Concentration
				UTM Easting	UTM Northing		
			micrograms/meter^3	meters	meters	meters / direction	yyyy-mm-dd-hh
Brunner Island	Elevated	Ground-level	74.32904	360,344.43	4,436,820.37	297 / ESE	1989-03-01-01 – 1993-12-06-11
		Flagpole	76.27095	360,344.43	4,436,820.37	297 / ESE	
	Flat	Ground-level	**87.88738**	360,344.43	4,436,820.37	297 / ESE	
		Flagpole	86.55573	360,344.43	4,436,820.37	297 / ESE	
KCXY	Elevated	Ground-level	58.29178	360,417.55	4,436,973.84	358 / E	2009-01-01-01 – 2013-12-31-24
		Flagpole	58.58065	360,416.00	4,436,970.00	356 / E	
	Flat	Ground-level	60.45949	360,396.04	4,436,928.70	332 / E	
		Flagpole	60.01681	360,396.04	4,436,928.70	332 / E	
KLNS	Elevated	Ground-level	72.33084	359,866.00	4,436,840.00	213 / WSW	2009-01-01-01 – 2013-12-31-24
		Flagpole	75.28096	359,866.00	4,436,840.00	213 / WSW	
	Flat	Ground-level	86.27715	359,896.00	4,436,830.00	190 / WSW	
		Flagpole	84.49435	359,896.00	4,436,830.00	190 / WSW	

ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Table 11A – Summary of DEP's Air Dispersion Modeling Results for
Chronic Risk Scenario for Maximum Exposed Worker

Meteorological Dataset	Terrain Option	Receptor Height Option	Maximum 5-Year n-Hexane Concentration	Location of Maximum Concentration (UTM Zone 18N, NAD 1983)		Distance / Direction of Maximum Concentration	Time of Maximum Concentration
				UTM Easting	UTM Northing		
			micrograms/meter^3	meters	meters	meters / direction	yyyy-mm-dd-hh
Brunner Island	Elevated	Ground-level	795.77244	359,965.43	4,436,944.37	102 / WNW	1989-03-01-01 – 1993-12-06-11
		Flagpole	699.07130	359,961.47	4,436,935.34	104 / W	
	Flat	Ground-level	**797.51015**	359,969.40	4,436,953.39	101 / WNW	
		Flagpole	702.65556	359,969.40	4,436,953.39	101 / WNW	
KCXY	Elevated	Ground-level	378.42391	359,969.40	4,436,953.39	101 / WNW	2009-01-01-01 – 2013-12-31-24
		Flagpole	302.29878	359,965.43	4,436,944.37	102 / WNW	
	Flat	Ground-level	396.95294	359,973.37	4,436,962.42	101 / WNW	
		Flagpole	342.99839	359,973.37	4,436,962.42	101 / WNW	
KLNS	Elevated	Ground-level	692.21709	359,961.47	4,436,935.34	104 / W	2009-01-01-01 – 2013-12-31-24
		Flagpole	649.70763	359,957.50	4,436,926.31	107 / W	
	Flat	Ground-level	714.66482	359,961.47	4,436,935.34	104 / W	
		Flagpole	614.93146	359,961.47	4,436,935.34	104 / W	

ATTACHMENT
Summary of DEP Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Table 11B – Summary of DEP's Air Dispersion Modeling Results with Non-Default Surface Friction Velocity Adjustment Option for Chronic Risk Scenario for Maximum Exposed Worker

Meteorological Dataset	Terrain Option	Receptor Height Option	Maximum 5-Year n-Hexane Concentration	Location of Maximum Concentration (UTM Zone 18N, NAD 1983)		Distance / Direction of Maximum Concentration	Time of Maximum Concentration
				UTM Easting	UTM Northing		
			micrograms/meter^3	meters	meters	meters / direction	yyyy-mm-dd-hh
Brunner Island	Elevated	Ground-level	352.95219	359,969.40	4,436,953.39	101 / WNW	1989-03-01-01 – 1993-12-06-11
		Flagpole	336.16862	359,965.43	4,436,944.37	102 / WNW	
	Flat	Ground-level	355.54683	359,969.40	4,436,953.39	101 / WNW	
		Flagpole	341.05471	359,969.40	4,436,953.39	101 / WNW	
KCXY	Elevated	Ground-level	253.69435	359,969.40	4,436,953.39	101 / WNW	2009-01-01-01 – 2013-12-31-24
		Flagpole	228.89090	359,969.40	4,436,953.39	101 / WNW	
	Flat	Ground-level	261.49810	359,973.37	4,436,962.42	101 / WNW	
		Flagpole	243.90215	359,973.37	4,436,962.42	101 / WNW	
KLNS	Elevated	Ground-level	376.64145	359,961.47	4,436,935.34	104 / W	2009-01-01-01 – 2013-12-31-24
		Flagpole	360.26937	359,961.47	4,436,935.34	104 / W	
	Flat	Ground-level	**379.52920**	359,961.47	4,436,935.34	104 / W	
		Flagpole	357.84595	359,961.47	4,436,935.34	104 / W	

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MEMO

TO William R. Weaver
Environmental Program Manager
Air Quality Program
Southcentral Region

FROM Andrew W. Fleck AWF
Environmental Group Manager
Air Quality Modeling Section
Division of Air Resource Management

DATE February 20, 2015

RE DEP Response to Public Comments
Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Responses to public comments on the Perdue Grain & Oilseed, LLC (Perdue) Plan Approval Application that are relevant to air dispersion modeling for the inhalation risk assessment are attached.

If you have any questions, you may contact me by e-mail at afleck@pa.gov or by telephone at 717.783.9243.

Attachment

cc: Joyce Epps, BAQ Director
Krishnan Ramamurthy, BAQ Division of Permits
Virendra Trivedi, BAQ New Source Review Section
Craig Evans, BAQ Air Toxics and Risk Assessment Section
Brian Morgan, BAQ Air Toxics and Risk Assessment Section
Thomas Hanlon, Southcentral Region AQ Program
Brian Wetzel, Southcentral Region AQ Program
Kirit Dalal, BAQ Division of Air Resource Management
John La Rosa, BAQ Air Quality Modeling Section
AQ Modeling Correspondence File

ATTACHMENT
DEP Response to Public Comments
Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Comment 1: The emissions from the facility may have uniquely significant public health impacts due to the local topography, weather patterns and frequent temperature inversions.

Response 1: In regard to Perdue's proposed emissions of hexane, the Pennsylvania Department of Environmental Protection's (DEP) air dispersion modeling for the inhalation risk assessment accounts for Perdue's proposed emissions of n-hexane, downwash due to nearby structures, local topography, and local meteorology (including temperature inversions). The DEP's air dispersion modeling is summarized in the attachment to the memorandum, "DEP Air Dispersion Modeling for Inhalation Risk Assessment." All model input/output files and data associated with the DEP's air dispersion modeling are available on a disk upon request.

Comment 2: a. Does stack height meet Good Engineering Practice (GEP) (Page 29)

Response 2: Stack height credit is regulated, not actual stack height. The proposed stack heights of the Perdue's Main Vent, Dry Vent, and Cooler Vent are 21.34 meters, 12.19 meters, and 12.19 meters, respectively. According to the U.S. Environmental Protection Agency's (EPA) Building Profile Input Program modified for the Plume Rise Model Enhancements algorithms (BPIPPRM), the proposed heights of these stacks are fully creditable. See subsection II.B.2.c of the attachment to the memorandum, "DEP Air Dispersion Modeling for Inhalation Risk Assessment."

Comment 3: I recommend that you don't to Lancaster Airport to get meterological data for the hexane air modeling study. Go to Bainbridge because that's where the temperature inversions are.

Response 3: See Response 1.

Comment 4: The hexane air modeling study should take into consideration the effect of the numerous temperature inversions and high levels of nitrous oxide that are known to occur in the region around the proposed new plant.

Response 4: In regard Perdue's proposed emissions of hexane, see Response 1. In regard to Perdue's proposed emissions of nitrogen oxides, see the plan approval review memorandum from the DEP's Southcentral Region.

Comment 5: Where can we see air modeling specifically related to seasonal and weather patterns specifically related to where the hexane will be dispersed?

Response 5: See Response 1.

ATTACHMENT
DEP Response to Public Comments
Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Comment 6: 19. Section F - Flue and Air Contaminant Emission: Specific information has not been provided as to whether the stack height(s) meet Good Engineering Practice (GEP) on Pages 77, 79, 80, 83, 84, and 86. 20.

Response 6: See Response 2.

Comment 7: 3.7 Where was the highest concentration of hexane located in the Health Risk Assessment in reference to the offsite residences?

Response 7: See Response 1.

Comment 8: Page 6 of letter: The following specific comments pertain to the modeling protocol:

Response 8: See responses 9 through 18 below.

Comment 9: a. The modeling protocol specifies that rural land use inputs will be utilized for dispersion coefficients determination. Dispersion coefficient determination of surface roughness length, albedo, and bowen ratio should be obtained from the AERSURFACE tool for input into the AERMOD model. The use of AERSURFACE to determine the dispersion coefficients should be included in the modeling protocol.

Response 9: Land cover data for determining the dispersion option and land cover data for estimating the surface characteristics are discussed in subsection II.B.1.b and subsection II.B.4.a, respectively, of the attachment to the memorandum, "DEP Air Dispersion Modeling for Inhalation Risk Assessment."

Comment 10: b. The modeling protocol specifies that concentrations of n-hexane will be calculated at the locations of residential and sensitive receptors near the proposed facility. The receptor grid should cover a 50 kilometer (km) range with 100 meter (m) grid spacing near the facility boundary with distances increasing gradually outward to 1000 m at the 50 km distance.

Response 10: The model's receptor pathway is discussed in subsection II.B.3 of the attachment to the memorandum, "DEP Air Dispersion Modeling for Inhalation Risk Assessment."

Comment 11: c. The modeling protocol specifies the use of meteorological data from Capital City Airport (KCXY) and Lancaster Airport (KLNS). Based on a temperature inversion study performed by Professor Richard D. Clark, Ph,D., Chair, Department of Earth Sciences, Millersville University under contract to Nissley Vineyards, meteorological data physically closer to the proposed location for the Perdue facility is available and should be utilized in any modeling conducted related to the proposed facility.

ATTACHMENT
DEP Response to Public Comments
Air Dispersion Modeling for Inhalation Risk Assessment
Perdue Grain & Oilseed, LLC
Application for Plan Approval 36-05158A
Proposed Soybean Processing Facility, Conoy Township, Lancaster County

Response 11: The model's meteorology pathway is discussed in subsection II.B.4 of the attachment to the memorandum, "DEP Air Dispersion Modeling for Inhalation Risk Assessment."

Comment 12: d. The modeling protocol indicates that the assessment will be of the dispersion of n-hexane emissions. However, the facility-wide actual emissions of VOCs will be more than 250 tons. The modeling should be conducted to address ambient impact as well as health risks associated with both VOCs, and n-hexane emissions.

Response 12: See the plan approval review memorandum from the DEP's Southcentral Region.

Comment 13: e. The modeling protocol does not include data on ambient concentrations of VOCs, and n-hexane for comparison.

Response 13: See the risk assessment review memorandum from the DEP's Air Toxic and Risk Assessment Section.

Comment 14: Page 7 of letter: f. The modeling protocol does not include information on VOCs as part of the risk assessment

Response 14: See the plan approval review memorandum from the DEP's Southcentral Region.

Comment 15: g. The modeling protocol does not include VOC or n-hexane emissions from the following sources in Table 1: i. Grain Dryers No.1 and No.2 ii. Hexane Storage Tanks iii. Temporary Emergency Boilers

Response 15: See the plan approval review memorandum from the DEP's Southcentral Region.

Comment 16: h. The modeling protocol specifies inaccurate building heights in Table 2. On the schematic drawing of the building profile that Perdue presented to the Conoy Township Zoning Hearing Board in March 2012 as Exhibit #2, the following elevations are listed: i. C - Bucket Elevator -148 it (equates to 45.11 meters) ii. D - Grain Tank - 101 ft (equates to 30.78 meters) iii. E - Dust Collector - 95 ft (equates to 28.96 meters) iv. F - Extraction Building - 90 ft (equates to 27.43 meters).

Response 16: Downwash due to nearby structures is discussed in subsection II.B.2.c of the attachment to the memorandum, "DEP Air Dispersion Modeling for Inhalation Risk Assessment."

Comment 17: i. The risk assessment section of the modeling protocol indicates a value of 700 micrograms per cubic meter (ug/m3) from the United States Environmental Protection Agency's (U.S. EPA's) Integrated Risk Information System (IRIS) will be utilized as it is the most

stringent value. However, more stringent limits have been utilized including a value of 600 ug/m3 in the Provisional Peer Reviewed Toxicity Values (PPRTVs) derived by the U.S. EPA Superfund Health Risk Technical Support Center (STSC) for the U.S. EPA's Superfund program and 352 ug/m3 of total hexane as a State Acceptable Ambient Concentration for air toxics permitting by the Virginia Department of Environmental Quality (VADEQ). The most stringent limit should be utilized in the risk assessment.

Response 17: See the risk assessment review memorandum from the DEP's Air Toxic and Risk Assessment Section.

Comment 18: j. As currently proposed, Perdue's model will inaccurately model the dispersion of n-hexane emissions and it should be revised or rejected.

Response 18: See Response 1.

Comment 19: 1. The maximum hourly rate used in the model was not specified in the report nor was it included in the data files obtained from PADEP of data used to perform the modeling. Therefore it is unclear if the modeling performed for acute exposure was based on the maximum hourly rate of hexane emissions from the Perdue facility.

Response 19: Emission rates entered in the model are discussed in subsection II.B.2.b of the attachment to the memorandum, "DEP Air Dispersion Modeling for Inhalation Risk Assessment." The emission rates of n-hexane entered in the model are based on Perdue's estimated source apportionment of a facility-wide mass emission limit of 208 tons per year of volatile organic compounds (VOC), which would be commercial hexane.

Comment 20: 2. On page 28, Table 2 Structure Dimensions contains inaccurate building heights for the Extraction Building (18.59 meters) and Storage Tanks (18.31 meters). On the schematic drawing of the building profile that Perdue presented to the Conoy Township Zoning Hearing Board in March 2012 as Exhibit #2, the following elevations are listed: i. D - Grain Tank - 101 ft (equates to 30.78 meters) ii. F - Extraction Building - 90 ft (equates to 27.43 meters). As incorrect building heights were utilized in performing the modeling, the modeling should be re-run with the correct building heights.

Response 20: See Response 16.

Comment 21: As currently conducted, Perdue's modeling inaccurately models the dispersion of n-hexane emissions and it should be rejected.

Response 21: See Response 1.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

MEMO

TO William Weaver
Air Program Manager
Southcentral Regional Office

FROM Craig Evans, Chief CC
Air Toxics and Risk Assessment Section
Division of Permits
Bureau of Air Quality

THROUGH Krishnan Ramamurthy, Chief JR
Division of Permits
Bureau of Air Quality

DATE February 20, 2015

RE Air Quality Modeling and Hexane Risk Evaluation
Perdue Agribusiness, Conoy Township, Lancaster County, Pennsylvania.

Background

Perdue AgriBusiness is proposing to construct a soybean grain elevator and processing plant in Conoy Township in Lancaster County. The plant would be built on 57 acres near the Lancaster County Solid Waste Management Authority's waste-to-energy facility. With a capacity of 25.6 million bushels, the grain elevator will receive, process, dry, store and ship soybeans that are grown and harvested throughout the region. The processing plant will process 21.3 million bushels of soybeans per year and produce soybean meal, soybean hulls and soybean oil. Perdue AgriBusiness will use steam from the Lancaster County Solid Waste Management Authority (LCSWMA) Waste-to-Energy facility.

The soybean processing plant uses a solvent, commercial hexane (which is found in automotive products, adhesives and some arts and crafts materials), to extract the oil from the beans. This is a proven process, regulated/overseen by environmental, human/worker and food safety regulatory authorities/agencies. There are 96 hexane based processing plants in the United States including Perdue's plants in Maryland, Virginia and North Carolina all of which produce 95 percent of U.S. soybean meal.

Solvent recovery will be achieved at the proposed facility by a distillation, condensation and mineral oil scrubber system. The plant will recycle 99.9 percent of all hexane that is used at the facility and feature advanced leak detection and repair (LDAR) systems to prevent fugitive emissions. Because of these enhancements, plant emissions will be reduced more than 16 percent from the original projection of 248 tons per year to a maximum of 208 tons per year.

On June 10, 2013, the Department of Environmental Protection (DEP) received a report titled "Air Dispersion Modelling and Health Risk Assessment" and addendums to this report on April 3, 2014 and January 12, 2015. This report was prepared for Perdue by ENVIRON International Corporation to support Perdue's plan approval application. The DEP's Air Quality Modeling Section performed an independent air quality analysis for a risk assessment on the proposed facility. The DEP's Air Toxics and Risk Assessment Section performed an independent risk assessment and found no unacceptable risks from the operations. The purpose of this memo is to discuss the results of the risk assessment analysis.

Inhalation Risk Assessment

The risk assessment process includes four primary steps: hazard identification, exposure assessment, toxicity assessment, and risk characterization. The hazard identification step involves identifying the compounds of potential concern (COPC) expected to be emitted from the proposed project considering factors such as fuel type, emissions control equipment, feedstock characteristics, etc. COPC emissions data from similar facilities were used in conjunction with manufacturers' specifications and engineering calculations to estimate emission rates from the proposed facility.

These emission rates, in conjunction with the results from the dispersion modeling conducted by the DEP for this facility, were used to estimate the maximum hourly and annual ground level ambient concentrations of the COPC over a defined grid outside the plant perimeter. The DEP's risk assessment analysis includes three inhalation pathway risk scenarios: acute risk, chronic risk for the maximum exposed individual, and chronic risk for the maximum exposed worker. The COPC identified for the risk assessment are n-hexane and commercial hexane.

The acute risk assessment compares the estimated one hour modeled maximum concentration to an acceptable one hour reference concentration. The maximum exposed individual (MEI) is assumed to live a 70 year lifetime at the point on the receptor grid where the exposure concentration is the highest. However, the EPA assumes a 30 year exposure duration for an adult resident.[1] The maximum exposed worker (MEW) is assumed to work at the point of maximum concentration 40 hours a week for 50 weeks a year.

[1] Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Chapter 6, Quantifying Exposure, September 2005 http://www.epa.gov/osw/hazard/tsd/td/combust/finalmact/ssra/05hhrap6.pdf

The DEP's Air Quality Modeling Section used the AERMOD air dispersion model to perform their analysis. The maximum ground level concentration (at the MEI location) was determined using the actual n-hexane emission rates. This procedure was performed for acute and both chronic exposure scenarios. More detail pertaining to the air dispersion modeling is available in the memorandum written by the DEP's Air Quality Modeling Section. The results of the DEP's air quality analysis were used for the risk assessment.

Toxicity assessment involves the identification of the adverse health effects posed by an individual compound and relates the development of these effects to the level of exposure. The toxic potential of a chemical may depend on exposure route and duration as well as the mode of action. In an inhalation risk assessment the health risk value potentially posed by each COPC is mathematically applied to the modeled exposure concentration to provide the estimated risk level.

Risk Factors and Their Application

Hexane is not an IRIS listed carcinogen. EPA has classified hexane as a Group D, not classifiable as to human carcinogenicity. Commercial hexane exposure affects the target organ of the nasal epithelial cells[2] and n-hexane exposure affects the central nervous system[3]. For noncancer risk, the risk value is determined using a reference concentration (RfC) expressed in mass per cubic meter of air (typically mg/m^3). An RfC is "an estimate of a continuous inhalation exposure for a given duration to the human population (including susceptible subgroups) that is likely to be without an appreciable risk of adverse health effects over a lifetime."[4] The RfC is divided into the modeled exposure concentration of the COPC (expressed in the same units of concentration) to derive the hazard quotient (HQ). An HQ of 1.0 or less indicates that a compound poses no threat of an adverse effect on a continuous exposure basis.

The acute health risk benchmark is the short term (one hour) exposure inhalation reference concentration. As with chronic RfCs, an HQ of 1.0 or less indicates that a compound poses no threat of an adverse effect, but on a one hour exposure basis rather than a chronic basis. The acute RfC for each COPC should not be exceeded by its respective modeled maximum hourly concentration - the predicted maximum one hour hazard quotient (a ratio of the acute exposure concentration divided by the acute RfC) should be no greater than 1.0.

Risk Factor References

As a reference for chronic human health inhalation risk values for the COPC, DEP follows the hierarchy provided by EPA's Office of Solid Waste in the "Human Health Risk Assessment Protocol" (HHRAP), Appendix 2-A. This list is recommended by EPA

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[2] Provisional Peer-Reviewed Toxicity Values for Commercial or Practical Grade Hexane http://hhpprtv.ornl.gov/issue_papers/HexaneCommercial.pdf

[3] EPA IRIS n-hexane, http://www.epa.gov/iris/subst/0486.htm

[4] EPA IRIS Glossary, http://www.epa.gov/iris/gloss8_arch.htm (accessed 8/21/12).

"for acquiring human health toxicity data to be used in performing risk assessments of hazardous waste combustion facilities" and is ranked as follows: [5]

1. EPA's Integrated Risk Information System (IRIS)
2. EPA's Provisional Peer Reviewed Toxicity Values (PPRTVs)
3. Other Toxicity Values (including California Environmental Protection Agency (Cal EPA) Reference Exposure Levels (RELs), Agency for Toxic Substances and Disease Registry (ATSDR) Minimal Risk Levels (MRLs), and Health Effects Assessment Summary Tables (HEAST) toxicity values

The Department uses the following hierarchy of acute risk values[6] for the acute risk assessment:

1. Short-Term Exposure Limit/40
2. Ceiling/10
3. 3 x Time-Weighted Average/20
4. Immediately Dangerous to Life or Health/20

Results

There are two chronic scenarios and one acute scenario that have been assessed for n-hexane and commercial hexane. The two chronic scenarios are:

1. Maximum Exposed Individual (MEI)

   Hazard Quotient: n-hexane=0.375 commercial hexane=0.875
   Attachments 1 and 2 identify key modeled receptors for the chronic MEI.

2. Maximum Exposed Worker (MEW)

   Hazard Quotient: n-hexane=0.260 commercial hexane=0.607
   Attachments 3 and 4 identify key modeled receptors for the chronic MEW.

The one acute scenario is:

1. Maximum Exposed Individual (MEI)

   Hazard Quotient: n-hexane=0.913 commercial hexane=0.548
   Attachments 5 and 6 identify key modeled receptors for the acute MEI.

The MEI is the individual who is exposed to the modeled maximum ground-level concentration. The MEW is the worker who is exposed to the modeled maximum ground-level concentration at the LCSWMA facility. The risks for all three scenarios are not unacceptable.

---

[5] Human Health Risk Assessment Protocol, Appendix A-2, EPA530-R-05-006, September 2005. p. A-2-33. www.epa.gov/osw/hazard/tsd/td/combust/finalmact/ssra/05hhrapapa.pdf (accessed 8/3/12).
[6] *NIOSH Pocket Guide to Chemical Hazards* http://www.cdc.gov/niosh/npg/default.html

Table A – Summary of DEP's Air Quality Analysis Results for Chronic Risk Scenario for Maximum Exposed Individual

Meteorological Dataset	Terrain Option	Receptor Height Option	Maximum 5-Year n-Hexane Concentration	Location of Maximum Concentration (UTM Zone 18N, NAD 1983)		Distance / Direction of Maximum Concentration	Hazard Quotient
				UTM Easting	UTM Northing		
			micrograms/meter^3	meters	meters	meters / direction	
Brunner Island	Elevated	Ground-level	201.43807	360,344.43	4,436,820.37	297 / ESE	*n-hexane 0.375 **commercial hexane 0.875
		Flagpole	186.05168	360,344.43	4,436,820.37	297 / ESE	
	Flat	Ground-level	**262.51849**	360,344.43	4,436,820.37	297 / ESE	
		Flagpole	228.80694	360,344.43	4,436,820.37	297 / ESE	
KCXY	Elevated	Ground-level	125.23080	360,421.85	4,436,982.87	363 / E	
		Flagpole	122.81275	360,416.00	4,436,970.00	356 / E	
	Flat	Ground-level	126.95677	360,406.51	4,437,167.42	423 / NE	
		Flagpole	122.62017	360,415.81	4,437,163.76	429 / NE	
KLNS	Elevated	Ground-level	143.75587	359,866.00	4,436,840.00	213 / WSW	
		Flagpole	139.65762	359,836.00	4,436,850.00	238 / WSW	
	Flat	Ground-level	186.50935	359,866.00	4,436,840.00	213 / WSW	
		Flagpole	171.03146	359,836.00	4,436,850.00	238 / WSW	

$$\frac{Modeled\ Maximum\ Exposure\ Concentration}{Reference\ Concentration\ (RfC)} = * Hazard\ Quotient \qquad \frac{262.51849\frac{\mu g}{m^3}}{700\frac{\mu g}{m^3}} = 0.375$$

$$\frac{2\ x\ Modeled\ Maximum\ Exposure\ Concentration}{Reference\ Concentration\ (RfC)} = ** Hazard\ Quotient \qquad \frac{2\ x\ 262.51849\frac{\mu g}{m^3}}{600\frac{\mu g}{m^3}} = 0.875$$

[102]

Table B – Summary of DEP's Air Quality Analysis Results for Chronic Risk Scenario for Maximum Exposed Worker

Meteorological Dataset	Terrain Option	Receptor Height Option	Maximum 5-Year n-Hexane Concentration	Location of Maximum Concentration (UTM Zone 18N, NAD 1983)		Distance / Direction of Maximum Concentration	Hazard Quotient
				UTM Easting	UTM Northing		
			micrograms/meter^3	meters	meters	meters / direction	
Brunner Island	Elevated	Ground-level	795.77244	359,965.43	4,436,944.37	102 / WNW	*n-hexane 0.260 **commercial hexane 0.607
		Flagpole	699.07130	359,961.47	4,436,935.34	104 / W	
	Flat	Ground-level	**797.51015**	359,969.40	4,436,953.39	101 / WNW	
		Flagpole	702.65556	359,969.40	4,436,953.39	101 / WNW	
KCXY	Elevated	Ground-level	378.42391	359,969.40	4,436,953.39	101 / WNW	
		Flagpole	302.29878	359,965.43	4,436,944.37	102 / WNW	
	Flat	Ground-level	396.95294	359,973.37	4,436,962.42	101 / WNW	
		Flagpole	342.99839	359,973.37	4,436,962.42	101 / WNW	
KLNS	Elevated	Ground-level	692.21709	359,961.47	4,436,935.34	104 / W	
		Flagpole	649.70763	359,957.50	4,436,926.31	107 / W	
	Flat	Ground-level	714.66482	359,961.47	4,436,935.34	104 / W	
		Flagpole	614.93146	359,961.47	4,436,935.34	104 / W	

$$\left(\frac{Modeled\ Maximum\ Exposure\ Concentration}{Reference\ Concentration\ (RfC)}\right) x \left(\frac{5\ working\ days}{7\ day\ week}\right) x \left(\frac{8\ working\ hours}{24\ hour\ day}\right) x \left(\frac{350\ working\ days}{365\ day\ year}\right) = *\ Hazard\ Quotient$$

$$\left(\frac{*797.51015\frac{\mu g}{m^3}}{700\frac{\mu g}{m^3}}\right) x \left(\frac{5\ working\ days}{7\ day\ week}\right) x \left(\frac{8\ working\ hours}{24\ hour\ day}\right) x \left(\frac{350\ working\ days}{365\ day\ year}\right) = 0.260$$

$$\left(\frac{2\ x\ Modeled\ Maximum\ Exposure\ Concentration}{Reference\ Concentration\ (RfC)}\right) x \left(\frac{5\ working\ days}{7\ day\ week}\right) x \left(\frac{8\ working\ hours}{24\ hour\ day}\right) x \left(\frac{350\ working\ days}{365\ day\ year}\right) = **\ Hazard\ Quotient$$

$$\left(\frac{**2\ x\ 797.51015\frac{\mu g}{m^3}}{600\frac{\mu g}{m^3}}\right) x \left(\frac{5\ working\ days}{7\ day\ week}\right) x \left(\frac{8\ working\ hours}{24\ hour\ day}\right) x \left(\frac{350\ working\ days}{365\ day\ year}\right) = 0.607$$

[103]

Table C – Summary of DEP's Air Quality Analysis Results for Acute Risk Scenario

Meteorological Dataset	Terrain Option	Receptor Height Option	Maximum 1-Hour n-Hexane Concentration	Location of Maximum Concentration (UTM Zone 18N, NAD 1983)		Distance / Direction of Maximum Concentration	Hazard Quotient
				UTM Easting	UTM Northing		
			micrograms/meters^3	meters	meters	meters / direction	
Brunner Island	Elevated	Ground-level	23,296.34881	359,970.86	4,436,956.77	101 / WNW	
		Flagpole	**24,168.29545**	359,958.78	4,436,929.31	106 / W	
	Flat	Ground-level	22,314.71487	359,976.00	4,437,020.00	135 / NW	*n-hexane 0.913
		Flagpole	20,864.48386	359,950.73	4,436,911.00	114 / W	
KCXY	Elevated	Ground-level	18,719.51768	359,962.81	4,436,938.46	103 / W	
		Flagpole	18,505.08469	359,958.78	4,436,929.31	106 / W	
	Flat	Ground-level	19,603.60515	359,986.96	4,436,993.39	108 / NW	**commercial hexane 0.548
		Flagpole	16,432.44071	359,958.78	4,436,929.31	106 / W	
KLNS	Elevated	Ground-level	18,545.25569	359,962.81	4,436,938.46	103 / W	
		Flagpole	17,351.90166	359,958.78	4,436,929.31	106 / W	
	Flat	Ground-level	19,066.28831	359,995.01	4,437,011.69	116 / NW	
		Flagpole	15,924.76181	359,982.94	4,436,984.23	105 / NW	

$$\frac{Modeled\ Maximum\ Exposure\ Concentration}{\left(\frac{3\ x\ time\ weighted\ average}{20}\right)} = *\ Hazard\ Quotient$$

$$\frac{*24{,}168.29545\frac{\mu g}{m^3}}{\left(\frac{3\ x\ 176{,}500\frac{\mu g}{m^3}}{20}\right)} = 0.913$$

$$\frac{(2\ x\ Modeled\ Maximum\ \ Exposure\ Concentration)}{\left(\frac{short\ term\ exposure\ limit}{40}\right)} = **\ Hazard\ Quotient$$

$$\frac{**(2\ x\ 24{,}168.29545\frac{\mu g}{m^3})}{\left(\frac{3{,}530{,}000\frac{\mu g}{m^3}}{40}\right)} = 0.548$$

[104]

Public comments on the plan approval application regarding ambient air quality impact:

Public comments that have been received on the Perdue applications over the past several years have focused on the potential health risks of the hexane emissions from the proposed Perdue facility. Some commenters also expressed concern over how any potential hexane-related health risks from the proposed Perdue facility would be affected by any existing background levels of hexane, or of other pollutants. One commenter also asserted that the maximum hourly rate used in the model was not specified in the report nor was it included in the data files obtained from PADEP of data used to perform the modeling. Therefore the commenter asserted that it is unclear if the modeling performed for acute exposure was based on the maximum hourly rate of hexane emissions from the Perdue facility.

In response to these comments, it should be noted that on June 10, 2013, the Department of Environmental Protection (DEP) received a report titled "Air Dispersion Modelling and Health Risk Assessment" and addendums to this report on April 3, 2014 and January 12, 2015. This report was prepared for Perdue by ENVIRON International Corporation to support Perdue's plan approval application. The DEP's Air Quality Modeling Section performed an independent air quality analysis for the risk assessment on the proposed facility. The DEP's Air Toxics and Risk Assessment Section performed a risk assessment and found no unacceptable risks from the operations. Refer to Tables A, B and C of the memo for key receptor results and hazard quotient calculations. The risk assessment includes an acute scenario (based on an average hourly emission rate of hexane), chronic exposure for maximum exposed individuals and maximum exposed LCSWMA workers, and included background sources of hexane which were negligible. With regard to background and or nearby sources of pollutants other than hexane, please refer to the main plan approval review memo related to this project.

Other commenters expressed that because humans vary widely in their susceptibility to chemical exposure due to age, gender, genetics and poor existing health, it cannot be presumed that even a low level exposure to a chemical such as hexane is risk free unless there are sufficient data to contradict this assumption. Some commenters further expressed about the effects of temperature inversions on atmospheric hexane levels.

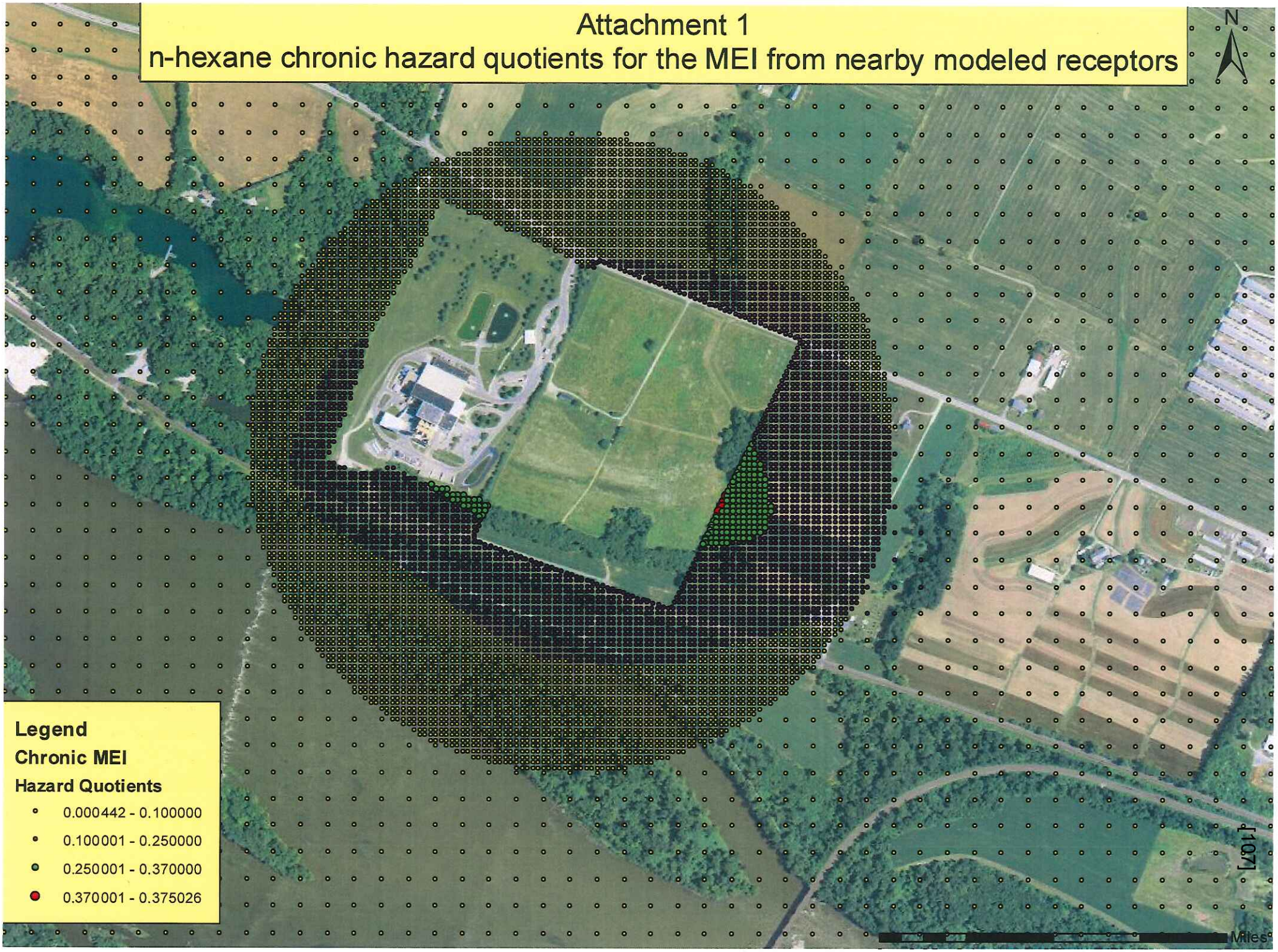
In response to these comments, DEP notes that the Reference Concentration (RfC) which is used to assess the non-cancer risk is "an estimate of a continuous inhalation exposure for a given duration to the human population (including susceptible subgroups) that is likely to be without an appreciable risk of adverse health effects over a lifetime." Therefore susceptible subgroups such as young children and the elderly are included in the risk assessment. Also, with regard to the comment about inversions, it should be noted that the air quality analysis took into account local weather data.

One commenter stated that the risk assessment section of the modeling protocol indicates a value of 700 micrograms per cubic meter ($\mu g/m^3$) from the United States Environmental Protection Agency's (U.S. EPA's) Integrated Risk Information System (IRIS) will be utilized as it is the most stringent value. However, more stringent limits have been utilized including a value of 600 $\mu g/m^3$ in the Provisional Peer Reviewed Toxicity Values (PPRTVs) derived by the U.S. EPA Superfund Health Risk Technical

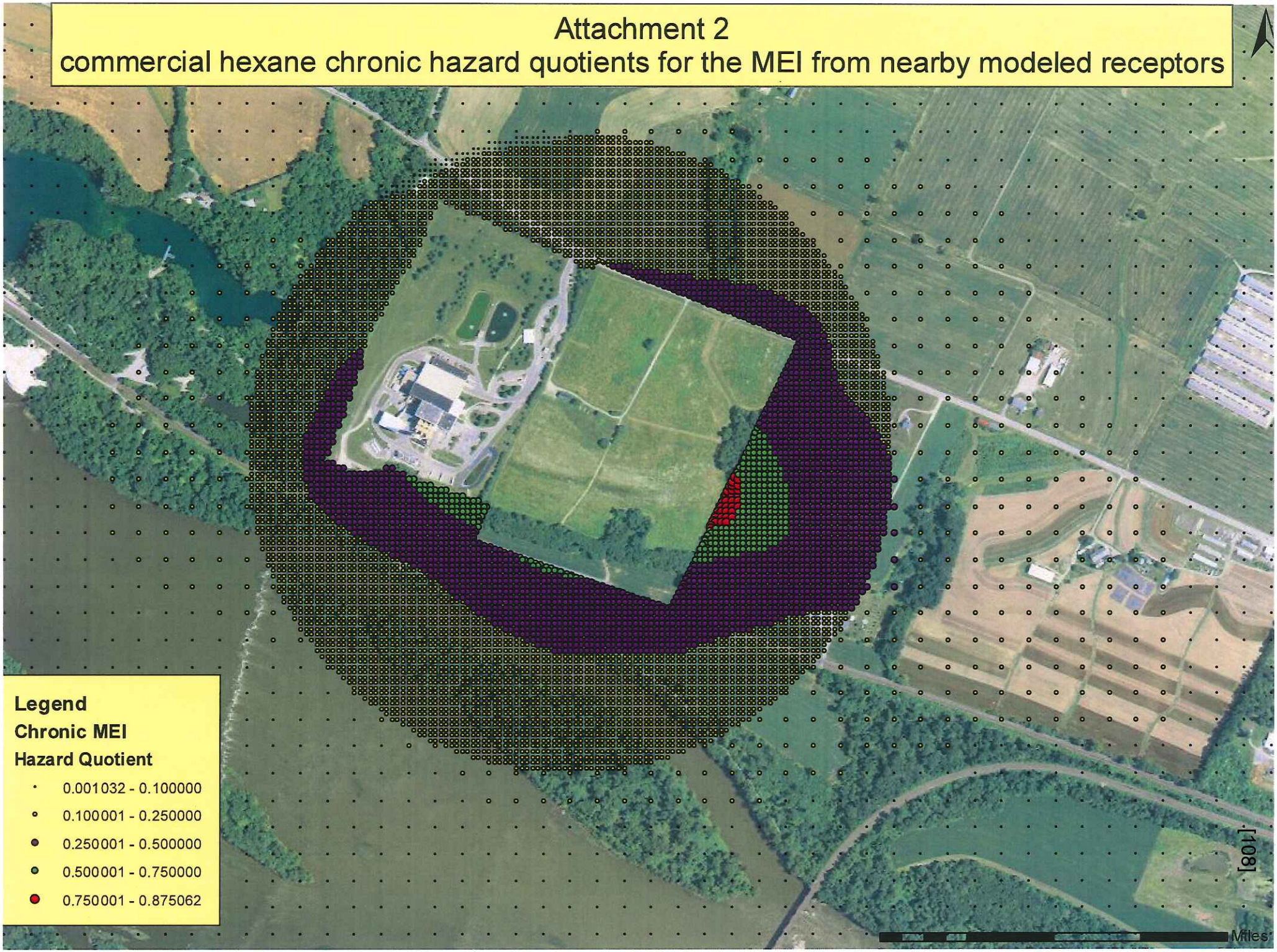
Support Center (STSC) for the U.S. EPA's Superfund program and 352 µg/m^3 of total hexane as a State Acceptable Ambient Concentration for air toxics permitting by the Virginia Department of Environmental Quality (VADEQ). The most stringent limit should be utilized in the risk assessment.

In response to this comment, DEP notes that in the DEP's Risk Factor References hierarchy found on page 4, IRIS appears first and PPRTV is second. The IRIS R*f*C for n-hexane is 700 µg/m^3 and the PPRTV R*f*C for commercial hexane is 600 µg/m^3.

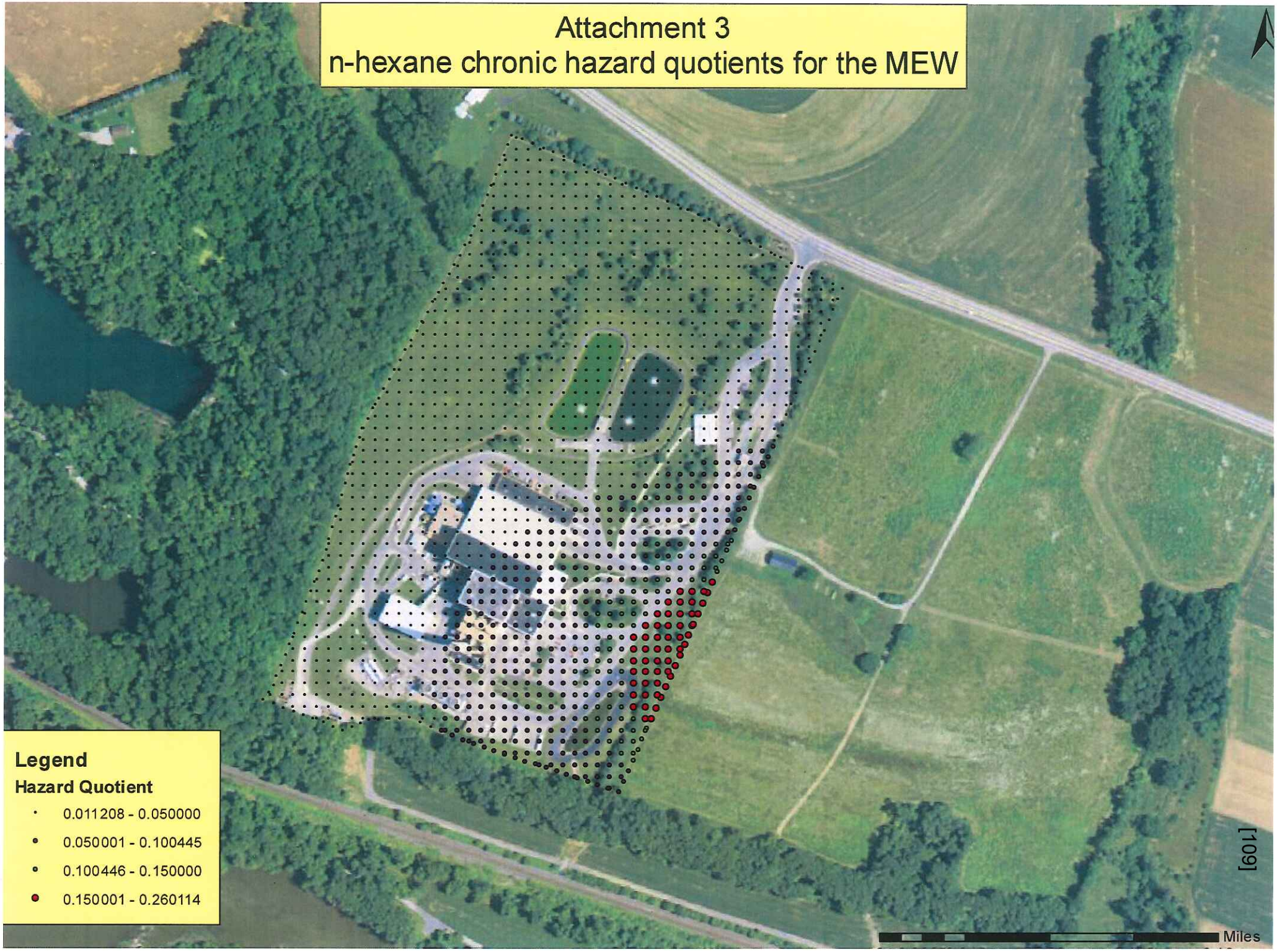
Attachment 1
n-hexane chronic hazard quotients for the MEI from nearby modeled receptors



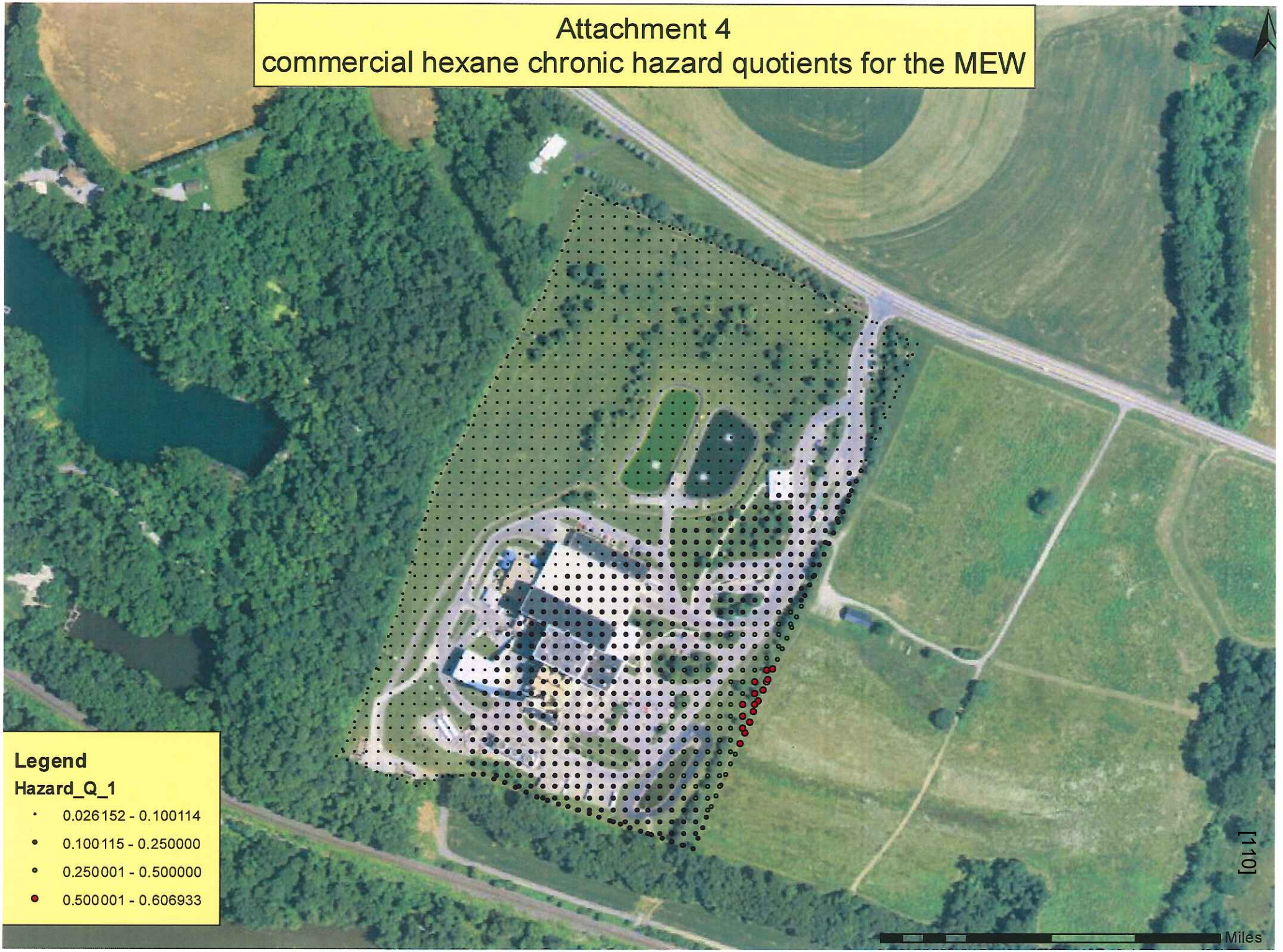
Attachment 2
commercial hexane chronic hazard quotients for the MEI from nearby modeled receptors



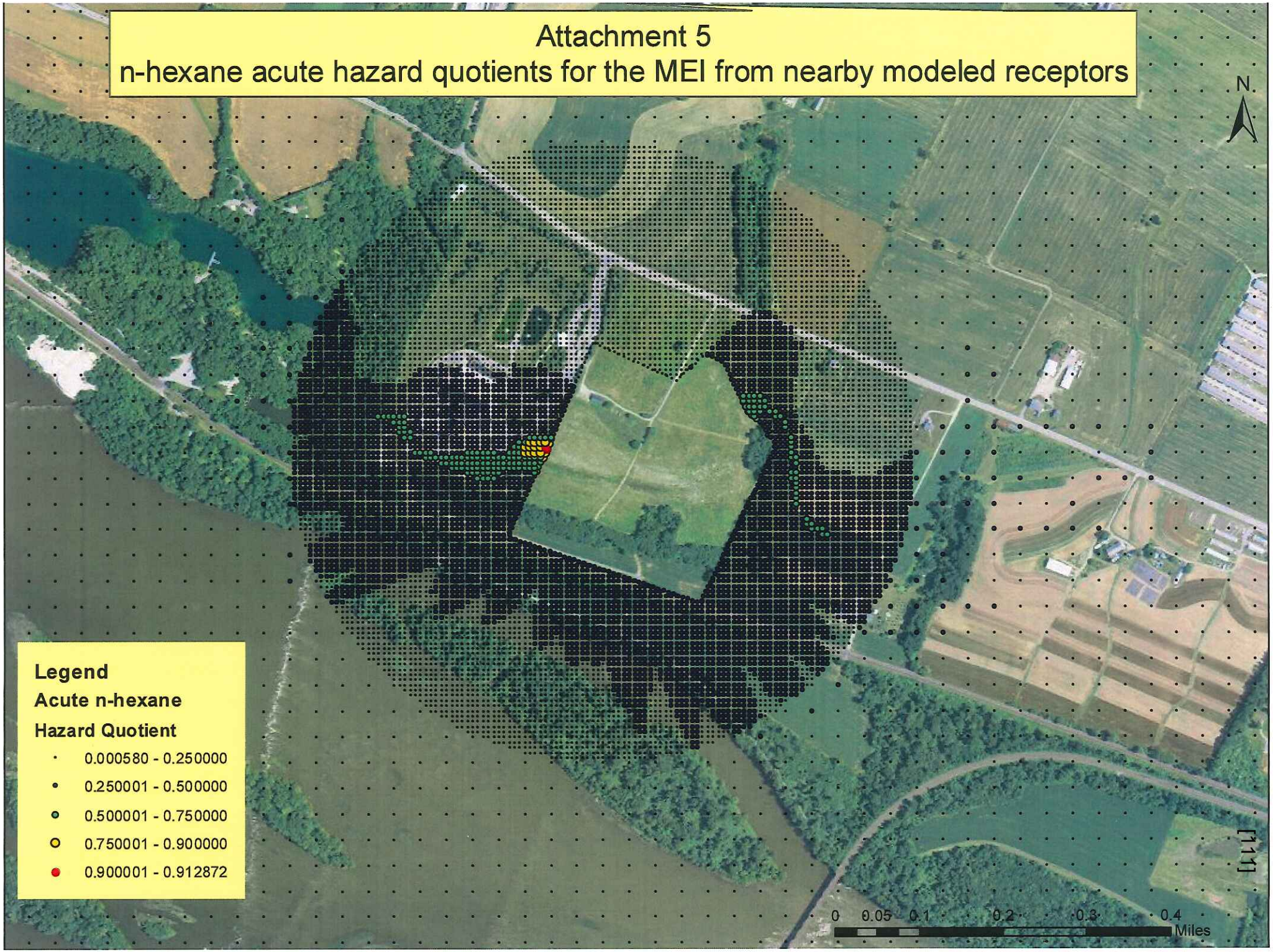
Attachment 3
n-hexane chronic hazard quotients for the MEW



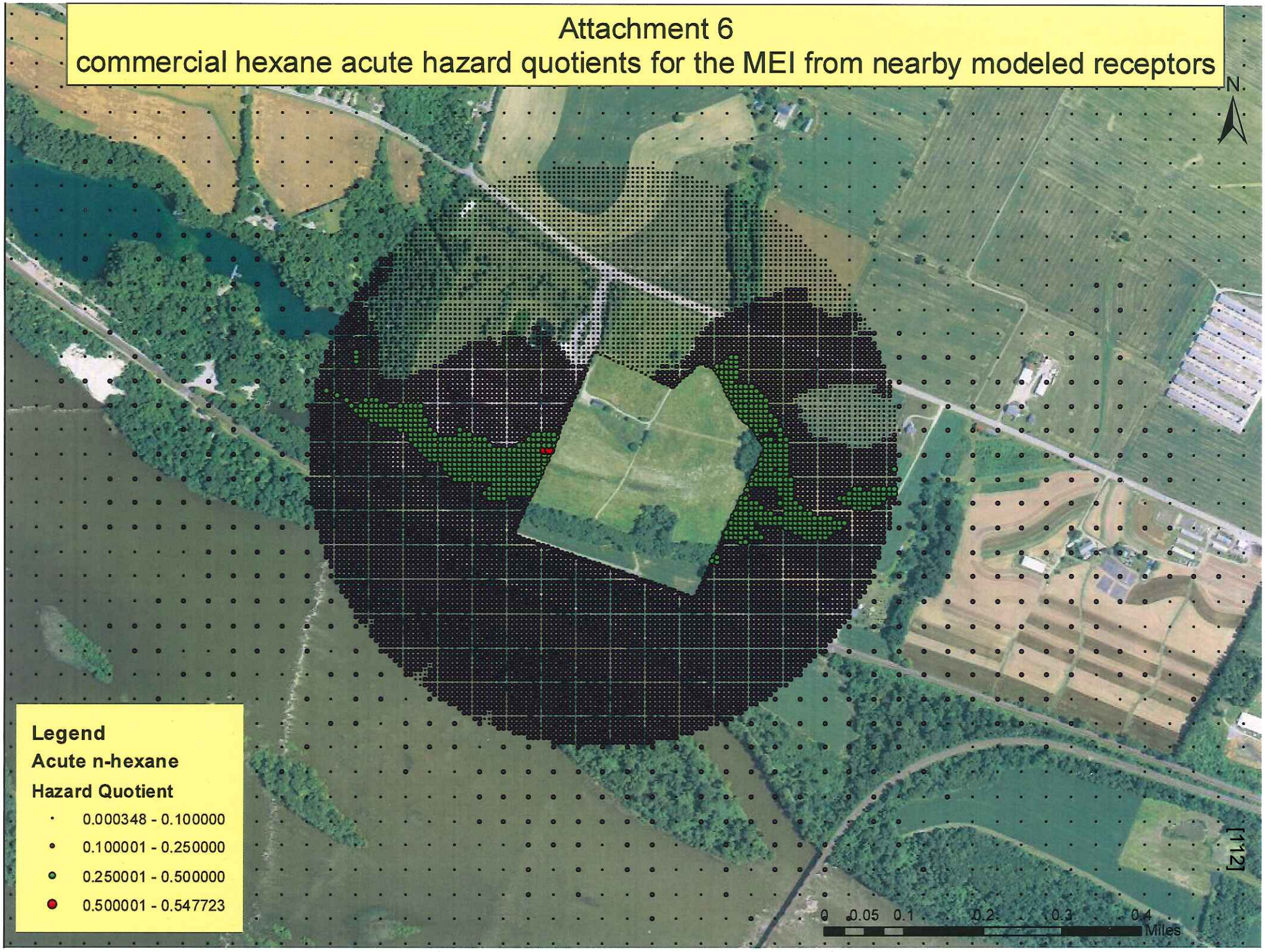
Attachment 4
commercial hexane chronic hazard quotients for the MEW



Attachment 5
n-hexane acute hazard quotients for the MEI from nearby modeled receptors



Attachment 6
commercial hexane acute hazard quotients for the MEI from nearby modeled receptors



Thomas J. Hanlon
Facility Permitting Chief
PA Dept. of Environmental Protection
Air Quality Program
909 Elmerton Ave.
Harrisburg, PA 17110

Oct. 23, 2012

RECEIVED
OCT 24 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Purdue Grain & Oil Seed, LLC
Conoy Twp., Lancaster Co., PA

Dear Mr. Hanlon:

As a member of the Hellam Twp. Board of Supervisors, I am requesting that the DEP conduct an "open microphone comment" public hearing in reference the the proposed Perdue installation of a grain elevator within our neighboring Conoy Twp.

Representatives and residents of Hellam Twp. have major concerns regarding potential air quality issues associated with the subject project which will be addressed and submitted to you before the close of the 30 day comment period.

We, the residents of Hellam Twp. will be impacted with compromised air quality, considering our proximity to the location of the proposed facility; and therefore, would like the opportunity to address concerns via an "open mic" public hearing forum.

Sincerely,
Martin C. Reed
Vice Chairman
Hellam Twp. Board of Supervisors

[114]

NATIONAL PARK FOUNDATION

Mr. Martin C. Reed
624 Woodsview Ln.
Hellam, PA 17406-9342

HARRISBURG PA 171

23 OCT 2002 PM 5 L

Mr. Thomas J. Hanlon
Facility Permitting Chief
PA. Dept. of Environmental Protection
Air Quality Program
909 Elmerton Ave.
Harrisburg, PA. 17110

17110820099

HELLAM TOWNSHIP

44 WALNUT SPRINGS ROAD
YORK, PENNSYLVANIA 17406
(717) 434-1300 FAX: (717) 434-1301
E-mail: CMann@ hellamtownship.com
Website: www.hellamtownship.com

BOARD OF SUPERVISORS
MIKE MARTIN
CHAIR
MARTY REED
VICE CHAIR
LARRY BUSINO
JAMES SIPE
STEVE WOLF

October 22, 2012

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Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

Hellam Township requests that DEP conduct an "open microphone comment" public hearing that will enable all of the attendees at the hearing to hear all of the public comments at the same time concerning the application referenced above for the installation of a grain elevator.

This proposed facility is located on land along the Susquehanna River, which is the boundary between Conoy Township and Hellam Township. Hellam Township and its residents have significant concerns about air quality issues which will be addressed and submitted to you before the close of the 30-day comment period.

While Hellam Township recognizes that the hearings are usually conducted in the municipality in which the proposed facility is located, Hellam Township would like to offer to host a public hearing at a facility within our Township. We believe that the proposed facility may impact Hellam Township in unique ways due to topography, air and water temperature issues, and would like the opportunity to address these in an "open microphone" public comment forum.

Sincerely,

Corina Mann

Corina Mann
Manager, Hellam Township
Direct dial: 717-434-1303

KEITH GILLESPIE, MEMBER
47th LEGISLATIVE DISTRICT

HARRISBURG OFFICE:
PO Box 202047
Harrisburg, PA 17120-2047
Phone: (717) 705-7167
Fax: (717) 772-9869

DISTRICT OFFICE:
4188 Lincoln Highway
York, PA 17406
Phone: (717) 840-4711
Fax: (717) 755-2896

E-mail: kgillesp@pahousegop.com

House of Representatives
Commonwealth of Pennsylvania
Harrisburg

COMMITTEES:
Professional Licensure
Judiciary
Game & Fisheries
Tourism & Recreational Development

SUBCOMMITTEES:
Judiciary-Courts
Tourism-Recreation-Chairman

CAUCUSES:
Firefighters-Chair
Sportsmens-Chair
Motorsports
Rural Health
South Central Pennsylvania

Web: RepGillespie.com

31 October 2012

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Mr. Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

Dear Mr. Hanlon,

I am writing to request a public meeting, with ample time for local residents to offer comments via an open microphone, relevant to the proposed Purdue Grain & Seed Oil Company project in Conoy Township in Lancaster County (36-03189 A).

I represent areas west of the Susquehanna River in York County, including the townships of Hellam and East Manchester, of which concerns with air quality issues associated with this proposed facility have been raised. The opportunity for residents to express these concerns to the Pennsylvania Department of Environmental Protection would be greatly appreciated.

Hellam Township has kindly offered to provide a venue for this forum.

Thank you for your consideration of this request. Please do not hesitate to contact me with any questions or if I can assist with facilitating this event.

Sincerely,

Keith J. Gillespie
Representative, 47th District

cc:
Michael Krancer, Secretary, Pennsylvania Department of Environmental Protection
Corina Mann , Hellam Township Manager
Hellam Township Board of Supervisors
D. Michael Craley, Solicitor, Hellam Township

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5335 Lincoln Highway
Hellam, PA 17406
October 31, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

As a resident of Hellam Township, I have significant concerns about issues related to the above facility application. Therefore, I request that DEP answer why they are not requiring Perdue to apply the NSR and PSD Clean Air Act standards to their review of the project as a <u>whole as opposed to phases</u>?

Due to Hellam Township's topography and air currents that carry pollution, the facility will impact Hellam Township residents. Consequently, DEP should conduct an "open microphone comment" public hearing concerning the application to enable concerned citizens to hear all information, as well as answering the above concern, as it relates to this proposed soybean facility.

Thank you for you time and attention to this matter.

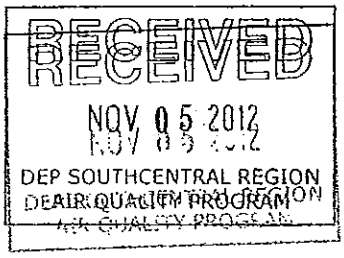
Sincerely yours,

Katina Snyder

Katina Snyder
717-252-4454

November 1, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110



Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

As a resident of Hellam Township, I have serious concerns about air quality issues connected to the above proposed facility which is to be located on the Susquehanna River on the boundary between Hellam Township and Conoy Township.

I question why Perdue has not been required to apply the NSR and PSD Clean Air Act standards to the plan as a whole. These regulations are definitely more strictly controlled than those applied to a project in phases. It also offers much better protection to the environment.

It is my request that the DEP hold a public hearing with "open microphone comments" concerning the installation and operation of the proposed grain elevator, being built to disguise the plant. Comments on an open microphone will assure that all in attendance will hear the public comments simultaneously.

Please seriously consider this request for an open public hearing and also consider a revision to the proposed Plan Approval.

Thank you, sincerely,

Verna E. Siford

Verna E. Siford
4543 Cherry Lane
Hellam, PA 17406

Phone: 717-755-6723

Thomas Hanlon
Facility Permitting Chief
PA DEP
Air Quality Control
909 Elmerton Ave.
Harrisburg, PA 17110

RECEIVED
NOV 05 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Perdue Grain and Oil Seed, LLC
Conoy Township, Lancaster County, PA

Dear Mr. Hanlon,

As residents of Hellam Township, which is immediately opposite the above proposed facility, we have concerns about the safety and health impacts of the proposed soybean facility. Hellam Towsnhip is already impacted by pollution from plants located along the river including Brunner Island, the LCSWMA incinerator and Three Mile Island. We are well aware of the hazards of poor air quality.

It concerns us that DEP has not required Perdue to show beyond a reasonable doubt that the grain elevator will be built and operated in such a manner as to prevent the emission of any particulates which are harmful to many individuals including the most vulnerable among us – children, the elderly, and people with health issues.

We feel there should be a public hearing to allow all impacted residents in both Lancaster and York Counties to voice and hear comments in a public space. Transparency regarding this issue would be in everyone's best interest.

Because of these concerns, we request that DEP hold a public hearing regarding the proposed plant.

Thank you.

Sincerely,

Phyllis Koster and Robert Oughton
183 Accomac Road
York, PA 17406
717-252-3518

October 29, 2012

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

As you are aware, the proposed facility referenced above is to be located on land along the Susquehanna River. As a resident of Hellam Township I have significant concerns about air quality issues related to this facility and I request that DEP:

- Conduct an "open microphone comment" public hearing concerning this application for the installation and operation of a grain elevator.

- Consider this comment in support of my request: Why has DEP not required Perdue to show that the Grain Elevator will be constructed and operated so as not to emit any particulates, which are harmful to human health?

The proposed facility will most likely affect me in Hellam Township in unique ways due to topography and air issues. In addition to expressing my written comments in this letter, I believe that the "open microphone" will give the public the opportunity to address the issues and concerns relating to this proposed soybean facility.

Thank you.

Sincerely yours,

Nellie Snyder
101 Frysville Road
Hellam, PA 17406
717-757-3462

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

5860 N River Dr
York PA 17406

November 4, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

I am the owner of significant wooded hillside parcels, located in Hellam Township, York County, which front on the Susquehanna River, which look across, into Lancaster County. Looking back across the River from Lancaster County, the eye sees hills covered with trees. And, I have been told that people enjoy this view. I appreciate these hills and have made significant sacrifices, on their behalf.

But it was with **considerable concern**, that I learned of another attempt to cite a facility, adjacent to the large smokestack, referred to as the Lancaster Incinerator. Through the years, there have been *numerous proposals, for this tract*, almost all of which included a **significant footprint of toxic emissions.**

I **fail to understand** how we have such a *lack of true regional planning* and opportunity for citizen input. I **own and reside within a 2 mile radius** and view of this proposed facility, grain elevator, "snake oil plant", or whatever we choose to call this "camel" with its "head", trying to come "into our tent". **I have received no notice whatsoever**, as to what is proposed. I did hear a rumor of Purdue offering the residents of Conoy Township a chicken dinner. And, I ask, how could something like a "free" chicken dinner be a reason for concern. Turns out, I learned later that it was "free hot dogs and hamburgers".

If there is something planned for this location, opportunity for **public comment** needs to be received and allowed prior to piecemeal approval for various facets of an undetermined end product. I **do not know what hexane is** and what ***side effects*** might occur, if development moves forward. Then there are issues related to this specific site, including karst and sinkholes.

But, I do know from *past experience* that *past planning for this tract, related to denied projects*, was performed in a **less than "above the board process".** I attended numerous lengthy Conoy Township meetings, including expenditure of attorney fees, in the thousands of dollar range, in order to be allowed to be granted "standing", which was denied, due to *not "living close enough"*. While the previous two proposed plants were denied, it appears that a new process is inching along.

Our area has some **extremely unusual characteristics**, due in part, to the **nature of our topography and the Susquehanna River**. It is an extreme understatement to refer to how *sounds, smells, and emissions transfer and become concentrated, in locations, where it might appear peculiar* that they ever arrived, at some particular spot. **Weather** and long, as well as short, patterns also have demonstrated **significant factors related to these oddities**. As someone, who experiences these things, on a daily basis, I must again state that there is ***extreme concern, for safety***, relative to any *new proposed emissions and related industrial development.*

Further, ***the best available technology needs to rule the day***, rather than the *most economical technology to allow for the most immediate profit.* There is **one opportunity to do things the proper way and with proper oversight.**

Additionally, factors related to **cumulative emissions are a significant part of this equation.** And, these factors relate to a ***minimum of 3 counties***, just for the initial spread. Once again, we see *the "dirty business" coming down to the boundaries of municipalities and County Lines.*

What steps is the PA Department of Environmental Protection taking to mitigate the multiple concerns relative to the possible potential citing of such an operation, including safety, health, welfare, and potential accidents?

Attempted circumvention of air quality regulations is not the answer.

I ***respectfully request an "open microphone comment" public hearing*** regarding this proposed application. It is *essential that citizens and stakeholders be allowed to hear the questions and comments from others, prior to ANY project approval.* Others and I *would appreciate if this hearing could be timed for an evening period.* However, if needed, I would arrange personal time away from my teaching duties to attend this hearing.

Thank you for your attention to this matter.

Sincerely,

Richard L. King

Hellam Township Resident

(717) 252-0550

Cc: Hellam Township Board of Supervisors

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NOV 06 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

November 4, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

Re: 36-03189A
Perdue Grain & Oil Seed. LLC
Conoy Township, Lancaster County, PA

Dear Mr. Hanlon:

The proposed soybean facility referenced above is to be located on land along the Susquehanna River, which is the boundary between Conoy Township and Hellam Township. Hellam Township and its residents have significant concerns about air quality issues related to this facility. As residents of Hellam Township we request that DEP:

- **Conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator.** This will enable all of the attendees at the hearing to hear all of the public comments at the same time.

- **Consider the comments and questions below in support of my request for a public hearing and for revision to the proposed Plan Approval:**

    - Breaking up the plan in to two phases appears to be an attempt by Perdue to circumvent a full air quality permit review. This is in violation of US EPA circumvention regulations. DEP should refuse to issue any permits to Perdue on a Phase 1 and Phase 2 basis in light of this circumvention.

    - The NSR and PSD regulations that would be triggered by a review of the whole project are significantly more stringent than those applied to a phased project. The NSR an PSD regulations also will require air modeling studies and offer much greater protection of human health and the environment.

- Why has DEP not required Perdue to show that the proposed grain elevator will be constructed and operated so as not to emit any particulates which are harmful to human health? Hellam Township receives sizable amount of particulates downwind from other industrial sources, including Brunner Island power plant and the LCSWMA incinerator. The cumulative effect of these emissions plus the particulate emissions from the proposed Perdue facility give us grave concern, especially since we are already in an EPA-designated non-attainment area for PM 2.5 micron lung damaging particulate emissions.

- What steps is DEP taking to ensure that any construction on the LCSWMA site takes into consideration the known sinkholes on that site and in the vicinity to prevent the possibility of collapse of any equipment, damage to hexane storage tanks and the potential for major deadly explosions?

The proposed facility will impact Hellam Township in unique ways due to topography and air/water temperature issues. In addition to expressing our written comments in this letter, we would like to see the public have the opportunity to address the issues of the proposed soybean facility in a public forum as requested above.

Thank you for your consideration of these comments. We look forward to your response.

Sincerely,

Stephen D. Wolf
585 Kreutz Creek Road
York, PA 17406
(717)779-4760

Elizabeth Wolf

November 5, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

RECEIVED
NOV 06 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

The proposed facility referenced above is to be located on land along the Susquehanna River, which is the boundary between Conoy Township and Hellam Township. Hellam Township and its residents have significant concerns about air quality issues related to this facility. As a resident of Hellam Township I request that DEP:

- **Conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator.** This will enable all of the attendees at the hearing to hear all of the public comments at the same time.

- **Consider the comments below in support of my request for a public hearing and for revision to the proposed Plan Approval.**

1. **Why has DEP permitted Perdue to break up their application for plan approval into two phases or stand-alone projects, when in fact the entire plan should be considered as a whole for a more stringent air quality review by DEP?** Breaking up the plan into two phases appears to be nothing more than an attempt by Perdue to circumvent a full air quality permit review. This is in violation of US EPA circumvention regulations. DEP should refuse to issue any permits to Perdue on a Phase 1 and Phase 2 basis in light of this circumvention.

2. **Why has DEP not required Perdue to apply the NSR and PSD Clean Air Act standards to their review of the project as a whole?** The NSR and PSD regulations that would be triggered by a review of the whole project are significantly more stringent than those applied to a phased project. The NSR and PSD regulations will also require air modeling studies and offer much greater protection of human health and the environment.

3. **Why has DEP not required Perdue to show that the Grain Elevator will be constructed and operated so as not to emit any particulates, which are harmful to human health?** Small children, older people, people with respiratory diseases and those with compromised immune systems are especially vulnerable. In Hellam Township we already receive sizable amounts of particulates downwind from other industrial sources, including the Brunner Island power plant and the LCSWMA incinerator. The cumulative effect of these emissions plus the particulate emissions from the proposed Perdue facility gives us grave concern, especially since we are already in an EPA-designated non-attainment area for PM 2.5 micron lung-damaging particulate emissions.

4. **What steps is DEP taking to ensure that any construction on the LCSWMA site should take into consideration the known sinkholes on that site and in the vicinity to prevent the possibility of collapse of any equipment, damage to hexane storage tanks and the potential for major deadly explosions?** Such an explosion could impact the safety, air quality and welfare of our Township residents directly across the river and downwind from this facility.

The proposed facility may impact Hellam Township in unique ways due to topography and air and water temperature issues. In addition to expressing my written comments in this letter, I would like to see the public have the opportunity to address in an "open microphone" public comment forum the issues and concerns relating to this proposed soybean facility

Thank you.

Sincerely yours,

Kristie Peters

Kristie Peters
6165 Nora Lane, York, Pa 17406
717-252-0996

November 1, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

RECEIVED
NOV 07 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

This proposed facility referenced above is to be located on land along the Susquehanna River, which is the boundary between Conoy Township and Hellam Township. As a Hellam Township resident living along the Hellam Hills ridge, I have significant concerns about air quality. I often times experience odors emanating from the east side of the Susquehanna River as they travel along the ridgeline. As a resident of Hellam Township I do not understand why DEP will permit Perdue to break up their application for plan approval into two phases or stand-alone projects, when in fact the entire plan should be considered as a whole for a more stringent air quality review and air quality measurements.

For the best interest of the communities involved, DEP should want to conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator. It would then enable all of the attendees to hear all of the public comments and concerns from the public as well as from DEP.

To reiterate, the proposed facility will impact Hellam Township in unique ways due to topography and air quality. For that reason alone, as well as it is the right thing to do, I would like to see the public have the opportunity to address in an "open microphone" public comment forum the issues and concerns relating to this proposed soybean facility.

Thank you.

Sincerely yours,

Ealora Holland

Ealora Holland
4185 Druck Valley Road
Hellam, PA 17406
717-755-3777

11/3/12

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

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NOV 07 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

The proposed facility referenced above is to be located on land along the Susquehanna River, which is the boundary between Conoy Township and Hellam Township. Hellam Township and its residents have significant concerns about air quality issues related to this facility. As a resident of Hellam Township I request that DEP:

- **Conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator.** This will enable all of the attendees at the hearing to hear all of the public comments at the same time.

- **Consider the comments below in support of my request for a public hearing and for revision to the proposed Plan Approval.**

1. **Why has DEP permitted Perdue to break up their application for plan approval into two phases or stand-alone projects, when in fact the entire plan should be considered as a whole for a more stringent air quality review by DEP?** Breaking up the plan into two phases appears to be nothing more than an attempt by Perdue to circumvent a full air quality permit review. This is in violation of US EPA circumvention regulations. DEP should refuse to issue any permits to Perdue on a Phase 1 and Phase 2 basis in light of this circumvention.

2. **Why has DEP permitted Perdue to break up their application for plan approval into two phases or stand-alone projects, when in fact the entire plan should be considered as a whole for a more stringent air quality review by DEP?** Breaking up the plan into two phases appears to be nothing more than an attempt by Perdue to circumvent a full air quality permit review. This is in violation of US EPA circumvention regulations. DEP should refuse to issue any permits to Perdue on a Phase 1 and Phase 2 basis in light of this circumvention.

3. **Why has DEP not required Perdue to apply the NSR and PSD Clean Air Act standards to their review of the project as a whole?** The NSR and PSD

regulations that would be triggered by a review of the whole project are significantly more stringent than those applied to a phased project. The NSR and PSD regulations will also require air modeling studies and offer much greater protection of human health and the environment.

4. **Why has DEP not required Perdue to show that the Grain Elevator will be constructed and operated so as not to emit any particulates, which are harmful to human health?** Small children, older people, people with respiratory diseases and those with compromised immune systems are especially vulnerable. In Hellam Township we already receive sizable amounts of particulates downwind from other industrial sources, including the Brunner Island power plant and the LCSWMA incinerator. The cumulative effect of these emissions plus the particulate emissions from the proposed Perdue facility gives us grave concern, especially since we are already in an EPA-designated non-attainment area for PM 2.5 micron lung-damaging particulate emissions.

5. **What steps is DEP taking to ensure that any construction on the LCSWMA site should take into consideration the known sinkholes on that site and in the vicinity to prevent the possibility of collapse of any equipment, damage to hexane storage tanks and the potential for major deadly explosions?** Such an explosion could impact the safety, air quality and welfare of our Township residents directly across the river and downwind from this facility.

The proposed facility may impact Hellam Township in unique ways due to topography and air and water temperature issues. In addition to expressing my written comments in this letter, I would like to see the public have the opportunity to address in an "open microphone" public comment forum the issues and concerns relating to this proposed soybean facility

Thank you.

Sincerely yours,

Robert W. Evans
7152 Roundtop Lane
Wrightsville, PA 17368
(717)252-1311

November 3, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

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NOV 07 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

As a resident of Hellam Township I have several concerns and reservations about the proposed Perdue soybean extraction facility to be located in Conoy Township directly across the Susquehanna River from Hellam Township. I request that DEP:

- **Conduct open microphone public hearings concerning the application referenced above for the installation and operation of a grain elevator.**

- **Consider the comments below in support of my request for a public hearing and for revisions to the proposed Plan Approval or Operating Permit:**

1. **Why has DEP permitted Perdue to break up their application for plan approval into two phases or stand-alone projects, when in fact the entire plan should be considered as a whole for a more stringent air quality review by DEP?** Breaking up the plan into two phases appears to be nothing more than an attempt by Perdue to circumvent a full air quality permit review. This is in violation of US EPA circumvention regulations. DEP should refuse to issue any permits to Perdue on a Phase 1 and Phase 2 basis in light of this circumvention.

2. **Why has DEP not required Perdue to apply the NSR and PSD Clean Air Act standards to their review of the project as a whole?** The NSR and PSD regulations that would be triggered by a review of the whole project are significantly more stringent than those applied to a phased project. The NSR and PSD regulations will also require air modeling studies and offer much greater protection of human health and the environment.

3. **Why has DEP not required Perdue to show that the Grain Elevator will be constructed and operated so as not to emit any particulates, which are harmful to human health?** Small children, older people, people with respiratory diseases and those with compromised immune systems are especially vulnerable. In Hellam Township we already receive sizable amounts of

particulates downwind from other industrial sources, including the Brunner Island power plant and the LCSWMA incinerator.

4. **Will DEP require that Perdue evaluate the cumulative health impacts of particulate pollutants and revise their permit application accordingly?** The cumulative effect of these emissions plus the particulate emissions from the proposed Perdue facility gives us grave concern, especially since we are already in an EPA-designated non-attainment area for PM 2.5 micron lung-damaging particulate emissions.

5. **Will DEP require that Perdue carry out an air modeling screening study of PM_{10} and $PM_{2.5}$ air pollutants, taking into consideration the numerous temperature inversions that are known to occur in the vicinity of the proposed soybean facility?** According to Perdue officials, Perdue has had no previous experience with temperature inversions in places where their existing facilities are located.

6. **What steps is DEP taking to ensure that any construction on the LCSWMA site should take into consideration the karst topography and sinkholes known to occur on the proposed site in order to prevent the possibility of collapse of any buildings and damage to hexane storage tanks with the potential for major deadly explosions?** Such an explosion could impact the safety, air quality and welfare of our Township residents directly across the river and downwind from this facility.

The proposed facility may impact Hellam Township in unique ways due to air pollution and topography issues. In addition to expressing my written comments in this letter, I would like to see the public have the opportunity to address in an "open microphone" public comment forum the issues and concerns relating to this proposed soybean facility

Thank you.

Sincerely yours,

Warren H. Evans

Warren H. Evans
7160 Roundtop Lane
Wrightsville, PA 17368
(717) 252-4145

11/3/12

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

The proposed facility referenced above is to be located on land along the Susquehanna River, which is the boundary between Conoy Township and Hellam Township. Hellam Township and its residents have significant concerns about air quality issues related to this facility. As a resident of Hellam Township I request that DEP:

- **Conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator.** This will enable all of the attendees at the hearing to hear all of the public comments at the same time.

- **Consider the comments below in support of my request for a public hearing and for revision to the proposed Plan Approval.**

1. **Why has DEP permitted Perdue to break up their application for plan approval into two phases or stand-alone projects, when in fact the entire plan should be considered as a whole for a more stringent air quality review by DEP?** Breaking up the plan into two phases appears to be nothing more than an attempt by Perdue to circumvent a full air quality permit review. This is in violation of US EPA circumvention regulations. DEP should refuse to issue any permits to Perdue on a Phase 1 and Phase 2 basis in light of this circumvention.

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The proposed facility may impact Hellam Township in unique ways due to topography and air and water temperature issues. In addition to expressing my written comments in this letter, I would like to see the public have the opportunity to address in an "open microphone" public comment forum the issues and concerns relating to this proposed soybean facility

Thank you.

Sincerely yours,

Renée Patton

Renee Patton
7152 Roundtop Lane
Wrightsville, PA 17368
(717)252-1956

November 4, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

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NOV 07 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

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- **Conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator.** This will enable all of the attendees at the hearing to hear all of the public comments at the same time.

- **Consider the comments below in support of my request for a public hearing and for revision to the proposed Plan Approval.**

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7. **Will DEP require Perdue to complete the Phase II archaeological studies requested by PHMC?**

The proposed facility may impact Hellam Township in unique ways due to topography and air pollution issues. In addition to expressing my written comments in this letter, I would like to see the public have the opportunity to address in an "open microphone" public comment forum the issues and concerns relating to this proposed soybean facility

Thank you.

Sincerely yours,

June Evans

June Evans
7160 Roundtop Lane
Wrightsville, PA 17368
(717) 252-4145

November 5, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

RECEIVED
NOV 07 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

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The proposed facility may impact Hellam Township in unique ways due to topography and air and water temperature issues. In addition to expressing my written comments in this letter, I would like to see the public have the opportunity to address in an "open microphone" public comment forum the issues and concerns relating to this proposed soybean facility

Thank you.

Sincerely yours,

Wesley Peters
6165 Nora Lane, York, Pa 17406
717-252-0996

Shank's Mare
2092 Long Level Road
Wrightsville, PA 17368
Ph 717-252-1616
Fax 717-252-0403
Email shanksmare@comcast.net
Web www.shanksmare.com

November 5, 2012

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

The proposed facility referenced above is to be located on land along the Susquehanna River, which is the boundary between Conoy Township and Hellam Township. As a resident and business owner located on the York County shore of the Susquehanna River, I have significant concerns about air quality issues related to this facility. I request that DEP:

- **Conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator.** This will enable all of the attendees at the hearing to hear all of the public comments at the same time.

- **Consider the comments below in support of my request for a public hearing and for revision to the proposed Plan Approval.**

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The proposed facility may impact Hellam Township and the Susquehanna River area in unique ways due to topography and air and water temperature issues. In addition to expressing my written comments in this letter, I would like to see the public have the opportunity to address in an "open microphone" public comment forum the issues and concerns relating to this proposed soybean facility

Thank you for your consideration.

Yours truly,

SHANK'S MARE OUTFITTERS

Elizabeth G. Winand
Co-Owner

November 5, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

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NOV 08 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, Canty, PA

Dear Mr. Hanlon,

As a resident of Hellam Township, I would like to voice my concerns about the above proposed facility / production plant that is located in Conoy Tounship along the Susquehanna River.

The river is not a barrier that will protect Hellam Township from emmissions from this plant. The township is already in an EPA - designated non-attainment area for 2.5 micron lung-damaging particulated emmissions from other industrial sources in the area, must we produce more?

Why has DEP allowed Perdue to submit a two phase project when in fact it is one large project? Is Perdue attempting to circumvent the more stringent air quality review by DEP that would apply to the whole project?

Is DEP looking at the geology of the area? To my understanding the area is prone to sink-holes. Imagine what could happen with equipment collapse and potential damage to the hexane storage tanks proposed for the facility.

I would like DEP to conduct an "open microphone Comment" public hearing for this facility! Thank You.

Sincerely,

Douglas E. Stoat

Douglas E. Stoat
Hellam Township Planning Commission
487 Kreutz Creek Road
York, PA 17406
(717) 755-7580

Enclosed - 2

[142]

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

November 5, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster County, PA

Dear Mr. Hanlon,

I am writing in concern to the facility/production plant proposed above, for Conoy Township along the Susquehanna River.

As a resident of Hellam Township, I am concerned about the emmissions the facility will produce. The air quality of our township is already a concern because of the industry already in the area.

Would DEP please consider holding an "open microphone comment" public hearing to address this issue? Thank You.

Sincerely,
Mary Beth Sloat

Mary Beth Sloat
487 Kreutz Creek Road
York, PA 17404
(717) 755-7580

November 7, 2012

RECEIVED
NOV 08 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

The proposed facility referenced above is to be located on land along the Susquehanna River, in Conoy Township, Lancaster County, PA. As a resident of Conoy Township I request that DEP:

- Conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator.

- Consider that the entire plan should be considered as a whole and not broken up into two separate parts, which results in a less stringent air quality review.

- Require that Perdue show that the grain elevator will be constructed and operated so as not to emit any particulates. The particulates from the Brunner Island plant and the county incinerator are already a burden for our community.

In addition to expressing my written comments in this letter, I would like to see the public have the opportunity to address in an "open microphone" public comment forum the issues and concerns relating to this proposed soybean facility

Thank you.

Sincerely yours,

John R. Nissley
160 Wickersham Road
Bainbridge, PA 17502
717-426-3366

November 2, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

In relation to the proposed facility referenced above, I as a Hellam Township resident have significant concerns about this facility. One of my primary concerns is what steps is DEP taking to ensure that any construction on the LCSWMA site should take into consideration the known sinkholes on that site and in the vicinity to prevent the possibility of collapse of any equipment, damage to hexane storage tanks and the potential for major deadly explosions? Such an explosion could impact the safety, air quality and welfare of our Township directly across the river and downwind from this facility.

In order to address that issue among many others, I would request that DEP conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator.

The proposed facility may impact Hellam Township in unique ways due to topography and air and water temperature issues. In addition to expressing my written comments in this letter, I would strongly encourage DEP to give the public the opportunity to address issues of concern at an "open microphone" public comment forum relating to this proposed soybean facility.

Thank you,

Garry Lehman
4923 Pleasant Valley Road
Hellam, PA 17406
717-586-6032

November 6, 2012

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

The proposed facility referenced above is to be located on land along the Susquehanna River, which is the boundary between Conoy Township and Hellam Township. Hellam Township and its residents have significant concerns about air quality issues related to this facility. As a resident of Hellam Township I request that DEP:

- **Conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator.** This will enable all of the attendees at the hearing to hear all of the public comments at the same time.

- **Why has DEP not required Perdue to apply the NSR and PSD Clean Air Act standards to their review of the project as a whole?** The NSR and PSD regulations that would be triggered by a review of the whole project are significantly more stringent than those applied to a phased project. The NSR and PSD regulations will also require air modeling studies and offer much greater protection of human health and the environment.

.The proposed facility may impact Hellam Township in unique ways due to topography and air and water temperature issues. In addition to expressing my written comments in this letter, I would like to see the public have the opportunity to address in an "open microphone" public comment forum the issues and concerns relating to this proposed soybean facility

Thank you.

Sincerely yours,

Melinda Trimmer
471 Frysville Road
York, PA 17406
717-818-9355

November 6, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

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NOV 09 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

The proposed facility referenced above is to be located on land along the Susquehanna River, which is the boundary between Conoy Township and Hellam Township. Hellam Township and its residents have significant concerns about air quality issues related to this facility. As a resident of Hellam Township I request that DEP:

- **Conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator.** This will enable all of the attendees at the hearing to hear all of the public comments at the same time.

- **Consider the comments below in support of my request for a public hearing and for revision to the proposed Plan Approval.**

I am concerned about the amount of hexane which will be released into the atmosphere. There is a real possibility that my family and I will be exposed to hexane and other particles from this operation. York and Lancaster County are rated poor for air quality as it stands today. I do not want to add to that problem.

.The proposed facility may impact Hellam Township in unique ways due to topography and air and water temperature issues. In addition to expressing my written comments in this letter, I would like to see the public have the opportunity to address in an "open microphone" public comment forum the issues and concerns relating to this proposed soybean facility

Thank you.

Sincerely yours,

Todd Trimmer
471 Frysville Road
York, PA 17406
717-817-2394

(1)

Nov. 7, 2012

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NOV 09 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Dear Mr. Hanlon

I am returning to the proposed Perdue Grain & Oil Seed facility proposed for Conoy Township - which is along the Susquehanna River. Being a resident of Hellam Twp - & living along the river I have concerns about the air quality related to the proposed Perdue plant -

As a member of the general public I would like to see an open microphone comment session, that would let me hear & possibly speak about this plant -

(2)

Nov. 7, 2012

The proposed Perdue Plant may & will impact Hellam Twp.s. air quality & surely affect the water quality in the river. I would like to see the general public have some say or at least hear what is going on at a public, "open mic" session. We need to be up front with the public -

Thank you for your consideration on this matter

Sincerely,
William D. Zuglin
1030 E River Drive
Wrightsville Pa.
Hellam Twp -
717-252-5294

November 8, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

RECEIVED
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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

The proposed facility referenced above is to be located on land along the Susquehanna River, in Conoy Township, Lancaster County, PA. As a resident of East Donegal Township, neighboring the facility I request that DEP:

- Conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator. This will enable all of the attendees at the hearing to hear all of the public comments at the same time.

- Consider the comments below in support of my request for a public hearing and for revision to the proposed Plan Approval.

Why has DEP permitted Perdue to break up their application for plan approval into two phases or stand-alone projects, when in fact the entire plan should be considered as a whole for a more stringent air quality review by DEP? Breaking up the plan into two phases appears to be nothing more than an attempt by Perdue to circumvent a full air quality permit review. This is in violation of US EPA circumvention regulations. DEP should refuse to issue any permits to Perdue on a Phase 1 and Phase 2 basis in light of this circumvention.

Why has DEP not required Perdue to show that the Grain Elevator will be constructed and operated so as not to emit any particulates, which are harmful to human health? Small children, older people, people with respiratory diseases and those with compromised immune systems are especially vulnerable. In Conoy Township we already receive sizable amounts of particulates downwind from other industrial sources, including the Brunner Island power plant and the LCSWMA incinerator. The cumulative effect of these emissions plus the particulate emissions from the proposed Perdue facility gives us grave concern, especially since we are already in an EPA-designated non-attainment area for PM 2.5 micron lung-damaging particulate emissions.

What steps is DEP taking to ensure that any construction on the LCSWMA site should take into consideration the known sinkholes on that site and in the vicinity to prevent the possibility of collapse of any equipment, damage to hexane storage tanks and the potential for major deadly explosions? Such an explosion could impact the

safety, air quality and welfare of our Township residents directly across the river and downwind from this facility.

In addition to expressing my written comments in this letter, I would like to see the public have the opportunity to address in an "open microphone" public comment forum the issues and concerns relating to this proposed soybean facility

Thank you.

Sincerely yours,

Carol Bromer

Carol Bromer
402 Stackstown Road
Marietta, PA 17547

November 8, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

The proposed facility referenced above is to be located on land along the Susquehanna River, in Conoy Township, Lancaster County, PA. As a resident of East Donegal Township, neighboring the facility I request that DEP:

- Conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator. This will enable all of the attendees at the hearing to hear all of the public comments at the same time.

- Consider the comments below in support of my request for a public hearing and for revision to the proposed Plan Approval.

Why has DEP permitted Perdue to break up their application for plan approval into two phases or stand-alone projects, when in fact the entire plan should be considered as a whole for a more stringent air quality review by DEP? Breaking up the plan into two phases appears to be nothing more than an attempt by Perdue to circumvent a full air quality permit review. This is in violation of US EPA circumvention regulations. DEP should refuse to issue any permits to Perdue on a Phase 1 and Phase 2 basis in light of this circumvention.

Why has DEP not required Perdue to show that the Grain Elevator will be constructed and operated so as not to emit any particulates, which are harmful to human health? Small children, older people, people with respiratory diseases and those with compromised immune systems are especially vulnerable. In Conoy Township we already receive sizable amounts of particulates downwind from other industrial sources, including the Brunner Island power plant and the LCSWMA incinerator. The cumulative effect of these emissions plus the particulate emissions from the proposed Perdue facility gives us grave concern, especially since we are already in an EPA-designated non-attainment area for PM 2.5 micron lung-damaging particulate emissions.

What steps is DEP taking to ensure that any construction on the LCSWMA site should take into consideration the known sinkholes on that site and in the vicinity to prevent the possibility of collapse of any equipment, damage to hexane storage tanks and the potential for major deadly explosions? Such an explosion could impact the

safety, air quality and welfare of our Township residents directly across the river and downwind from this facility.

In addition to expressing my written comments in this letter, I would like to see the public have the opportunity to address in an "open microphone" public comment forum the issues and concerns relating to this proposed soybean facility

Thank you.

Sincerely yours,

Nick Bromer

Nick Bromer
402 Stackstown Road
Marietta, PA 17547

November 8, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

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NOV 09 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

The proposed facility referenced above is to be located on land along the Susquehanna River, in Conoy Township, Lancaster County, PA. As a resident of Conoy Township, I request that DEP:

- Conduct an "open microphone" public hearing concerning the application for the installation and operation of a grain elevator.

- Consider that the entire plan should be considered as a whole and not broken up into two separate parts, which results in a less stringent air quality review.

- Require that Perdue show that the grain elevator will be constructed and operated so as not to emit any particulates. The particulates from the Brunner Island plant and the county incinerator are already a burden for me and my neighbors.

The proposed plant and its emissions especially concern me because my home is directly across from the site. An open microphone public comment forum would enable me and my neighbors to learn more.

Thank you.

Sincerely yours,

Catherine E. Kauffman

Catherine E. Kauffman
165 Wickersham Road
Bainbridge, PA 17502
717-426-1176

HELLAM TOWNSHIP

44 WALNUT SPRINGS ROAD
YORK, PENNSYLVANIA 17406
(717) 434-1300 FAX: (717) 434-1301
E-mail: CMann@ hellamtownship.com
Website: www.hellamtownship.com

BOARD OF SUPERVISORS
MIKE MARTIN
CHAIR
MARTY REED
VICE CHAIR
LARRY BUSINO
JAMES SIPE
STEVE WOLF

November 8, 2012

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

By previous correspondence, Hellam Township requested that DEP conduct an "open microphone comment" public hearing on the above application. Hellam Township is now providing you with a concise statement of our objections to the issuance of the plan approval and/or operating permit for the above application.

The above plan application is for the installation of grain elevator operation, and indicates that a subsequent plan will be filed for the approval of the soybean oil extraction facility. Hellam Township strongly objects to consideration of this proposal by separate "phases". Hellam Township believes that the applicant is attempting to circumvent DEP (and possibly EPA) regulations and limitations by the bifurcation of the application into Phases. In support of this we offer the following information:

1. Land development approval of this project was done as one application, with no separation of phases for the grain elevation and soybean oil extraction facility.

2. A variance has already been obtained from the Conoy Township Zoning Hearing Board for the grain elevator to exceed the height limitations of that township's zoning ordinance, indicating a larger than usual grain elevator to service the anticipated soybean volume for the hexane in the soybean oil extraction process.

3. Dust from the grain elevator operation, added to the hexane VOC emissions represent a negative health impact on the human respiratory tract and the additive effects must be considered as a whole.

4. All previous testimony and presentations by Perdue to various governmental entities, including the Lancaster County Emergency Preparedness Committee (LEPC) treated the application as one, with no proposed phasing.

5. Notice was published in the October 25, 2012 issue of the PA Bulletin (Vol. 42, No. 43) that Perdue has applied to the PA DEP Bureau of Environmental Cleanup and Brownfields, Division of Storage Tanks, for a permit for 2 above ground storage tanks (ASTs) storing 40,000 gallons of hexane (SSIP Application No. 12021). These tanks will be used in the soybean extraction process, not the grain elevator portion of the facility.

6. Perdue should be required to apply New Source Review (NSR) Standards found in 25 Pa. Code Chapter 127 Subchapter E (s.127.201-127.218) and Prevention of Significant Deterioration (PSD) regulations found in 25 Pa. Code Chapter 127 Subchapter D (s.127.81-s.127.83). The combined emissions from the entire project would be subject to NSR and PSD. Accordingly Phasing makes no sense form a public health standpoint.

For these reasons, Hellam Township strongly opposes PA DEP permitting Perdue to "phase" this aspect of their application when they have not done so or indicated an intent or need to do so in any other forum. Hellam Township is concerned that this will allow Perdue to circumvent a full air quality review because it is our understanding that the regulations that would be triggered by a review of the project as a whole are significantly more stringent that those applied to a phased project.

Sincerely,

Corina Mann

Corina Mann
Manager, Hellam Township
Direct dial: 717-434-1303

October 8, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

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NOV 13 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

If there is truly nothing for the citizens of Lancaster County to be concerned of about the entire process, from applications for, to the completion of, and operation of this project, then the fact remains that any questions should be welcomed.

This Perdue project is being proposed for development on land along the Susquehanna River, in Conoy Township, Lancaster County, PA and as a resident of Lancaster County, I am very concerned and I request that the DEP, which is a governmental department of the citizens of U.S. that was developed for the protection of the environment and the life it supports, whether human, animal or plant to consider the following:

- **Conduct an "open microphone comment" public hearing concerning the application by Perdue.** This format will allow everyone to hear all of the public comments at the same time during the hearing.

- **Demonstrate a true representation of the environment and the life it supports by holding an "open microphone" question and comment forum for the public.**

Thank you for your service, Karen Miranda

Karen Miranda
645 W Main St.
Mount Joy, Pa. 17552
(717) 653-0758

November 8, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

As a resident of Lancaster County, I am concerned about the proposed Perdue facility to be located along the Susquehanna River in Conoy Township (see above reference.) Given the magnitude of the operation and concerns about the safety and health of area residents, I request that DEP:

- **Conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator.** This will enable all of the attendees at the hearing to hear all of the public comments at the same time.

- **Consider the comment(s) below in support of my request for a public hearing and for revision to the proposed Plan Approval.**

In addition to expressing my written comments in this letter, I would like to see the public have the opportunity to address in an "open microphone" public comment forum the issues and concerns relating to this proposed soybean facility

Thank you.

Sincerely yours,

Patricia Eiserer

Patricia Eiserer
78 Sun Lane , Millersville, Pa 17551
(717)-872-4230

List of suggested comments/questions for bullet points in letter:

1. **Why has DEP permitted Perdue to break up their application for plan approval into two phases or stand-alone projects, when in fact the entire plan should be considered as a whole for a more stringent air quality review by DEP?** Breaking up the plan into two phases appears to be nothing more than an attempt by Perdue to circumvent a full air quality permit review. This is in violation of US EPA circumvention regulations. DEP should refuse to issue any permits to Perdue on a Phase 1 and Phase 2 basis in light of this circumvention.

2. **Why has DEP not required Perdue to apply the NSR and PSD Clean Air Act standards to their review of the project as a whole?** The NSR and PSD regulations that would be triggered by a review of the whole project are significantly more stringent than those applied to a phased project. The NSR and PSD regulations will also require air modeling studies and offer much greater protection of human health and the environment.

3. **Why has DEP not required Perdue to show that the Grain Elevator will be constructed and operated so as not to emit any particulates, which are harmful to human health?** Small children, older people, people with respiratory diseases and those with compromised immune systems are especially vulnerable. In Conoy Township we already receive sizable amounts of particulates downwind from other industrial sources, including the Brunner Island power plant and the LCSWMA incinerator. The cumulative effect of these emissions plus the particulate emissions from the proposed Perdue facility gives us grave concern, especially since we are already in an EPA-designated non-attainment area for PM 2.5 micron lung-damaging particulate emissions.

4. **What steps is DEP taking to ensure that any construction on the LCSWMA site should take into consideration the known sinkholes on that site and in the vicinity to prevent the possibility of collapse of any equipment, damage to hexane storage tanks and the potential for major deadly explosions?** Such an explosion could impact the safety, air quality and welfare of our Township residents directly across the river and downwind from this facility.

November 8, 2012

Thomas J. Hanlon, Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

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NOV 13 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Re: Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

As a citizen of Hellam Township and living down river of the proposed project referenced above I would like to see an open public hearing with citizen comment addressing the total environmental impact of the Purdue plant.

My questions are simple ones that I think Purdue should answer to the full satisfaction of the citizens that could be affected by the plans emissions. The plant should also be subject the most stringent regulations required by your department.

Why is this project being presented in two phases? It is my understanding that by allowing Purdue to do so the company would have a smaller environmental hurdle to clear.

It is also my understanding that the Purdue proposal has not been subject to the "New Source Review" scrutiny under the Clean Air Act. Why?

With all the scientific tools at our disposal and all the evidence of air pollution issues impacting our environment in a negative fashion, we should demand that all potential problems this project could present by thoroughly vetted.

Sncerely,

Jeff LIvingston
6104 Lincoln Highway
Wrightsville, PA 17368

Ph: (717) 252-3618

November 9, 2012

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NOV 13 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster County, PA

Dear Mr. Hanlon,

The proposed facility referenced above is to be located on land along the Susquehanna River, in Conoy Township, Lancaster County, PA. As residents of Conoy Township we request that DEP:

- **Conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator.** This will enable all of the attendees at the hearing to hear all of the public comments at the same time.

- **Consider the comment(s) below in support of my request for a public hearing and for revision to the proposed Plan Approval. These are questions requiring answers in our democracy.**

1. **Why has DEP permitted Perdue to break up their application for plan approval into two phases or stand-alone projects, when in fact the entire plan should be considered as a whole for a more stringent air quality review by DEP?** Breaking up the plan into two phases appears to be nothing more than an attempt by Perdue to circumvent a full air quality permit review. This is in violation of US EPA circumvention regulations. DEP should refuse to issue any permits to Perdue on a Phase 1 and Phase 2 basis in light of this circumvention.

2. **Why has DEP not required Perdue to apply the NSR and PSD Clean Air Act standards to their review of the project as a whole?** The NSR and PSD regulations that would be triggered by a review of the whole project are significantly more stringent than those applied to a phased project. The NSR and PSD regulations will also require air modeling studies and offer much greater protection of human health and the environment.

3. **Why has DEP not required Perdue to show that the Grain Elevator will be constructed and operated so as not to emit any particulates, which are**

harmful to human health? Small children, older people, people with respiratory diseases and those with compromised immune systems are especially vulnerable. In Conoy Township we already receive sizable amounts of particulates downwind from other industrial sources, including the Brunner Island power plant and the LCSWMA incinerator. The cumulative effect of these emissions plus the particulate emissions from the proposed Perdue facility gives us grave concern, especially since we are already in an EPA-designated non-attainment area for PM 2.5 micron lung-damaging particulate emissions.

4. **What steps is DEP taking to ensure that any construction on the LCSWMA site should take into consideration the known sinkholes on that site and in the vicinity to prevent the possibility of collapse of any equipment, damage to hexane storage tanks and the potential for major deadly explosions?** Such an explosion could impact the safety, air quality and welfare of our Township residents and those directly across the river and downwind from this facility.

As longtime residents of Bainbridge, Conoy Township, we are acutely concerned for our health and safety. Living near another potentially polluting industrial facility is unsettling. Even more so is the threat of a devastating explosion.

We ask that there be no shortcuts allowed in this permit application, and we want our voices heard – it is our right as citizens.

Thank you.

Sincerely yours,

Irwin Richman

M Susan Richman

Irwin Richman, Ph.D.
M. Susan Richman, Ph.D.
866 Stackstown Road
Bainbridge, PA 17502
(717)426-1860

November 11, 2012

RECEIVED
NOV 13 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

The proposed facility referenced above is to be located on land along the Susquehanna River, in Conoy Township, Lancaster County, PA. As a resident of Lancaster County I request that DEP conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator, thereby enabling all of the attendees at the hearing to hear all of the public comments at the same time. Certainly with a project of this scope, and given the concerns that have been expressed about air quality, citizens deserve to have their concerns heard by the permitting agency.

I would also like to have the issue addressed as to why DEP has permitted Perdue to break up their application for plan approval into two phases or stand-alone projects, when in fact the entire plan should be considered as a whole for a more stringent air quality review by DEP. Breaking up the plan into two phases appears to be nothing more than an attempt by Perdue to circumvent a full air quality permit review. This is in violation of US EPA circumvention regulations. DEP should refuse to issue any permits to Perdue on a Phase 1 and Phase 2 basis in light of this circumvention.

The fact that Perdue refuses to consider adopting any of the technology which could significantly reduce the emission of hexane is particularly disturbing to me, particularly when the technology is readily available. To allow this sort of "bottom line" decision-making in regards to Pennsylvania's already compromised air quality would seem to be in direct contradiction of DEP's mission.

Thank you.

Sincerely yours,

Barbara May

Barbara May
100 Red Fox Road
Millersville, PA 17551
717-872-9221

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NOV 1 3 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

November 11, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

The proposed facility referenced above is to be located on land along the Susquehanna River, in Conoy Township, Lancaster County, PA. As a resident of Lancaster County] I request that DEP conduct an "open microphone comment" public hearing concerning the application referenced above for the installation and operation of a grain elevator. This will enable all of the attendees at the hearing to hear all of the public comments at the same time.

Additionally, why is DEP permitting Perdue's projet to be treated as two stand alone phases when the regulations would be much more stringent when treated as a whole? You are permitting Perdue to accomplish by indirection, what you would not permit them to do directly, reducing compliance requirements in the process. Are you excusing NSR and PAD air modeling sudies?

You are permitting this project in an already EPA designated nonattainment area. As a resident of Manor Township which is adjacent to Conoy Township, Lancaster County, Pennsylvania and as a Township Supervisor, in Manor Township, my concerns are grave especially in view of the fact that I am suffering from COPD and already can easily distinguish bad air days where I have to curtail my activities

The public needs to have the opportunity to address in an "open microphone" public comment forum the issues and concerns relating to this proposed soybean facility. What's the harm in that and what is the rush all about?

Thank you.

Sincerely yours,

John S. May
100 Red Fox Road
Millersville, PA 17551
(717) 872-9221

August Mack
ENVIRONMENTAL

941 Wheatland Avenue, Suite 202
Lancaster, PA 17603
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DEP-SOUTHCENTRAL REGION

VIA HAND DELIVERY

November 12, 2012

Mr. Thomas J. Hanlon, PE
Environmental Engineering Manager
Air Quality Program
Pennsylvania Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, Pennsylvania 17110-8200

Re: Comments on Plan Approval Application, Proposed Plan Approval and Request for Public Hearing
Phase 1 (Soybean Processing Facility) - #36-03189A
Perdue Grain & Oilseed LLC
1897 River Road
Marietta, Pennsylvania
Conoy Township, Lancaster County

Dear Mr. Hanlon:

At the request of our client, A/R Nissley, Inc. (Nissley Vineyards) we have reviewed the Plan Approval Application submitted by Perdue Grain & Oilseed LLC (hereinafter referred to as Perdue) for a soybean processing facility (#36-03189A) submitted to the Pennsylvania Department of Environmental Protection (PADEP) on June 27, 2012 as well as the proposed Plan Approval No. 36-03189A dated October 3, 2012 and the technical memorandum prepared by PADEP dated September 25, 2012. As a result of this review, we are providing the following comments/concerns to the PADEP for their consideration:

General Comments

1. **Public Hearing.** Nissley Vineyards requests a public "microphone" hearing on this application, so that all concerned residents can present their comments to PADEP and all other residents and may hear all comments at the same time.

2. **Circumvention.** Perdue has submitted two separate Plan Approval Applications for their proposed soybean processing facility, identified in

Attachment C, Project Description of application #36-03189A as a single project consisting of two (2) distinct operations: Phase I (soybean grain elevator) and Phase II (soybean extraction operation). The Phase II Plan Approval Application for the soybean extraction operation (#36-05158A) was submitted to PADEP under separate cover on August 13, 2012. Perdue's alleged reasoning for submitting the applications in phases is to enable them to construct and operate the grain elevator (Phase I) for the Fall 2013 soybean harvest. Contrary to Perdue's reasoning, since Perdue identifies this as a single project, which will be subject to the new source review (NSR) requirements of Title 25 of the Pennsylvania Code Chapter 127, Subchapter E (25 Pa. Code §127.201 to §127.218), the applications should be reviewed and considered as one application for the entire facility. If these applications are not considered as one, then the NSR requirements will not be adequately applied to the Phase I (grain elevator) operations. This would result in a direct violation of PADEP's "circumvention" regulation, 25 Pa. Code § 127.216, which states:

> *Regardless of the exemptions provided in this subchapter, an owner or other person may not circumvent this subchapter by causing or allowing a pattern of ownership or development, including the phasing, staging, delaying or engaging in incremental construction, over a geographic area of a facility which, except for the pattern of ownership or development, would otherwise require a permit or submission of a plan approval application.*

As Perdue's plans for the facility include both Phases and the facility will be subject to NSR, then all of the NSR requirements must be applied to both Phase I and Phase II. This includes purchase of emission credit offsets, the use of the lowest achievable emission rate (LAER) and an economic and social evaluation of the use of an alternate site for this facility. On page 6 of PADEP's technical memorandum under the heading of Applicable Requirements, PADEP discusses the facility as an overall project (Phase 1 &2) for the purpose of the applicability of the requirements of Title 40 Code of Federal Regulations (CFR) 60, Subpart DD. Although PADEP specifies in its technical memorandum that LAER and offset requirements will apply to Phase 1, the alternative site analysis is not discussed, nor is it a part of the Phase I application. This analysis cannot be performed after the fact and is thus a circumvention of the requirement as any alternative site analysis conducted after the facility is constructed would be biased towards the projects current location. Since all of the NSR requirements have not been met, he Phase I application should be denied as an impermissible circumvention.

3. **Temperature inversions.** Nissley Vineyards has contracted with Professor Richard D. Clark, Ph.D., Chair, Department of Earth Sciences, Millersville University to conduct a study of temperature inversions along the Susquehanna

River centered on the location of the proposed Perdue facility. A copy of this study is provided in Attachment A. The results of this study indicate that temperature inversions occurred in this location on approximately 86% or 313 of the days in 2011, with a breakdown of the duration of the inversions as follows:

- No inversions: 52 days
- Short inversions (less than 4 hours): 293 inversions
- Medium length inversions (4 to 8 hours): 130 inversions.
- Long inversions (9 hours or more): 96 inversions.

Note, the number of inversions exceeds 313 as more than one inversion and/or type of inversion occurred on multiple days. From the perspective of temperature, 2011 was an "average" year, so the number of inversions is what we would expect in an "average" temperature year. More inversions would be anticipated in a warmer year. These temperature inversions prevent air pollutants from dispersing and the study indicates that "areas immediately downwind of a pollution source can be significantly affected by deleterious air quality for long durations". There are concerns with air pollution in the area of the proposed Perdue facility including:

- Nonattainment with the 2008 8-hour Ozone Standard of 0.075 parts per million (ppm)
- Nonattainment with the 2006 $PM_{2.5}$ 24-hour Standard of 35 micrograms per cubic meter of air ($\mu g/m^3$) and $PM_{2.5}$ Annual Standard of 15 $\mu g/m^3$.

Due to the unique air characteristics in this area of the Susquehanna River as well as the fact that Perdue claims that the overall project will emit 246 tons of volatile organic compounds (just four (4) tons below) the Prevention of Significant Deterioration (PSD) threshold of 250 tons specified in Title 40 Code of Federal Regulations (CFR) Part 52, PADEP should request the following from Perdue:

- Information on how the source will not prevent or adversely affect the attainment or maintenance of ambient air quality standards in accordance with Title 25 of the Pennsylvania Code §127.12(a)(6).
- A plan of action for the reduction of emissions during each forecast level specified in 25 Pa. Code §137.3(1) thereby preventing the occurrence of an emergency due to the effects of the pollutants on the health of persons in accordance with 25 Pa. Code §127.12(a)(7).
- A plan for dealing with air pollution emergencies in accordance with 25 Pa. Code §127.12(a)(9).

The permit application should be denied since Perdue has not addressed and cannot adequately satisfy this important concern.

Specific Comments

1. Page 1, Application for Plan Approval to Construct, Modify or Reactivate an Air Contaminant Source and/or Install an Air Cleaning Device (hereinafter referred to as the Process Form), in Section A the type of review required for the facility

has been selected as requiring approval under NSPS or NESHAPs or both but should have been selected as requiring approval under NSPS, NESHAPs, MACT, NSR and PSD as Perdue states in Attachment C, Project Description that the facility is a single project consisting of two (2) distinct operations: Phase I (soybean grain elevator) and Phase II (soybean extraction operation) and in Attachment H BAT, Evaluation that the overall project will be subject to NSR requirements.

2. **Grain Receiving & Processing:** Page 4, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information
   a. The flow diagram in Attachment F does not include all of the requested information including:
      i. Gaseous, liquid and solid flow rates
      ii. The amount of raw material charged to the process in tons/hour at rated capacity
      iii. The specific locations of where contaminants are controlled are not shown on the diagram, specifically the location of collection hoods or other pickup points
      iv. A description of collection hoods design, airflow and capture efficiency for emissions vented through Baghouse C101 and Filters C102 is not provided.
   b. The applicant indicates that the pressure drop on the baghouse will be read weekly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the baghouse should be continuously monitored. This requirement for continuous monitoring should be incorporated into Section D, permit condition #004 on page 18 of the proposed Plan Approval.
   c. The applicant does not identify and describe all fugitive emission points but indicates that "fugitive particulate matter emissions will be negligible" but no information on the capture efficiency of the collection hoods that duct emissions to the baghouse is provided to support this claim of negligible fugitive emissions.

   Perdue should be required to prove that fugitive emissions will be negligible or the permit should be denied.

3. **Wet Grain Storage Bins:** Page 6, Process Form, Section B - Processes Information, Item 4. Process Storage Vessels B. For Solids indicates a capacity of 900 tons but does not clarify that this is 900 tons for each storage bin as on Page 5, Item 1. Source Information specifies the capacity as "30,000 bushels (each)". Information available from the Ohio State University (www.online.ag.ohio-state.edu) indicates that a bushel of soybeans is assigned a weight of 60 pounds making the capacity of each bin 900 tons (each). The capacity (tons), turnover per year in tons, and turnover per day in tons should be corrected to indicate

that these numbers are for each bin or corrected to reflect the total for all four (4) bins of 3,600 tons, 28,800 tons per day, and 10,512,000 tons per year. Perdue should be required to correct this deficiency in its permit application.

4. **Wet Grain Storage Bins:** Page 7, Process Form, Section B – Processes Information, Item 6. Miscellaneous Information. The applicant indicates that weekly visual observation of the bin vent filters will be conducted to check for the presence of visible fugitive emissions. As the facility will operate 24 hours per day, 7 days per week the visual observation should be performed on a daily basis. This requirement for daily monitoring should be incorporated into a permit condition in Section D, page 20 of the proposed Plan Approval.

5. **Grain Dryer No. 1:** Page 8, Process Form, Section B – Processes Information, Item 1. Source Information specifies a 4,800 bushel capacity. The capacity of the storage bins and grain dryers does not appear to equate as it appears that much more grain will be received at the facility than will be processed in the grain dryers with no explanation of the discrepancy. Perdue should be required to clarify this deficiency in its permit application.

6. **Grain Dryer No. 1:** Page 8, Process Form, Section B – Processes Information, Item 2. Fuel specifies a BTU content for propane of 91,500 BTUs per gallon. The U.S. Environmental Protection Agency's Compilation of Air Pollutant Emission Factors (AP-42) specifies a BTU content for propane of 90,500 BTU/gallon. This comment also applies to Grain Dryer No. 2 on Page 11. Perdue should be required to clarify this deficiency in its permit application.

7. **Grain Storage Bins:** Page 14, Process Form, Section B – Processes Information, Item 1. Source Information specifies a 500,000 bushel capacity for each bin. The capacity of these storage bins does not appear to equate to the earlier capacities. In addition on Page 15, Process Form, Section B – Processes Information, Item 4. Process Storage Vessels B. For Solids indicates a capacity of 15,000 tons but does not clarify that this is 15,000 tons for each storage bin as on Page 14, Item 1. Source Information specifies the capacity as "500,000 bushels (each)". Information available from the Ohio State University (www.online.ag.ohio-state.edu) indicates that a bushel of soybeans is assigned a weight of 60 pounds making the capacity of each bin 15,000 tons (each). The capacity (tons), turnover per year in tons, and turnover per day in tons should be corrected to indicate that these numbers are for each bin or corrected to reflect the total for all four (4) bins of 60,000 tons, 240,000 tons per day, and 87,600,000 tons per year.

8. **Grain Storage Bins:** Page 16, Process Form, Section B – Processes Information, Item 6. Miscellaneous Information the applicant indicates that weekly visual observation of the bin tank vents will be conducted to check for the presence of visible emissions. As the facility will operate 24 hours per day, 7 days per week the visual observation should be performed on a daily basis. This requirement for daily monitoring should be incorporated into a permit condition in Section D, page 23 of the proposed Plan Approval.

9. **Grain Loadout:** Page 17, Process Form, Section B – Processes Information, Item 6. Miscellaneous Information the applicant indicates that fugitive emissions will occur during grain loadout. As with grain receiving and processing, grain loadout should be located within a building and ducted to a baghouse to control particulate matter emissions. Perdue should be required to correct this deficiency in its permit application with the required modifications incorporated in the proposed Plan Approval.

10. **Facility Roadways:** Page 22, Process Form, Section B – Processes Information, Item 6. Miscellaneous Information the applicant indicates that daily visual observations of facility roadways will be performed. As the facility will operate 24 hours per day, 7 days per week the visual observation should be performed on an hourly basis. This requirement for daily monitoring should be incorporated into a permit condition in Section D, page 25 of the proposed Plan Approval along with specific requirements for including method and frequency for when dust control measures will be implemented on facility roadways.

11. **Section C – Air Cleaning Device:** Page 23 provides maximum emission rates for PM, PM10, and $PM_{2.5}$ and indicates the Calculation/Estimation Method is provided in Attachment G.
    a. The calculations in Attachment G for 101 - Grain Receiving and Processing are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum grain handling rate of the source which is specified as 600 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 2 of the application but indicates that only 630,000 tons per year will be processed for a processing time of only 1,050 hours per year. The emission calculations should be revised to indicate emissions based on processing of 600 tons per hour for 8,760 hours per year which equals 5,256,000 tons annually. A limit of 630,000 tons of soybean receipt has been included in the proposed Plan Approval although processing at the rated capacity will result in the grain receiving occurring over just 44 days. Perdue should be required to explain how their operations will be conducted based on the rated capacity of the equipment and the soybean limit.

b. The calculations in Attachment G for 102- Wet Grain Storage Bins are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 900 tons capacity and 2,520,000 tons per year turnover per bin (on Page 6 of the application) or 2,800 tons per hour per bin or 11,200 tons per hour (for the four bins). The emission calculations should be revised to indicate emissions based on processing of 11,200 tons per hour for 8,760 hours per year which equals 98,112,000 tons annually. No capacity for the wet grain storage bins is included in the proposed Plan Approval not is any throughput or operating hour limitation. As the rated capacity of this equipment differs from grain receiving, separate limitations need to be established. In addition, documentation of the control efficiency (99%) of the wet grain storage bin filters is not provided. Perdue should be required to correct this deficiency in its permit application.

c. The calculations in Attachment G for emissions due to grain processing in 103 - Grain Dryer No. 1 and 104 - Grain Dryer No. 2 are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 144 tons per hour and operation for 8,760 hours per year as indicated on Pages 8 and 11 of the application but indicates that only 315,000 tons per year will be processed in each dryer for a processing time of only 2,187.5 hours per year per dryer. Note, the fuel combustion calculations for the dryers are based on fuel consumption and operation 8,760 hours per year. The emission calculations due to grain processing in the dryers should be revised to indicate emissions based on processing of 144 tons per hour for 8,760 hours per year per dryer. In addition, documentation of the PM control efficiency (90%) claimed due to the internal configuration of the dryer is not provided. AP-42 specifies a lower emission rate from column dryers which Perdue has used in their application. This lower emission factor takes into account the lower emissions from the type of dryer Perdue will be installing and an additional control efficiency is not applicable to the use of a column dryer. If the dryers' internal configuration is providing 90% PM control then approximately 684.24 lbs per day of particulate matter will be accumulating in each dryer which would create a combustible dust and explosion hazard. The dryers should be connected to an air pollution control device (i.e., baghouse, dust collector, etc.) for particulate matter control and to prevent the build-up of combustible dust. In addition, the emission calculations for the dryers should be revised.. Perdue should be required to correct this deficiency in its permit application. Although PADEP's technical memorandum reflects that only 50% of the air stream is controlled, and includes revised emission

calculations provided by Perdue, no documentation of the 90% controls of this 50% air stream has been provided.

d. The calculations in Attachment G for emissions due to propane combustion in 103 - Grain Dryer No. 1 and 104 - Grain Dryer No. 2 - are based on a fuel heating value of 91,500 BTU/gallon. The emission factor source cited, U.S. EPA AP-42, Section 1.5, Table 1.5-1, 07/2008 specifies a typical heating value of propane is 90,500 BTU/gallon. No information is provided for the use of the 91,500 BTU/gallon fuel heating value. In addition, no information is provided to substantiate the assumption that low NOx burners for propane combustion will provide a similar reduction in NOx emissions as low NOx burners for natural gas combustion. Documentation of the use of the 91,500 BTU/gallon fuel heating value and emission rates for low NOx burners for propane combustion should be provided or the emissions calculations should be revised to utilize at heating value of 90,500 BTU/gallon and the actual emission factor for NOx for propane combustion of 13 lbs per 1000 gallons of fuel. Perdue should be required to correct this deficiency in its permit application.

e. The calculations in Attachment G for 105 - Grain Storage Bins are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 500,000 bushels (15,000 tons) capacity and 2,520,000 tons per year turnover per bin (on Pages 14 and 15 of the application) or 300 tons per hour per bin or 1,200 tons per hour (for the four bins). The emission calculations should be revised to indicate emissions based on processing of 1,200 tons per hour for 8,760 hours per year which equals 10,512,000 tons annually. Perdue should be required to correct this deficiency in its permit application. No capacity for the wet grain storage bins is included in the proposed Plan Approval not is any throughput or operating hour limitation. As the rated capacity of this equipment differs from grain receiving, separate limitations need to be established.

f. The calculations in Attachment G for 106 - Grain Loadout are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 120 tons per hour (the maximum and rated capacity) and operation for 8,760 hours per year as indicated on Page 17 of the application but indicates that only 72,000 tons per year will be processed for a processing time of only 600 hours per year. The emission calculations should be revised to indicate emissions based on processing of 120 tons per hour for 8,760 hours per year which equals 1,051,200 tons annually. Perdue should be required to correct this deficiency in its permit application. No capacity for the wet grain storage bins is included in the proposed Plan Approval not is any throughput or

operating hour limitation. As the rated capacity of this equipment differs from grain receiving, separate limitations need to be established.

12. **Section D - Additional Information:** Page 26 indicates that the project will not be subject to NSR, however Perdue states in Attachment C, Project Description that the facility is a single project consisting of two (2) distinct operations: Phase I (soybean grain elevator) and Phase II (soybean extraction operation) as well as in Attachment H, BAT Evaluation that the overall project will be subject to NSR requirements. The permit application does not include an appropriate "top-down" Best Available Control Technology (BACT) Analysis along with the use of lowest achievable emission rate (LAER) and an analysis of alternate sites to fulfill the NSR requirements. The permit should be denied for this reason.

13. **Section D - Additional Information:** Page 26 indicates the Best Available Technology (BAT) demonstration is provided in Attachment H.
    a. As Perdue states in Attachment C, Project Description that the facility is a single project consisting of two (2) distinct operations: Phase I (soybean grain elevator) and Phase II (soybean extraction operation) and in Attachment H, BAT Evaluation that the overall project will be subject to NSR requirements this BAT demonstration should be revised to reflect a "top-down" Best Available Control Technology (BACT) analysis. This would include a search of the reasonably available control technology (RACT)/BACT/LAER clearing house for available control technologies, a ranking of the technologies based on control efficiencies, and an economic analysis including the cost per ton of pollutant removed. These elements were not included. Perdue should be required to correct this deficiency in its permit application.
    b. Perdue indicates that column dryers were selected as they have a lower PM emission rate. Perdue has used this lower PM emission rate as part of the emission calculations provided in Attachment G. However, Perdue has also claimed a PM control efficiency (90%) due to the internal configuration of the dryers in addition to using the lower emission rate. No documentation on the PM control efficiency of the dryers is included with the application. The U.S. EPA's compilation of air pollutant emission factors specifies a lower emission rate from column dryers which takes into account the lower emissions from the type of dryer Perdue will be installing and an additional control efficiency is not applicable to the use of the dryer. During PADEP's review of the application, Perdue revised their emission estimates for the dryers to reflect that only 50% of the air stream was controlled but still provided no documentation of the 90% control efficiency. The dryers should be connected to an air pollution control device (i.e., baghouse, dust collector, etc.) for particulate matter

control and to prevent the build-up of combustible dust. Perdue should be required to correct this deficiency in its permit application.

14. **Section D - Additional Information:** Page 27 information on emissions increases and decreases of VOCs and NOx are not provided even though Perdue states in Attachment C, Project Description that the facility is a single project consisting of two (2) distinct operations: Phase I (soybean grain elevator) and Phase II (soybean extraction operation) as well as in Attachment H, BAT Evaluation that the overall project will be subject to NSR requirements. Emission reduction credit offsets are not identified, a LAER demonstration is not provided, and an analysis of alternate sites is not provided. In addition, Title 25 of the Pennsylvania Code Chapter (25 Pa. Code §) 127.203a(a) requires the owner or operate to calculate a net emission increase is accordance with 25 Pa. Code §127.203a(a)(ii), if the emission increase from a project equals or exceeds the applicable emissions rate that is "significant" as defined in 25 Pa. Code §121.1. Emissions from Phase 1 exceed the "significant" emissions rate for PM-10 and $PM_{2.5}$ with revised emission calculations (See Specific Comment 11). Perdue should be required to correct this deficiency in its permit application.

15. **Section F - Flue and Air Contaminant Emission**: Pages 29 to 34 information on the maximum emission rate of the following sources is not provided:
    a. **101 - Grain Receiving & Processing:** See Specific Comment 11.a
    b. **102 - Wet Grain Storage Bins**: See Specific Comment 11.b
    c. **103 - Grain Dryer No. 1 and 104 - Grain Dryer No. 2 - Grain Dryer No. 2**: See Specific Comment 11.c
    d. **105 - Grain Storage Bins:** See Specific Comment 11.d
    e. **106 - Grain Loadout:** See Specific Comment 11.e

16. **Section F - Flue and Air Contaminant Emission**: Pages 29 to 33 specific information has not been provided including:
    a. Does stack height meet Good Engineering Practice (GEP) (Page 29)
    b. Stack exhaust volume, temperature, and moisture information (Pages 30 to 33). Perdue should be required to correct this deficiency in its permit application.

17. **Addendum A - Source Applicable Requirements and Addendum 1 - Method of Compliance Worksheets** - It does not appear that all applicable requirements pertaining to each source have been included on Addendum A and Addendum 1 based on information provided by Perdue in Attachment D - Applicable Requirements. Applicable requirements that should be evaluated and included are:
    a. 40 Code of Federal Regulations (CFR) Part 60.8 and 60.303
    b. 25 Pa. Code §121 - General Provisions

c. 25 Pa. Code §122 - National Performance Standards for New Stationary Sources
d. 25 Pa. Code §127 - Construction, Modification, Reactivation, and Operation of Sources. Note, applicability of this regulation should be evaluated based on revised emission calculations (See Specific Comment 11) based on the maximum capacities of the sources to be permitted.
e. 25 Pa. Code §129.57 - Storage tanks less than or equal to 40,000 gallons capacity containing VOCs.

Perdue should be required to correct this deficiency in its permit application.

18. **Attachment B - Facility Site Map** - The facility site map provided with the application does not include information on four (4) additional wet grain storage bins that would be part of Source ID 102 and six (6) additional, 500,000 million bushel grain tanks that would be part of Source ID 105 and are specified as plans for future expansion on an engineering drawing titled Zoning Exhibit for Perdue Grain and Oilseed, LLC Soybean Processing Facility dated Feb. 29, 2012 that was presented at a public hearing before the Zoning Hearing Board of Conoy Township on March 22, 2012. Perdue should clarify their plans for future expansion with regard to their air permit requirements prior to PADEP issuing the Plan Approval for Phase I.

19. **Attachment C - Project Description and Attachment D Applicable Requirements:** Perdue indicates that the overall project will be subject to NSR but that the NSR requirements will be addressed in the Phase 2 application. If the overall project will be subject to NSR then NSR must be addressed in both the Phase 1 and Phase 2 Plan Approval Applications. The permit should be denied for this reason.

20. **Attachment E - Process Description:**
    a. The process description indicates that the soybeans will pass through two (2) enclosed scalper screens to remove foreign material such as sticks, stems, pods, dirt, and other debris. The totally enclosed scalper screens will not be emission sources themselves; however, miscellaneous dust pick up points with the processing system will be sent to the grain baghouse for control. If dust is generated from the scalper screens requiring miscellaneous dust pick up points that are sent to the grain baghouse for control then these scalper screens are an emission source and should be included as part of the emission calculations, on the appropriate application forms, and as an emission source in the proposed Plan Approval. In addition, the soybean screening process is identified as an air emission source by Perdue in Attachment I, County and Municipal Notifications. Perdue should be required to correct this deficiency in its permit application.

b. The process description indicates that as Source ID 102 the wet grain storage bin tanks can be filled relatively quickly, resulting in the displacement of a significant volume of air, the vents will be equipped with collapsible fabric filters to minimize fugitive emissions of dust. Source ID 105 grain storage bins should also be equipped with collapsible fabric filters on the bin vents as the annual precontrol emissions in tons per year specified for Source ID 105 in Attachment G are the same as the annual precontrol emissions in tons per year specified for Source ID 102. Perdue should be required to correct this deficiency in its permit application.

21. **Attachment J – General Information Form:**
    a. On page 3 of 7, Project Information Item 1. Perdue indicates "Yes" that they have informed the surrounding community and addressed any concerns prior to submitting the application to the PADEP Previous questions and concerns raised by Nissley Vineyards have not been addressed including questions submitted in writing on the following dates
        i. May 26, 2010
        ii. December 28, 2011
        iii. A handout distributed as Perdue's Open House on April 26, 2012
        iv. June 18, 2012.
    b. On page 3 of 7, Project Information Item 2. Perdue provides information on project funding but does not include the grant expiration date. The grant contract expires on November 30, 2016 and the project is required to be completed within the term of the contract.

The application submitted by Perdue is extremely deficient and should be denied as a result of the numerous inaccuracies, especially Perdue's failure to address the circumvention requirements of 25 Pa. Code § 127.216.

If you have any questions regarding this submittal, I can be reached at (717) 399-9587 ext. 27.

Sincerely,

Susan M. Burkett

Susan M. Burkett, ASP
Principal Engineer, eCAP® Services

Cc: Mr. Daniel Husted, PE, Chief, New Source Review Section, PADEP
Ms. Gerallyn Duke, New Source Review/PSD, U.S. EPA Region III

ATTACHMENT A

Temperature Inversion Report
Millersville University
Dated November 12, 2012

ATTACHMENT A

Temperature Inversion Report
Millersville University
Dated November 12, 2012

Millersville University
SEIZE THE OPPORTUNITY

P.O. Box 1002, Millersville, PA 17551-0302
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12 NOVEMBER 2012

Joel R. Burcat, Esquire
Saul Ewing LLP
Two North Second Street
Harrisburg, PA 17101

Dear Mr. Burcat,

You have requested that we evaluate the temperature inversions in Bainbridge for 2011. The analysis of 2011 Bainbridge, PA inversions is summarized in the following report. The following deliverables are submitted in accordance and compliance with our statement of work.

A. Data Acquisition and Conditioning for Analysis

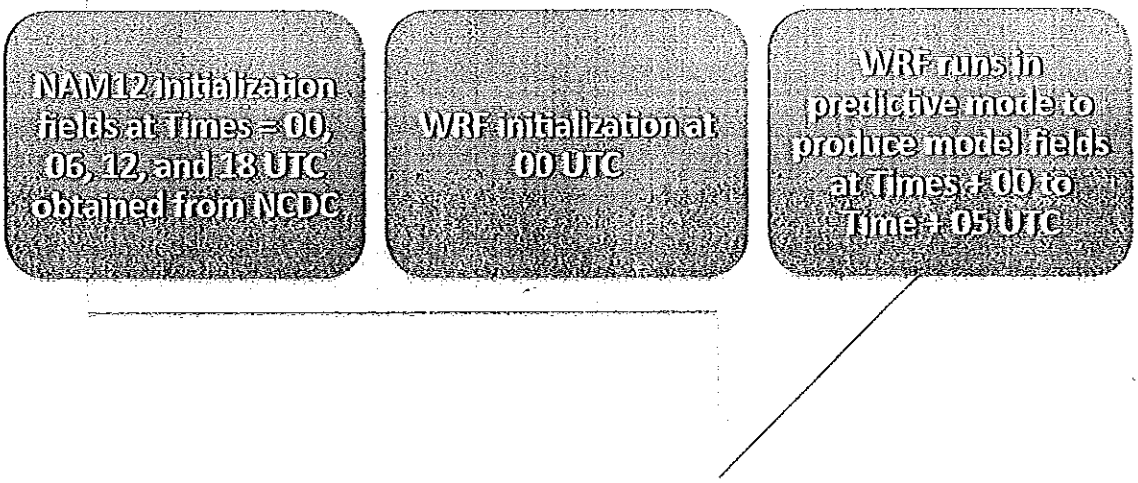
a. WRF model runs for 24 hours, 365 days in 2011 centered on Bainbridge, PA

i. North American Model – 12 km resolution (NAM12) model fields were obtained from the National Climatic Data Center (NCDC) for 00, 06, 12, and 18 UTC for each day in 2011, and used to initialize the Millersville Weather Research and Forecasting (WRF) numerical modeling system. Overall, 7.2 percent of the total annual hourly data are missing due to the unavailability of the NAM12 initialization fields from NCDC. Qualitative analysis allowed for a downward adjustment of 0.8 percent resulting in 6.4 percent of hourly data missing. Of the 8760 hours in 2011, we evaluated 8197 (93.4%) of total annual hours. The table below summarizes the missing data. (MS Excel spreadsheet, **"Missing_Bainbridge_Data_10-31-2012.xlsx,"** refer to these missing data. We do not feel that these missing data significantly compromise our analysis or our results.

TABLE 1. Missing hours of model output per month

Month	Missing hours of data	Percentage of Monthly Total
Jan	0	0.0
Feb	24	3.6
Mar	224	30.1
Apr	146	20.3
May	7	0.9
Jun	102	14.2
Jul	6	0.8
Aug	54	7.3
Sep	0	0.0
Oct	0	0.0
Nov	0	0.0
Dec	0	0.0

ii. Following model initialization, the WRF model was employed in a predictive mode to create output files for each hour from Initialization time through initialization time + 5 hours. The workflow is represented by the following schematic.



iii. The result was to create 3-dimensional numerical output over the WRF domain from which the vertical profiles of temperature T, dew point temperature T_d, potential temperature θ, height z, and wind components u, v, could be extracted for Bainbridge, PA.

iv. The raw data from the WRF model were employed to construct graphic files of the vertical profiles of the meteorological variables listed in "c."

B. Working Definition of an Inversion

An inversion is a layer of atmosphere where the temperature increases with height, that is, it is "inverted" from the normal decrease with height most often seen in the troposphere. However, stable layers can be much deeper than inversion layers. A stable layer can be defined in several ways. For instance, when the temperature decreases with height by an amount that is less than the saturation adiabat, the layer is said to be stable with respect to moist adiabatic ascent, which in turn is stable with respect to dry adiabatic ascent. Another method for defining stability is to use the bulk Richardson number (BRN), where:

BRN = buoyancy acceleration/square of the wind shear

Or

$$BRN = \{ (g/\theta)\, \Delta\theta/\Delta Z \}/ (\Delta U/\Delta Z)^2$$

where g = 9.81 ms^{-2}, θ is the potential temperature in Kelvin, Z is the height of the layer in meters and U is the wind in ms^{-1}. The Δ symbol represents the difference between the top of the stable layer and the surface; example $\Delta Z = Z_{top} - Z_{bottom}$ = thickness of the layer, $\Delta\theta$ represents the difference in potential temperature between the top and bottom, and $\Delta U/\Delta Z$ is the wind shear. The layer is considered stably stratified when the BRN > $BRN_{CRITICAL}$ = 0.25. One may recognize the numerator as the square of the Brunt-Vaisala Frequency, N^2. The BRN has the

advantage of considering instability, and by extension the generation of turbulence and mixing, in terms of both hydrostatic instability and mechanical instability, the latter due to shear. *In this analysis we use the formal definition of an inversion, a layer where temperature increases with height,* but we also provide additional information on the depth of the stable layer using the BRN.

Temperature inversions modeled at Bainbridge, PA ranged in duration from one hour to 19 hours. Short duration inversions have little consequence on air quality since they are often weak and easily disrupted by multiple atmospheric conditions. Medium duration (lasting 4-8 hours) and long duration (≥ 9 hours or extending from sunset to sunrise) can have a significant impact on air quality by trapping pollutants. Under these conditions, winds are usually calm or no more than a few meters per second. Consequently, area immediately downwind of a pollution source can be significantly affected by deleterious air quality for long durations – until mixing fumigates and replenishes the air. Low-lying areas such as valleys, where under clear sky conditions can be subject to strong and low-lived inversions, are particularly susceptible.

C. **Analysis of vertical profiles to determine the existence of inversions at Bainbridge, PA**

Our analysis took at two-pronged approach to determine the existence of an inversion for a particular vertical profile: i) a qualitative visual inspection of the profile image to determine the existence of the inversion and its depth; and ii) a quantitative analysis of the surface-based inversion based upon a computational analysis of the vertical temperature profile. In addition, the BRN was employed to determine the depth of the stable layer.

i) Qualitative determine of inversion frequency and depth based on visual inspection of each vertical profile was carried out for each of the 8197 hourly profiles. Each profile was visually inspected and a determination of existence (or not) of an inversion was made, along with an estimate of the height of the inversion. To pass the "inversion test," the inversion had to originate at the surface and the temperature had to increase with altitude. Upon meeting these criteria, the inversion was counted and an estimate of the depth of the inversion was recorded.

Table 2 shows a comparison of the two methods in determining monthly inversion frequency. The two methods differ by 5.4 percent. However, March and April had a significant number of missing vertical profiles, which resulted in the lower frequencies in those months.

Table 2: Comparison of evaluation methods

COMPARISON OF QUALITATIVE (VISUAL) AND QUANTITATIVE METHODS (COMPUTER PROGRAM) OF INVERSION DETERMINATION													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Quantitative Method	241	227	137	111	223	255	294	230	232	202	176	131	2459
Qualitative Method	239	220	82*	75*	211	240	290	228	225	207	179	131	2327

*Prior to conducting the quantitative approach, the data in successive hours before and after the missing data, which often included times from 00 – 05 UTC, were evaluated and where possible, were conservatively extrapolated based on best judgment. The resulting analysis led to the addition of 55 hours of inversions in March and 36 inversion-hours in April. If we eliminate March and April from the totals, the number of inversion-hours identified by the two different methods agrees within 1.8 percent.

ii) A quantitative numerical analysis of the Bainbridge data was conducted to determine the depth of the surface-based stable layer as well as the depth of the inversion; the former using the BRN method and the latter using the formal definition of an inversion.

We evaluated each hour of the 8197 total hours for the existence of an inversion. The following is a result of that analysis. This data can be found in "**Inversion_Summary_10-31-2012.xlsx**." Using BRN to identify stable layers, of which inversions are subsets, results in layers of greater depth than the depth of the inversions. This is discussed in greater detail later.

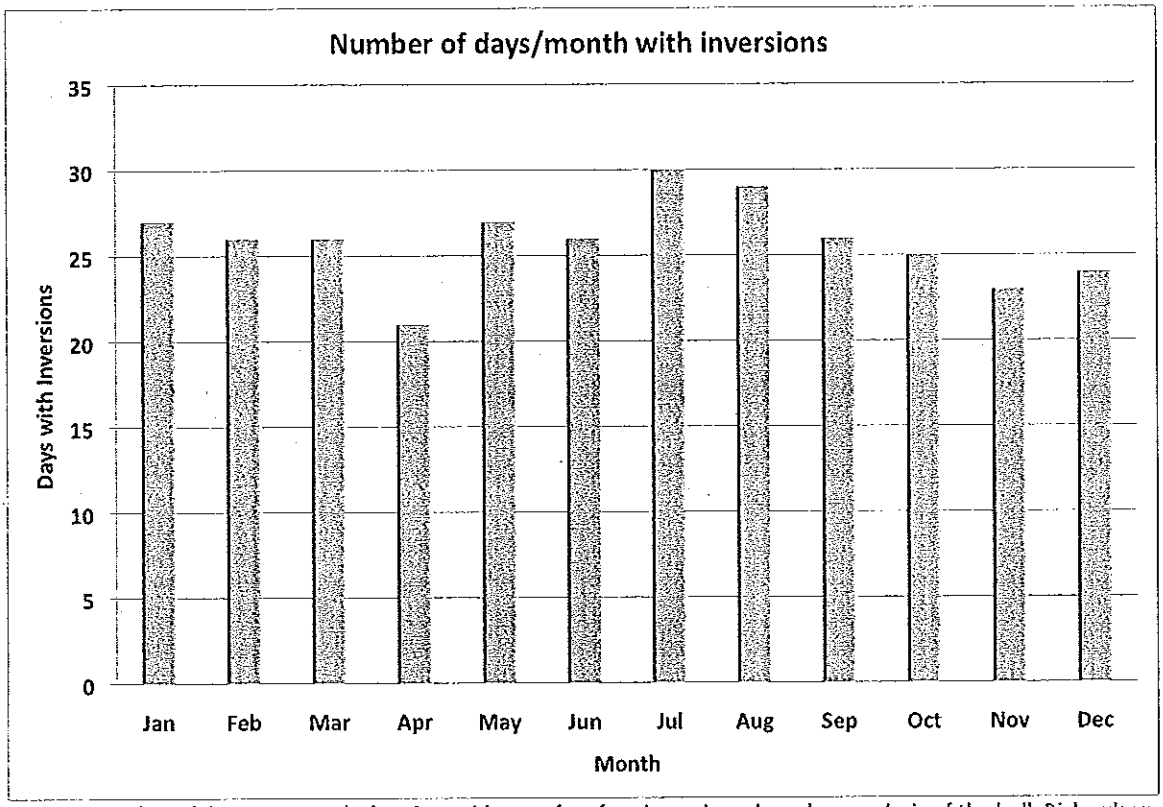


Figure 1: Number of days per month showing evidence of surface inversions; based on analysis of the bulk Richardson number.

Figure 1 shows that the number of days in each month with at least one hour of inversion is relatively uniform. However, with addition analysis, we found that the characteristic of these inversions varies significantly from month to month.

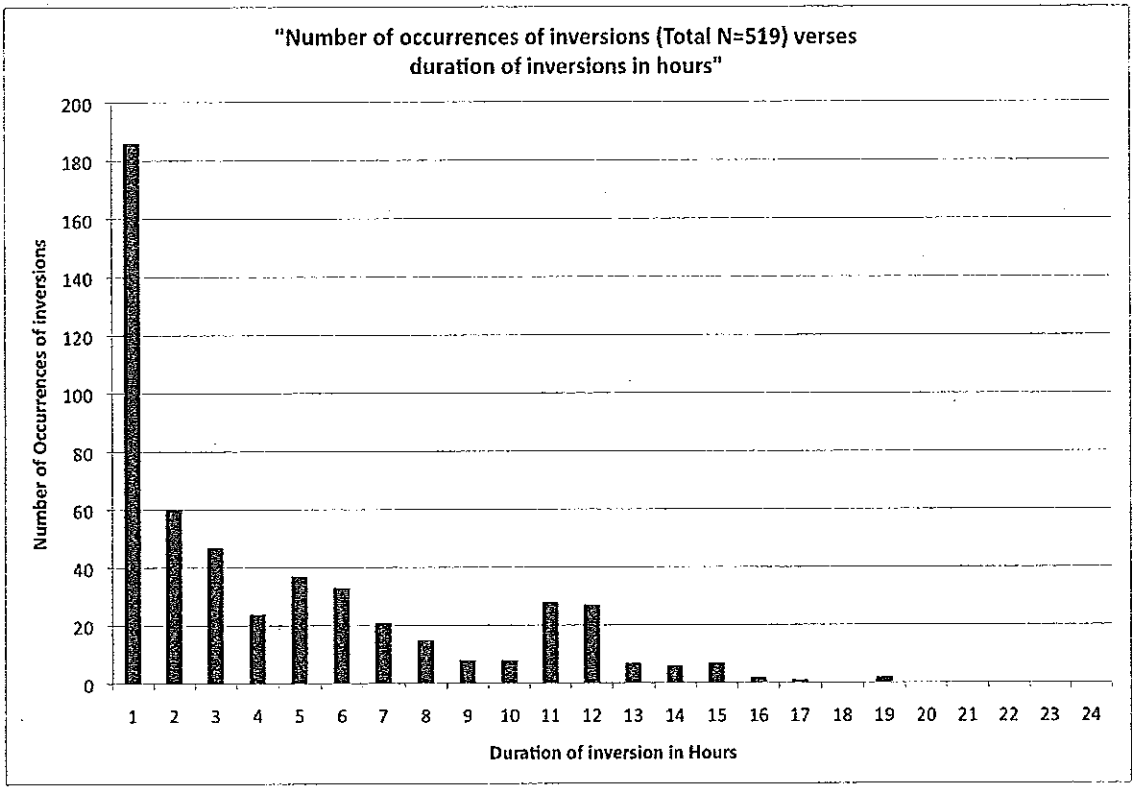


Figure 2a: The number of occurrences of inversions versus the duration of the inversion in hours. Based on a total of 519 inversions in Bainbridge, PA in 2011.

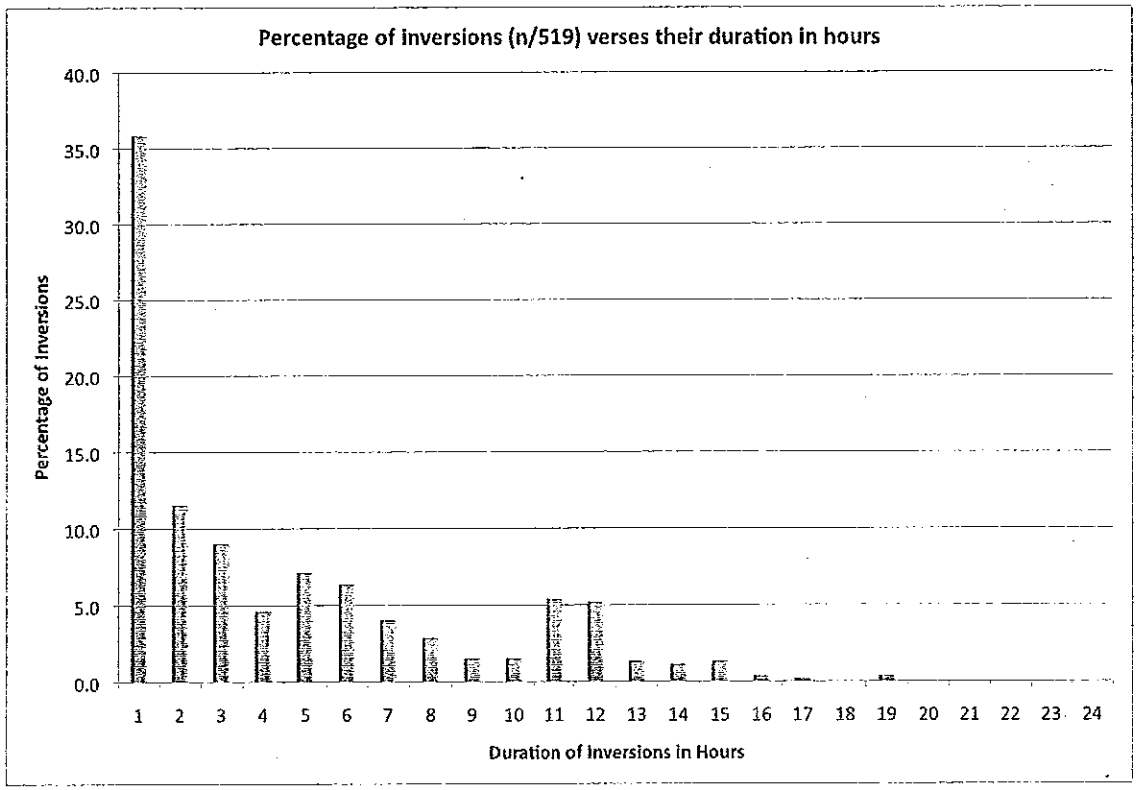


Figure 2b: Same as 2a except percentage of inversions versus their duration in hours. Based on a total of 519 inversion in Bainbridge, PA in 2011.

Figure 2a and 2b depict the number and percentage of occurrences of inversions as a function of their duration in hours. The inversions were classified according to the following categories:

- Short duration inversions lasting less than 4 hours (293 out of 519 or 56.5%)
- Medium duration inversions lasting between 4-8 hours (130 out of 519 or 25.0%)
- Long duration inversions lasting 9 hours or longer (96 out of 519 or 18.5%)

The distinction between medium duration and long duration at 8 to 9 hours is arbitrary. One could argue that an 8-hour inversion should be categorized as a long duration. The reason why the cut-off was made between 8-hour and 9-hour inversions is qualitatively justified by the distribution in Figures 2a and 2b where the modality changes. On the other hand, the distinction between short duration and medium duration between 3 and 4 hours is based more on the strength of the inversion and the characteristics of the stable layer.

In addition, the medium duration inversions were further subcategorized into those that occurred primarily in the evening hours (e.g. starting around 1900-2000 local time and referred to as medium-evening (ME)) and those that were primarily in the early morning hours after midnight local time (MM). Of these, 58/130 or 44.6% occurred were ME and 55.4% were MM.

Short duration (1-3 hours in length) and are either weak or quickly destroyed by vertical mixing or synoptic/meso-scale systems. They would contribute little to trapping pollutants and transporting them along stably stratified downwind streamlines.

The medium duration inversions have durations between 4-8 hours and can be bifurcated into those that occur primarily in the evening hours (44.6%) and those that occur in the early morning hours (55.4%). This distinction is probably related to the timely of clearing skies and radiational cooling. On a clear day, the inversion will develop rapidly around sunset. If it persists all night it will fall into the long duration category. If clouds encroach, or wind speed increases due to the approach of a synoptic or mesoscale weather system, the inversion will weaken or be destroyed. Conversely, on days with convective clouds, if often takes several hours after sunset for the clouds to dissipate, causing the inversion to form later.

Long duration inversions lasting 9 or more hours make up 18.5% of all inversions. These inversions are sustained long enough to allow appreciable downwind transport, and would exhibit stronger stability than short- or medium-duration counterparts. As such, they have the ability to trap pollutants in the near surface layer for longer periods. The medium-to-long duration inversions would typically occur on clear to partly cloudy nights with strong longwave radiative cooling and light to calm winds at the surface. These *radiation inversions* typically become established after sunset and persist until shortly after sunrise.

Figure 3 shows a summary of the medium and long duration inversions for each month in 2011. Note that no long duration inversions were recorded in the transition (and rainy) months of March and April. Inversions in general, and in particular long duration inversions, are more common in summer; peaking in July when the aloft winds are relatively light and large quasi-stationary air masses stall over the mid-Atlantic region.

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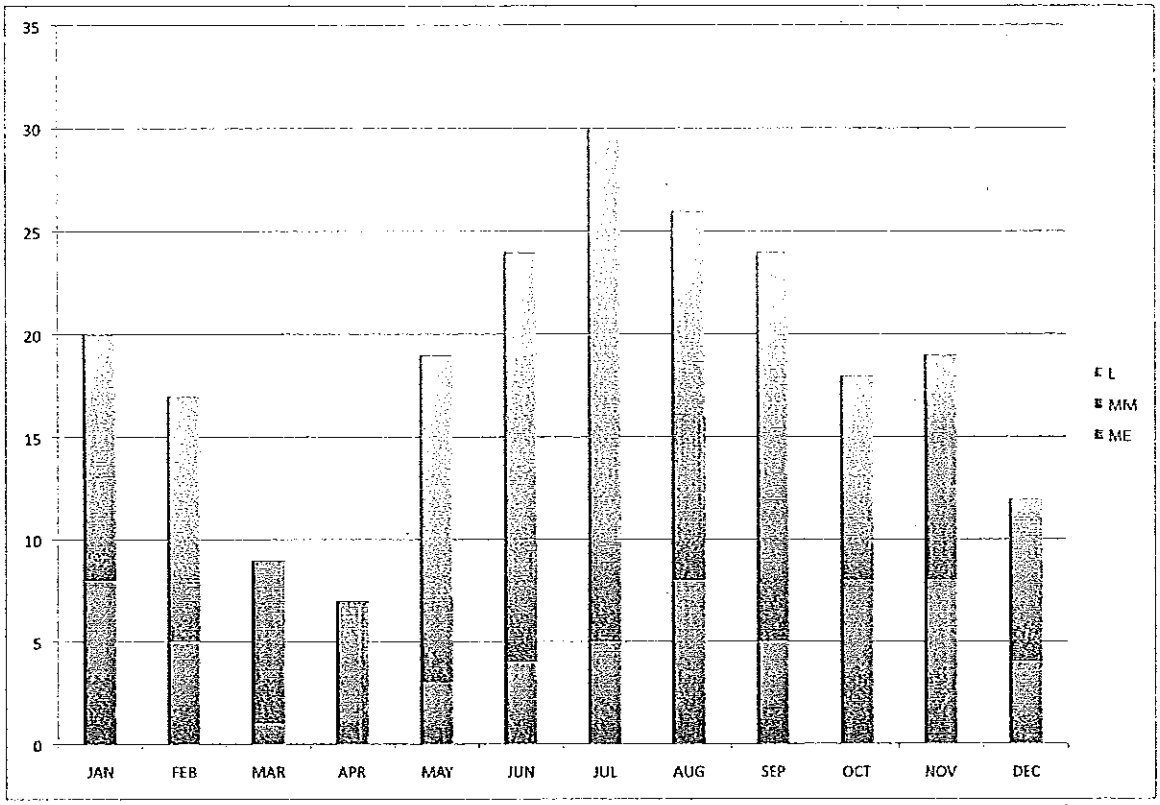

Figure 3: Distribution of Medium and Long duration inversions according to month in 2011. ME = inversions that occurred primarily in the evening; MM = early morning inversions starting after midnight; L = long duration inversions

The data were ranked according to the number of inversion-hours per month and the number of inversion-days per month. In 2011, Bainbridge had the greatest number of inversion-hours in mid-summer and mid-winter, followed by end of summer and end of winter. The least number of inversions is during the spring transition months of March and April, and in December. The spring transition in March and April is characterized by colder temperatures aloft and warmer surface temperatures leading to instability and mixing near the surface. Inversions cannot become established in a well-mixed surface layer. The consequence is the reduction in the number of surface inversions during the spring transition. Similarly, November and December are the winter transition seasons when the polar jet stream extends southward. Baroclinic waves (cold and warm fronts) migrate along the polar front and encroach on the mid-Atlantic region bringing higher surface wind speeds, and colder and progressive air masses, which tend to erode inversions or prohibit their formation. High pressure air masses in mid-summer and fall bring subsidence and clear sky conditions, which favor longwave radiative cooling and the development of extended radiation inversions. Table 3 and Table 4 show the months in 2011 ranked by the frequency of inversion-hours and inversion-days per month.

Table 3: Rank inversion-hour frequency by month

RANK ACCORDING TO INVERSION-HOURS PER MONTH		
RANK	Month	Total inv-hrs/month
1	JUL	294
2	JUN	255
3	JAN	241
4	SEP	232
5	AUG	230
6	FEB	227
7	MAY	223
8	OCT	202
9	NOV	176
10	MAR	137
11	DEC	131
12	APR	111

Table 4: Rank inversion-day frequency by month

RANK ACCORDING TO INVERSION-DAYS PER MONTH		
RANK	Month	Total inv-days/month
1	JUL	30
2	JUN	29
3	AUG	29
3	JAN	27
4	MAY	27
4	FEB	26
4	MAR	26
4	SEP	26
5	OCT	25
6	DEC	24
7	NOV	23
8	APR	21

The distribution of total inversions by month is given in Figure 4, and should be compared to Table 2, which is the same data ranked. Figure 4 illustrates that the majority of inversions-hours at Bainbridge are recorded during relatively stagnant weather conditions brought about by slowly moving, weakly progressive air masses moving across the mid-Atlantic region. This generally occurs in summer when the polar jet stream is situated over Canada, well north of the mid-Atlantic region, and the atmospheric condition often lacks strong gradients (i.e. barotropic atmosphere). Transition seasons, when the weather systems are more progressive and conditions are less favorable for the establishment of inversions, exhibit lower frequencies of inversions.

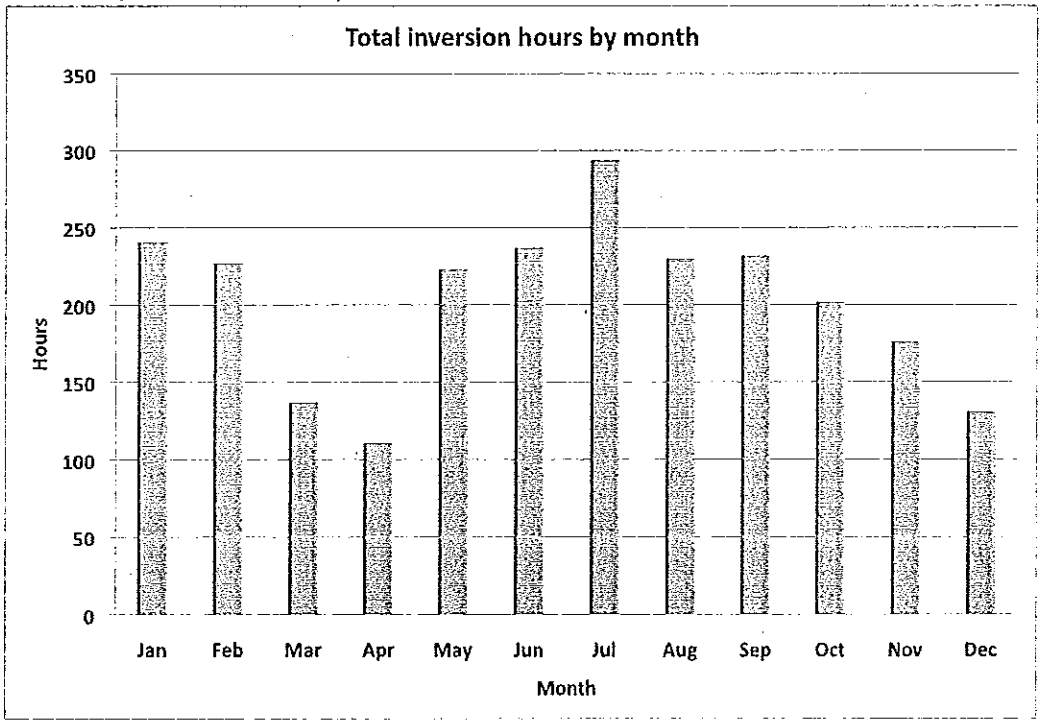

Figure 4: Total inversion-hours by month for 2011 in Bainbridge, PA

An interesting aspect of this analysis is the mean monthly depth of the surface-based stable layer as shown in Figure 5. While slow-moving high pressure air masses may bring clear to nearly clear sky conditions during summer and autumn, and in 2011 during mid-winter as well, the depth of the inversion is shallower in summer than in winter. Summertime in the mid-Atlantic region east of the Appalachian Mountains, under conditions of high pressure, may lead to a higher frequency of stable layers, but these conditions also lead to the development of the summertime nocturnal low-level jet (LLJ), which tends to occupy the layer immediately above the surface-based nocturnal inversion. In this region, the LLJ can exhibit wind speeds in excess of 18 m/s (36 kts) for sustained periods between sunset and sunrise. The consequence of the LLJ is to quell the growth of the nocturnal inversion and destroy the inversion early after sunrise. Thus, the same conditions that lead to strong radiative cooling at night and radiation inversions also leads to the development of LLJs that tend to suppress the vertical growth of the inversion and can cause mixing when Richardson numbers fall below critical due to excessive wind shear in the near surface layer. Conversely, even though the winter, spring, and autumn have fewer inversion-hours per month, the LLJs are weak or non-existent and the radiation inversions can growth to significant average depths.

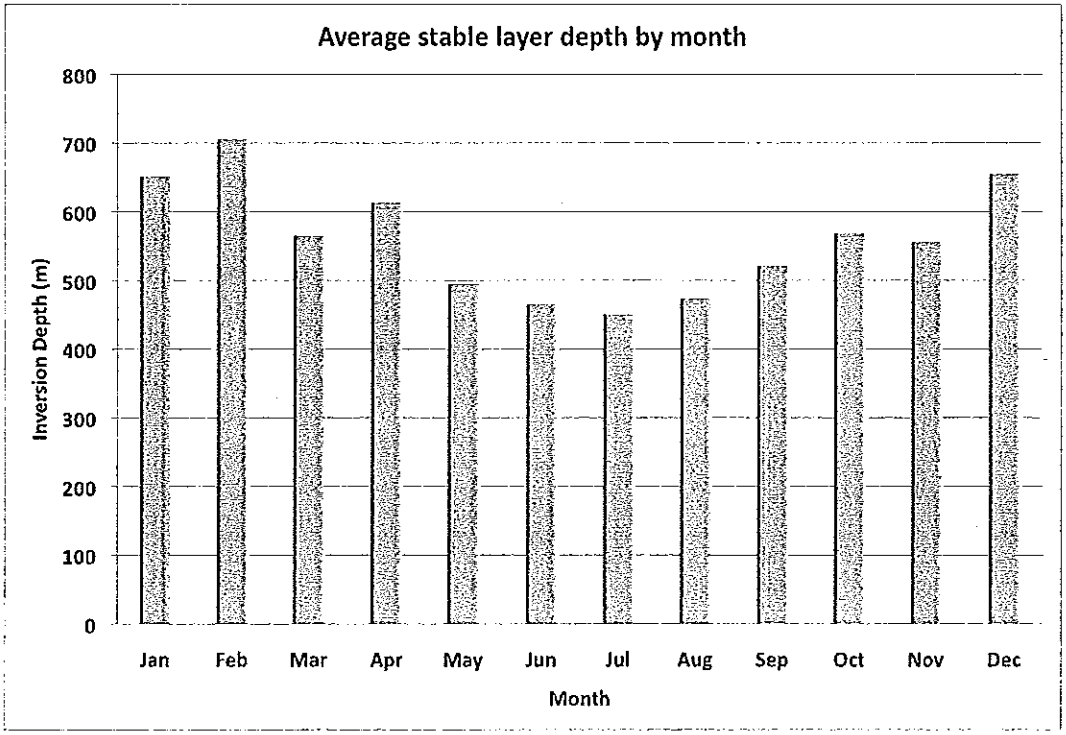

Figure 5: Average depth of the stable layer in meters by month as determined by the BRN method.

In addition to the determination of the depth of the stable layer, the depth of the inversion layer, using the strict definition of an inversion as one where the temperature increases with height, was also calculated. The criteria for this determination was similar to the BRN determination of the stable layer in that it first required the T(Z+1) > T(Z). Then the temperature of each layer was subject to the test the same test. The top of the inversion was recorded as the height where T no longer increased with height. The results, as might be expected, were lower inversion heights as shown in Figure 6.

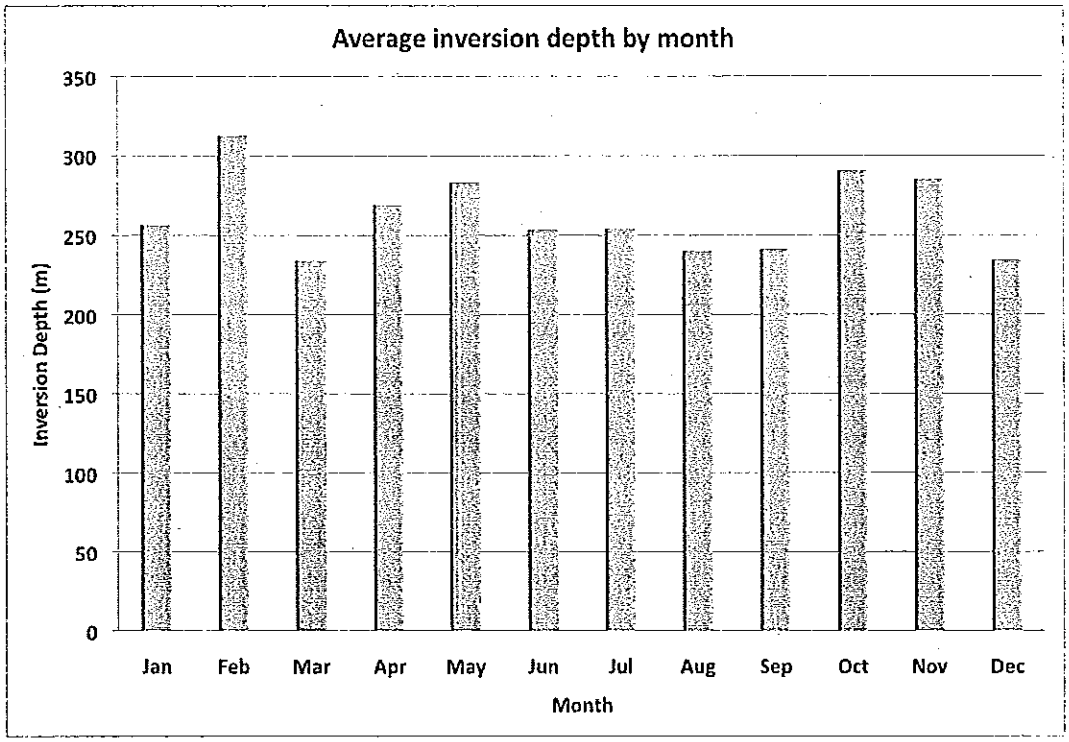

Figure 6: Average depth of inversions in meters

If Figures 3 and 6 are evaluated together, it is apparent that during the solar summer (May-September), and to a lesser degree in mid-winter (Jan-Feb), strong and long-duration inversions can develop that trap pollutants in layers generally less than 250 meters (~750 feet) above the surface.

Figure 7 illustrates the average inversion-hours per inversion day. For those days with inversions, mid-summer and mid-winter days exhibit the longest duration inversions. This can be understood by considering the meteorological conditions associated with mid-summer/winter months versus those of the transition seasons. Transition seasons are characterized by progressive systems, which on the average tend to disrupt inversions, whereas mid-summer/winter seasons are characterized by more stagnant and slowly moving air masses which tend to maintain atmospheric conditions longer. This is a caveat to this assessment. March and April are not only influence by progressive systems that shorten the inversion duration, but these months were noted for the largest amount of missing data, which would tend to diminish the average inversion hours even further. While it is true that March and April will undoubtedly have shorter-duration inversions owing to the meteorological conditions characteristic of transition seasons, they are partly affect but the bias in the larger frequency of missing data.

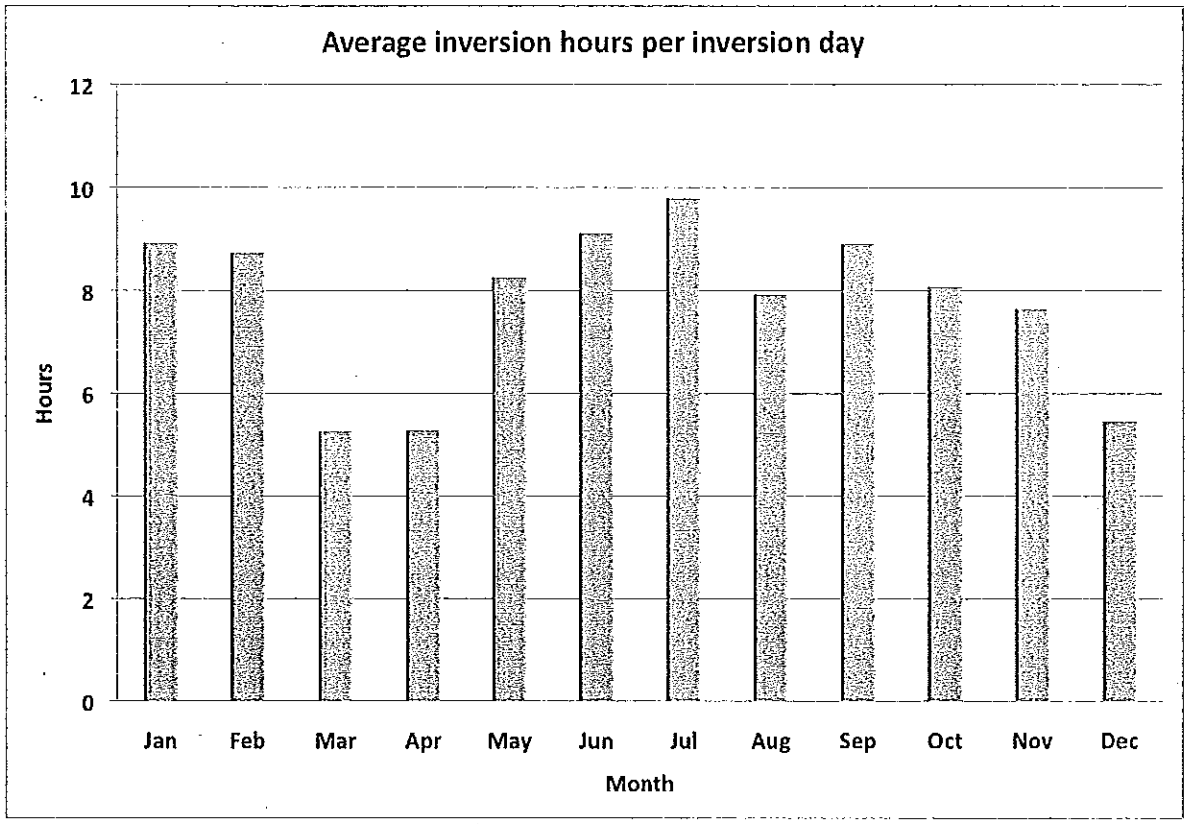

Figure 7: Average inversion-hours per inversion day for Bainbridge, PA 2011

D. Comparative analysis of Bainbridge 2011 to the 10-year and long-term historical (98 year) climatology.

Was 2011 a typical year for inversions in Bainbridge? The charge to this study was to qualitatively ascertain whether the conditions observed at Bainbridge in 2011 could be classified as 1) much below (MB), 2) below (B), 3) normal (N), 4) above (A), or 5) much above (MA), when compared to short and long-term climatology. Although the level of subjectively increases for an analysis of this type, it is possible to make qualitative judgments based on a comparison between Bainbridge, PA in 2011 using Millersville University 2011 as a surrogate, and 98 years of climate records archived at Millersville University. The data for this analysis can be found in **"Bainbridge_Climatological_Comparison_10-31-2012.xlsx."**

The convention used for the categorical ranking of temperature anomaly and precipitation is based on the accepted methods of the National Climatic Data Center and is given in Table 4.

Table 4: Categories of ranking of climatological data based on NCDC

Much Below (MB)	Below (B)	Normal (N)	Above (A)	Much Above (MA)
Less than -1.25 SD	Less than -0.5 SD	Between -0.5 SD and +0. 5 SD	Greater than +0.5 SD	Greater than +1.25 SD

Table 5: Comparison of 2011 Temperature Anomaly to long-term historical climate record and 10-year climate record. For the short-term (10-year) comparison, the numerical Z parameters are given as a measure of the deviation from the mean. Red font indicates those years when the 10-year does not match the 98-year long–term climate record.

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2011 Compared to 98 year historical climate record	B	N	N	A	A	A	MA	N	A	N	MA	MA
2011 Compared to 2001-2010 climate record	B -0.84	N 0.35	B -0.51	N 0.32	A 0.59	N -0.19	MA 1.30	MB -1.59	N -0.06	B -0.78	N 0.49	MA 1.30

Table 6: Comparison of 2011 Precipitation to long-term historical climate record and 10-year climate record. For the short-term (10-year) comparison, the numerical Z parameters are given as a measure of the deviation from the mean. Red font indicates those years when the 10-year does not match the 98-year long–term climate record.

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2011 Compared to 98 year historical climate record	N	N	A	MA	N	N	B	MA	MA	N	N	N
2011 Compared to 2001-2010 climate record	N 0.15	N 0.06	MA 2.02	MA 2.15	N 0.46	N -0.42	B -0.85	MA 1.45	MA 2.14	N -0.13	A 0.72	N -0.21

Attention should focus primarily on the comparison between 2011 and the 10-year climate record for both temperature anomaly and precipitation, since records indicate that there has been a trend toward slightly warmer and wetter in recent decades. When averaged over the 12 months of 2011 to obtain an annual categorical rank for the Z parameter, it suggests that for temperature, Z = 0.03, and for precipitation, Z = 0.63. Thus, comparing 2011 to the most recent decade would point to a nearly NORMAL year with respect to average temperature anomaly, and a wetter year in this geographical region (above normal (0.5 < **0.63** < 1.25 SD).

A year of nearly normal temperatures qualitatively implies that 2011 would likely have a typical number of inversions compared to the years in the most recent decade on average. On the other hand, above normal precipitation in 2011 implies wetter surface cover (soil and subsoil)

on average, and the addition of soil moisture changes the near surface radiative and thermodynamic characteristics in a complicated way. Air above a wet surface will have higher relative humidity and a greater potential for fog formation. When water vapor condenses to form fog and latent heat is released to the near-surface air, the result is to slow the nocturnal decrease in temperature thereby slowing the formation of an inversion or weakening the strength of an existing inversion. Additionally, if a fog forms, fog-top net radiative cooling creates negative buoyancy forces that tend to mix the layer, further weakening the strength of an inversion to preventing it from forming altogether. Rain (snow) tends to destroy inversions. A saturated layer of air will exhibit a lapse rate that follows the saturation adiabat, which is a decrease in temperature of between 3.5-6.5 C/km in the low layers of the atmosphere. Moreover, weather systems associated with rain events are typically mid-Atlantic cyclonic low-pressure systems, which are regions of convergence, ascending motion, and adiabatic cooling, none of which is conducive to sustaining inversions or enabling their development in the first place. March and April 2011 exhibited precipitation in amounts MUCH ABOVE NORMAL, suggesting that the development of inversions during those months would diminish as a result. **Both total inversion hours (Figure 3) and average inversion hours per inversion day (Figure 6) show March and April as having fewer inversions and shorter-duration inversions, which could be a result of increased precipitation in 2011 during those months. The take-away is that years with normal to below normal precipitation could see a higher frequency of inversions due to the reduced amount of moisture/water in the atmosphere/soil.**

4. Project Summary

A. All raw data files will be stored on a Millersville server and may be transferred to another server at any time. These files include: 1) textual output from the WRF model and 2) images of vertical profiles over Bainbridge, PA for each hour of data that was available from NCDC.
B. 8179 hourly vertical profiles were evaluated for the existence of inversions. 6.4 percent of the data were available for analysis
C. The total number of inversion-hours per year = 2459/8760 = 28.07%
D. The total number of days per year with at least one hour of inversion = 313
E. The number of days in 2011 in Bainbridge having inversions with durations of less than 4 hours was 56.5%; 25.0% had durations of 4-8 hours; 18.5% had long durations of 9 hours or more.
F. Stronger inversions last longer unless synoptic or mesoscale systems displace the atmospheric condition that establishes them. Long lasting inversions, in this analysis those that are medium or long duration, have the potential to trap pollutants for that duration near the surface; calm to light winds will prevent significant transport in strong inversions causing pollutant concentrations to become elevated in the vicinity of the source, especially when the source stack is short and confined within the depth of the inversion.
G. Using the Millersville University climate archive (1914-2011), it was determined that 2011 was normal in temperature in comparison of the decade from 2001-2010 and would likely have a frequency of inversions typical of other years based on temperature alone; precipitation was above normal in 2011 compared to 2001-2010, in March and April, and could have contributed to the fewer inversions observed during these months

Sincerely,

Richard D. Clark

Richard D. Clark, Ph.D.
Chair, Department of Earth Sciences

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AIR QUALITY PROGRAM

November 12, 2012

Thomas J. Hanlon
Facility Permitting Chief
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Township, Lancaster, County, PA

Dear Mr. Hanlon,

By letter dated November 8, 2012, Hellam Township provided information opposing PA DEP permitting Perdue to "phase" this aspect of their application. After further review of the application and supporting materials by the township's professional consultants to ensure that it comports with all federal and state requirements, Hellam Township provides the following additional comments in opposition to the application:

After reviewing the draft plan approval and Mr. Brian Wetzel's technical review memo for this permit, Hellam Township believes that the draft permit is not in accordance with DEP or EPA requirements.

As an overriding issue, it is eminently clear, from public statements made by Perdue Grain & Oil Seed, LLC (Perdue), Lancaster County Commissioners, Lancaster County Solid Waste Authority, and even the plan approval application itself, that the ultimate business plan for Perdue is the installation of a grain elevator and a soybean oil extraction plant. It is further admitted by both DEP and Perdue, that the total facility will be a major source of VOCs in a presumed non-attainment area, subject to New Source Review (NSR).

One requirement for a new or modified source that triggers NSR is that the applicant must conduct an alternative site analysis. DEP has not indicated in its review memo that this was in fact conducted or that DEP concurred in any determination that the selected site's location met the harms/benefit requirements of the regulation. And while there may be a legitimate reason for Perdue to develop this project in two phases, the failure to address the alternate site analysis for the entire project is a circumvention of this requirement, whether intended or not. If DEP does not require this analysis for Phase 1 of the project, a legitimate investigation of alternative sites is circumvented by virtue of the argument (after the fact) that placing the extraction plant next to the elevator results in transportation savings and results in the least harms, thereby totally corrupting a legitimate alternative site investigation. DEP must insist on this analysis prior to issuing the Phase I plan approval.

Additionally, since the public has not had an opportunity to review DEP's analysis of this issue, a revised draft permit with an updated technical review memo should be issued with another 30-day comment period.

There are additional areas of concern in the draft plan approval relating to particulate emission limits and the verification of those limits, which are included below.

The first source listed in the draft plan approval, the grain receiving and processing (Source 101) has emission limits based on Chapter 123 regulations and in Source Group 01, limits based on New Source Performance Standards (NSPS). Nowhere in the draft plan approval or in the review memo are limits established under Best Available Technology (BAT) requirements as required under Chapter 127. Chapter 123 regulations and NSPS limits are not BAT determinations.

Additionally, the potential-to-emit (PTE) on this source is improperly determined. The review memo agrees with Perdue's estimate of a 99.9% control efficiency of the baghouse without any requirement to verify or test this hypothesis. The vendor guarantee of 99.9% cannot be taken seriously since it is given independent of any inlet loading. Any knowledgeable baghouse vendor is aware that percentage removals can only be guaranteed based on an inlet loading. In contrast the permit limits for this source are 0.02 gr/dscf under the Chapter 123 regulation and 0.01 gr/dscf under the NSPS. The review memo states that the air flow through the grain baghouse is 30,000 ACFM. While the review memo doesn't give the SCFM through the baghouse, the fact that this is moving ambient air allows one to assume the actual flow is fairly close to the standard flow for purposes of estimating the PTE of this source. Using 30,000 SCFM and 0.01 gr/dscf, the more stringent of the two limits, a PTE of 11.3 tons per year of particulate matter (PM) is indicated. Contrast this with the Perdue's estimate of estimate of a PTE of 0.03 tons per year based on unverified and unenforceable assumptions. The review memo should be revised to establish a PTE that is actually enforceable. If Perdue wishes to use the 99.9% control, the permit must require actual demonstration of this in practice.

There are more serious issues with the grain dryers. Again DEP fails to establish BAT emission limits on the largest source of particulate emissions in this plan approval. The uncontrolled emissions, by Perdue's own estimate, make this source major for PM, yet DEP imposes no limits or testing requirements on these dryers but just assumes the Perdue estimated control of 90%. BAT must be established and enforceable conditions must be included to test these sources to ensure they are below major source thresholds. If periodic testing is not included, the minor source status of the grain elevator is not practically enforceable, contrary to DEP and EPA regulations.

And on a final note, due to the strong interest of Hellam Township and its citizens on these permits, we hereby request that the permit applications and related documents be posted in the Community Information section of the regional web page.

Sincerely,

Corina L. Mann

Corina L. Mann
Manager, Hellam Township
Direct dial: 717-434-1303

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*Certified Civil Trial Specialist
By National Board of Trial Advocacy

November 21, 2012

Thomas Hanlon, Air Quality Permitting Chief
Air Quality Program
Department of Environmental Protection
909 Elmerton Avenue
Harrisburg, PA 17110

Re: **36-03189A & 36-05158A: Perdue Grain & Oil Seed, LLC**

Dear Mr. Hanlon:

I am the solicitor for Conoy Township, Lancaster County, the host municipality for the Perdue Grain & Oils Seed, LLC proposed grain elevator and soybean oil extraction facility. I attempted to speak with you by telephone on November 20th however, my call was returned by Mr. Lanbeth of counsel's office who suggested that I write to you.

It was only yesterday, November 20, 2012 that I learned of the public hearing scheduled on the Perdue Grain & Oil Seed, LLC Air Quality Permit applications. At that time I learned that the hearing is to be held from 6:00 pm to 8:00 on Thursday, December 13, 2012 at the Hellam Fire Company Hall, at 163 East Market Street, Hellam, PA 17406. Not only is the hearing to be held at a municipal location other than in Conoy Township, the host municipality for the proposed facility, but it is scheduled to conflict with Conoy Township's Board of Supervisors meeting for December 13, 2012 which was scheduled at the beginning of the year and public notice provided according to the requirements of the law.

This scheduling of this location, date and time denies the Conoy Township's Supervisors an opportunity to appear and to testify at the public hearing as well as to hear testimony from others who may choose to present oral, public comment on this application. Conoy Township's residents are equally inconvenienced by the scheduling.

I am writing to protest on behalf of Conoy Township's governing body and its residents. This scheduling constitutes a denial of an opportunity be heard by those most directly affected by this application and offends administrative due process be accorded Conoy Township's supervisors and its residents.

Conoy Township requests that this hearing be rescheduled to a Conoy Township location at a date and time that does not conflict with the previously publicly advertised meetings of the Conoy Township Board of Supervisors.

Very truly yours,

Matthew J. Creme, Jr.

MJC, Jr. /ncg
Cc: Gina Mariani- Chair of Conoy Township Board of Supervisors.
Peter Heller- Perdue Grain & Oil Seed, LLC
Senator Mike Folmer
Rep. Dave Hickernell

(a)

NAME	AFFILIATION/ ORGANIZATION	ADDRESS	COMMENT FOR THE RECORD? (Only check if you haven't signed up before the hearing.)
Joel Burcat	Saul Ewing	2 N 2d St. Hbg Pa	
TODD & MELINDA TRIMMER		471 FRYSVILLE ROAD	
PAT LEMAY	citizen	78 Sunhill Millersville PA	
Karen & Matt Peffley	Citizen	920 Valley View Rd, Hellam	
CAROL KUSHNER	RESIDENT MARIETTA	573 ESSEX ST MARIETTA	
Rich Kushner	BUSINESS OWNER	7 N. DECATUR ST. MARIETTA.	
Steve Wolt	Hellam	585 KREUTZ CREEK Rd Hellam, Pa 17406	✓
STEVE IZZO	HORN FARM	4945 Horn RD.	
John Schmelzle	RETTEW	5031 Richard Ln., Mech., PA	

(20)

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GARY W. DUBE'	HELLAM FIRE CO.	163 E MARKET ST. HELLAM PA	
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Al Parrish	Hellam Twp	1230 Millstone Rd York	
Neil Habecker	Wrightsville Borough	419 Locust ST. Wrightsville 17368	
CHIEF FRED SMELTZER	HELLAM TWP		X
Eileen P.M. Campbell	Hellam Twp. planning Com.	5383 Howard Rd. Hellam 17406	
Douglas E. Sloot	Hellam Twp	487 Kreutz Creek Rd	
Steve Prescott	Hellam Twp	4648 Duck Valley Rd.	
Ed Wible	Borough council President Hellam	260 E. Market St. Hellam Pa 17406	
[illegible]	York	1891 Lincoln Hwy	
DAVID DIETZ		5974 Lincoln Hwy, York, PA 17406	

(32)

NAME	AFFILIATION/ ORGANIZATION	ADDRESS	COMMENT FOR THE RECORD? (Only check if you haven't signed up before the hearing.)
WARREN EVANS	SELF	7160 ROUNDTOP LANE, Hellam Township 17368	
SUSAN Burkett	August Mack Environmental, Inc.	941 Wheatland Avenue Suite 202 Lancaster, PA 17603	
Debra Martin	Self	355 Kreutz Creek Rd York	
Mike Martin	Hellam Twp.	355 Kreutz Creek Rd York	already signed up (LK)
Richard King	Hellam Twp Resident	586 River Dr Hellam	
Jennifer Ericson	Self + Sierra Club Lanc. Group	1080 Lambley Rd., Landisville PA	
Judith Nissley	Nissley Vineyards	140 Vintage Drive, Bainbridge, PA	
Mark Sowers	Hellam Twp Police	195 [illegible] Rd Wrightsville Pa 17362	
Paul McCleary	Hellam Boro Mayor	457 Arnold Lane Hellam PA. 17406	
William [illegible]	E.AC	1030 E River [illegible]	
Ruth Nobile	EAC.	1264 C. Drive Dr.	
BILL FITZPATRICK	SELF	197 S. BROAD HELLAM PA.	

(44)

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JIM BAUMGARTNER		100 KILLARNON LANE LANCASTER, PA 17603	
Jane Druce	Sierra Club (Lanc)	1009 Tracy Rd Lancaster PA 17601	
Peter Heller	Perdue Agri Business	213 Queen St Chestertown MD 21620	
Wayne Black	Perdue Agr. Business	P.O Box 460 Lewiston, NC 27849	
Rose Dubs		141 E. market Hellam, PA	
Ken + Nan Garber		2108 River Rd. Bainbridge PA 17502	
Renée L.P. Evans		7152 Roundtop Ln. Wrightsville	
Elizabeth Evans		Wrightsville	
Phyllis Koster		183 Asaomac Rd	
Rob Evans		7152 Roundtop Ln. Wrightsville	

[198]

56

NAME	AFFILIATION/ ORGANIZATION	ADDRESS	COMMENT FOR THE RECORD? (Only check if you haven't signed up before the hearing.)
CAROL BROMER	N/A	402 STACKSTOWN RD MARIETTA, PA 17547	
Tammy Baer	concerned citizen	Hellam Township Po box 21991 York PA 17406	
DAN SHARRER		NEW OXFORD	
June Evans	Hellam Twp resident	7160 Roundtop Lane Wrightsville, PA 17368	
Connie Hannigan	Hellam Twp Board	624 Woodsview Ln York PA 17406	
Martin Rock	" "	" "	
Linda Reynolds	Sierra Club	140 New Haven Dr. Hitz, Pa 17543	
Tom Malesic	concerned Citizen	1080 Lamby Rd Landisville PA 17538	
DAVID ZAMBITO	COZEN O'CONNOR	305 NORTH FRONT ST, SUITE 400 HARRISBURG, PA 17101	
WAYNE HOSKEN	PERDUE AGRIBUSINESS	6906 Zion Church Rd Salisbury, MD 21801	
GREGORY ROWE	PERDUE AGRIBUSINESS	6906 Zion Church Rd Salisbury MD 21801	
VICKIE BURGESS		575 LAUREL TR York 17406	

68

+5 latecomers +2 children + media = about 83 people (not including DEP)

NAME	AFFILIATION/ ORGANIZATION	ADDRESS	COMMENT FOR THE RECORD? (Only check if you haven't signed up before the hearing.)
Robert Oughton		183 Accomac Rd York PA	
Lynn Malihak		241 Marietta Ave, Apt. D Mt. Joy, PA 17552	
Jonathan Darby		6221 Hauser School Rd York PA 17406	
Dean Burkholder		1865 River Road Marietta Pa 17547	
Seth T. Grove		620 Stackstown, Rd Marietta, PA 17547	Possibly
MATTHEW J GROVE JR	CONOY TWP	212 N QUEEN ST LANCASTER PA 17603	
John Kerchner		East Petersburg PA	
Barry Miller	Fire Co	4914 Mt Hellam 17406	
Barbara May	citizen	100 RED FOX ROAD Millersville PA 17551	
DEB LIVINGSTON	Citizen	PO Box 194 Wrightsville 17368	
JEFF LIVINGSTON	Citizen	PO Box 194 Wrightsville 17368	
JOHN B. EIFERT	CITIZEN	4819 TRAY SCHOOL RD YORK	POSSIBLY

Weaver, William

From: Kai Rose <clientservices@sargents.com>
Sent: Thursday, January 03, 2013 4:42 PM
To: Weaver, William
Subject: DEP Public Hearing - Perdue Grain & Oil Feed - 12/13/2012

To Whom it May Concern:

The Department of Environmental Protection has the right to publish this transcript on DEP's website, as well as make copies of this transcript for the public. The public can request copies of the transcript from DEP or print a copy of the transcript from the website.

Please let me know if there is anything else I can do for you.

Thanks,

Kainani S. Rose
Client Services
The Sargent's Group
210 Main Street
Johnstown, PA 15901
Phone: (814) 536-8908
Fax: (814) 539-7579

DEPARTMENT OF ENVIRONMENTAL PROTECTION

* * * * * * * * * *

IN RE: PERDUE GRAIN AND OILSEED PERMIT APPLICATIONS

BEFORE: LISA KASIANOWITZ, Chair, Community Relations Coordinator
ERIC LINGLE, Chief of the Registration, Permitting and Certification Section
TOM HANLON, Chief of the Facilities Permitting Section
AMANDA WITMAN, Office of Communications

HEARING: Thursday, December 13, 2012
6:10 p.m.

LOCATION: Hellam Fire Company Hall
163 East Market Street
Hellam, PA 17406

ORIGINAL

WITNESSES: Wayne Black, Michael Martin, June Evans, Judy Nissely, Carole Bromer, Nick Bromer, Dean Burkholder, Jennifer Ericson, Warren Evans, Barbara May, Tammy Baer, Pat Lemay, Chief Fred Smeltzer, Steve Izzo, Steve Wolf, Seth Grove, John Eifert, Jane Heller, Richard King, Annette Logan, Kevin Stewart

Reporter: Jolynn C. Prunoske

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I N D E X

OPENING REMARKS	
By Chair	4 - 6
PRESENTATION	
By Mr. Hanlon	6 - 8
By Mr. Lingle	8 - 10
By Mr. Black	11 - 17
DISCUSSION AMONG PARTIES	17 - 19
TESTIMONY	
By Mr. Martin	19 - 26
By Ms. Evans	26 - 32
By Ms. Nissley	33 - 39
By Mrs. Bromer	39 - 43
By Mr. Bromer	44
By Mr. Burkholder	44 - 46
By Ms. Ericson	47 - 51
By Mr. Evans	52 - 59
By Ms. May	60 - 63
By Ms. Baer	63 - 65
By Ms. Lemay	65 - 67
By Mr. Smeltzer	67 - 69
By Mr. Izzo	69 - 73
By Mr. Wolf	73 - 76
By Mr. Grove	77 - 80

I N D E X (cont.)

TESTIMONY	
By Mr. Eifert	80 - 82
By Ms. Heller	82 - 88
By Mr. King	88 - 98
By Ms. Logan	98 - 100
By Mr. Stewart	100 - 105
CLOSING REMARKS	
By Chair	105

P R O C E E D I N G S

CHAIR:

All right. We're going to go ahead and begin here. Thank you all for coming. My name is Lisa Kasianowitz. I'm the South Central community relations coordinator for the Department of Environmental Protection. You all are here tonight for a public hearing on Perdue Grain and Oilseed, recent application submitted by them for air quality and storage tanks. We are here to receive comments from residents and interested parties regarding the air quality and storage tank permits, for which Perdue Grain and Oilseed have applied, to construct a grain elevator, a soybean oil extraction facility and also there will be storage tanks located there for the holding of hexane. This is located in Conoy Township, Lancaster County.

I would like to begin by thanking Hellam Township for the use of the facility tonight and Hellam Fire Company. Next I'm going to introduce who I have here with me from DEP and then I will introduce who I have here from Perdue.

So first off, again, my name is Lisa Kasianowitz, South Central community relations

coordinator and I have here with me --- I have Tom Hanlon, who's the permitting section chief for our air quality program, H-A-N-L-O-N. And then I also have Bill Weaver. He's with our air quality program. He's the program manager for air quality. From DEP's storage tanks program I have Eric Lingle, L-I-N-G-L-E. I also have my office of communications, Amanda Witman, W-I-T-M-A-N, and she will be helping to facilitate the hearing tonight. Last from Perdue I have Wayne Black who will be speaking on behalf of Perdue.

Since this may be your first experience at a public hearing I want to take a few minutes to talk about how our time will be spent here together tonight. We'll begin by explaining how comments are recorded in what's called our administrative record. DEP staff will then provide information on the permits for which we receive applications on. Please note that staff will not entertain questions during their speeches. After DEP gives the speeches, I will invite Perdue up to give a speech as well. No questions will be entertained during the speech as well. This is necessary so that we can share additional information on the program for you.

It is important to note that DEP is

holding this hearing to allow interested parties the opportunity to comment on the air quality and storage tank permits so that our staff can listen and gather the comments and respond to them in our written response comment document. Questions posed at any time during tonight's hearing will be addressed in our comment response document. The Department will wait until all comments are received, whether spoken tonight or sent in writing up until December 17th, before we make any responses. So let me just be clear on that again. Questions posed at any time tonight will be responded to in our comment response document, which can be made available by request. And it'll also be posted on our website.

DEP will review all of these comments, all the relevant comments, given tonight on air quality and storage tanks and have them in our consideration of our permit review applications. Next I'm going to invite Tom Hanlon up to speak a little bit about the air quality permits that we have received from Perdue.

MR. HANLON:

Good evening. Thank you everybody for coming tonight. As Lisa said, my name's Tom Hanlon and I am a permitting chief in the air quality program

of the DEP's South Central Regional Office. And currently Perdue Grain and Oilseed have submitted two air quality plans to our office referred to as phase one and phase two of the project for the proposed facility in Conoy Township in Lancaster County.

The first plan approval, generally referred to as phase one, was received on June 27th of this year and it was determined to be administratively complete on July 2nd of 2012. The phase one plan approvals is proposed for the installation of a grain elevator and equipment associated with that would consist of grain loading, unloading areas, dryer screens and storage bins. And we reviewed that application and prepared a draft plan approval back in October. And we published notice of our intent to issue the plan approval in the Pennsylvania Bulletin on October 13. And we are currently in a comment period for that plan approval.

The second plan approval referred to as phase two, was received on August 13th of this year and determined to be administratively complete on August 23rd. And the phase two application are for the installation of the soybean processing facility including an oil extraction operation. The equipment with that would include cracking rolls, conditioners,

extractors as well as heaters and dryers. And currently we're in the technical review phase of that application.

And so as part of this public hearing we're here to solicit comments on those two applications and we'll also receive written comments on those applications by December 17th of this year. And, as Lisa eluded to, a copy of the phase one application that was submitted by Perdue as well as a copy of our draft plan approval and support of technical review memo, as well as a copy of the application submitted as phase two are located on our website, on DEP's website at DEP.state.pa.us under the heading of regional resources. We're in the South Central region, so if you go right to that site there's a section for community information. So if you click on that, you'll find a copy of the two applications as well as our draft plan approval for phase one and supporting information on those. Thank you.

CHAIR:

Thank you. Next by Eric Lingle of storage tanks to speak about the permits received from Perdue on the storage tanks.

MR. LINGLE:

Good evening, everybody. My name is Eric Lingle. I'm with the division of storage tanks out of DEP's central office in Harrisburg. I'm the permit chief there and the reason we're here tonight is because Perdue applied to us for what we call a site specific installation permit, otherwise known as --- by the acronym of an SSIP. They applied to us on October 2nd of this year for the installation of two 20,000 gallon hexane tanks, above ground storage tanks storing hexane, what we consider regulated, hazardous substance in liquid form.

The reason the SSIP was required was because the two 20,000 tanks break our threshold of what we consider a new large above ground storage tank facility, which is set at 21,000 gallons. So having the aggregate capacity of 40,000 gallons at a new above ground storage tank facility cracked our regulatory threshold for them to meet by applying for a site specific installation permit. The SSIPs are reviewed by a number of individuals both in Central Office as well as out in our South Central Office by our tank folks out there. We also enlist the assistance of professional geologists and professional engineers in the review of these plans.

The overall scope of the SSIP itself, we

don't do a lot of these permits. A lot of folks aren't real familiar with them. The scope of the permit is essentially to determine the suitability of the site for the installation of the tank that is proposed. We look at issues such as geology, flood plains, wetlands, that kind of thing. Currently we're in the midst of the technical review phase of their SSIP application and that's why we're here tonight is to take into account your comments as well as comments already received and any comments we receive up through December 17th.

Just to go beyond, just to give you some information on the storage tank program, in a case where an SSIP is issued and the applicant goes on to install the tanks, we do have a certification program which requires them to use DEP certified installers as well as a registration program that requires them to register the tanks with us. Along with that our ongoing regulatory requirements on tanks of this size would require generally a monthly maintenance check as well as a periodic tank integrity inspections. The tanks, of course, must be installed to meet all applicable industry standards for fire explosion, et cetera. Thank you.

CHAIR:

Wayne Black, do you want to come up here?

MR. BLACK:

Yeah.

CHAIR:

Thank you.

MR. BLACK:

Lisa, thank you, ma'am.

CHAIR:

Uh-huh (yes).

MR. BLACK:

Thank you everyone for the opportunity to be able to speak tonight. Good evening. My name's Wayne Black. I'm the environmental director for Perdue Agribusiness, one of the Perdue family of companies. I'm here tonight on behalf of the company to give an overview of the proposed soybean process that's going to be located in Conoy in Lancaster County.

For those of you who aren't familiar with Perdue aggregates we provide agriculture, service and products to food and feed markets throughout the U.S. and the world. We currently operate four soybean process facilities and over 45 grain handling facilities with the capacity to store over 70 million bushels of grain and annually handle more than 250

million bushels.

The proposed facility will receive in processed soybeans from local and regional origination. It has two distinct, but equally important operations, the grain receiving and soybean processing. Each of these processes has specific emission sources that are significant to each operation, and thereby have emissions at each one of these sources. These emissions are subject to state and federal regulation, and therefore, we have applied for plan approvals with Pennsylvania DEP. These plan approvals would involve control technologies, emission monitoring and recordkeeping to be associated with to name a few. And before we can construct either of these two phases of the project we must receive approval from DEP.

The grain elevator that I spoke of will receive beans in. They will be dried and stored there prior to processing. The processing plan will take those bean, crack those beans, condition them, form them into flakes and then wash them with hexane. This hexane will remove the oil. At this point the flakes, which will be eventually dried and ground into meal and the oil itself, will go through hexane recovery. And this hexane recovery will go back to be reused and

processed again and again.

Over 90 percent of all the oil that's produced today in the world is produced by this type of method, by the hexane extraction method. The hexane extraction method is very effective and efficient in the removal of soybean oil. There are other means out there that are able to do this such as mechanical extrusion. The mechanical extrusion is much more energy intensive and thereby produces a large environmental footprint. Several things were considered in the citing of our facility and control and pollution prevention is just one of them. It's just as important as the engineering and the control technology in the process itself.

The South Central region in Pennsylvania is one of the largest producers of soybeans in the state. By citing the facility here we can ensure that vehicular transport of these beans to their final destination results in lower emissions from transport. We further minimize our environmental footprint by locating near the LCSWMA Waste-to-Energy facility. The energies from this facility in providing steam to our operation will reduce our need to combust fossil fuels for our operation. And the water that is used in our process will also come from --- it'll be

recycled and reused, thus diminishing any negative impacts on water resources.

Ozone Depletion is a complex issue and it comes from a varying number of sources depending on the photochemical reactivity and their location. These sources are diverse and include stationary sources such as power plants and industrial facilities and also mobile sources such as buses, trucks, car, passenger vehicles. The VOCs, which can potentially lead to ozone depletion from this facility are minor when considered to the other stationary sources that are located in this area, in the region. In designing the facility we've maximized hexane recovery. In doing that it reduces the VOCs and thereby we reduce our contribution to any type of ozone formation.

We are confident that the hexane levels or emissions from this plant will be well below those thresholds that are set by EPA for public health. To confirm this we've gone beyond what is required in the air approval --- air approval plan process or application by conducting modeling to ascertain what those levels are and their effect on air quality surrounding the plant. To do this we have retained nationally renowned experts in modeling and risk assessment to accomplish this. In doing this they

will conduct this model using EPA protocols set up by EPA and this model will take into account things such as meteorological data, which will include wind direction and temperature diversion. We also evaluated several other facilities, similar facilities to our own, and the controlled technologies that they employ. From the aspect of the practicality of permitting, permitting that source and its effectiveness as controlling emissions in the field, we evaluated the energy consumption, the efficiency of the device and the safety and operational safety aspect of the device as it relates to our process. And we are confident that we have selected in moving forward the correct control technology for our application that's included in our permit.

Our site specific storage plan will also include the submission of a spill response --- a spill prevention and response plan. The spill prevention response plan along with any other plans of safety in nature will be coordinated with local emergency planning commission and Conoy Township authorities. We believe that the control and the pollution prevention technology that's been submitted in our permits application, that being the air permit approval application and the site specific

implementation plan for the tanks, will meet or exceed the state and federal regulations in regards to air and meet or exceed the state regulation in regards to the storage tank. In addition these devices and the process will be constructed to meet national codes of which --- meet or exceed these national codes of which is the National Fire Protection Association. We have over 50 years of experience in operating these facilities, so we're not new to this game.

We have excellent safety and environmental records at each one of these sites. We currently have sites in Caulfield, North Carolina, Chesapeake, Virginia and Salisbury, Maryland where our corporate offices are directly adjacent from operations. The individuals that operate and maintain these systems on a daily basis are highly trained and skilled especially in the area of process safety management. And they have years of experience in operation of these plants.

In closing, Pennsylvania has a long history of preserving its agricultural lands for future generations and the citizens of York and Lancaster County have been forefront in that effort, but preservation alone may not be enough. This plant will provide the farmer a means to receive an

equitable return on their investment, and by Perdue providing that means, we look to partner in the state's agriculture preservation efforts. Thank you.

CHAIR:

Thank you. Okay. We will now begin our formal comment portion of the hearing. We have a professional stenographer on hand to record your comments for administrative record. Please note that the DEP's hearing process does not enable us to respond to questions posed while you are giving testimony. Please, of course, feel free to present your testimony in the form of a question, but realize that if you do, no one will respond to it this evening. I will simply thank you for your question and you can return to your seat. Response to all relevant testimony given this evening will be included in our comment response document.

First, I will call the names of those who pre-registered before the night of this hearing. Those who signed up this evening at the door will then next be given the opportunity to testify. So far we have 16 people registered to testify this evening with a couple of possibilities, so we'll get to those after the ones who are pre-registered testify. Please limit your remarks to ten minutes each. We will have a

timer and I will let you finish your thought, but at ten minutes I will cut off the time. If there are multiple representatives of a particular group, please have a representative of your group come up to give your overall comments. In order to hear from as many people as possible tonight, please refrain from repeating comments or concerns raised by previous speakers and please consider summarizing your remarks if you are also submitting written comments.

All in attending should be considerate of those presenting testimony by limiting noise and conversations so that your fellow people here can be heard and also so that our stenographer can get your name and your address and your testimony correct. When testifying, please begin by stating your name and your address for the record and be sure to spell our your name. If you forget, I will ask you to spell out your name and state your address for our stenographer. If you have a copy of your testimony that you brought tonight --- and we have a public comments box right there that you can simply drop off or if you're reading from it and then you want to drop it off, you can do that as well, so --- but either way if you brought any written responses you can drop them off in that box right there (indicating). Reminder that you

can also submit written comment up until December 17th, and if you decided not to speak tonight, you can still do that. You can still submit written comment.

Please remember there's a ten minute time frame. State your name, your address and spell out your last name for the stenographer. So I'm going to go ahead and start with calling off the names of the people who pre-registered, which begins with Michael Martin.

MR. MARTIN:

Thank you. My name is Mike Martin. I'm the chairman of the Hellam Township Board of Supervisors. On behalf of the Board I thank the Pennsylvania Department of Environmental Protection and --- for holding this hearing and also for Perdue for being here. And I'm also very grateful to the residents of Conoy East and West Donegal Townships, West Hempfield, Hellam Township, Bainbridge, Marietta, Wrightsville and Hellam Boroughs for being here this evening. I know we've all had other things to do and I thank you very much for taking the time to be there.

If you haven't seen it, I think most of you already have, there have been maps handed out at the door. This is a map of Hellam Township. The star up there (indicating) is where the proposed plant will

be. North is that way. Prevailing winds are from the north and northwest. Prevailing winds will blow any emissions onto Hellam Township first. Okay?

Provided the proposed Perdue facility does not pose risks to the health of our residents and to our environment, Hellam Township does not stand in opposition to it. As a farmer from extended families of farmers I appreciate the benefit of having a large local buyer of a staple farm product like soybeans locally here. And our local economy certainly needs additional opportunities for employment. However, from the statements made by Perdue and the research we have seen, it is clear that the facility as proposed does indeed pose significant and possibly insurmountable health risks to our community as well as very significant risks to the environment. These risks are predominantly from the release of hexane from the portion of the proposed plant that would extract oil from soybeans.

It is important for local farmers to note that Perdue has stated that the grain elevator will be constructed regardless of whether or not the soybean processing plant is built, thus the benefits of an additional large, local buyer of soybeans is not dependent upon the construction of the soybean oil

extraction facility. And that is a portion of the facility that would emit the large amounts of hexane.

Hexane is a nerve toxin, a carcinogen, an eye, nose, throat and lung irritant. That is exposure to it can cause cancer, damage human nerves resulting in conditions like peripheral neuropathy where a person loses sensation in their limbs, as well as irritating the eyes, nose, throat, and lungs. Hexane, along with its close cousin gasoline, is also classified as a volatile organic compound or VOC. VOCs combined with nitrous oxide in the atmosphere to form ozone, a component of smog that is especially harmful to the lungs. There are already several large nitrous oxide producers near this proposed Perdue plant. Lancaster County's mass burn incinerator, as already mentioned, is located immediately adjacent to the proposed site of the Perdue soybean processing facility. And Brunner Island coal fire electric generation station is in close proximity also. In 2010 the incinerator released 5,359 tons of nitrous oxide and in 2006 Brunner Island released 12,754 tons. The Armstrong Marietta ceiling plant, also an emitter of nitrous oxide and classified as a high emitter of greenhouse gases, is also located in close proximity to the proposed site.

In addition, the proposed soybean processing plant itself is anticipated by Perdue to release 25 tons of nitrous oxide per year. The figures provided by Perdue as to the amount of hexane that will be released have been revised multiple times, as has the hexane rate of recovery. Many of the provided figures conflict with the 7,000 gallons per month of hexane that Perdue has stated will be trucked to the plant every month. In at least one document Perdue has stated that it will release 220,000 pounds of hexane per year into the atmosphere. If such a large volume of hexane is released by Perdue in such close proximity to the existing large emitters of nitrous oxide, large volumes of ozone will be produced resulting in very serious degradation to air quality that is already not in compliance with federal standards.

This soup of chemical emissions from the proposed Perdue plant and other already existing facilities would pose an especially high threat to health because of the high frequency of atmospheric temperature inversions that trap these hazardous emissions close to the ground where they have greater opportunity to combine into ozone and where they are inhaled by residents. Temperature inversions coupled

with ground level toxic pollution emissions are known to have caused extensive fatalities in the past. One of the most noteworthy was a temperature inversion of five days duration in London in 1952 that killed 12,000 people.

The DEP already recognizes this region as an ozone non-attainment area. The addition of 220,000 pounds per year of hexane emissions, which is more than four times the amount that is allowed without the use of emission credits, will almost certainly create very significant health problems for residents of the region, especially in consideration of the proximity of these hexane emissions to the previously mentioned heavy sources of nitrous oxide emissions, and the frequent and severe temperature inversions experienced in this region.

But VOCs and ozone are not the only air quality problems we currently experience that will be exacerbated by Perdue's proposed plan. As recently as December 1st, 2012 an air quality action day was forecast by the Pennsylvania DEP for three regions in Pennsylvania including the Susquehanna River Valley. That air quality alert was not for ozone, but was instead for inhalable particulate matter of the type that would also be emitted by the proposed Perdue

plant. This type of particulate matter clogs the lungs making breathing difficult. In order to appreciate the seriousness of the air quality situation in the lower Susquehanna Valley, in addition to noting that York has often made the list of the top 25 cities in the nation with the most polluted air, including number 24 in 2011, we must also consider what is happening in a wider region of Pennsylvania to our north and west. That is, the type of horizontal shale gas drilling known as fracking. According to a report by the U.S. Congress's Office of Technology Assessment gas field ozone has created a large --- a previously unrecognized air pollution problem similar to that found in large urban areas, and can spread up to 200 miles beyond the immediate region where gas is being produced.

Gas drilling operations also produce inhalable ten micron particulate matter. In short air, quality in the lower Susquehanna Valley that is already among the worst in the nation --- among the worst in the nation is under heavy and persistent assault. In addition, it seems there are some very legitimate questions regarding the legality of the $8.75 million grant that Governor Corbett authorized for the proposed Perdue plant. Some of the concerns

are related to the fact that the plant would severely exacerbate existing very poor air quality conditions. We also have serious concerns that the phasing of the project that has been requested by Perdue has been requested in order to circumvent new source review of the overall project. The specifics of those concerns can be found in Hellam Township's written comments dated 11/12/2012. We are requesting that DEP explain their justification if Perdue is allowed to phase this project.

The risks of the use of hexane to extract soybean oil are well known and well documented. They include the above described air pollution, toxic exposure and carcinogenic risks for nearby residents, even higher risks of exposure for plant workers, hexane explosion risks and the risks posed by residual hexane that is in the soybeans --- the soybean oil and the soybean byproducts, some of which is directly consumed by humans and some of which is fed to farm animals being raised for human consumption including chickens.

Other alternative extraction methods exist. We believe that when all costs are considered, and especially when health risks, explosion risks and environmental risks are included, hexane based

extraction is neither a least cost nor a least risk extraction mechanism. We prefer our air, our morning coffee and our oven stuffer roasters without the hexane aftertaste. Thank you.

CHAIR:

Thank you. Okay. Next on our list we have June Evans. June Evans?

MS. EVANS:

Good evening. My name is June Evans, E-V-A-N-S. I live at 7160 Roundtop Lane. I'm a Hellam Township resident. I chair the township's Environmental Advisory Council and I serve on the Board of Directors of the Horn Farm Center for Agriculture Education located in our township.

I have a longstanding interest in responsible, environmentally sound practices that I believe we all should concern ourselves with as stewards of this earth's air, land and water. Our home is in the Hellam hills, crossing down river from the proposed Perdue soybean crush plant in Conoy Township. And my comments this evening are based on personal experiences with air pollution and sources that affect the place where I live and the quality of life I experience there.

I have a long acquaintance with the

Hellam hills. I grew up at one of the most beautiful spots in York County on Roundtop, which is right here (indicating), which overlooks the Donahue Valley and the Susquehanna River. From there you can literally see for miles and miles on a clear day, now even up to the TMI Towers.

When I was young the favorite thing for our family to do was to sit on my front porch at Roundtop and watch approaching storms and weather changes come from the northwest and down the river. It was very clear that the prevailing winds were from that direction. As a child, I roamed the woods of our land breathing air that was free of any pollution that later came with Brunner Island Power Plant, which came online in 1961, the Armstrong Industry Ceiling Tile Plant in Marietta, which opened in 1970 and the LCSWMA Incinerator, which began operation in 1991. I was away from the area during those years those plants were built.

We were living in Bethesda, Maryland area while my husband was employed at the National Cancer Institute as a research biochemist, but after he retired we moved back here to a home we built in the Hellam hills not far from Roundtop. I was delighted to be back in this township that I love and I looked

forward to many hours out of doors relaxing on our deck, hiking in the woods and especially working in my garden.

Anyone who gardens knows that one of the best times to be doing that during the summer months is early in the morning. So imagine my surprise and dismay when we found the air so polluted at certain times often daily and especially in the early morning with an acrid odor that was so irritating to the eyes and throat that we had to close all our windows and doors and stay inside until it dissipated. Our neighbors were also experiencing this discomfort.

We called the EPA and a representative from their office in Lancaster came over to investigate. We learned that the source from the pollution was the Armstrong Industry's Marietta Ceiling Tile Plant, which is located across the --- and up river from us, not far down river from the proposed Perdue plant and that the pollution was due both to particulate matter and to formaldehyde, a cancer causing chemical that are byproducts of the ceiling tile manufacturing process, and are released into the air from the plant's stacks. We also learned that the pollution is greatly exacerbated by the frequent temperature inversions, which are common in

our region and which trap the pollution close to ground level.

We contacted Armstrong and met with engineers and officials at the plant who gave us and our son, who lives near us and with his family was also experiencing pollution, a tour of a plant. They assured us that they would be addressing the problem through their plan to install required state of the art scrubbers on the stacks in the near future. This was in the mid to late 1990s. Late in the 1990s the scrubbers were installed and the type of pollution we were experiencing from the ceiling plant has since diminished remarkably.

I share this story with you for several reasons. First, it illustrates very clearly that residents from Hellam Township can and do experience detrimental effects of air pollution sources from across the river, especially downwind from those sources. And they have every reason to be concerned about potential new sources of air pollution. DEP is responsible to all the persons who can be affected by this proposed project, not just those in one politically designated entity. As I noted earlier, there are now at least three plants in the region in which I live that can be sources of air pollution and

that can affect those of us who live across the river and downwind from these plants. One of them, the Brunner Island Power Plant, has been notorious for air pollution problems. It's striking that, as Mike mentioned, even as recently as December 1st this year an air quality action day was declared by DEP for our Susquehanna Valley region, with cautions to those most vulnerable to respiratory problems to limit their activities because of unhealthy pollutions levels in the air. It's also noteworthy that temperature inversions are much more common than we realize based on records kept for many years by Millersville University's earth sciences department.

As we know, these inversions can greatly concentrate and exacerbate the effects of local air pollution by trapping this pollution close to ground level. Specifically the 2011 record for the Bainbridge area clearly corroborates what I was experiencing even in the 1990s, that mid to long term inversion episodes are most common in the summer months and especially in the early morning and late evening. The 2011 record indicates that these types of temperature inversions continue to occur and as the Millersville report states the mid and long term episodes have the most potential for trapping

pollutants near the surface of the ground. My concern is that in addition to the temperature inversion problem adding another source of potential air pollution to the number of sources we now have in this region will make an already scary health problem even worse.

I would like to request that DEP take action now during the request for application for phase two air quality permit approval and before any construction begins to require appropriate and adequate air quality protection technology at the Perdue facility. I would like to add that so far I've seen nothing in the applications for this facility or heard anything from Perdue that mitigates my concern about the cumulative effort, the cumulative effect of adding a new source of pollution at any level to the pollution levels we already have to deal with here in this River Valley region.

There are means to address conscientiously the control of dangerous air pollution sources if a company is required to do so. Concern for the health, safety and well being of the residents in the region where a company wishes to locate a plant should be of primary importance to that company. Surely the cost of adequate state of the art control

and capture technology that would eliminate or severely reduce the amount of hexane that would be emitted from the proposed Perdue plant would be a small investment given the large publicly funded grant the company has received for this project.

DEP should insist that concern for the health and safety of the area's residents come first when and if they approve Perdue's air quality permit applications for this project. The DEP owes it to the residents of this region and that includes not only those of Hellam Township, but those of any other townships both across the river and on the same side of the river of the proposed plant, to strictly abide by its stated mission. And I quote, to protect Pennsylvania's air, land and water from pollution and to provide for the health and safety of its citizens to a cleaner environment, unquote. I strongly urge you to consider this as you review the applications for this proposed project. Thank you.

CHAIR:

Thank you. Okay. Next on our list is Steve Wolf.

MR. WOLF:

I'll yield.

CHAIR:

Okay. Okay. Next on the list is Judy Nissley.

MS. NISSLEY:

Yes. My name is Judith Nissley, 140 Vintage Drive, Bainbridge, PA. So with that address you can understand I'm in Conoy Township, across the river. If you were looking through what I wrote, some of these things I will eliminate because they were stated so well, first by Mike Martin and then by June Evans. And so here we go. Here's mine.

In the spring of 2010 I was invited to attend the dinner meeting with Dick Willey who is the president of Perdue Agribusiness. As he explained Perdue's plans to build a plant, it would start with raw soybeans and end up with raw --- with soy meal, an edible oil, I became very interested. In fact, it made me so happy that at the end of the dinner I gave him the biggest hug I could muster.

To put that hug into perspective you need to know that over the past five or more years there were two different corn to ethanol plants proposed for this site where Perdue intends to build their plant. Compared to corn soybeans are soil friendly in that they return nitrogen to the soil and grow in tight rows, which minimize soil erosion.

As far as I could tell, the oil extraction process would not require nearly the amount of fresh water that ethanol production requires. The end products would be edible, which means that our rich Lancaster farm --- Lancaster County farmland would be used to grow food for livestock and people, not engines. Local farmers would have a market for their crop and most importantly the products from the soybean crush plant would be as economically viable ten years from now as they are today. That is what I thought at the time.

As Mr. Willey's guest, I soon thereafter had the privilege of visiting a Perdue plant at Caulfield, North Carolina and Salisbury, Maryland. I was impressed by the efficiency of the process and how well the facilities were maintained, despite being 20 or more years old. And I also very much liked the people who devoted their day to showing me around. On that visit I was excited to share what I had learned with other members of my community who have a keen interest in industrial development. Truly this was the kind of industry we could embrace, but not so fast.

As we studied the solvent extraction materials Perdue had provided someone detected a

problem and the name of that problem has already been mentioned, hexane. We needed to know more details about the plant, so we developed a list of questions which we sent to Mr. Willey. He and his associates met with us and tried to answer the questions. From this meeting we developed more questions, which we sent to Perdue along with requests that the answers be given in a forum that would be open to the general public.

Then there was a very long silence. Having received only minimal answers from Perdue, my family decided to seek information on our own. Among other things that we learned, hexane is a dangerous neurotoxin. Our area's particularly prone to thermal inversions. Hexane vapors are potentially explosive and we already knew that the site is underlaid by karst topography making the ground unstable. But we needed experts to advise us in these matters and assure us that the specific plant proposed by Perdue would not be a hazard to people and property including Lancaster County's research recovery facility. It would be the closest neighbor to the Perdue plant.

For this purpose we engaged the legal services of Saul Ewing, environmental engineering services of August Mack Environmental, the explosion

expert services of Ballistic Analysis International and the scientific services of the Department of Earth Sciences at Millersville University. And these are the studies in which June Evans referred when she was speaking.

Because I know the importance of jobs and a tax base for the supervisors of Conoy Township I was hoping that the experts would tell us not to worry, that the plant would be fine. Eventually after Perdue announced the Conoy Township site as their choice, they did hold an open house for the public, but it was not the public forum that we had requested. Instead it was just a public relations event. This approach was in keeping with the presentation that Perdue made to Conoy Township Board of Supervisors. Despite it being a public meeting, questions and comments from the public were forbidden. Likewise, the same approach was used at a presentation made by Perdue to the Lancaster County Local Emergency Planning Commission. Questions and comments for all to hear were not allowed.

It has lead me to believe that Perdue cannot actually defend their use of hexane in the process and made statements such as it's no worse than gasoline and hexane is not a problem.

The one they used the most often, and which Wayne Black repeated tonight, is if it were a problem our effective offices not be situated so close. They're referring to their offices at Salisbury, Maryland, however, the plant --- that plant is not situated on karst topography subject to sink holes and caverns like the site in Conoy Township. It is not in a climate prone to temperature inversions like the site at Conoy Township and it is not in an area that already has degraded air quality like Lancaster and York Counties. Neither is the plant at Caulfield, North Carolina. On my visit there I remarked on how great it would be to take my bicycle for a spin because the land is so flat with no hills to climb or trap the air.

By now DEP --- you at DEP have received the technical comments prepared by August Mack Environmental for phase one in the above ground storage tanks. August Mack has done a thorough review of all the permit applications filed by Perdue and its consultants. They will be filing written comments on the phase two air permit in the next day or two. August Mack has significant experience in permitting facilities and they have found literally dozens of errors in calculations, emissions and understatements

in Perdue's applications. These errors all serve to whitewash the risks from the Perdue plant.

Included in the August Mack comments are two significant reports, which I hope that you will read thoroughly. One is the Ballistics Analysis International report prepared by Mr. Frank Chiapetta who is one of the world's leading experts in explosions. He has concluded that there are significant, specific potential problems with the configuration of the proposed Perdue plant. And the second report on the occurrence of thermal inversions in the Bainbridge area, which was prepared by scientist, Professor Richard Clark at the Millersville University.

And his climatic study concluded that in 2011, an average year, thermal inversions occurred on 313 days with some days having more than one inversion. My understanding is that there will be chronic exposure from any permitted hexane emissions that are trapped close to the ground or inversions. There's also the risk of acute exposure should an explosion or accidental release of hexane occur during a thermal inversion.

For the reasons stated in their comments already submitted August Mack Environmental concludes

that the Perdue applications should be denied.

I am extremely disappointed that this is the case and I'm also disappointed that despite their claims of being green and environmentally friendly Lancaster County Solid Waste Management Authority agreed initially to help Perdue obtain a permit from you no matter what. You are the protectors of our environment and over the past several months when I presented municipal leaders with information concerning potential problems I was met with the same response. We have no authority. This is an issue for DEP. The DEP has regulations to protect us. Those leaders firmly believe that you can protect their citizens. In fact, they are relying on you to do so. Thank you.

CHAIR:

Thank you. Next we have Carole Bromer. Carol?

MRS. BROMER:

Hi. I'm Carol Bromer, B-R-O-M-E-R. I thank you for having the meeting and I appreciate that we get a chance to talk. And as someone already mentioned, this is the third time for some of us who have health and safety issues with this particular site, with the business ventures that LCSWMA has

engaged with, previously on two corn ethanol plants on the same site. And some of those same health and safety issues repeat every time, just as has been mentioned, the cumulative effects of the emission from Brunner Island, from LCSWMA itself and the new plant. And I do hope that DEP takes that into account.

Secondly is the issue you keep hearing about the thermal inversion. It's a documented situation where instead of the emissions going up and being dispersed, they stay at the living, breathing area where we are. And then, of course, the karst geology, which has been mentioned, and the possibility of sinkholes.

So those issues come up every time LCSWMA engages with a bio fuels plant, but right now the new thing this time is hexane and it's pretty scary. Now, I live in East Donegal Township and I'm closer to the plant than most of the residents of Conoy Township. And it's pretty scary, as I said. My kids are in college now, but they spend a lot of time at home, Christmas break, spring break, summer. And so I'm concerned about hexane. And I am concerned that Perdue is going to be able to buy pollution credits somewhere else to pollute in that area. I'm not happy with Perdue for a couple of different reasons.

As I mentioned, these thermal inversions. The first time they met with some of our residents back in 2010 Perdue got together with some of us and they had no clue about thermal inversions. They didn't know what we were talking about. I'm glad that you've discovered them now and mentioned them. And then secondly I'd like to say that, as Ms. Nissley had mentioned, the format that we were hoping for where hard questions about health and safety issues could be publicly asked and answered had never been provided by Perdue.

Also, I don't understand what's going on with the DEP application, that it was split in two. A lot of people are saying it's to circumvent the process and that's a real question that needs to be answered. One of the things that I did find out at the open house was --- from Perdue was that Perdue was a ---. A Perdue representative told me that they were proud to be taking $8.75 million of Pennsylvania state taxpayers' money and I was shocked. Maybe it's different with corporate welfare, but I never heard anyone who's on personal welfare who's proud of the fact that they're taking money and they're on the dole. I was especially shocked that Perdue, who's listed in Forbes as one of America's largest private

companies and they had a revenue of $4.6 billion in 2011, is proud to be on the dole with Pennsylvania taxpayer money especially in such economic difficult times.

And when we speak of this grant, this $8.75 million, in the grant there are special conditions listed that, one, on page 37 of the grant that a phase one environmental study needs to be done. And on page 38 that geotechnical --- complete geotechnical environmental studies need to be done, and when I talked to --- Perdue's the subgrantee on this grant and the Redevelopment Authority of the County of Lancaster is the grantee. And when I talked to David Brazina at the Redevelopment Authority last week he hadn't seen any of those studies. Now, that seems kind of funny to me because Perdue was already supposed to have broken ground, so I don't know what's going on with that.

In that grant also Perdue mentions that they're going to provide 35 jobs to the region and the average salary of the job is going to be $18 an hour. And so that means that some of the jobs will be below $18 an hour if that's the average. Now, according to MIT, Massachusetts Institute of Technology, the living wage for our region for a family of four, mom, dad and

two kids, is $17.31. So that means that some of the jobs that Perdue's going to be providing will be below the poverty level. So this is what we're being told is going to be with the grant. They're going to provide jobs. Some of them will not be a living wage.

And in the grant application on page 24 they say the entire facility will be constructed using best available technology. They also say they will utilize best available emission controls on the same page and yet my understanding is that Perdue is refusing to spend a few hundred thousand dollars of the almost $9 million grant that they're getting from Pennsylvania state taxpayers to put a scrubber or a filter on the meal dryer where 80 percent of the hexane is going to be released into the air. It just seems that there should be some way that the unemployed can have jobs and the farmers can have an outlet for their product, and we still have air that doesn't have additional pollutants being brought into the area. Thank you.

CHAIR:

Okay. Next I have Nick Bromer. Nick Bromer? And please remember to state your address.

MR. BROMER:

Oh, yeah. Name is Nick Bromer. Same

address as my wife.

MRS. BROMER:

I didn't state it.

MR. BROMER:

Oh. 402 Stackstown Road, Marietta, PA. Need the ZIP? Okay. I was just sitting over here thinking how it would be, you know, if a company came to you and said they wanted to dump tons of gasoline on your property? And I started thinking hexane is completely gasoline. It's not really that different and I thought, well, I don't like it. Aside from that I'd just like to say my wife has researched this very thoroughly. She's very smart and I agree with everything she says. That's about it. Thank you.

CHAIR:

Thank you. Next on the list is Dean Burkholder. Dean Burkholder.

MR. BURKHOLDER:

My name is Dean Burkholder, 1865 River Road, Marietta. I'm next door to this proposed plant and I'm just right on the star. I'm not for it, I'm not against it. I have three kids. I just ask the DEP to protect my family. I'm taking Perdue at their word that they're doing everything possible to do so. And tonight listening to some of the testimony I'm not

sure how that is, but I'm also --- you know how people get when plants like this go in. I've been through --- as Judy has said, we've been through three of these plants. Two of them I thank God that they didn't go in because I don't know what would have happened if they did. I'm also a little disappointed that I'm over here tonight instead of my own township. We have solicitors in our township and I'm quite concerned why they didn't take the action that they needed to to get this all done.

You know, $30,000 in the budget, but here I am in this township. That's one of my problems. Like I said, I'm not opposed to it as many of you are and you can probably say to yourself, well, you're not, so maybe I am. I come from a farm background. According to some of the testimony an hour age my farm should have went up for sale, but I don't intend to move. If this plant goes in, it goes in. It's going to help as far as agriculture goes, but it's also concerns as many of you have raised the question of the hexane. I also look at --- I stopped at Sheetz the other week and I saw a guy get out of his car and he's puffing away on a cigarette. He's filling his gas tank.

The Perdue people took myself and my wife

on the most terrifying plane ride ever I've taken down to see their plant. And one thing I did notice when I walked into that plant was lost time injuries. I mean, I'm an industrial project manager. I own the farm beside where the property is going to be, the plant built, but I also work away. I have 30 employees --- well, 30, 35 employees at the location that I'm in charge of and I think my lost time injury right now is 648 days. When I went into the plant down in North --- South, wherever. Maryland. When I went down to see that plant one thing that caught my eye --- and I think the man's name was Greg that I spoke to was it was over four years without a lost time injury. And that is astounding.

I think about the hexane, but I also think about things like glycine, which is Roundup. There's more Roundup used by the average citizen than there is by farmers, which is kind of scary if you think about it. There's MEK, which in my business I have to be trained to use MEK, but many women don't know that they use it every time they put fingernail polish on. Like I said, all I'm here for is to state my fact that I want my family protected. Thank you.

CHAIR:

Thank you. Next on the list is Jennifer

Ericson. Jennifer Ericson?

MS. ERICSON:

Thank you for having this public hearing. My name is Jennifer Ericson. That's spelled E-R-I-C-S-O-N. There's no K. My address is 1080 Lambley Road in Landisville, Pennsylvania. And I don't make a habit of attending meetings like this, but when I heard what was being considered, I just couldn't actually believe that it was being considered to begin with. And so I felt compelled to come out and speak against this. Air pollution, of course, we know increases the rates of asthma and respiratory illness in children and adults. It also makes breathing more difficult for healthy individuals.

Now, I'm a runner and I'm healthy. I don't have asthma, but I can tell when we're having ozone action days just by how difficult it is to breathe during my morning runs on those days. I run with my friend, Amy Jordan, who is a neighbor. She also lives on Lambley Road. She couldn't be here tonight. She has asthma and she runs with me, and on ozone action days and days when we're having those thermal inversions that everybody has talked about already this evening, she has much more difficulty breathing and has to use an inhaler. Her son also

suffers, so it's real. People are suffering and it's due to the pollution that is aggravating it.

The American Lung Association monitors air quality, as do many other organizations, and Lancaster County has received a failing grade, that's an F, in air quality for several years now. By its very name the Department of Environmental Protection is charged with keeping the environment safe for all living creatures, especially children. That means not allowing companies to expose even one person, let alone hundreds of thousands of people to pollutants.

Perdue is planning to release an estimated 245 tons of hexane gas into the air each year. This is almost five times the allowed maximum limit. Hexane is a dangerous neurotoxin, as other people have already mentioned, that when inhaled it disrupts the nervous system causing paralysis. It can alter menstrual cycles, reduce fertility in men and women and cause miscarriages. In short it can kill. It is a dangerous pollutant.

Has the EPA or the DEP conducted any health risk studies to determine how this plant's emissions will impact Lancaster and York County residents, especially given the unique nature of our area and the thermal inversions that magnify the

pollution and keep it down to where we can breathe at? I can't believe that any study, if it has been conducted, would find that this plant is going to help our air quality. It's only going to make it worse.

According to the newspaper accounts Perdue would create about 30 jobs with this new plant. Honestly I don't believe that 30 jobs is worth the price Lancaster and York County residents will pay with their health if this permit is granted. Actually, there is no number of jobs that would offset the damage this pollution will cause.

Just because another company is greedy enough, in this case Lancaster County Solid Waste Management Authority, to sell their environmental credits to Perdue that doesn't mean we have to allow it. 245 tons of hexane is 245 tons too much, especially when we're already suffering from horrible air quality. If you grant this permit, what will happen when Perdue emits more than the 245 tons they've estimated? Their Caulfield, North Carolina site currently emits 264 tons of hexane gas per year.

As for the tanks, Perdue currently has several --- four processing facilities in Maryland, Virginia and North Carolina. I believe this would be their first in Pennsylvania. Hexane, as we've ---

some of you have already mentioned, is a highly explosive chemical making these tanks extremely dangerous to the workers and residents near the facility. Allowing these tanks to be placed on this site and close together is putting nearby residents at serious risk. If one tank explodes so will the other. Hexane explosions are deadly.

According to the National Fire Protection Association, hexane has a flammability rating of three, meaning it is a severe fire hazard. Perdue does not have a perfect track record when it comes to handling dangerous chemicals. They had an explosion in 2005 at their Salisbury, Maryland facility involving --- it involved sodium chloride. Fortunately no one died, but several were seriously injured. Perdue is not the only company that uses hexane to process soybeans. Other companies have experienced hexane explosions. Minnesota, a soybean processors plant in 2009, a soybean oil factory in a Brazilian City of Hermosa in 2009, the Arkansas Riceland food plant had an explosion in 2006, the Iowa Ag processing corporation plant had an explosion in 2003, the Canadian Can American food plant had an explosion in 2002 and the Indiana Central Soya plant had one in 1994. While this list may not seem like

explosions happen frequently, what had me alarmed about these hexane explosions was that for many no one knew what caused them. The workers said, oh, everything was running just like it always is. All safety measures were in place. We don't know why it happened, but it happened.

One of them happened when a plant was actually shut down and not even in operation, so it really shouldn't have happened. Fortunately that limited the number of people who were injured. Eight employees were harmed, five critically in that explosion. That was the explosion in Iowa. I just think the risks to the lives of the 30 proposed Perdue plant employees is too great. I can't believe that we can't find 30 safer agricultural jobs for these people even on that same site.

Your job, DEP, is to protect us from this. You have a chance to save us from serious health risks. Please don't sell out the health of Lancaster and York County's children for 30 jobs and some cash. Please don't grant this permit or both permits. I would hope you will instead urge Perdue to find an alternative method for processing their soybeans, one that is safe for everyone young and old. Thank you very much.

CHAIR:

Next is Warren Evans.

MR. EVANS:

My name is Warren Evans, E-V-A-N-S. I live at 7160 Roundtop Lane, Hellam Township. I've been a resident of Hellam Township for 23 years. I'm a retired medical research scientist and spent 30 years in cancer research at the National Cancer Institute in Bethesda, Maryland. I have a BA degree in chemistry from Princeton University, received a Master's degree in medical sciences and a Ph.D. in biochemistry from the Division of Medical Sciences at Harvard Medical School. I am also currently an actively engaged in supporting the local farm community of York and Lancaster County by serving as president of the Horn Farm Center for Agriculture Education, which is located on 187 acre farm in Hellam Township. Because of my background in medical research, I will be commenting mainly on the health hazards associated with hexane emissions that will be generated by Perdue's proposed Conoy Township facility if it is built without proper equipment for capturing hexane emissions.

Our township officials and residents are not fooled by Perdue produced misleading statements to

the press that they are removing most of the hexane from the air by using a scrubber on the part of the extraction process that removes residual hexane from soybean oil. This scrubber removes 99 percent of the hexane from the oil, but only 20 percent of the hexane emissions from the total plant. The major part of the hexane emission from this plant would come from the meal dryer oven, which has no equipment on it to remove hexane emissions and allows 80 percent or up to 250 tons of the total emissions from the plant to be dumped in the air that we breathe. Don't be fooled by numbers.

I want to make it clear at the beginning of these comments that I am for businesses that create farm related jobs in our local community. Perdue Agribusiness located in Salisbury, Maryland wants to bring new jobs to our area, but at the same time they want to be permitted by DEP to pollute the air we breathe with toxic waste product such as hexane which they plan to release into the air at the proposed soybean extraction factory. I believe, however, that we can have both clean air and farm related jobs if Perdue agrees to follow all existing DEP regulations which require them to install equipment that will capture or control toxic hexane emissions at key

points in their soybean extraction process. This equipment would enable Perdue to greatly reduce the toxic hexane emissions and set a new industry standard nationally for the required lowest achievable emission rate, which they referred to the number --- the letters LAER, for their --- for these toxic emissions.

I also believe that it is premature and inappropriate for Perdue representatives to talk about jobs and money to Conoy Township officials and the media when they have not yet submitted a thorough analysis of the potential health and environmental impacts of the proposed facility as is required by DEP regulations that deal with the proposed hexane storage tanks on this site. Unless this information is supplied to the DEP I request that DEP deny Perdue's applications for phase one, phase two plan and approval of the application and for their above ground storage tank permit. Perdue certainly has a right to profit from their business investment, but they should not be allowed to do this at the expense of the health and safety of the people who live in Hellam Township and other communities in our area. So far in their statements to the press and to the Conoy supervisors Perdue representatives list only the benefits of this factory without revealing the real and potential

dangers hexane emissions pose to the health of the people who live in surrounding communities.

Hexane is a liquid solvent derived from petroleum and has properties similar to gasoline. Hexane in the vapor form is highly explosive and constitutes a major safety hazard in and around the proposed soybean extraction facility. Hexane is a toxic chemical that is listed by the EPA as a hazardous air pollutant. It is a neurotoxin known to have harmful effects on humans such as nerve damage, muscle paralysis and mental abnormalities in cases of chronic exposure and even death at higher concentrations.

Because humans vary widely in their susceptibility to chemical exposure due to age, gender, genetics and poor existing health, it cannot be presumed that even a low level exposure to a chemical such as hexane is risk free unless there are sufficient data to contradict this assumption. To my knowledge, there have been no --- there have been few, if any, serious public health studies of human populations exposed to various levels of hexane emissions around soybean extraction plants. According to the U.S. News and World Report this is partly due to the aggressive chemical industry lobbying to exempt

suspected toxic chemicals from regulation. Perdue's choice to locate their new plant right next to the Lancaster County incinerator and just a few miles down river from the Brunner Island coal burning plant could lead to another type of hazardous air pollution, namely elevated levels of toxic ozone smog. This incinerator and the Brunner Island plant are among the largest generators of nitrous oxide in Lancaster County.

Both of these facilities release millions of pounds of nitrous oxide per year, which in the presence of the hexane emissions released into the air from the Perdue factory could result in elevated levels of toxic smog. If you look on the plan, the two smokestacks are right next door to each other practically, so you have nitrous oxide coming out of one stack and hexane coming out of the other. And guess what they do on a sunny day? Form smog and it goes right down to the ground. If there's an inversion, people are exposed to that.

People's choice to --- Perdue's choice to locate this new plant next to the Lancaster --- sorry. The smog makes the air dangerous to breathe and leads to asthma attacks, emphysema and other lung diseases, particularly among young children and the elderly.

Residents in the Lancaster/York area already suffer from high levels of smog and are advised to stay indoors on hot and hazy days to avoid breathing smog polluted air. The healthcare costs and premature deaths caused by this smog pollution are costs to the unsuspecting public that have not been reported by Perdue to the press or to the county township officials. You never hear about that. They're externalizing their costs onto us. We pay the medical bills. Go out to Apple Hill and look at the parking lot out there. Can't even find a parking place.

It should also be noted that smog levels are greatly elevated at ground level during temperature inversions that are known to occur in the region. According to Perdue officials, get this, Perdue has had no previous experience with temperature inversions in places where their existing soybean facilities are located. In view of the potential health hazards caused by smog I would ask the DEP to require that Perdue carry out an air bodily screening study on the hexane emissions released from their proposed plant in Conoy Township. I recommend that you don't to Lancaster Airport to get the data. Go to Bainbridge because that's where the temperature inversions are. You'll see it all washed out. If you

go to try to get your meteorological data from up there at the airport, it's not --- there's no hill there. There's no river there. That's what causes the inversion.

This study should take into consideration the effect of the numerous temperature inversions and high levels of nitrous oxide that are known to occur in the region around the proposed new plant. Excuse me. I'm getting a little out of breath here. The footnotes in section D, page 72 of Perdue's phase two plant approval application state that the Department may request additional information to evaluate the application such as air quality modeling and a plan for air pollution emergencies. If we are lucky, perhaps such a study will help us to avoid the type of deadly smog that hung over Donora, Pennsylvania out near Pittsburgh in 1948 due to a severe temperature inversion.

So you don't have to go to London to find out where the troubles were. So there was a severe temperature inversion in Donora. The chemical smog that usually dispersed into the atmosphere around Donora was trapped in the inversion and accumulated until a rainstorm ended this inversion and dispersed the smog after four days. Twenty (20) residents of

Donora died and 14,000 --- not 1,400, 14,000 people suffered severe respiratory illness such as asthma in the aftermath of this tragic event. I cite this worse case scenario not as a scare tactic, but as a warning that we cannot go on casually dumping more and more chemicals such as hexane into the air we breath and not expect serious impacts on our health. These impacts can come on us suddenly over a short period of time as it did in Donora with little warning of the grave dangers that lie ahead. I earnestly request that the DEP keep this in mind when they reply to our comments. Thank you. Thank you for holding the meeting.

MS. WITMAN:

Thank you, Mr. Evans. Next we have Dr. Barbara Martin. Okay. We got Christopher Martin.

MR. HOFFMAN:

Dr. Hoffman.

MS. WITMAN:

We have Martin here, but perhaps the --- yeah, perhaps it was ---.

MR. HOFFMAN:

I have a comment.

MS. WITMAN:

Okay. No problem. All right. We have

Barbara May.

MS. MAY:

Hi. Good evening. My name is Barbara May, M-A-Y. I live across the river in Lancaster County in Millersville and I've lived there all my life, most --- almost all my life. And like several other people have mentioned, I first became aware of air pollution possibilities in Lancaster County when proposed ethanol plants were brought before the community. What caught my attention about the current one, as several other people mentioned, was the 200 tons of hexane emissions that are likely.

And reading about the nature of hexane and its potential for destruction, I got even more concerned, but then I was relieved to hear that there were mineral scrubbers that can remove the hexane, almost all of it, from the air. But then I learned that Perdue doesn't want to do that. And then I thought what possible use can I be? How useless I am, how useless we all are in the face of large corporations like Perdue. And then we spent Thanksgiving on the other side of the country. My husband has COPD. That stands for chronic obstructive pulmonary disorder. It's a respiratory condition and it's progressive and there is no cure. Granted he was

a smoker. He earned it, but that's water over the dam.

The symptoms are coughing with or without phlegm --- his is with phlegm --- fatigue, chronic shortness of breath with even mild activity, frequent respiratory infections, trouble catching your breath, wheezing. The only symptom he doesn't have is wheezing. In basic training in the Navy he won an award for being the most physically fit. Now walking up a driveway is impossible for him. Walking the dog became a miserable ordeal instead of the evening pleasure he used to enjoy. So what's it like in addition to living with COPD? We're lucky. He doesn't yet have to be on oxygen, but often he has to stop midway up the stairs to catch his breath.

Imagine how you feel after running or walking faster than you really can. Just imagine that. That's his day a lot of the time. The biggest, the nastiest one is the gut wrenching coughing when he's trying to get up the phlegm that comes with this condition. Sometimes it sounds as if he's going to choke. I've accepted all this as part of the illness, just the consequences of having --- his having been a smoker.

And then we went to Seattle. Our first

two days he coughed, but it was getting less. By the third day the coughing had almost disappeared and he had no trouble keeping up with the rest of us on city streets. We didn't have to walk slowly and wait for him. He felt great. His energy was high. He actually enjoyed the museums and other tourist activities.

And then we came home. The coughing started on the way home from the airport. A day later the phlegm, the breathlessness, everything, it was all there. It was the most dramatic illustration I've ever had of the hideous difference in air quality between where we live and where you live and where my son lives --- one of my sons. I'm pretty healthy for my age. I walk my dog several miles most days, but I can tell --- now, what do they call it? An ozone something? I call it a bad air day and I can tell when it's a bad air day. Walking up to the mailbox my lungs burn, I'm out of breath, my legs are weak and my first thought is, oh, geez, what's wrong with me now? And then I realize, oh, it's a bad air day. And I can also tell a bad air day when I look at my husband. There's no color. His face is a little blue sometimes and, of course, his breathing is a lot more difficult. I'm telling you this because I want you to realize

what it's like on a daily basis to live in a place where the air is chronically bad. And we take it for granted.

When I say, oh, it's a bad air day, I'm taking it for granted. That's what really gets to me. We take it for granted that we have to live in a bad air place. So when I hear about 100, 200 tons of hexane going into our air and the combination, as people have said, about hexane and nitrous oxide, and what a wonderful soup of smog we're going to have, I get angry. And then I hear Mr. Black say we believe everything is going to be okay. And I don't want my --- I don't want to live with their beliefs. I want him to tell me we know beyond a shadow of a doubt that you're going to be okay and that we're not going to pollute your air. I want to know the DEP is going to know that our air is not going to get worse. I want to know that Perdue is going to take genuine responsibility for our air quality and I don't want it based on belief. Thank you.

MS. WITMAN:

Next we have Tammy Baer.

MS. BAER:

My name is Tammy Baer. I live at 4700 Bear Ridge, Hellam Township. That's B-A-E-R. I grew

up here and currently live in Hellam Township. My German and Scottish ancestors settled here and many are buried in the Dietz Cemetery. My papa Charlie Scott lived right across the street and was a lifelong volunteer here at this station. I have invested interest in this community. I am a landowner and landlady and hope one day to extend an invitation to the Horn Farm community to organically farm some of my acreage. I have two granddaughters living here and I am concerned for their health if they continue to do so.

How can we tell our children drugs are bad for you when adults --- when we are assaulting them with the very air they breathe, the water they drink and the food they eat? Everyone's eager to support breast cancer awareness and wear a pink ribbon and hold fundraisers for children with leukemia. It's a noble cause, but I say let's eradicate the causes at their source.

156 tons of hexane a year, it makes me sick. Until these corporations are held liable for the destruction they leave in their wake, the deaths and disease of our loved ones, I don't see anything changing. They are making a profit and we are dying. We have natural gas extraction running rampart in the

northern western PA. We have three nuclear reactors in our vicinity. I have friends sitting here who could list numerous other industries that are polluting our beautiful state in order to line their pockets with fortunes and leaving us with the toxic air, water and food.

We have the richest farmland in the state right here in PA. I think that is a treasure we need to take seriously and preserve. Maybe it's already too late for PA, and the country for that matter, but it's going to get far worse if we don't stand up and say stop right now. This world isn't the world my papa lived in. It's not the same world I grew up in and it makes me very angry to think that I have to consider moving away from the United States of American in order to have my grandchildren grow up in a toxic free community. 150 tons of hexane a year, I can't believe this. Thank you.

MS. WITMAN:

Thank you, Ms. Baer. Next we have Pat Lemay.

MS. LEMAY:

Pat Lemay, L-E-M-A-Y, 78 Sun Lane, Millersville. You've heard many excellent points tonight, so this is going to be very brief. It is

well established that south central Pennsylvania has some of the worst air quality in the nation and that according to the American Lung Association the causes of asthma --- the cases of asthma are higher here than in the national average. It is also well established that there's a link between poor air quality and multiple sclerosis and there's a higher incidence of that disease in Lancaster County than other areas of the country.

Further, it is well accepted that air pollution contributes to cardiovascular disease and heart attacks. My questions for the DEP are given that hexane is a neurotoxin and given that Lancaster County is already a non-attainment zone due to the toxic emissions that already exist here, why would you not require Perdue to really use the best available technology to minimize the adverse effects of its emissions? And given that the air pollution is right here in York and Lancaster Counties, how would Perdue's buying pollution credits from a business in another state or even next door help the pollution problem here? As a regulatory agency charged with protecting the health and welfare of the public here in Pennsylvania, DEP has a morale burden to require Perdue to use the best available technology throughout

its entire operation. Thank you.

MS. WITMAN:

Now we have Chief Fred Smeltzer.

MR. SMELTZER:

Good evening. My name's Fred Smeltzer, fire chief from Hellam Township. S-M-E-L-T-Z-E-R. I've been involved in the volunteer fire service for 43 years. I served as the chief officer for 37 years in Wrightsville and Hellam Township. I'm current in all my NIMS and hazmat certifications and I'm very familiar with the area of the Perdue plant as we run mutual aid in East Donegal Township.

I want to first say that I personally confirm the issues raised by the previous speakers and written comments on prevailing winds and vapors in the Hellam Township. In my firefighting and fire chief career we have numerous times we've responded to the odor of natural gas outside running from Wrightsville Borough to the west side of Hellam Borough in Hellam Township, and have traced these natural gases back to Texas Eastern and Cargill, which are located in East Donegal Township.

I was first made aware of the soybean extraction facility at the Lancaster emergency preparedness meeting October 4th, 2012 and I have the

information provided by Perdue. The points I wish to present is to deal with the 20,000 gallons of storage tanks above ground and the permit zone. This map previously presents the shown proximity to Hellam Township and the proposed facility.

I wish to express my concerns for a potential fire explosion of vapors released of hexane, which can be stored --- or will be stored at this facility. As many have presented already, neither I or Hellam Township are proposed (sic) to this facility at all. We just would like to provide the safety --- provide that the public safety is satisfactorily addressed by the DEP and all concerned parties. The property in this area has sinkhole activity underlying carbonate bedrock. Will the DEP provide --- or require Perdue to provide an analysis of soil and related to safety for the installation of these tanks? Will spill prevention and preparative response plans be required? Will risk management plans be required, a safety security training, plant facility training, security chain link fencing with cameras? Limited access point guarded by trained personnel and security cameras, appropriate identification badges for all employees and vendors going in and out of the plant? Security level outside lighting at night,

identification and enforcement of restricted activity areas, security for parking of all tankers remaining on the facility overnight, blast resistant measures for the critical plant operations and tank storage areas? Requirement of chemical security, vulnerability access to the U.S. Department of Homeland Security in assistance with the U.S. Department of Agriculture?

In conclusion, I wish only to say that these are dangerous times. Both terrorism, domestic and foreign, is a reality in our world today with flammable liquids --- with a flammable liquid facility of this magnitude. The old adage of an ounce of prevention is worth a pound of cure cannot be more appropriate in a situation like we have today. Thank you.

MS. WITMAN:

Thank you, Chief Smeltzer. We now have Steve Izzo.

MR. IZZO:

My name is Steve Izzo, I-Z-Z-O. I live at 11079 Gumtree Road in Brogue. I'm here because I work most of my working life in Hellam. I had a business in Hellam for a long time. I have a lot of friends in Hellam. I actually have been to a lot of

these meetings and I've spent a lot of time fighting natural gas extraction, which you know as fracking. And there are other people in this audience that I know and I can see that have also had some experience in that area.

And what I'm here to say is that I don't --- I no longer believe the DEP is here to protect us. I think the DEP is here to protect corporations from us. Time and time again the regulations aren't good enough to protect us or they're not enforced and it no longer seems like a coincidence to me.

I don't know whether the results of this hearing are going to have any effect on the decision DEP makes. I'll be highly surprised if they do. I attended many of these for the Susquehanna River Basin Commission that gives --- allows permits to be given to the fracking industry to withdraw water from the Susquehanna River. And I heard comment after comment at multiple meetings. I mean, almost everyone opposed, all permits approved. This may sound negative. Too bad. This is my experience. This is what I've experienced so far.

I can't imagine why this plant's even being considered. I really don't. I realize you guys' job here is to, you know, present Perdue in the

best possible light because your work depends on it. It's your income. I get all that, but producing this kind of pollution --- I'm sure you've heard the term sacrifice zones. Well, sacrifice zones used to be in a third world country. So they used to be out in the middle of nowhere where there were very few people. Well, now sacrifice zones are coming to where there's populations because the need for profit never ends, you know. And the amount of sacrifice that we are supposed to make --- I mean, we pay; right? We pay. The DEP operates because we pay taxes. That's why it operates, you know. All our government operates because we pay taxes, yet our governor is given almost $9 million to an industry that's already filthy rich while people don't have homes, don't have jobs. I mean, it's way beyond anything reasonable. Way beyond.

You know, and I'm just basically here asking you guys to do more than just leave here tonight and say, oh, that's too bad. They shouldn't be able to do that. You guys need to say something, you know. You need to write letters to the paper. If we don't stand up and start talking about this, it'll never end. It'll never end. I promise you that. If the DEP was protecting us, then why is it that we

already have such bad air pollution and they're considering even more, you know? What protection is there really taking place?

At the top levels of government a lot of money changes hands, you know. I mean, corporations have way too much influence in our government and frankly the stories of personal tragedy, you know, of disease and loved ones getting sick, I don't think it matters. I think it's the cost of doing business, you know, and I think we're all expandable. That's how it's viewed. And if you spend enough time fighting various corporate industries or whatever, you will certainly come to find sooner or later that we are considered to be expendable. And you can't.

I wish Maria Payan was here, you know, Peach Bottom Concerned Citizens Group. She fights agribusiness all the time for buying off politicians, for getting laws changed, for doing tons of things that are not in the interest of people. So I would just submit to you that Perdue has no interest whatsoever in what we think. They just want to make a bunch of money, you know. That's what their job is, to make a bunch of money. And I would also suggest that the DEP, while these are probably very good people, they're probably, you know, influenced by

forces well beyond their control and certainly beyond ours, you know. And when $9 million is handed to a company the size of Perdue, you know, there's no more chickens left in the chicken house. They're all foxes.

MS. WITMAN:

Thank you. Do we have two more? Mr. Wolf, did you want to say something?

MR. WOLF:

Yeah, I'll say something.

MS. WITMAN:

Okay.

MR. WOLF:

I really didn't prepare anything this evening and I just thought that I would like to reiterate some of the items stated.

MS. WITMAN:

I'm sorry.

MR. WOLF:

I'm sorry. I'm Steve Wolf, 585 Kreutz Creek Road, Hellam 17406. I, too, would like to thank everyone from Conoy Township for attending here this evening. Believe me, it was not our intent to overshadow you in this hearing and we wanted to make sure that you were a part of it. And as Hellam

Township supervisor, I am also on the Horn Farm Board of Directors. I'm also on the Local Government --- I'm the chairman of Local Government Advisory Committee for York County and I'm also the first vice president for the York County Association of Second Class Township Supervisors and a former Marine.

I, too, would like to just say my research has been as brief as it's been, you only need to get into some of the areas of the internet. The internet's a great thing because there's no hidden secrets. Just look at an MSDA sheet for hexane, n-hexane and you'll see it's not good stuff. There's 16 parts of an MSDA sheet, one of them being acute and chronic effects, and if you look at the acute and chronic effects, you'll notice there's distinct items that we should all be concerned with the soybean extraction plant.

I think everyone's referring to the hexane emissions and I believe it's 246,000 pounds of hexane released. Now, this hexane is not just smokestack gas going up. It's vapor. It's gasoline vapor. It's more akin to benzene than it is to gasoline and we all know what benzene can do. There is a total of 84,000 gallons of hexane delivered to the plant a year, 40,000 gallons stored. That would

seem a little high to me that if you're only using 7,000 gallons a month why you would have to keep 40,000 gallons on hand in above ground storage tanks.

You know, we talk about temperature inversions and I know that everyone here has probably experienced a temperature inversion at some point in their life and your neighbor starts a fire someplace or has a fire or fireplace and we notice that hundreds and hundreds of feet away you can smell it in all directions. I mean, you don't even have to be downwind. You can go upwind and smell it. I can sit here tonight and probably smell somebody's cologne that's 20 feet away. That's the kind of influence this plant is going to have on your health.

Hexane, and from what I read, has little or no odor, so there we have to worry about that. Also hexane is --- can land on water and from what I've read it will stay on the water for several days before it sinks. So the mighty Susquehanna is now --- it's not just air, it's water.

You know, we talk about corporate welfare and I, too, am opposed to corporate welfare and I hear all too often about the poor people who are on welfare get slammed when we know most of this dollars go out to corporations. I think of the almost $9 million

that Perdue will have or receive and I think about what the folks in Conoy Township, the farmers in Conoy Township can do with $9 million. This is a significant sum of money and I know that it would create more than 30 jobs or 35 jobs if it was delivered to the community for those leaders to plan and use.

I'm a community leader. I'll represent with support of 4 others, 6,000 people. Tonight we have mayors of both Hellam Borough and Wrightsville Borough. They represent 3,000 and 3,500 people. That's quite a few folks tonight that are in support of this. We hope that we make an impact tonight. We hope that DEP understands our concerns and we hope that in most cases that these permits are not looked at closely --- or they're not looked at closely. They're looked at probably seldom because of the technical information on them. It would make it almost impossible for a citizen to review a plan. It takes support of your community, it takes support of your leaders and I'm very proud that we have people like Mike Martin, Warren Evans to support us in this endeavor. I'd like to thank you all tonight and thank you.

MS. WITMAN:

Thank you, Mr. Wolf. Matthew Crème?

ATTORNEY CREME:

It's pronounced Crème and I will yield my time.

MS. WITMAN:

Crème. I apologize. Okay. Thank you, sir. Are there two more?

CHAIR:

Yes. There were two possibilities that we'll just check on. Seth Grove? You would like to?

MR. GROVE:

Yes. My name is Seth Grove, G-R-O-V-E. I live at 620 Stackstown Road with my parents. I've lived there for 24 years of my life. I'm a graduate of Penn State University with a degree in design construction engineering technology with four years focus in aerospace engineering also. I have lived here all 24 years of my life. I am also the assistant cross country coach at Penn State Harrisburg. I've roamed the streets in this area all my life. I was a second team all conference division III runner.

When we talk about air quality, I've run my fastest times on the roads around my house. I've not run them on tracks miles away, I've not run them in courses in different states. I've run them right

next to my house. You could account this for me knowing the area better, but I account it for air quality and exceptional lungs. We talk about hexane being a very toxic gas and how it can cause cancer, but we have TMI sitting just miles away from us that has caused cancer to many loved ones in this area, yet no one can fight such a large corporation.

My sister was diagnosed with thyroid cancer her senior year of high school and is now five years clean. She now lives in Wrightsville and is striving great in a career. You talked about the Armstrong Ceiling Plant causing pollution in the airs and how ceiling tiles back in the '80s and early '90s had asbestos in them, and that could have been a large quantity of why that had so much pollution then. I now work in the construction industry and deal with the DEP daily with different regulations and have had to fight them on different safety qualities that I don't want to deal with as a --- in the construction industry.

We also talked about hexane as an explosive. Yet I live miles from Nissley Vineyard and several years ago felt the explosion from their tank, from one of their buildings. It shook the house I live in, yet I don't know the chemicals that were left

off by that explosion or how it affected the air quality in this area. We know explosions happen and we know the tanks that will be used are DEP regulated and approved, but we know that accidents happen and we cannot control everything 100 percent of the time. I live literally miles --- a mile or less away from where this proposed plant is to go in. Like Mr. Burkholder said, we just want the DEP to protect us in their decision. And I know with working with them that they do consider everything.

Geotextile studies are done in this area and we know due to the limestone that there are sinkholes everywhere including at my own house. We cannot control these sinkholes and as much geotextile work we do in the ground, you cannot predict exactly where every sinkhole will occur. And just like I said with explosions, you can't predict everything. Some things just happen out of your own control.

You want to say that hexane is a gas that affects the nervous system, yet we go to dentists and doctors for surgery and we use laughing gas, which affects our nervous system. Sacrifice zones were made in third word countries, yet now we fight the government day in and day out about big businesses moving jobs across. Now we bring those jobs back to

America and we fight because they are no longer safe for our people. Maybe that's why big businesses move them out of the country.

I'm not here to sound like I am in support of Perdue and I'm not here to say that I am in support of the comments made earlier. I just hope that Perdue is honest enough and that DEP does their job correctly to provide us all a safe area to live in and maintain. Thank you.

MS. WITMAN:

Thank you very much.

CHAIR:

The last possibility is John Eifert.

MR. EIFERT:

Eifert (corrects pronunciation).

CHAIR:

What?

MR. EIFERT:

Eifert.

MS. WITMAN:

John Eifert.

MR. EIFERT:

Yes. My name is John Eifert. I live at 4819 Tracey School Road right here in Hellam, York, Pennsylvania 17406. E-I-F-E-R-T. I just have about

two or three questions. Then I'll just have a brief statement and a lot of this, of course, is discussion that has been tonight about the chemical that's used in the processing to derive the oil from soybeans.

One, in terms of the ventilated product whether it's in buildings and so forth or whether it's the drying process where the heat is generated to dry it out, will that be going to the atmosphere? That's the first question.

Also, the hexane, what I gather, is going to be in a liquid form as it's in storage tanks in liquid form. Will those storage tanks have to require a venting condition or is --- you know, to atmosphere or to another secondary vessel?

Thirdly, based on standard MSDS publications hexane is very reactive with chlorine, bromine and fluorine. Now, I know that Norfolk Southern Railway runs tank cars up and down the river on a regular basis. So is the location of these two tanks in an area that would --- in case there was a derailment there wouldn't be a collision of these tanker cars with these other chemicals that's highly reactive with ethane? That should be considered. I'd like to know that there's precautions being put into play for that.

And now I just have a statement. With the situation with the use of hexane --- with the hexane, you know, everyone's here. We're all, you know, concerned about it. There's a solution for it. It's not like you can't process this stuff in a safe manner. It's like, oh, how do you do it? There's scrubbing technologies there. It can be done right. Why do we all --- we shouldn't have to worry about it. EPA should do their job and be responsible and make sure it's done right. Perdue should be responsible and make sure they do their job correctly and they're good stewards of our community. That's it. Done. There's a solution for it. Let's all do it right. Thank you.

CHAIR:

Thank you. Okay. So because I saw some people come in late who didn't get to sign it, I'm going to open the floor and ask if there's anyone else who wishes to present testimony tonight. Yes, ma'am. Since you came up, the woman in the red sweater. If you can, come up, please. And just state your name and your address, please, when you come up.

MS. HELLER:

My name's Jane Heller, H-E-L-L-E-R. And those that know me would agree that the last name is

prophetic to some extent. Mr. Izzo really touched on some things toward the end of his discussion that I think are critically important and I think it's important to remember and I've been involved with the community of the people who are interested in environmental issues for some period of time now. I think it's first important to notice that we probably do not have a representative from any of the governments here. Do we have anybody from Pennsylvania or from York County, any of the representatives or senators or anyone who's in a position to exercise any effort in these kinds of things? Probably not.

I think the big concern we all have is --- and I can well remember when John Hangar left DEP several years ago at the onset of Mr. Corbett's entry into the politics of running the state. I wasn't the greatest fan of John Hangar. I think he did reasonably well. He, you know, tried. I don't know this new person who is running DEP, but I think we have to be realistic about this and all the speeches that have been made tonight are well done. The information is great, but really we have to think up the food chain, folks. This is much further up than DEP.

When you have a governor who cuts spending to the public so that the counties have to cut spending for the senior citizen groups --- and I guess I would say I qualify in that category, but you know, there are things that are of concern with those of us who have lived here for many years or were born here. That politics seems to be playing a very active part in a lot of these things. The concern would be once this goes from this hearing today and goes to the hands of DEP to make the decision where would the pressures be placed on DEP to go along with? We've already had, what, $8 million, $9 million handed or is going to be handed to Perdue and we all like the idea of promoting jobs. That's great for the economy, but as everyone has said, and I will say as well, at the expense of our lungs and those of us who are seniors, you know, can look forward to breathing issues.

I live in East York. Used to live in Hellam for many years. There certainly is real concern about that, but the question is, is there concern at the very top reaches of the political spectrum here? And we have a county that is typically run by one party and I don't want to mention which one, but you know, I'm not sure it's totally echo friendly let us just say. We have issues with our

rivers, we have Chesapeake Bay folks who come up here and they're very concerned about what's happening with the fracking that's being done. I've been involved with those organizations. They are also struggling with the issues up there in the northern part of the state and we need to be aware that that can move further down toward us, that that can destroy our river. I happen to have a summer place. Not keen on the idea of losing huge amounts of money because the river turns into crude, which is sort of what's happening.

So we have to think not only in terms of our health issues. We have to think in terms of the financial issues, you know. Mr. Corbett, pray God, before too long will be out of office and we will have somebody new come in, but in the meantime we will have a corporation spewing contaminants into the air. If this county is already known as having problems, environmental problems, let's think about what that does to the value of our property if we're going to get, you know, concerned about finances. We're already looking at $8 million of our tax dollars that went to this company or will go to this company. We might have chosen some other use for that perhaps. We would prefer to have that go to help the poor, perhaps

we would like to see it go to provide job training, et cetera, et cetera, something to build the community.

I'm not sure 20,000 gallon tanks of killing fumes is exactly what I would call helping the community, certainly over there in Marietta. And if I lived in Marietta, I'd be scared to death because, you know, do you really want that stuff on your side of the --- I guess my whole point is that without going up the food chain here, folks, we can sit here and we can cogitate, we can have all this wonderful discussion. What is it going to do? Is it going to change these folks' minds? Because frankly I think the pressure comes from above, so without any pressure coming from underneath where is this going to happen? Are you going to talk to Mr. Gillespie or are you going to talk to Mr. Wall? Are you going to talk to Mr. Smucker? Are any of those folks paying any attention to this? These are the folks we elect. We send them up there to take care of us, to take care of our environment, to make sure that we stay healthy. We pay taxes. We pay their salaries very generously, as you might notice.

So what are we getting for our dollar here, you know? I hate to sound like a grumpy old woman, but I am a grumpy old woman. When it comes to

stuff like this, I feel it's fair to be a grumpy old woman. I've earned the years. You need to think about where do you go next with this? It's great to sit here and complain and be angry, et cetera, but if you don't do something beyond this, it's probably going to happen. And then what? And then we'll all sit here gasping the air wondering what's --- why we're suffering with this. There are steps beyond this that need to be taken. I don't know, you know, where you're going to go with this.

If these folks have the opportunity to spend a little more money and make it safer, then that's what should happen, but it ain't going to happen if you're just sitting here hoping the DEP folks who are --- let's face it, they're under the Governor. They're not in a position maybe to make these kind of decisions, and without pressure from you, what's going to happen? I mean, I would hope that they will do the honest thing, but you know, reality is corporations are corporations. They're in business to make money. They're not in business to protect our health. We have to be realistic about it.

And so I would say to you, you've got representatives, you've got senators, you've got people in Harrisburg who control this group. If you

are complaining about it, you need to do more than come here tonight and then be unhappy when it all goes through. There are things you can do and I would hope that you will do it. Thank you. 1819 Idylwyld and I defy you to spell it because no one I have met since I've moved there two years ago knows how. Would you like me to spell it for you?

MS. WITMAN:

Sure. Why not?

MS. HELLER:

I-D-Y-L-W-Y-L-D. It is the Scottish I guess.

CHAIR:

Anyone else? Yes, sir.

MR. KING:

Thank you everyone for being so patient. My name is Richard King, K-I-N-G. My address is 5860 N as in North, River Drive and that would be Hellam. Thank you, Hellam Township supervisors, Hellam Borough, Fire Company and you folks for listening to us tonight. Good evening everyone on the 13th day of December.

I see a lot of familiar faces here from Conoy Township. We've been through some similar issues in the past. Here we are again. I hope you

all have a safe journey home, by the way. Traveling over to the other side of the river during those cold and snowy nights wasn't all that pleasant for these last two adventures that we went through. Even though our municipalities are joined by the Susquehanna River, I know you folks have about 30 minutes coming up here, so here it goes.

I think it's really essential to take --- sit up and take notice to the true lack of regional planning. Okay? It's a common theme that the dirty business is often performed at the edges of municipal boundaries. The Lancaster incinerator is at the edge of Conoy Township and Lancaster County boundaries. And while it may be true that the river plays a factor, we also see the same theme with power plants in the same vicinity on both sides of the river, but we know that air and water movement did not recognize these boundaries and their de-cumulative negative effect.

It seems odd to have that ozone action day last week. Colder months of the year. Will this proposed plan increase or decrease more such days in this area where air quality's already stressed? Perdue is the newest player to look at the location presently presented for their scheme to --- for their

corporate coppers and, you know, when one looks across the Susquehanna River and sees these vast hillsides lined with trees, one might conclude that there isn't anybody there and nobody cares. Well, I'm here this evening to tell you that such a notion is patently absurd.

People live behind those trees and I happen to be one of them. Hellam Township has gone to extensive lengths to preserve and zone much of this area as a continuous canopy. Enjoy the view, but please don't poop on our doorstep.

My parents who both became educators descended from law abiding farmers, but they always continued to farm. I can vividly recall how my mother was humored with Frank Perdue, the chicken man, who'd come on the television to speak of his newer, improved chicken. She thought he was hilarious. She knew a thing or two about chickens and she found something in his presentation that was able to make her laugh. Fast forward to the present day. Jim Perdue, Chairman of Perdue, who I do not see in the audience and I did look very carefully, represents to our communities to be a trusted, corporate citizen and a conscientious steward of the environment, our vision, values and aspirations. At Perdue our vision is to be the most

trusted name in food and agricultural products while our reasons for being describes our purpose, that being to provide innovative food and agriculture products and services that enhance the quality of life for everyone we touch. Folks, we've been touched. We're fighting for our homes here.

Where these two clash is where they meet. One of their other statements is to our shareholders to deliver consistent earnings, growth and a strong balance sheet in pursuit of our vision while remaining true to our values. They clash. Perdue states that they strive to be a good neighbor. Some of you read the newspaper, but they've done very little to earn our trust. Instead they arrive here with a large contingent of hired legal guns including Matthew Crème of Nikolaus Hohenadel, Daniel Bambito (phonetic) of Post and Schell and Maxine Woelfling of the firm of Morgan Lewis. Are you people in the audience?

ATTORNEY CRÈME:

I'm the solicitor for Conoy Township, Mr. King, as you well know.

MR. KING:

Did I miss anyone who is also here with legal counsel? Good neighbors do not show up with an attaché of such individuals. The fact is that Perdue

has an agenda and they're making it known that they really would prefer to do things their own way and that it would go best if we would all step back and get out of their way.

Perdue's spokesperson, Wayne Black, spoke to the York Dispatcher Reporter, Candy Woodall, prior to this meeting. Wayne rebuts all request related to scrubbers and requests to hexane containment according to this article. That's just not a good way to arrive at a meeting. It is obvious you didn't want to come here and that you don't appreciate our questions.

Is it also true that Perdue will need to purchase pollution credits from elsewhere so as to be able to make their sizable hexane discharge here in Susquehanna River Valley? How many tons of this noxious, nerve gendering, endangering, flammable, smog causing according to OSHA, EPA and Material Safety Data will be brought onto this proposed site in a year's time? How will it be arriving? Will containment be in double walled containment vehicles during shipping and on site? Where and what off site monitoring is proposed with these releases? How much of the chemical will be used and released in a 24 hour period? Is material going to be evaporated, vented, scrubbed or disposed of and what percentages? How did

you obtain your data and what is your reliability factor for this data?

Where can we see air modeling, I didn't see any of it here this evening, specifically related to seasonal and weather patterns specifically related to where this material will be dispersed? Do you have charts of cumulative emission data and prevailing wind direction from the many other pollution sources already at this location? And where did you say that you were venting or allowing this material to escape to? Also, who and what is the source of the hexane and what is the pathway of its journey to arrive at this proposed location? And will any of this residual chemical be transported off site? If so, where to and by what method?

User information related to hexane states close neighbors are not desirable around such facilities. This includes data relating to isolation from railroads and truck traffic along with the potential for flash explosions. Yet your proposed location is adjacent to a consistently operated mass burn facility. How many trains will pass this site daily? How many trash trucks visit and idle at this mass burn facility? This seems such an odd location to site a refinery of this nature.

Let's get back to that ring of being a good neighbor. I'm not going to ask, but I still have this question. I was kind of interested. By a show of hands that those people who are here tonight on Perdue's nickel, legal, subcontractors, et cetera, how many of you reside within a one mile radius of this proposed facility? Two miles? You're here on Perdue's nickel. Perdue is paying you to be here tonight. Three miles, five miles? Now, who's the good neighbor? Both of you do not reside here, but are more than willing to take the money and run.

This proposed area for this plant is in a very unique location. The river hills, the Susquehanna River, the adjacent valley and plains cause micro-climate temperature inversions, weather patterns and other oddities. I had tried very hard to step back and allow others to deal with this proposed refinery. My phone rang on a cold November Sunday morning from a neighbor. I stepped outside my deck and I'm listening to post refinery concerns. I'm about two miles away as eagles fly from this location and I smelled the industrial smell of cakes baking. It must be crazy. It was one of those damp, overcast days common for that time of year, but I smelled the industrial cake baking that day and the next day. I

never smelled that before and it went on for like two days and then it stopped, and I had no idea where any industrial cake baking facility is. I don't have neighbors that close.

That's what happens in these areas where we live. It got my attention. It got me to thinking, you know, what if it was hexane that was hanging around out there instead of the cake baking stuff? So I thought, you know, I'm going to find out what this hexane stuff is and I started reading all the information that I could about it. And I started going, oh, I don't think this is good. We have similar oddities for smell, sound and lighting that are magnified and trapped. Voices on the other side of the Susquehanna River can on occasion sound as if they are near 10 to 15 feet away from you. Industrial sounds, smells, emissions and lighting can be overbearing and very intrusive.

Then we also have individuals who enjoy the recreation of swimming, fishing, hiking, boating and hunting. What of their safety? Again, while one may look across the Susquehanna River and see trees on the York County side, we look back across and see unshielded lights, hear industrial noise and experience emissions from increasing numbers of

stacks. And these stacks which reach skyward they're about on level with our hills. They're shooting these stacks way up into the air, but we're looking down onto them and into them.

Mr. Black over here went so far to state on record in the newspaper that there are no problems in their facility in the Salisbury, Chesapeake and the two in North Carolina, but there's more to that equation. Flat locale, flat locale, close to the Atlantic Ocean, some swamplands in North Carolina, but again flat. Nothing similar to what we're talking about here.

MS. WITMAN:

You're past your time.

MR. KING:

It is?

MS. WITMAN:

Ten minutes.

MR. KING:

Okay.

MS. WITMAN:

Please wrap it up.

MR. KING:

Well, I'll wrap it up. To use the old adage, it's like comparing apples to oranges or

chicken talk roosters to hens. Then there's that major issue of the $8.75 million. That's a lot of zeros. It's not free money. It didn't drop out of the sky, and while Governor Corbett may have had some wonderful thoughts about all of it, had he taken that money instead of using it as corporate welfare, it sure would have helped to have taken care of pensions for state employees and other people instead of trying to say that you're not worth what you're working for. PA State Constitution says we're entitled to clean air and clean water. We're asking you to do that.

This is not a matter to be taken lightly. We need to double check. We want the best available technology, not the cheapest available technology. Let's double check who's footing a big part of this bill because what you're proposed is unacceptable, it's dangerous, frivolous and it's an unhealthy pursuit, and if you can't meet the conditions that are being put out, take your business elsewhere because we really don't want it here. Again, good neighbors do not hide behind a mirage of legal hired guns. Further, they don't report to the press what they will and won't be willing to do prior to sitting down at a public meeting with those who are the stakeholders. Perdue should be ashamed of its actions. Thank you.

CHAIR:

Thank you. I think I saw one --- was there anyone else? Yes, ma'am.

MS. LOGAN:

Annette Logan, 5874 River Drive. The mailing address is York, but it's Hellam Township. And I'm going to speak on behalf of those who live on the river. Sometimes in the river when it floods, which it does fairly often. I actually live more or less next door to Mr. King and we're kind of here --- I can't look at the ---. I don't want to take the time to look at the map to be specific. However, we're going to get whatever it is first. If you drive along the river and you notice all the smokestacks on the other side, we don't need anymore crap in the air. We don't need what we already have.

Now, the trains go by. I can set my watch by them. I grew up in a railroad town, so I understand that concept. There is a freight train that goes by at least every hour all night long. It's been mentioned that they carry things that could affect and mix with the nitrous oxide and hexane if there was a derailment.

All right. The other thing I wanted to bring up. I am so impressed with the research that

the citizens of this area have done on this project. And, Mr. Black, you need to understand we have very highly educated people and we have very determined people and sometimes they're the same people. We don't want you here. All right? We don't want your plant over there. We don't want to risk the explosion if it should happen. I don't know what exploded that night. He said it was Nissley. I thought it was the gas line. It could have been emissions. Whatever, it shook my house. Another explosion that's going to put all that stuff into the air. We don't have sirens. We had sirens for Three Mile Island that we can't hear on the river. We're not going to hear your siren either.

June Evans mentioned about an acrid odor. We have an odor that's fairly consistent, comes and goes. It smells like a combination of chocolate and cat poop. I have no idea what it is, but let me mention one more thing and then I'll stop. That's the wildlife in the area. Mr. King mentioned the eagles. We have eagles. They seem to be protected. Maybe we can use them to protect us from this. We have fish in the river. We have all kinds of little critters. We have raccoons that get into the garbage, but they're raccoons. We have a lot of wildlife in that area.

They can use some protection from this, too, because they don't even know what's happening, nor do we. So go away, Mr. Black. Take your plant and put it somewhere else. We don't want it.

CHAIR:

Thank you. Anyone else? Yes, sir, in the back and I believe that was like the last comment. I saw no one else raising their hand. And then I'll wrap up.

MR. STEWART:

Good evening. I'm Kevin Stewart, S-T-E-W-A-R-T. I'm here tonight as a representative from the American Lung Association in Pennsylvania. I am a resident of Lancaster County in Manor Township at 720 Roara Road, Lancaster.

The American Lung Association is the oldest voluntary agency in the United States that is protecting lung health. We were founded in 1892 in Philadelphia and --- our oldest predecessor agency was and we are representing approximately ten percent of the population who suffer from chronic lung disease. That certainly includes people with asthma, chronic bronchitis, emphysema, also people who are interested in protecting their health, and that should include the rest of us.

Lancaster County is named in our state of air report. I think some people have cited that. Around the end of April the American Lung Association publishes this report taking a look at air quality. Just from the point of view of Lancaster and York Counties, we have a record since the first report came out in 2000, these areas have all received straight Fs for ozone air pollution. Lancaster County in the 2012 report was ranked 29th worst metro area in the United States for ozone air pollution.

Right now I should also point out that we're at the cusp of new air pollution standards for fine particle pollution. Perhaps as soon as tomorrow morning the administration should be announcing those. And the American Lung Association would like to see stronger air pollution standards for fine particle pollution. That's why we sued the EPA to approve that.

Also, next year the EPA is supposed to conduct its review for ozone air pollution and the American Lung Association is also on record there to indicate that the ozone air pollution standard is currently too weak to protect public health adequately. In other words, even when we are getting ozone action days and fine particle pollutions days

or, as Barbara May said, bad air days, we are not really telling the entire truth about how bad the air quality really is. And so those are some things that are coming down the pike.

A couple principles here. The American Lung Association through our clean air policy position, which are available on our website, basically the basic idea is that we want to minimize exposures, hazards. Basically everyone has the right to clean air. Everyone has the right to know what they may be exposed to, the maximum and average concentrations, the accompanying risks from a particular facility. And, you know, once a community has been made aware of these, then they can make informed choices as to the costs and benefits. And certainly that applies --- you know, although explosion and fire hazards are not within ALA's purview, the same principle, of course, applies to those kinds of risks.

We also believe that that information should be made available to the public for their review prior to asking for action on air quality permits and those things. We don't want to sort of find out after the fact more information that pertains to a particular facility that would then give us a

much better picture about what the true risks are.

I understand and there was a statement, I believe, from Mr. Black who indicated with respect to the modeling and risk assessment is that their consultant will, I believe was the verb you used, conduct this model using EPA protocols. Well, our position is that that model should be conducted in advance of requesting the assessment. It is critical also to recognize that as we see elsewhere in Pennsylvania anyone who's familiar with the Pittsburgh area, the Mon Valley area, is familiar with the whole issue of air inversions and people living at the height of smokestack, effective smokestack fumes. We know that topography in an area is a critical issue and so that's something that must be included in any kind of proper modeling.

We also recognize that this is an area where we have multiple sources and because of that and other things there's an issue of environmental justice that starts to become clear here. Emissions from those sources need to be understood. Certainly the issues of multiple sources, not only industrial, but also transportation orientated. We've heard about the trains, we've heard about the truck trips necessary to supply the facilities, the associated hazards with

respect to any accidents that might occur with respect to any of those kinds of sources, those are critical issues as well.

I did want to indicate as well that there were some --- oh, yes, one other thing here. Excuse me. The question does remain about why the plant should emit so much hexane in this day and age. This hardly seems to me what should be permitted under layer. And certainly when we heard from Dr. Evans, there was certainly a point to be made in what he said with respect to the unscrubbed meal dryer. That is a critical issue that needs to be addressed properly. The idea of also using --- I think you mentioned using local meteorology data for modeling was another point that he mentioned there.

But the bottom line in my brief presentation is just simply to indicate that we need to have adequate information on which to base our decisions and that information should include enough information to understand what the risks may be and what the proper kinds of controls may be, what the costs for those controls are and a proper kind of a dialogue. Any kind of good neighbor approaching a community should have that kind of dialogue. I encourage that kind of dialogue. I don't believe that

the best solutions are done through an adversarial process. The best solutions are done in questions and answers and proper respectful conversation.

Certainly the Lung Association wants to support the finding of a good solution here that does recognize the environmental and respiratory health needs of this community. Thank you.

CHAIR:

Okay. I have to give it last chance. Anyone else? Okay. That concludes the formal comment portion of tonight's hearing. Just a few reminders. Written comments can be submitted up until December 17th. Even if you've spoken here tonight, you want to submit something additional, you can do that as well. Located here on the table are two forms that give the addresses of where to mail the comments to. There's also an e-mail address for storage tanks. Both of those are located there in case you need them to mail your comments in. And comment response documents will be made from this hearing and they can be available if requested. Thank you for attending this hearing and have a good night.

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HEARING CONCLUDED AT 8:38 P.M.

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CERTIFICATE

I hereby certify that the foregoing proceedings, hearing held before Chairman Kasianowitz was reported by me on 12/13/2012 and that I Jolynn C. Prunoske read this transcript and that I attest that this transcript is a true and accurate record of the proceeding.

Jolynn C. Prunoske

Perdue DEP Permit Hearing

Hallam Fire Hall, Hallam PA

December 13, 2012

Good evening! My name is Mike Martin. I am Chairman of the Hellam Township Board of Supervisors.

On behalf of the Board I thank the Pennsylvania Department of Environmental Protection for holding this hearing, and also Perdue for participating. I am especially grateful to the residents of Conoy, East and West Donegal, West Hempfield, and Hellam Townships and Bainbridge, Marietta, Columbia, Wrightsville, and Hallam Boroughs as well as residents of other municipalities who have taken time out of their busy schedules to be here this evening.

Provided the proposed Perdue facility does not pose risks to the health of our residents and to our environment, Hellam Township does not stand in opposition to it. As a farmer from extended families of farmers I appreciate the benefit of having a large local buyer of a staple farm product like soy beans. And our local economy certainly needs additional opportunities for employment.

However, from the statements made by Perdue and the research we have seen, it is clear that the facility as proposed does indeed pose significant and possibly insurmountable health risks to our community as well as very significant risks to the environment. These risks are predominantly from the release of hexane from the portion of the proposed plant that would extract oil from soybeans.

It is important for local farmers to note that Perdue has stated that the grain elevator will be constructed regardless of whether or not the soybean processing plant is built. Thus the benefit of an additional large local buyer of soybeans is not dependent upon the construction of the soybean oil extraction portion of the project, which is the portion that would be the source of the largest hexane emissions.

Hexane is a nerve toxin, carcinogen, and eye, nose, throat, and lung irritant. That is, exposure to it can can cause cancer, damage human nerves resulting in conditions like peripheral neuropathy where a person loses sensation in their limbs, as well as irritate the eyes, nose, throat, and lungs.

Hexane, along with its close cousin gasoline, is also classified as a volatile organic compound, or VOC. VOC's combine with nitrous oxide in the atmosphere to form ozone, a component of smog that is especially harmful to the lungs.

There are already several large nitrous oxide producers near the proposed Perdue plant. Lancaster County's mass burn incinerator is located immediately adjacent to the proposed site of the Perdue soybean processing facility, and Brunner Island coal fired electric generation station is in close proximity. In 2010 the incinerator released 5,359 tons of nitrous oxide, and in 2006 Brunner Island released 12,754 tons. The Armstrong Marietta Ceiling Plant, also an emitter of nitrous oxide and classified as a "High" emitter of greenhouse gasses is also located in close proximity to the site of the proposed Perdue plant.

In addition the proposed soybean processing plant itself is anticipated by Perdue to release 25 tons of nitrous oxide per year.

The figures provided by Perdue as to the amount of hexane to be released have been revised multiple times, as has the hexane rate of recovery. Many of the provided figures conflict with the 7,000 gallons per month of hexane that Perdue has stated will be trucked to the plant every month. In at least one document Perdue has stated it will release 220,000 lbs of hexane per year into the atmosphere.

If such a large volume of hexane is released by Perdue in such close proximity to the existing large emitters of nitrous oxide large volumes of ozone will be produced, resulting in very serious degradation to air quality that is already not in compliance with federal standards.

The soup of chemical emissions from the proposed Perdue plant and other already existing facilities would pose an especially high threat to health because of the high frequency of atmospheric temperature inversions that trap these hazardous emissions close to the ground where they have greater opportunity to combine into ozone and where they are inhaled by the residents.

Temperature inversions coupled with ground level toxic pollution emissions are known to have caused extensive fatalities in the past. One of the most noteworthy was a temperature inversion of 5 days duration in London in 1952 that killed 12,000 people.

The DEP already recognizes this region as an ozone non-attainment area. The addition of 220,000 lbs/year of hexane emissions, which is more than four times the amount that is allowed without the use of emission credits, will most certainly create very significant health problems for residents of the region, especially in consideration of the proximity of these hexane emissions to the previously mentioned heavy sources of nitrous oxide emissions and the frequent and severe temperature inversions experienced in this region.

But VOC's and ozone are not the only air quality problems we currently experience that will be exacerbated by Perdue's proposed plant. As recently as December 1, 2012 an "Air Quality Action Day" was forecast by the PA DEP for three regions in Pennsylvania including the Susquehanna River Valley. That air quality alert was not for ozone, but instead for inhalable particulate matter of the type that would also be emitted by the proposed Perdue plant. This type of particulate matter clogs the lungs making breathing difficult.

In order to appreciate the seriousness of the air quality situation in the lower Susquehanna Valley, in addition to noting that York has often made the list of the top 25 cities with the most polluted air, including number 24 in 2011, we must also consider what is happening in a wider region of Pennsylvania to our north and west. That is, the type of horizontal shale gas drilling known as "fracking". According a report by the US Congress's Office of Technology Assessment, "Gas field ozone has created a previously unrecognized air pollution problem ... similar to that found in large urban areas, and can spread up to 200 miles beyond the immediate region where gas is being produced." Gas drilling operations also produce inhalable 10 micron particulate matter. In short the "air quality" in the lower Susquehanna Valley that is already among the worst in the nation is under heavy and persistent assault.

In addition, it seems there are some very legitimate questions regarding the legality of the $8.75 million grant that Governor Corbett authorized for the proposed Perdue plant. Some of the concerns are related to the fact that the plant would severely exacerbate existing very poor air quality conditions.

We also have serious concerns that the phasing of this project that has been requested by Perdue has been requested in order to circumvent new source review (NSR) of the overall project. The specifics of these concerns can be found in Hellam Township's written comments dated 11/12/2012. We are requesting that DEP explain their justification if Perdue is allowed to phase this project.

The risks of the use of hexane to extract soy bean oil are well known and well documented. They include the above described air pollution, toxic exposure, and carcinogenic risks for nearby residents, even higher risks of exposure for plant workers, hexane explosion risks, and the risks posed by residual hexane that is in the soybean oil and soybean byproducts, some of which is directly consumed by humans and some of which is fed to farm animals being raised for human

consumption, including chickens.

Other alternative extraction methods exist. We believe that when all costs are considered, and especially when health risks, explosion risks, and environmental risks are included, hexane based extraction is neither a least cost nor a least risk extraction mechanism.

We prefer our air, our morning coffee, and our "Oven Stuffer Roasters" without a hexane after-taste!

Thank you!

Michael C. Martin

Chairman, Hellam Township Board of Supervisors
44 Walnut Springs Road
York, PA 17406
717 252-2623
Email: mmartin@HellamTownship.com

COMMENT: Proposed Perdue Soybean Crush Plant, Conoy Township

June Evans
7160 Roundtop Lane
Wrightsville, PA 17368
Hellam Township

Presented at:
DEP Public Hearing
Hellam Fire Hall
December 13, 2012

I am a resident of Hellam Township. I chair the Township's Environmental Advisory Council and serve on the Board of Directors of the Horn Farm Center for Agricultural Education located in our Township. I have a longstanding interest in responsible, environmentally sound practices that I believe we all should concern ourselves with as stewards of this earth's air, land and water.

Our home is in the Hellam Hills, across and down river from the proposed Perdue soybean crush plant in Conoy Township. My comments this evening are based on personal experiences with air pollution from sources that affect the place where I live and the quality of life I experience there.

I have a long acquaintance with the Hellam Hills. I grew up at one of the most beautiful spots in York County, on Roundtop, which overlooks the Donegal Valley and the Susquehanna River. From there you can literally see for miles and miles on a clear day, now even up to the TMI towers. When I was young, a favorite thing for our family to do was to sit on our front porch at Roundtop and watch approaching storms and weather changes come from the northwest and down the river. It was very clear that the prevailing winds were from that direction.

As a child I roamed the woods of our land, breathing air that was free of any of the pollution that later came with the Brunner Island power plant, which came on-line in 1961; the Armstrong Industries ceiling tile plant in Marietta, which opened in 1970; and the LCSWMA incinerator, which began operation in 1991. I was away from the area during the years those plants were built. We were living in the Bethesda, Maryland, area while my husband was employed at the National Cancer Institute as a research biochemist, but after he retired we moved back here to a home we built in the Hellam Hills not far from Roundtop. I was delighted to be back in this township that I love, and I looked forward to many hours out of doors, relaxing on our deck, hiking in the woods and especially working in my garden.

Anyone who gardens knows that one of the best times to be doing that during the summer months is early in the morning, so imagine my surprise and dismay when we found the air so polluted at certain times, often daily and especially in the early morning,

with an acrid odor that was so irritating to the eyes and throat that we had to close all windows and doors and stay inside until it dissipated. Our neighbors were also experiencing this discomfort.

We called the EPA, and a representative from their office in Lancaster County came over to investigate. We learned that the source of the pollution was the Armstrong Industries Marietta ceiling tile plant which is located across and upriver from us, not far downriver from the proposed Perdue plant and that the pollution was due both to particulate matter and to formaldehyde, a cancer causing chemical, that are by-products of the ceiling tile manufacturing process and are released into the air from the plant's stacks. We also learned that the pollution is greatly exacerbated by the frequent temperature inversions which are common in our region and which trap the pollution close to ground level.

We contacted Armstrong and met with engineers and officials at the plant, who gave us (and our son who lives near us and with his family was also experiencing the pollution) a tour of the plant. They assured us that they would be addressing the problem through their plan to install required state-of-the-art scrubbers on the stacks in the near future. This was in the mid-to-late 1990s; late in the 1990s the scrubbers were installed and the type of pollution we were experiencing from the ceiling plant has since diminished remarkably.

I share this story with you for several reasons:

- It illustrates very clearly that residents from Hellam Township can and do experience detrimental effects of air pollution sources from across the river, especially downwind from those sources, and have every reason to be concerned about potential new sources of air pollution. DEP is responsible to ALL the persons who could be affected by this proposed project, not just those in one politically designated entity.

- As I noted earlier, there are now at least three plants in the region in which I live that can be sources of air pollution and that can affect those of us who live across the river and downwind from these plants. One of them, the Brunner Island power plant, has been notorious for air pollution problems. It is striking that, even as recently as December 1 this year, an Air Quality Action Day was declared by DEP for our Susquehanna Valley region, with cautions to those most vulnerable to respiratory problems to limit their activities because of unhealthy pollution levels in the air. It is also noteworthy that temperature inversions are much more common than we realized, based on records kept for many years by Millersville University's Earth Sciences Department. As we know, these inversions can greatly concentrate and exacerbate the effects of local air pollution by trapping this pollution close to ground level. Specifically, the 2011 record for the Bainbridge area clearly corroborates what I was experiencing even in the 1990s: that mid to long term inversion episodes are most common in the summer months and especially in the early morning and late evening. The 2011 record

indicate that these types of temperature inversions continue to occur, and, as the Millersville report states, the mid and long term episodes have the most potential for trapping pollutants near the surface of the ground. My concern is that, in addition to the temperature inversion problem, adding another source of potential air pollution to the number of sources we now have in this region will make an already scary health problem even worse. **I would like to request that DEP take action now, during the request for application for Phase 2 air quality permit approval and before any construction begins, to require appropriate and adequate air quality protection technology at the Perdue facility.** I would like to add that so far I have seen nothing in the applications for this facility or heard anything from Perdue that mitigates my concern about the cumulative effect of adding a new source of pollution, at any level, to the pollution levels we already have to deal with here in this river valley region.

- There are means to address conscientiously the control of dangerous air pollution sources if a company is required to do so. Concern for the health, safety and well-being of the residents in the region where a company wishes to locate a plant should be of primary importance to that company. Surely the cost of adequate, state-of-the-art control and capture technology that would eliminate or severely reduce the amount of hexane that would be emitted from the proposed Perdue plant would be a small investment, given the large publicly funded grant the company has received for this project! **DEP should insist that concern for the health and safety of the area's residents come first, when and if they approve Perdue's air quality permit applications for this project.**

The DEP owes it to the residents of this region, and that includes not only those of Hellam Township but those of any other townships both across the river and on the same side of the river as the proposed plant, to strictly abide by its stated mission: *to protect Pennsylvania's air, land, and water from pollution and to provide for the health and safety of its citizens through a cleaner environment.*

I strongly urge you to consider this as you review the applications for this proposed project.

Thank you.

Testimony by: Judith W. Nissley
Presented on: December 13, 2012
Presented at: PA DEP Hearing re: Perdue Grain & Oilseed LLC Soybean Oil Extraction Facility

In the Spring of 2010, I was invited to attend a dinner meeting with Dick Willey, who is the president of Perdue AgriBusiness. As he explained Perdue's plans to build a plant that would start with raw soybeans and end up with soy meal and edible oil, I became very interested. In fact, it made me so happy that at the end of dinner I gave him the biggest hug I could muster.

To put that hug into perspective, you need to know that over the past five or more years, there were two different corn to ethanol plants proposed for the site where Perdue intends to build their plant.

Compared to corn, soybeans are soil friendly in that they return nitrogen to the soil and grow in tight rows, which minimize soil erosion. As far as I could tell, the oil extraction process would not require nearly the amount of fresh water that ethanol production requires. The end products would be edible; which means that our rich Lancaster County farmland would be used to grow food for livestock and people, not engines. Local farmers would have a market for their crop, and most importantly, the products from the soybean crush plant would be as economically viable 10 years from now as they are today. That is what I thought at the time.

As Mr. Willey's guest, I soon thereafter had the privilege of visiting the Perdue plants at Cofield, NC and Salisbury, MD. I was impressed by the efficiency of the process and how well the facilities were maintained despite being 20 or more years old. I also very much liked the people who devoted their day to showing me around.

Following that visit, I was excited to share what I had learned with other members of my community who have a keen interest in industrial development. Surely this was the kind of industry we could embrace.

But not so fast. As we studied the solvent extraction materials Perdue had provided, someone detected a problem. The name of that problem is **n-hexane**. We needed to know more details about the plant, so we developed a list of questions, which we sent to Mr. Willey. He and his associates met with us and tried to answer the questions. From this meeting, we developed more questions, which we sent to Perdue along with a request that the answers be given in at a forum that would be open to the general public.

Then there was a very long silence.

Having received only minimal answers from Perdue, my family decided to seek information on our own. Among other things, we learned that:

1. Hexane is a dangerous neurotoxin that can cause serious health problems from both chronic exposure and acute exposure.

2. Our area is particularly prone to thermal inversions, which would trap any emitted hexane and keep it close to ground level.

3. Hexane vapors are potentially explosive. There have been soybean extraction facilities that had catastrophic explosions due to the mixing of hexane and dust. These explosions have occurred at American facilities within the past 10 to 20 years.

4. We already knew that the site is underlaid by karst topography, making the ground unstable.

But we needed experts to advise us in these matters and assure us that the specific plant proposed by Perdue would not be a hazard to people and property, including Lancaster County's resource recovery facility that would be the closest neighbor to the Perdue plant.

For this purpose we engaged:

- The legal services of Saul Ewing
- The environmental engineering services of August Mack Environmental
- The explosion expert services of Ballistics Analysis International, and
- The scientific services of the Department of Earth Sciences at Millersville University.

Because I know the importance of jobs and a tax base for the supervisors of Conoy Township, I was hoping that the experts would tell us not to worry. That the plant would be fine.

Eventually, after Perdue announced the Conoy Township site as their choice, they did hold an Open House for the public. But it was not the public forum that we had requested. Instead, it was just a public relations event.

This approach was in keeping with the presentation that Perdue made to the Conoy Township Board of Supervisors. Despite it being a public meeting, questions and comments from the public were forbidden. Likewise, the same approach was used at a presentation made by Perdue to the Lancaster County Local Emergency Planning Commission. Questions and comments for all to hear were not allowed.

It has led me to believe that Perdue cannot actually defend their use of hexane in the process. They make statements such as: "It's no worse than gasoline" and "Hexane's not a problem". The one they use the most is: "If it were a problem, our executive offices would not be situated so close".

They are referring to their offices at Salisbury, MD. However:

- That plant is not situated on karst topography subject to sinkholes and caverns like the site at Conoy Township.
- It is not in a climate prone to temperature inversions, like the site at Conoy Township.
- And it is not in an area that already has degraded air quality, like Lancaster and York Counties.

Neither is their plant at Cofield, NC. On my visit there I remarked on how great it would be to take my bicycle for a spin because the land is so flat, with no hills to climb or trap the air.

By now you have received the technical comments prepared by August Mack Environmental for Phase I and for the Above Ground Storage Tanks. August Mack has done a thorough review of all of the permit applications filed by Perdue and its consultants. They will be filing written comments on the Phase II air permit in the next day or two. August Mack has significant experience in permitting facilities and they have found literally dozens of errors in calculations, omissions and understatements in Perdue's applications. These errors all serve to white-wash the risk from the Perdue plant.

Included in the August Mack comments are two significant reports:

1. The Ballistics Analysis International report was prepared by Mr. Frank Chiapetta, one of the world's leading experts in explosions. He has concluded that there are significant, specific potential problems with the configuration of the proposed Perdue plant.
2. The report on the occurrence of thermal inversions in the Bainbridge area was prepared by a prominent scientist, Professor Richard Clark, who is the chairman of the Department of Earth Sciences at Millersville University. His climatic study concluded that in 2011, an average year, thermal inversions occurred on 313 days, with some days having more than one inversion

My understanding is that there will be chronic exposure from any permitted hexane emissions that are trapped close to the ground during thermal inversions. There is also the risk of acute exposure should an explosion or accidental release of hexane occur during a thermal inversion.

For the reasons stated in their comments, August Mack Environmental concludes that the Perdue applications should be denied.

I am extremely disappointed that this is the case. I am also disappointed that despite their claims of being green and environmentally friendly, the Lancaster County Solid Waste Management Authority agreed to help Perdue obtain a permit from you no matter what.

You are the protectors of our environment. Over the past several months, when I presented municipal leaders with information concerning potential problems, I was met with the same response, "We have no authority...that is an issue for DEP... the DEP has regulations to protect us". Those leaders firmly believe that you can protect their citizens. In fact, they are relying on you to do so.

Thank you.

COMMENTS ON THE PERDUE PERMIT APPLICATIONS FOR A SOYBEAN EXTRACTION FACILITY IN CONOY TOWNSHIP

Warren Evans
7160 Roundtop Lane
Wrightsville, PA 17368
717-252-4145

INTRODUCTION

My name is Warren Evans. I have been a resident of Hellam Township for 23 years. I am a retired medical research scientist and spent 30 years in cancer research at the National Cancer Institute in Bethesda, Maryland. I have a B.A. degree in Chemistry from Princeton University and received a Masters degree in Medical Sciences and a Ph.D. in Biochemistry from the Division of Medical Sciences at Harvard Medical School.

I am also currently actively engaged in supporting the local farm community of York and Lancaster Counties by serving as President of the Horn Farm Center for Agricultural Education, which is located on a 187-acre farm in Hellam Township.

Because of my background in medical research I will be commenting mainly on the health hazards associated with hexane emissions that will be generated by Perdue's proposed Conoy Township facility if it is built without proper equipment for capturing hexane emissions from the extraction process. Our Township officials and residents are not fooled by Perdue's misleading statements to the press that they are removing most of the hexane from the air by using a scrubber on the part of the extraction process that removes residual hexane from the soybean oil. This scrubber removes 99% of the hexane from oil but only 20% of the total hexane emissions from the plant. The major part of the hexane emissions from this plant would come from the meal dryer oven, which has no equipment on it to remove hexane emissions and allows 80% or up to 250 tons of the total emissions from the plant to be dumped into the air we breathe.

I want to make it clear at the beginning of these comments that I am for businesses that create farm-related jobs in our local community. Perdue Agribusiness, located in Salisbury, Maryland, wants to bring new jobs to our area but at the same time they want to be permitted by DEP to pollute the air we breathe with toxic waste products such as hexane, which they plan to release into the air at their proposed soybean extraction factory in Conoy Township. I believe, however, that we can have both clean air and farm-related jobs if Perdue agrees to follow existing DEP regulations which require them to install equipment that will capture or control toxic hexane emissions at key points in their soybean extraction process. This equipment would enable Perdue to greatly reduce their toxic hexane emissions and set a new industry-wide national standard for the required lowest achievable emission rate (LAER) for these toxic emissions.

I also believe it is premature and inappropriate for Perdue representatives to talk about jobs and money to Conoy Township officials and the media when they have not yet submitted a thorough analysis of the potential health and environmental impacts of the proposed facility, as is required by DEP regulations that deal with the proposed hexane storage tanks for this site (see 25 Pa. Code Section 245.235(b)). **Unless this information**

is supplied to the DEP, I request that the DEP deny Perdue's Application for Phase 1 and Phase 2 Plan Approval and the application for their Above-ground Storage Tank (AST) permit. Perdue certainly has a right to profit from their business investments, but they should not be allowed to do this at the expense of the health and safety of the people who live in Hellam Township and other communities in our area.

HEALTH HAZARDS FROM HEXANE EMISSIONS

So far, in their statements to the press and to the Conoy Supervisors, Perdue representatives list only the benefits of this factory without revealing the real and potential dangers hexane emissions pose to the health of the people who live in surrounding communities.

Hexane is a liquid solvent derived from petroleum and has properties similar to gasoline. Hexane in the vapor form is highly explosive and constitutes a major safety hazard in and around the proposed soybean extraction facility. Hexane is a toxic chemical that is listed by the EPA as a hazardous air pollutant. It is a neurotoxin known to have harmful effects on humans such as nerve damage, muscle paralysis and mental abnormalities in cases of chronic exposure and even death at higher exposures. Because humans vary widely in their susceptibility to chemical exposures due to age, gender, genetics and poor existing health, it cannot be presumed that even a low level exposure to a chemical such as hexane is risk-free unless there are sufficient data to contradict this assumption. To my knowledge there have been few if any serious public health studies of human populations exposed to various levels of hexane emissions around soybean extraction plants. According to the U.S. News and World Report (June 19, 2000) this is partly due to aggressive chemical industry lobbying to exempt suspected toxic chemicals from regulation.

Perdue's choice to locate their new plant right next to the Lancaster County incinerator and just a few miles downriver from the Brunner Island coal burning plant could lead to another type of hazardous air pollution, namely elevated levels of toxic ozone smog. This incinerator and the Brunner Island plant are among the largest generators of nitrous oxides in Lancaster County. Both of these facilities release millions of pounds of nitrous oxide per year, which in the presence of the hexane emissions released into the air from the Perdue factory could result in elevated levels of toxic smog. This smog makes the air dangerous to breathe and leads to asthma attacks, emphysema and other lung diseases, particularly among young children and the elderly.

Residents in the Lancaster/York area already suffer from high levels of smog and are advised to stay indoors during hot and hazy days to avoid breathing smog-polluted air. The healthcare costs and premature deaths caused by this smog pollution are costs to the unsuspecting public that have not been reported by Perdue to the press or to Conoy Township officials.

It should also be noted that smog levels are greatly elevated at ground level during temperature inversions that are known to occur in the region around Perdue's proposed facility. According to Perdue officials, Perdue has had no previous experience with temperature inversions in the places where their existing soybean extraction facilities are

located. **In view of the potential health hazards caused by smog, I would ask the DEP to require that Perdue carry out an air modeling screening study of the hexane emissions released from their proposed plant in Conoy Township.** This study should take into consideration the effect of the numerous temperature inversions and the high levels of nitrous oxide that are known to occur in the region around the proposed new plant. The footnotes in Section D, page 72, of Perdue's Phase 2 Plan Approval Application state that the Department may request additional information to evaluate the application such as air quality modeling and a plan for air pollution emergencies. If we are lucky perhaps such a study will help us to avoid the type of deadly smog that hung over Donora, PA in 1948 due to a severe temperature inversion. The chemical smog that usually dispersed into the atmosphere around Donora was trapped in the inversion and accumulated until a rainstorm ended this inversion and dispersed the smog. Twenty residents of Donora died and 14,000 people suffered severe respiratory illnesses, such as asthma, in the aftermath of this tragic event.

I cite this worst-case scenario not as a scare tactic but as a warning that we cannot go on casually dumping more and more chemicals such as hexane into the air we breathe and not expect serious impacts on our health. These impacts can come on us suddenly over a short period of time with little warning of the grave dangers that lie ahead. **I earnestly request that DEP keep this in mind when they reply to our comments.**

Comments before DEP re Perdue application in Conoy Township
12/13/12 in Hellam Township

Barbara May
100 Red Fox Road
Millersville, PA 17551

I have lived across the river, Lancaster County – for most of my life. I first became aware of the potential for environmental harm to the area several years ago when Penn Mar wanted to build an ethanol plant on the Waste Authority's land. What caught my attention about the current Perdue application was the information that the plant would be discharging over 100 tons of waste hexane into the outside air. Reading about the nature of hexane, and its ability to combine with the tons of nitrous oxide produced by the Waste Authority next door, thereby adding significantly to the existing smog in the area got me thinking seriously about our air quality. I was relieved to hear that there are mineral scrubbers that can eliminate almost all of this hexane, but then, I learned that Perdue doesn't want to install these scrubbers – it's too expensive.

And I thought – there's really nothing I can do or say that will make a difference: "money talks," "Money is power", "Corporations run the show in PA."

And then, we spent T-giving on the West coast with our children and their families.

My husband has COPD. Chronic Obstructive Pulmonary Disorder. It's a respiratory condition. It's a progressive condition, with no cure. Granted, he was a smoker, he earned it. But the days of blaming cigarettes are passed – Symptoms: coughing, with or without phlegm, fatigue, chronic shortness of breath with even mild activity, frequent respiratory infections, trouble catching one's breath, wheezing. The only symptom he doesn't have is wheezing.

In basic training in the Navy he won an award for being the most physically fit – now, walking up the driveway is impossible. Walking the dog became a miserable ordeal instead of the evening pleasure he used to enjoy.

What's it like living with COPD? We are lucky – he does not yet have to be on oxygen … has to stop midway up the stairs to catch his breath. Imagine how you feel after walking or running faster than you can — a half block walk takes him as long as a whole block takes the rest of us, with perhaps a stop in the middle to catch his breath. Frequent deep breaths and exhalations, sometimes just while

hexane, which is already listed by the EPA as a hazardous air pollutant. They have no experience with the production of hexane in areas where temperature inversions occur, such as in Conoy township and the rest of Lancaster County, yet they still do not want to install a mineral scrubber.

One might argue that PA's air is already bad, a little more pollution won't make ***that*** much difference.

My answer to that line of thinking is – why isn't DEP looking at ways to ***clean up*** our air, instead of seriously considering adding more pollutants?

One might also argue that if you don't like the air in PA, move somewhere else. We were born and grew up here, some of our children and grandchildren live here – we shouldn't even have to think about leaving the area – we should be able to depend on our state and its agencies to protect us. That's what we look to you for.

The facts are very simple: our air quality is bad and is already a negative factor in many of our lives; Perdue has the ability to prevent additional pollution. Please, please, please, consider the very real nature of the existing air pollution in our area, and require Perdue, at the very least, to install the mineral scrubbers.

Question for the Commmission:

If DEP does not require Perdue to install the mineral scrubbers, what guarantee can you give citizens that they will not be adversely affected by the hexane discharge from the plant?

What's it like living with COPD? We are lucky – he does not yet have to be on oxygen ... has to stop midway up the stairs to catch his breath. Imagine how you feel after walking or running faster than you can — a half block walk takes him as long as a whole block takes the rest of us, with perhaps a stop in the middle to catch his breath. Frequent deep breaths and exhalations, sometimes just while sitting reading the paper. Gut-wrenching coughing at times as he tries to expel the phlegm that accumulates and makes him feel as if he is choking.

I accepted all this as part of the illness --- just one of those nasty consequences of having been a smoker.

UNTIL WE WENT TO SEATTLE.

Our first 2 days my husband had the usual coughing spells. By the 3rd day, however, the coughing had almost disappeared, and he had no trouble keeping up with the rest of the family on our outings. We didn't have to walk slowly in the street to accommodate him. He felt great! (Especially great because he did not come down with the intestinal virus that knocked out 5 of us in the very early morning of Thanksgiving Day). His energy was high, and he actually enjoyed the museums and other tourist activities.

And then we came home. The coughing started on the way home from the airport – the phlegm, the breathlessness, -- it was all there by the time we got home.

It was the most dramatic illustration one could have of the hideous difference in air quality between where we live and where our son and his family live. I'm relatively healthy for my age – I walk my dog several miles most days, and I can tell when there's a bad air day: walking up to the mailbox my lungs burn, I'm panting, and my legs get weak. My first thought is usually "Uh oh, what's wrong with me?" and then, I realize – "Of course, it's a bad air day!"

I can also tell a bad air when I look at my husband – there's no color -- his face is grey, and of course his breathing is noticeably more difficult.

Our air quality is already abysmal – 29th worst out of 277 US cities. Perdue is requesting permission to release over 100 tons of hexane a year into our already miserable non-attainment area. They do not want to install a mineral scrubber which would eliminate most of the hexane emissions – They apparently do not want to prevent the combination of hexane and nitrous oxide which will contribute

hexane, which is already listed by the EPA as a hazardous air pollutant. They have no experience with the production of hexane in areas where temperature inversions occur, such as in Conoy township and the rest of Lancaster County, yet they still do not want to install a mineral scrubber.

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"We believe"

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12/13/12 in Hellam Township

Barbara May
100 Red Fox Road
Millersville, PA 17551

"Money talks" "Money is Power" "You can't argue with the facts." The facts that I know that relate to this hearing have little to do with corporate power or big money, but they are as real as my presence before you this evening.

I have lived across the river, Lancaster County – for most of my life. I first became aware of the potential for environmental harm to the area several years ago when Penn Mar wanted to build an ethanol plant on the Waste Authority's land. What caught my attention about the current Perdue application was the information that the plant would be discharging over 100 tons of waste hexane into the outside air. Reading about the nature of hexane, and its ability to combine with the tons of nitrous oxide produced by the Waste Authority next door, thereby adding significantly to the existing smog in the area got me thinking seriously about our air quality. I was relieved to hear that there are mineral scrubbers that can eliminate almost all of this hexane, but then, I learned that Perdue doesn't want to install these scrubbers – it's too expensive.

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I can also tell a bad air when I look at my husband – there's no color -- his face is grey, and of course his breathing is noticeably more difficult.

Our air quality is already abysmal – Perdue is requesting permission to release over 100 tons of hexane a year into our already miserable non-attainment area. They do not want to install a mineral scrubber which would eliminate most of the hexane emissions – They apparently do not want to prevent the combination of hexane and nitrous oxide which will contribute significantly to our already miserable air quality, increasing the respiratory difficulties of people like my husband. They do not want to pay for any studies exploring the health risks of

hexane, which is already listed by the EPA as a hazardous air pollutant. They have no experience with the production of hexane in areas where temperature inversions occur, such as in Conoy township and the rest of Lancaster County, yet they still do not want to install a mineral scrubber.

One might argue that PA's air is already bad, a little more pollution won't make ***that*** much difference.

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Question for the Commmission:

If DEP does not require Perdue to install the mineral scrubbers, what guarantee can you give citizens that they will not be adversely affected by the hexane discharge from the plant?

Good Evening,

I am Fred Smeltzer, Fire Chief for Hellam Township. I have been involved in the volunteer fire service for 43 years. I have been a chief officer for 37 years in the Wrightsville Volunteer Fire Company and Hellam Township. I Am current on required, NIMS, and Haz Mat certifications. Familiar with area due to mutual-aid (Maytown).

I want to first say that I can personally confirm the issues raised by previous speakers and written comments concerning prevailing winds bringing vapor or VOC's into Hellam Township. In my time as a firefighter and chief officer there have been many occasions when we have been dispatched to odors of natural gas anywhere from Wrightsville Borough to the west end of Hallam Borough, and everywhere in between, and have traced the source to a natural gas bleed off at the Texas Eastern facility in East Donegal Township.

I was first made aware of the significance of this proposed soybean extraction facility when I attended the Lancaster Emergency Preparedness Committee's meeting on October 4, 2012. I appreciate the information provided by Perdue at that meeting.

The points I wish to present deal with the two 20,000 gallon above-ground storage tanks (AST's) for which Perdue has sought a permit. This map and previous presenters have shown the proximity of Hellam Township to the proposed facility, and I wish to express my concerns about the potential for fire, explosion and vapor release of the hexane to be stored and used in this facility.

As with the other presenters, neither I nor Hellam Township oppose the soybean extraction facility, provided that public safety is satisfactorily addressed. With this in mind I would request that DEP's review of this AST application specifically deal with the following concerns:

1. This property is in an area known for sinkhole activity and is underlain by carbonate bedrock. Will DEP require Perdue to provide information and analysis of the soil as it relates to the safety of the installation of these tanks?

2. Will a spill prevention response plan be required?

3. Will a Risk Management Plan be required which contains the following:

a. safety and security training
b. plant facility security by a chain link fence of suitable height with barbed wire and cameras
c. limited access points guarded by trained personnel and security cameras
d. Appropriate identification badges for all employees, vendors and visitors
e. Security level outside lighting at night.

f. Identification and enforcement of restricted activity areas
g. Security for parking of all tankers remaining overnight
h. Blast resistant measures for all critical plant operations and the tank storage areas
i. Requirement of a Chemical Security and Vulnerability Assessment by the US Department of Homeland Security, with assistance from the US Department of Agriculture

In conclusion, I wish only to say that we live in dangerous times. Terrorism, both domestic and foreign based, is a reality and must be considered with flammable liquid facilities of this magnitude. The old adage, an ounce of prevention is work a pound of cure, cannot be more appropriate than in this situation.

Thank You!

Fred Smeltzer, Fire Chief
Hellam Township
44 Walnut Springs Road
York, PA 17406

Good evening on this 13th day of December.

Thank you to the Department of Environmental Protection for the opportunity to speak regarding this proposed development, and also to the Hellam Township Board of Supervisors and Hallam Borough.

I see a number of familiar faces in the audience, from Conoy Township, and from nearby. Welcome to our humble fire hall. I can also state with some certainty that many of you did not appreciate the extra travel to attend this meeting. I am able to say this because I attended numerous meetings at Conoy Township's Fire Hall and Township Building, when refinery proposals were presented for this same location, adjacent to the Lancaster Incinerator, by Penn Mar and also the Ethanol Refinery, sponsored by Obetz and Worley.

Even though our municipalities are adjoined by the Susquehanna River, I know you folks will be travelling 30 minutes or more in darkness. I've done it in the snow ice, and more. May your journey be a safe one.

I believe that it is essential to sit up and to take notice of the true lack of regional planning. It is a common theme that the "dirty business" is often performed at the edges of municipal boundaries. The Lancaster Incinerator is at the edge of the Conoy and Lancaster County boundaries. And, while it may be true that the River plays a factor, we also see the same theme with power plants, in this SAME VICINITY, on both sides of the Susquehanna. BUT, AIR AND WATER MOVEMENT DOES NOT RECOGNIZE THESE boundaries and there is a cumulative negative effect.

It seemed odd last week when an "ozone action day" was declared during the colder months of the year. Will this proposed plant increase or decrease more such days, in this area, where air quality is already stressed?

Purdue is the newest "player" to look at this location for their own scheme to line their corporate coffers. And, when one looks across the Susquehanna River and sees those vast hillsides lined with trees, one might conclude that there isn't anyone there who cares.

Well I am here this evening to tell you that such a notion is patently absurd. People live behind those trees and I happen to be one of those people. Hellam Township has gone to extensive lengths to preserve and zone much of this area as a "Continuous Canopy". Enjoy the view, but please don't "poop on our doorstep"!

My Parents, who both became educators, descended from a long line of farmers. The families continue to farm. I can vividly recall how my Mother was humored when Frank Perdue, "the chicken man", would come on the television to speak of his newer and improved chicken. She knew a thing or two about chickens and she found something in his presentation, which was able to make her laugh.

Fast forward to present day: Jim Perdue, Chairman of Perdue, whom I do not see in the audience, represents: "**To Our Communities** - To be a trusted corporate citizen and a conscientious steward of the environment."

"Our Vision, Values and Aspirations"

At Perdue, Our Vision is "**To be the most trusted name in food and agricultural products,**" while Our Reason for Being describes our purpose:

"To provide innovative food and agricultural products and services that enhance the quality of life for everyone we touch."

Where these "tudes" clash is where they meet: " **To Our Shareholders** - To deliver consistent earnings growth and a strong balance sheet in pursuit of Our Vision, while remaining true to Our Values."

Purdue states that they strive to be a good neighbor, but they have done very little to earn our trust. Instead, they arrive here with a large contingent of hired "legal guns", including Matthew Creme of Nikolaus Hohenadel, David P. Zambito, of Post & Schell, and Maxine Woelfling of the firm of Morgan Lewis . Hello! Are you people in the audience? Did I miss any other legal counsel here this evening, representing this proposed activity?

Good neighbors do not show up with an attaché of such individuals. **The fact is that Purdue has an AGENDA, and they are making it known that they would really prefer to do things their own way and that it would be best if we all step back and get out of their way!**

Perdue spokesperson, Wayne Black, spoke to the York Dispatch Reporter, Candy Woodall, prior to this meeting. Wayne Black rebuffed all requests related to scrubbers and requests related to hexane containment, according to this article. *This is not a good way to arrive at a meeting. It is obvious that you didn't want to come here and that you don't appreciate that we are questioning your actions!*

Is it also true that Perdue will need to purchase "pollution credits" from elsewhere, so as to be able to make their sizeable hexane discharge here, in the Susquehanna River Valley?

How many tons of this nauseous, nerve endangering, flammable, smog causing, according to OSHA, EPA, and Material Safety Data, will be brought onto this proposed site in a year's time? How will it be arriving? Will containment be in double walled containment vessels during shipping and on site? Where and what on and off site monitoring is proposed relative to releases? How much of this chemical will be used and released in a 24 hour period? Is this material going to be "evaporated", vented, scrubbed, or disposed of and in what percentages? How did you obtain your data? And, what is your reliability factor for this data? Where can we see air modeling related to wind directions? Does this take into account seasonal and weather patterns, specifically related to where this material will be dispersed? Do you have charts of *cumulative emission data and prevailing wind directions* from the *many other pollution sources, already at this location?* **And, where did you say that you were venting or allowing this material to escape to? Also, who and what is the source of this hexane, and what is pathway of its journey to arrive at this proposed location? And, will any of this residual chemical be transported off site? If so, where to and by what method?**

User information related to hexane states that close neighbors are not desirable around such facilities. This includes data relating to isolation from railroads, and truck traffic, along with a potential for flash explosions. Yet, your proposed location is adjacent to a consistently operated mass burn operation!

How many trains pass this site daily? How many trash trucks visit and idle at the mass burn facility daily? ***This seems such an odd location to site a refinery of this nature!***

Let's get back to that "ring of being a good neighbor". By a show of hands, how many of you are here tonight, on "Perdue's nickel"? This includes legal, subcontractors, who are presently receiving money or anyone presently receiving Perdue funds.... How many of you reside within a one mile radius of this proposed facility? 2 miles? 3 miles? 5 miles? 10 miles? *Now, who is the "good neighbor"? Most of you do not reside here, but are more than willing to "take the money and run"!*

This proposed area for this plant is in a very unique location. The River Hills, the Susquehanna River, the adjacent valleys, and plains, cause microclimates, temperature inversions, weather patterns, and other oddities. I had tried very hard to step back and allow others to deal with this proposed refinery. My phone rang on a cold November Sunday afternoon, from a neighbor. As I stepped outside onto my deck and as I was listening to concerns about a proposed refinery, within approximately 2 miles, as the eagle flies, from my residence, I smelled cakes baking. It was one of those damp overcast days, common for that time of year. But, I smelled this industrial cake baking activity for that day and the next. This had never occurred before and hasn't recurred to date. But, it got my attention! This scent laden air was trapped and was accumulating, in that particular area. Similar oddities of smell, sound, and lighting, are magnified and entrapped, in this locale. Voices, on the other side of the Susquehanna River, can on occasion, sound as if they are a mere 10 – 15 feet away from you. Industrial sounds, smells, emissions, and lighting can be over bearing and intrusive.

Then, we also have individuals who enjoy their recreation, swimming, fishing, hiking, boating, and hunting. What of their safety?

Again, while one may look across the Susquehanna River and see trees on the York County side, we look back across and see unshielded lights, hear industrial noise, and experience emissions from an increasing number of stacks, which reach skyward, but whose tops are on level with the Hellam Hills!

Perdue's Wayne Black goes so far as to state that there are "no problems" at their facilities in Salibury MD, Chesapeake VA, or in North Carolina. But there is more to this equation. Salisbury MD is a relatively flat locale, fairly close to the Atlantic Ocean. The Chesapeake VA, location rests near the Chesapeake, where the topography is also flat and at about sea level. North Carolina, at Cofield and Pantego, has some smaller hills, water, and swamplands, but none of the aforementioned locations are remotely similar to the proposed location, next to the mass burn facility in Conoy Township. To use the old adage, "this is like comparing apples to oranges" or in chicken talk comparing "roosters to hens"...

Then we have a major issue of a grant of 8.75 million dollars! Let's step back for a minute! THAT IS A LOT of ZEROES!!! And, it comes with serious expectations. This is ***not*** "FREE MONEY", which dropped out of the sky. While "fast Eddy Rendell" of speedy turnpike fame may have initiated this grant, we also need to scrutinize Governor Corbett's actions in this matter.

Let's keep in mind that Governor Corbett is the same politician who wishes to vilify state employees, who have been loyal and faithful workers, for our Commonwealth, by threatening their pensions, both future and past.

8.75 million dollars would go a great distance to keep Pennsylvania's current OBLIGATIONS, on track, as opposed to pursuit of CORPORATE WELFARE.

Article I, section 27 of the Pennsylvania Constitution

Article I, section 27 of the Pennsylvania Constitution provides as follows:

Sec. 27. Natural Resources and the Public Estate

The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.

This amendment, which was adopted in 1972, encompasses two basic principles. First, Pennsylvanians have a right to a decent environment, and second, Pennsylvania government has a trusteeship responsibility to protect that environment on behalf of future generations.

The statute that creates the Department of Conservation and Natural Resources, as well as the statutes that the Department is charged with administering, implement this amendment.

These 2 principles of our Constitution are not matters to be taken lightly. We depend upon the PA Department of Environmental Protection to be vigilant in regards to our environment, and the related safety, health, and welfare, of the citizenry. Your agency has stood strong, in the past, even when political maneuvering, attempted to rubber stamp activity, which was environmentally detrimental. We expect no less in the present.

We should expect the "best available technology", even if it comes with a price tag. ***Let's double check who is footing much of this bill!*** To accept "cheaper available technology", especially as it has been presented by Purdue, is a completely unacceptable, dangerous, frivolous, and unhealthy pursuit!

If Purdue is unwilling or unable to meet stringent environmental conditions, during the planning phases, then we should be asking what kind of responses will be forthcoming, once they are up and running. Purdue needs to make a serious effort to work with all of the municipalities and government oversight, if they wish to perform business, in our locale. If Purdue is unable to truly demonstrate corporate and community environmental stewardship, then they should seeking their permits without the "slush" of PA funds and they may ultimately wish to seek to place their establishment elsewhere.

"Good neighbors" do not hide behind a barrage of "legal hired guns". Further, "good neighbors", do not report to the press what they will and won't be willing to do, prior to sitting down, in a public meeting, with those who are stakeholders! Purdue, should be ashamed of its actions and its spokespeople!

Richard King
5960 N Rivers Dr
York PA 17406
7172520550

Comments submitted for DEP Hearing, Hellam Township 12/13/12

Welcome to our community. This is a simple region with concern for our environment, dedicated planning, and a committed community. Hellam is a peaceful area but do not underestimate our commitment to protecting our way of life and the health and welfare of our community. Please realize that there are many of us who are well versed in the law, dealings with regulations, health issues, and large corporations who seek to profit using less than ample safety methods. Remember that this very community has suffered under the oppression of the TMI incident so we are not novice to spinning of data and marketing tactics to minimize perception of risk and the abandonment of public concern for safety and health effects.

As a practicing physician in the area for the last 25 years, I am concerned about the potential for health effects on the population of the area as it relates to the use of hexane. It makes no common sense for the Perdue organization to commence business in this area which is rich in the poultry business with a toxic substance near a major river. Toxin is toxin. Toxin in a river is still toxin and there is no other way to state it. Will this plant put hexane or another toxin into the river?

I am further interested in why DEP has not made it a requirement to monitor the health effects of a toxin released into the air directly. Why is Perdue not required to monitor hexane release effects? If monitoring is required, what will be the standard for testing and who will do the testing? If such testing is not required, then there must exist alternative measurement of the toxic effects and that there will be a tracking, either informal or formal, of these effects with release of the information to the public. As a citizen I reserve my right to sue for such effects and hereby enter into the public record that there exist rights of citizens to seek damages for tort of a known toxic substance released by water, land, or air and that this right is not to be mitigated and dismissed by legal means in advance.

In the era of known catastrophic environmental events, it simply makes no common sense to use such a toxin in any form near food substance or to release it into the air. I ask why is DEP not requesting the use of cold press or the use of an appropriate scrubber to act as a safeguard for citizens? Further why have the executives of Perdue not considered the risk to their reputation of using such a substance? How does Perdue intend to ensure the community that it will not simply abandon us in the event of a serious event? It is not clear the reasoning for selecting this sort of plant when a cold press plant would serve the purpose. What is the reason for selection of this sort of plant?

Every few years, there appears a group of individuals who proposes to build some sort of combustible facility along this area of the Susquehanna River. It results in hearings and dragging out geology maps and books which prove the porous nature of the ground just in case you have not seen the sinkholes. It is about time that the DEP takes a firm stance about this topic and the unusual geology which exists and has existed in this place for millions of years. Petitions for facilities with combustible substances should never be considered in this area. Combustible facilities such as the one proposed have already resulted in accident and injury with reports readily available on the internet. How does this plan propose to mitigate the safety concern? How does this plan account for the increased need for services provided in the event of a catastrophe?

Essentially, this comes down to doing the right thing v.corporate greed- just do the right thing, put the scrubbers and monitoring in place or go to cold press and sleep easy at night with a good conscience. Show this community that Perdue is a different corporation which actually cares.

Barbara L. Hoffmann MD

520 Chimney Rock Road
York, PA 17406

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AIR QUALITY PROGRAM

PUBLIC COMMENT
Pat Lemay
12/13/12
Perdue Soybean Crushing Plant

It is well established that south central Pennsylvania has some of the worst air quality in the nation and that, according to the American Lung Association, the cases of asthma are higher here than the national average.

It is also well established that there is a link between poor air quality and multiple sclerosis, and that there is higher incidence of that disease in Lancaster County than in other areas of the country.

Further, it is well accepted that air pollution contributes to cardiovascular disease and heart attacks.

My questions for DEP are:

Given that hexane is a neurotoxin and given that Lancaster County is already a non-attainment zone due to the toxic emissions that already exist here, why would you not require Perdue to use the very best available technology to minimize the adverse effects of its emissions?

And given that the air pollution is right here in York and Lancaster Counties, how would Perdue's buying pollution credits from a business in another state or even next door mitigate the pollution problem that already exists here?

As a regulatory agency charged with protecting the health and welfare of the public here in Pennsylvania, DEP has a moral burden to require Perdue to use the best available technology throughout its entire operation.

Pat Lemay
78 Sun Lane
Millersville, PA 17551

December 14th, 2012

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AIR QUALITY PROGRAM

Mr. Thomas J. Hanlon
PA Department of Environmental Protection
Air Quality Program
909 Elmerton Avenue
Harrisburg, PA 17110

Re: 36-03189A
Perdue Grain & Oil Seed, LLC
Conoy Twp., Lanc. Co, PA

Mr. Mr. Hanlon:

First of all, I wish to thank you for the opportunity for the citizens of York and Lancaster County to be heard at last evening's Public Hearing.

As a Supervisor for Hellam Twp., I am proud of the Board's collective efforts to offer our residents a high life quality, including clean air and water. And although we have been successful in influencing these environmental issues within the boundaries of our Township, we have limited ability to control those emanating from beyond. Thus, came our request for the Hearing to allow all those, both within our Township and beyond to voice concerns.

As Hellam Twp. Supervisors, we subscribe to the principles of "Smart Growth!" We embrace growth; however, it must be at the right place, and at the right time. It is our position that Conoy Twp. is not the right place for the Perdue Project, and you, as DEP Representatives should understand this! The York valley and Susquehanna River valley tends to trap the heavy polluted air, thus causing the air inversions that we experience on over 300 days each year, and both York and Lancaster Counties rank very low nationwide for air quality. Consider the fact that the river valley in close proximity to the proposed operation, and that this area already has the ill atmospheric effects of Brunner Island Coal Plant, Armstrong Ceiling Plant and the Lancaster Incinerator. Therefore, DEP, as our "caretakers" should be considering more stringent standards for those existing area polluters, rather than adding another. Has your Department accessed the cumulative air quality impacts of these existing operations? Adding the impacts of the grain elevator and oil extraction operation, considering the notable increases in PM 10's, VOC's and resulting ozone, not to mention their combination with Hexane, as well as the impact of over 90 inbound truckloads of soybeans arriving daily, the lower Susquehanna River Valley will become both a dangerous and undesirable place to live.

I do not particularly fault Perdue for being a potentially "bad neighbor," for they are only acting as one would expect from a member of the large business community, i.e. maximizing their profitability. And, when considering the PA State Grant, which will fund 15% of the total estimate of the entire project, they are not going to act as a "good neighbor" without government oversight. Deregulation of business is not sustainable; we as citizens need our government to offer adequate controls to keep us safe and healthy, as the DEP Mission states! I do not envy you in your position, as the pressure from the Governor's office must be tremendous. Nevertheless, the 35 jobs is no tradeoff for the negative impacts of this project, and the area farmers will continue to enjoy a market for their soybean crops without Perdue located here in southcentral PA. Please, have a conscience and act morally! Act to deny this project in it's entirety!

Sincerely,

Martin C. Reed, V.Chair
Hellam Township Board of Supervisors

cc: Hon. Keith J. Gillespie
4188 Lincoln Highway
York, PA 17406

I

DEP Air Quality
re Purdue Soybean plant
in Lanc. County

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

12/14/12

The airquality in Lanc. County continues to be some of the worst in the nation. I am a healthy active woman, but suffer from sinus issues & migraines all the time. When I am out of Lanc. City I feel better - as do my children.

I am seriously thinking of leaving the area due to this problem. I have serious reservations about a large plant in Lanc that would be adding more hazardous chemicals to our air. Even if at below cut off levels - it will be contributing to an already serious problem.

The Bleecker Family
29 Froelich Ave
Mountville, PA 17554

HARRISBURG PA 170

19 DEC 2012 PM 6 L

DEP Air Quality
South-central office
909 Elmerton Ave
Harrisburg PA 17110

17110920709

Lynn Malinak
141 Marietta Ave
Apt. D
Mt. Joy, PA 17552

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AIR QUALITY PROGRAM

Mr. Hanlan:

I am a resident of Mt. Joy, but spend the majority of my time working a small organic produce farm in Bainbridge (Conoy Tanship).

I attended the public hearing in Hellam on Dec. 13 and was pleased with the abundance of thoroughly-researched and well-reasoned testimony from my community. I share these ardent opinions.

I will not regale you with impassioned personal anecdotes but urge you to consider the degradation that Perdue's soybean plant will impose on our already damaged, yet unique geographic area against your moral and federally-appointed responsibility to protect and preserve it.

I hope that you will determine that the addition of 245 tons of hexane to our polluted landscape would be a catastrophic mistake — one that can be prevented by your good judgement!

Please realize your obligation, your burden, to reject Perdue.

Sincerely, Lynn Malinak Lynn Malinak

[344]

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AIR QUALITY PROGRAM

December 15, 2012

Thomas Hanlon
DEP Air Quality
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Dear Mr. Hanlon,

I am totally opposed to the proposed Perdue soybean-crushing plant in Conoy Township. According to its application to DEP, Perdue Grain & Oilseed LLC would emit up to 245 tons of hexane into the air each year. Hexane is federally classified as a hazardous air pollutant. N-Hexane is a suspected reproductive toxicant and exposure to it has the potential to negatively affect the human reproductive system.

I am amazed that the Lancaster Count Solid Waste Management Authority claims its #1 goal is to protect the environment. How can it support this proposal?

Please stop this from coming to Lancaster County.

Sincerely,

Holly Williams

Holly Williams
153 E. King Street, Apt. 311
Lancaster, PA 17602

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ATTORNEYS AT LAW

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*Certified Civil Trial Specialist
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December 17, 2012

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AIR QUALITY PROGRAM

Thomas Hanlon, Air Quality Permitting Chief
Air Quality Program
Department of Environmental Protection
909 Elmerton Avenue
Harrisburg, PA 17110

Re: **36-03189A & 36-05158A: Perdue Grain & Oil Seed, LLC**

Dear Mr. Hanlon:

I am writing on behalf of the Conoy Township Board of Supervisors in my capacity as Conoy Township Solicitor. I attended and heard all of the testimony presented at the public hearing held on Thursday, December 13, 2012 in the permitting applications referenced above. No person presented any testimony asserting or suggesting that there is any regulation of the Commonwealth Department of Environmental Protection with which the Applicant Perdue Grain & Oils Seed, LLC has not complied.

All that may be asked to this applicant is that it complies with applicable regulation. This is the standard to which Conoy Township has held this Applicant in matters under its jurisdiction and Conoy Township expects that the Department of Environmental Protection will do the same.

Thank you for your kind attention to this matter.

Very truly yours,

Matthew J. Creme, Jr.

MJC, Jr. /ncg
Cc: Gina Mariani- Chair of Conoy Township Board of Supervisors.
Maxine M. Woelfling, Esquire

[346]

NIKOLAUS & HOHENADEL, LLP
ATTORNEYS AT LAW
212 NORTH QUEEN STREET
LANCASTER, PA. 17603

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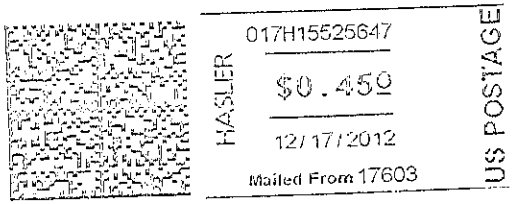
12/17/2012
Mailed From 17603
US POSTAGE



Thomas Hanlon, Air Quality Permitting Chief
Air Quality Program
Department of Environmental Protection
909 Elmerton Avenue
Harrisburg, PA 17110

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SWEDISH MOTORS, INC.
SVENSK TESTAD

SAAB, VOLVO SALES & SERVICE
7 N. Decatur Street
Marietta, PA 17547
Phone 717-426-2202
Fax 717-426-2217
www.swedishmotors.com

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Rich Kushner
573 ESSEX ST.
MARIETTA, PA 17547
717-371-7751 cell
Rich@swedishmotors.com

Mr. Hanlon,

My questions and concerns are related to the proposed Purdue Soybean Plant in Conoy Twp. in Lancaster County. I not only operate a business in Marietta but I also live here and own 4 Properties in Marietta including rentals. I am speaking on behalf of 22 people that are my family, work or rent from me.

My concern is how DEP could possibly allow Hexane to be emitted into our environment at this proposed Purdue Plant when the technology exists to remove or recycle that substance. DEP should not allow any harmful substance to be released by "buying credits". I am appalled that you would even consider this.

Rich Kushner

[348]

Swedish Motors, Inc.
7 N. Decatur St.
Marietta, PA 17547
717-426-2202

HARRISBURG PA 171
17 DEC 2012 PM 3 T

Thomas Hanlon
DEP AIR QUALITY
South Central Regional Office
909 Elmerton Ave.
Harrisburg, Pa. 17110.

Central PA's Dealership Alternative For Audi, BMW, MINI, Saab, Volvo & VW

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AIR QUALITY PROGRAM

Thomas Hanlon
Facility Permitting Chief
PA DEP
Air Quality Control
909 Elmerton Ave.
Harrisburg, PA 17110
December 16, 2012

Re: 36-03189A
Perdue Grain and Oil Seed, LLC
Conoy Township, Lancaster County, PA

Dear Mr. Hanlon,

As recent attendees to the public hearing held at the Hellam Fire Hall in Hallam, PA, York County, we wish to express our concerns regarding the proposed soy bean crushing plant in Conoy Twp.

We feel there are many reasons why this plant should not be located in an area that already suffers from poor quality air and several polluting sources. However, the fact that there is available technology that could mitigate the amount of pollutants that will be expelled into already poor quality air and that these methods are not being used, is outrageous.

The grant being given to this corporation from the state of Pennsylvania should ensure that the best available protections for the residents of PA are being used. Again, that the residents of PA are being asked to pay to have the quality of their air degraded, is astonishing.

If this is allowed to go forward as proposed, it will be another example of how greed has overcome the moral imperative of protecting the health, safety and welfare of the people of this commonwealth.

We sincerely hope that the DEP will not allow that to be the case.

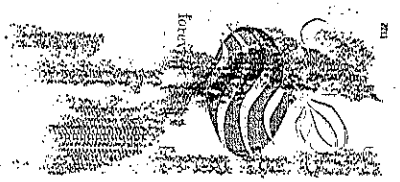
Thank you for the opportunity to comment on this project.

Sincerely,

Phyllis Koster and Robert Oughton
183 Accomac Road
York, PA 17406
717-252-3518

[350]

Koster
183 Accomac
York PA 17406



Thomas Hanlon, Facility Permitting Chief
PA DEP Air Quality Control
909 ELMERTON AVE
HARRISBURG PA 17110

Hanlon, Thomas

From: Lingle, Eric
Sent: Friday, December 14, 2012 2:41 PM
To: Hanlon, Thomas
Subject: FW: Proposed Purdue plant in Conoy Township

From: Kevin Petrask [mailto:kpetrask@comcast.net]
Sent: Thursday, December 13, 2012 8:58 PM
To: EP, Tanks
Subject: Proposed Purdue plant in Conoy Township

Dear Thomas Hanlon,

I have a concern about air quality regarding the proposed Purdue plant. I do not attend township meetings and first heard about this on the news Thursday evening. My concern is if this plant will emit any odors? Once in a while where I live if the wind is right I can get the occasional whiff of chocolate from the Mars factory in town. At the same time if the wind is right I can get a horrible smell from the nearby chicken farms. My point is the smells go away. I am afraid however that this plant will leave a stench that will linger. I am not against this plant one bit and am not concerned about the air quality in regards to being able to breathe it. I look out my window daily and see 4 towers from Three Mile Island so I don't believe a Purdue plant will pose a major safety risk at least one that I am not to concerned about. When I travel to Virginia Beach I pass to Purdue chicken processing plants and the smell is absolutely horrible. Occasionally I will cut through Spring Grove, PA and smell the god awful smell coming from the P H Glatfelter paper mill. Is Conoy and the surrounding area going to be synonymous with bad smells????

Sincerely,

Kevin Petrask
165 Covered Bridge Road
Elizabethtown PA 17022

Hanlon, Thomas

From: Lingle, Eric
Sent: Friday, December 14, 2012 2:40 PM
To: Hanlon, Thomas
Subject: FW: Purdue soybean plant

Good Afternoon Tom,
We received this email regarding the Perdue plant. Another one to follow.

Eric Lingle | Environmental Group Manager Department of Environmental Protection | Bureau of Environmental Cleanup & Brownfields Rachel Carson State Office Building
400 Market St. | Harrisburg PA 17101
Phone: 717.783.2403 | Fax: 717.772.5598
www.dep.state.pa.us

-----Original Message-----
From: Daron Smith [mailto:daronjsmith@gmail.com]
Sent: Friday, December 14, 2012 8:45 AM
To: EP, Tanks
Subject: Purdue soybean plant

I wanted to register my objections to the soybean plant proposed for Lancaster county. I live just across the river from the plant and believe the hexane released would adversely the health of my daughters who suffer from asthma.

Thank you,
Daron Smith

Hanlon, Thomas

From: Lingle, Eric
Sent: Monday, December 17, 2012 8:02 AM
To: Hanlon, Thomas
Subject: FW: Perdue- soybeans

Looks like this one is up your alley.

From: EP, Tanks
Sent: Monday, December 17, 2012 8:00 AM
To: Lingle, Eric
Subject: FW: Perdue- soybeans

Dawn Heimbach | Administrative Officer 2
Department of Environmental Protection | Bureau of Environmental Cleanup and Brownfields
Rachel Carson State Office Building
400 Market Street | Harrisburg, PA 17101
Phone: 717.772.5556 | Fax: 717.772.5598
www.dep.state.pa.us

From: rhale3@verizon.net [mailto:rhale3@verizon.net]
Sent: Sunday, December 16, 2012 5:24 PM
To: EP, Tanks
Subject: Perdue- soybeans

I was unable to attend the hearing on 12/13/12 in Hallam.

I understand that Perdue must only propose to comply with applicable regulations for the permit process.

Did Perdue indicate any willingness to "control" the emissions above what is required by law? If not, I am opposed to the plant. There is a moral obligation here. If the plant ultimately goes on line in compliance with
just what is required this will be a factor in my purchase of their products.

I would expect someone has run cost projections on emission control above and beyond statue. Where might I find such an analysis?

Thank you for the opportunity to send in comments.

Robert Hale
737 Sunset Rd.
Wrightsville, PA 17368
717-252-1366

Hanlon, Thomas

From: Lingle, Eric
Sent: Monday, December 17, 2012 8:03 AM
To: Hanlon, Thomas
Subject: FW: Purdue Soybean Crushing Plant Tank

Another Perdue comment...

From: EP, Tanks
Sent: Monday, December 17, 2012 8:00 AM
To: Lingle, Eric
Subject: FW: Purdue Soybean Crushing Plant Tank

Dawn Heimbach | Administrative Officer 2
Department of Environmental Protection | Bureau of Environmental Cleanup and Brownfields
Rachel Carson State Office Building
400 Market Street | Harrisburg, PA 17101
Phone: 717.772.5556 | Fax: 717.772.5598
www.dep.state.pa.us

From: Mr William Shultz [mailto:bubbashultz@verizon.net]
Sent: Sunday, December 16, 2012 11:17 AM
To: EP, Tanks
Subject: Purdue Soybean Crushing Plant Tank

I have no problem with companys expanding, etc., but I think they should do it with their own funds, and do it without exception safely and environmentally friendly. The rich mans' creed is spend none of their money and spend all of everyone elses money. That is how they remain rich, and get even richer. Stop now. bubba

Received 12/17/12

December 14th, 2012.

Mr. Eric Lingle
DEP Bureau of Environmental Cleanup and Brownfields
Division of Storage Tanks
PA Dept. of Environmental Protection
P.O. Box 8762
Harrisburg, PA 17105-8762

Re: SSIP Application No. 12021
Perdue Grain & Oil Seed, LLC
Conoy Twp., Lanc. Co, PA

Mr. Lingle:

First of all, I wish to thank you for the opportunity for the citizens of York and Lancaster County to be heard at last evening's Public Hearing.

As a Supervisor for Hellam Twp., I am proud of the Board's collective efforts to offer our residents a high life quality, including clean air and water. And although we have been successful in influencing these environmental issues within the boundaries of our Township, we have limited ability to control those emanating from beyond. Thus, came our request for the Hearing to allow all those, both within our Township and beyond to voice concerns.

As Hellam Twp. Supervisors, we subscribe to the principles of "Smart Growth!" We embrace growth; however, it must be at the right place, and at the right time. It is our position that Conoy Twp. is not the right place for the Perdue Project, and you, as DEP Representatives should understand this! The York valley and Susquehanna River valley tends to trap the heavy polluted air, thus causing the air inversions that we experience on over 300 days each year, and both York and Lancaster Counties rank very low nationwide for air quality. Consider the fact that the river valley in close proximity to the proposed operation, and that this area already has the ill atmospheric effects of Brunner Island Coal Plant, Armstrong Ceiling Plant and the Lancaster Incinerator. Therefore, DEP, as our "caretakers" should be considering more stringent standards for those existing area polluters, rather than adding another. Has your Department accessed the cumulative air quality impacts of these existing operations? Adding the impacts of the grain elevator and oil extraction operation, considering the notable increases in PM 10's, VOC's and resulting ozone, not to mention their combination with Hexane, as well as the impact of over 90 inbound truckloads of soybeans arriving daily, the lower Susquehanna River Valley will become both a dangerous and undesirable place to live.

I do not particularly fault Perdue for being a potentially "bad neighbor," for they are only acting as one would expect from a member of the large business community, i.e. maximizing their profitability. And, when considering the PA State Grant, which will fund 15% of the total estimate of the entire project, they are not going to act as a "good neighbor" without government oversight. Deregulation of business is not sustainable; we as citizens need our government to offer adequate controls to keep us safe and healthy, as the DEP Mission states! I do not envy you in your position, as the pressure from the Governor's office must be tremendous. Nevertheless, the 35 jobs is no tradeoff for the negative impacts of this project, and the area farmers will continue to enjoy a market for their soybean crops without Perdue located here in southcentral PA. Please, have a conscience and act morally! Act to deny this project in it's entirety!

Sincerely,

Martin C. Reed, V.Chair
Hellam Township Board of Supervisors

cc: Hon. Keith J. Gillespie
4188 Lincoln Highway
York, PA 17406

I

Received 12/17/12 [357]

December 15, 2012

Eric Lingle
DEP Bureau of Environmental Cleanup & Brownsfields
Division of Storage Tanks
P.O. Box 8762
Harrisburg, PA 17105

Dear Mr. Lingle,

I am totally opposed to the proposed Perdue soybean-crushing plant in Conoy Township. According to its application to DEP, Perdue Grain & Oilseed LLC would emit up to 245 tons of hexane into the air each year. Hexane is federally classified as a hazardous air pollutant. N-Hexane is a suspected reproductive toxicant and exposure to it has the potential to negatively affect the human reproductive system.

I am amazed that the Lancaster Count Solid Waste Management Authority claims its #1 goal is to protect the environment. How can it support this proposal?

Please stop this from coming to Lancaster County.

Sincerely,

Holly Williams

Holly Williams
153 E. King Street, Apt. 311
Lancaster, PA 17602

Hanlon, Thomas

From: Lingle, Eric
Sent: Tuesday, December 18, 2012 7:17 AM
To: Hanlon, Thomas
Subject: FW: comment on Pedue soybean facility

From: EP, Tanks
Sent: Tuesday, December 18, 2012 7:16 AM
To: Lingle, Eric
Subject: FW: comment on Pedue soybean facility

Dawn Heimbach | Administrative Officer 2
Department of Environmental Protection | Bureau of Environmental Cleanup and Brownfields
Rachel Carson State Office Building
400 Market Street | Harrisburg, PA 17101
Phone: 717.772.5556 | Fax: 717.772.5598
www.dep.state.pa.us

From: payans@zoominternet.net [mailto:payans@zoominternet.net]
Sent: Monday, December 17, 2012 9:08 PM
To: EP, Tanks
Subject: comment on Pedue soybean facility

I am very concerned about the air emissions in an area where air quality is already an issue . I also am concerned about the setbacks, in case of an explosion. I think serious consideration should be given in relocating the tanks farther from each other. Are there are other methods for obtaining the oil that are significantly less harmful to human health and the environment, including the workers at the plant ? The BAI report cites hexane explosions at U.S. soybean facilities in Iowa, Minnesota, Arkansas and Indiana, as well as in Canada, Mexico, Italy, Brazil and South Africa. The hexane explosion in Mexico killed 200 people.

There are community concerns about this facility being located here and what kind of training would be done, in case , of an emergency situation.

Thank you,

Maria Payan

York County, PA

Hanlon, Thomas

From: Lingle, Eric
Sent: Monday, December 17, 2012 2:58 PM
To: Hanlon, Thomas
Subject: FW: Perdue Soybean Plant

-----Original Message-----
From: EP, Tanks
Sent: Monday, December 17, 2012 2:57 PM
To: Lingle, Eric
Subject: FW: Perdue Soybean Plant

Dawn Heimbach | Administrative Officer 2 Department of Environmental Protection | Bureau of Environmental Cleanup and Brownfields Rachel Carson State Office Building
400 Market Street | Harrisburg, PA 17101
Phone: 717.772.5556 | Fax: 717.772.5598
www.dep.state.pa.us

-----Original Message-----
From: Trimmer, Todd [mailto:Todd.Trimmer@harley-davidson.com]
Sent: Monday, December 17, 2012 11:43 AM
To: EP, Tanks
Subject: Perdue Soybean Plant

I first wish to thank both the PA DEP and Predue for attending last Thursday nights meeting in Hellam.

I do not oppose the plant. I appreciate the jobs and the access for farmers.

I do oppose Perdue emitting 246,000 lbs of hexane into air which already is poorly rated for quality. I feel that with the almost $9,000,000 grant that PA gave to Perdue additional scrubbers could be installed to capture 100% of the hexane.

We need to begin taking serious steps to improve our air quality. Allowing Perdue to dump this much hexane and allow them to purchase air quality credits is not the way to do.

Please require them to capture all the hexane. I am trying to protect my family and neighbors and future generations who have a right to clean air.

Thank you for reading this email and thank you for your service.

Todd Trimmer
471 Frysville Road
York, PA 17406-9382
(717) 817-2394

HELLAM TOWNSHIP

44 WALNUT SPRINGS ROAD
YORK, PENNSYLVANIA 17406
(717) 434-1300 FAX: (717) 434-1301
E-mail: CMann@ hellamtownship.com
Website: www.hellamtownship.com

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

December 14, 2012

Mr. Thomas Hanlon, P.E.,
DEP Air Quality
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

RE: Phase 2 Permit Application, Perdue Grain & Oil Seed, LLC

Dear Mr. Hanlon,

By letter dated November 8, 2012, Hellam Township provided information opposing PA DEP's allowing Perdue to "phase" their application and we remain firm in our belief that that process circumvents the Air Pollution Control Act. In spite of our opposition to the process, we have previously provided comments on Phase 1 of the Perdue application by letter dated November 12, 2012, demonstrating areas where the application and the proposed permit were not compliant with DEP regulations. We now have reviewed the Phase 2 application and, based on discussions with our technical and legal consultants believe that this application significantly fails to meet the requirements of the Air Pollution Control Act or the regulations promulgated thereunder. Major revisions are needed to the design of this facility and this application before DEP can consider granting a plan approval to Phase 2 of the project. Specific deficiencies are noted in the following paragraphs.

Fugitive Emissions

As a first point of discussion, Perdue either fails to understand DEP's fugitive emission regulations at §123.1 or else purposefully attempts to dissemble on this requirement. The Perdue explanation of compliance with §123.1 speaks solely to fugitive particulate matter from roadways, which is actually an exempted source under this section of the regulations. In actuality, this regulation prohibits all types of fugitive air contaminants, not just particulate, unless they are specifically exempted (as are the roadways) or unless the Department determines that the emissions, after appropriate control are of minor significance in causing air pollution. The Perdue application shows fugitive VOC emissions of 93 tons, nearly twice the level of a major VOC source. The fugitive VOC emissions alone from this facility would be the sixth highest in the County based on 2010 emission inventory data. The fugitive hexane situation is even more alarming with fugitive emissions of 42 tons, over four times the major source threshold for HAPs. Forty-two tons of hexane from fugitive emissions at a single source would exceed the entire hexane emissions both fugitive and stack, from all sources in each and every DEP region of the state, based on 2010 emissions data. The fugitive hexane emissions alone

represent the largest single hexane source in the entire Commonwealth, by nearly a factor of four. Clearly fugitive emissions of this magnitude cannot be considered of minor significance with respect to causing air pollution. Further, DEP must determine that the fugitive emissions are of minor significance *after appropriate control.* Failure to control at all is not appropriate control. These emissions must be captured and controlled in order for the facility to be lawfully permitted. The application violates DEP regulations.

LAER

Perdue's LAER analysis appears woefully inadequate. It appears to be little more than a cut and paste exercise based on Google searches with little understanding of the LAER requirements or the technical issues involving the control methods evaluated.

The first major failure in Perdue's approach is their decision to conduct "this LAER Evaluation based on a facility-wide gallons of VOC per ton of soybeans processed emission limitation."

That is an unlawful approach to LAER. While the facility emissions are used to determine whether non-attainment new source (NNSR) review is triggered, as it is in this case, once NNSR becomes applicable, LAER must be applied to each new or modified source (§127.205(1)). Additionally EPA guidance published August 29, 1988 on LAER states that "each emissions unit must achieve the lowest possible emission rate". Consequently the Perdue LAER analysis is flawed in attempting to assess LAER on a facility wide basis. Each individual source of VOCs must be evaluated, those which have proposed controls as well as those that have no proposed controls. A general commitment to use BMP, which is basically what Perdue is proposing, is a far cry from LAER and is unacceptable.

Secondly, Perdue fails to understand the technology transfer requirements of LAER. Perdue's LAER discussion makes much of the fact that there are no other soybean extraction plants using control technologies above what they have proposed in this application. This is irrelevant. EPA requirements on LAER require sources to evaluate "any sources that produce similar gas streams that could be controlled by the same or similar technology" in evaluating LAER technology. And similar gas stream control has been demonstrated by all of the technologies Perdue rejects.

Biofiltration

Biofiltration is a relatively new approach to air pollution control but there are installed systems treating hydrocarbon contaminated waste streams, including solvent contaminated exhausts. Again the fact that they have not been installed in soybean processing plants is irrelevant to a LAER determination. Perdue admits that hexane is relatively easy to biodegrade

yet argues that the bed size to control their emissions, (and we suppose they mean their facility emissions based on their incorrect interpretation of LAER), would be prohibitively large. They have given no evidence to suggest that that is true either for the entire facility or for individual sources. EPA has published a technical paper on biofilters, *Using Bioreactors to Control Air Pollution* (EPA-456/R-03-003). EPA gives an example, in this document, of a biofilter controlling compost odors and treating 210,000 cfm in a biofilter bed area of approximately 200 feet by 200 feet. That is a relatively large air flow. The listed sources in the Perdue application that emit hexane have a combined air flow of only 39,500 cfm. Additional flow would need to be added to capture the fugitive emissions from the extraction process, but that should be able to be easily accomplished within the 210,000 cfm total flow in the subject case. And even if a biofilter were required of 200 feet by 200 feet, that scarcely rises to the level of technical infeasibility. To eliminate this technology Perdue must show precisely why it is technically infeasible and provide some design details on what size the biofilter would have to be. Biofiltration cannot be eliminated on speculative assumptions.

Perdue goes on to describe the many challenges involved in running a biofilter system, and these are accurately characterized. However, difficulties in operating a biofilter do not make using one technically infeasible. They may suggest that while technically feasible, this technology is inferior to other more reliable alternatives, but that is an entirely different analysis, yet one that must also be included in the LAER analysis.

Carbon Adsorption

Perdue next analyses the use of adsorbents, including carbon, and notes that this technology can remove between 95 and 99% of VOCs. These systems are widely used on a vast array of gas streams. Typically, challenges in a particular type of gas stream are addressed in the choice of adsorbents used. Perdue mentions that many sorbents may be used but then sets up a straw man, activated carbon, and shoots that down without so much as a mention of alternative sorbents. Perdue suggests that because adsorption on carbon is exothermic and hexane is flammable the technology is too dangerous to be used. This is absurd. All adsorption processes are exothermic and all VOCs are flammable to one degree or another. Perdue's arguments would suggest that the technology would never be used and it is in fact used quite commonly. Carbon is probably not the ideal sorbent for many of the gas streams to be evaluated for LAER at this facility due to high moisture content in the exhaust. Bed fires are an obvious concern for all of these systems but a proper design and proper sorbent selection will eliminate or adequately manage this risk.

EPA also has a technical manual on adsorption technology, *Choosing an Adsorption System for VOC: Carbon, Zeolite, or Polymers?* (EPA 456/F-99-004) which states "VOC and organic hazardous air pollutant emissions can be controlled, recovered, recycled, or concentrated for additional treatment by adsorption technology. This includes emissions from: dry cleaning, degreasing, paint spraying, solvent extracting..."

Absorption technology cannot be considered a technically infeasible technology based on the data provided in the Perdue application.

Incineration

Perdue then turns to the most obvious control technology – incineration. Here, they discuss both regenerative thermal oxidation (RTO) and catalytic oxidation, and once again note the high control efficiencies available with these technologies. On the RTO they argue that oil from the mineral oil scrubber or particulate from the meal dryer or cooler will either plug the RTO or cause a loss of heat transfer. Neither is an argument against technical infeasibility. Particulate (meal and oil) can be filtered prior to the RTO. Other facilities with similar exhaust characteristics are able to treat the gas and use an RTO.

Interestingly, Perdue makes no specific statements as to why a catalytic oxidizer would be technically infeasible, but goes on to address safety issues for all types of incineration. They argue that since hexane is highly flammable, incineration is not an acceptable option.

Explosion is an issue in all enclosed incineration systems, but it is an issue that is routinely managed. The lower explosive limit (LEL) for hexane is 1.1%. Typically a safety factor of 25% of LEL is used in incinerator design. In this case a design limit of 0.275% hexane would be protective against explosion hazard. If we take Perdue's projected VOC emissions from the three non-fugitive sources (extraction process, meal dryer, and meal cooler) and distribute them equally over the year based on the flows for the three control systems, we find that the average concentrations of the three exhaust streams would be 0.2%, 0.01%, and 0.001% respectively. All of these are below the safety limit for enclosed incineration systems on average and can be monitored and if needed in the short term, diluted with ambient air to maintain operations below the safety level.

Perdue notes the existence of an NFPA standard for Solvent Extraction Plants (NFPA 36) and opines that the standard "does not appear to prohibit the use of incineration processes". Indeed, NFPA 36 has 28 pages of standards regarding safe operations of a solvent extraction plant, one paragraph of which addresses boilers and other open flame operations. The NFPA standard requires that open flames be located at least 100 feet from the extraction process. Clearly, Perdue cannot hide behind a fear of explosion regarding incineration when this is a minor issue in the NFPA standard, and one that is adequately addressed therein.

In addition, Perdue fails to mention the most common type of incineration control - a flare. Flares are used in natural gas well completions, (containing highly flammable gas), precisely as a safety feature. Flaring is an open combustion process that does not have an enclosed combustion chamber that can have an explosive environment. Flares also would not be subject to the plugging problems that Perdue worries about with the RTO.

If Perdue is convinced that operational or safety issues compel them to avoid an RTO or catalytic oxidation system, a flare will provide the same level of control without these concerns.

We also find it interesting that Perdue is so concerned about explosive conditions in the air exhaust from the mineral scrubber that they take ***manual readings*** of the hexane level in the exhaust air stream at the final vent fan every ***two (2) hours*** to ensure that the hexane concentration remains less than 20% of the LEL. And that if levels are found to be above the 20% threshold, immediate action will be taken to ascertain the probable cause and necessary corrective action will be taken, including the interruption of operations which could involve shutdown of the process. (Perdue Plan Approval Application, Attachment H, Page 8 of 9).

We would humbly suggest that if the potential for explosion is a real danger, perhaps Perdue should investigate a real time process monitor for this parameter rather than relying on manual readings every two hours.

Finally, Perdue notes that an incinerator would lead to increased energy consumption and the emission of more greenhouse gases. Neither factor is a component of a LAER analysis.

LAER Summary

Purdue has not proven that biofiltration, adsorption, or incineration is a technically infeasible option for any of the sources at this facility. One of these technologies or an alternate control technology must be installed. The argument that no controls are possible on some of these sources doesn't even pass the BAT test, let alone LAER. Additionally, even the VOC sources that have controls must have the proposed controls evaluated to prove that they are in fact LAER, and as noted above, this must be done on a source by source basis. In every case where Perdue wants to argue that a particular control technology is infeasible they must provide precise gas stream details, including flows, temperatures, particulate loading if applicable, moisture content, temperature and VOC concentration, and give detailed reasons why a particular control cannot be installed on a particular source. Furthermore, they cannot argue, as they have done here, that contaminants in the gas stream prevent the use of a control technology as LAER without investigating treatment of the gas stream to remove those contaminants.

As discussed above, LAER decisions are not based on what other similar plants have installed but rather on what is technically feasible. EPA evaluated enhanced controls on these types of facilities in a document entitled "*Economic Impact Analysis for the Final Vegetable Oil Processing NESHAP Final Report* (EPA-452/R-01-005 January 2001)".

In that document EPA evaluated above the floor MACT controls. "For this option, plants would be required to install a fabric filter and catalytic incinerator to the combined exhaust from the meal dryer and cooler vents (Zukor and Snyder, 2000). The fabric filter is installed to remove excess particulate matter in the exhaust stream prior to entering the catalytic incinerator. The catalytic incinerator is capable of reducing the volume of HAP and VOC emissions in the exhaust stream by approximately 95 percent." While EPA did not implement the "above the

floor" option in the promulgated MACT standard, the analysis shows that filtration followed by catalytic incineration was a technically feasible control option over twelve years ago. Control of and would exempt the facility from NNSR.

Without further data from Perdue, this is the LAER that DEP should impose.

Alternative Site Analysis

§ 127.205(5) For a new or modified facility which meets the requirements of and is subject to this subchapter, an analysis shall be conducted of alternative sites, sizes, production processes and environmental control techniques for the proposed facility, which demonstrates that the benefits of the proposed facility significantly outweigh the environmental and social costs imposed within this Commonwealth as a result of its location, construction or modification.

The Perdue application is totally non responsive to the regulatory requirement. The intent of the regulation is to actually evaluate alternative sites in the particular, not just make generic statements that alternative sites were considered and found wanting. Furthermore the regulation requires an evaluation of benefits and environmental and social costs (commonly called harms) from the proposed project and a determination that the benefits *significantly* outweigh the harms. This application doesn't even mention harms.

One of the most obvious harms is the construction of a major source of VOCs in an area that already is treated as a non-attainment area for ozone and is upwind from areas of measured ozone exceedances. The way to mitigate this harm is to construct outside of non-attainment areas. At a minimum, Perdue should evaluate an actual location for construction of this facility outside the ozone transport region and compare the harms to the Lancaster site.

A second obvious harm to be investigated is the proposed emission of hexane ten times higher than the currently highest emitting source in PA and an emission higher than the total hexane currently being emitted in each region of DEP. Potential harms from hexane emissions include chronic and sub-chronic inhalation risks.

Other environmental and social costs that should be evaluated include health and welfare and property impacts from all air emissions, including hexane; the potential for fire and explosion and the impact on local citizens quality of life; traffic impacts on surrounding roads, including risks to school buses; impacts to future development from consumption of a large amount of the air resource; noise of the facility; the potential for off-site odors; development of sinkholes on site and downstream; mosquito risks (including West Nile risks) from storm water ponds; aesthetics (building higher than normal zoning allows); and potential impacts to the

Susquehanna river, both from groundwater withdrawal, sinkhole development, and potential discharges to the river. Another major societal cost of this project is any state grants, which are ultimately borne by the taxpayers of Pennsylvania for the benefit of private industry, and must be included as a societal cost of the project.

Perdue must actually conduct these benefit-to-costs analyses and show the benefits significantly outweigh the costs, and they must include detailed analyses showing evaluation of actual alternative sites.

A second major deficiency in the alternative analysis is the evaluation of alternative production processes. Perdue does briefly discuss the flash desolventizing process and correctly determines that that process has higher emissions than the one they are proposing. However there are other potential hexane-free extraction processes that could be employed, including supercritical CO_2, 10% IPA in water, 10% n-propanol in water, 10% ethanol in water, to name just a few. These last three are all non-HAPS and the reduction of VOCs using predominantly water would greatly reduce the VOC emissions and eliminate the HAPs. The application must evaluate these alternative processes as well and any other alternative processes that could minimize the VOC and HAPs risks.

Mr. Wayne Black, Environmental Director for Perdue Farms, Inc., was quoted as saying at a public hearing on December 13, 2012, that hexane is used in more than 90 percent of soybean processing plants today. Perdue must examine the technology used at the other 10% of the plants and determine if that has a greater benefit to harms ratio and also whether that technology could satisfy LAER requirements by virtue of less VOC emissions.

It is understood that there will be decreased benefits from the use of these non-traditional solvents but they must be balanced against the reduced harms resulting from less VOC and HAP emissions. It is not enough to simply say that they are more costly to implement. Cost data must be provided and compared to the decreased harms.

To the extent Perdue's LAER implementation does not result in VOC emissions below 50 tons per year, these alternative processes would also need to be considered as LAER. In that situation these technologies would need to be implemented if they are technically feasible regardless of any increased costs of production.

Summary

Perdue's Phase 2 application should not be granted a plan approval under DEP or EPA regulations. It violates regulations for fugitive emissions, does not implement LAER control technology, or adequately analyze benefits and costs of this or alternative sites and processes. It must be amended to satisfactorily address these errors or be denied.

Sincerely,

Corina Mann

Corina Mann
Manager, Hellam Township
Direct dial: 717-434-1303

August Mack
ENVIRONMENTAL

941 Wheatland Avenue, Suite 202
Lancaster, PA 17603
ph: 717.399.9587 | f: 717.399.5493
www.augustmack.com

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DEC 17 2012
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VIA HAND DELIVERY

December 17, 2012

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DEC 17 2012
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Mr. Thomas J. Hanlon, PE
Air Quality Permitting Chief
Air Quality Program
Pennsylvania Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, Pennsylvania 17110-8200

Re: Comments on Plan Approval Application and Request for Public Hearing
Phase 2 (Soybean Oil Extraction Facility) - #36-05158A
Perdue Grain & Oilseed LLC
1897 River Road
Marietta, Pennsylvania
Conoy Township, Lancaster County

Dear Mr. Hanlon:

At the request of our client, A & R Nissley, Inc. (Nissley Vineyards) we have reviewed the Plan Approval Application submitted by Perdue Grain & Oilseed LLC (hereinafter referred to as Perdue) for a soybean oil extraction facility (#36-05158A) submitted to the Pennsylvania Department of Environmental Protection (PADEP) on August 13, 2012. As a result of this review, we are providing the following comments/concerns to the PADEP for their consideration:

General Comments

1. **Public Hearing and Draft Permit.** Nissley Vineyards requests a public "microphone" hearing on this application, so that all concerned residents can present their comments to PADEP and all other residents and may hear all comments at the same time.

   a. Nissley Vineyards also requests that should PADEP determine not to deny Perdue's permit application at this stage, PADEP issue a "Draft Permit" and that the public be given an opportunity to comment on the Draft Permit and its specific terms.

2. **Prevention of Significant Deterioration (PSD).** Perdue indicates in Attachment D, Applicable Requirements that the federal prevention of significant deterioration requirements (PSD) are not applicable to the project as the calculated potential to emit (PTE) is anticipated to be less than the 250 tons per year threshold that is applicable to this type of facility. Perdue calculates the facility-wide volatile organic compound (VOC) emissions to be 248.65 tons. Based on our calculations and this comment submittal (Specific comment No. 14), the actual emissions will exceed 250 tons, thus subjecting the facility to PSD requirements including ambient impact modeling and an additional impacts analysis. As a result, the PSD requirements will apply and the application should be denied.

   a. **Emission Calculations.** The following emission calculations are believed to be incorrect or incomplete:
      - VOC emissions from Grain Dryer no. 1 and Grain Dryer No. 2 which use a propane heating value of 91,500 British Thermal Units (BTUs/hour) instead 90,500 BTUs/hour specified in the U.S. Environmental Protection Agency's Compilation of Air Pollutant Emission Factors (AP-42). In addition, Perdue indicated in a meeting on June 15, 2012 that 400,000,000 cubic feet of natural gas would be used in the Grain Dryer's but the emission calculations are not based on this amount.
      - VOC emissions from boilers which are indicated as 1.46 tons in Attachment I but only 0.0455 tons in Attachment G.
      - Particulate Matter (PM), Particulate Matter less than ten (10) microns in diameter (PM-10), and Particulate Matter less than 2.5 microns in diameter (PM-2.5) emissions estimates are not based on operation 8,760 hours per year for the following sources:
        - 202 - Bean Conditioning
        - 203 - Flaking Rolls
        - 205A Meal Dryer
        - 205B Meal Dryer
        - 206 Meal Screening and Grinding
        - 207 Mill Feed (Hull) Grinding
        - 209 Meal/Mill Feed Loadout Tank.

3. **Hexane.** The application includes two (2), 20,000 gallon, aboveground storage tanks (ASTs) that will be utilized to store hexane. The storage of hexane at this location is a concern due to its potential to adversely impact the environment, public health, public safety and air quality.

a. **Temperature inversions.** Nissley Vineyards has retained Professor Richard D. Clark, Ph.D., Chair, Department of Earth Sciences, Millersville University to conduct a study of temperature inversions along the Susquehanna River centered on the location of the proposed Perdue facility. A copy of this study is provided in Attachment A. The results of this study indicate that temperature inversions occurred in this location on approximately 86% or 313 of the days in 2011, with a breakdown of the duration of the inversions as follows:

- No inversions: 52 days
- Short inversions (less than 4 hours): 293 inversions
- Medium length inversions (4 to 8 hours): 130 inversions
- Long inversions (9 hours or more): 96 inversions.

Note, the number of inversions exceeds 313 as more than one inversion and/or type of inversion occurred on multiple days. According to Professor Clark, from the perspective of temperature, 2011 was an "average" year, so the number of inversions is what we would expect in an "average" temperature year. More inversions would be anticipated in a warmer year. These temperature inversions prevent air pollutants from dispersing and the study indicates that "areas immediately downwind of a pollution source can be significantly affected by deleterious air quality for long durations". There are concerns with air pollution in the area of the proposed Perdue facility including:

- Nonattainment with the 2008 8-hour Ozone Standard of 0.075 parts per million (ppm)
- Nonattainment with the 2006 $PM_{2.5}$ 24-hour Standard of 35 micrograms per cubic meter of air ($\mu g/m^3$) and $PM_{2.5}$ Annual Standard of 15 $\mu g/m^3$.

Due to the unique air characteristics in this area of the Susquehanna River as well as the fact that Perdue claims that the overall project will allegedly emit 248.65 tons of VOCs, allegedly 1.35 tons below the PSD threshold of 250 tons specified in Title 40 Code of Federal Regulations (CFR) Part 52, PADEP should request the following from Perdue:

- A recalculation of emissions of VOCs on the basis of the comments contained in this letter.
- Information on how the source will not prevent or adversely affect the attainment or maintenance of ambient air quality standards in accordance with Title 25 of the Pennsylvania Code §127.12(a)(6).
- A plan of action for the reduction of emissions during each forecast level specified in 25 Pa. Code §137.3(1) thereby

preventing the occurrence of an emergency due to the effects of the pollutants on the health of persons in accordance with 25 Pa. Code §127.12(a)(7).

- A plan for dealing with air pollution emergencies in accordance with 25 Pa. Code §127.12(a)(9).

The permit application should be denied since Perdue has not addressed and cannot adequately satisfy this important concern.

b. **Public Health.** There are negative health effects associated with exposure to hexane. The exposure routes for humans are inhalation, ingestion and skin and/or eye contact. Target organs include eyes, skin, respiratory system and central and peripheral nervous systems. Symptoms from acute exposure include irritation of the eyes and nose, nausea, headache, dermatitis and dizziness. Chronic exposure includes peripheral neuropathy. Per a study conducted by the National Institutes of Health in 1991, the most common and best characterized toxic response in humans exposed to hexane is the development of neuropathy. As hexane has a low vapor pressure, a release from the ASTs or process structure would readily evaporate resulting in airborne concentrations of hexane impacting neighboring properties including properties located in Conoy Township and Hellam Township across the Susquehanna River. The permit application should be denied since Perdue has not addressed and cannot adequately satisfy this important public health concern.

c. **Safety Concerns/Explosion Hazard.** Nissley Vineyards has retained Mr. Frank Chiappetta, President and Explosives Application Engineer with Blasting Analysis International, Inc. (BAI) to evaluate the safety concerns associated with the proposed hexane ASTs. A copy of the BAI report is provided in Attachment B. The results of this study indicate an explosion of the hexane tanks would result in:

- High velocity fragments (shrapnel) impacting neighboring properties resulting in death or serious injury to anyone hit by it as well as serious property damage to any structures that it encountered.
- Multiple fires wherever any burning shrapnel/debris landed.
- The oil storage tank, which is situated only 40 feet away from the hexane storage tanks, most likely catching on fire and spewing out huge amounts of heavy smoke and toxic gases.
- There is a large propane storage tank nearby on the adjacent Lancaster County Solid Waste Authority incinerator property. Depending on the mass and velocity of a projectile, it is possible to

explode the propane tank on impact, causing another secondary large scale energetic explosion.

- Airblast (concussion) would occur from the explosion that in itself would kill or seriously injure people and would also cause serious damage to nearby properties. The overpressure effect could result in the destruction of nearby buildings which could inflict injury or death to anyone inside or near the building(s). Because it is so close, it is expected that the incinerator complex would be seriously damaged from an explosion. In addition, BAI would expect windows in buildings as far as half a mile away to be blown out, which could also result in injury to anyone nearby.
- If there is a temperature inversion at the time of the explosion, the inversion layer will reflect the airblast energy back to ground elevation with a greater intensity and if there is an inversion at an appropriate height above the ground, with high-velocity directional winds, the inversion layer can be reflected back down to earth to break windows much farther away than half a mile with the possibility of a damage focal point 1 - 2 miles away. This is illustrated in the Figure provided as Attachment C.
- If a hexane explosion occurred, the resultant fires would result in noxious fumes (as occurred at other soybean processing facilities). For example, some of the gasses often resulting from hexane explosions are oxides of nitrogen. Exposure to these gasses with concentrations of only 0.03 to 0.05% could be fatal 8 to 72 hours after exposure.

d. **Scrubbers.** Due to the concerns with the use of hexane, Perdue should be required to install air pollution control devices (i.e., scrubbers) on all significant sources of VOC emissions at the proposed facility including the Meal Dryer which will emit 83.50 tons per year and the Meal Cooler which will emit 17.19 tons per year.

The permit application should be denied since Perdue has not addressed these safety concerns.

4. **Monitoring.** Due to the concerns associated with ambient air quality in the vicinity of the facility including temperature inversions and a potential release of hexane, Perdue should be required to install monitors and continuously monitor for both hexane and VOCs at the property line.

5. **Emergency Preparedness.** Due to safety concerns with the use of hexane at the facility Perdue should be required to prepare an emergency response plan that will include immediate and direct notification of all

neighbors--by Perdue--within a one mile radius of the proposed plant in Conoy Township, Pennsylvania. The plan should include a warning system to be implemented by Perdue to warn nearby residents immediately, rather than rely solely on the local emergency response units (most of whom are volunteers), because valuable time would be lost for nearby residents in deciding to evacuate immediately, or to seal their homes by closing all windows/doors and turning off their A/C units until the danger has passed. According to Perdue representatives, they plan to use the local emergency response units in dealing with such events. Perdue should take responsibility for this important aspect of emergency planning and response.

Specific Comments

1. **Soybean Preparation Process:** Page 4, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information
    a. The flow diagram in Attachment F does not include all of the requested information including:
        i. Gaseous, liquid and solid flow rates
        ii. The amount of raw material charged to the process in tons/hour at rated capacity
        iii. The specific locations of where contaminants are controlled are not shown on the diagram, specifically the location of collection hoods or other pickup points
        iv. A description of collection hoods design, airflow and capture efficiency for emissions vented through:
            1. Baghouses C201A, C201B, C201C, C201D, C201E, C206, C207 and C210
            2. Cyclones C202, C203, C205A, C205B
            3. Mineral Oil Scrubber C204
            4. Filters C208 and C209.

    Perdue should be required to correct this deficiency in its permit application.
    b. The applicant indicates that the pressure drop on the baghouses will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the baghouse should be continuously monitored with continuous monitoring being incorporated into a permit condition.

2. **Bean Conditioning:** Page 7, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information. The applicant indicates that the pressure drop on the high efficiency cyclone will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the high efficiency cyclone should be

continuously monitored with continuous monitoring being incorporated into a permit condition.

3. **Flaking Rolls:** Page 10, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information. The applicant indicates that the pressure drop on the high efficiency cyclone will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the high efficiency cyclone should be continuously monitored with continuous monitoring being incorporated into a permit condition.

4. **Extraction Process:** Page 13, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information:
   a. The applicant indicates a written plan for demonstrating compliance with Title 40 Code of Federal Regulations (CFR) Part 63, Subpart GGGG , §63.2851 will be developed and implemented and the hexane recovery system will be operated and maintained per the manufacturer's instructions. As part of the Plan Approval application the facilities provided to monitor and record process operating conditions which may affect the emission of air contaminants are to be described fully. Perdue should be required to correct this deficiency in its permit application.
   b. The applicant does not identify and describe all fugitive emission points but indicates that "fugitive hexane emissions will occur at various component fittings in the extraction process/hexane recovery system." Perdue should be required to prove that fugitive emissions will be negligible or the permit should be denied.
   c. The applicant indicates a Startup, Shutdown, and Malfunction (SSM) plan for demonstrating compliance with Title 40 Code of Federal Regulations (CFR) Part 63, Subpart GGGG , §63.2852 will be developed prior to start-up. As part of the Plan Approval application a description of how emissions will be minimized especially during start up, shut down, process upsets an/or disruptions is to be provided. Perdue should be required to correct this deficiency in its permit application.

5. **Meal Dryer:**
   a. Page 14, Process Form, Section B - Processes Information, Item 2 and Item 3. no information on fuel use or a burner for the meal dryer is provided. During a meeting in June 2012 representatives from Perdue indicated that drying in the meal dryer would be via steam. It does not appear that adequate information on how drying will be achieved in the meal dryer is provided in the event that steam becomes unavailable from the Lancaster County Solid Waste Management Authority (LCSWMA) incinerator including fuel usage and associated combustion emissions.

b. Page 16, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that the pressure drop on the cyclone will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the cyclone should be continuously monitored with continuous monitoring being incorporated into a permit condition.

6. **Meal Cooler:** Page 19, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information:
   a. The applicant indicates that the pressure drop on the cyclone will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the cyclone should be continuously monitored with continuous monitoring being incorporated into a permit condition.

7. **Meal Screening and Grinding:** Page 22, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information:
   a. The applicant indicates that the pressure drop on the baghouse will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the baghouse should be continuously monitored with continuous monitoring being incorporated into a permit condition.

8. **Mill Feed (Hull) Grinding:** Page 25, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information:
   a. The applicant indicates that the pressure drop on the baghouse will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the baghouse should be continuously monitored with continuous monitoring being incorporated into a permit condition.

9. **Meal/Mill Feed Storage Bins:** Page 28, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that monthly visual observation of the bin vent filters will be conducted to check for the presence of visible emissions. As the facility will operate 24 hours per day, 7 days per week the visual observation should be performed on a daily basis. This requirement for daily monitoring should be incorporated into a permit condition.

10. **Meal/Mill Feed Loadout Tank:** Page 29, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that monthly visual observation of the tank vent filter will be conducted to check for the presence of visible emissions. As the facility will operate 24 hours per day, 7

days per week the visual observation should be performed on a daily basis. This requirement for daily monitoring should be incorporated into a permit condition.

11. **Meal Loadout Area:** Page 34, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that that the pressure drop on the baghouse will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the baghouse should be continuously monitored with continuous monitoring being incorporated into a permit condition.

12. **Seed Silo Tanks:** Page 35, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that monthly visual observation of the silo vents will be conducted to check for the presence of visible emissions. As the facility will operate 24 hours per day, 7 days per week the visual observation should be performed on a daily basis. This requirement for daily monitoring should be incorporated into a permit condition.

13. **Facility Roadways:** Page 43, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that daily visual observations of facility roadways will be performed. According to Perdue's traffic study, 668 vehicles (mostly large trucks) will enter and exit the property daily. This has the potential for creating significant dust. As the facility will operate 24 hours per day, 7 days per week the visual observation should be performed on an hourly basis. This requirement for hourly monitoring should be incorporated into a permit condition with specific requirements including method and frequency for when dust control measures will be implemented on facility roadways. Dust control measures should be implemented on a continuous basis to suppress any dust from vehicles.

14. **Section C - Air Cleaning Device:**
    a. Page 44 provides maximum emission rates for PM, PM10, and $PM_{2.5}$ for 201 - Soybean Preparation Process. The calculations in Attachment G for 201 - Grain Receiving and Processing are based on the back calculation of an uncontrolled emission factor assuming a 90% cyclone control efficiency. No documentation of a 90% cyclone control efficiency is provided in the application.
    b. Page 47 provides maximum emission rates for PM, PM10, and $PM_{2.5}$ for 202 - Bean Conditioning. The calculations in Attachment G for 202 - Bean Conditioning Processing are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 59 tons per hour (the rated capacity) and operation for 8,760

hours per year as indicated on Page 5 of the application but indicates that only 493,500 tons will be processed for a processing time of only 8,364 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 59 tons per hour for 8,760 hours per year which equals 516,840 tons. In addition, documentation of the control efficiency (95%) of the high efficiency cyclone is not provided. Perdue should be required to correct this deficiency in its permit application.

c. Page 50 provides maximum emission rates for PM, PM10, and $PM_{2.5}$ for 203 - Flaking Rolls. The calculations in Attachment G for 203 - Flaking Rolls are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 59 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 5 of the application but indicates that only 493,500 tons will be processed for a processing time of only 8,364 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 59 tons per hour for 8,760 hours per year which equals 516,840 tons. In addition, documentation of the control efficiency (95%) of the high efficiency cyclone is not provided. Perdue should be required to correct this deficiency in its permit application.

d. Page 53 provides maximum emission rates for VOCs and n-Hexane for 204 - Extraction Process. Documentation of the control efficiency (99%) of the mineral oil scrubber is not provided. Perdue should be required to correct this deficiency in its permit application.

e. Page 56 provides maximum emission rates for PM, PM10, VOC, $PM_{2.5}$, and n-Hexane for 205A - Meal Dryer. The calculations in Attachment G for 205A - Meal Dryer are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 59 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 14 of the application but indicates that only 393,750 tons will be processed for a processing time of only 6,674 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 59 tons per hour for 8,760 hours per year which equals 516,840 tons. Documentation of the control efficiency (90%) of the cyclone is not provided. In addition, emissions associated with fuel combustion in the dryer are not provided. During a meeting in June 2012 representatives from Perdue indicated that drying in the meal dryer would be via steam. It does not appear that adequate information on how drying will be achieved in the meal dryer if steam becomes unavailable from the LCSWMA incinerator including fuel

usage and associated combustion emissions has been provided in the application. Perdue should be required to correct this deficiency in its permit application.

f. Page 59 provides maximum emission rates for PM, PM10, VOC, $PM_{2.5}$, and n-Hexane for 205B - Meal Cooler. The calculations in Attachment G for 205B - Meal Cooler are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 59 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 17 of the application but indicates that only 393,750 tons will be processed for a processing time of only 6,674 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 59 tons per hour for 8,760 hours per year which equals 516,840 tons. Documentation of the control efficiency (90%) of the cyclone is not provided. Perdue should be required to correct this deficiency in its permit application.

g. Page 62 provides maximum emission rates for PM, PM10, and $PM_{2.5}$ for 206 - Meal Screening and Grinding. The calculations in Attachment G for 206 - Meal Screening and Grinding are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 47 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 20 of the application but indicates that only 393,750 tons will be processed for a processing time of only 8,378 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 47 tons per hour for 8,760 hours per year which equals 411,720 tons. Perdue should be required to correct this deficiency in its permit application.

h. Page 65 provides maximum emission rates for PM, PM10, and $PM_{2.5}$ for 207 - Mill Feed (Hull) Grinding. The calculations in Attachment G for 207 - Mill Feed (Hull) Grinding are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 3.75 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 23 of the application but indicates that only 31,500 tons will be processed for a processing time of only 8,400 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 3.75 tons per hour for 8,760 hours per year which equals 32,850 tons. Perdue should be required to correct this deficiency in its permit application.

i. Page 68 provides maximum emission rates for PM, PM10, and $PM_{2.5}$ for 208 - Meal Loadout Area. The calculations in Attachment G for 208 - Meal

Loadout Area are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 1,314 tons per day turnover (54.75 tons per hour) and operation for 8,760 hours per year as indicated on Page 26 and 27 of the application but indicates that only 425,250 tons will be processed for a processing time of only 7,767 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 54.75 tons per hour for 8,760 hours per year which equals 479,610 tons. Perdue should be required to correct this deficiency in its permit application.

j. Attachment G also includes emissions for boilers in the event that steam is not available from the LCSWMA incinerator. The alternative siting analysis in Attachment I specifies 1.46 tons of VOCs would be emitted from natural gas-fired boilers if Perdue would be required to generate their own steam as opposed to using excess steam from the neighboring LCSWMA incinerator. However, Perdue indicated that only 0.0455 tons of VOCs would be generated from boilers in Attachment G. Perdue should be required to correct this deficiency in its permit application

15. **Section D - Additional Information:** Page 71 indicates that the project will not be subject to PSD. Perdue calculates the facility-wide VOC emissions to be 248.65 tons. Based on this comment submittal (Specific comment No. 14), revised emission calculations should be prepared which will result in an increase in the facility-wide VOC emissions to above the 250 ton threshold thus subjecting the facility to PSD requirements including ambient impact modeling and an additional impacts analysis.

16. **Section D - Additional Information:** Page 71 indicates the Best Available Technology (BAT) demonstration is provided in Attachment J. The permit application does not include an appropriate "top-down" Best Available Control Technology (BACT) Analysis. This would include a search of the reasonably available control technology (RACT)/BACT/LAER clearing house for available control technologies for both particulate matter and volatile organic compounds (VOCs), a ranking of the technologies based on control efficiencies, and an economic analysis including the cost per ton of pollutant removed. These elements were not included. Therefore the application should be denied.

17. **Section D - Additional Information:** Page 71 indicates the Lowest Achievable Emission Rate (LAER) demonstration is provided in Attachment H. The LAER demonstration does not consider vegetable oil production utilizing non-solvent extraction methods which result in lower emission rates. In addition, Perdue's LAER demonstration proposes a facility-wide solvent loss limit of 0.165 gallons

of solvent per ton of soybeans processed (gal/ton). This solvent loss limit is higher than the solvent loss limits for eight (8) of the facilities identified in the LAER demonstration which include:

- 0.16 gal/ton for Bunge North America in Morristown, Indiana
- 0.16 gal/ton for ConAgra in Morristown, Indiana
- 0.15 gal/ton for Archer Daniels Midland in Mexico, Missouri
- 0.15 gal/ton for Archer Daniels Midland in Mankato, Minnesota
- 0.146 gal/ton for Cargill Oil Seeds in Sidney, Ohio
- 0.145 gal/ton for Ag Processing in St. Joeseph, Missouri
- 0.134 gal/ton for Louis Dreyfus Ag. Ind. in Claypool, Indiana
- 0.125 gal/ton for Prairie Pride in Eve, Missouri.

In addition, no method of control is evaluated for the solvent losses from the meal dryer. Therefore the application should be denied.

18. **Section D - Additional Information:** Page 71 indicates the Analysis of Alternative Sites is provided in Attachment I. The Analysis of Alternative Sites does not specifically identify any alternative sites that were considered by Perdue. No information on the environmental or social costs associated with selection of the proposed site are included in the analysis such as the issues with public safety, air emissions and temperature inversions, and explosion hazards detailed in this comment submission. Therefore the application should be denied. In addition, the alternative siting analysis specifies 1.46 tons of VOCs would be emitted from natural gas-fired boilers if Perdue would be required to generate their own steam as opposed to using excess steam from the neighboring LCSWMA incinerator. Perdue included emissions from temporary boilers in their emissions calculations provided as Attachment G. However, Perdue indicated incorrectly that only 0.0455 tons of VOCs would be generated from the temporary boilers.

19. **Section F - Flue and Air Contaminant Emission**: Specific information has not been provided as to whether the stack height(s) meet Good Engineering Practice (GEP) on Pages 77, 79, 80, 83, 84, and 86.

20. **Addendum A - Source Applicable Requirements and Addendum 1 - Method of Compliance Worksheets** - Perdue has failed to include all applicable requirements pertaining to each source on Addendum A and Addendum 1 based on information provided by Perdue in Attachment D - Applicable Requirements. Applicable requirements that should be evaluated and included are:

    a. 25 Pa. Code §121 - General Provisions
    b. 25 Pa. Code §127 - Construction, Modification, Reactivation, and Operation of Sources. Note, applicability of this regulation should be

evaluated based on revised emission calculations (See Specific Comment 14).

Perdue should be required to correct this deficiency in its permit application.

21. **Attachment B – Facility Site Map** – The facility site map provided with the application does not include information on four (4) additional wet grain storage bins that would be part of Source ID 102 and six (6) additional, 500,000 million bushel grain tanks that would be part of Source ID 105 and are specified as plans for future expansion on an engineering drawing titled Zoning Exhibit for Perdue Grain and Oilseed, LLC Soybean Processing Facility dated Feb. 29, 2012 that was presented at a public hearing before the Zoning Hearing Board of Conoy Township on March 22, 2012. Perdue should clarify their plans for future expansion with regard to their air permit requirements. In addition, the facility site map also excludes equipment for degumming that one might expect to find at an oil extraction facility. Perdue should clarify their plans for use of such equipment and the VOCs that would be emitted during the operation of that equipment.

22. **Attachment D – Applicable Requirements:**
    a. Perdue indicates that compliance with the particulate matter emission limits of 25 Pa. Code §123.13 will be demonstrates by maintaining emission calculations. Perdue is proposing the use of air pollution control equipment including baghouses, cyclones, and filters to control particulate matter and has claimed specific control efficiencies for the specified control equipment. Perdue should be required to perform a facility-wide stack test to ensure compliance with particulate matter emission limits and verify the claimed control device efficiencies. The stack test requirement should be included as a permit condition.
    b. Perdue indicates that the federal PSD are not applicable to the project as the calculated PTE is anticipated to be less than the 250 tons per year threshold that is applicable to this type of facility. Perdue calculates the facility-wide VOC emission to be 248.65 tons. Based on this comment submittal, revised emission calculations should be prepared as specified in Comment 14. This will show an increase in the facility-wide VOC emissions to above the 250 ton threshold thus subjecting the facility to PSD requirements including ambient impact modeling and an additional impacts analysis. As a result, the PSD requirements will apply and the application should be denied.

23. **Attachment M – General Information Form:**
    a. On page 3 of 7, Project Information Item 1. Perdue indicates "Yes" that they have informed the surrounding community and addressed any concerns prior to submitting the application to the PADEP. Despite

Perdue's incorrect assertion, previous questions and concerns raised by residents have not been addressed to those residents including questions submitted in writing on the following dates

i. May 26, 2010 (A copy has been included as Attachment D)
ii. December 28, 2011 (A copy has been included as Attachment E)
iii. A handout distributed at Perdue's Open House on April 26, 2012 (A copy has been included as Attachment F)
iv. Questions dated June 18, 2012 that were submitted to Perdue in writing following a meeting between Nissley Vineyards and Perdue on June 15, 2012 have not been answered despite Perdue's assurance that they would provide answers to the questions that they were unable to answer during that meeting. (A copy has been included as Attachment G).

b. On page 3 of 7, Project Information Item 2. Perdue provides information on project funding but does not include the grant expiration date. The grant contract expires on November 30, 2016 and the project is required to be completed within the term of the contract.
c. On page 5 of 7, Coordination Information Item 7.0 Perdue indicates that the project will not involve the construction and operation of industrial waste treatment facilities. However, the process flow diagram provided as Attachment F includes a hexane/water separation and wastewater stripping process.

The application submitted by Perdue is extremely deficient and should be denied as important concerns related to adversely affecting the environment, public health, public safety and air quality have not been and cannot be adequately addressed.

Moreover, even if additional information was provided by Perdue, the application should still be denied. The emission of more than 248 tons of VOCs from this location including more than 245 tons of hexane emissions along with the storage of 40,000 gallons of hazardous hexane at this site is an environmental hazard, a safety hazard, and a public health hazard. The only way this facility would be acceptable would be if it eliminated the use of hexane.

If you have any questions regarding this submittal, I can be reached at (717) 399-9587 ext. 27.

Sincerely,

Susan M. Burkett, ASP
Principal Engineer, eCAP® Services

Cc: Mr. Daniel Husted, PE, Chief, New Source Review Section, PADEP
Ms. Gerallyn Duke, New Source Review/PSD, U.S. EPA Region III

ATTACHMENT A

Temperature Inversion Report
Millersville University
Dated November 12, 2012

Millersville University
SEIZE THE OPPORTUNITY

P.O. Box 1002, Millersville, PA 17551-0302
Department of Earth Sciences
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12 NOVEMBER 2012

Joel R. Burcat, Esquire
Saul Ewing LLP
Two North Second Street
Harrisburg, PA 17101

Dear Mr. Burcat,

You have requested that we evaluate the temperature inversions in Bainbridge for 2011. The analysis of 2011 Bainbridge, PA inversions is summarized in the following report. The following deliverables are submitted in accordance and compliance with our statement of work.

A. Data Acquisition and Conditioning for Analysis

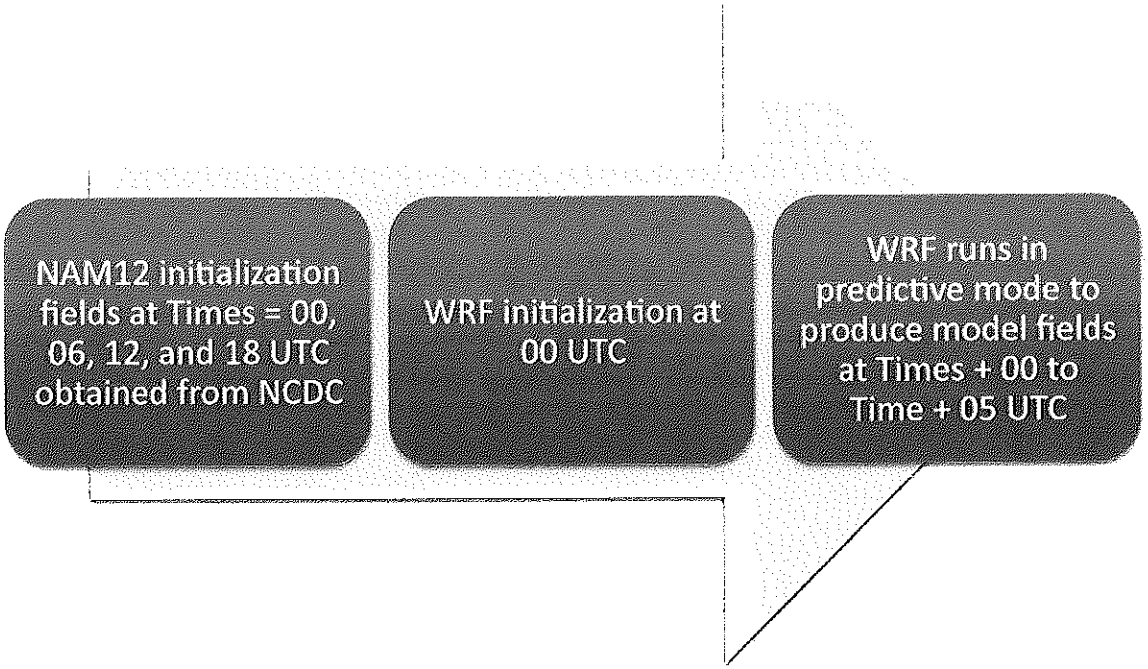
a. WRF model runs for 24 hours, 365 days in 2011 centered on Bainbridge, PA

i. North American Model – 12 km resolution (NAM12) model fields were obtained from the National Climatic Data Center (NCDC) for 00, 06, 12, and 18 UTC for each day in 2011, and used to initialize the Millersville Weather Research and Forecasting (WRF) numerical modeling system. Overall, 7.2 percent of the total annual hourly data are missing due to the unavailability of the NAM12 initialization fields from NCDC. Qualitative analysis allowed for a downward adjustment of 0.8 percent resulting in 6.4 percent of hourly data missing. Of the 8760 hours in 2011, we evaluated 8197 (93.4%) of total annual hours. The table below summarizes the missing data. (MS Excel spreadsheet, "**Missing_Bainbridge_Data_10-31-2012.xlsx**," refer to these missing data. We do not feel that these missing data significantly compromise our analysis or our results.

TABLE 1. Missing hours of model output per month

Month	Missing hours of data	Percentage of Monthly Total
Jan	0	0.0
Feb	24	3.6
Mar	224	30.1
Apr	146	20.3
May	7	0.9
Jun	102	14.2
Jul	6	0.8
Aug	54	7.3
Sep	0	0.0
Oct	0	0.0
Nov	0	0.0
Dec	0	0.0

ii. Following model initialization, the WRF model was employed in a predictive mode to create output files for each hour from Initialization time through initialization time + 5 hours. The workflow is represented by the following schematic.



iii. The result was to create 3-dimensional numerical output over the WRF domain from which the vertical profiles of temperature T, dew point temperature T_d, potential temperature θ, height z, and wind components u, v, could be extracted for Bainbridge, PA.

iv. The raw data from the WRF model were employed to construct graphic files of the vertical profiles of the meteorological variables listed in "c."

B. Working Definition of an Inversion

An inversion is a layer of atmosphere where the temperature increases with height, that is, it is "inverted" from the normal decrease with height most often seen in the troposphere. However, stable layers can be much deeper than inversion layers. A stable layer can be defined in several ways. For instance, when the temperature decreases with height by an amount that is less than the saturation adiabat, the layer is said to be stable with respect to moist adiabatic ascent, which in turn is stable with respect to dry adiabatic ascent. Another method for defining stability is to use the bulk Richardson number (BRN), where:

BRN = buoyancy acceleration/square of the wind shear

Or

$$BRN = \{ (g/\theta)\, \Delta\theta/\Delta Z \}/ (\Delta U/\Delta Z)^2$$

where g = 9.81 ms^{-2}, θ is the potential temperature in Kelvin, Z is the height of the layer in meters and U is the wind in ms^{-1}. The Δ symbol represents the difference between the top of the stable layer and the surface; example $\Delta Z = Z_{top} - Z_{bottom}$ = thickness of the layer, $\Delta\theta$ represents the difference in potential temperature between the top and bottom, and $\Delta U/\Delta Z$ is the wind shear. The layer is considered stably stratified when the BRN > $BRN_{CRITICAL}$ = 0.25. One may recognize the numerator as the square of the Brunt-Vaisala Frequency, N^2. The BRN has the

advantage of considering instability, and by extension the generation of turbulence and mixing, in terms of both hydrostatic instability and mechanical instability, the latter due to shear. *In this analysis we use the formal definition of an inversion, a layer where temperature increases with height,* but we also provide additional information on the depth of the stable layer using the BRN.

Temperature inversions modeled at Bainbridge, PA ranged in duration from one hour to 19 hours. Short duration inversions have little consequence on air quality since they are often weak and easily disrupted by multiple atmospheric conditions. Medium duration (lasting 4-8 hours) and long duration (≥ 9 hours or extending from sunset to sunrise) can have a significant impact on air quality by trapping pollutants. Under these conditions, winds are usually calm or no more than a few meters per second. Consequently, area immediately downwind of a pollution source can be significantly affected by deleterious air quality for long durations – until mixing fumigates and replenishes the air. Low-lying areas such as valleys, where under clear sky conditions can be subject to strong and low-lived inversions, are particularly susceptible.

C. **Analysis of vertical profiles to determine the existence of inversions at Bainbridge, PA**

Our analysis took at two-pronged approach to determine the existence of an inversion for a particular vertical profile: i) a qualitative visual inspection of the profile image to determine the existence of the inversion and its depth; and ii) a quantitative analysis of the surface-based inversion based upon a computational analysis of the vertical temperature profile. In addition, the BRN was employed to determine the depth of the stable layer.

i) Qualitative determine of inversion frequency and depth based on visual inspection of each vertical profile was carried out for each of the 8197 hourly profiles. Each profile was visually inspected and a determination of existence (or not) of an inversion was made, along with an estimate of the height of the inversion. To pass the "inversion test," the inversion had to originate at the surface and the temperature had to increase with altitude. Upon meeting these criteria, the inversion was counted and an estimate of the depth of the inversion was recorded.

Table 2 shows a comparison of the two methods in determining monthly inversion frequency. The two methods differ by 5.4 percent. However, March and April had a significant number of missing vertical profiles, which resulted in the lower frequencies in those months.

Table 2: Comparison of evaluation methods

COMPARISON OF QUALITATIVE (VISUAL) AND QUANTITATIVE METHODS (COMPUTER PROGRAM) OF INVERSION DETERMINATION													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Quantitative Method	241	227	137	111	223	255	294	230	232	202	176	131	2459
Qualitative Method	239	220	82*	75*	211	240	290	228	225	207	179	131	2327

*Prior to conducting the quantitative approach, the data in successive hours before and after the missing data, which often included times from 00 – 05 UTC, were evaluated and where possible, were conservatively extrapolated based on best judgment. The resulting analysis led to the addition of 55 hours of inversions in March and 36 inversion-hours in April. If we eliminate March and April from the totals, the number of inversion-hours identified by the two different methods agrees within 1.8 percent.

ii) A quantitative numerical analysis of the Bainbridge data was conducted to determine the depth of the surface-based stable layer as well as the depth of the inversion; the former using the BRN method and the latter using the formal definition of an inversion.

We evaluated each hour of the 8197 total hours for the existence of an inversion. The following is a result of that analysis. This data can be found in "**Inversion_Summary_10-31-2012.xlsx**." Using BRN to identify stable layers, of which inversions are subsets, results in layers of greater depth than the depth of the inversions. This is discussed in greater detail later.

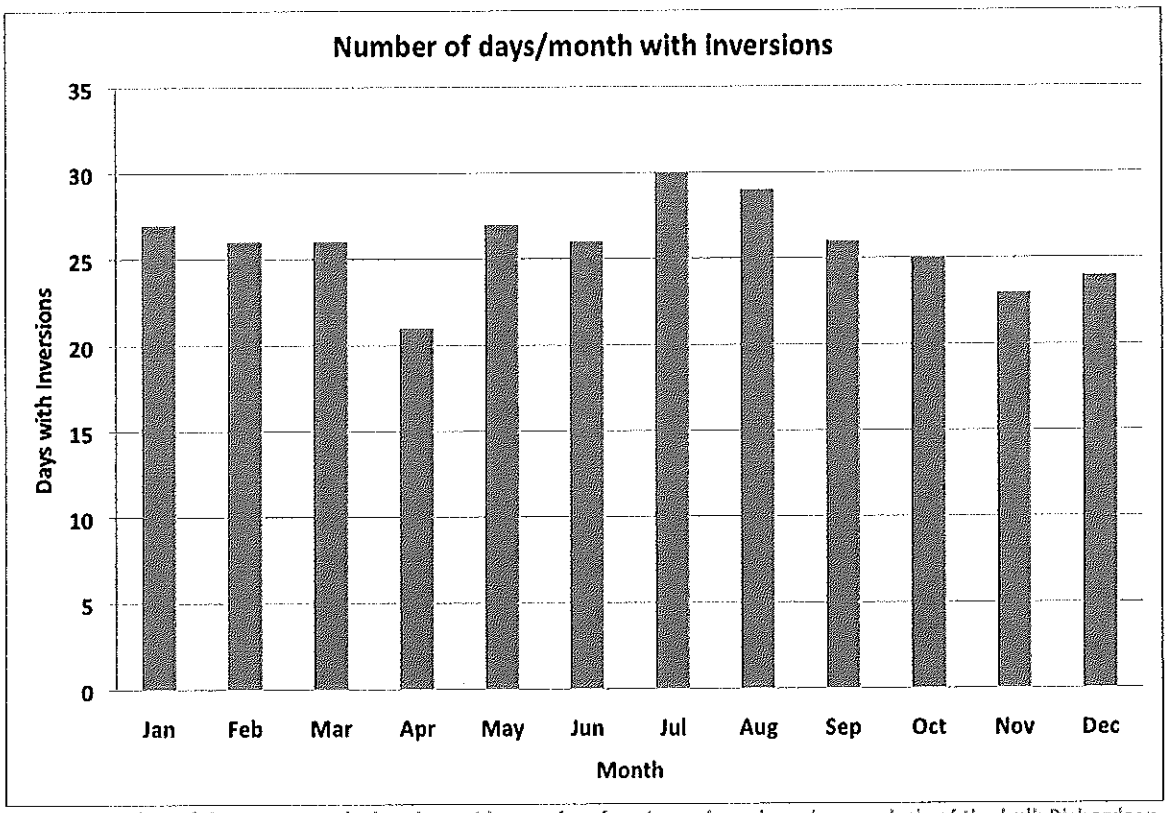


Figure 1: Number of days per month showing evidence of surface inversions; based on analysis of the bulk Richardson number.

Figure 1 shows that the number of days in each month with at least one hour of inversion is relatively uniform. However, with addition analysis, we found that the characteristic of these inversions varies significantly from month to month.

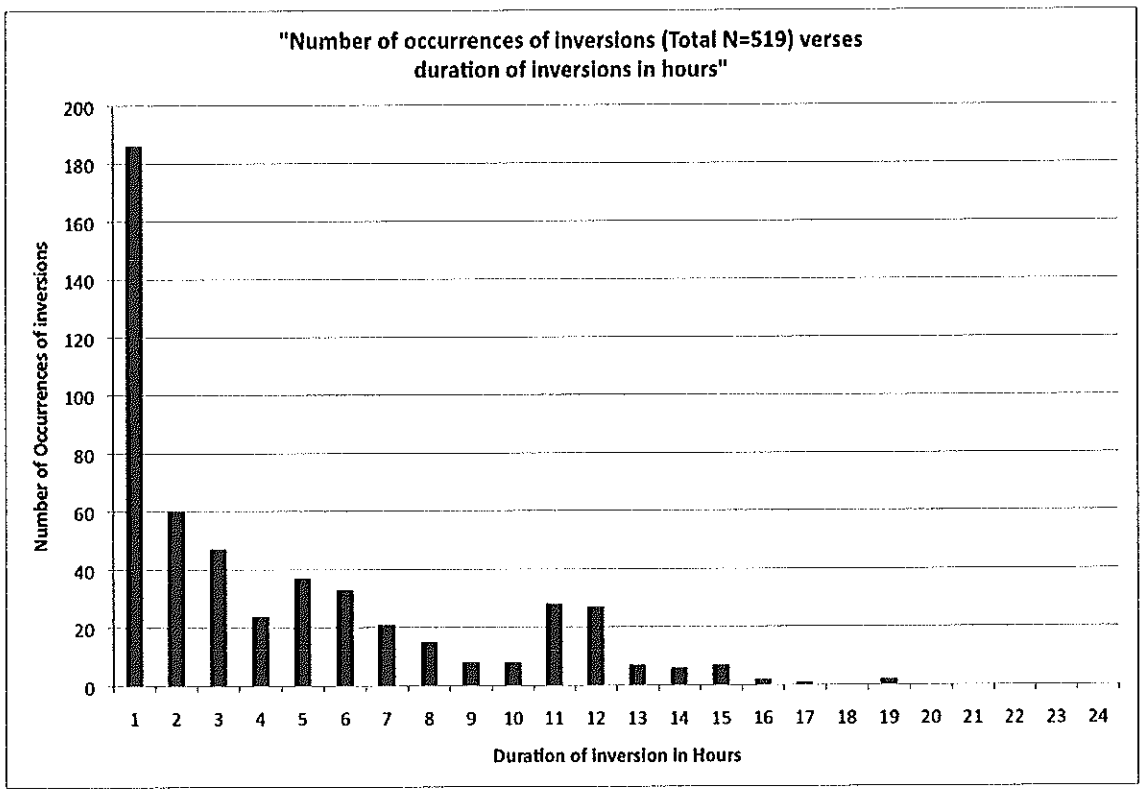


Figure 2a: The number of occurrences of inversions versus the duration of the inversion in hours. Based on a total of 519 inversions in Bainbridge, PA in 2011.

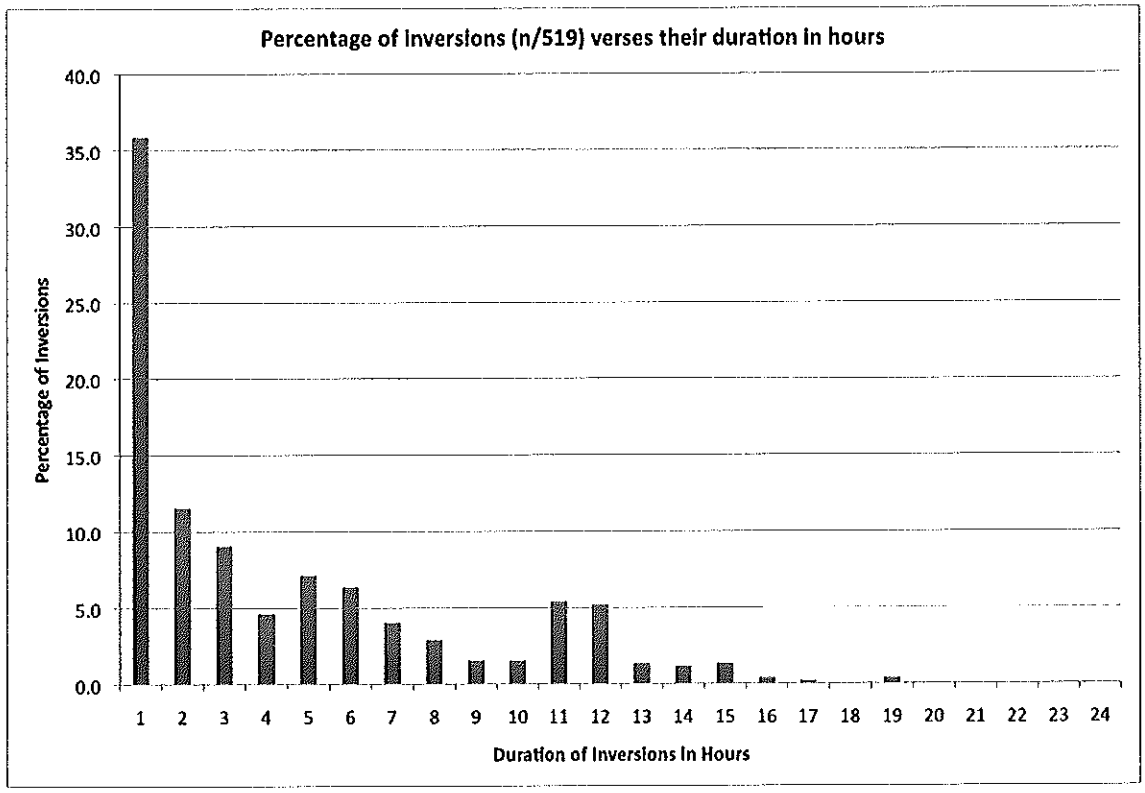


Figure 2b: Same as 2a except percentage of inversions versus their duration in hours. Based on a total of 519 inversion in Bainbridge, PA in 2011.

Figure 2a and 2b depict the number and percentage of occurrences of inversions as a function of their duration in hours. The inversions were classified according to the following categories:

- Short duration inversions lasting less than 4 hours (293 out of 519 or 56.5%)
- Medium duration inversions lasting between 4-8 hours (130 out of 519 or 25.0%)
- Long duration inversions lasting 9 hours or longer (96 out of 519 or 18.5%)

The distinction between medium duration and long duration at 8 to 9 hours is arbitrary. One could argue that an 8-hour inversion should be categorized as a long duration. The reason why the cut-off was made between 8-hour and 9-hour inversions is qualitatively justified by the distribution in Figures 2a and 2b where the modality changes. On the other hand, the distinction between short duration and medium duration between 3 and 4 hours is based more on the strength of the inversion and the characteristics of the stable layer.

In addition, the medium duration inversions were further subcategorized into those that occurred primarily in the evening hours (e.g. starting around 1900-2000 local time and referred to as medium-evening (ME)) and those that were primarily in the early morning hours after midnight local time (MM). Of these, 58/130 or 44.6% occurred were ME and 55.4% were MM.

Short duration (1-3 hours in length) and are either weak or quickly destroyed by vertical mixing or synoptic/meso-scale systems. They would contribute little to trapping pollutants and transporting them along stably stratified downwind streamlines.

The medium duration inversions have durations between 4-8 hours and can be bifurcated into those that occur primarily in the evening hours (44.6%) and those that occur in the early morning hours (55.4%). This distinction is probably related to the timely of clearing skies and radiational cooling. On a clear day, the inversion will develop rapidly around sunset. If it persists all night it will fall into the long duration category. If clouds encroach, or wind speed increases due to the approach of a synoptic or mesoscale weather system, the inversion will weaken or be destroyed. Conversely, on days with convective clouds, if often takes several hours after sunset for the clouds to dissipate, causing the inversion to form later.

Long duration inversions lasting 9 or more hours make up 18.5% of all inversions. These inversions are sustained long enough to allow appreciable downwind transport, and would exhibit stronger stability than short- or medium-duration counterparts. As such, they have the ability to trap pollutants in the near surface layer for longer periods. The medium-to-long duration inversions would typically occur on clear to partly cloudy nights with strong longwave radiative cooling and light to calm winds at the surface. These *radiation inversions* typically become established after sunset and persist until shortly after sunrise.

Figure 3 shows a summary of the medium and long duration inversions for each month in 2011. Note that no long duration inversions were recorded in the transition (and rainy) months of March and April. Inversions in general, and in particular long duration inversions, are more common in summer; peaking in July when the aloft winds are relatively light and large quasi-stationary air masses stall over the mid-Atlantic region.

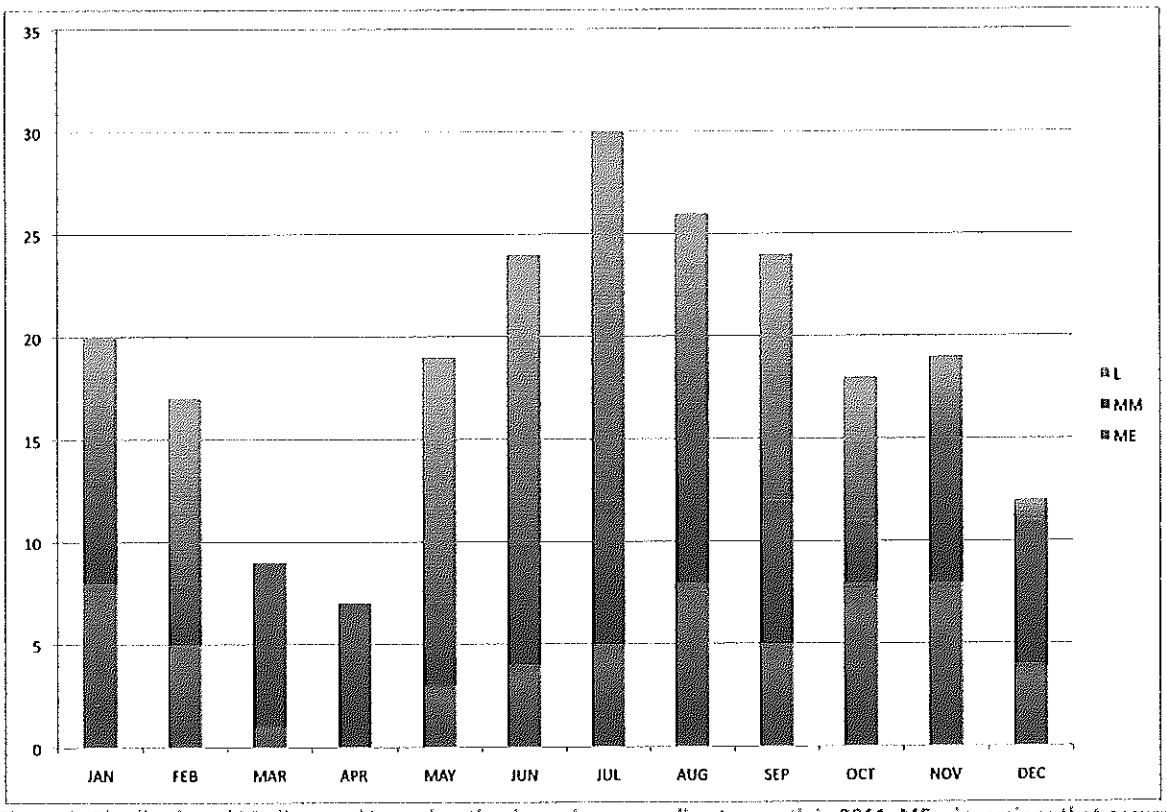


Figure 3: Distribution of Medium and Long duration inversions according to month in 2011. ME = inversions that occurred primarily in the evening; MM = early morning inversions starting after midnight; L = long duration inversions

The data were ranked according to the number of inversion-hours per month and the number of inversion-days per month. In 2011, Bainbridge had the greatest number of inversion-hours in mid-summer and mid-winter, followed by end of summer and end of winter. The least number of inversions is during the spring transition months of March and April, and in December. The spring transition in March and April is characterized by colder temperatures aloft and warmer surface temperatures leading to instability and mixing near the surface. Inversions cannot become established in a well-mixed surface layer. The consequence is the reduction in the number of surface inversions during the spring transition. Similarly, November and December are the winter transition seasons when the polar jet stream extends southward. Baroclinic waves (cold and warm fronts) migrate along the polar front and encroach on the mid-Atlantic region bringing higher surface wind speeds, and colder and progressive air masses, which tend to erode inversions or prohibit their formation. High pressure air masses in mid-summer and fall bring subsidence and clear sky conditions, which favor longwave radiative cooling and the development of extended radiation inversions. Table 3 and Table 4 show the months in 2011 ranked by the frequency of inversion-hours and inversion-days per month.

Table 3: Rank inversion-hour frequency by month

RANK ACCORDING TO INVERSION-HOURS PER MONTH		
RANK	Month	Total inv-hrs/month
1	JUL	294
2	JUN	255
3	JAN	241
4	SEP	232
5	AUG	230
6	FEB	227
7	MAY	223
8	OCT	202
9	NOV	176
10	MAR	137
11	DEC	131
12	APR	111

Table 4: Rank inversion-day frequency by month

RANK ACCORDING TO INVERSION-DAYS PER MONTH		
RANK	Month	Total inv-days/month
1	JUL	30
2	JUN	29
3	AUG	29
3	JAN	27
4	MAY	27
4	FEB	26
4	MAR	26
4	SEP	26
5	OCT	25
6	DEC	24
7	NOV	23
8	APR	21

The distribution of total inversions by month is given in Figure 4, and should be compared to Table 2, which is the same data ranked. Figure 4 illustrates that the majority of inversions-hours at Bainbridge are recorded during relatively stagnant weather conditions brought about by slowly moving, weakly progressive air masses moving across the mid-Atlantic region. This generally occurs in summer when the polar jet stream is situated over Canada, well north of the mid-Atlantic region, and the atmospheric condition often lacks strong gradients (i.e. barotropic atmosphere). Transition seasons, when the weather systems are more progressive and conditions are less favorable for the establishment of inversions, exhibit lower frequencies of inversions.

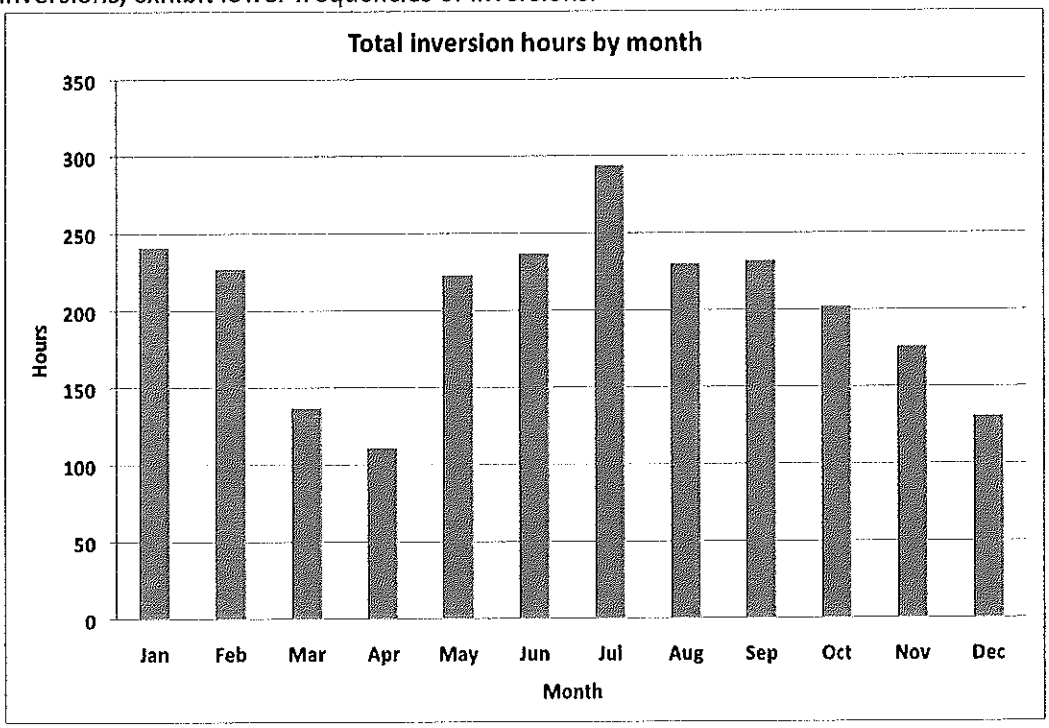


Figure 4: Total inversion-hours by month for 2011 in Bainbridge, PA

An interesting aspect of this analysis is the mean monthly depth of the surface-based stable layer as shown in Figure 5. While slow-moving high pressure air masses may bring clear to nearly clear sky conditions during summer and autumn, and in 2011 during mid-winter as well, the depth of the inversion is shallower in summer than in winter. Summertime in the mid-Atlantic region east of the Appalachian Mountains, under conditions of high pressure, may lead to a higher frequency of stable layers, but these conditions also lead to the development of the summertime nocturnal low-level jet (LLJ), which tends to occupy the layer immediately above the surface-based nocturnal inversion. In this region, the LLJ can exhibit wind speeds in excess of 18 m/s (36 kts) for sustained periods between sunset and sunrise. The consequence of the LLJ is to quell the growth of the nocturnal inversion and destroy the inversion early after sunrise. Thus, the same conditions that lead to strong radiative cooling at night and radiation inversions also leads to the development of LLJs that tend to suppress the vertical growth of the inversion and can cause mixing when Richardson numbers fall below critical due to excessive wind shear in the near surface layer. Conversely, even though the winter, spring, and autumn have fewer inversion-hours per month, the LLJs are weak or non-existent and the radiation inversions can growth to significant average depths.

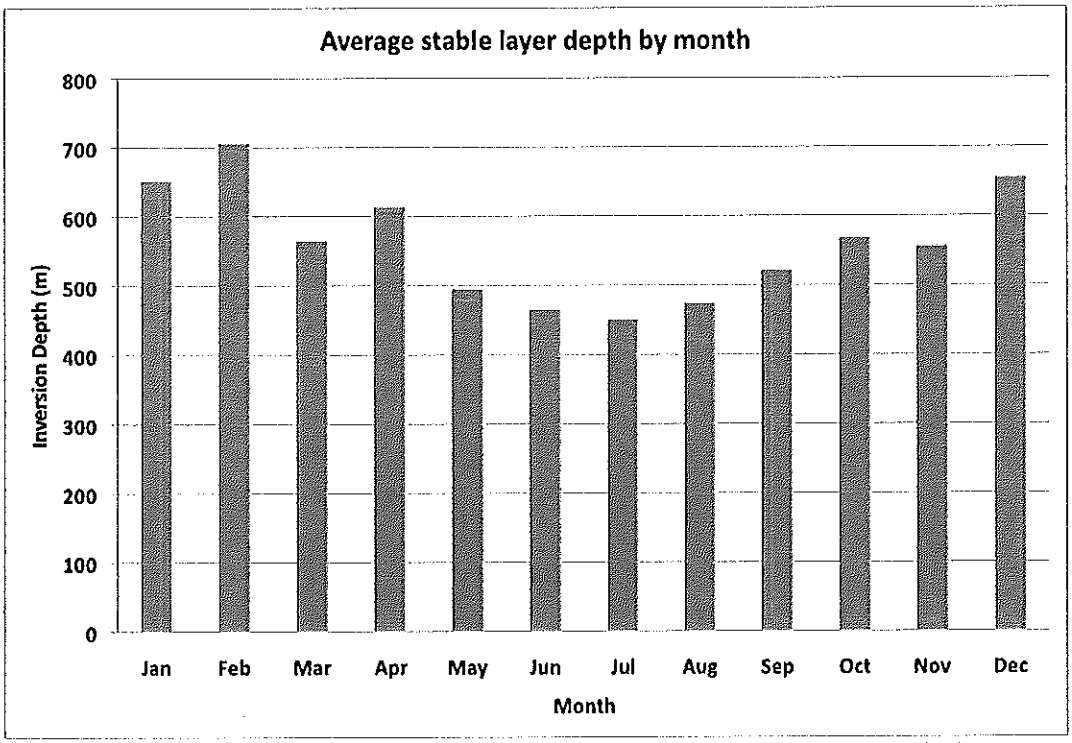


Figure 5: Average depth of the stable layer in meters by month as determined by the BRN method.

In addition to the determination of the depth of the stable layer, the depth of the inversion layer, using the strict definition of an inversion as one where the temperature increases with height, was also calculated. The criteria for this determination was similar to the BRN determination of the stable layer in that it first required the $T(Z+1) > T(Z)$. Then the temperature of each layer was subject to the test the same test. The top of the inversion was recorded as the height where T no longer increased with height. The results, as might be expected, were lower inversion heights as shown in Figure 6.

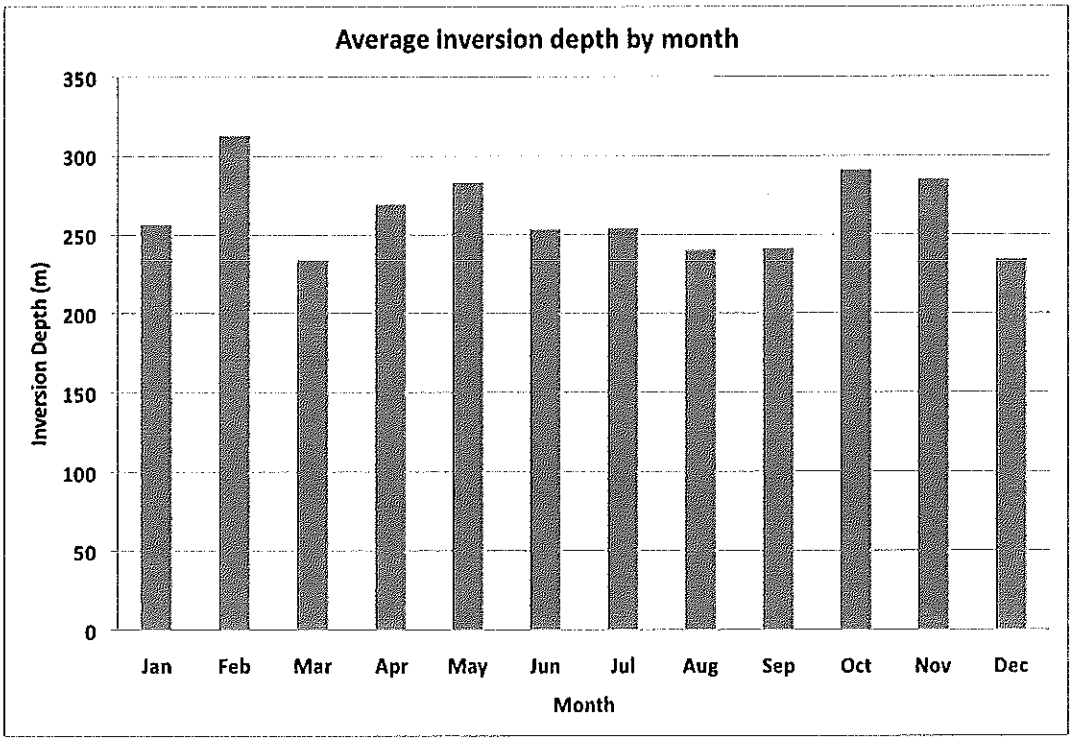


Figure 6: Average depth of inversions in meters

If Figures 3 and 6 are evaluated together, it is apparent that during the solar summer (May-September), and to a lesser degree in mid-winter (Jan-Feb), strong and long-duration inversions can develop that trap pollutants in layers generally less than 250 meters (~750 feet) above the surface.

Figure 7 illustrates the average inversion-hours per inversion day. For those days with inversions, mid-summer and mid-winter days exhibit the longest duration inversions. This can be understood by considering the meteorological conditions associated with mid-summer/winter months versus those of the transition seasons. Transition seasons are characterized by progressive systems, which on the average tend to disrupt inversions, whereas mid-summer/winter seasons are characterized by more stagnant and slowly moving air masses which tend to maintain atmospheric conditions longer. This is a caveat to this assessment. March and April are not only influence by progressive systems that shorten the inversion duration, but these months were noted for the largest amount of missing data, which would tend to diminish the average inversion hours even further. While it is true that March and April will undoubtedly have shorter-duration inversions owing to the meteorological conditions characteristic of transition seasons, they are partly affect but the bias in the larger frequency of missing data.

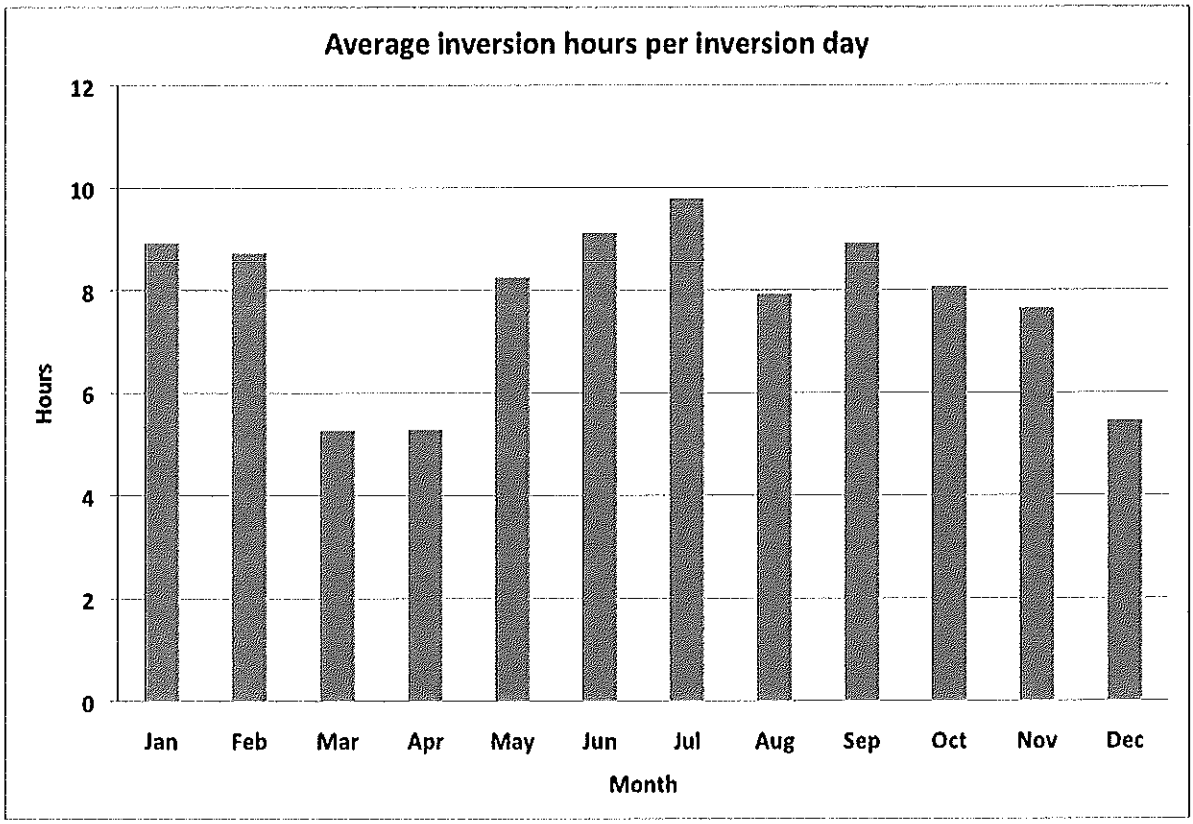


Figure 7: Average inversion-hours per inversion day for Bainbridge, PA 2011

D. Comparative analysis of Bainbridge 2011 to the 10-year and long-term historical (98 year) climatology.

Was 2011 a typical year for inversions in Bainbridge? The charge to this study was to qualitatively ascertain whether the conditions observed at Bainbridge in 2011 could be classified as 1) much below (MB), 2) below (B), 3) normal (N), 4) above (A), or 5) much above (MA), when compared to short and long-term climatology. Although the level of subjectively increases for an analysis of this type, it is possible to make qualitative judgments based on a comparison between Bainbridge, PA in 2011 using Millersville University 2011 as a surrogate, and 98 years of climate records archived at Millersville University. The data for this analysis can be found in "**Bainbridge_Climatological_Comparison_10-31-2012.xlsx**."

The convention used for the categorical ranking of temperature anomaly and precipitation is based on the accepted methods of the National Climatic Data Center and is given in Table 4.

Table 4: Categories of ranking of climatological data based on NCDC

Much Below (MB)	Below (B)	Normal (N)	Above (A)	Much Above (MA)
Less than -1.25 SD	Less than -0.5 SD	Between -0.5 SD and +0. 5 SD	Greater than +0.5 SD	Greater than +1.25 SD

Table 5: Comparison of 2011 Temperature Anomaly to long-term historical climate record and 10-year climate record. For the short-term (10-year) comparison, the numerical Z parameters are given as a measure of the deviation from the mean. Red font indicates those years when the 10-year does not match the 98-year long–term climate record.

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2011 Compared to 98 year historical climate record	**B**	**N**	N	A	**A**	A	**MA**	N	A	N	MA	**MA**
2011 Compared to 2001-2010 climate record	**B** **-0.84**	**N** **0.35**	B -0.51	N 0.32	**A** **0.59**	N -0.19	**MA** **1.30**	MB -1.59	N -0.06	B -0.78	N 0.49	**MA** **1.30**

Table 6: Comparison of 2011 Precipitation to long-term historical climate record and 10-year climate record. For the short-term (10-year) comparison, the numerical Z parameters are given as a measure of the deviation from the mean. Red font indicates those years when the 10-year does not match the 98-year long–term climate record.

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2011 Compared to 98 year historical climate record	**N**	**N**	A	**MA**	**N**	**N**	**B**	**MA**	**MA**	**N**	N	**N**
2011 Compared to 2001-2010 climate record	**N** **0.15**	**N** **0.06**	MA 2.02	**MA** **2.15**	**N** **0.46**	**N** **-0.42**	**B** **-0.85**	**MA** **1.45**	**MA** **2.14**	**N** **-0.13**	A 0.72	**N** **-0.21**

Attention should focus primarily on the comparison between 2011 and the 10-year climate record for both temperature anomaly and precipitation, since records indicate that there has been a trend toward slightly warmer and wetter in recent decades. When averaged over the 12 months of 2011 to obtain an annual categorical rank for the Z parameter, it suggests that for temperature, Z = 0.03, and for precipitation, Z = 0.63. Thus, comparing 2011 to the most recent decade would point to a nearly NORMAL year with respect to average temperature anomaly, and a wetter year in this geographical region (above normal (0.5 < **0.63** < 1.25 SD).

A year of nearly normal temperatures qualitatively implies that 2011 would likely have a typical number of inversions compared to the years in the most recent decade on average. On the other hand, above normal precipitation in 2011 implies wetter surface cover (soil and subsoil)

on average, and the addition of soil moisture changes the near surface radiative and thermodynamic characteristics in a complicated way. Air above a wet surface will have higher relative humidity and a greater potential for fog formation. When water vapor condenses to form fog and latent heat is released to the near-surface air, the result is to slow the nocturnal decrease in temperature thereby slowing the formation of an inversion or weakening the strength of an existing inversion. Additionally, if a fog forms, fog-top net radiative cooling creates negative buoyancy forces that tend to mix the layer, further weakening the strength of an inversion to preventing it from forming altogether. Rain (snow) tends to destroy inversions. A saturated layer of air will exhibit a lapse rate that follows the saturation adiabat, which is a decrease in temperature of between 3.5-6.5 C/km in the low layers of the atmosphere. Moreover, weather systems associated with rain events are typically mid-Atlantic cyclonic low-pressure systems, which are regions of convergence, ascending motion, and adiabatic cooling, none of which is conducive to sustaining inversions or enabling their development in the first place. March and April 2011 exhibited precipitation in amounts MUCH ABOVE NORMAL, suggesting that the development of inversions during those months would diminish as a result. **Both total inversion hours (Figure 3) and average inversion hours per inversion day (Figure 6) show March and April as having fewer inversions and shorter-duration inversions, which could be a result of increased precipitation in 2011 during those months. The take-away is that years with normal to below normal precipitation could see a higher frequency of inversions due to the reduced amount of moisture/water in the atmosphere/soil.**

4. Project Summary

A. All raw data files will be stored on a Millersville server and may be transferred to another server at any time. These files include: 1) textual output from the WRF model and 2) images of vertical profiles over Bainbridge, PA for each hour of data that was available from NCDC.
B. 8179 hourly vertical profiles were evaluated for the existence of inversions. 6.4 percent of the data were available for analysis
C. The total number of inversion-hours per year = 2459/8760 = 28.07%
D. The total number of days per year with at least one hour of inversion = 313
E. The number of days in 2011 in Bainbridge having inversions with durations of less than 4 hours was 56.5%; 25.0% had durations of 4-8 hours; 18.5% had long durations of 9 hours or more.
F. Stronger inversions last longer unless synoptic or mesoscale systems displace the atmospheric condition that establishes them. Long lasting inversions, in this analysis those that are medium or long duration, have the potential to trap pollutants for that duration near the surface; calm to light winds will prevent significant transport in strong inversions causing pollutant concentrations to become elevated in the vicinity of the source, especially when the source stack is short and confined within the depth of the inversion.
G. Using the Millersville University climate archive (1914-2011), it was determined that 2011 was normal in temperature in comparison of the decade from 2001-2010 and would likely have a frequency of inversions typical of other years based on temperature alone; precipitation was above normal in 2011 compared to 2001-2010, in March and April, and could have contributed to the fewer inversions observed during these months

Sincerely,

Richard D. Clark

Richard D. Clark, Ph.D.
Chair, Department of Earth Sciences

ATTACHMENT B

Safety Concerns Report
Blasting Analysis, Inc.
Dated September 7, 2012

Blasting Analysis International, Inc.

371 Daniel Street
Allentown, Pennsylvania USA 18104-8509

[402]
Explosives-Seismic-Mining
(Engineers & Specialists)

(610) 530-7415 • Fax (610) 395-5552
Email: blastinganalysis@rcn.com

September 7, 2012

The Honorable Gina Mariani
Chair
Conoy Township Board of Supervisors
211 Falmouth Road
Bainbridge, PA 17502

Re: Serious Safety Concerns Regarding Perdue's Proposed Grain and Oilseed, LLC – Soybean Processing Plant, Conoy Township

Dear Ms. Mariani,

Introduction

I have been retained to provide advice on behalf of A&R Nissley, Inc. (Nissley Vineyards) regarding the explosion hazard from the proposed Perdue Grain and Oilseed, LLC – Soybean Processing Plant, Conoy Township.

I have an extensive background in explosives and blasting. I am the President and Explosives Applications Engineer with Blasting Analysis International, Inc. (BAI). With BAI, I have worked on major projects, including the first expansion and deepening of the Panama Canal between 1994 and 2002. I am one of four authors in the textbook entitled "Explosives and Rock Blasting" and received the Distinguished Service Award from the International Society of Explosives Engineers in 1990 for my "outstanding technical contribution to the mining/explosive industry". I hold a Bachelor's and a Master's degree in mining engineering from Queen's University (Canada), with a specialty in blasting and explosives applications.

Nissley Vineyards owns property opposite the proposed plant on Pa. Route 441 (River Road). That property is only 1,030 feet from the proposed location of Perdue's hexane tanks. The Nissley property currently is used for agriculture and it has employees and tenants who work that property. Also, there is always the possibility that the property may someday be used for some development purpose.

I have some serious concerns regarding the safety of nearby homeowners, travelers, employees and businesses should an accidental explosion occur at the Perdue facilities in terms of shrapnel, fire and toxic fumes. It is our understanding that the Perdue plant will be storing hexane in two

adjacent storage tanks, each holding 20,000 gallons for a total of 40,000 gallons, and that the plant will be using 30,000 gallons of hexane at any one time in the process (we have been told by Perdue that there will be a maximum of 40,000 gallons on site at any one time). Hexane is highly explosive and even facilities using hexane that have been well-maintained have suffered from catastrophic explosions.

I met with a number of Perdue representatives on June 15, 2012 to discuss these concerns. Although the Perdue representatives have promised to get back to us, no information has been provided to date regarding their explosion hazard assessments, emergency plans or standard operating procedures to protect nearby residential homeowners, travelers (on River Road) and businesses, in the event of an accidental explosion.

Recent Soybean Manufacturing Plant Explosions Using Hexane

Unfortunately, explosions in the manufacturing of soybean oil using hexane are not uncommon.

- In 2003 a soybean manufacturing plant using hexane owned by AG Processing Inc. exploded in Sioux City, Iowa, injuring eight employees, with three of the injuries being critical. *Sources – Nuteva Newsletter. August 29, 2003, and Associated Press, August 30, 2003.*

- Hexane explosions have occurred in Italy, Mexico (200 dead) and South Africa. *Source – "Soy Protein Use in Natural Foods Bathed in Toxic Solvent Hexane", Natural News, May 20, 2009.*

- Explosions in which hexane was implicated also have occurred at the Minnesota Soybean Processors plant (May, 2009), a plant in Formosa Brazil (March, 2009), Arkansas Ricelands Food Plant (2006), Ag Processing Inc. plant (2003), Canadian CanAmera Foods plant (2002), and Indiana Central Soya plant (1994). *Source – "Organic Versus Conventional Soy", Alexis Bayer, Organic consumers Association, July 1, 2009.*

Generally speaking, the causes for explosions at soybean processing plants are from heat sources such as open flames, hexane spillages, and inadequate supervisor/employee training.

Case History of Damages, Injuries and Deaths Caused by a Massive Chemical Explosion

A very well documented hydroxylamine plant explosion, which occurred in the Lehigh Valley, PA during 1999, provides a clear example of what can be expected in the surrounding community from a massive chemical explosion. While hexane is not the same as hydroxylamine, for comparison of an explosion they are very similar.

It was believed a hydroxylamine tank holding 9,000 gallons exploded during the distilling process from a nearby hot plate or Bunsen burner. Since the density of hydroxylamine is 1.21 g/cc and the density of hexane is 0.66 g/cc, the 9,000 gallon tank of hydroxylamine would be more or less equivalent to a hexane explosion of approximately 18,000 gallons. The Purdue plant in contrast will be using up to 30,000 gallons of hexane in their process, or housing up to 40,000 gallons of hexane in their two storage tanks. Thus, a hexane explosion from the proposed Perdue plant will be much more devastating than what occurred at the hydroxylamine plant explosion.

Some important observations in the aftermath of the hydroxylamine plant explosion were:

- Facility was a two-story steel and concrete structure with a 40,000 square foot area.
- Explosion left a 4 foot crater on cement floor.
- Blew out 3 @ 25 feet concrete containment walls, which collapsed the building.
- 5 fatalities, plus 14 serious injuries.
- Explosion sent metal studs, concrete pieces and insulation several hundred yards in all directions.
- Some debris (insulation) was found up to 5 miles away.
- Explosion was heard up to 10 miles away.
- Windows were blown out in nearby office buildings.
- Force caused cracks in wall of adjacent building, which was located 100 yards away.
- Explosion broke windshields and caved roofs on at least 30 cars in the parking lot.
- Many windows in nearby homes were shattered.

Source No. 1 – "The Explosion at Concept Sciences: Hazards of Hydroxlamine". U.S. Chemical and Hazard Investigative Board, Case Study No. 1999-13-C-PA, March, 2002.

Source No. 2 - "Five Workers Killed in Pennsylvania Chemical Plant", Paul Scherrer, International Committee of the Fourth International, February 24, 1999.

Safe Distances for Chemical (Reactive) Explosions

Figure 1 illustrates a plan view of the proposed Purdue plant property perimeter, approximate location of the two 20,000 gallon storage tanks, and distances to various points of concern in the event of an accidental explosion.

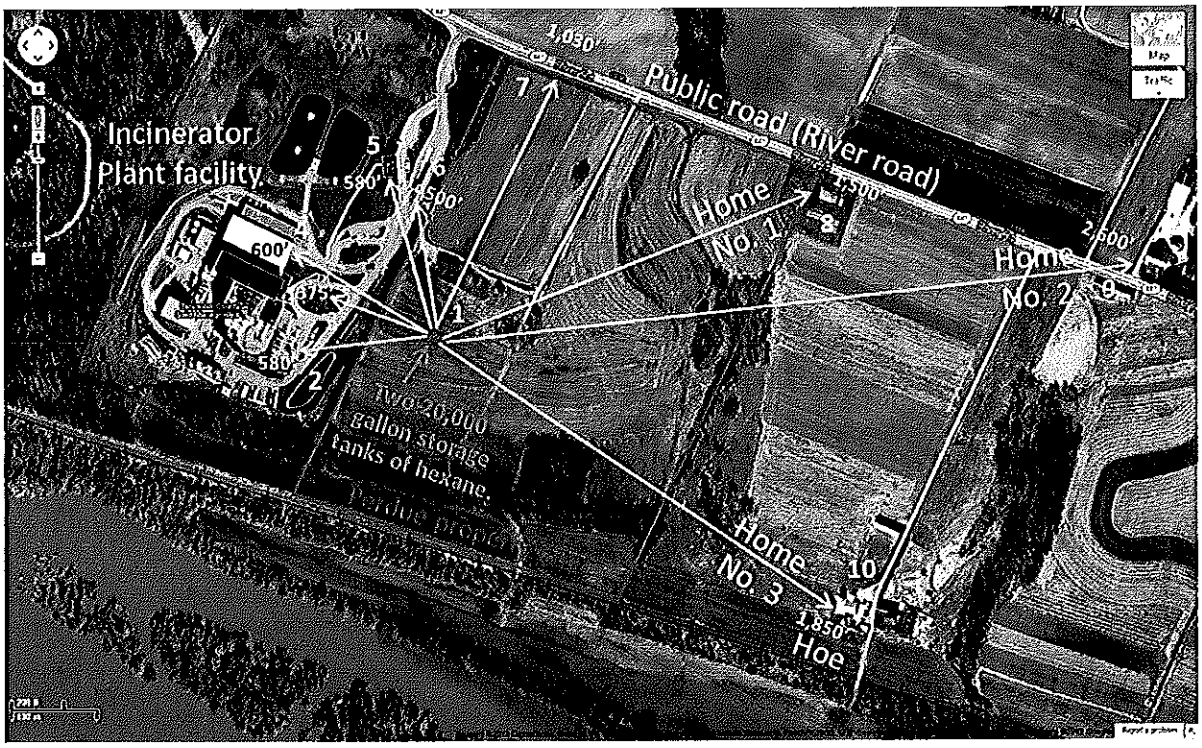


Figure 1 – Plan view of the Purdue property perimeter, two 20,000 hexane storage tanks, and points of concern regarding an accidental explosion.

Hexane weighs approximately 5.6 lbs/gal. Thus, one of the 20,000 gallon storage tanks would weigh approximately 112,000 lbs. Based on the Perdue layout of the plant facilities dated February 29, 2012, the two 20,000 gallon tanks show a separation distance of only 5 feet. Because these tanks are in the open, they would be considered as being unbarricaded and more likely one would cause a sympathetic explosion of the other if one of the tanks exploded.

According to the IME (Institute Makers of Explosives) in Publication No. 2, "The American Table of Distances for Storage of Explosive Materials", June, 1991, the hexane tanks should be separated by a minimum distance of 430 feet, to eliminate a sympathetic explosion if one of the hexane storage tanks exploded. In the case of only a 5 foot separation, it is a certainty that if one of the 20,000 gallon hexane tanks exploded, the second 20,000 gallon tank would also explode.

Tables 1 and 2 list the minimum safe distances recommended by the IME for a 20,000 and 40,000 gallon hexane explosion, respectively.

Table 1 - For a 20,000 Gallon Hexane Explosion

Structure or Area of Concern	Minimum Safe Distance
Inhabited Buildings (Homes, Businesses and Plants).	2,000 ft.
*Public Highways With Less Than 3,000 Vehicles per Day.	1,120 ft.

Table 2 - For a 40,000 Gallon Hexane Explosion

Structure or Area of Concern	Minimum Safe Distance
Inhabited Buildings (Homes, Businesses and Plants).	2,155 ft.
*Public Highways With Less Than 3,000 Vehicles per Day.	1,300 ft.

**Public highway means any public street, public alley or public road.*

The main difference between an explosive detonation and a hexane explosion is the degree of small fragments created at the source. I would expect that the explosion effects regarding how far the fragments or shrapnel are thrown would be similar.

In reference to Figure 1, the main points of public concern around the hexane storage tanks are listed in Table 3.

Table 3 – Applies to a 20,000 to 40,000 Gallon Hexane Explosion

Point No.	Description	Current Distance From Hexane Storage Tanks
1	Oil storage tank.	40 ft.
2	Parking lot.	580 ft.
3	Parking lot.	375 ft.
4	Main incinerator building.	600 ft.
5	Inhabited office building.	580 ft.
6	Inhabited office building.	500 ft.
7	Public road (River road).	1,030 ft.
8	Residential home No. 1.	1,500 ft.
9	Residential home No. 2.	2,600 ft.
10	Residential home No. 3.	1,850 ft.

The distances coded in red in Table 3 designate unsafe distances from the hexane storage tanks. Note that even if the two 20,000 gallon hexane storage tanks were separated by a safe distance of 430 ft., a single 20,000 gallon hexane tank explosion could still result in serious injuries, death and/or property damage to the nearby public.

The minimum safe distance to cover all points of concern from a 20,000 to 30,000 gallon hexane explosion is 2,000 ft. The minimum safe distance to cover all points of concern from a 40,000 gallon hexane explosion is 2,155 ft.

Opinions Regarding the Effects of an Explosion of Hexane

In the event of an accidental hexane explosion, I would expect the following consequences:

1. High velocity fragments (shrapnel) will be thrown in all directions. If there were an explosion of the fully loaded hexane storage tanks, shrapnel would be formed from the tanks themselves. If the soybean processing plant (loaded with 30,000 gallons of hexane) were to explode, the plant container and building itself would become shrapnel that would be thrown a similar distance. The shrapnel alone from such an explosion would have disastrous consequences. This shrapnel would be projected to Route 441 and beyond, to the neighboring homes and to the incinerator complex. The shrapnel would cause death or serious injury to anyone who was hit by it. In addition, the shrapnel would cause serious property damage to any structures that it encountered.

2. Multiple fires would be expected wherever any burning shrapnel/debris fell on.

3. The oil storage tank, which is situated only 40 ft. away from the hexane storage tanks, would most likely catch on fire and spew out huge amounts of heavy smoke and toxic gases.

4. BAI understands that there is a large propane storage tank nearby on the adjacent incinerator property. Depending on the mass and velocity of a projectile, it is also possible to explode the propane tank on impact, causing another secondary large scale energetic explosion.

5. Airblast (concussion) would occur from the explosion that in itself would kill or seriously injure people and would also cause serious damage to nearby properties. The overpressure effect could result in the destruction of nearby buildings which could inflict injury or death to anyone inside or near the building(s). Because it is so close, I would expect that the incinerator complex would be seriously damaged from an explosion. In

addition, I would expect windows in buildings as far as half a mile away to be blown out, which could also result in injury to anyone nearby.

6. If a hexane explosion occurred, I would expect the explosion to set off fires giving off noxious deadly fumes (as occurred at other soybean processing facilities). For example, some of the gasses often resulting from hexane explosions are oxides of nitrogen. Exposure to these gasses with concentrations of only 0.03 to 0.05% could be fatal 8 to 72 hours after exposure.

Recommendations

In view of the serious potential dangers to the public, BAI makes the following recommendations:

1. Perdue should perform a full explosion hazard assessment before proceeding with their plans, and to make their findings available to the public.

2. An emergency response plan needs to be prepared by Perdue that will include immediate and direct notification of all neighbors within a one mile radius of the plant. The plan should include a warning system to be implemented by Perdue to warn nearby residents immediately, rather than rely solely on the local emergency response units, because valuable time would be lost for nearby residents in deciding to evacuate immediately, or to seal their homes by closing all windows/doors and turning off their A/C units until the danger has passed. According to Perdue representatives, they plan to use the local emergency response units in dealing with such events. As of June 15, 2012, Perdue was not planning to directly notify neighbors in the event of any emergency at the plant. Instead, they were planning to rely on local authorities. It is not clear how and/or when nearby neighbors would be warned of the dangers and precious time would be lost while Perdue communicated with the emergency responders who would then have to communicate with the community. Perdue should take responsibility for this important aspect of planning.

3. Conoy Township and Lancaster County need to update both their emergency plans and training for emergency responders to deal with a potential explosion hazard from the Perdue facility.

4. If Perdue cannot satisfy the minimum safe distances to all points of concern, the options would be to either bury the two 20,000 gallon storage tanks and the process section of the plant which requires the use of 30,000 gallons of hexane, or to relocate the entire plant facilities elsewhere.

Sincerely,

R. Frank Chiappetta

R. Frank Chiappetta
Explosives Applications Engineer
BLASTING ANALYSIS INTERNATIONAL
Explosives, Seismic & Mining Specialists

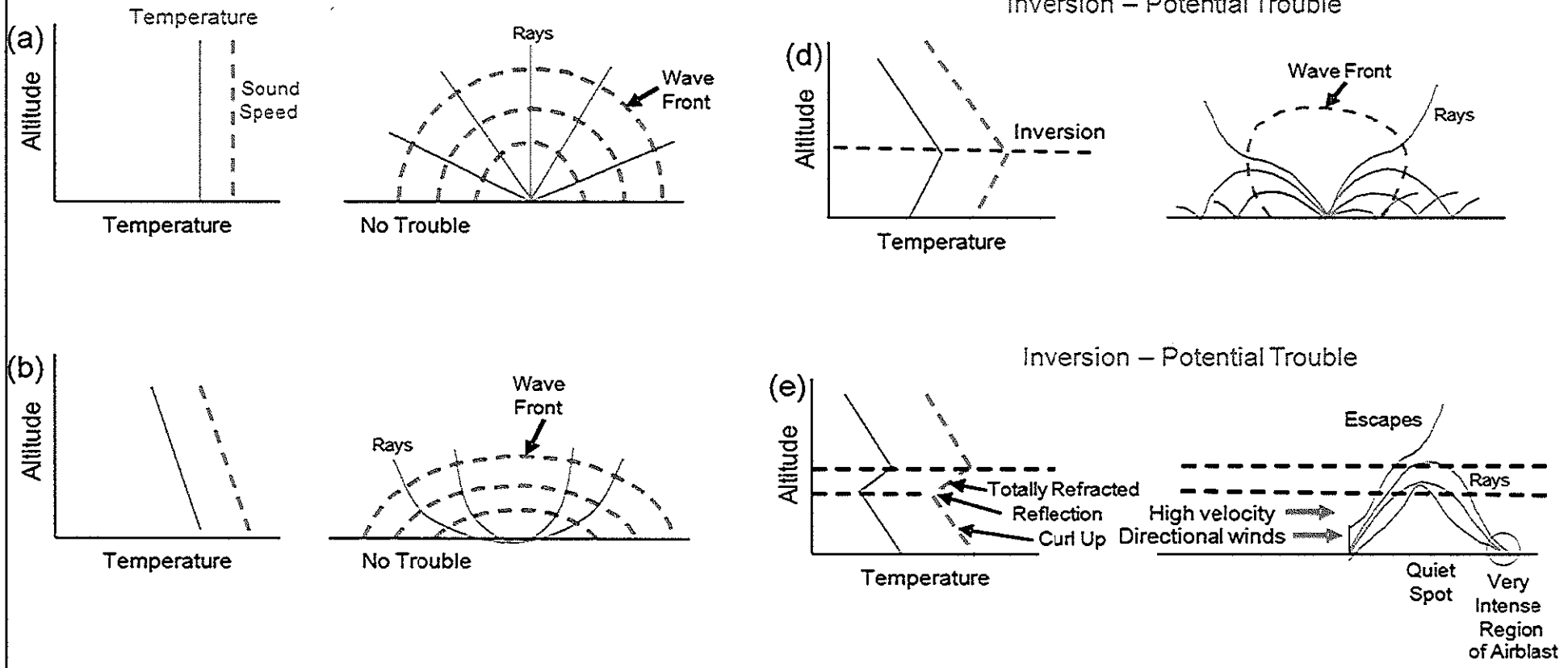
File:HARRISBURG-1873676 -- BAI report -- PerdueNissley - 1

ATTACHMENT C

Figure
Effect of Altitude Temperature Profile on Airblast Propagation

Effect of Altitude Temperature Profiles on Airblast Propagation

Modified after Cook, 1958



ATTACHMENT D

Resident Questions to Perdue
Dated May 26, 2010

Follow Up Questions/Concerns about the Soybean Crush Plant Proposed for the Conoy Township Site
(May 26, 2010)

1. With an ever-increasing public demand for organic, chemical-free foods, it would seem that soybean oil and the animal feed produced by the expeller method would have a better market and carry Perdue AgriBusiness farther into the future than those produced by the solvent extraction method. Recent concerns about hexane found in veggie burgers will most likely grow over time and include other soy products. Can you explain why you prefer to build a plant that uses hexane solvent rather than expeller extraction methods?

2. Please comment on the perception that using the expeller method would give large savings by eliminating the need for:

    a. Hexane purchase and delivery.
    b. Hexane storage tanks.
    c. A distillation and hexane recovery system: evaporators, stripping columns, condensers and solvent/water separators.
    d. Mineral oil scrubber.
    e. Desolventizer-toaster (D-T).
    f. Complex, automatic safety control systems to prevent release of toxic levels of hexane to the outside air in the event of operator errors or equipment failures
    g. Purchase of pollution credits.

3. Can you cite any examples of current state of the art soybean extraction plants that use scrubbers on their meal dryer? Do they recover the hexane from these scrubbers?

4. According to current industry-wide standards, is the proposed soybean extraction plant considered a state of the art plant with respect to hexane emissions? Are there other plants owned by other corporations that emit less hexane than that proposed by Perdue (0.15 gallons of hexane per ton of soybeans processed)? Please cite examples.

5. For a new solvent extraction plant built in Lancaster County or York County, an area with already degraded air quality and prone to temperature inversions, would you consider installing a scrubber on the meal dryer, or vent the dryer through a common vent header to the planned mineral oil scrubber and solvent recovery system? Advantages appear to be:

    a. Recapturing expensive hexane, at a cost savings of millions of dollars over five to ten years.
    b. Reducing the number of pollution credits needed.
    c. Protecting the public from toxic exposure to hexane especially during temperature inversions. Highly vulnerable populations would include young children, pregnant women, persons with already compromised neurological systems and the elderly.

d. Gaining excellent public relations exposure as a result of voluntarily installing equipment that would help protect the public. (Note: This advantage would be even greater if the expeller method is used.)

6. Please explain the costs involved with installing a scrubber for the meal dryer or venting the meal dryer through the planned mineral oil scrubber.

7. Given the fact that the site proposed for your soybean crush plant is underlain with limestone geology and prone to random sinkholes, how would you prevent aquifer contamination in the event of an unanticipated hexane spill caused by the ground collapsing into a sinkhole cavern? Would this risk be eliminated by using the expeller method?

8. Do you plan to buttress any large structures/equipment you use on this site with pilings to prevent them from collapsing into sinkhole caverns?

9. What type of coolant is used for cooling the mash after drying? How much coolant is used per year and how will it be stored?

10. What are the estimated total VOC emissions from the plant in tons per year? What percent of the total VOC emissions come from the meal dryer?

11. Please specify the other types and estimated quantities of emissions.

12. Under Title 5 of the Clean Air Act, what type of emissions source permit will you seek: Minor, Synthetic Minor or Major?

13. What are the elements of a soybean crush plant that cause Homeland Security to require a fence around the plant?

14. Why are pollution credits needed if your plant would not exceed the emissions standard for hexane (i.e., 0.2 gals. hexane/ton soybeans processed)?

13. How often is the plant shut down for maintenance? What type of maintenance? How long is the typical maintenance shut down?

14. Do you plan to install a gas-fired back-up boiler to use during planned interruptions (e.g., for maintenance) of the steam supply, to insure the reliability of steam service and to minimize the frequency and duration of steam outages? Will this back-up boiler be included in your Air Permit Application?

15. How will hexane emissions from the soybean extraction batches already in progress at the time of an unplanned plant shutdown be prevented from escaping from the proposed plant?

16. In the event of operator errors or equipment failures that result in releases of toxic levels of hexane that threaten public health and safety and are beyond the control of the inside plant operator/technician, who will provide the engineering expertise necessary to deal with unforeseen emergencies? Your suggestion that you would fly in an engineer from your plant in Salisbury would not be satisfactory if delays caused by adverse flying conditions prevented the arrival of an engineer at the plant in time to provide the expertise needed to deal with an emergency. Would you be willing to retain a knowledgeable local engineer who can be on-call in the event of an unforeseen emergency?

17. Once you have selected this site, are you willing to have a public meeting to explain the plant and answer any questions?

ATTACHMENT E

Resident Questions to Perdue
Dated December 28, 2011

Questions/Concerns about the Soybean Crush Plant
Proposed for the Conoy Township Site
(December 28, 2011)

1. Do you plan to install a back-up generator so that in the event of a power outage the safety monitors will continue to function? Could the VOC emission standards as set by the EPA and DEP be exceeded after a power outage occurs or at any time during any other plant malfunction? If so how do you plan to prevent these emission standards from being exceeded?

2. When we last met on May 11, 2010 you stated that 98% of the soybean oil produced by the plant will be used for food grade oil and 2% for biofuel. Do you have any immediate or future plans to produce biofuel at the proposed Conoy Township site? If so, how many gallons of biofuel will be produced per year at this site?

3. What safe-guards will you have in place to prevent explosions caused by hexane vapors?

4. What kinds of insurance will you have for your planned facility in Conoy Township? In the event of a catastrophic explosion or fire at your facility, will your insurance cover injury or harm to persons and properties including the resource recovery facility? What will be the coverage limits in terms of distance from your facility and in terms of total dollars? Will this coverage include reimbursement to the Township for lost revenues in the event of a major shutdown or loss of the resource recovery facility due to an accident at your facility?

ATTACHMENT F

Perdue Open House Handout
Dated April 26, 2012

PERDUE'S PROPOSED SOYBEAN CRUSH PLANT

THERE IS A LOT TO KNOW!

Benefits of the proposed plant:

- **Create about 35 jobs.** *(Ask Perdue for a list of jobs, pay scales and required skills.)*
- **Provide potential spin-off jobs through expansion of soybean storage facilities in area.**
- **Provide opportunities for the local farming community.**

Serious concerns about the proposed plant:

- **The name "soybean crush plant" for the factory is somewhat misleading.** The soybeans are crushed only in order to accomplish the main purpose of the plant, which is to extract oil from the beans. The oil is extracted with hexane, a highly explosive, nerve-damaging solvent derived from petroleum.
- **Over 100 tons (238,000 pounds) of hexane per year will be permitted to be released into the outside air.** This could lead to the potential accumulation of pockets of concentrations of hexane emissions during temperature inversions, which are known to occur in the Conoy area due to its river valley location.
- **Installing a mineral scrubber on the meal drying oven would reduce the hazardous hexane emissions and could be paid for with a portion of the $8.75 million in your taxpayer money granted to Perdue by the State.** Perdue has no plans to install this scrubber. Conoy Township officials should require that this scrubber be installed.
- **Hexane by itself is a neurotoxin and is known to have harmful effects on humans.** Overexposure is known to result in neuropathy, nerve damage, dermatitis, vision impairment and to affect the upper respiratory system. Perdue is not required to and does not plan to carry out any health risk studies of their hexane emissions.
- **Hexane is listed by the EPA as a hazardous air pollutant.** The Perdue factory will be built next to the LCSWMA incinerator, which generates over ten million pounds of nitrous oxide per year. When hexane emissions from the soybean factory mix with nitrous oxide emissions from the incinerator in the presence of sunlight, smog/ozone is produced, making the air dangerous to breathe and leading to asthma attacks and other lung illnesses especially among children and the elderly. As recently reported, Lancaster County already has the 29th worst smog in the U.S. Not controlling the emissions from this plant with a scrubber will make it even worse.
- **Because the factory will be located in a major sinkhole area, onsite spills and storage of hexane (30,000 gallons) could threaten the safety of local water supplies.** Perdue should be required to provide a hydrogeological study to insure that the location of this factory is safe.
- **Hexane is highly explosive.** In 2003, an explosion rocked a soybean processing factory in Iowa, injuring eight people – three critically - and sparked a fire that shut down the factory. Explosions at soybean processing plants have occurred as recently as 2009 in Minnesota and Kansas. This raises the question as to whether an explosion at the proposed Perdue factory could be a threat to the adjacent county incinerator and nearby neighbors.
- **Other Central PA businesses, such as Wengers Feed Mill Inc., extract soybean oil without using a toxic, air polluting, explosion-prone, taxpayer-subsidized hexane extraction process.**

WHAT YOU CAN DO: 1) Share this flyer with neighbors. 2) Bring your concerns to the Conoy Twp Planning Commission meeting at 7:00 pm on Tuesday, May 1, 2012 at the Township Building in Falmouth. 3) Sign up to be notified of future public meetings and developments, or write to ConoyFactoryConcerns@gmail.com.

ATTACHMENT G

Nissley Vineyards Questions to Perdue
Dated June 18, 2012

MEMORANDUM

To: Herbert D. Frerichs, Jr., Esq.
Maxine Woelfling, Esq.
David P. Zambito, Esq.

From: Joel R. Burcat, Esq.
Saul Ewing LLP

Date: June 18, 2012

Subject: Nissley-Perdue: Additional Questions

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1. **Additional Document Requests:**

We understand that the following documents already exist. We would appreciate receiving copies of the following so that we may finalize our evaluation based on your documentation rather than speculation or conjecture:

1.1 The Environ representative (Stan Hayes?) indicated that he would provide us with the input parameters and the modeling results for the models that Environ has run, but he did not have them with him. Could you please provide this information?

1.2 Perdue indicated that there is a Standard Operating Procedure (SOP) for hexane deliveries which includes a series of checks, grounding of the truck, chocking of the wheels, etc. A copy of this SOP was requested and Perdue indicated you would be willing to provide it. Please also provide the SOPs planned for use at the plant regarding hexane storage and usage.

1.3 It is not clear that we have the latest plan view of plant facilities. Kindly provide the up-to-date plan.

1.4 Perdue stated it is relying on local police, fire and emergency response units with which it will develop an emergency plan. We would like a copy of all the on-site and off-site emergency procedures, including any alarm signals and their meaning.

1.5 Please provide the health risk assessment.

1.6 We request a copy of the risk management plan regarding the use of hexane at the facility.

1.7 Please provide the stormwater management plan for the facility.

Additional Questions

During our meeting on June 15, Perdue was not in a position to answer some questions or could not answer fully some questions. Some answers generated additional questions. We would very much appreciate answers to the following questions:

2. **Air**

2.1 What are the pre- and post-control potential PM / PM2.5 emissions, by source?

2.2 What is the maximum hourly/daily throughput, and what is the limiting factor?

2.3 There seems to be some discrepancy on the potential emissions of hexane. Perdue's handout from the open house on April 26, 2012 indicates the facility will use less than 100,000 gallons of hexane per year. At our June 15 meeting, the Environ representative indicated that 15,000 gallons of hexane/yr was used in the health risk modeling. A Perdue representative at the meeting indicated hexane deliveries will occur once per month. That would mean 12 deliveries per year and if the delivery truck holds 6,000 gallons, then 72,000 gallons of hexane will be used (i.e., emitted each year). Can you clarify the amount of emission of hexane from the plant (actual AND potential).

2.4 When asked specifically what technologies were considered in the "top-down" BACT analysis for control of hexane emissions as well as other pollutants, Perdue indicated they would have to get back to us as the BACT was prepared by Rettew & Associates and no one from Rettew was at the meeting. Can you provide this information?

3. **Health and Safety**

3.1 Will the Perdue facility have dedicated Environmental, Health & Safety (EHS) personnel and a dedicated Incident Commander? If so, which shift(s) will have EHS coverage? If not, where will the closest EHS professional be located (i.e. Salisbury, MD)?

3.2 Where will the hexane monitors be located?

3.3 What is the highest concentration of hexane that you have measured in the extraction buildings of other Perdue facilities while in operations?

3.4 Does Perdue have any hexane air monitoring data that is more recent than three years old?

3.5 What is the most hexane that will be released from the facility at any one time?

3.6 Is there/will there be a documented calibration process for the handheld air monitoring equipment that is utilized to test for hexane at the facility?

3.7 Where was the highest concentration of hexane located in the Health Risk Assessment in reference to the offsite residences?

3.8 Will the facility follow OSHA's Electrical Safety Standards for combustible dust for Class II (dust hazard), Division 1 (dust hazard continually present), Group G (grain, corn, flour, wood and plastics) hazards?

3.9 Will the facility follow OSHA's Electrical Safety Standards for flammable liquids?

3.10 Will the facility develop an Emergency Preparedness Plan per OSHA's Process Safety Management Standard (29 CFR 1910.119).

3.11 What is Perdue willing to do to make the facility safer for the community?

4. **Explosion hazard**

4.1 The Perdue representatives did not think an explosion of the two 20,000 gallon tanks of hexane was a likely release scenario. When asked what a realistic scenario would be and what realistic scenario Perdue had considered, Perdue's attorney responded that Perdue wanted to discuss this internally. Do you now have an answer for us?

4.2 Can you please provide for us the planned distance between the two 20,000 gallon hexane storage tanks, and distance from the storage tanks to the extraction building?

4.3 Perdue stated that the two 20,000 gallon hexane storage tanks did not constitute the most dangerous risk for an accidental explosion. Assuming this is the case, at what section of the process is the most dangerous risk? Can you provide the quantity of hexane usage in that particular unit operation, and in what section of the plant it is located? We would also like to know if Perdue is planning to do a hazard assessment on any type of accidental explosion pertaining to nearby residential homeowners.

4.4 Perdue said it did not consider the impact of an accidental explosion on nearby surrounding residential homeowners. They relied only on complying with NFPA 30 regulations, but said they would look into this internally. Can you provide Perdue's assessment of this when it is completed?

4.5 At the meeting, Perdue was not in a position to discuss any impacts of an accidental detonation with the incinerator plant, particularly in regards to the large nearby propane tank used at the incinerator. Can you provide Perdue's assessment on this when it is completed?

4.6 Purdue mentioned that the plant structure where hexane was in active use was constructed with non-flammable steel, which was designed to contain debris from flying around in the event of an accidental explosion. Can you provide more details for this design?

4.7 Perdue mentioned that the two 20,000 gallon storage tanks could not be buried underground because they could not monitor for leaks. Can you provide more details on your rational for this?

4.8 The distance between the two 20,000 gallon hexane storage tanks would be according to NFPA 30. Perdue indicated this distance had not yet been calculated. Wouldn't this distance be known since it would be used at other Perdue soybean processing plants? If so, can you please provide it?

4.9 Please provide a name for the carriers, if known, that will be delivering hexane.

August Mack
ENVIRONMENTAL

941 Wheatland Avenue, Suite 202
Lancaster, PA 17603
ph: 717.399.9587 | f: 717.399.5493
www.augustmack.com

VIA HAND DELIVERY

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FEB 26 2013
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

February 26, 2013

Mr. Brian Wetzel
Air Quality Permitting
Pennsylvania Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, Pennsylvania 17110-8200

Re: Comments on Perdue's Response to Comments Phase I Application (Perdue's Response) and
Air Dispersion Modeling & Risk Assessment Protocol
Phase 1 (Soybean Processing Facility, #36-03189A) and Phase 2 (Soybean Oil Extraction Facility, #36-05158A)
Perdue Grain & Oilseed LLC
1897 River Road
Marietta, Pennsylvania
Conoy Township, Lancaster County

Dear Mr. Wetzel:

At the request of our client, A & R Nissley, Inc. (Nissley Vineyards) we have reviewed the Perdue Response to Comments Phase I Application (hereinafter referred to as Perdue's Response) submitted by Perdue Grain & Oilseed LLC (hereinafter referred to as Perdue) to the Pennsylvania Department of Environmental Protection (PADEP) via electronic mail on January 25, 2013 and the Air Dispersion Modeling & Risk Assessment Protocol (hereinafter referred to as the Modeling Protocol) submitted to PADEP via electronic mail on November 20, 2012 for a soybean oil processing and extraction facility (#36-03189A and #36-05158A). As a result of this review, we are providing the following comments/concerns to the PADEP for your consideration:

General Comments

1. **Permit Applications.** Nissley Vineyards requests PADEP deny Perdue's permit application at this stage, due to the previously submitted concerns associated with hexane use related to temperature inversions, public health, air quality, safety concerns/explosion hazards, lack of monitoring, and emergency preparedness which have not been addressed to date and are not addressed in Perdue's Response.

Perdue has neglected or refused to answer important comments which means that both the PADEP and the pubic cannot fully evaluate Perdue's proposed project. Since the burden of showing compliance with all regulatory requirements is on Perdue, and they have neglected or refused to do so, the applications should be denied.

2. **Comments Not Included in Perdue's Response.** There appear to be a number of comments that were not included in Perdue's Response based on the Perdue Response numbering system beginning with #9 and ending with #186 and not being inclusive. Both General and Specific comments that appear not to be included on the list of Perdue's Responses are detailed as follows. Nissley Vineyards requests that the Department require a full response to these important comments and concerns.
    a. **Emission estimates**:
        i. Volatile organic compound (VOC) emissions from Grain Dryer No. 1 and Grain Dryer No. 2 not being based on 400,000,000 cubic feet of natural gas as indicated by Perdue in a meeting on June 15, 2012.
        ii. VOC emissions from boilers which are indicated as 1.46 tons in Attachment I but only 0.0455 tons in Attachment G.
    b. **Safety Concerns/Explosion Hazard.** The results of a study completed by Mr. Frank Chiappetta, President and Explosives Application Engineer with Blasting Analysis International, Inc. (BAI) to evaluate the safety concerns associated with the proposed hexane aboveground storage tanks (ASTs) which indicated an explosion of the hexane tanks would result in:
        - High velocity fragments (shrapnel) impacting neighboring properties resulting in death or serious injury to anyone hit by it as well as serious property damage to any structures that it encountered.
        - Multiple fires wherever any burning shrapnel/debris landed.
        - The oil storage tank, which is situated only 40 feet away from the hexane storage tanks, most likely catching on fire and spewing out huge amounts of heavy smoke and toxic gases.
        - There is a large propane storage tank nearby on the adjacent Lancaster County Solid Waste Authority incinerator property. Depending on the mass and velocity of a projectile, it is possible to explode the propane tank on impact, causing another secondary large scale energetic explosion.
        - Airblast (concussion) would occur from the explosion that in itself would kill or seriously injure people and would also cause serious damage to nearby properties. The overpressure effect could result in the destruction of nearby buildings which could inflict injury or death to anyone inside or near the building(s). Because it is so close, it is expected that the incinerator complex would be seriously

damaged from an explosion. In addition, BAI would expect windows in buildings as far as half a mile away to be blown out, which could also result in injury to anyone nearby.

- If there is a temperature inversion at the time of any explosion, the inversion layer will reflect the airblast energy back to ground elevation with a greater intensity. If there is an inversion at an appropriate height above the ground, with high-velocity directional winds, the inversion layer can be reflected back down to earth to break windows much farther away than half a mile with the possibility of a damage focal point 1 - 2 miles away.
- If a hexane explosion occurred, the resultant fires would result in noxious fumes (as occurred at other soybean processing facilities). For example, some of the gasses often resulting from hexane explosions are oxides of nitrogen. Exposure to these gasses with concentrations of only 0.03 to 0.05% could be fatal 8 to 72 hours after exposure.

c. **Scrubbers.** Due to environmental and public health concerns associated with the use of hexane, Perdue should be required to install air pollution control devices (i.e., scrubbers) on all significant sources of VOC emissions at the proposed facility including the Meal Dryer which will emit 83.50 tons per year and the Meal Cooler which will emit 17.19 tons per year.

d. **Monitoring.** Due to the concerns associated with ambient air quality in the vicinity of the facility including temperature inversions and a potential release of hexane, Perdue should be required to install monitors and continuously monitor for both hexane and VOCs at the property line.

e. **Emergency Preparedness.** Due to safety concerns with the use of hexane at the facility Perdue should be required to prepare an emergency response plan that will include immediate and direct notification of all neighbors--by Perdue--within a one mile radius of the proposed plant in Conoy Township, Pennsylvania. The plan should include a warning system to be implemented by Perdue to warn nearby residents immediately, rather than rely solely on the local emergency response units (most of whom are volunteers), because valuable time would be lost for nearby residents in deciding to evacuate immediately, or to seal their homes by closing all windows/doors and turning off their A/C units until the danger has passed. According to Perdue representatives, they plan to use the local emergency response units in dealing with such events. Perdue should take responsibility for this important aspect of emergency planning and response.

f. **Attachment M - General Information Form.** On page 5 of 7, Coordination Information Item 7.0 Perdue indicates that the project will not involve the construction and operation of industrial waste treatment

facilities. However, the process flow diagram provided as Attachment F includes a hexane/water separation and wastewater stripping process.

g. **Bean Conditioning.** Page 7, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information. The applicant indicates that the pressure drop on the high efficiency cyclone will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the high efficiency cyclone should be continuously monitored with continuous monitoring being incorporated into a permit condition.

h. **Flaking Rolls.** Page 10, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information. The applicant indicates that the pressure drop on the high efficiency cyclone will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the high efficiency cyclone should be continuously monitored with continuous monitoring being incorporated into a permit condition.

i. **Extraction Process:** Page 13, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information:

   i. The applicant indicates a written plan for demonstrating compliance with Title 40 Code of Federal Regulations (CFR) Part 63, Subpart GGGG, §63.2851 will be developed and implemented and the hexane recovery system will be operated and maintained per the manufacturer's instructions. As part of the Plan Approval application the facilities provided to monitor and record process operating conditions which may affect the emission of air contaminants are to be described fully therefore Perdue should be required to provide the written plan as part of its permit application.

   ii. The applicant does not identify and describe all fugitive emission points but indicates that "fugitive hexane emissions will occur at various component fittings in the extraction process/hexane recovery system." Perdue should be required to prove that fugitive emissions will be negligible or the permit should be denied.

   iii. The applicant indicates a Startup, Shutdown, and Malfunction (SSM) plan for demonstrating compliance with Title 40 Code of Federal Regulations (CFR) Part 63, Subpart GGGG , §63.2852 will be developed prior to start-up. As part of the Plan Approval application a description of how emissions will be minimized especially during start up, shut down, process upsets an/or disruptions is to be provided. Perdue should be required to correct this deficiency in its permit application.

j. **Attachment D – Applicable Requirements.** Perdue indicates that compliance with the particulate matter emission limits of 25 Pa. Code §123.13 will be demonstrated by maintaining emission calculations. Perdue is proposing the use of air pollution control equipment including baghouses, cyclones, and filters to control particulate matter and has claimed specific control efficiencies for the specified control equipment. Perdue should be required to perform a facility-wide stack test to ensure compliance with particulate matter emission limits and verify the claimed control device efficiencies. The stack test requirement should be included as a permit condition.

3. **Comments Not Addressed or inadequately addressed.** There are some comments that were not completely addressed in Perdue's Response. Specific comments that appear not to be completely addressed include the following General and Specific Comments:
   a. **Temperature inversions.** Until the results of appropriate air dispersion modeling is provided and reviewed this comment has not been addressed.
   b. **Public Health.** Until the results of appropriate air dispersion modeling is provided and reviewed this comment has not been addressed.
   c. **Attachment M – General Information Form.**
      i. On page 3 of 7, Project Information Item 1. Perdue indicates "Yes" that they have informed the surrounding community and addressed any concerns prior to submitting the application to the PADEP. Despite Perdue's incorrect assertion, previous questions and concerns raised by residents have not been addressed to those residents including questions submitted in writing on the following dates. Many of the concerns identified in these questions from the community have not been addressed, even after three years.
         1. May 26, 2010
         2. December 28, 2011
         3. A handout distributed at Perdue's Open House on April 26, 2012)
         4. Questions dated June 18, 2012 that were submitted to Perdue in writing following a meeting between Nissley Vineyards and Perdue on June 15, 2012 have not been answered despite Perdue's assurance that they would provide answers to the questions that they were unable to answer during that meeting.

4. **Perdue's Response #51 - Modeling Protocol.** Perdue indicates that dispersion modeling will be conducted to address the Phase 2 hexane emission concerns. The cover letter of the modeling protocol indicates that Perdue is voluntarily conducting this assessment of the potential health risks associated with hexane from the proposed facility. However, this modeling protocol does not include ambient impact

modeling or modeling of impacts from VOC emissions. Although Perdue calculates the facility-wide VOC emissions to be 248.65 tons, as our previous comments indicated the actual emissions will exceed 250 tons, thus subjecting the facility to Prevention of Significant Deterioration (PSD) requirements including ambient impact modeling and an additional impacts analysis. The modeling protocol submitted on behalf of Perdue confirms the higher VOC emissions as Table 1 of the modeling protocol specifies the n-hexane loss emissions to be a total of 157.50 tons per year from four sources (the Main (Final) Vent, the Drier Vent, the Cooler Vent, and Extraction Area Fugitives). The n-hexane emissions specified in Perdue's application for these sources totaled only 110.51 tons. Based on n-hexane emissions of 157.50 tons per year, the actual VOC emissions would be more than 350 tons per year clearly making the facility subject to PSD. As the applications do not include the PSD ambient impact modeling and additional impacts analysis requirements, the applications should be denied.

Specific Comments to Perdue's Responses

1. **Perdue's Response #51 - Modeling Protocol.** The following specific comments pertain to the modeling protocol.
   a. The modeling protocol specifies that rural land use inputs will be utilized for dispersion coefficients determination. Dispersion coefficient determination of surface roughness length, albedo, and bowen ratio should be obtained from the AERSURFACE tool for input into the AERMOD model. The use of AERSURFACE to determine the dispersion coefficients should be included in the modeling protocol.
   b. The modeling protocol specifies that concentrations of n-hexane will be calculated at the locations of residential and sensitive receptors near the proposed facility. The receptor grid should cover a 50 kilometer (km) range with 100 meter (m) grid spacing near the facility boundary with distances increasing gradually outward to 1000 m at the 50 km distance.
   c. The modeling protocol specifies the use of meteorological data from Capital City Airport (KCXY) and Lancaster Airport (KLNS). Based on a temperature inversion study performed by Professor Richard D. Clark, Ph.D., Chair, Department of Earth Sciences, Millersville University under contract to Nissley Vineyards, meteorological data physically closer to the proposed location for the Perdue facility is available and should be utilized in any modeling conducted related to the proposed facility.
   d. The modeling protocol indicates that the assessment will be of the dispersion of n-hexane emissions. However, the facility-wide actual emissions of VOCs will be more than 250 tons. The modeling should be conducted to address ambient impact as well as health risks associated with both VOCs, and n-hexane emissions.
   e. The modeling protocol does not include data on ambient concentrations of VOCs, and n-hexane for comparison.

f. The modeling protocol does not include information on VOCs as part of the risk assessment

g. The modeling protocol does not include VOC or n-hexane emissions from the following sources in Table 1:
   i. Grain Dryers No. 1 and No. 2
   ii. Hexane Storage Tanks
   iii. Temporary Emergency Boilers

h. The modeling protocol specifies inaccurate building heights in Table 2. On the schematic drawing of the building profile that Perdue presented to the Conoy Township Zoning Hearing Board in March 2012 as Exhibit #2, the following elevations are listed:
   i. C - Bucket Elevator - 148 ft (equates to 45.11 meters)
   ii. D - Grain Tank - 101 ft (equates to 30.78 meters)
   iii. E - Dust Collector - 95 ft (equates to 28.96 meters)
   iv. F - Extraction Building - 90 ft (equates to 27.43 meters).

i. The risk assessment section of the modeling protocol indicates a value of 700 micrograms per cubic meter ($\mu g/m^3$) from the United States Environmental Protection Agency's (U.S. EPA's) Integrated Risk Information System (IRIS) will be utilized as it is the most stringent value. However, more stringent limits have been utilized including a value of 600 $\mu g/m^3$ in the Provisional Peer Reviewed Toxicity Values (PPRTVs) derived by the U.S. EPA Superfund Health Risk Technical Support Center (STSC) for the U.S. EPA's Superfund program and 352 $\mu g/m^3$ of total hexane as a State Acceptable Ambient Concentration for air toxics permitting by the Virginia Department of Environmental Quality (VADEQ). The most stringent limit should be utilized in the risk assessment.

j. As currently proposed, Perdue's model will inaccurately model the dispersion of n-hexane emissions and it should be revised or rejected.

2. **Perdue's Response #86 and #87 - New Source Review (NSR) Alternative Site Analysis.** Perdue's Response does not address the issue of circumvention of NSR for Phase I. Perdue submitted two separate Plan Approval Applications for their proposed soybean processing facility, but identified the project as a single project consisting of two (2) distinct operations: Phase I (soybean grain elevator) and Phase II (soybean extraction operation). Perdue's alleged reasoning for submitting the applications in phases is to enable them to construct and operate the grain elevator (Phase I) for the Fall 2013 soybean harvest. Contrary to Perdue's reasoning, since Perdue identifies this as a single project, which will be subject to the NSR requirements of Title 25 of the Pennsylvania Code Chapter 127, Subchapter E (25 Pa. Code §127.201 to §127.218), the applications should be reviewed and considered as one application for the entire facility. If these applications are not considered as one, then the NSR requirements will not be adequately applied to the Phase I (grain elevator) operations. This would result

in a direct violation of PADEP's "circumvention" regulation, 25 Pa. Code § 127.216, which states:

> *Regardless of the exemptions provided in this subchapter, an owner or other person may not circumvent this subchapter by causing or allowing a pattern of ownership or development, including the phasing, staging, delaying or engaging in incremental construction, over a geographic area of a facility which, except for the pattern of ownership or development, would otherwise require a permit or submission of a plan approval application.*

As Perdue's plans for the facility include both Phases and the facility will be subject to NSR, then all of the NSR requirements must be applied to both Phase I and Phase II. This includes an analysis of alternative sites. The analysis of alternative sites does not specifically identify any alternative sites that were considered by Perdue. No information on the environmental or social costs associated with selection of the proposed site or other sites considered are included in the analysis such as the issues with public safety, air emissions and temperature inversions, and explosion hazards detailed in this comment submission. Therefore the applications should be denied.

3. **Perdue's Response #98 - Proposed Emission of VOCs.** Perdue's response indicates the potential VOC emissions are below 250 tons per year. However, the n-hexane emissions shown on Table 1 of the modeling protocol submitted to PADEP on November 20, 2012 indicate n-hexane emissions of 157.50 tons per year. The n-hexane emissions specified in the application were only 110.51 tons per year. The modeling protocol submitted on behalf of Perdue confirms the higher VOC emissions. Based on n-hexane emissions of 157.50 tons per year, the actual VOC emissions would be more than 350 tons per year clearly making the facility subject to PSD. As the applications do not include the PSD ambient impact modeling and additional impacts analysis requirements, the applications should be denied.
4. **Perdue's Response #103 - Type of Review.** Perdue's Response does not address the required type of review for Phase 1. See Perdue's Response #86 and #87 above. NSR applies to Phase I as indicated and the review selected should be corrected as indicated. For the Phase 1 application, Page 1, Application for Plan Approval to Construct, Modify or Reactivate an Air Contaminant Source and/or Install an Air Cleaning Device (hereinafter referred to as the Process Form), in Section A the type of review required for the facility has been selected as requiring approval under NSPS or NESHAPs or both but should have been selected as requiring approval under NSPS, NESHAPs, MACT, NSR and PSD.
5. **Perdue's Responses #109 - Grain Receiving & Processing.** Perdue's Response does not address the request for continuous recorded monitoring of pressure drop on the baghouse being incorporated into a permit condition.
6. **Perdue's Responses #112 - Wet Grain Storage Bins.** Perdue's Response does not address the request for daily monitoring of bin vent filters for the presence of visible fugitive emissions being incorporated into a permit condition. As the facility will

operate 24 hours per day, 7 days per week the visual observation should be performed on a daily basis.

7. **Perdue's Response #116, #120, 121, 122, 123, 124, 135, 136,137, 138, 139, and 140.** Perdue's Response indicates that Perdue has requested and received in the Plan Approval, an enforceable permit throughput limitation of 630,000 tons of soybeans per consecutive 12-month period. Despite Perdue's erroneous statement, it is our understanding that the Plan Approval has not been issued by the PADEP.
8. **Perdue's Response #118 - Grain Loadout.** Perdue's Response indicates that grain loadout is not part of normal operations when the grain elevator is supplying soybeans to the extraction process. Based on this response, Perdue does not plan to operate the grain elevator on its own as they have indicated in their applications since they are unwilling to consider the fugitive emissions from grain loadout, locate this portion of the operation within a building, or duct it to a baghouse to control particulate matter emissions. Any permit issued for the grain elevator should consider emissions associated with grain loadout.
9. **Perdue's Response #119 - Facility Roadways.** Perdue's Response and the referenced permit condition do not address fugitive emissions control from facility roadways. According to Perdue's traffic study, 668 vehicles (mostly large trucks) will enter and exit the property daily. This has the potential for creating significant dust. As the facility will operate 24 hours per day, 7 days per week the visual observation should be performed, at a minimum, on an hourly basis. This requirement for hourly monitoring should be incorporated into a permit condition with specific requirements including method and frequency for when dust control measures will be implemented on facility roadways. Dust control measures should be implemented on a continuous basis to suppress any dust from vehicles.
10. **Perdue's Response #125 - Wet Grain Storage Bin Filter Control Efficiency.** Perdue's Response does not provide actual documentation from the manufacturer of the wet grain storage bin filters of their control efficiency. This information should be available to the Department and the public and provided to substantiate any control efficiency claims and to allow a specific control efficiency to be utilized as part of air emission calculations.
11. **Perdue's Response #127 and #146 - Column Dryer Control Efficiency.** Perdue's Response does not provide actual documentation from the manufacturer of the column dryer of its control efficiency nor address that the control efficiency was claimed in addition to utilizing an emission factor that includes the control efficiency.
12. **Perdue's Response #133 and 134 - Low NOx Burners for Propane Combustion.** Perdue's Response does not provide actual documentation that low NOx burners for propane combustion will provide a similar reduction in NOx emissions as low NOx burners for natural gas. This information should be provided so that emissions factors associated with low NOx burners may be utilized as part of the emission calculations.

13. **Perdue's Response #142 and 145 - Best Available Technology (BAT) Demonstration.** Perdue's Response does not adequately address the inadequacies of the best available control technology (BACT) Analysis. The BACT Analysis included with the application did not include a search of the reasonably available control technology (RACT)/BACT/lowest achievable emission rate (LAER) clearing house for available control technologies for both particulate matter and VOCs, a ranking of the technologies based on control efficiencies, and an economic analysis including the cost per ton of pollutant removed of technologies evaluated. Therefore the applications should be denied.
14. **Perdue's Response #149 - LAER Demonstration and Alternative Site Analysis.** Perdue's Response does not adequately address the inadequacies of the LAER demonstration and Alternative Site Analysis as indicated:
    a. The LAER demonstration does not consider vegetable oil production utilizing non-solvent extraction methods which result in lower emission rates. These technologies are readily available. In addition, Perdue's LAER demonstration proposes a facility-wide solvent loss limit of 0.165 gallons of solvent per ton of soybeans processed (gal/ton). This solvent loss limit is higher than the solvent loss limits for eight (8) of the facilities identified in the LAER demonstration which include:
        - 0.16 gal/ton for Bunge North America in Morristown, Indiana
        - 0.16 gal/ton for ConAgra in Morristown, Indiana
        - 0.15 gal/ton for Archer Daniels Midland in Mexico, Missouri
        - 0.15 gal/ton for Archer Daniels Midland in Mankato, Minnesota
        - 0.146 gal/ton for Cargill Oil Seeds in Sidney, Ohio
        - 0.145 gal/ton for Ag Processing in St. Joeseph, Missouri
        - 0.134 gal/ton for Louis Dreyfus Ag. Ind. in Claypool, Indiana
        - 0.125 gal/ton for Prairie Pride in Eve, Missouri.
    b. The Analysis of Alternative Sites does not specifically identify any alternative sites that were considered by Perdue. No information on the environmental or social costs associated with selection of the proposed site are included in the analysis such as the issues with public safety, air emissions and temperature inversions, and explosion hazards detailed in this comment submission. The Alternative Site Analysis is entirely inadequate. Therefore the applications should be denied.
15. **Perdue's Response #158 - Stack Height.** Perdue's Response indicates that stack height information was not provided because air dispersion modeling was not required. Stack height information is requested on the application forms with no limitations that it is to be provided only if air dispersion modeling is required.

The comments submitted by a variety of concerned residents have not been adequately addressed by Perdue. Moreover, even if additional information was provided by Perdue, the applications should still be denied. The emission of more than 248 tons of VOCs from this location including more than 110 tons of n-hexane emissions along with

the storage of 40,000 gallons of hazardous hexane at this site is an environmental hazard, a safety hazard, and a public health hazard. The only way this facility would be acceptable would be if it eliminated the use of hexane.

If you have any questions regarding this submittal, I can be reached at (717) 399-9587 ext. 27.

Sincerely,

Susan M. Burkett, ASP
Principal Engineer, eCAP® Services

cc: Mr. Daniel Husted, PE, Chief, New Source Review Section, PADEP
Ms. Gerallyn Duke, New Source Review/PSD, U.S. EPA Region III

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April 2, 2013

Mr. Brian Wetzel
Air Quality Permitting
Pennsylvania Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, Pennsylvania 17110-8200

Re: Comments on Grain Elevator Site Analysis
and Request for New Public Comment Period and Public Hearing
Phase I Plan Approval Application No. 36-03189A
Perdue Grain & Oilseed LLC
1897 River Road
Marietta, Pennsylvania
Conoy Township, Lancaster County

Dear Mr. Wetzel:

At the request of our client, A & R Nissley, Inc. (Nissley Vineyards) we have reviewed the submittal by Perdue Grain & Oilseed LLC (hereinafter referred to as Perdue) of a Grain Elevator Site Analysis (hereinafter referred to as Perdue's alternative site analysis (ASA)) submitted to the Pennsylvania Department of Environmental Protection via electronic mail on March 11, 2013 in support of Perdue's Phase I Plan Approval Application No. 36-03189A . Following are our comments regarding Perdue's ASA.

1. **Public Comment/Public Hearing.** The requirement for an ASA is specified in Title 25 of the Pennsylvania Code Subchapter E. New Source Review Section 127.205(5). The ASA was not submitted to PADEP until March 11, 2013. The ASA should have been filed along with Perdue's application, prior to the beginning of the public comment period (which ended November 12, 2012). As the public did not have the opportunity to comment on this information during the public comment period or during the public hearing which was held on December 13, 2012 a new public comment period is requested to allow for the required public comment along with an associated public "microphone" hearing on Perdue's ASA as well as any additional information submitted by Perdue in support of the Plan Approval Application after the aforementioned dates. Alternatively, PADEP should reject the ASA and Perdue's application as being untimely and inadequate.

2. **Alternative Site Analysis Requirement.** Perdue argues that the alternatives analysis is not required for the grain elevator Plan Approval Application. Perdue's reasoning is wrong, however, as Perdue indicated in its Plan Approval Application, they are proposing a single project consisting of two (2) distinct operations: Phase I (soybean grain elevator) and Phase II (soybean extraction operation). Perdue's alleged reasoning for submitting the applications in phases is to enable them to construct and operate the grain elevator (Phase I) for the Fall 2013 soybean harvest. Contrary to Perdue's argument, since Perdue identifies this as a single project, which will be subject to the new source review (NSR) requirements of Title 25 of the Pennsylvania Code Chapter 127, Subchapter E (25 Pa. Code §127.201 to §127.218), the ASA is required for the grain elevator plan approval application. If the NSR requirements are not adequately applied to the grain elevator operations, there would be a direct violation of the PADEP's "circumvention" regulation, 25 Pa. Code § 127.216, which states:

   Regardless of the exemptions provided in this subchapter, an owner or other person may not circumvent this subchapter by causing or allowing a pattern of ownership or development, including the phasing, staging, delaying or engaging in incremental construction, over a geographic area of a facility which, except for the pattern of ownership or development, would otherwise require a permit or submission of a plan approval application.

   The Phase I Plan Approval should not be issued until all of the NSR requirements have been met, including the provision of an ASA, and the public's right to comment has been fulfilled.

3. **Alternative Site Analysis.**
   a. The grain elevator site analysis does not fulfill the requirements of an alternative site analysis as it does not meet the requirements of 25 Pa. Code § 127.205(5) which states:

      ...an analysis shall be conducted.....which demonstrates that the benefits of the proposed facility significantly outweigh the environmental and social costs imposed within this Commonwealth as a result of its location, construction or modification.

   b. The grain elevator site analysis does not provide a detailed analysis of the proposed site along with the alternative sites. Due to this absence of a detailed analysis, the requisite information has not been provided to allow the impacted public or other decision-makers to make an informed decision.
   c. Perdue fails to grasp the detailed requirements of an ASA. An ASA is intended to be an exhaustive and thorough analysis of alternative sites, not a summary or conclusory statement. Each alternative site ought to be thoroughly evaluated. See Pennsylvania Trout v. DEP, 863 A.2d 93 (Pa.

Commw. 2004). The evaluation cannot be a summary or a conclusion, but must be an exhaustive analysis of practical on-site and off-site alternatives. See, Pennsylvania Trout v. DEP, EHB Docket No. 2002-251-R (Adjudication, April 23, 2004), 2004 WL 1045408.

As Perdue has failed to provide an alternative site analysis that demonstrates that the requirements have been met and from which an informed decision can be made, the Plan Approval Application should be denied.

4. **Alternative Sites.**
   a. The report states the advantages of Perdue's proposed location for the project in Conoy Township, PA; however, no alternative sites are listed. The report merely states that the alternative sites, purportedly located in York County, did not offer all the land use benefits of the proposed location. Therefore, it is impossible for the public or other decision-makers to determine if the alternative sites were thoroughly evaluated.
   b. The analysis also does not state any of the specific advantages of the alternative sites and only mentions that they do not have some of the advantages listed for the proposed location. Therefore, the public and other decision-makers cannot determine the extent of the advantages and disadvantages of the alternative sites.
   c. The ASA report utterly fails to document the potential alternative sites within the meaning of the regulations or the EHB's standard established in Pennsylvania Trout.

   As Perdue has failed to provide the necessary information in the alternative site analysis that demonstrates that the requirements have been met and from which an informed decision can be made, the Plan Approval Application should be denied.

5. **Site Size.** The report does not fully address the project size as it states that the project size was based on Perdue's knowledge and evaluation of the market; however, no research information has been presented for review. Therefore, it is not possible to determine if the project size is appropriate until additional information regarding Perdue's evaluation is provided.

6. **Traffic.** Section 6.0, Project Benefits and Impacts, does not provide an analysis of the impact of increased traffic in the vicinity of the proposed location nor in the surrounding areas from which the soybeans will be shipped to the proposed grain elevator. A traffic study was conducted by Rettew on behalf of Perdue and dated June 5, 2012, which clearly shows that there will be a dramatic increase in vehicular traffic in the area. This is not discussed as a project impact which would be detrimental to the area. Perdue's proposed operation will introduce literally thousands of truck trips every week onto rural and local roads. Perdue's ASA

summarily addresses traffic (at best) and is entirely inadequate. In addition, this traffic study was limited to traffic on Route 441 at the entrance to the proposed facility. However, in Section 1.0 Background of Perdue's ASA, Perdue indicates that:

"The proposed facility will receive, process, dry, store, and ship soybeans that are grown and harvested within Lancaster County and the surrounding region, consisting primarily of York, Berks, and Lebanon Counties and the states of New Jersey, New York, and Delaware."

As the proposed facility will only accept soybeans via truck, a study of the increase in truck traffic throughout the area from which soybeans will be shipped is warranted including specific modeling of the particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) (a nonattainment pollutant in Lancaster County) and nitrous oxide emissions (a pre-cursor to ground level ozone (a nonattainment pollutant in Lancaster County)) along the entire Route 441 access route from Columbia, PA to Middletown, PA.

As Perdue has failed to adequately evaluate the impact of traffic at the proposed location and the limited traffic study that was conducted indicates an unacceptable increase in traffic along Route 441, the Plan Approval Application should be denied.

7. **Other Project Impacts.** Perdue's ASA fails to address other social costs of the project including the exacerbation of existing air quality issues due to the presence of temperature inversions in the vicinity of the proposed location, public safety, social impact from truck traffic, and explosion hazards.

As Perdue has failed to provide the necessary information in the alternative site analysis of the other social costs that exist at the proposed location or an evaluation of these costs for any alternative sites, the Plan Approval Application should be denied.

Due to the lack of information, detail, and data presented in Perdue's ASA, the Permit Application should be denied. The alternative site analysis provides no specific information on other site locations and their potential advantages/benefits and disadvantages. Until this information is provided and is sufficient, the permit should be denied.

If you have any questions regarding this submittal, we can be reached at (717) 399-9587.

Sincerely,

Bridget Shadler
Project Manager

Susan M. Burkett, ASP
Principal Engineer, eCAP® Services

cc: Mr. Daniel Husted, PE, Chief, New Source Review Section, PADEP
Ms. Gerallyn Duke, New Source Review/PSD, U.S. EPA Region III
Ms. Kathleen Cox, Associate Director, Permits & Air Toxics, U.S. EPA Region III

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AIR QUALITY PROGRAM

June 25, 2013

Mr. William Weaver
Air Quality Program Manager
PA Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Dear Mr. Weaver:

Thank you for speaking to me regarding the status of the new plan approval application submitted by Perdue Grain & Oil Seed, LLC, for the proposed facility in Conoy Township in Lancaster County. After consulting with our legal and technical advisors, we want to convey our position that the receipt of this application must be published in the Pa Bulletin in order to ensure all affected parties are aware of this new application.

As you know, DEP routinely publishes permit actions in the Pa Bulletin and citizens rely on this publication as the official record of DEP actions. A review of recent notices regarding Perdue's air quality permitting efforts would give an incomplete picture of the current state of affairs.

On October 13, 2012, DEP published a notice of receipt and intent to issue a plan approval for the grain elevator, at that time the first phase of a two-phased project.

On April 13, 2012, DEP published a notice that the grain elevator permit had been issued on March 29, 2013.

Then, on May 4, 2013, DEP noticed that the grain elevator permit had been rescinded on April 17, 2013.

Thus anyone viewing the official legal record for this project would not be aware that Perdue had reapplied for a grain elevator plan approval. We believe that to satisfy the requirements of DEP's regulations and to remove any public confusion, notice of the new application for the grain elevator must appear in the PA Bulletin.

Thank you for your time and consideration in this matter.

Respectfully,

Corina Mann

Corina Mann
Township Manager

Saul Ewing LLP

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June 28, 2013

Ms. Lynn Langer
Regional Director
DEP South-central Regional Office
909 Elmerton Ave.
Harrisburg, PA 17110

RE: Perdue Air Plan Approval application 36-05158A (Revised in June 2013)
Conoy Township, Lancaster County

Dear Ms. Langer:

This Firm represents A&R Nissley, Inc. As you may know, Nissley and many others in Lancaster and York Counties are involved in commenting on Air Plan Approval applications and storage tank applications filed by Perdue Grain and Oilseed, LLC, in Conoy Township, Lancaster County. Currently, those applications are being reviewed by the Department and, to our knowledge, have not been approved. Indeed, the public comment period for those applications is pending. What is significant is that the Department has not made a final determination on the applications.

I am writing to express concern that the Department's spokesperson, Lisa Kasianowitz, Community Relations Coordinator, appears to have become a cheerleader for Perdue and its pending permit applications. Since the Department currently is reviewing the application and, supposedly, no final determination has been made, one would think that the Department would comment very little on the applications and leave the public relations and spin to Perdue's highly paid public relations consultants (they seem to have a lot of them).

Specifically, in response to questioning by a WGAL (TV-8) reporter for stories that ran on June 20, 2013, about the amount of hexane that would be emitted by the proposed Perdue factory, Ms. Kasianowitz said in response to whether the factory would emit 208 tons of hexane:

> "That is a drastic difference so we are trying to make sure that people understand that it is 104 tons of hexane that will be – that has a potential to be emitted – into the atmosphere."

In fact, Ms. Kasianowitz is wrong. Perdue's application explicitly states that its factory will be emitting 208.01 tons of VOCs as "Total Hexane" into the atmosphere.[1] Aside from being extremely inaccurate, her statement clearly is designed to minimize public concerns about Perdue's factory for a permit that has not yet been issued. No one yet knows how much hexane *the Department* will allow to be emitted as no permits have been issued. It certainly makes members of the public feel better, however, when the Department makes comforting, albeit inaccurate, statements about the emissions.

In response to another question regarding whether or not Perdue's factory would be adding pollutants into the air of Lancaster County, Ms. Kasianowitz said:

> "Therefore they're technically not emitting any more emissions into the atmosphere than is already there."

Again, Ms. Kasianowitz is wrong. Perdue *will* be emitting more emissions into the atmosphere. They admit so clearly in their plan approval application.[2] We understand that if DEP allows them to do so, they will be buying emissions credits, but the Perdue factory *will be* emitting hexane, VOCs, particulate matter, carbon dioxide, and other contaminants into the atmosphere. Furthermore, if Perdue is permitted by DEP to utilize emissions credits, that may not result in a *net* increase of pollution on a regional or statewide basis, but that will be cold comfort to the people downwind of the stacks who are forced to breath the hexane, VOCs and particulates emitted into the atmosphere by the Perdue factory.

Effectively, Ms. Kasianowitz—and by extension the Department whom she represents--is taking sides in this matter, long before the Department supposedly has made a decision in this case by issuing a permit. Of course, if the Department in fact has already made up its mind—before the Department has done its own thorough review and accepted third party comments—then the entire permit review process is a sham.

If Perdue wants to spin the amount and kind of hexane and other contaminants it will be dumping into the air or whether it will be emitting at all into the atmosphere, they can rely on their many highly paid PR consultants to try to influence public opinion. It is wrong for a DEP

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1 See *Revised Plan Approval Application-Potential Emission Calculations-Attachment G* (page unnumbered by Perdue, but table indicating *Distribution of Emissions by Emissions Point*, June 2013). Attachment 1. Some of the 208.01 tons will be n-hexane and some will be other forms of hexane, but the number of total hexane is twice as high as that stated by DEP's spokesperson. According to that table, the facility will emit 104.00 tons of n-Hexane per year.

2 See *Revised Plan Approval Application-Applicable Requirements- Attachment D- Summary Table of Total Potential Emissions* (page unnumbered by Perdue, June 2013). Attachment 2.

spokesperson (and by extension, her employer, the Department) to do so—especially before it has taken any action by issuing a plan approval.

Very truly yours,

Joel R. Burcat

Cc: Ms. Alisa Harris, Special Deputy Secretary for External Affairs
Ms. Katherine Gresh, Director, Communications Office
Ms. Judy Nissley
Ms. Joyce Nissley

Perdue Grain & Oilseed, LLC
Plan Approval Application - Potential Emission Calculations - Attachment G
Soybean Processing Facility
Conoy Township, Lancaster County

Revised June 2013

Facility-Wide Hexane Solvent Loss Calculations for Proposed Conoy Township Facility:

Total VOC solvent loss rate:	0.140 gal total VOC solvent loss/ton soybeans processed (from LAER Evaluation)
Typical volume fraction of HAP (n-hexane) in solvent:	0.50 n-hexane gal/total hexane solvent gal (based on Citgo Hexane Solvent 19041)
n-Hexane (HAP) loss rate:	0.070 gal n-hexane loss/ton soybeans processed (0.140 gal/ton x 0.50 = 0.070 gal/ton)
Typical density of hexane solvent:	5.66 lbs/gal (from Citgo Hexane Solvent 19041)
Maximum annual soybean processing rate:	525,000 tons soybeans/yr (requested throughput limitation)

Total VOC emissions:	208.01 tons/yr	(0.140 gal/ton x 525,000 tons/yr x 5.66 lbs/gal x 1 ton/2,000 lbs = 208.01 tons/yr)
n-Hexane (HAP) emissions:	104.00 tons/yr	(0.070 gal/ton x 525,000 tons/yr x 5.66 lbs/gal x 1 ton/2,000 lbs = 104.00 tons/yr)

Distribution of Emissions by Emission Point:

Emission Point	Estimated Percent of Total Emissions[1] (%)	Total Hexane VOC Emissions (tons/yr)	n-Hexane HAP Emissions (tons/yr)
S204 - Mineral Oil Scrubber Main (Final) Vent	3.48%	7.24	3.62
S205A - Meal Dryer Cyclone Stack	24.24%	50.42	25.21
S205B - Meal Cooler Cyclone Stack	12.12%	25.21	12.61
2204 - Fugitive Emissions:			
A - Crude Meal	39.25%	81.63	40.82
B - Crude Oil	12.92%	26.87	13.43
C - Equipment Component Leaks	7.95%	16.53	8.27
D - Wastewater	0.05%	0.10	0.052
Total:	100%	208.01	104.00

[1] As per U.S. EPA's AP-42 Section 9.11.1 and 40 CFR Part 63 Subpart GGGG, VOC/hexane emissions from soybean solvent extraction facilities are represented on a facility-wide basis, expressed as a total solvent loss ratio (SLR), gallons of solvent lost per ton of soybeans processed. Perdue has proposed a facility-wide SLR emission limit of 0.140 gal/ton that corresponds to annual total VOC emissions of 208.01 tons/yr and n-hexane emissions of 104.00 tons/yr. In order to attribute the VOC/hexane emissions to individual emission sources, the total estimated facility emissions were multiplied by a percentage that was developed based on the supporting information presented below.

Supporting Information:

Distribution of VOC Emissions to Known Emission Sources Based on Technical Support Documents Used in the Development of the Vegetable Oil NESHAP Model MACT Plant VOC Emissions by Emission Source	Model MACT Plant VOC Emissions[1] (tons/yr)	Adjusted Model MACT Plant VOC Emissions[2] (tons/yr)	Adjusted Model MACT Plant Percent of Total Emissions (%)
Main Vent	12	14	3.48%
Dryer Vent	86	98	24.24%
Cooler Vent	43	49	12.12%
Crude Meal	158	158	39.25%
Crude Oil	52	52	12.92%
Equipment Leaks	32	32	7.95%
Storage Tanks	3.9	---	---
Wastewater	0.2	0.2	0.05%
Startup/Shutdown	19	---	---
Total:	407	403	100%

[1] Vegetable Oil NESHAP Project File - Final Process and Emission Characteristics of Vegetable Oil Production Model Plants Memorandum, December 20, 2000, A-97-59 IV-B-6 (EPA Air Docket). This memorandum is based on more up-to-date industry characterizations from data gathering under the NESHAP development than U.S. EPA's AP-42 document for this industry.

[2] Model MACT Plant VOC Emissions were adjusted to reflect the design of the proposed Perdue facility:

Storage tanks emissions will be controlled by the mineral oil scrubber system and discharged via the main vent. A conservative 90% control was applied to the storage tanks emissions, with the uncontrolled 10% being added to the main vent emissions:

3.9 tons/yr x (1-0.90) = 0.4 tons/yr. 12 tons/yr + 0.4 tons/yr = 12.4 tons/yr.

During facility startup/shutdown events, emissions will occur through the main vent, dryer vent, and cooler vent. The startup/shutdown emissions were re-distributed proportionally among the three (3) emission points based on the distributed emissions during normal operations:

Main Vent: 19 tons/yr x (12 tons/yr / 141 tons/yr) = 1.6 tons/yr. 12.4 tons/yr + 1.6 tons/yr = 14 tons/yr

Dryer Vent: 19 tons/yr x (86 tons/yr / 141 tons/yr) = 12 tons/yr. 86 tons/yr + 12 tons/yr = 98 tons/yr

Cooler Vent: 19 tons/yr x (43 tons/yr / 141 tons/yr) = 6 tons/yr. 43 tons/yr + 6 tons/yr = 49 tons/yr

Perdue Grain & Oilseed, LLC
Plan Approval Application – Potential Emission Calculations – Attachment G
Soybean Processing Facility
Conoy Township, Lancaster County

Revised June 2013

Perdue Grain & Oilseed, LLC – Soybean Processing Facility – Summary Table of Total Project Potential Emissions

Source	PM (tons/yr)	PM-10 (tons/yr)	PM-2.5 (tons/yr)	SOx (tons/yr)	CO (tons/yr)	NOx (tons/yr)	VOC (tons/yr)	n-Hexane (tons/yr)	Formaldehyde (tons/yr)	Total HAPs (tons/yr)	CO2 (tons/yr)	N2O (tons/yr)	CH4 (tons/yr)	CO2-e (tons/yr)
101 – Grain Receiving/Processing														
– Stack Emissions	0.0291	0.0129	0.0022											
– Fugitive Emissions	1.1025	0.2457	0.0410											
102 – Wet Grain Storage Bins (4 bin tanks)	0.0788	0.0198	0.0035											
103 – Grain Dryer 1	19.06	4.76	0.81											
104 – Grain Dryer 2	19.06	4.76	0.81											
105 – Grain Storage Bins (4 bin tanks)	7.88	1.98	0.35											
106 – Grain Loadout	3.10	1.04	0.18											
201 – Soybean Preparation Process	1.14	0.29	0.05											
202 – Bean Conditioning	0.0247	0.00617	0.00105											
203 – Flaking Rolls	9.13	2.28	0.39											
204 – Extraction Process														
– Final Vent Emissions							7.24	3.62		3.62				
– Fugitive Emissions – Crude Meal							81.63	40.82		40.82				
– Fugitive Emissions – Crude Oil							26.87	13.43		13.43				
– Fugitive Emissions – Equipment Component Leaks							16.53	8.27		8.27				
– Fugitive Emissions – Wastewater							0.10	0.05		0.05				
205A – Meal Dryer	35.44	8.86	1.51				50.42	25.21		25.21				
205B – Meal Cooler	37.41	9.35	1.59				25.21	12.61		12.61				
206 – Meal Screening and Grinding	0.6694	0.1673	0.0284											
207 – Mill Feed (Hull) Grinding	0.0315	0.0079	0.0013											
208 – Meal/Mill Feed Storage Bins (4 bin tanks)	0.0532	0.0134	0.0023											
209 – Meal/Mill Feed Loadout Tank	0.0532	0.0134	0.0023											
210 – Meal Loadout Area	0.0574	0.0144	0.0024											
211 – Soybean Day Tanks (2 tanks)	0.0656	0.0165	0.0029											
212 – Hexane Storage Tanks (2 tanks)*							0.0091	0.0045		0.0045				
301 – Soybean Processing Facility Roadways	10.04	2.01	0.49											
Temporary Portable Emergency Boiler(s)	0.34	0.23	0.16	0.022	0.51	2.04	0.0204		0.0062	0.0073	2,274.60	0.027	0.0053	2,282.93
TOTAL PROJECT FACILITY EMISSIONS:	144.74	36.10	6.42	0.022	0.51	2.04	208.03	104.00	0.0062	104.01	2,274.60	0.027	0.0053	2,282.93

* Emissions from the Hexane Storage Tanks are accounted for in the Extraction Process final vent emissions, since hexane storage tank vents will be routed to the distillation/condensing/mineral oil scrubber system

Saul Ewing LLP

Andrew T. Bockis
Phone: (717) 257-7520
Fax: (717) 257-7592
abockis@saul.com
www.saul.com

July 19, 2013

RECEIVED
JUL 22 2013
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

VIA E-MAIL AND FIRST CLASS MAIL
wiweaver@pa.gov

Mr. William Weaver
Department of Environmental Protection
Regional Air Quality Manager
909 Elmerton Avenue
Harrisburg, PA 17110

Re: Perdue Grain & Oil Seed, LLC
Plan Approval Application No. 36-05158A
Conoy Township, Lancaster County

Dear Bill,

I am writing in response to the Department's notice of receipt of Perdue Grain & Oil Seed, LLC's application for a Plan Approval that was published in the *Pennsylvania Bulletin* on July 13, 2013. 43 Pa. Bull. 3969.

I would like to receive a copy of any proposed Plan Approval.

Very truly yours,

Andrew T. Bockis

Site, a closed residual waste landfill located at 3700 South 26th Street in the City of Philadelphia. The date of this action commences the ten year bond liability period. The permit was revoked by the Southeast Regional Office on May 16, 2013.

AIR QUALITY

PLAN APPROVAL AND OPERATING PERMIT APPLICATIONS NEW SOURCES AND MODIFICATIONS

The Department has developed an "integrated" plan approval, State Operating Permit and Title V Operating Permit program. This integrated approach is designed to make the permitting process more efficient for the Department, the regulated community and the public. This approach allows the owner or operator of a facility to complete and submit permitting documents relevant to its application one time, affords an opportunity for public input and provides for sequential issuance of the necessary permits.

The Department received applications for Plan Approvals or Operating Permits from the following facilities.

Copies of these applications, subsequently prepared draft permits, review summaries and other support materials are available for review in the regional office listed before the applications. Persons interested in reviewing the application files should contact the appropriate regional office to schedule appointments.

Persons wishing to receive a copy of a proposed Plan Approval or Operating Permit shall indicate interests to the Department regional office within 30 days of the date of this notice and shall file protests or comments on a proposed Plan Approval or Operating Permit within 30 days of the Department providing a copy of the proposed documents to persons or within 30 days of its publication in the *Pennsylvania Bulletin*, whichever comes first. Interested persons may also request that hearings be held concerning a proposed Plan Approval or Operating Permit. A comment or protest filed with the Department regional office shall include a concise statement of the objections to the issuance of the Plan Approval or Operating Permit and relevant facts which serve as the basis for the objections. If the Department schedules a hearing, a notice will be published in the *Pennsylvania Bulletin* at least 30 days prior the date of the hearing.

Persons with a disability who wish to comment and require an auxiliary aid, service or other accommodation to participate should contact the regional office listed before the application. TDD users may contact the Department through the Pennsylvania AT&T Relay Service at (800) 654-5984.

Final Plan Approvals and Operating Permits will contain terms and conditions to ensure that the source is constructed and operating in compliance with applicable requirements in 25 Pa. Code Chapters 121—143, the Federal Clean Air Act (42 U.S.C.A. §§ 7401—7671q) and regulations adopted under the Federal Clean Air Act.

PLAN APPROVALS

Plan Approval Applications Received under the Air Pollution Control Act (35 P. S. §§ 4001—4015) and 25 Pa. Code Chapter 127, Subchapter B that may have special public interest. These applications are in review and no decision on disposition has been reached.

Northeast Region: Air Quality Program, 2 Public Square, Wilkes-Barre, PA 18711-0790

Contact: Ray Kempa, New Source Review Chief—Telephone: 570-826-2507

39-00006A: Samuel Adams Pennsylvania Brewing Co. (7880 Penn Drive, Breinigsville, PA 18031) for installation and operation of 40 new multipurpose vessels, ammonia chiller system, 40 new finished beer storage tanks and brewery enhancements at their facility in Upper Macungie Twp., **Lehigh County**.

Southcentral Region: Air Quality Program, 909 Elmerton Avenue, Harrisburg, PA 17110

Contact: Thomas J. Hanlon, Facility Permitting Chief—Telephone: 717-705-4862 or William Weaver, Program Manager—Telephone: 717-705-4702.

36-05158A: Perdue Grain & Oil Seed, LLC (PO Box 1537, Salisbury, MD 21802-1537) on June 4, 2013, for modification of the pending plan approval application for a soybean processing facility in Conoy Township, **Lancaster County**, to include application updates, including the additional installation of a grain elevator facility, an expanded siting analysis, and a revised analysis of Lowest Achievable Emission Rate (LAER).

Intent to Issue Plan Approvals and Intent to Issue or Amend Operating Permits under the Air Pollution Control Act and 25 Pa. Code Chapter 127, Subchapter B. These actions may include the administrative amendments of an associated operating permit.

Southeast Region: Air Quality Program, 2 East Main Street, Norristown, PA 19401

Contact: Sachin Shankar, New Source Review Chief—Telephone: 484-250-5920

46-267A: Data Based Systems International, Inc.—DBSI (1000 Adams Avenue, Audubon, PA 19403) for installation and operation of two (2) diesel-fired emergency generator sets, each having an electrical production capacity of 2.0 megawatts at their facility in Lower Providence Township, **Montgomery County**. The plan approval is for a non-Title V, State-only facility. DBSI provides back-up electrical power to the medical industry during utility power outages and during electrical infrastructure maintenance and is applying to install, operate, and maintain these two engines so as to be able to maintain the necessary back-up power supply that their customers demand. Aggregate NO_x emissions shall not exceed their current permitted level of 24.56 tons in any 12 consecutive month period. The units are subject to the NSPS requirements found in 40 CFR 60, Subpart IIII. The plan approval will include monitoring, recordkeeping and reporting requirements designed to keep the facility operating within all applicable air quality requirements.

46-0283: Danco General Contracting, Inc. (485 Texas Road, Morganville, NJ 07751) for the installation of a portable crusher and screener with associated diesel-fired engines to be located at the Silvi Concrete facility in Limerick Township, **Montgomery County**. Pollutants of concern from the operation of the crusher and screener are fugitive particulate matter. Emissions will be controlled by a water spray dust suppression system. The Plan Approval will contain recordkeeping and operating restrictions designed to keep the facility operating within allowable emissions and all applicable air quality requirements.

HELLAM TOWNSHIP

44 WALNUT SPRINGS ROAD
YORK, PENNSYLVANIA 17406
(717) 434-1300 FAX: (717) 434-1301
E-mail: info@hellamtownship.com
Website: www.hellamtownship.com

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August 1, 2013

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Dear Mr. Weaver:

Thank you for including the notice for Perdue's revised plan approval in the recent *PA Bulletin.* We are now satisfied that appropriate notice has been given for all aspects of the application up to the present time. After reviewing this latest notice and discussing the revised process at length, the Hellam Township Board of Supervisors has voted to ask DEP to hold a public hearing on this revised application. Our reasons for doing so are included below.

The first and only public hearing held by DEP on this project was now over half a year ago. In those months, there have been significant developments in the application process and in the amount of public information available. As we all know, when the December 2012 hearing was held, it was for a two-phased project, the first phase being the grain elevator and the second phase being the hexane extraction plant. Hellam Twp. opposed the manner in which DEP handled the phased construction of this project and that was the focus of many of our citizens' comments at the public hearing, as well as comments provided by the Township itself. This initial concern was satisfied when Perdue requested that the issued plan approval for the grain elevator be rescinded by the Department and when DEP honored the request. Consequently, as a result of the merging of the two phases into one, the public is looking at a much different application today than it was at the time of the last public hearing. It is for all intents and purposes a new application and our Township has a whole new set of concerns.

Additionally, as Hellam Twp. commented previously, the original Phase 2 application was so devoid of details regarding LAER and alternative site analysis, that we believe the application should have been found administratively incomplete. While DEP did not take such an action, our comments apparently were taken seriously by either DEP or Perdue, who

subsequently submitted a 386 page revision to their original application. On a page number basis this represents nearly 80% of the combined volume of the first two, phased applications. Clearly, this cannot be viewed as a minor amendment to the Perdue application. The public has a right to comment on this massive amount of data which was not available at the time of the previous hearing.

And the recently submitted data are not substantial merely from a volumetric standpoint, but in substantive content as well. The original LAER submittal was nine pages in total length. The revised application has a LAER section that is seventy-four pages in length with an additional one hundred-fifty pages of exhibits, for a total of over two hundred twenty-five pages of completely new information. The alternative siting analysis represents another important issue. Here the original application contained three pages of alternative siting analysis; the revision, nineteen pages.

DEP recognized that the public had a right to comment on the original two-phased application in order to receive public input prior to issuing the draft permit and DEP held the public hearing for that purpose. We now ask DEP to recognize that the public has an equal right to provide comment on this vastly changed application with hundreds of pages of information that were not available at the time of the original hearing.

On behalf of the Hellam Twp. Board of Supervisors, we request that DEP hold a public hearing on the June 4, 2013, Perdue application to allow our citizens the opportunity to provide testimony on it and have their comments considered by DEP as the application is reviewed. We would be more than happy to provide a venue for such a hearing should DEP want to hold it in Hellam Twp.

Respectfully,

Corina L. Mann
Hellam Township Manager

HELLAM TOWNSHIP

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YORK, PENNSYLVANIA 17406
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August 2, 2013

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AIR QUALITY PROGRAM

Mr. William Weaver
Department of Environmental Protection
Regional Air Quality Manager
909 Elmerton Avenue
Harrisburg, PA 17110

Re: Perdue Grain & Oil Seed, LLC
Plan Approval Application no. 36-05158A
Conoy Township, Lancaster County

Dear Mr. Weaver.

I am writing in response to the Department's notice of receipt of Perdue Grain & Oil See, LLC's application for a Plan Approval that was published in the Pennsylvania Bulletin on July 13, 2013. 43 Pa. Bull. 3969.

Hellam Township would like to receive a copy of any proposed Plan Approval.

Respectfully,

Corina L. Mann

Corina L. Mann
Township Manager

402 Stackstown Road,

Marietta, PA, 17547

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AUG 0 6 2013

DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

August 3, 2013

Mr. William Weaver, Manager, Air Quality Program

Department of Environmental Protection, South Central Regional Office

909 Elmerton Avenue

Harrisburg, PA 17110

Dear Mr. Weaver:

I live about two miles from the proposed plant, in a direction generally downwind from it. I am writing to say that I am opposed to this plant because it will release many tons of hexane, which is sure to make local people sick and/or hurt them (hundreds of tons of neurotoxin is bound to affect someone's health), and to reduce property values. If soybeans can be processed without hexane, a giga-buck corporation like Perdue can afford to do it the slightly more expensive way, especially since they have been given millions of dollars of our tax money for this project. There is no need to poison people and take value away from their homes, in order to increase an already healthy corporate profit margin. We can get soybean oil without any health damage or further wealth transfer. Another objection is that LCSWMA (the Lancaster trash authority) is illegally pushing this project, which is contrary to the state law governing authorities. Authorities are not permitted to meddle in private concerns or go into business.

I understand that the Perdue application has been substantially changed, and the public – who is already funding Perdue, and who will be made sick – has a right to hear the latest and comment on it. There should be a second public hearing.

I live at 402 Stackstown Road, Marietta, PA 17547. My phone number is 717-426-1664.

Nick Bromer

Nick Bromer

August 5, 2013

Mr. William Weaver
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

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Dear Mr. Weaver,

It is my understanding that Perdue Agribusiness has submitted a revised version of their previous application for a permit to build a soybean extraction facility in Conoy Township, Lancaster County. I live in Hellam Township, less than 10 miles downwind from this proposed facility which I understand will be dumping over 200 tons of toxic hexane per year into the air which those of us living near this factory all must breathe.

Based on my direct experience in the past with air pollutants coming from other industrial plants near the proposed Perdue factory, such as the Armstrong tile plant in Marietta, I believe it is highly likely that these hexane emissions will have a negative impact on the health and quality of my life and that of my family and my neighbors.

For these reasons and the fact that the Perdue permit application has been revised substantially, I am requesting that the DEP hold another public hearing so that the public health and safety issues that are related to this permit can be discussed openly in public.

I await your decision regarding this request for a public hearing

Sincerely,

Warren H. Evans

Warren H. Evans
7160 Roundtop Lane
Wrightsville, PA 17368
(717) 252-4145

August 5, 2013

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Dear Mr. Weaver:

I live in the Hellam Hills, York County, across and downriver from the proposed Perdue soybean crush plant in Lancaster County. I am opposed to the issuance of a permit for the construction of this plant for several reasons. I am concerned not only about the large quantities of hexane this plant would emit into the air in a river valley which already has a high level of pollution, but also because temperature inversions are common here and concentrate pollution to dangerous and uncomfortable levels. I have personally experienced the air pollution which can result from these inversions where I live.

Because there have been many changes to the permit application which Perdue has submitted since the last public hearing was held, I am requesting that DEP hold another public hearing to give concerned citizens an opportunity to formally express our concerns about the new issues in Perdue's current application for a permit for the soybean plant.

Thank you very much for considering this request.

Sincerely,

June Evans

June Evans
7160 Roundtop Lane
Wrightsville, PA 17368
(717) 252-4145

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AUG 07 2013
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

5335 Lincoln Highway
Hellam, PA 17406
August 5, 2013

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Dear Mr. Weaver:

As you can see from my address, I live in the Hellam valley across the river and down wind from the proposed Perdue plant.

Therefore, it makes sense that I am concerned about the health impacts of the hexane that will be emitted from the plant. And let me say that I am opposed to the issuance of a permit to Perdue in Lancaster County.

I also believe that there have been many changes to this application and am requesting that DEP hold a public hearing, as they did for the previous application, so that we can express our concerns about the facility and understand the full intent of the application.

Thank you for your time and attention to this matter.

Sincerely,

Katina L. Snyder
717-252-4454

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Requesting a public hearing for Perdue

I live in Lancaster

I wish to object to the issuance of a permit for the construction of the Perdue soybean plant in Lancaster County.

I believe soybeans can be processed in a more organic way without using toxic chemicals and that technology should be directed towards that goal instead of making use of oil byproducts, which end up in our environment and our food chain.

Perdue has made many changes to their application since the last public hearing was held. DEP needs to hear the public's concern on these new issues.

I am requesting that DEP hold a public hearing so that we can express our concerns about this facility in a formal proceeding.

Lucretia Patton

Lucretia Patton

618 Hamilton St
Lancaster Pa 17602

(717) 295-3781

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

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AIR QUALITY PROGRAM

Requesting a public hearing for Perdue

I live in Lancaster

I wish to object to the issuance of a permit for the construction of the Perdue soybean plant in Lancaster County.

I believe soybeans can be processed in a more organic way without using toxic chemicals and that technology should be directed towards that goal instead of making use of oil byproducts, which end up in our environment and our food chain.

Perdue has made many changes to their application since the last public hearing was held. DEP needs to hear the public's concern on these new issues.

I am requesting that DEP hold a public hearing so that we can express our concerns about this facility in a formal proceeding.

Kevin Patton
Kevin Patton
618 Hamilton St
Lancaster Pa 17602

(717) 295-3781

101 Frysville Road
Hellam, PA 17406
August 6, 2013

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DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Dear Mr. Weaver:

As a resident of Hellam Township, just across the Susquehanna, I am opposed to the issuance of a permit to Perdue in Lancaster County for the construction of a soybean plant. The health impacts of the hexane that will be emitted from the plant are of great concern to me.

I also believe that DEP should hold a public hearing because of the many changes to this application. The general public is greatly interested in this application and deserves the right to address the issue.

Your time and attention to this matter is appreciated.

Sincerely,

Nel C Snyder

Nel C Snyder
717-757-3462

NIKOLAUS & HOHENADEL, LLP
ATTORNEYS AT LAW

DONALD H. NIKOLAUS
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MATTHEW J. CREME, JR.
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JEFFREY A. MILLS
MICHAEL S. GRAB
JOSEPH G. MUZIC, JR.*
LISA J. McCOY
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*Certified Civil Trial Specialist
By National Board of Trial Advocacy

August 7, 2013

RECEIVED
AUG 09 2013
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Re: Perdue Air Permit Application

Dear Mr. Weaver:

I am the Solicitor of Conoy Township and I have been instructed by the Conoy Township Supervisors to write to you in reference to the Hellam Township request that a second public hearing be held on the Perdue Air Permit Application. The Conoy Township Supervisors do not share the opinion of the Hellam Township Supervisors that a second public hearing is required. Conoy Township urges the Department to proceed with the application without the delay of second public hearing.

Nevertheless, should the Department determine that a second public hearing is desirable, the Conoy Township Supervisors will host that hearing in Conoy Township. The first public hearing was held in Hellam Township and scheduled for an evening advertised at the beginning of the year as the regular monthly meetings of the Conoy Township Supervisors. Both the location and the timing prevented the Conoy Township Supervisors from attending and inhibited attendance by Conoy Township residents. For that reason the Conoy Township Supervisors have asked me to extend their hospitality to host any future hearing in Conoy Township. We ask that you coordinate with us on an appropriate date, so that the facilities are available and that it does not conflict with other public meetings or hearings.

Thank you for your kind attention to this matter.

Very truly yours,

Matthew J. Creme, Jr.

MJC, Jr./ncg
Cc: Conoy Township
Vince Brisini, Deputy Secretary

RECEIVED
AUG 12 2013
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

August 7, 2013

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Dear Mr. Weaver:

I live in Hellam Township, which as you know is across the Susquehanna, and in direct setting for the air currents to dispel the hexane that will be emitted from the construction of a soybean plant in Lancaster County by Perdue. Therefore, I would like to express my opposition to the issuance of a permit to Perdue to build the plant.

Additionally, I think it would behoove DEP to hold a public hearing so that the community can provide input regarding the many changes in this recent application. Not everyone has the time to write letters, but as has been seen, will take the time to attend a public hearing. I think it would be invaluable to your objective review of the application.

Thank you,

Garry Lehman
4923 Pleasant Valley Road
Hellam, PA 17406
717-586-6032 (cell)

August 8, 2013

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

RECEIVED
AUG 12 2013
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Dear Mr. Weaver,

I am a resident of Hellam Township across the Susquehanna River from the proposed Perdue Soybean Processing Plant.

I am opposed to the issuance of a permit for construction of this facility. York Canty already has some of the worst quality of air in the United States. How can you allow the construction of a plant that will only add more VOCs and hexane to the air we already have trouble breathing?

You should also take into account that the Susquehanna River and Chesapeake Bay are already distressed. The emission from this plant will be washed into the river and to the bay as they settle on the ground, causing more stress on an already distressed Eco System.

The new application submitted by Perdue has many changes, so I would like to request DEP hold a public hearing, so concerned citizens can address their questions.

Sincerely,
Douglas E. Sluet

Douglas E. Sluet
Hellam Township Planning Commission
487 Kreutz Creek Road
York, PA 17406
(717) 755-7580

RECEIVED
AUG 12 2013
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

August 8, 2013

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Dear Mr. Weaver,

I am a resident of Hellam Township across the Susquehanna River from the proposed Perdue Soybean Processing Plant.

I would like to request a public hearing to address new concerns with the many changes in the Perdue application.

Why would the DEP even consider the approval of permits, when the plant would emit more VOCs and hexane in the regions already poor air quality?

Sincerely,
Mary Beth Shaat
Mary Beth Shaat
487 Kreutz Creek Road
York, PA 17406
(717) 755-7580

RECEIVED
AUG 12 2013
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

183 Accomac Rd
York, PA 17406
717.252.3518
August 8, 2013

Dear Mr. Weaver,

We live in Hellam Township, York County, PA and are opposed to the issuance of a new permit for the construction of a soybean plant by Perdue.

York County has terrible air pollution already and adding more pollutants, such as hexane, would further degrade our air quality. Enough already!

We can't believe that this issue has not been put to rest. Another public hearing should be held since there have been changes made in this new application. You owe it to the public, that has to pay the consequences for your actions, to at least hear our concerns about the new proposal.

We are requesting that you hold a public hearing so that we can voice these concerns in public.

Thank you for your consideration,

Phyllis Koster and Robert Oughton

RECEIVED
AUG 12 2013
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

August 8, 2013

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Dear Mr. Weaver:

I live in the Hellam Hills just across the Susquehanna in line with the wind currents that travel along the ridgeline. I would like to state that I am opposed to the issuance of a permit to Perdue in Lancaster County for the construction of a soybean plant. Of great concern to me are the health impacts of the hexane that will be emitted from the plant.

Because of the many changes in this recent application, I also believe hat DEP has the responsibility to our community to hold a public hearing. The general public is greatly interested in this application and should be allowed to express their concerns in a formal proceeding.

Thank You.

Sincerely,

Ealora Holland

Ealora Holland
4185 Druck Valley Road
Hellam, PA 17406
717-755-3777

August Mack
ENVIRONMENTAL

941 Wheatland Avenue, Suite 202
Lancaster, PA 17603
ph: 717.399.9587 | f: 717.399.5493
www.augustmack.com

RECEIVED
AUG 12 2013
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

VIA CERTIFIED MAIL - RETURN RECEIPT REQUESTED

August 9, 2013

Mr. William Weaver
Pennsylvania Department of Environmental Protection
Regional Air Quality Manager
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, Pennsylvania 17110-8200

Re: Plan Approval Application No. 36-05158A
Perdue Grain & Oilseed LLC
1897 River Road
Marietta, Pennsylvania
Conoy Township, Lancaster County

Dear Mr. Weaver:

I am writing in response to the Pennsylvania Department of Environmental Protection's notice of receipt of Perdue Grain & Oil Seed, LLC's application for a Plan Approval that was published in the *Pennsylvania Bulletin* on July 13, 2013. 43 Pa. Bull. 3969.

I would like to receive a copy of any proposed Plan Approval.

If you have any questions regarding this request, we can be reached at (717) 399-9587.

Sincerely,

Bridget E Shadler

Bridget Shadler
Project Manager

Susan M Burkett

Susan M. Burkett, ASP
Principal Engineer, eCAP® Services

402 Stackstown Road
Marietta, PA 17547

RECEIVED
AUG 13 2013
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

August 9, 2013

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Dear Mr. Weaver;

I am writing to request a public hearing for the Perdue Soybean Plant's DEP application. I live very close to the plant and I am concerned about the hexane and additional VOCs that will be added to our already compromised air quality.

I am also concerned about the processing of Perdue's applications. As I understand the situation, Perdue filed two separate DEP applications, of which one received a permit; then Perdue asked DEP to take back that permit; and now there is a new application. Since Perdue has changed their application since the last public hearing, I think it is important another hearing is held.

Thank you for your time and consideration.

Sincerely,

Carol Bromer

Carol Bromer

RECEIVED
AUG 15 2013
DEP SOUTH CENTRAL REGION
AIR QUALITY PROGRAM

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

August 4, 2013

Dear Mr. Weaver,

I am a resident of Hellam Township. I live across the river and downstream from the location of the proposed Perdue facility in Conoy Township.

I object strenuously to the issuance of a permit to allow Perdue to build this plant in Lancaster County.

The air in our county already gets a failing grade for ozone and particle pollution in a 24-hour period. Adding hexane to what already exists assures that our air quality will only get worse. It is important to consider the synergistic effects of all pollutants on health in the region. It is wrong to look only at the numbers without regard to the current conditions including the air current inversions typical of this area that push upper atmospheric air down to breathing level. Perdue is attempting to build this plant without due diligence and precaution in this regard.

Perdue has made several changes to the application since I attended the last public hearing. This raises new concerns and new questions. Please hold a public hearing so that theses concerns may be stated formally.

Thank you for your consideration. I look forward to attending the next public hearing concerning the proposed Perdue plant.

Sincerely,

Debra Livingston

Debra Livingston
6104 Lincoln Highway
Wrightsville, PA 17368
(717) 252-3618

August 14, 2013

RECEIVED
AUG 16 2013
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Re: Perdue Air Plan Approval
Application Revised June 2013
Conoy Township, Lancaster County

Dear Mr. Weaver:

As the owner of the property adjoining the parcel on which the proposed soy bean crush is to be built, and as a nearby resident, I am writing on behalf of my family to request that a public hearing be held on the above referenced application.

The Department and U.S. EPA have documented that the air quality in this area is already significantly degraded. Perdue will be contributing to this degradation. We understand that they intend to buy emissions credits, which means that ***regionally*** the air may not be additionally degraded, ***but that does not have any impact on the local air quality, which already is degraded.*** Also, Perdue's reliance on emissions credits will not take into consideration temperature inversions, which will concentrate air pollution around the plant on numerous days. Perdue should be required to scrub all of the VOC's from their emissions. Also, my family is very concerned about additional emissions from increased truck traffic and the potential for a serious explosion of the hexane. DEP ought to require Perdue to address these significant environmental concerns.

My family will be filing technical comments, but I felt it was important to relate this request and our most pressing concerns. Thank you for considering my request.

Yours truly,

Judith W. Nissley

Judith W. Nissley
145 Vintage Drive
Bainbridge, PA 17502
717-426-3514

JWN/sms

LANCASTER COUNTY
SOLID WASTE MANAGEMENT
AUTHORITY
Unlocking the Energy of Innovation

August 19, 2013

Mr. Vince Brisini, Deputy Secretary
PADEP – Bureau of Waste, Air, Radiation, and Remediation
16th Floor, Rachel Carson State Office Building
P.O. Box 2063
Harrisburg, PA 17105-2063

RECEIVED
AUG 20 2013
DEPARTMENT OF ENV. PROTECTION
WASTE, AIR, RADIATION & REMEDIATION

Dear Mr. Brisini:

I am writing concerning the current application under review by your bureau, submitted by Perdue AgriBusiness (Perdue) to build and operate a soybean processing facility in Conoy Township, Lancaster County, Pennsylvania.

I understand that PADEP is reviewing the Perdue hexane extraction facility application under the guidelines of LAER (Lowest Achievable Emissions Rate). It is our belief that Perdue has lowered their proposed hexane release (.140/lbs/ton soybeans processed) to a rate lower than any other full-time operated hexane extraction facility in the United States. Notwithstanding this rate, I urge the PADEP to consider the fact that Perdue will have zero fossil emissions when providing heat in the processing and drying of soybeans. This is of course is due to their planned purchase of steam from our Waste-to-Energy (WTE) Facility next door. From the beginning, it was the intention of Perdue to locate their soybean processing facility adjacent to an alternative source of heat. Not only did they achieve that with the current location, but the steam they will purchase from LCSWMA is from the Commonwealth's Alternative Energy Portfolio Standard (AEPS) list of renewable energy sources: waste-to-energy. I urge PADEP to consider the significant CO2, CO and NOX offsets that will be achieved through use of our steam and Perdue's strategic environmental decision to co-locate next to a clean renewable energy source.

I cannot emphasize how important it is for Perdue to receive approval from your department in the very near future. The proposed facility has tremendous, broad community support in Conoy Township and throughout all of Lancaster County. The facility will create good paying jobs and help the entire agricultural industry in all of

LANCASTER COUNTY
SOLID WASTE MANAGEMENT
AUTHORITY

Unlocking the Energy of Innovation

central Pennsylvania. LCSWMA will use the additional energy revenue from Perdue to defray rising costs of operating our WTE Facility and help neutralize the downward trend in electricity sales; thus allowing us to keep tipping fees stable, which benefits all residents and businesses in Lancaster County.

When Pennsylvania is promoting PPP (public/private partnerships), there is no better example than a proposed private facility literally connected to a vital public asset for the good of the entire community.

Sincerely,

James D. Warner
CEO

Cc: The Honorable Tom Corbett
E. Christopher Abruzzo, Acting Secretary, Department of Environmental Protection

RECEIVED
AUG 19 2013
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Re: Perdue Air Plan Approval
Application Revised June 2013
Conoy Township, Lancaster County

Dear Mr. Weaver:

I am writing to register my objection to the issuance of a permit for the construction of the Perdue soybean plant in Lancaster County.

I have serious concerns about the emissions of VOCs that will contribute to even higher levels of pollution than we already have in our area. Because of these emissions, Perdue will have to buy polllution credits, but doing so does nothing to mitigate the actual effects of these emissions locally.

I am concerned about the health impacts of hexane as it mixes with the other VOCs that are already emitted from other local sources. These impacts are not limited just to Conoy Township, but to other areas in Lancaster County, including Millersville, where I live.

Perdue has substantially changed its application since the last public meeting. I therefore request a meeting at which the public can respond to the new application and at which new concerns can be addressed.

Pat Lemay
78 Sun Lane
Millersville, PA 17551
717-872-4230

Audi BMW MINI Saab Volvo Volkswagen
Swedish Motors, Inc.
www.swedishmotors.com
7 N. Decatur Street
Marietta, PA 17547
tel: 717.426.2202
fax: 717.426.2217
Your Dealership Alternative Since 1981

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Dear Mr. Weaver,

I live in Marietta, I have rental properties in Marietta and along RT.441 in East Donegal Township and I own and operate a business in Marietta that employ 13 people most of which live in Marietta, Maytown or East Donegal Township.

I am concerned about the possibility that your department will issue a permit to Purdue to build their soybean plant without at least having another public meeting for citizens that may be affected by this facility to voice their opinion.

I attended the meeting in Hellam because I am concerned about the toxic Hexane emissions in excess of those allowed and the ever changing information that Purdue is providing to you and our region. I am not opposed to having their facility built and operated in Conoy Township but I do not trust the information Purdue is providing and I do not think they should be allowed to emit any pollutants.

I am even more outraged that DEP would allow Purdue to buy credits and be allowed to exceed your emission regulations. I am concerned about the potential health impacts of the released hexane and the increased truck traffic on Rt.441.

I hope you consider my request to provide the opportunity for concerned people to attend a public hearing about the Purdue Soybean plant.

Regards,

Rich Kushner

573 Essex St.
Marietta, Pa 17547
717-426-2202

5874 River Dr
York, PA 17406
717/252-4227
August 19, 2013

RECEIVED
AUG 23 2013
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

Mr. William Weaver, Manager
Air Quality Program
Department of Environmental Protection
South Central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Re: Perdue processing plant

Dear Mr. Weaver:

I live in Hellam Township (Accomac) just across the Susquehanna from the proposed Perdue plant, the Armstrong plant, the Wyeth plant, and the incinerator. I am actually directly across from the "golfball" water tower, and downriver from Brunner's Island and Three Mile Island.

To make a long story short, we do not need any more pollution in the air.

Furthermore, the geology of the proposed site is honeycombed with karst and a collapse is imminent. The train tracks go right through that area and there are trains on the tracks every hour all night long. I am very concerned about the possibility of a killing accident or a collapse of the tanks at the plant

Perdue has made many changes to their application since the last public hearing was held. DEP needs to hear the public's concern on these new issues. We need a new public hearing.

DEP needs to take a more serious look at the negative impacts on our area.

Sincerely,

Annette Logan, Ed.D

August Mack
ENVIRONMENTAL

941 Wheatland Avenue, Suite 202
Lancaster, PA 17603
ph: 717.399.9587 | f: 717.399.5493
www.augustmack.com

RECEIVED
NOV 26 2013
DEP SOUTHCENTRAL REGION
AIR QUALITY PROGRAM

VIA CERTIFIED MAIL - RETURN RECEIPT REQUESTED

November 25, 2013

COPY

Mr. Thomas J. Hanlon, PE
Environmental Engineering Manager
Air Quality Program
Pennsylvania Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, Pennsylvania 17110-8200

Re: Request for Meeting with PADEP and Comments on Revisions to Plan Approval Application No. 36-05158A
Perdue Grain & Oilseed LLC
1897 River Road
Marietta, Pennsylvania
Conoy Township, Lancaster County

Dear Mr. Hanlon:

At the request of our client, A & R Nissley, Inc. (Nissley Vineyards) we have reviewed the Revisions to Plan Approval Application No. 36-05158A (hereinafter referred to as the Revised Application) submitted by Perdue Grain & Oilseed LLC (hereinafter referred to as Perdue) for a soybean processing facility to the Pennsylvania Department of Environmental Protection (PADEP) on June 4, 2013. As a result of this review, we are providing the following comments/concerns to the PADEP for their consideration.

In addition, we are aware that the Department routinely meets with parties who have substantial concerns and objections to permit applications. Nissley has presented substantial comments and we request a one-on-one meeting with the Department to discuss our comments and Nissley's concerns. This is different than a public meeting at which the Department receives commentary and does not respond at that public meeting. Our hope is to engage the Department in a dialogue about Perdue's permit application. We had previously requested a meeting with the Department and were refused. **It was directly as a result of DEP's unreasonable refusal to meet with us that we were forced to request a meeting with EPA.** Our client's preference is to meet with DEP, not other agencies. Consequently, we request a meeting with the Department to discuss our client's concerns.

Temperature Inversions

Nissley Vineyards has contracted with Professor Richard D. Clark, Ph.D., Chair, Department of Earth Sciences at Millersville University to conduct a study of temperature inversions along the Susquehanna River centered on the location of the proposed Perdue facility. A copy of this study is provided in Attachment A. The results of this study indicate that temperature inversions occurred in this location on approximately 86 percent or 313 days in 2011, with a breakdown of the duration of the inversions as follows:

- No inversions: 52 days
- Short inversions (less than 4 hours): 293 inversions
- Medium length inversions (4 to 8 hours): 130 inversions
- Long inversions (9 hours or more): 96 inversions.

Note, the number of inversions exceeds 313 as more than one inversion and/or type of inversion occurred on multiple days. From the perspective of temperature, 2011 was an "average" year, so the number of inversions is what we would expect in an "average" temperature year. More inversions would be anticipated in a warmer year. These temperature inversions prevent air pollutants from dispersing and the study indicates that "areas immediately downwind of a pollution source can be significantly affected by deleterious air quality for long durations." There are concerns with air pollution in the area of the proposed Perdue facility including:

- Nonattainment with the 2008 8-hour Ozone Standard of 0.075 parts per million (ppm)
- Nonattainment with the 2006 $PM_{2.5}$ 24-hour Standard of 35 micrograms per cubic meter of air ($\mu g/m^3$) and $PM_{2.5}$ Annual Standard of 15 $\mu g/m^3$.

Due to the unique air characteristics in this area of the Susquehanna River as well as the fact that Perdue claims that the overall project will emit 208 tons of volatile organic compounds (VOCs), PADEP should request the following from Perdue:

- Information on how the source will not prevent or adversely affect the attainment or maintenance of ambient air quality standards in accordance with Title 25 of the Pennsylvania Code §127.12(a)(6).
- A plan of action for the reduction of emissions during each forecast level specified in 25 Pa. Code §137.3(1) thereby preventing the occurrence of an emergency due to the effects of the pollutants on the health of persons in accordance with 25 Pa. Code §127.12(a)(7).
- A plan for dealing with air pollution emergencies in accordance with 25 Pa. Code §127.12(a)(9).

The permit application should be withheld until Perdue adequately satisfies this important concern.

Ambient Impact Modeling

Perdue contracted with Environ International Corporation (Environ) to conduct dispersion modeling due to the potential health risks of hexane emission concerns. The cover letter of the modeling protocol indicates that Perdue is voluntarily conducting this assessment of the potential health risks associated with hexane from the proposed facility. However, the modeling performed by Perdue did not include ambient impact modeling of all emissions sources in the area including the proposed facility or modeling of VOC emissions.

Perdue calculates the facility-wide VOC emissions to be 208 tons. Perdue indicated in the Alternative Site Analysis (ASA) (Attachment I) that "the impact of the proposed plant on ozone formation in the surrounding region of Lancaster and York Counties is expected to be insignificant". However, Perdue has not conducted any ambient impact modeling on which to base this statement. The ASA includes information that VOCs react to produce "ozone," or "smog, ...a regional air quality issue in much of the Northeastern United States, including in Southeastern Pennsylvania" as well as indicating that formation of ozone from VOCs forms over the course of "four (4) to six (6) hours or more" and that in this time period VOC emissions from the facility will have dispersed and will not cause ozone formation in Lancaster County.

As previously presented in this comment submittal, temperature inversions occur 313 of 365 days per year in the vicinity of the proposed facility in an "average" temperature year and these inversions prevent pollutants from dispersing. In addition, information maintained by PADEP (www.ahs2.dep.state.pa.us/aq-apps/aqpartners/code_red.asp) identifies that Ozone Action Days have been forecast in the southeast region of Pennsylvania since 2009 with warnings being issued to limit or curtail outdoor activity due to poor air quality. In an area where temperature inversions are known to occur, where ground level ozone results in Ozone Action Days being declared and the population being warned to limit or curtail outdoor activity, ambient impact modeling is necessary to ensure that new sources of 208 tons of VOC emissions will not further degrade the air quality in the vicinity of the facility.

As the application does not include ambient impact modeling, the application should be denied.

Air Dispersion Modeling and Health Risk Assessment

Perdue contracted with Environ to conduct dispersion modeling due to the potential health risks of hexane emission concerns. The following concerns were noted following a review of the report of these modeling results dated June 2013:

1. The maximum hourly rate used in the model was not specified in the report nor was it included in the data files obtained from PADEP of data used to perform the modeling. Therefore it is unclear if the modeling performed for acute

exposure was based on the maximum hourly rate of hexane emissions from the Perdue facility.

2. On page 28, Table 2 Structure Dimensions contains inaccurate building heights for the Extraction Building (18.59 meters) and Storage Tanks (18.31 meters). On the schematic drawing of the building profile that Perdue presented to the Conoy Township Zoning Hearing Board in March 2012 as Exhibit #2, the following elevations are listed:
    i. D - Grain Tank - 101 ft (equates to 30.78 meters)
    ii. F - Extraction Building - 90 ft (equates to 27.43 meters).

    As incorrect building heights were utilized in performing the modeling, the modeling should be re-run with the correct building heights.

As currently conducted, Perdue's modeling inaccurately models the dispersion of n-hexane emissions and it should be rejected.

Lowest Achievable Emission Rate (LAER) (Attachment H)

The LAER demonstration is provided in Attachment H. The LAER demonstration does not include any add-on control technology. All add-on control technologies identified were determined as technically infeasible with the exception of the use of a mineral oil scrubber on the main vent. However, not all of the reasons given that specific technology is technically infeasible are valid. Some of these reasons would be operational considerations or could be eliminated through the use of multiple technologies. For instance the use of mineral oil scrubber for the meal dryer vent and meal cooler vent is indicated as technically infeasible due to excess PM and low VOC concentrations. A regenerative thermal oxidizer (RTO) was rejected as technically infeasible but was identified as a potential control option in the Vegetable Oil NESHAP. These technologies should be further evaluated with the use of both PM control and condensing of VOCs. In addition, the use of a RTO is deemed not economically feasible. However, the cost of a specific technology is not a consideration under LAER. The LAER should be revised to evaluate all technologies that could be utilized and appropriate add-on VOC control technology specified for use at this facility.

Emergency Response/Safety

Nissley Vineyards has retained Mr. Frank Chiappetta, President and Explosives Application Engineer with Blasting Analysis International, Inc. (BAI) to evaluate the safety concerns associated with the proposed hexane ASTs. A copy of the BAI report is provided in Attachment B. The results of this study indicate an explosion of the hexane tanks would result in:

- High velocity fragments (shrapnel) impacting neighboring properties resulting in death or serious injury to anyone who was hit by it as well as serious property damage to any structures that it encountered
- Multiple fires wherever any burning shrapnel/debris landed

- The oil storage tank, which is situated only 40 ft away from the hexane storage tanks, most likely catching on fire and spewing out huge amounts of heavy smoke and toxic gases
- There is a large propane storage tank nearby on the adjacent Lancaster County Solid Waste Authority incinerator property. Depending on the mass and velocity of a projectile, it is possible to explode the propane tank on impact, causing another secondary large scale energetic explosion
- Airblast (concussion) would occur from the explosion that in itself would kill or seriously injure people and would also cause serious damage to nearby properties. The overpressure effect could result in the destruction of nearby buildings which could inflict injury or death to anyone inside or near the building(s). Because it is so close, it is expected that the incinerator complex would be seriously damaged from an explosion. In addition, BAI would expect windows in buildings as far as half a mile away to be blown out, which could also result in injury to anyone nearby.
- If there is a temperature inversion at the time of the explosion, the inversion layer will reflect the airblast energy back to ground elevation with a greater intensity .If there is an inversion at an appropriate height above the ground, with high-velocity directional winds, the inversion layer can be reflected back down to earth to break windows much farther away than half a mile with the possibility of a damage focal point 1 - 2 miles away. This is illustrated in the figure provided as Attachment C.
- If a hexane explosion occurred, the resultant fires would result in noxious fumes (as occurred at other soybean processing facilities). For example, some of the gasses often resulting from hexane explosions are oxides of nitrogen. Exposure to these gasses with concentrations of only 0.03 to 0.05% could be fatal 8 to 72 hours after exposure.

Due to safety concerns with the use of hexane at the facility, Perdue should be required to prepare an emergency response plan that will include immediate and direct notification of all neighbors--by Perdue--within a one mile radius of the proposed plant in Conoy Township, Pennsylvania. The plan should include a warning system to be implemented by Perdue to warn nearby residents immediately, rather than rely solely on the local emergency response units (most of whom are volunteers), because valuable time would be lost for nearby residents in deciding to evacuate immediately, or to seal their homes by closing all windows/doors and turning off their air conditioning units until the danger has passed. According to Perdue representatives, they plan to use the local emergency response units in dealing with such events. Perdue should take responsibility for this important aspect of emergency planning and response.

<u>Alternative Site Analysis (ASA) (Attachment I)</u>

The ASA submitted with the Revised Application has been significantly modified to and addresses some of the concerns raised in comments submitted April 2, 2013 to

PADEP on Perdue's Grain Elevator Site Analysis. However, the ASA submitted with the Revised Application still does not meet the requirements of 25 Pa. Code § 127.205(5) which states:

> *"...an analysis shall be conducted.....which demonstrates that the benefits of the proposed facility significantly outweigh the environmental and social costs imposed within this Commonwealth as a result of its location, construction or modification."*

The ASA does not provide a full comparison of the benefits as well as the environmental and social costs of the proposed facility versus the benefits as well as the environmental and social costs of the alternative sites evaluated. Due to this absence of a full comparison, the requisite information has not been provided to allow the impacted public or other decision-makers to make an informed decision.

Perdue fails to grasp the detailed requirements of an ASA. An ASA is intended to be an exhaustive and thorough analysis of alternative sites, not a summary or conclusory statement. Each alternative site ought to be thoroughly evaluated. See Pennsylvania Trout v. DEP, 863 A.2d 93 (Pa. Commw. 2004). The evaluation cannot be a summary or a conclusion, but must be an exhaustive analysis of practical on-site and off-site alternatives. See, Pennsylvania Trout v. DEP, EHB Docket No. 2002-251-R (Adjudication, April 23, 2004), 2004 WL 1045408.

No information on benefits associated with any of the alternative sites evaluated is presented. In addition, the sole environmental and economic benefit for selection of the proposed site, as well as lack of further consideration for any of the alternative sites, is the availability of steam from the neighboring Lancaster County Solid Waste Authority (LCSWA). The ASA does not provide any information on the current use of the steam from the LCSWA or how use by Perdue at the proposed location would be more socially and environmentally beneficial than the current use of that steam.

Other benefits as well as environmental and social costs that should be considered, evaluated, and compared for the proposed site as well as alternative sites include public safety, air emissions and temperature inversions, and explosion hazards addressed in these comments.

The ASA report utterly fails to document that the benefits of the proposed facility significantly outweigh the environmental and social costs versus any of the potential alternative sites within the meaning of the regulations or the EHB's standard established in Pennsylvania Trout.

The ASA does not provide an analysis of the impact of increased traffic in the vicinity of the proposed location nor in the surrounding areas from which the soybeans will be shipped to the proposed grain elevator. A traffic study was conducted by Rettew on behalf of Perdue and dated June 5, 2012, which clearly shows that there will be a

dramatic increase in vehicular traffic in the area. This is not discussed as a project impact which would be detrimental to the area. Perdue's proposed operation will introduce literally thousands of truck trips every week onto rural and local roads. Perdue's ASA summarily addresses traffic only in regard to the capacity of the LCSWMA driveway and is entirely inadequate. In addition, this traffic study was limited to traffic on Route 441 at the entrance to the proposed facility. However, "the proposed facility will receive, process, dry, store, and ship soybeans that are grown and harvested within Lancaster County and the surrounding region, consisting primarily of York, Berks, and Lebanon Counties and the states of New Jersey, New York, and Delaware."

As the proposed facility will only accept soybeans via truck, a study of the increase in truck traffic throughout the area from which soybeans will be shipped is warranted including specific modeling of the particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) (a nonattainment pollutant in Lancaster County) and nitrous oxide emissions (a pre-cursor to ground level ozone (a nonattainment pollutant in Lancaster County)) along the entire Route 441 access route from Columbia, PA to Middletown, PA. In addition, an evaluation of the impact of the increased truck traffic on roadway infrastructure, specifically aging bridges in Lancaster County, which may result in the imposition of load limits, as well as the possibility of utilizing rail for shipments of raw materials to and finished products from the facility should be incorporated in the ASA.

The ASA indicates, "given the nature of the proposed facility's operations, other environmental impacts relating to water, waste, and land are expected to be minimal." The ASA fails to provide any details on these environmental impacts for the proposed facility or alternative sites nor is any analysis included to warrant selection of the proposed facility versus alternative sites based on these impacts.

The ASA discusses economic risks that Perdue is assuming in selecting the proposed location without mentioning or evaluating economic cost of the 8.75 million dollar grant to the Commonwealth of Pennsylvania or addressing the other social costs (i.e., degradation of air quality, public safety, and traffic). The ASA appears to give sole weight to Perdue's economic benefit at the expense of any other social or environmental costs.

As Perdue has failed to provide an alternative site analysis that demonstrates that the requirements have been met and from which an informed decision can be made, the Revised Application should be denied.

<u>Best Available Technology (BAT) Analysis (Attachment J)</u>

The BAT Analysis includes best management practices (BMPs) for grain handling. Many of these BMPs are qualitative in nature. Specific quantitative requirements for BMPs should be incorporated in addition to the qualitative BMPs as follows:

General Maintenance, Upkeep, and Repair:

- All grain handling and soybean processing operations will cease immediately if equipment or air pollution control equipment malfunctions occur that will result in excess emissions and will not be resumed until a remedy is implemented.
- Clean internal and external areas, including floors, roofs and decks, daily during operations to minimize dust to the atmosphere when the facility is receiving, transferring, or loading out grain.
- Clean the yard, ditches, and curbs daily during operations to minimize accumulation of grain, chaff, and grain dust.

Grain Handling Equipment:

- Grain handling equipment shall be cleaned daily, enclosed, or controlled to minimize visible dust emissions to the atmosphere when the equipment is being operated.

In addition, as Perdue indicates in the BAT that the Airlanco baghouses for control of particulate matter (PM) emissions from sources 201, 202, 206, 207, and 210 are guaranteed not to exceed 0.01 grains per dry standard cubic feet (gr/dscf) and this emission rate should be considered BAT for these sources as opposed to the emission rate of 0.04 gr/dscf in 25 Pa. Code §123.13(c)(1)(i).

Compliance Assurance Monitoring (CAM) Plan

The CAM Plan for "Flaking Rolls" should be modified to increase the frequency of checks for the PM monitoring device on page 3 of 5 as follows:

- Record the pressure differential hourly during source operation
- Check for visible emissions from the discharge from the cyclone stack once per shift during source operation.

Geologic Considerations

Specific geologic considerations identified in comments submitted November 26, 2012 to PADEP on Perdue's Site Specific Installation Permit (SSIP) Application and Spill Prevention Response (SPR) Plan and February 14, 2013 to the Susquehanna River Basin Commission (SRBC) on Perdue's Groundwater Withdrawal and Consumptive Use Application Pending/NOI #2012-071 and 2012-072 have not been addressed.

Within the Aquifer Test Report dated April 2012, it states that the Site is underlain by carbonate geology. A carbonate geology report, which was submitted to the Lancaster County Planning Commission (LCPC), identified a bedrock outcrop and sinkholes on site. The larger of the two sinkholes was measured to be 18-feet in diameter and 4-feet deep, which is large. Additionally, the aerial photographs that were reviewed identified a fracture trace onsite and the Kochanov map identified a closed depression. These karst geologic features are of concern; however, Perdue's Aquifer Test report

only provides very general recommendations for sinkhole repair and no site specific recommendations for sinkhole repair are provided. We found that the Aquifer Test Report was superficial, generalized, not site-specific and inadequate for its purpose.

Within the SSIP Application, the Geologic Considerations state that the Site is underlain by carbonate geology; therefore, the permittee is required to include the methodology that will be used to stabilize the tank system's foundation. The carbonate geology report identified sinkholes on site which are of possible concern but only provides very general recommendations for sinkhole repair. No site specific recommendations for sinkhole repair are provided. The geotechnical report considers the karst geology in their foundation discussion but there is no discussion regarding potential problems during construction. The geotechnical report also indicates that the moisture contents of some of the soil samples were very high and could be a possible concern. Both reports should include more specific information on the karst geology at the Site including site specific recommendations for sinkhole repair, addressing problems during constructions and the high moisture content observed in some soil samples. Considering the karst topography of the project area, the proximity to the Susquehanna River and the proximity to nearby neighbors who could be impacted by sinkholes, these reports are wholly inadequate.

Considering the additional groundwater withdrawal that is proposed, the on-lot septic system, and the general construction activities that will occur including the construction of two aboveground storage tanks (ASTs) that will contain 20,000 gallons each of hexane, there is a major concern that these activities will aggravate karst conditions present onsite resulting in new sinkhole development. When fully loaded, each hexane tank will contain 116,760 pounds of hexane. Coupled with the tare weight of the tanks, that will put significant stress on the karst terrain in itself. This concern is compounded by the fact that there are known fracture traces, closed depressions, bedrock outcrops, and sinkholes located and/or identified onsite.

These known conditions, coupled with the proposed activities could result in a situation in which the ASTs' foundations are compromised resulting in a hexane release. If the foundations were compromised and a release occurred, up to 40,000-gallons of hexane (a highly flammable substance with explosive vapors) would be released into a known karst environment. This release would most likely impact the Susquehanna River (both water quality and habitats) and groundwater in the area. Given that the municipality does not provide water to this area, many private water supply wells could be affected. In order to address private water supply wells, a search of the Pennsylvania Groundwater Information System (PaGWIS) was completed. However, this database is highly inaccurate and incomplete. It is understood that municipal water is not available in the vicinity of the Site and that all surrounding properties would contain their own private water supply well. Therefore, additional data should have been collected in order to verify that no additional water supply wells could be impacted from proposed

Site activities. Additionally, given that the hexane would likely migrate through sinkholes and other underground cavities, it would be nearly impossible to contain the release once it has entered the subsurface and would make for a difficult and costly remediation.

Perdue appears to rely on sinkhole repair which is entirely an after-the-fact remedy. They have not adequately documented how they will handle mitigation and prevention of collapse sinkholes in this karst terrain. A thorough geophysical analysis ought to be conducted of the entire tract to determine the likely location of underground voids and potential collapse sinkholes. That ought to be followed up with core drilling and a down-hole geophysical analysis to determine the location of voids, conduits and potential sinkholes. Once the tract has been thoroughly analyzed and the location of underground voids, conduits, sinkholes and potential sinkholes has been documented, then those voids, conduits, sinkholes and potential sinkholes ought to be mitigated with grout. Furthermore, a grout curtain or other appropriate mitigatory measure ought to be employed to prevent the further formation of new sinkholes. Finally, a structural engineer ought to be employed by Perdue and submit a report to the Department documenting how Perdue will construct facilities, some of which contain hazardous chemicals, in this karst environment.

While a sinkhole(s) opening might have an economic impact on Perdue, if it caused an explosion or release of hexane, that would have a huge adverse impact on neighbors, including Nissley.

Conclusion

The application submitted by Perdue is deficient and should be denied until important concerns related to adversely affecting the environment, public safety, and air quality have been adequately addressed.

Moreover, even if additional information was provided by Perdue, the emission of more than 208 tons of VOCs from this location including more than 104 tons of n-hexane emissions along with the storage of 40,000 gallons of hazardous hexane at this site is an environmental hazard, a safety hazard, and a public health hazard. The only way this facility would be acceptable would be if it eliminated the use of hexane.

If you have any questions regarding this submittal, I can be reached at (717) 399-9587 ext. 27.

Sincerely,

Susan M. Burkett

Susan M. Burkett, ASP
Principal Engineer, eCAP® Services

cc: Mr. Daniel Husted, PE, Chief, New Source Review Section, PADEP
Ms. Gerallyn Duke, New Source Review/PSD, U.S. EPA Region III

ATTACHMENT A

Temperature Inversion Report
Millersville University
Dated November 12, 2012

Millersville University
SEIZE THE OPPORTUNITY

P.O. Box 1002, Millersville, PA 17551-0302
Department of Earth Sciences
http://www.millersville.edu/esci
Phone: 717-872-3289
Fax: 717-871-4725

12 NOVEMBER 2012

Joel R. Burcat, Esquire
Saul Ewing LLP
Two North Second Street
Harrisburg, PA 17101

Dear Mr. Burcat,

You have requested that we evaluate the temperature inversions in Bainbridge for 2011. The analysis of 2011 Bainbridge, PA inversions is summarized in the following report. The following deliverables are submitted in accordance and compliance with our statement of work.

A. Data Acquisition and Conditioning for Analysis

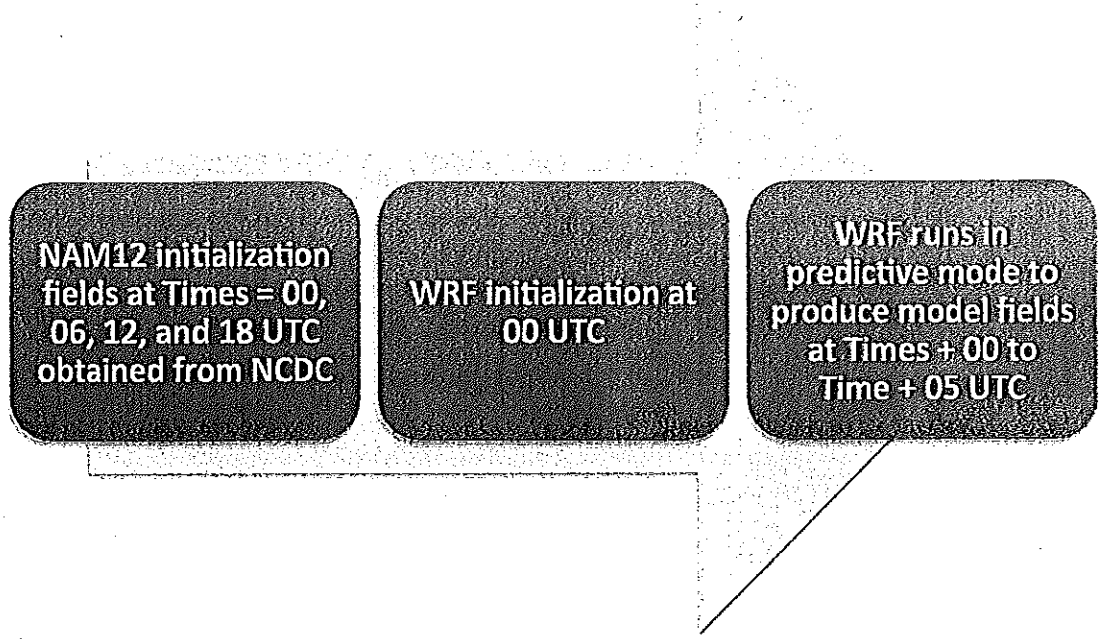
a. WRF model runs for 24 hours, 365 days in 2011 centered on Bainbridge, PA

i. North American Model – 12 km resolution (NAM12) model fields were obtained from the National Climatic Data Center (NCDC) for 00, 06, 12, and 18 UTC for each day in 2011, and used to initialize the Millersville Weather Research and Forecasting (WRF) numerical modeling system. Overall, 7.2 percent of the total annual hourly data are missing due to the unavailability of the NAM12 initialization fields from NCDC. Qualitative analysis allowed for a downward adjustment of 0.8 percent resulting in 6.4 percent of hourly data missing. Of the 8760 hours in 2011, we evaluated 8197 (93.4%) of total annual hours. The table below summarizes the missing data. (MS Excel spreadsheet, "**Missing_Bainbridge_Data_10-31-2012.xlsx**," refer to these missing data. We do not feel that these missing data significantly compromise our analysis or our results.

TABLE 1. Missing hours of model output per month

Month	Missing hours of data	Percentage of Monthly Total
Jan	0	0.0
Feb	24	3.6
Mar	224	30.1
Apr	146	20.3
May	7	0.9
Jun	102	14.2
Jul	6	0.8
Aug	54	7.3
Sep	0	0.0
Oct	0	0.0
Nov	0	0.0
Dec	0	0.0

ii. Following model initialization, the WRF model was employed in a predictive mode to create output files for each hour from Initialization time through initialization time + 5 hours. The workflow is represented by the following schematic.



iii. The result was to create 3-dimensional numerical output over the WRF domain from which the vertical profiles of temperature T, dew point temperature T_d, potential temperature θ, height z, and wind components u, v, could be extracted for Bainbridge, PA.

iv. The raw data from the WRF model were employed to construct graphic files of the vertical profiles of the meteorological variables listed in "c."

B. Working Definition of an Inversion

An inversion is a layer of atmosphere where the temperature increases with height, that is, it is "inverted" from the normal decrease with height most often seen in the troposphere. However, stable layers can be much deeper than inversion layers. A stable layer can be defined in several ways. For instance, when the temperature decreases with height by an amount that is less than the saturation adiabat, the layer is said to be stable with respect to moist adiabatic ascent, which in turn is stable with respect to dry adiabatic ascent. Another method for defining stability is to use the bulk Richardson number (BRN), where:

BRN = buoyancy acceleration/square of the wind shear

Or

$$BRN = \{ (g/\theta)\, \Delta\theta/\Delta Z \}/ (\Delta U/\Delta Z)^2$$

where g = 9.81 ms^{-2}, θ is the potential temperature in Kelvin, Z is the height of the layer in meters and U is the wind in ms^{-1}. The Δ symbol represents the difference between the top of the stable layer and the surface; example $\Delta Z = Z_{top} - Z_{bottom}$ = thickness of the layer, $\Delta\theta$ represents the difference in potential temperature between the top and bottom, and $\Delta U/\Delta Z$ is the wind shear. The layer is considered stably stratified when the BRN > $BRN_{CRITICAL}$ = 0.25. One may recognize the numerator as the square of the Brunt-Vaisala Frequency, N^2. The BRN has the

advantage of considering instability, and by extension the generation of turbulence and mixing, in terms of both hydrostatic instability and mechanical instability, the latter due to shear. *In this analysis we use the formal definition of an inversion, a layer where temperature increases with height,* but we also provide additional information on the depth of the stable layer using the BRN.

Temperature inversions modeled at Bainbridge, PA ranged in duration from one hour to 19 hours. Short duration inversions have little consequence on air quality since they are often weak and easily disrupted by multiple atmospheric conditions. Medium duration (lasting 4-8 hours) and long duration (≥ 9 hours or extending from sunset to sunrise) can have a significant impact on air quality by trapping pollutants. Under these conditions, winds are usually calm or no more than a few meters per second. Consequently, area immediately downwind of a pollution source can be significantly affected by deleterious air quality for long durations – until mixing fumigates and replenishes the air. Low-lying areas such as valleys, where under clear sky conditions can be subject to strong and low-lived inversions, are particularly susceptible.

C. **Analysis of vertical profiles to determine the existence of inversions at Bainbridge, PA**

Our analysis took at two-pronged approach to determine the existence of an inversion for a particular vertical profile: i) a qualitative visual inspection of the profile image to determine the existence of the inversion and its depth; and ii) a quantitative analysis of the surface-based inversion based upon a computational analysis of the vertical temperature profile. In addition, the BRN was employed to determine the depth of the stable layer.

i) Qualitative determine of inversion frequency and depth based on visual inspection of each vertical profile was carried out for each of the 8197 hourly profiles. Each profile was visually inspected and a determination of existence (or not) of an inversion was made, along with an estimate of the height of the inversion. To pass the "inversion test," the inversion had to originate at the surface and the temperature had to increase with altitude. Upon meeting these criteria, the inversion was counted and an estimate of the depth of the inversion was recorded.

Table 2 shows a comparison of the two methods in determining monthly inversion frequency. The two methods differ by 5.4 percent. However, March and April had a significant number of missing vertical profiles, which resulted in the lower frequencies in those months.

Table 2: Comparison of evaluation methods

COMPARISON OF QUALITATIVE (VISUAL) AND QUANTITATIVE METHODS (COMPUTER PROGRAM) OF INVERSION DETERMINATION													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Quantitative Method	241	227	137	111	223	255	294	230	232	202	176	131	2459
Qualitative Method	239	220	82*	75*	211	240	290	228	225	207	179	131	2327

*Prior to conducting the quantitative approach, the data in successive hours before and after the missing data, which often included times from 00 – 05 UTC, were evaluated and where possible, were conservatively extrapolated based on best judgment. The resulting analysis led to the addition of 55 hours of inversions in March and 36 inversion-hours in April. If we eliminate March and April from the totals, the number of inversion-hours identified by the two different methods agrees within 1.8 percent.

ii) A quantitative numerical analysis of the Bainbridge data was conducted to determine the depth of the surface-based stable layer as well as the depth of the inversion; the former using the BRN method and the latter using the formal definition of an inversion.

We evaluated each hour of the 8197 total hours for the existence of an inversion. The following is a result of that analysis. This data can be found in "**Inversion_Summary_10-31-2012.xlsx**." Using BRN to identify stable layers, of which inversions are subsets, results in layers of greater depth than the depth of the inversions. This is discussed in greater detail later.

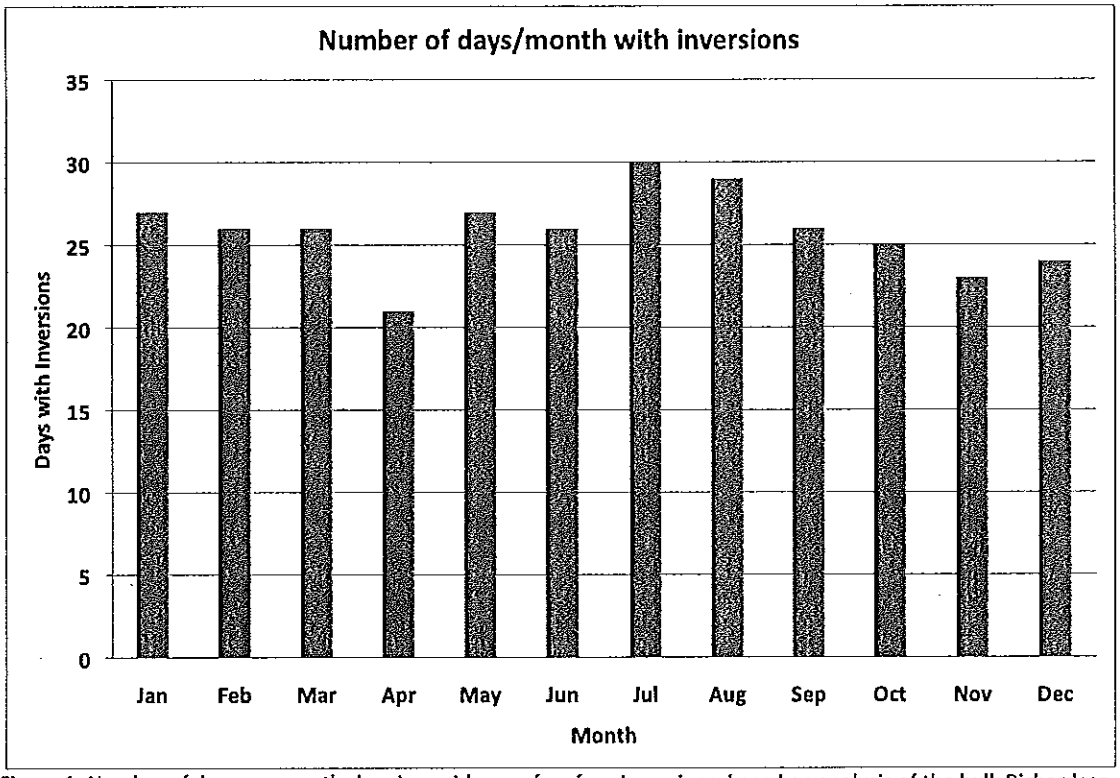


Figure 1: Number of days per month showing evidence of surface inversions; based on analysis of the bulk Richardson number.

Figure 1 shows that the number of days in each month with at least one hour of inversion is relatively uniform. However, with addition analysis, we found that the characteristic of these inversions varies significantly from month to month.

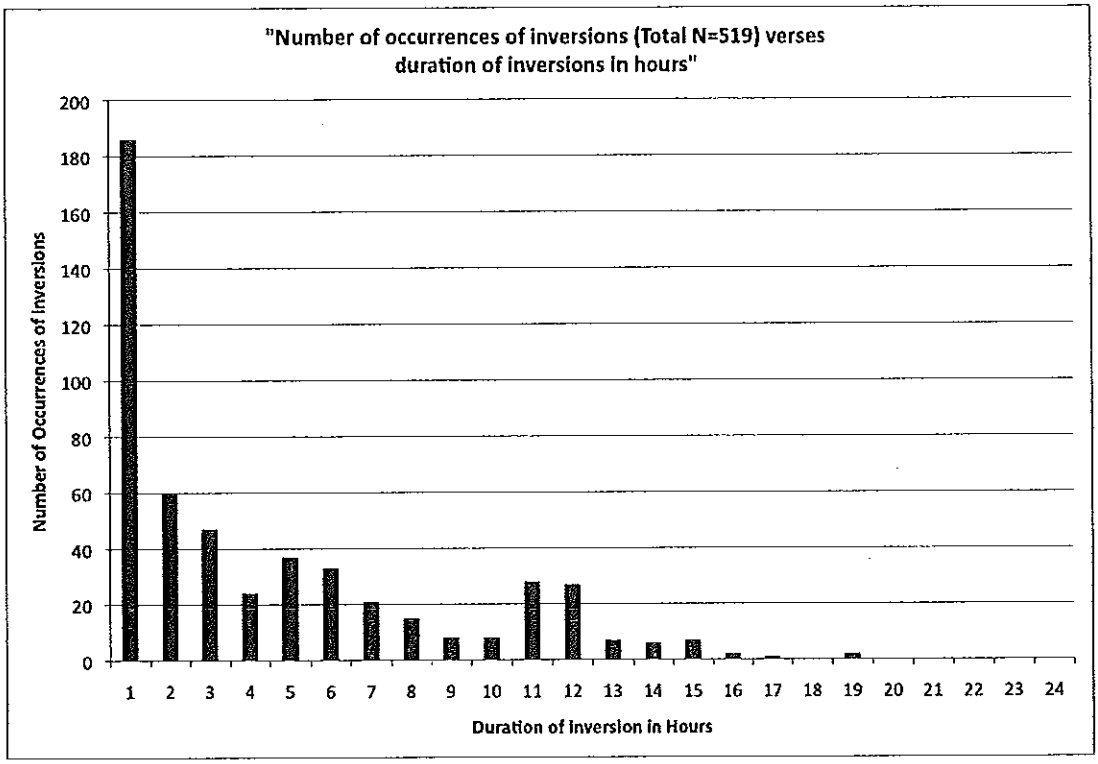


Figure 2a: The number of occurrences of inversions versus the duration of the inversion in hours. Based on a total of 519 inversions in Bainbridge, PA in 2011.

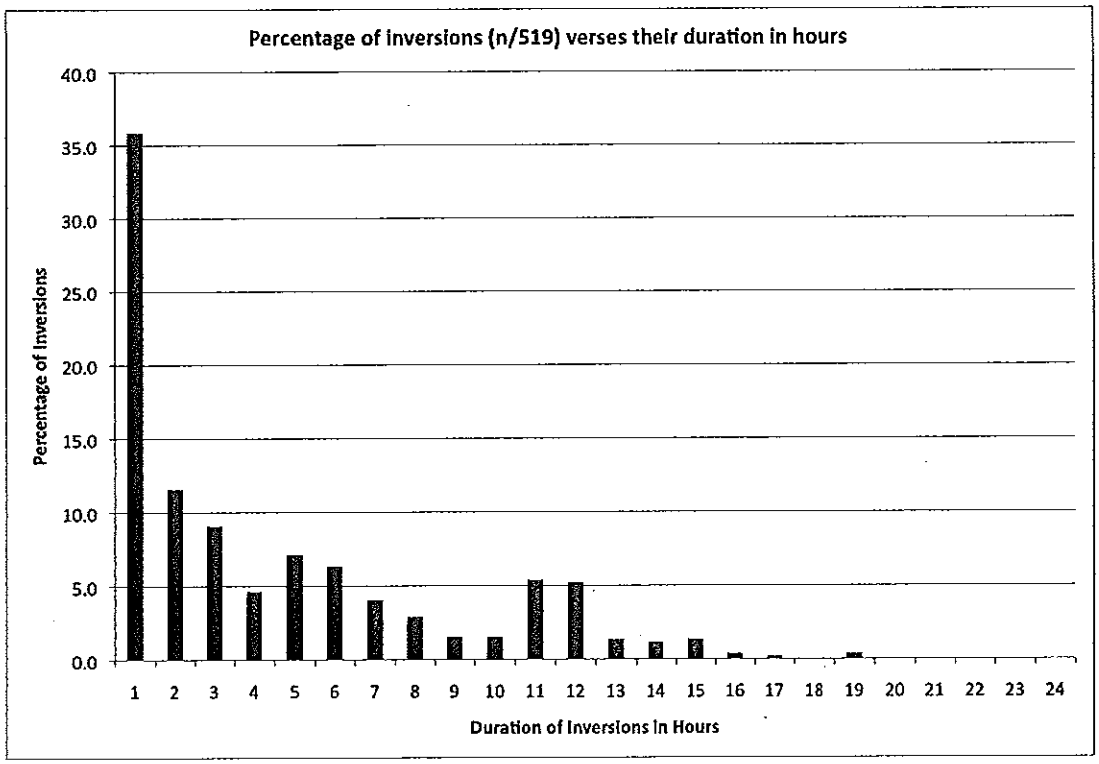


Figure 2b: Same as 2a except percentage of inversions versus their duration in hours. Based on a total of 519 inversion in Bainbridge, PA in 2011.

Figure 2a and 2b depict the number and percentage of occurrences of inversions as a function of their duration in hours. The inversions were classified according to the following categories:

- Short duration inversions lasting less than 4 hours (293 out of 519 or 56.5%)
- Medium duration inversions lasting between 4-8 hours (130 out of 519 or 25.0%)
- Long duration inversions lasting 9 hours or longer (96 out of 519 or 18.5%)

The distinction between medium duration and long duration at 8 to 9 hours is arbitrary. One could argue that an 8-hour inversion should be categorized as a long duration. The reason why the cut-off was made between 8-hour and 9-hour inversions is qualitatively justified by the distribution in Figures 2a and 2b where the modality changes. On the other hand, the distinction between short duration and medium duration between 3 and 4 hours is based more on the strength of the inversion and the characteristics of the stable layer.

In addition, the medium duration inversions were further subcategorized into those that occurred primarily in the evening hours (e.g. starting around 1900-2000 local time and referred to as medium-evening (ME)) and those that were primarily in the early morning hours after midnight local time (MM). Of these, 58/130 or 44.6% occurred were ME and 55.4% were MM.

Short duration (1-3 hours in length) and are either weak or quickly destroyed by vertical mixing or synoptic/meso-scale systems. They would contribute little to trapping pollutants and transporting them along stably stratified downwind streamlines.

The medium duration inversions have durations between 4-8 hours and can be bifurcated into those that occur primarily in the evening hours (44.6%) and those that occur in the early morning hours (55.4%). This distinction is probably related to the timely of clearing skies and radiational cooling. On a clear day, the inversion will develop rapidly around sunset. If it persists all night it will fall into the long duration category. If clouds encroach, or wind speed increases due to the approach of a synoptic or mesoscale weather system, the inversion will weaken or be destroyed. Conversely, on days with convective clouds, if often takes several hours after sunset for the clouds to dissipate, causing the inversion to form later.

Long duration inversions lasting 9 or more hours make up 18.5% of all inversions. These inversions are sustained long enough to allow appreciable downwind transport, and would exhibit stronger stability than short- or medium-duration counterparts. As such, they have the ability to trap pollutants in the near surface layer for longer periods. The medium-to-long duration inversions would typically occur on clear to partly cloudy nights with strong longwave radiative cooling and light to calm winds at the surface. These *radiation inversions* typically become established after sunset and persist until shortly after sunrise.

Figure 3 shows a summary of the medium and long duration inversions for each month in 2011. Note that no long duration inversions were recorded in the transition (and rainy) months of March and April. Inversions in general, and in particular long duration inversions, are more common in summer; peaking in July when the aloft winds are relatively light and large quasi-stationary air masses stall over the mid-Atlantic region.

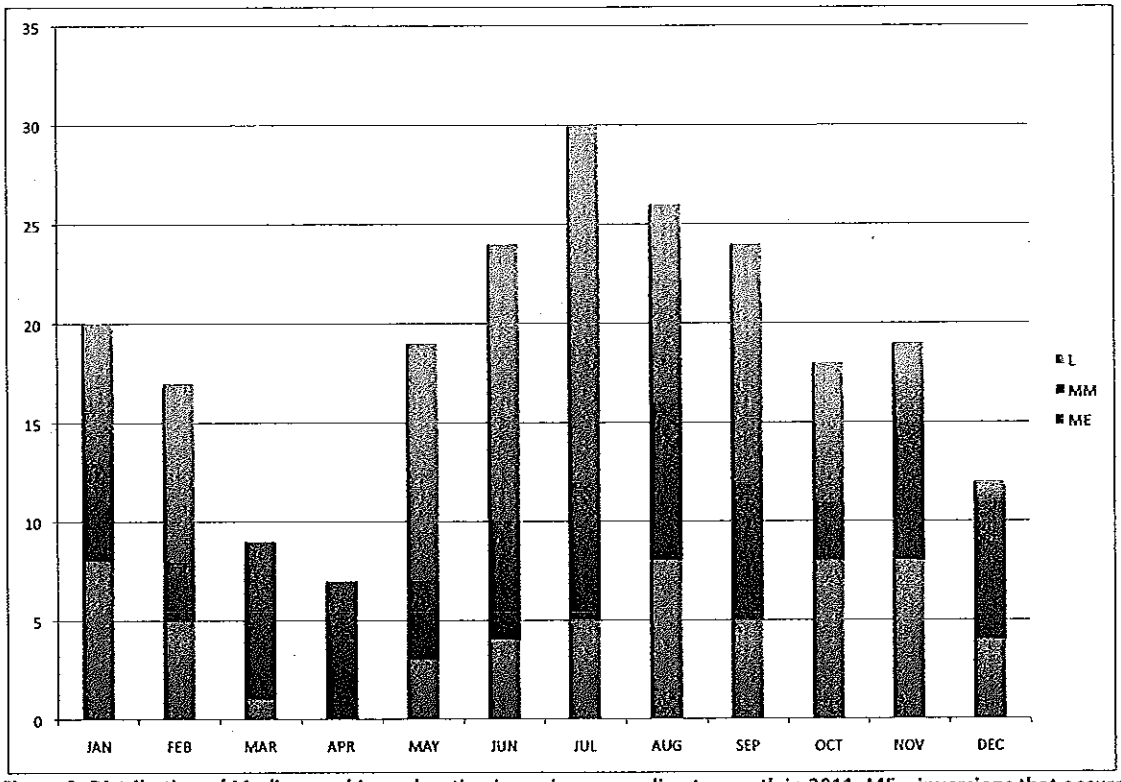


Figure 3: Distribution of Medium and Long duration inversions according to month in 2011. ME = inversions that occurred primarily in the evening; MM = early morning inversions starting after midnight; L = long duration inversions

The data were ranked according to the number of inversion-hours per month and the number of inversion-days per month. In 2011, Bainbridge had the greatest number of inversion-hours in mid-summer and mid-winter, followed by end of summer and end of winter. The least number of inversions is during the spring transition months of March and April, and in December. The spring transition in March and April is characterized by colder temperatures aloft and warmer surface temperatures leading to instability and mixing near the surface. Inversions cannot become established in a well-mixed surface layer. The consequence is the reduction in the number of surface inversions during the spring transition. Similarly, November and December are the winter transition seasons when the polar jet stream extends southward. Baroclinic waves (cold and warm fronts) migrate along the polar front and encroach on the mid-Atlantic region bringing higher surface wind speeds, and colder and progressive air masses, which tend to erode inversions or prohibit their formation. High pressure air masses in mid-summer and fall bring subsidence and clear sky conditions, which favor longwave radiative cooling and the development of extended radiation inversions. Table 3 and Table 4 show the months in 2011 ranked by the frequency of inversion-hours and inversion-days per month.

Table 3: Rank inversion-hour frequency by month

RANK ACCORDING TO INVERSION-HOURS PER MONTH		
RANK	Month	Total inv-hrs/month
1	JUL	294
2	JUN	255
3	JAN	241
4	SEP	232
5	AUG	230
6	FEB	227
7	MAY	223
8	OCT	202
9	NOV	176
10	MAR	137
11	DEC	131
12	APR	111

Table 4: Rank inversion-day frequency by month

RANK ACCORDING TO INVERSION-DAYS PER MONTH		
RANK	Month	Total inv-days/month
1	JUL	30
2	JUN	29
3	AUG	29
3	JAN	27
4	MAY	27
4	FEB	26
4	MAR	26
4	SEP	26
5	OCT	25
6	DEC	24
7	NOV	23
8	APR	21

The distribution of total inversions by month is given in Figure 4, and should be compared to Table 2, which is the same data ranked. Figure 4 illustrates that the majority of inversions-hours at Bainbridge are recorded during relatively stagnant weather conditions brought about by slowly moving, weakly progressive air masses moving across the mid-Atlantic region. This generally occurs in summer when the polar jet stream is situated over Canada, well north of the mid-Atlantic region, and the atmospheric condition often lacks strong gradients (i.e. barotropic atmosphere). Transition seasons, when the weather systems are more progressive and conditions are less favorable for the establishment of inversions, exhibit lower frequencies of inversions.

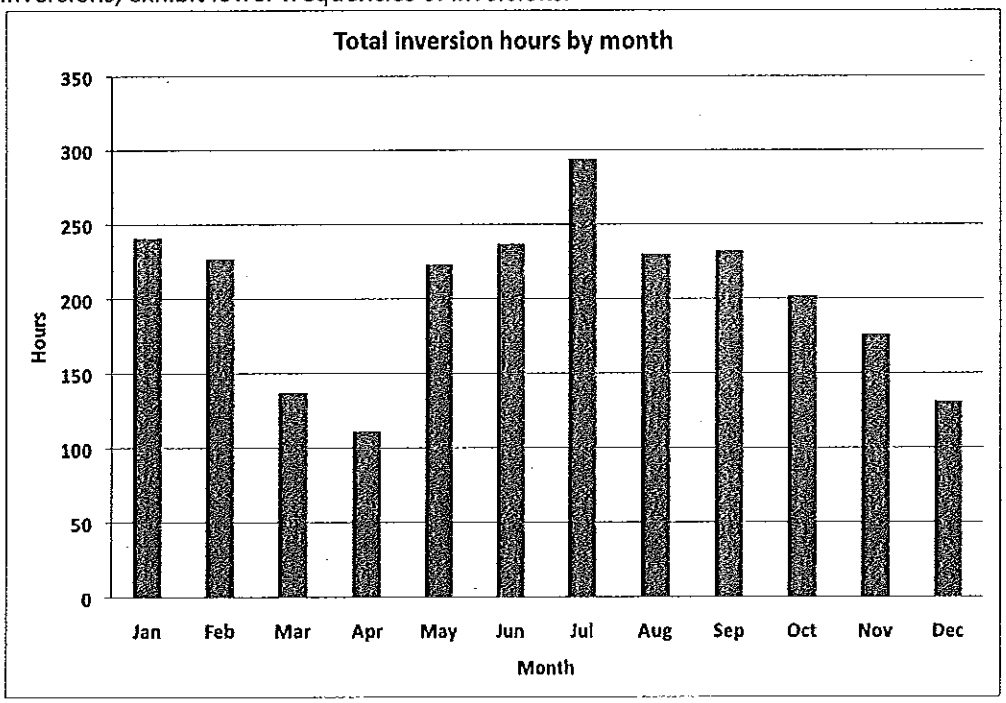


Figure 4: Total inversion-hours by month for 2011 in Bainbridge, PA

An interesting aspect of this analysis is the mean monthly depth of the surface-based stable layer as shown in Figure 5. While slow-moving high pressure air masses may bring clear to nearly clear sky conditions during summer and autumn, and in 2011 during mid-winter as well, the depth of the inversion is shallower in summer than in winter. Summertime in the mid-Atlantic region east of the Appalachian Mountains, under conditions of high pressure, may lead to a higher frequency of stable layers, but these conditions also lead to the development of the summertime nocturnal low-level jet (LLJ), which tends to occupy the layer immediately above the surface-based nocturnal inversion. In this region, the LLJ can exhibit wind speeds in excess of 18 m/s (36 kts) for sustained periods between sunset and sunrise. The consequence of the LLJ is to quell the growth of the nocturnal inversion and destroy the inversion early after sunrise. Thus, the same conditions that lead to strong radiative cooling at night and radiation inversions also leads to the development of LLJs that tend to suppress the vertical growth of the inversion and can cause mixing when Richardson numbers fall below critical due to excessive wind shear in the near surface layer. Conversely, even though the winter, spring, and autumn have fewer inversion-hours per month, the LLJs are weak or non-existent and the radiation inversions can growth to significant average depths.

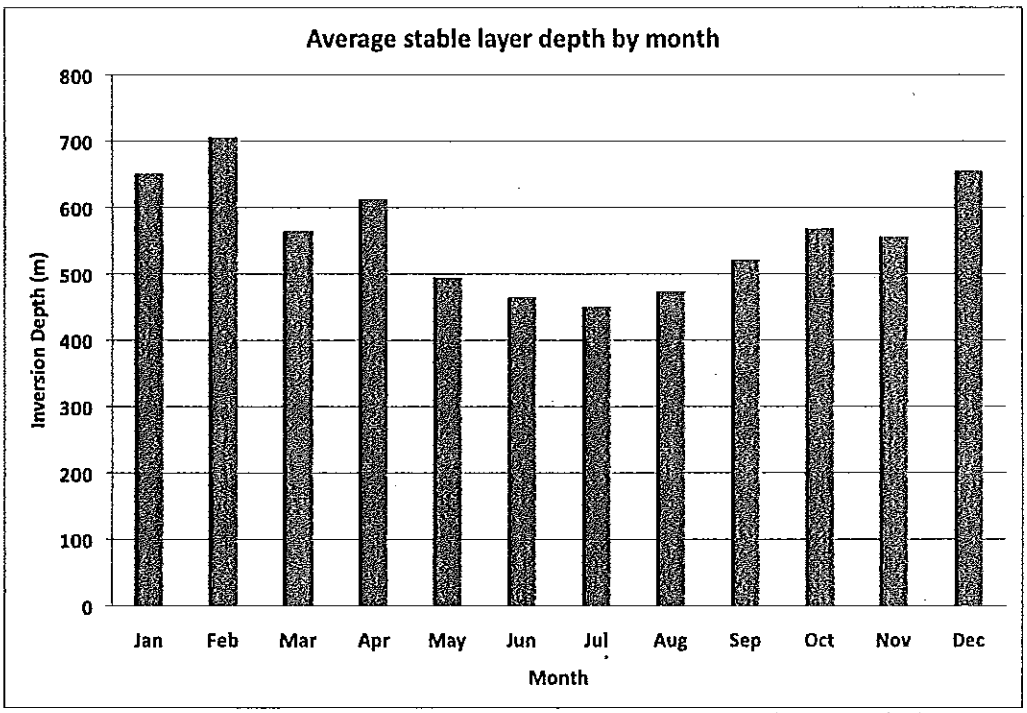


Figure 5: Average depth of the stable layer in meters by month as determined by the BRN method.

In addition to the determination of the depth of the stable layer, the depth of the inversion layer, using the strict definition of an inversion as one where the temperature increases with height, was also calculated. The criteria for this determination was similar to the BRN determination of the stable layer in that it first required the $T(Z+1) > T(Z)$. Then the temperature of each layer was subject to the test the same test. The top of the inversion was recorded as the height where T no longer increased with height. The results, as might be expected, were lower inversion heights as shown in Figure 6.

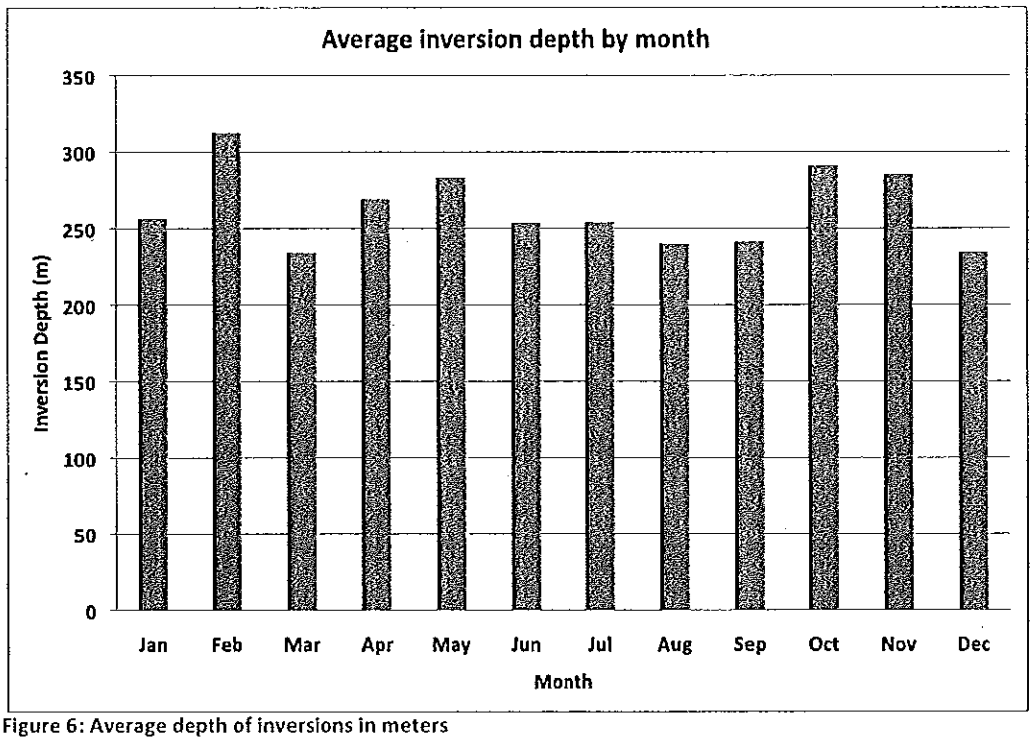


Figure 6: Average depth of inversions in meters

If Figures 3 and 6 are evaluated together, it is apparent that during the solar summer (May-September), and to a lesser degree in mid-winter (Jan-Feb), strong and long-duration inversions can develop that trap pollutants in layers generally less than 250 meters (~750 feet) above the surface.

Figure 7 illustrates the average inversion-hours per inversion day. For those days with inversions, mid-summer and mid-winter days exhibit the longest duration inversions. This can be understood by considering the meteorological conditions associated with mid-summer/winter months versus those of the transition seasons. Transition seasons are characterized by progressive systems, which on the average tend to disrupt inversions, whereas mid-summer/winter seasons are characterized by more stagnant and slowly moving air masses which tend to maintain atmospheric conditions longer. This is a caveat to this assessment. March and April are not only influence by progressive systems that shorten the inversion duration, but these months were noted for the largest amount of missing data, which would tend to diminish the average inversion hours even further. While it is true that March and April will undoubtedly have shorter-duration inversions owing to the meteorological conditions characteristic of transition seasons, they are partly affect but the bias in the larger frequency of missing data.

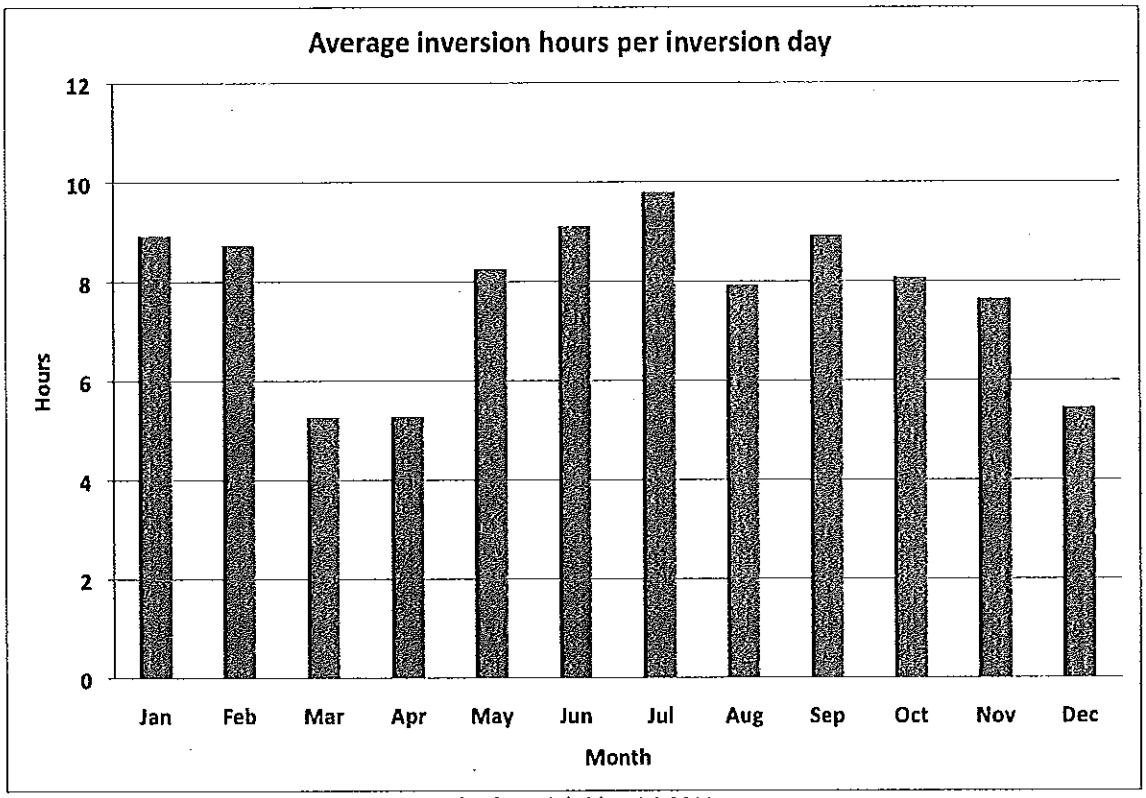


Figure 7: Average inversion-hours per inversion day for Bainbridge, PA 2011

D. **Comparative analysis of Bainbridge 2011 to the 10-year and long-term historical (98 year) climatology.**

Was 2011 a typical year for inversions in Bainbridge? The charge to this study was to qualitatively ascertain whether the conditions observed at Bainbridge in 2011 could be classified as 1) much below (MB), 2) below (B), 3) normal (N), 4) above (A), or 5) much above (MA), when compared to short and long-term climatology. Although the level of subjectively increases for an analysis of this type, it is possible to make qualitative judgments based on a comparison between Bainbridge, PA in 2011 using Millersville University 2011 as a surrogate, and 98 years of climate records archived at Millersville University. The data for this analysis can be found in **"Bainbridge_Climatological_Comparison_10-31-2012.xlsx."**

The convention used for the categorical ranking of temperature anomaly and precipitation is based on the accepted methods of the National Climatic Data Center and is given in Table 4.

Table 4: Categories of ranking of climatological data based on NCDC

Much Below (MB)	Below (B)	Normal (N)	Above (A)	Much Above (MA)
Less than -1.25 SD	Less than -0.5 SD	Between -0.5 SD and +0. 5 SD	Greater than +0.5 SD	Greater than +1.25 SD

Table 5: Comparison of 2011 Temperature Anomaly to long-term historical climate record and 10-year climate record. For the short-term (10-year) comparison, the numerical Z parameters are given as a measure of the deviation from the mean. Red font indicates those years when the 10-year does not match the 98-year long–term climate record.

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2011 Compared to 98 year historical climate record	B	N	N	A	A	A	MA	N	A	N	MA	MA
2011 Compared to 2001-2010 climate record	B -0.84	N 0.35	B -0.51	N 0.32	A 0.59	N -0.19	MA 1.30	MB -1.59	N -0.06	B -0.78	N 0.49	MA 1.30

Table 6: Comparison of 2011 Precipitation to long-term historical climate record and 10-year climate record. For the short-term (10-year) comparison, the numerical Z parameters are given as a measure of the deviation from the mean. Red font indicates those years when the 10-year does not match the 98-year long–term climate record.

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2011 Compared to 98 year historical climate record	N	N	A	MA	N	N	B	MA	MA	N	N	N
2011 Compared to 2001-2010 climate record	N 0.15	N 0.06	MA 2.02	MA 2.15	N 0.46	N -0.42	B -0.85	MA 1.45	MA 2.14	N -0.13	A 0.72	N -0.21

Attention should focus primarily on the comparison between 2011 and the 10-year climate record for both temperature anomaly and precipitation, since records indicate that there has been a trend toward slightly warmer and wetter in recent decades. When averaged over the 12 months of 2011 to obtain an annual categorical rank for the Z parameter, it suggests that for temperature, Z = 0.03, and for precipitation, Z = 0.63. Thus, comparing 2011 to the most recent decade would point to a nearly NORMAL year with respect to average temperature anomaly, and a wetter year in this geographical region (above normal ($0.5 < \mathbf{0.63} < 1.25$ SD).

A year of nearly normal temperatures qualitatively implies that 2011 would likely have a typical number of inversions compared to the years in the most recent decade on average. On the other hand, above normal precipitation in 2011 implies wetter surface cover (soil and subsoil)

on average, and the addition of soil moisture changes the near surface radiative and thermodynamic characteristics in a complicated way. Air above a wet surface will have higher relative humidity and a greater potential for fog formation. When water vapor condenses to form fog and latent heat is released to the near-surface air, the result is to slow the nocturnal decrease in temperature thereby slowing the formation of an inversion or weakening the strength of an existing inversion. Additionally, if a fog forms, fog-top net radiative cooling creates negative buoyancy forces that tend to mix the layer, further weakening the strength of an inversion to preventing it from forming altogether. Rain (snow) tends to destroy inversions. A saturated layer of air will exhibit a lapse rate that follows the saturation adiabat, which is a decrease in temperature of between 3.5-6.5 C/km in the low layers of the atmosphere. Moreover, weather systems associated with rain events are typically mid-Atlantic cyclonic low-pressure systems, which are regions of convergence, ascending motion, and adiabatic cooling, none of which is conducive to sustaining inversions or enabling their development in the first place. March and April 2011 exhibited precipitation in amounts MUCH ABOVE NORMAL, suggesting that the development of inversions during those months would diminish as a result. **Both total inversion hours (Figure 3) and average inversion hours per inversion day (Figure 6) show March and April as having fewer inversions and shorter-duration inversions, which could be a result of increased precipitation in 2011 during those months. The take-away is that years with normal to below normal precipitation could see a higher frequency of inversions due to the reduced amount of moisture/water in the atmosphere/soil.**

4. Project Summary

A. All raw data files will be stored on a Millersville server and may be transferred to another server at any time. These files include: 1) textual output from the WRF model and 2) images of vertical profiles over Bainbridge, PA for each hour of data that was available from NCDC.
B. 8179 hourly vertical profiles were evaluated for the existence of inversions. 6.4 percent of the data were available for analysis
C. The total number of inversion-hours per year = 2459/8760 = 28.07%
D. The total number of days per year with at least one hour of inversion = 313
E. The number of days in 2011 in Bainbridge having inversions with durations of less than 4 hours was 56.5%; 25.0% had durations of 4-8 hours; 18.5% had long durations of 9 hours or more.
F. Stronger inversions last longer unless synoptic or mesoscale systems displace the atmospheric condition that establishes them. Long lasting inversions, in this analysis those that are medium or long duration, have the potential to trap pollutants for that duration near the surface; calm to light winds will prevent significant transport in strong inversions causing pollutant concentrations to become elevated in the vicinity of the source, especially when the source stack is short and confined within the depth of the inversion.
G. Using the Millersville University climate archive (1914-2011), it was determined that 2011 was normal in temperature in comparison of the decade from 2001-2010 and would likely have a frequency of inversions typical of other years based on temperature alone; precipitation was above normal in 2011 compared to 2001-2010, in March and April, and could have contributed to the fewer inversions observed during these months

Sincerely,

Richard D. Clark, Ph.D.
Chair, Department of Earth Sciences

ATTACHMENT B

Safety Concerns Report
Blasting Analysis, Inc.
Dated September 7, 2012

Blasting Analysis International, Inc.

371 Daniel Street
Allentown, Pennsylvania USA 18104-8509

Explosives-Seismic-Mining
(Engineers & Specialists)

(610) 530-7415 • Fax (610) 395-5552
Email: blastinganalysis@rcn.com

September 7, 2012

The Honorable Gina Mariani
Chair
Conoy Township Board of Supervisors
211 Falmouth Road
Bainbridge, PA 17502

Re: Serious Safety Concerns Regarding Perdue's Proposed Grain and Oilseed, LLC – Soybean Processing Plant, Conoy Township

Dear Ms. Mariani,

Introduction

I have been retained to provide advice on behalf of A&R Nissley, Inc. (Nissley Vineyards) regarding the explosion hazard from the proposed Perdue Grain and Oilseed, LLC – Soybean Processing Plant, Conoy Township.

I have an extensive background in explosives and blasting. I am the President and Explosives Applications Engineer with Blasting Analysis International, Inc. (BAI). With BAI, I have worked on major projects, including the first expansion and deepening of the Panama Canal between 1994 and 2002. I am one of four authors in the textbook entitled "Explosives and Rock Blasting" and received the Distinguished Service Award from the International Society of Explosives Engineers in 1990 for my "outstanding technical contribution to the mining/explosive industry". I hold a Bachelor's and a Master's degree in mining engineering from Queen's University (Canada), with a specialty in blasting and explosives applications.

Nissley Vineyards owns property opposite the proposed plant on Pa. Route 441 (River Road). That property is only 1,030 feet from the proposed location of Perdue's hexane tanks. The Nissley property currently is used for agriculture and it has employees and tenants who work that property. Also, there is always the possibility that the property may someday be used for some development purpose.

I have some serious concerns regarding the safety of nearby homeowners, travelers, employees and businesses should an accidental explosion occur at the Perdue facilities in terms of shrapnel, fire and toxic fumes. It is our understanding that the Perdue plant will be storing hexane in two

adjacent storage tanks, each holding 20,000 gallons for a total of 40,000 gallons, and that the plant will be using 30,000 gallons of hexane at any one time in the process (we have been told by Perdue that there will be a maximum of 40,000 gallons on site at any one time). Hexane is highly explosive and even facilities using hexane that have been well-maintained have suffered from catastrophic explosions.

I met with a number of Perdue representatives on June 15, 2012 to discuss these concerns. Although the Perdue representatives have promised to get back to us, no information has been provided to date regarding their explosion hazard assessments, emergency plans or standard operating procedures to protect nearby residential homeowners, travelers (on River Road) and businesses, in the event of an accidental explosion.

Recent Soybean Manufacturing Plant Explosions Using Hexane

Unfortunately, explosions in the manufacturing of soybean oil using hexane are not uncommon.

- In 2003 a soybean manufacturing plant using hexane owned by AG Processing Inc. exploded in Sioux City, Iowa, injuring eight employees, with three of the injuries being critical. *Sources – Nuteva Newsletter. August 29, 2003, and Associated Press, August 30, 2003.*

- Hexane explosions have occurred in Italy, Mexico (200 dead) and South Africa. *Source – "Soy Protein Use in Natural Foods Bathed in Toxic Solvent Hexane", Natural News, May 20, 2009.*

- Explosions in which hexane was implicated also have occurred at the Minnesota Soybean Processors plant (May, 2009), a plant in Formosa Brazil (March, 2009), Arkansas Ricelands Food Plant (2006), Ag Processing Inc. plant (2003), Canadian CanAmera Foods plant (2002), and Indiana Central Soya plant (1994). *Source – "Organic Versus Conventional Soy", Alexis Bayer, Organic consumers Association, July 1, 2009.*

Generally speaking, the causes for explosions at soybean processing plants are from heat sources such as open flames, hexane spillages, and inadequate supervisor/employee training.

Case History of Damages, Injuries and Deaths Caused by a Massive Chemical Explosion

A very well documented hydroxylamine plant explosion, which occurred in the Lehigh Valley, PA during 1999, provides a clear example of what can be expected in the surrounding community from a massive chemical explosion. While hexane is not the same as hydroxylamine, for comparison of an explosion they are very similar.

It was believed a hydroxylamine tank holding 9,000 gallons exploded during the distilling process from a nearby hot plate or Bunsen burner. Since the density of hydroxylamine is 1.21 g/cc and the density of hexane is 0.66 g/cc, the 9,000 gallon tank of hydroxylamine would be more or less equivalent to a hexane explosion of approximately 18,000 gallons. The Purdue plant in contrast will be using up to 30,000 gallons of hexane in their process, or housing up to 40,000 gallons of hexane in their two storage tanks. Thus, a hexane explosion from the proposed Perdue plant will be much more devastating than what occurred at the hydroxylamine plant explosion.

Some important observations in the aftermath of the hydroxylamine plant explosion were:

- Facility was a two-story steel and concrete structure with a 40,000 square foot area.
- Explosion left a 4 foot crater on cement floor.
- Blew out 3 @ 25 feet concrete containment walls, which collapsed the building.
- 5 fatalities, plus 14 serious injuries.
- Explosion sent metal studs, concrete pieces and insulation several hundred yards in all directions.
- Some debris (insulation) was found up to 5 miles away.
- Explosion was heard up to 10 miles away.
- Windows were blown out in nearby office buildings.
- Force caused cracks in wall of adjacent building, which was located 100 yards away.
- Explosion broke windshields and caved roofs on at least 30 cars in the parking lot.
- Many windows in nearby homes were shattered.

Source No. 1 – "The Explosion at Concept Sciences: Hazards of Hydroxlamine". U.S. Chemical and Hazard Investigative Board, Case Study No. 1999-13-C-PA, March, 2002.

Source No. 2 - "Five Workers Killed in Pennsylvania Chemical Plant", Paul Scherrer, International Committee of the Fourth International, February 24, 1999.

Safe Distances for Chemical (Reactive) Explosions

Figure 1 illustrates a plan view of the proposed Purdue plant property perimeter, approximate location of the two 20,000 gallon storage tanks, and distances to various points of concern in the event of an accidental explosion.

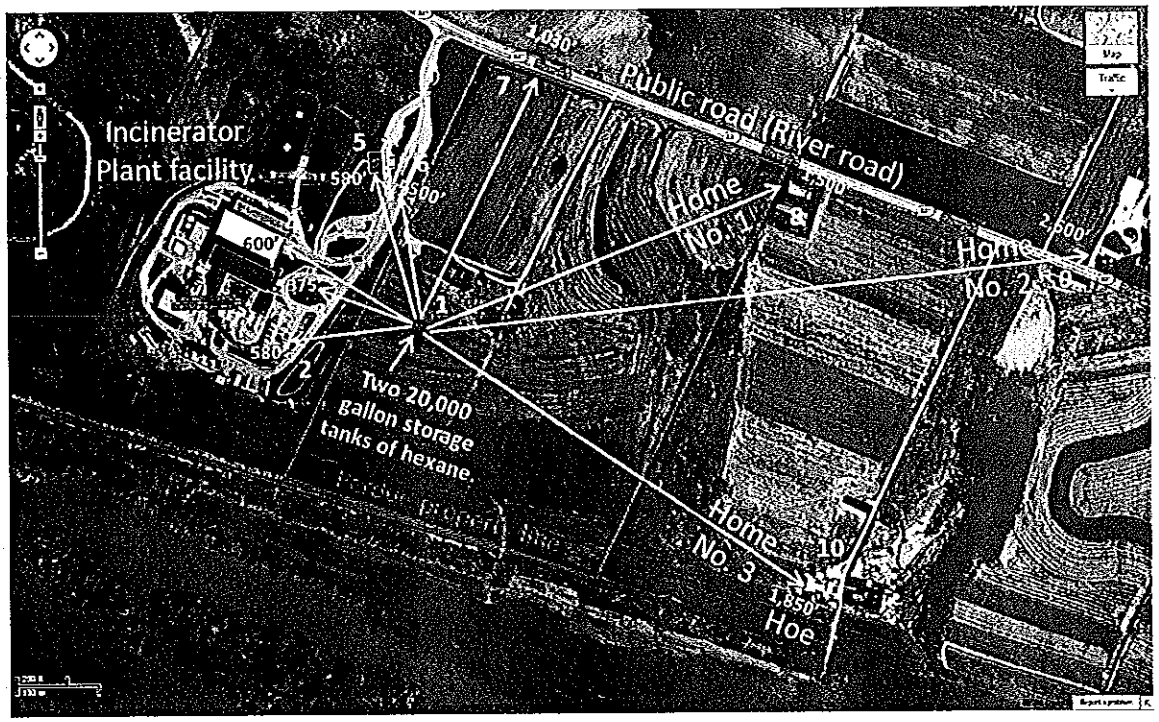


Figure 1 – Plan view of the Purdue property perimeter, two 20,000 hexane storage tanks, and points of concern regarding an accidental explosion.

Hexane weighs approximately 5.6 lbs/gal. Thus, one of the 20,000 gallon storage tanks would weigh approximately 112,000 lbs. Based on the Perdue layout of the plant facilities dated February 29, 2012, the two 20,000 gallon tanks show a separation distance of only 5 feet. Because these tanks are in the open, they would be considered as being unbarricaded and more likely one would cause a sympathetic explosion of the other if one of the tanks exploded.

According to the IME (Institute Makers of Explosives) in Publication No. 2, "The American Table of Distances for Storage of Explosive Materials", June, 1991, the hexane tanks should be separated by a minimum distance of 430 feet, to eliminate a sympathetic explosion if one of the hexane storage tanks exploded. In the case of only a 5 foot separation, it is a certainty that if one of the 20,000 gallon hexane tanks exploded, the second 20,000 gallon tank would also explode.

Tables 1 and 2 list the minimum safe distances recommended by the IME for a 20,000 and 40,000 gallon hexane explosion, respectively.

Table 1 - For a 20,000 Gallon Hexane Explosion

Structure or Area of Concern	Minimum Safe Distance
Inhabited Buildings (Homes, Businesses and Plants).	2,000 ft.
*Public Highways With Less Than 3,000 Vehicles per Day.	1,120 ft.

Table 2 - For a 40,000 Gallon Hexane Explosion

Structure or Area of Concern	Minimum Safe Distance
Inhabited Buildings (Homes, Businesses and Plants).	2,155 ft.
*Public Highways With Less Than 3,000 Vehicles per Day.	1,300 ft.

**Public highway means any public street, public alley or public road.*

The main difference between an explosive detonation and a hexane explosion is the degree of small fragments created at the source. I would expect that the explosion effects regarding how far the fragments or shrapnel are thrown would be similar.

In reference to Figure 1, the main points of public concern around the hexane storage tanks are listed in Table 3.

Table 3 – Applies to a 20,000 to 40,000 Gallon Hexane Explosion

Point No.	Description	Current Distance From Hexane Storage Tanks
1	Oil storage tank.	40 ft.
2	Parking lot.	580 ft.
3	Parking lot.	375 ft.
4	Main incinerator building.	600 ft.
5	Inhabited office building.	580 ft.
6	Inhabited office building.	500 ft.
7	Public road (River road).	1,030 ft.
8	Residential home No. 1.	1,500 ft.
9	Residential home No. 2.	2,600 ft.
10	Residential home No. 3.	1,850 ft.

The distances coded in red in Table 3 designate unsafe distances from the hexane storage tanks. Note that even if the two 20,000 gallon hexane storage tanks were separated by a safe distance of 430 ft., a single 20,000 gallon hexane tank explosion could still result in serious injuries, death and/or property damage to the nearby public.

The minimum safe distance to cover all points of concern from a 20,000 to 30,000 gallon hexane explosion is 2,000 ft. The minimum safe distance to cover all points of concern from a 40,000 gallon hexane explosion is 2,155 ft.

Opinions Regarding the Effects of an Explosion of Hexane

In the event of an accidental hexane explosion, I would expect the following consequences:

1. High velocity fragments (shrapnel) will be thrown in all directions. If there were an explosion of the fully loaded hexane storage tanks, shrapnel would be formed from the tanks themselves. If the soybean processing plant (loaded with 30,000 gallons of hexane) were to explode, the plant container and building itself would become shrapnel that would be thrown a similar distance. The shrapnel alone from such an explosion would have disastrous consequences. This shrapnel would be projected to Route 441 and beyond, to the neighboring homes and to the incinerator complex. The shrapnel would cause death or serious injury to anyone who was hit by it. In addition, the shrapnel would cause serious property damage to any structures that it encountered.

2. Multiple fires would be expected wherever any burning shrapnel/debris fell on.

3. The oil storage tank, which is situated only 40 ft. away from the hexane storage tanks, would most likely catch on fire and spew out huge amounts of heavy smoke and toxic gases.

4. BAI understands that there is a large propane storage tank nearby on the adjacent incinerator property. Depending on the mass and velocity of a projectile, it is also possible to explode the propane tank on impact, causing another secondary large scale energetic explosion.

5. Airblast (concussion) would occur from the explosion that in itself would kill or seriously injure people and would also cause serious damage to nearby properties. The overpressure effect could result in the destruction of nearby buildings which could inflict injury or death to anyone inside or near the building(s). Because it is so close, I would expect that the incinerator complex would be seriously damaged from an explosion. In

addition, I would expect windows in buildings as far as half a mile away to be blown out, which could also result in injury to anyone nearby.

6. If a hexane explosion occurred, I would expect the explosion to set off fires giving off noxious deadly fumes (as occurred at other soybean processing facilities). For example, some of the gasses often resulting from hexane explosions are oxides of nitrogen. Exposure to these gasses with concentrations of only 0.03 to 0.05% could be fatal 8 to 72 hours after exposure.

Recommendations

In view of the serious potential dangers to the public, BAI makes the following recommendations:

1. Perdue should perform a full explosion hazard assessment before proceeding with their plans, and to make their findings available to the public.

2. An emergency response plan needs to be prepared by Perdue that will include immediate and direct notification of all neighbors within a one mile radius of the plant. The plan should include a warning system to be implemented by Perdue to warn nearby residents immediately, rather than rely solely on the local emergency response units, because valuable time would be lost for nearby residents in deciding to evacuate immediately, or to seal their homes by closing all windows/doors and turning off their A/C units until the danger has passed. According to Perdue representatives, they plan to use the local emergency response units in dealing with such events. As of June 15, 2012, Perdue was not planning to directly notify neighbors in the event of any emergency at the plant. Instead, they were planning to rely on local authorities. It is not clear how and/or when nearby neighbors would be warned of the dangers and precious time would be lost while Perdue communicated with the emergency responders who would then have to communicate with the community. Perdue should take responsibility for this important aspect of planning.

3. Conoy Township and Lancaster County need to update both their emergency plans and training for emergency responders to deal with a potential explosion hazard from the Perdue facility.

4. If Perdue cannot satisfy the minimum safe distances to all points of concern, the options would be to either bury the two 20,000 gallon storage tanks and the process section of the plant which requires the use of 30,000 gallons of hexane, or to relocate the entire plant facilities elsewhere.

Sincerely,

R. Frank Chiappetta

R. Frank Chiappetta
Explosives Applications Engineer
BLASTING ANALYSIS INTERNATIONAL
Explosives, Seismic & Mining Specialists

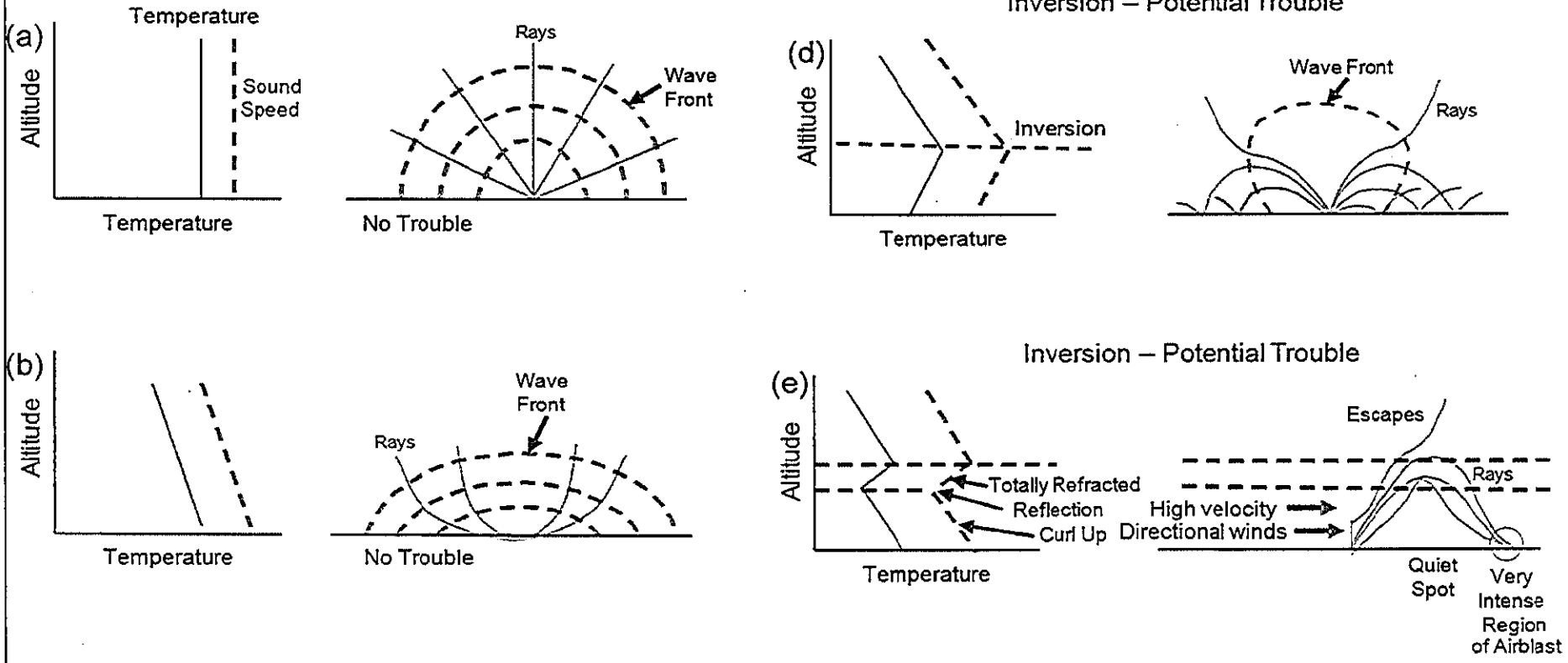
File:HARRISBURG-1873676 – BAI report – PerdueNissley - 1

ATTACHMENT C

Figure
Effect of Altitude Temperature Profile on Airblast Propagation

Effect of Altitude Temperature Profiles on Airblast Propagation

Modified after Cook, 1958



STATE REPRESENTATIVE
DAVID S. HICKERNELL

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PO BOX 202098
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House of Representatives
Commonwealth of Pennsylvania
Harrisburg

CHIEF DEPUTY WHIP

COMMITTEES

AGRICULTURE & RURAL AFFAIRS
INSURANCE
POLICY
PROFESSIONAL LICENSURE
VICE CHAIRMAN
TRANSPORTATION

December 12, 2014

Dana Aunkst, Acting Secretary
PA Department of Environmental Protection
16th Floor, Rachel Carson State Office Building
400 Market Street, P.O. Box 2063
Harrisburg, PA 17105-2063

Re: Proposed Perdue Soybean Processing Facility
Conoy Township—Lancaster County

Dear Secretary Aunkst:

I am writing concerning the revised pending Plan Approval Application submitted by Perdue Grain & Oilseed to construct a soybean processing facility in Conoy Township, Lancaster County. As state representative, I represent Conoy Township in the Pennsylvania General Assembly.

It is my understanding that in reviewing this application, DEP will be holding a public hearing to accept comments. **I would like to request that such hearing be held within the boundaries of Conoy Township where the proposed facility would be located.** I have been contacted by the Board of Supervisors in Conoy Township and they too feel strongly that this hearing should be held in the Township. A previous DEP hearing on a prior application by Perdue was held outside the Township and in fact, was held outside of Lancaster County.

Thank you for your consideration of this request and please feel free to contact me if you have any questions. If for some reason this public hearing cannot be held in Conoy Township, I would appreciate the opportunity to discuss this with you.

Sincerely,

David S. Hickernell
State Representative
98th Legislative District

DSH/lsh

Cc: Conoy Township Supervisors

From: Black, Wayne [mailto:Wayne.Black@perdue.com]
Sent: Friday, January 25, 2013 5:18 PM
To: Wetzel, Brian
Cc: Maxine M. Woelfling (mwoelfling@morganlewis.com); John Schmeizle (jschmeizle@rettew.com); Heller, Peter
Subject: Perdue Response to Comments Phase I Application
Importance: High

Mr. Wetzel,

Please find attached our response to the proposed comments that you had previously forwarded. If you should have any questions or concerns please do not hesitate to contact me.

Sincerely,

Wayne Black

#	Comment	Commenter #	Category	Response
9	Will DEP require Perdue to complete the Phase II archaeological studies requested by PHMC?	17	Overall Permitting Issues	The Phase II archaeological study and report have been completed and submitted to PHMC. PHMC issued a clearance letter dated October 31, 2012 for the project. In the letter, the PHMC concluded that, "Therefore, the location of the current APE [Area of Potential Effect] and buffer zone requires no additional testing. If plans should change and the APE is enlarged or relocated, additional testing will be necessary."
14	Certainly the issues of multiple sources, not only industrial, but also transportation orientated need to be considered. We've heard about the trains, we've heard about the truck trips necessary to supply the facilities.	88	Overall Permitting Issues	No rail service is proposed for the project. Mobile source emissions are outside the scope of the DEP Plan Approval Application process.
16	For the reasons stated in their comments already submitted August Mack Environmental concludes that the Perdue applications should be denied.	65-66	Overall Permitting Issues	The Phase 1 Plan Approval Application satisfies all applicable requirements, and, consequently, the Plan Approval for the grain elevator facility should be issued.
19	The project should not be divided into two phases because land development approval of the project was done as one application, with no separation of phases for the grain elevator and soybean oil extraction facility.	30	Overall Permitting Issues	It was agreed upon in pre-application meetings with DEP that the two permit approach for the facility would be acceptable by DEP. Total project emission estimates are provided in Attachment C (Project Description) in both the Phase 1 and Phase 2 permit applications. Total project emissions are the same regardless of whether one permit application was submitted or two permit applications were submitted. A two permit approach was chosen so as to allow construction of the grain elevator to commence in a timely manner for harvest season 2013. Perdue is fully aware that DEP approval of the Phase 1 application would not guarantee approval of the Phase 2 application.
20	The project should not be divided into two phases because a variance has already been obtained from the Conoy Township Zoning Hearing Board for the grain elevator to exceed the height limitations of that township's zoning ordinance, indicating a larger than usual grain elevator to service the anticipated soybean volume for the hexane in the soybean oil extraction process.	30	Overall Permitting Issues	This statement is incorrect. The zoning height variance was granted for the extraction building of Phase 2, and not for the grain elevator of Phase 1.
21	The project should not be divided into two phases because dust from the grain elevator operation, added to the hexane VOC emissions, represent a negative health impact on the human respiratory tract and the additive effects must be considered as a whole.	30	Overall Permitting Issues	It was agreed upon in pre-application meetings with DEP that the two permit approach for the facility would be acceptable by DEP. Total project emission estimates are provided in Attachment C (Project Description) in both the Phase 1 and Phase 2 permit applications. Total project emissions are the same regardless of whether one permit application was submitted or two permit applications were submitted. A two permit approach was chosen so as to allow construction of the grain elevator to commence in a timely manner for harvest season 2013. Perdue is fully aware that DEP approval of the Phase 1 application would not guarantee approval of the Phase 2 application.
22	The project should not be divided into two phases because all previous testimony and presentations by Perdue to various governmental entities, including the Lancaster County Emergency Preparedness Committee (LEPC) treated the application as one, with no proposed phasing.	30	Overall Permitting Issues	It was agreed upon in pre-application meetings with DEP that the two permit approach for the facility would be acceptable by DEP. Total project emission estimates are provided in Attachment C (Project Description) in both the Phase 1 and Phase 2 permit applications. Total project emissions are the same regardless of whether one permit application was submitted or two permit applications were submitted. A two permit approach was chosen so as to allow construction of the grain elevator to commence in a timely manner for harvest season 2013. Perdue is fully aware that DEP approval of the Phase 1 application would not guarantee approval of the Phase 2 application.
23	The project should not be divided into two phases because notice was provided in the 10/25/12 issued of the PA Bulletin (Vol. 42, No. 43) that Perdue has applied to PADEP for a permit for two aboveground storage tanks storing 40,000 gallons of hexane (SSIP Application No. 12021). These tanks will be used in the soybean extraction process, not the grain elevator portion of the facility.	30	Overall Permitting Issues	Perdue's application for a Storage Tank Site Specific Installation Permit (SSIP) is irrelevant to Phase 1. As published in the PA Bulletin on October 27, 2012, Perdue did apply for a site specific storage tank permit. The SSIP Application is currently under DEP review.
51	The emissions from the facility may have uniquely significant public health impacts due to the local topography, weather patterns and frequent temperature inversions.	2, 4, 8-19, 23-25, 39, 41, 45, 47, 57, 61-68, 70-72, 74-75, 81, 85-86, 88	Public Heath and Welfare	Perdue is conducting air dispersion modeling to address the Phase 2 hexane emission concerns.
56	Will this plant emit any odors, especially those that will linger?	53	Public Heath and Welfare	If any odor is detectable at all from this type of operation generally it will possess a feed/grain odor, based on Perdue's experience at its other existing grain handling and storage facilities, Perdue does not anticipate odors to be a concern.
69	Adding the impacts of the grain elevator and oil extraction operation, considering the notable increases in PM 10's, the impact of over 90 inbound truckloads of soybeans arriving daily, the lower Susquehanna River Valley will become both a dangerous and undesirable place to live.	45, 57	Public Heath and Welfare	Perdue disagrees with this statement. The facility will be subject to, and intends to comply with, the applicable DEP and EPA requirements. The proposed grain elevator facility is considered a minor source of PM10 emissions, based on potential emission estimates. Mobile source emissions are outside the scope of the DEP Plan Approval Application process, however the location of the plant should decrease the overall miles traveled for product destination resulting in lowered emissions from transportation.
84	I expect someone has run cost projections on emission control above and beyond statute. Where might I find such an analysis?	55	BAT/LAER/NNSR Issues	Regarding "emission control above and beyond statute", it is impossible to correctly address this comment without the relevant statutory provision, however the Grain facility will employ BAT and comply with Subpart DD.
86	DEP did not require the NSR alternative site analysis when reviewing Perdue's Phase 1 application. Any alternative site analysis conducted after the Phase 1 facility is constructed would be biased toward the project's current location.	39, 41	August Mack Phase 1 Comments	An analysis was provided with the Phase 2 Plan Approval Application, and that analysis pertains to the facility as a whole. Since the Phase 1 facility is not yet constructed, the analysis is not "biased towards the project's current location." See Attachment C, page 1, paragraph 4; of Phase I application, relating to the grain elevator's ability to function as a stand-alone facility.
87	The Phase 1 application should be denied as an impermissible circumvention due to the lack of the alternative site analysis.	39, 41	August Mack Phase 1 Comments	An analysis was provided with the Phase 2 Plan Approval Application, and that analysis pertains to the facility as a whole. Since the Phase 1 facility is not yet constructed, the analysis is not "biased towards the project's current location." See Attachment C, page 1, paragraph 4; of Phase I application, relating to the grain elevator's ability to function as a stand-alone facility.
98	The proposed emission of VOC from the proposed facility is 4 tons below the 250-ton-per-year PSD threshold.	39, 41	August Mack Phase 1 Comments	The proposed potential VOC emissions are below 250 tons per year.
103	**Phase 1 application:** Page 1: the type of review selected is NSPS and NESHAPS. This is incorrect. The form should also indicate that Phase 1 is subject to NSR and PSD review. This is needed in order to be consistent with Attachment C which states that that the facility is a single project consisting of two distinct operations, and Attachment H, which says the overall project will be subject to NSR.	39, 41	August Mack Phase 1 Comments	This comment has been taken out of context as to the validity of the overall project versus Phase I. As a stand-alone, minor facility, the grain elevator is only subject to NSPS. DEP has given no indication to Perdue that the selected "Type of Review required and Fees" needs to be revised. See Attachment C, page 1, paragraph 4; of Phase I application, relating to the grain elevator's ability to function as a stand-alone facility.
104	Grain Receiving & Processing: Page 4, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information: The flow diagram in Attachment F does not include all of the requested information including:	39, 41	August Mack Phase 1 Comments	See below.
105	i. Gaseous, liquid and solid flow rates	39, 41	August Mack Phase 1 Comments	Although not shown on the flow diagram, gaseous, liquid, and solid flow rates are provided in the Plan Approval Application's Attachment G (Potential Emission Calculations) for each source.
106	ii. The amount of raw material charged to the process in tons/hour at rated capacity	39, 41	August Mack Phase 1 Comments	Although not shown on the flow diagram, the amount of raw material charged to the process is provided in the Plan Approval Application's Attachment G (Potential Emission Calculations) for each source.

[518]

#	Comment	Commenter #	Category	Response
107	iii. The specific locations of where contaminants are controlled are not shown on the diagram, specifically the location of collection hoods or other pickup points	39, 41	August Mack Phase 1 Comments	The location of control equipment is provided on the process flow diagram (Attachment F to the Plan Approval Application). Emission estimates are consistent with U.S. EPA AP-42 Section 9.9.1 emission factors and methodology. The emission estimates for Grain Receiving/Processing include the combined emission factors from "Grain receiving" and "Headhouse and grain handling" as provided in AP-42 Table 9.9.1-1. This is due to the fact that the overall system (grain receiving, handling (drag conveyance, legs, turnhead, etc.), and enclosed cleaner screens) is aspirated to the single Grain Receiving/Processing Baghouse.
108	iv. A description of collection hoods design, airflow and capture efficiency for emissions vented through Baghouse C101 and Filters C102 is not provided.	39, 41	August Mack Phase 1 Comments	Collection hoods are not part of the process; therefore their associated design is not provided in the application. System design to include enclosed receiving and airflow velocities can be found in Attachement E and page 24 respectively of the Phase I Plan Approval Application. Hood design and capture efficiency are not applicable to filter C102, however supplemental information was supplied to DEP regarding air flow in relationship to filter design.
109	Grain Receiving & Processing: Page 4, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information: The applicant indicates that the pressure drop on the baghouse will be read weekly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the baghouse should be continuously monitored. This requirement for continuous monitoring should be incorporated into Section D, permit condition #004 on page 18 of the proposed Plan Approval.	39, 41	August Mack Phase 1 Comments	A gauge will continuously monitor the baghouse's pressure drop. The pressure drop reading will be recorded once per week when the source is operating, as per the draft Plan Approval, Section D, Source ID 101, Condition #003 and #004(a). The monitoring technology employed and associated required visual obsevations will ensure the baghouse is operating as designed.
110	Grain Receiving & Processing: Page 4, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information: The applicant does not identify and describe all fugitive emission points but indicates that "fugitive particulate matter emissions will be negligible" but no information on the capture efficiency of the collection hoods that duct emissions to the baghouse is provided to support this claim of negligible fugitive emissions. Perdue should be required to prove that fugitive emissions will be negligible or the permit should be denied.	39, 41	August Mack Phase 1 Comments	Grain receiving and processing will be located within a building. Emission estimates are consistent with U.S. EPA AP-42 Section 9.9.1 emission factors and methodology. The emission estimates for Grain Receiving/Processing include the combined emission factors from "Grain receiving" and "Headhouse and grain handling" as provided in AP-42 Table 9.9.1-1. This is due to the fact that the overall system (grain receiving, handling (drag conveyance, legs, turnhead, etc.), and enclosed cleaner screens) is aspirated to the single Grain Receiving/Processing Baghouse.
111	Wet Grain Storage Bins: Page 6, Process Form, Section B - Processes Information, Item 4. Process Storage Vessels B. For Solids indicates a capacity of 900 tons but does not clarify that this is 900 tons for each storage bin as on Page 5, Item 1. Source Information specifies the capacity as "30,000 bushels (each)". Information available from the Ohio State University (www.online.ag.ohiostate.edu) indicates that a bushel of soybeans is assigned a weight of 60 pounds making the capacity of each bin 900 tons (each). The capacity (tons), turnover per year in tons, and turnover per day in tons should be corrected to indicate that these numbers are for each bin or corrected to reflect the total for all four (4) bins of 3,600 tons, 28,800 tons per day, and 10,512,000 tons per year. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	As previously submitted in the Plan Approval Application, each bin has a 900-ton storage capacity. As per the Potential Emission Calculations, Perdue has requested, and received in the Plan Approval, an enforceable permit throughput limitation of 630,000 tons of soybeans per consecutive 12-month period.
112	Wet Grain Storage Bins: Page 7, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information. The applicant indicates that weekly visual observation of the bin vent filters will be conducted to check for the presence of visible fugitive emissions. As the facility will operate 24 hours per day, 7 days per week the visual observation should be performed on a daily basis. This requirement for daily monitoring should be incorporated into a permit condition in Section D, page 20 of the proposed Plan Approval.	39, 41	August Mack Phase 1 Comments	The wet grain storage bin vents are required to be observed weekly per Plan Approval Section C, Condition #011. DEP typically requires a weekly observation frequency for permitted facilities. The required visual obsevations will ensure the bin vent filters are operating as designed.
113	Grain Dryer No.1: Page 8, Process Form, Section B - Processes Information, Item 1. Source Information specifies a 4,800 bushel capacity. The capacity of the storage bins and grain dryers does not appear to equate as it appears that much more grain will be received at the facility than will be processed in the grain dryers with no explanation of the discrepancy. Perdue should be required to clarify this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	As previously submitted in the Plan Approval Application, grain is stored in the wet grain storage bins after receipt. From the wet grain storage bins, grain is fed to each dryer by a scalper with a maximum throughput capacity of 144 tons per hour. The receiving of grain is an intermittent process, which may involve the storage of grain received before drying to accomodate system design.
114	Grain Dryer No.1: Page 8, Process Form, Section B - Processes Information, Item 2. Fuel specifies a BTU content for propane of 91,500 BTUs per gallon. The U.S. Environmental Protection Agency's Compilation of Air Pollutant Emission Factors (AP-42) specifies a BTU content for propane of 90,500 BTU/gallon. This comment also applies to Grain Dryer No. 2 on Page 11. Perdue should be required to clarify this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	Per AP-42, Section 1.5.3.1 and Table 1.5-1 Footnote (a), propane has a heat content of 91,500 BTU/gal.
115	Grain Storage Bins: Page 14, Process Form, Section B - Processes Information, Item 1. Source Information specifies a 500,000 bushel capacity for each bin. The capacity of these storage bins does not appear to equate to the earlier capacities.	39, 41	August Mack Phase 1 Comments	As previously submitted in the Plan Approval Application, each (dry) grain storage bin has a 15,000-ton storage capacity. Each wet grain storage bin has a 900-ton storage capacity.
116	Grain Storage Bins: In addition on Page 15, Process Form, Section B - Processes Information, Item 4. Process Storage Vessels B. For Solids indicates a capacity of 15,000 tons but does not clarify that this is 15,000 tons for each storage bin as on Page 14, Item 1. Source Information specifies the capacity as "500,000 bushels (each)". Information available from the Ohio State University (www.online.ag.ohiostate.edu) indicates that a bushel of soybeans is assigned a weight of 60 pounds making the capacity of each bin 15,000 tons (each). The capacity (tons), turnover per year in tons, and turnover per day in tons should be corrected to indicate that these numbers are for each bin or corrected to reflect the total for all four (4) bins of 60,000 tons, 240,000 tons per day, and 87,600,000 tons per year.	39, 41	August Mack Phase 1 Comments	As previously submitted in the Plan Approval Application, each bin has a 15,000-ton storage capacity. As per the Potential Emission Calculations, Perdue has requested, and received in the Plan Approval, an enforceable permit throughput limitation of 630,000 tons of soybeans per consecutive 12-month period.
118	Grain Loadout: Page 17, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that fugitive emissions will occur during grain loadout. As with grain receiving and processing, grain loadout should be located within a building and ducted to a baghouse to control particulate matter emissions. Perdue should be required to correct this deficiency in its permit application with the required modifications incorporated in the proposed Plan Approval.	39, 41	August Mack Phase 1 Comments	As indicated on page 17, Section B.1 of the Plan Approval Application, grain loadout is typically only used for the purpose of transporting soybeans off-site. It is not part of normal operations when the grain elevator is supplying soybeans to the soybean oil extraction process.

[519]

#	Comment	Commenter #	Category	Response
119	Facility Roadways: Page 22, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that daily visual observations of facility roadways will be performed. As the facility will operate 24 hours per day, 7 days per week the visual observation should be performed on an hourly basis. This requirement for daily monitoring should be incorporated into a permit condition in Section D, page 25 of the proposed Plan Approval along with specific requirements for including method and frequency for when dust control measures will be implemented on facility roadways.	39, 41	August Mack Phase 1 Comments	The facility roadway dust emissions are adequately regulated under Plan Approval Section C, Condition #005, #011, and #016.
120	Section C - Air Cleaning Device: Page 23 provides maximum emission rates for PM, PM10, and PM2.5 and indicates the Calculation/Estimation Method is provided in Attachment G.	39, 41	August Mack Phase 1 Comments	See below.
121	a.1. The calculations in Attachment G for 101 - Grain Receiving and Processing are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum grain handling rate of the source which is specified as 600 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 2 of the application but indicates that only 630,000 tons per year will be processed for a processing time of only 1,050 hours per year. The emission calculations should be revised to indicate emissions based on processing of 600 tons per hour for 8,760 hours per year which equals 5,256,000 tons annually.	39, 41	August Mack Phase 1 Comments	As provided in the Potential Emission Calculations attachment to the Plan Approval Application, the maximum potential short-term (lb/hr) emissions are based on the maximum hourly throughput rate. Perdue has requested and accepted a 12-month soybean throughput limitation of 630,000 tons per year. This restriction is an enforceable permit limitation contained in the Plan Approval; therefore, potential long-term (12-month) emissions are based on this limitation. In a given hour, the Grain Receiving/Processing source could process 600 tons per hour; however, there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all. As opposed to limiting hours of operation and in the interest of operational flexibility, Perdue has requested and accepted a 12-month soybean throughput limitation for the facility. As shown in the Plan Approval Application's Potential Emission Calculations and in DEP's review memo emission calculations, the 630,000 TPY soybean throughput limit will result in emissions below major source thresholds for the grain elevator facility.
122	a.2. A limit of 630,000 tons of soybean receipt has been included in the proposed Plan Approval although processing at the rated capacity will result in the grain receiving occurring over just 44 days. Perdue should be required to explain how their operations will be conducted based on the rated capacity of the equipment and the soybean limit.	39, 41	August Mack Phase 1 Comments	As provided in the Potential Emission Calculations attachment to the Plan Approval Application, the maximum potential short-term (lb/hr) emissions are based on the maximum hourly throughput rate. Perdue has requested and accepted a 12-month soybean throughput limitation of 630,000 tons per year. This restriction is an enforceable permit limitation contained in the Plan Approval; therefore, potential long-term (12-month) emissions are based on this limitation. In a given hour, the Grain Receiving/Processing source could process 600 tons per hour; however, there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all. As opposed to limiting hours of operation and in the interest of operational flexibility, Perdue has requested and accepted a 12-month soybean throughput limitation for the facility. As shown in the Plan Approval Application's Potential Emission Calculations and in DEP's review memo emission calculations, the 630,000 TPY soybean throughput limit will result in emissions below major source thresholds for the grain elevator facility.
123	b.1. The calculations in Attachment G for 102- Wet Grain Storage Bins are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 900 tons capacity and 2,520,000 tons per year turnover per bin (on Page 6 of the application) or 2,800 tons per hour per bin or 11,200 tons per hour (for the four bins). The emission calculations should be revised to indicate emissions based on processing of 11,200 tons per hour for 8,760 hours per year which equals 98,112,000 tons annually.	39, 41	August Mack Phase 1 Comments	As provided in the Potential Emission Calculations attachment to the Plan Approval Application, the maximum potential short-term (lb/hr) emissions are based on the maximum hourly throughput rate. Perdue has requested and accepted a 12-month soybean throughput limitation of 630,000 tons per year. This restriction is an enforceable permit limitation contained in the Plan Approval; therefore, potential long-term (12-month) emissions are based on this limitation. In a given hour, the Wet Grain Storage Bins could accept 600 tons per hour; however, there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all. Maximum hourly and maximum annual throughput limitations are constrained by the Grain Receiving/Processing source. As opposed to limiting hours of operation and in the interest of operational flexibility, Perdue has requested and accepted a 12-month soybean throughput limitation for the facility. As shown in the Plan Approval Application's Potential Emission Calculations and in DEP's review memo emission calculations, the 630,000 TPY soybean throughput limit will result in emissions below major source thresholds for the grain elevator facility.
124	b.2. No capacity for the wet grain storage bins is included in the proposed Plan Approval not is any throughput or operating hour limitation. As the rated capacity of this equipment differs from grain receiving, separate limitations need to be established.	39, 41	August Mack Phase 1 Comments	As provided in the Potential Emission Calculations attachment to the Plan Approval Application, the maximum potential short-term (lb/hr) emissions are based on the maximum hourly throughput rate. Perdue has requested and accepted a 12-month soybean throughput limitation of 630,000 tons per year. This restriction is an enforceable permit limitation contained in the Plan Approval; therefore, potential long-term (12-month) emissions are based on this limitation. In a given hour, the Wet Grain Storage Bins could accept 600 tons per hour; however, there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all. Maximum hourly and maximum annual throughput limitations are constrained by the Grain Receiving/Processing source. As opposed to limiting hours of operation and in the interest of operational flexibility, Perdue has requested and accepted a 12-month soybean throughput limitation for the facility. A throughput capacity for the wet grain storage bins is not needed in the Plan Approval since the bins' filling rate is dictated by the throughput capacity of the grain receiving and processing source (ID 101).
125	b.3. In addition, documentation of the control efficiency (99%) of the wet grain storage bin filters is not provided. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	A control efficiency of 99% for the wet grain storage bin filters is a generally accepted efficiency for fabric filters. As an example, in its "Statement of Legal and Factual Basis" dated July 1, 2010, Virginia DEQ lists an efficiency of 99% for the fabric filters associated with the grain storage silos (bins) at Perdue's Chesapeake, Virginia facility.
126	c.1. The calculations in Attachment G for emissions due to grain processing in 103 - Grain Dryer No. 1 and 104 - Grain Dryer No. 2 are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 144 tons per hour and operation for 8,760 hours per year as indicated on Pages 8 and 11 of the application but indicates that only 315,000 tons per year will be processed in each dryer for a processing time of only 2,187.5 hours per year per dryer. Note, the fuel combustion calculations for the dryers are based on fuel consumption and operation 8,760 hours per year. The emission calculations due to grain processing in the dryers should be revised to indicate emissions based on processing of 144 tons per hour for 8,760 hours per year per dryer.	39, 41	August Mack Phase 1 Comments	As provided in the Potential Emission Calculations attachment to the Plan Approval Application, the maximum potential short-term (lb/hr) emissions are based on the maximum hourly throughput rate. Perdue has requested and accepted a 12-month soybean throughput limitation of 630,000 tons per year. This restriction is an enforceable permit limitation contained in the Plan Approval; therefore, potential long-term (12-month) emissions are based on this limitation. In a given hour, each Grain Dryer could process 144 tons of soybeans per hour; however, there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all. The maximum hourly throughput limitation is constrained by the scalper that feeds each Grain Dryer.

#	Comment	Commenter #	Category	Response
127	c.2. In addition, documentation of the PM control efficiency (90%) claimed due to the internal configuration of the dryer is not provided. AP-42 specifies a lower emission rate from column dryers which Perdue has used in their application. This lower emission factor takes into account the lower emissions from the type of dryer Perdue will be installing and an additional control efficiency is not applicable to the use of a column dryer.	39, 41	August Mack Phase 1 Comments	The dryer's internal configuration consisting of screen airs and a cyclone is typically considered a PM control device. As an example, in its "Statement of Legal and Factual Basis" dated July 1, 2010, Virginia DEQ lists an efficiency of 95% for the screen airs and associated cyclone within the same dryer model at Perdue's Chesapeake, Virginia facility.
128	c.3. If the dryers' internal configuration is providing 90% PM control then approximately 684.24 lbs per day of particulate matter will be accumulating in each dryer which would create a combustible dust and explosion hazard.	39, 41	August Mack Phase 1 Comments	Regarding the dryer's internal configuration, any controlled PM that is collected is recirculated into the process; it does not accumulate in the dryer. Perdue has extensive experience operating this type and model of dryer at one of Perdue's existing facilities.
129	c.4.The dryers should be connected to an air pollution control device (i.e., baghouse, dust collector, etc.) for particulate matter control and to prevent the build-up of combustible dust.	39, 41	August Mack Phase 1 Comments	Add-on PM emission controls are not practical for the column grain dryers, given their relatively large volumes of exhausted air and the large cross-sectional area of the exhaust. The proposed grain dryers will comply with the EPA's NSPS 40 CFR Part 60 Subpart DD emission limitations.
130	c.5. In addition, the emission calculations for the dryers should be revised. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	As provided in the Potential Emission Calculations attachment to the Plan Approval Application, the maximum potential short-term (lb/hr) emissions are based on the maximum hourly throughput rate. Perdue has requested and accepted a 12-month soybean throughput limitation of 630,000 tons per year. This restriction is an enforceable permit limitation contained in the Plan Approval; therefore, potential long-term (12-month) emissions are based on this limitation. In a given hour, each Grain Dryer could process 144 tons of soybeans per hour; however, there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all. The maximum hourly throughput limitation is constrained by the scalper that feeds each Grain Dryer. Regarding the dryer's internal configuration, any controlled PM that is collected is recirculated into the process; it does not accumulate in the dryer. The dryer's internal configuration consisting of screen airs and a cyclone is typically considered a PM control device. As an example, in its "Statement of Legal and Factual Basis" dated July 1, 2010, Virginia DEQ lists an efficiency of 95% for the screen airs and associated cyclone within the same dryer model at Perdue's Chesapeake, Virginia facility.
131	c.6. Although PADEP's technical memorandum reflects that only 50% of the air stream is controlled, and includes revised emission calculations provided by Perdue, no documentation of the 90% controls of this 50% air stream has been provided.	39, 41	August Mack Phase 1 Comments	The dryer's internal configuration consisting of screen airs and a cyclone is typically considered a PM control device. As an example, in its "Statement of Legal and Factual Basis" dated July 1, 2010, Virginia DEQ lists an efficiency of 95% for the screen airs and associated cyclone within the same dryer model at Perdue's Chesapeake, Virginia facility.
132	d.1. The calculations in Attachment G for emissions due to propane combustion in 103 - Grain Dryer No.1 and 104 - Grain Dryer No.2 - are based on a fuel heating value of 91,500 BTU/gallon. The emission factor source cited, U.S. EPA AP-42, Section 1.5, Table 1.5-1, 07/2008 specifies a typical heating value of propane is 90,500 BTU/gallon. No information is provided for the use of the 91,500 BTU/gallon fuel heating value.	39, 41	August Mack Phase 1 Comments	Per AP-42, Section 1.5.3.1 and Table 1.5-1 Footnote (a), propane has a heat content of 91,500 BTU/gal.
133	d.2. In addition, no information is provided to substantiate the assumption that low NOx burners for propane combustion will provide a similar reduction in NOx emissions as low NOx burners for natural gas combustion.	39, 41	August Mack Phase 1 Comments	In the absence of EPA-approved (AP-42) propane low NOx emission factors and given that the specified low emissions burner is capable of combusting both natural gas and propane, natural gas low NOx emission reduction was used a surrogate to approximate propane low NOx emissions.
134	d.3. Documentation of the use of the 91,500 BTU/gallon fuel heating value and emission rates for low NOx burners for propane combustion should be provided or the emissions calculations should be revised to utilize at heating value of 90,500 BTU/gallon and the actual emission factor for NOx for propane combustion of 13 lbs per 1000 gallons of fuel. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	Per AP-42, Section 1.5.3.1 and Table 1.5-1 Footnote (a), propane has a heat content of 91,500 BTU/gal. Regarding low NOx emissions from propane combustion, in the absence of EPA-approved (AP-42) propane low NOx emission factors and given that the specified low emissions burner is capable of combusting both natural gas and propane, natural gas low NOx emission reduction was used a surrogate to approximate propane low NOx emissions.
135	e.1. The calculations in Attachment G for 105 - Grain Storage Bins are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 500,000 bushels (15,000 tons) capacity and 2,520,000 tons per year turnover per bin (on Pages 14 and 15 of the application) or 300 tons per hour per bin or 1,200 tons per hour (for the four bins).	39, 41	August Mack Phase 1 Comments	As provided in the Potential Emission Calculations attachment to the Plan Approval Application, the maximum potential short-term (lb/hr) emissions are based on the maximum hourly throughput rate. Perdue has requested and accepted a 12-month soybean throughput limitation of 630,000 tons per year. This restriction is an enforceable permit limitation contained in the Plan Approval; therefore, potential long-term (12-month) emissions are based on this limitation. In a given hour, the Grain Storage Bins could accept 300 tons per hour; however, there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all. As opposed to limiting hours of operation and in the interest of operational flexibility, Perdue has requested and accepted a 12-month soybean throughput limitation for the facility.
136	e.2. The emission calculations should be revised to indicate emissions based on processing of 1,200 tons per hour for 8,760 hours per year which equals 10,512,000 tons annually. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	As provided in the Potential Emission Calculations attachment to the Plan Approval Application, the maximum potential short-term (lb/hr) emissions are based on the maximum hourly throughput rate. Perdue has requested and accepted a 12-month soybean throughput limitation of 630,000 tons per year. This restriction is an enforceable permit limitation contained in the Plan Approval; therefore, potential long-term (12-month) emissions are based on this limitation. In a given hour, the Grain Storage Bins could accept 300 tons per hour; however, there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all. As opposed to limiting hours of operation and in the interest of operational flexibility, Perdue has requested and accepted a 12-month soybean throughput limitation for the facility.
137	e.3. No capacity for the wet grain storage bins is included in the proposed Plan Approval not is any throughput or operating hour limitation. As the rated capacity of this equipment differs from grain receiving, separate limitations need to be established.	39, 41	August Mack Phase 1 Comments	As provided in the Potential Emission Calculations attachment to the Plan Approval Application, the maximum potential short-term (lb/hr) emissions are based on the maximum hourly throughput rate. Perdue has requested and accepted a 12-month soybean throughput limitation of 630,000 tons per year. This restriction is an enforceable permit limitation contained in the Plan Approval; therefore, potential long-term (12-month) emissions are based on this limitation. In a given hour, the Grain Storage Bins could accept 300 tons per hour; however, there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all. As opposed to limiting hours of operation and in the interest of operational flexibility, Perdue has requested and accepted a 12-month soybean throughput limitation for the facility. An annual throughput capacity for the grain storage bins is not needed in the Plan Approval since the bins' annual throughput rate is dictated by the annual throughput capacity of the grain receiving and processing source (ID 101).

[520]

#	Comment	Commenter #	Category	Response
[524] 138	f.1. The calculations in Attachment G for 106 - Grain Loadout are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 120 tons per hour (the maximum and rated capacity) and operation for 8,760 hours per year as indicated on Page 17 of the application but indicates that only 72,000 tons per year will be processed for a processing time of only 600 hours per year.	39, 41	August Mack Phase 1 Comments	As provided in the Potential Emission Calculations attachment to the Plan Approval Application, the maximum potential short-term (lb/hr) emissions are based on the maximum hourly throughput rate. Perdue anticipates a 12-month soybean throughput maximum of 72,000 tons per year for Grain Loadout, and potential long-term (12-month) emissions are based on this maximum. In a given hour, Grain Loadout could process 120 tons per hour; however, there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all since Grain Loadout is not part of normal operations. The loadout would only be utilized to remove off-spec soybeans from the process, if necessary.
139	f.2. The emission calculations should be revised to indicate emissions based on processing of 120 tons per hour for 8,760 hours per year which equals 1,051,200 tons annually. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	As provided in the Potential Emission Calculations attachment to the Plan Approval Application, the maximum potential short-term (lb/hr) emissions are based on the maximum hourly throughput rate. Perdue anticipates a 12-month soybean throughput maximum of 72,000 tons per year for Grain Loadout, and potential long-term (12-month) emissions are based on this maximum. In a given hour, Grain Loadout could process 120 tons per hour; however, there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all since Grain Loadout is not part of normal operations. The loadout would only be utilized to remove off-spec soybeans from the process, if necessary.
140	f.3. No capacity for the wet grain storage bins is included in the proposed Plan Approval nor is any throughput or operating hour limitation. As the rated capacity of this equipment differs from grain receiving, separate limitations need to be established.	39, 41	August Mack Phase 1 Comments	As provided in the Potential Emission Calculations attachment to the Plan Approval Application, the maximum potential short-term (lb/hr) emissions are based on the maximum hourly throughput rate. Perdue has requested and accepted a 12-month soybean throughput limitation of 630,000 tons per year. This restriction is an enforceable permit limitation contained in the Plan Approval; therefore, potential long-term (12-month) emissions are based on this limitation. In a given hour, the Wet Grain Storage Bins could accept 600 tons per hour; however, there will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all. Maximum hourly and maximum annual throughput limitations are constrained by the Grain Receiving/Processing source. As opposed to limiting hours of operation and in the interest of operational flexibility, Perdue has requested and accepted a 12-month soybean throughput limitation for the facility. A throughput capacity for the wet grain storage bins is not needed in the Plan Approval since the bins' filling rate is dictated by the throughput capacity of the grain receiving and processing source (ID 101).
142	The permit application does not include an appropriate "topdown" Best Available Control Technology (BACT) Analysis along with the use of lowest achievable emission rate (LAER) and an analysis of alternate sites to fulfill the NSR requirements.	39, 41	August Mack Phase 1 Comments	Given its potential emissions, the stand-alone Phase 1 grain elevator facility is not required to evaluate BACT, LAER, or alternate sites. LAER and the alternate site analysis for the project were provided in the Phase 2 Plan Approval Application.
144	Section D - Additional Information: Page 26 indicates the Best Available Technology (BAT) demonstration is provided in Attachment H.	39, 41	August Mack Phase 1 Comments	See below.
145	a. As Perdue states in Attachment C, Project Description that the facility is a single project consisting of two (2) distinct operations: Phase I (soybean grain elevator) and Phase II (soybean extraction operation) and in Attachment H, BAT Evaluation that the overall project will be subject to NSR requirements this BAT demonstration should be revised to reflect a "top-down" Best Available Control Technology (BACT) analysis. This would include a search of the reasonably available control technology (RACT)/BACT/LAER clearing house for available control technologies, a ranking of the technologies based on control efficiencies, and an economic analysis including the cost per ton of pollutant removed. These elements were not included. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	This comment has been taken out of context as to the validity of the overall project versus Phase I. As a stand-alone, minor facility, the grain elevator is only subject to NSPS. DEP has given no indication to Perdue that the selected "Type of Review required and Fees" needs to be revised. See Attachment C, page 1, paragraph 4; of Phase I application, relating to the grain elevator's ability to function as a stand-alone facility.
146	b.1. Perdue indicates that column dryers were selected as they have a lower PM emission rate. Perdue has used this lower PM emission rate as part of the emission calculations provided in Attachment G. However, Perdue has also claimed a PM control efficiency (90%) due to the internal configuration of the dryers in addition to using the lower emission rate. No documentation on the PM control efficiency of the dryers is included with the application. The U.S. EPA's compilation of air pollutant emission factors specifies a lower emission rate from column dryers which takes into account the lower emissions from the type of dryer Perdue will be installing and an additional control efficiency is not applicable to the use of the dryer	39, 41	August Mack Phase 1 Comments	The dryer's internal configuration consisting of screen airs and a cyclone is typically considered a PM control device. As an example, in its "Statement of Legal and Factual Basis" dated July 1, 2010, Virginia DEQ lists an efficiency of 95% for the screen airs and associated cyclone within the same dryer model at Perdue's Chesapeake, Virginia facility.
147	b.2. During P ADEP' s review of the application, Perdue revised their emission estimates for the dryers to reflect that only 50% of the air stream was controlled but still provided no documentation of the 90% control efficiency. The dryers should be connected to an air pollution control device (i.e., baghouse, dust collector, etc.) for particulate matter control and to prevent the build-up of combustible dust. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	The dryer's internal configuration consisting of screen airs and a cyclone is typically considered a PM control device. As an example, in its "Statement of Legal and Factual Basis" dated July 1, 2010, Virginia DEQ lists an efficiency of 95% for the screen airs and associated cyclone within the same dryer model at Perdue's Chesapeake, Virginia facility. Add-on PM emission controls are not practical for column grain dryers, given their relatively large volumes of exhausted air and the large cross-sectional area of the exhaust. New grain dryers being manufactured today rely on internal configuration and column plate design to minimize PM emissions. The proposed grain dryers will comply with the EPA's NSPS 40 CFR Part 60 Subpart DD emission limitations.
148	Section D - Additional Information: Page 27 information on emissions increases and decreases of VOCs and NOx are not provided even though Perdue states in Attachment C, Project Description that the facility is a single project consisting of two (2) distinct operations: Phase I (soybean grain elevator) and Phase II (soybean extraction operation) as well as in Attachment H, BAT Evaluation that the overall project will be subject to NSR requirements.	39, 41	August Mack Phase 1 Comments	This comment has been taken out of context as to the validity of the overall project versus Phase I. As a stand-alone, minor facility, the grain elevator is only subject to NSPS. DEP has given no indication to Perdue that the selected "Type of Review required and Fees" needs to be revised. See Attachment C, page 1, paragraph 4; of Phase I application, relating to the grain elevator's ability to function as a stand-alone facility.
149	Emission reduction credit offsets are not identified, a LAER demonstration is not provided, and an analysis of alternate sites is not provided.	39, 41	August Mack Phase 1 Comments	The Phase 2 Plan Approval Application addresses the NA-NSR requirements (ERCs, LAER, and alternative site analysis) for the project.
150	In addition, Title 25 of the Pennsylvania Code Chapter (25 Pa. Code §) 127.203a(a) requires the owner or operator to calculate a net emission increase is accordance with 25 Pa. Code §127.203a(a)(ii), if the emission increase from a project equals or exceeds the applicable emissions rate that is "significant" as defined in 25 Pa. Code §121.1. Emissions from Phase 1 exceed the "significant" emissions rate for PM-I0 and PM2.5 with revised emission calculations (See Specific Comment 11). Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	Potential annual emissions are based on an enforceable permit throughput limit of 630,000 TPY of soybeans. NA-NSR does not apply to PM-10 since Lancaster County is in attainment for PM-10. NA-NSR does not apply to PM-2.5 since overall project potential emissions are less than 100 TPY.
151	Section F - Flue and Air Contaminant Emission: Pages 29 to 34 information on the maximum emission rate of the following sources is not provided:	39, 41	August Mack Phase 1 Comments	See below.

[522]

#	Comment	Commenter #	Category	Response
152	a. 101 - Grain Receiving & Processing: See Specific Comment 11.a	39, 41	August Mack Phase 1 Comments	Hourly and annual maximum emission rates are provided in the Plan Approval Application on pages 29 through 35 and also in Attachment G. Short-term (hourly) emission rates are based on maximum hourly processing rate, and long-term (annual) emission rates are based on the enforceable Plan Approval throughput limitation of 630,000 TPY.
153	b. 102 - Wet Grain Storage Bins: See Specific Comment 11.b	39, 41	August Mack Phase 1 Comments	Hourly and annual maximum emission rates are provided in the Plan Approval Application on pages 29 through 35 and also in Attachment G. Short-term (hourly) emission rates are based on maximum hourly processing rate, and long-term (annual) emission rates are based on the enforceable Plan Approval throughput limitation of 630,000 TPY.
154	c. 103 - Grain Dryer No.1 and 104 - Grain Dryer No.2 - Grain Dryer No. 2: See Specific Comment 11.c	39, 41	August Mack Phase 1 Comments	Hourly and annual maximum emission rates are provided in the Plan Approval Application on pages 29 through 35 and also in Attachment G. Short-term (hourly) emission rates are based on maximum hourly processing rate, and long-term (annual) emission rates are based on the enforceable Plan Approval throughput limitation of 630,000 TPY.
155	d. 105 - Grain Storage Bins: See Specific Comment 11.d	39, 41	August Mack Phase 1 Comments	Hourly and annual maximum emission rates are provided in the Plan Approval Application on pages 29 through 35 and also in Attachment G. Short-term (hourly) emission rates are based on maximum hourly processing rate, and long-term (annual) emission rates are based on the enforceable Plan Approval throughput limitation of 630,000 TPY.
156	e. 106 - Grain Loadout: See Specific Comment 11.e	39, 41	August Mack Phase 1 Comments	Hourly and annual maximum emission rates are provided in the Plan Approval Application on pages 29 through 35 and also in Attachment G. Short-term (hourly) emission rates are based on maximum hourly processing rate, and long-term (annual) emission rates are based on the maximum anticipated throughput of 72,000 TPY.
157	Section F - Flue and Air Contaminant Emission: Pages 29 to 33 specific information has not been provided including the following. Perdue should be required to correct these deficiencies in its permit application:	39, 41	August Mack Phase 1 Comments	See below.
158	a. Does stack height meet Good Engineering Practice (GEP) (Page 29)	39, 41	August Mack Phase 1 Comments	Since air dispersion modeling was not required for PM emissions from this source, GEP stack height information was not provided in the application.
159	b. Stack exhaust volume, temperature, and moisture information (Pages 30 to 33).	39, 41	August Mack Phase 1 Comments	Bin vent stack exhaust flow data and grain dryer stack exhaust flow data were submitted in supplemental information to DEP.
160	Addendum A - Source Applicable Requirements and Addendum 1 - Method of Compliance Worksheets - It does not appear that all applicable requirements pertaining to each source have been included on Addendum A and Addendum 1 based on information provided by Perdue in Attachment D - Applicable Requirements. Applicable requirements that should be evaluated and included are as follows. Perdue should be required to correct these deficiencies in its permit application.	39, 41	August Mack Phase 1 Comments	See below.
161	a. 40 Code of Federal Regulations (CFR) Part 60.8 and 60.303	39, 41	August Mack Phase 1 Comments	Based on a review of the draft Plan Approval, the requirements are included in Section C, Condition #008.
162	b. 25 Pa. Code §121 - General Provisions	39, 41	August Mack Phase 1 Comments	Based on a review of the draft Plan Approval, the requirements are included in Section B.
163	c. 25 Pa. Code §122 - National Performance Standards for New Stationary Sources	39, 41	August Mack Phase 1 Comments	Based on a review of the draft Plan Approval, the applicable New Source Performance Standard (NSPS) requirements of 40 CFR Part 60, Subpart DD are included in Section E, Group 1.
164	d. 25 Pa. Code §127 - Construction, Modification, Reactivation, and Operation of Sources. Note, applicability of this regulation should be evaluated based on revised emission calculations (See Specific Comment 11) based on the maximum capacities of the sources to be permitted.	39, 41	August Mack Phase 1 Comments	Based on a review of the draft Plan Approval, the requirements are included throughout the draft Plan Approval as appropriate. As discussed above, the short-term (hourly) emission rates are based on maximum hourly processing rate, and long-term (annual) emission rates are based on the enforceable Plan Approval throughput limitation of 630,000 TPY; therefore, there is no need to revise the emission calculations.
165	e. 25 Pa. Code §129.57 - Storage tanks less than or equal to 40,000 gallons capacity containing VOCs.	39, 41	August Mack Phase 1 Comments	This regulation does not apply to the Phase 1 grain elevator facility as there are no VOC-containing storage tanks proposed for the facility.
166	Attachment B - Facility Site Map - The facility site map provided with the application does not include information on four (4) additional wet grain storage bins that would be part of Source ID 102 and six (6) additional, 500,000 million bushel grain tanks that would be part of Source ID 105 and are specified as plans for future expansion on an engineering drawing titled Zoning Exhibit for Perdue Grain and Oilseed, LLC Soybean Processing Facility dated Feb. 29, 2012 that was presented at a public hearing before the Zoning Hearing Board of Conoy Township on March 22, 2012. Perdue should clarify their plans for future expansion with regard to their air permit requirements prior to PADEP issuing the Plan Approval for Phase	39, 41	August Mack Phase 1 Comments	Perdue does not have current plans for full build-out of the additional grain storage tanks as indicated on the Zoning Exhibit. In the future, should Perdue develop such plans, the proper DEP permit applications will be filed to seek approval for such plans.
169	Attachment E - Process Description: a. The process description indicates that the soybeans will pass through two (2) enclosed scalper screens to remove foreign material such as sticks, stems, pods, dirt, and other debris. The totally enclosed scalper screens will not be emission sources themselves; however, miscellaneous dust pick up points with the processing system will be sent to the grain baghouse for control. If dust is generated from the scalper screens requiring miscellaneous dust pick up points that are sent to the grain baghouse for control then these scalper screens are an emission source and should be included as part of the emission calculations, on the appropriate application forms, and as an emission source in the proposed Plan Approval.	39, 41	August Mack Phase 1 Comments	As indicated in the Plan Approval Application, the enclosed cleaner scalper screens are a component of the Grain Receiving/Processing Source. Emission estimates are consistent with U.S. EPA AP-42 Section 9.9.1 emission factors and methodology. The emission estimates for Grain Receiving/Processing include the combined emission factors from "Grain receiving" and "Headhouse and grain handling" as provided in AP-42 Table 9.9.1-1. This is due to the fact that the overall system (grain receiving, handling (drag conveyance, legs, turnhead, etc.), and the enclosed cleaner scalper screens) is aspirated to the single Grain Receiving/Processing Baghouse.
170	In addition, the soybean screening process is identified as an air emission source by Perdue in Attachment I, County and Municipal Notifications. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	As indicated in the Plan Approval Application, the enclosed cleaner scalper screens are a component of the Grain Receiving/Processing Source. Emission estimates are consistent with U.S. EPA AP-42 Section 9.9.1 emission factors and methodology. The emission estimates for Grain Receiving/Processing include the combined emission factors from "Grain receiving" and "Headhouse and grain handling" as provided in AP-42 Table 9.9.1-1. This is due to the fact that the overall system (grain receiving, handling (drag conveyance, legs, turnhead, etc.), and the enclosed cleaner scalper screens) is aspirated to the single Grain Receiving/Processing Baghouse.
171	Attachment E - Process Description: b. The process description indicates that as Source ID 102 the wet grain storage bin tanks can be filled relatively quickly, resulting in the displacement of a significant volume of air, the vents will be equipped with collapsible fabric filters to minimize fugitive emissions of dust. Source ID 105 grain storage bins should also be equipped with collapsible fabric filters on the bin vents as the annual precontrol emissions in tons per year specified for Source ID 105 in Attachment G are the same as the annual precontrol emissions in tons per year specified for Source ID 102. Perdue should be required to correct this deficiency in its permit application.	39, 41	August Mack Phase 1 Comments	As provided in AP-42, Table 9.9.1-1, there is only one (1) set of PM/PM10/PM2.5 emission factors available for estimating "Storage bin (vent)" emissions, regardless of bin capacity or maximum bin filling rate. Given that the ID 105 large bins are of a different size configuration and loading rate as compared to the smaller wet grain ID 102 bins, it is not practical to utilize collapsible fabric filters on the ID 105 bins. As per the draft Plan Approval, the bins are required to be observed for visible emissions.

[523]

#	Comment	Commenter #	Category	Response
172	Attachment J - General Information Form: a. On page 3 of 7, Project Information Item 1. Perdue indicates "Yes" that they have informed the surrounding community and addressed any concerns prior to submitting the application to the PADEP. Previous questions and concerns raised by Nissley Vineyards have not been addressed including questions submitted in writing on the following dates: i. May 26, 2010, ii. December 28, 2011, iii. A handout distributed as Perdue's Open House on April 26, 2012, and iv. June 18, 2012.	39, 41	August Mack Phase 1 Comments	Perdue has undertaken extensive efforts to reach out to the local community through, among other things, an open house and presentations to municipalities, the agricultural community and local and county emergency responders. The project was also the subject of public land use proceedings before Conoy Township and Lancaster County. Perdue has attempted to address the concerns of Nissley Vineyards through various means, including having Ms. Judy Nissley tour a similar facility in Maryland and meetings with the Nissleys and their consultants. Despite these efforts, Perdue has been unable to address the Nissleys' concerns to their satisfaction. Moreover, there is no regulatory requirement that Perdue do so prior to issuance of the Plan Approval.
173	Attachment J - General Information Form: b. On page 3 of 7, Project Information Item 2. Perdue provides information on project funding but does not include the grant expiration date. The grant contract expires on November 30, 2016 and the project is required to be completed within the term of the contract.	39, 41	August Mack Phase 1 Comments	The grant contract expires on November 30, 2016; the information pertaining to project funding through ARCAP is public knowledge and is available for review.
175	It is eminently clear, from public statements made by Perdue Grain & Oil Seed, LLC (Perdue), Lancaster County Commissioners, Lancaster County Solid Waste Authority, and even the plan approval application itself, that the ultimate business plan for Perdue is the installation of a grain elevator and a soybean oil extraction plant.	42	Hellam Township Phase 1 Comments	Perdue is proposing to construct a grain elevator and a soybean oil extraction plant at the proposed site. As referenced in paragraph four (4) of Attachment C (Project Description) to the Phase 1 Plan Approval Application, the grain elevator facility will have the ability to function as a stand-alone facility.
176	It is further admitted by both DEP and Perdue, that the total facility will be a major source of VOCs in a presumed non-attainment area, subject to New Source Review (NSR).	42	Hellam Township Phase 1 Comments	The potential VOC emissions from the proposed facility classify the proposed facility as a major source of VOC emissions.
177	One requirement for a new or modified source that triggers NSR is that the applicant must conduct an alternative site analysis. DEP has not indicated in its review memo that this was in fact conducted or that DEP concurred in any determination that the selected site's location met the harms/benefit requirements of the regulation. And while there may be a legitimate reason for Perdue to develop this project in two phases, the failure to address the alternate site analysis for the entire project is a circumvention of this requirement, whether intended or not. If DEP does not require this analysis for Phase 1 of the project, a legitimate investigation of alternative sites is circumvented by virtue of the argument (after the fact) that placing the extraction plant next to the elevator results in transportation savings and results in the least harms, thereby totally corrupting a legitimate alternative site investigation. DEP must insist on this analysis prior to issuing the Phase I plan approval.	42	Hellam Township Phase 1 Comments	An alternative site analysis was provided with the Phase 2 Plan Approval Application, and that analysis pertains to the facility as a whole. Since the Phase 1 facility is not yet constructed, the analysis is not biased towards the project's current location.
178	Additionally, since the public has not had an opportunity to review DEP's analysis of this issue, a revised draft permit with an updated technical review memo should be issued with another 30-day comment period.	42	Hellam Township Phase 1 Comments	The Phase 2 Plan Approval Application contains an alternative site analysis covering the entire facility. This analysis has been available for public review since the time of the Phase 2 Plan Approval Application submittal.
179	There are additional areas of concern in the draft plan approval relating to particulate emission limits and the verification of those limits, which are included below.	42	Hellam Township Phase 1 Comments	See below.
180	The first source listed in the draft plan approval, the grain receiving and processing (Source 101) has emission limits based on Chapter 123 regulations and in Source Group 01, limits based on New Source Performance Standards (NSPS). Nowhere in the draft plan approval or in the review memo are limits established under Best Available Technology (BAT) requirements as required under Chapter 127. Chapter 123 regulations and NSPS limits are not BAT determinations.	42	Hellam Township Phase 1 Comments	DEP has established a BAT emission level for sources similar to Perdue's grain elevator operation in General Plan Approval GP-15. GP-15 specifies the BAT emission level as 0.02 gr/dscf. Perdue has proposed a more restrictive limit of 0.01 gr/dscf and believes this limitation to satisfy BAT.
181	Additionally, the potential-to-emit (PTE) on this source is improperly determined. The review memo agrees with Perdue's estimate of a 99.9% control efficiency of the baghouse without any requirement to verify or test this hypothesis. The vendor guarantee of 99.9% cannot be taken seriously since it is given independent of any inlet loading. Any knowledgeable baghouse vendor is aware that percentage removals can only be guaranteed based on an inlet loading. In contrast the permit limits for this source are 0.02 gr/dscf under the Chapter 123 regulation and 0.01 gr/dscf under the NSPS.	42	Hellam Township Phase 1 Comments	As provided in the Plan Approval Application, the baghouse manufacturer guarantees that based on 2 micron and larger dust particles, the baghouse will have a 99.9% or better mass efficiency rating on the dust laden incoming gas stream, and that emissions will not exceed 0.01 gr/dscf. Given that the baghouse manufacturer is aware of the type of emission source being controlled, the manufacturer has an indication of the typical expected inlet loading characteristics for this type of emission source and has guaranteed the control efficiency. Using the regulatory limit of 0.01 gr/dscf and the design airflow will yield an allowable emission rate in pounds per hour which is not necessarily the source's potential to emit on an annual basis.
182	The review memo states that the air flow through the grain baghouse is 30,000 ACFM. While the review memo doesn't give the SCFM through the baghouse, the fact that this is moving ambient air allows one to assume the actual flow is fairly close to the standard flow for purposes of estimating the PTE of this source. Using 30,000 SCFM and 0.01 gr/dscf, the more stringent of the two limits, a PTE of 11.3 tons per year of particulate matter (PM) is indicated. Contrast this with the Perdue's estimate of a PTE of 0.03 tons per year based on unverified and unenforceable assumptions.	42	Hellam Township Phase 1 Comments	Perdue has requested and received an enforceable permit throughput limitation of 630,000 tons of soybeans per year. Emissions were estimated based on this annual throughput limit, published EPA AP-42 emission factors, and a manufacturer guaranteed control efficiency. There will be times throughout the course of a year when the process is operating at well below the maximum hourly rate or not even operating at all. As opposed to limiting hours of operation and in the interest of operational flexibility, Perdue has requested and accepted a 12-month soybean throughput limitation for the facility.
183	The review memo should be revised to establish a PTE that is actually enforceable. If Perdue wishes to use the 99.9% control, the permit must require actual demonstration of this in practice.	42	Hellam Township Phase 1 Comments	The proposed Plan Approval (Section C, Condition #008) contains stack testing requirements for the baghouse.
184	There are more serious issues with the grain dryers. Again DEP fails to establish BAT emission limits on the largest source of particulate emissions in this plan approval. The uncontrolled emissions, by Perdue's own estimate, make this source major for PM, yet DEP imposes no limits or testing requirements on these dryers but just assumes the Perdue estimated control of 90%.	42	Hellam Township Phase 1 Comments	The proposed Plan Approval (Section C, Condition #008) requires opacity measurements to demonstrate compliance with the applicable opacity limits. Perdue believes the column grain dryers qualify as BAT given that the alternative dryer configuration, namely a rack grain dryer, has higher emission rates, per AP-42. The dryer's internal configuration consisting of screen airs and a cyclone is considered a PM control device. As an example, in its "Statement of Legal and Factual Basis" dated July 1, 2010, Virginia DEQ lists an efficiency of 95% for the screen airs and associated cyclone within the same dryer model at Perdue's Chesapeake, Virginia facility.
185	BAT must be established and enforceable conditions must be included to test these sources to ensure they are below major source thresholds.	42	Hellam Township Phase 1 Comments	Per the Department's review memo, DEP concurs with Perdue's BAT determination for the proposed sources. The proposed Plan Approval (Section C, Condition #008) contains testing requirements to ensure compliance with the applicable regulatory limits and the proposed Plan Approval limits.
186	If periodic testing is not included, the minor source status of the grain elevator is not practically enforceable, contrary to DEP and EPA regulations.	42	Hellam Township Phase 1 Comments	Testing is required within the proposed Plan Approval (Section C, Condition #008). As per the proposed Plan Approval, Perdue will limit its emissions by complying with the enforceable soybean throughput limitation of 630,000 tons per year.

From: Fontaine, Peter [mailto:PFontaine@cozen.com]
Sent: Monday, March 10, 2014 3:40 PM
To: Hanlon, Thomas
Cc: Maxine M. Woelfling; Herbert D. Frerichs Jr. (herb.frerichs@perdue.com); Rowe, Greg (Greg.Rowe@perdue.com); Black, Wayne (Wayne.Black@perdue.com); 'Hudson, Wayne' (Wayne.Hudson@Perdue.com)
Subject: Deliberative Draft Comment & Response Document

Enclosed please find our inputs to the Draft Comment & Response Document.

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#	Comment	Commenter #	Category	N
14	Certainly the issues of multiple sources, not only industrial, but also transportation orientated need to be considered. We've heard about the trains, we've heard about the truck trips necessary to supply the facilities.	88	Overall Permitting Issues	Rail will not be used to transport soybeans to the facility or finished products from the facility. To the extent that the commenter is suggesting that emissions from mobile sources must be considered as part of the plan approval process, DEP has already done so in its implementation plans and new source review regulations.
55	The proposed siting of the Perdue facility is flawed due to a lack of regional planning	9, 85-86	Public Health and Welfare	Acts 67, 68 and 127 of 2000 (amendments to the Pennsylvania Municipalities Planning Code) require DEP to consider comprehensive land use plans and zoning ordinances in its review of applications for facilities such as Perdue's soybean processing facility. DEP relies upon information provided by the relevant county and host municipality, and, in this case, that information indicated that Perdue's proposed facility was consistent with Lancaster County and Conoy Township land use requirements. Municipalities are entrusted with the authority, but not the obligation, to develop and implement comprehensive plans and zoning ordinances, either on an individual or multi-municipal basis. DEP has no authority to deny a plan approval application on the basis that there is no regional land use planning
56	Will this plant emit any odors, especially those that will linger?	53	Public Health and Welfare	Perdue does not expect odors to be a concern. Based on Perdue's experience at its other facilities, if any odors are detectable, they will be a feed/grain type of odor. The Plan Approval will contain conditions prohibiting malodors beyond the project property line.
58	Industrial sounds, smells, emissions and lighting from the Conoy Township side of the river can be overbearing and very intrusive on the Hellam Township side of the river.	85-86	Public Health and Welfare	To the extent that the commenter is suggesting that the project will result in noise, odor and similar issues, Perdue does not expect the project, as designed, to create any odor, emissions, noise or lighting issues. DEP has no authority to address issues of sound and lighting, as they are matters within the purview of local governments, and Conoy Township and the Lancaster County Planning Commission have already approved the project. The Plan Approval will contain conditions prohibiting malodors beyond the project property line and limiting emissions.
59	While one may look across the Susquehanna River and see trees on the York County side, we look back across and see unshielded lights, hear industrial noise and experience emissions from increasing numbers of stacks.	85-86	Public Health and Welfare	See response to Comment 55.
75	Do you have charts of cumulative emission data and prevailing wind direction from the many other pollution sources already at this location?	85-86	Public Health and Welfare	It is unclear whether the commenter is referring to the project site, Conoy Township or Lancaster County in general. Meteorological data from locations close to the project site were provided by DEP to Perdue and considered in the Air Dispersion Modeling and Health Risk Assessment Report (Risk Assessment Report) prepared by ENVIRON International and submitted to DEP as part of the Plan Approval Application. That report and the supporting data are available for public inspection and copying in the DEP Southcentral Region Office. Similarly, emissions data relating to other sources in the area is available for public inspection and copying at the DEP Southcentral Region Office.
84	I expect someone has run cost projections on emission control above and beyond statute. Where might I find such an analysis?	55	BAT/LAER/NNSR Issues	Relevant cost data is presented in the revised LAER Evaluation found at Attachment H to the revised Plan Approval Application.
98	The proposed emission of VOC from the proposed facility is 4 tons below the 250-ton-per-year PSD threshold.	39, 41	August Mack Phase 1 Comments	Based on the revised LAER Evaluation, total maximum potential VOC emissions are 185.72 TPY year, or 64.28 TPY below the PSD threshold of 250 TPY.
99	Due to the unique air characteristics of the area, as well as the 246 TPY proposed emissions of VOC, DEP should request that Perdue provide information on how the source will not prevent or adversely affect the attainment or maintenance of ambient air quality standards per 25 Pa. Code 127.12(a)(6).	39, 41	August Mack Phase 1 Comments	Based on the revised LAER Evaluation, the total maximum VOC emissions are 185.72 TPY. The "unique air characteristics of the area" have been considered in the Risk Assessment Report submitted as part of the Plan Approval Application. The revised LAER Evaluation and the Risk Assessment Report provide information that will enable DEP to make a determination that the project will not prevent or adversely affect the attainment and maintenance of ambient air quality standards..

#	Comment	Commenter #	Category	N
100	Due to the unique air characteristics of the area, as well as the 246 TPY proposed emissions of VOC, DEP should request that Perdue provide a plan of action for reduction of emissions during each forecast level specified in 25 Pa. Code 137.3(1) thereby preventing an emergency due to the effects of the pollutants on the health of persons in accordance with 25 Pa. Code 127.12(a)(7).	39, 41	August Mack Phase 1 Comments	Based on the revised LAER Evaluation, the total maximum VOC emissions are 185.72 TPY. DEP has the discretion to request such a plan as part of the Plan Approval Application, but has not done so.
101	Due to the unique air characteristics of the area, as well as the 246 TPY proposed emissions of VOC, DEP should request that Perdue provide a plan for dealing with air pollution emergencies in accordance with 25 Pa. Code 127.12(a)(9).	39, 41	August Mack Phase 1 Comments	Based on the revised LAER Evaluation, the total maximum VOC emissions are 185.72 TPY. DEP has the discretion to request such a plan as part of the Plan Approval Application, but has not done so. In addition, there is no requirement in the Clean Air Act to do so.
142	The permit application does not include an appropriate "topdown" Best Available Control Technology (BACT) Analysis along with the use of lowest achievable emission rate (LAER) and an analysis of alternate sites to fulfill the NNSR requirements.	39, 41	August Mack Phase 1 Comments	The project is not subject to Prevention of Significant Deterioration (PSD) requirements, and, therefore, BACT requirements do not apply. The project is subject to Non-Attainment New Source Review (NA NSR) requirements, and, as a result, LAER requirements apply. A revised LAER Evaluation was submitted to DEP as part of the revised Plan Approval Application. The required Alternatives Analysis was also submitted to DEP as part of the revised Plan Approval Application.
189	We have the richest farmland in the state right here in PA. I think that is a treasure we need to take seriously and preserve.	76	Additional Issues	As explained in the revised Alternatives Analysis submitted with the revised Plan Approval Application, the siting of the facility in Lancaster County will reduce transportation and shipping costs for farmers who must now ship soybeans out of state for processing. The resultant economic benefit to Lancaster County farmers will enable them to preserve agricultural lands.
190	If this county is already known as having problems, environmental problems, let's think about what that does to the value of our property	84	Additional Issues	The commenter has not identified what, if any, environmental problems the county is experiencing and how those problems affect property values. In any event, the construction and operation of Perdue's facility in accordance with DEP requirements should not create or contribute to environmental problems. The facility will be sited in an area zoned for industrial uses and should not result in a reduction of property values.
193	I believe that it is premature and inappropriate for Perdue representatives to talk about jobs and money to Conoy Township officials and the media when they have not yet submitted a thorough analysis of the potential health and environmental impacts of the proposed facility as is required by DEP regulations that deal with the proposed hexane storage tanks on this site (25 Pa. Code Section 245.235(b)). Unless this information is supplied to the DEP I request that DEP deny Perdue's applications for phase one, phase two plan and approval of the application and for their above ground storage tank permit.	71-72	Additional Issues	The environmental assessment requirements of 25 Pa. Code §245.235 only apply to tanks of certain capacities located at certain types of storage tank facilities, as per 25 Pa. Code §245.231(b)(4) and the DEP's Site Specific Storage Tank Installation Permit (SSIP) Application Instructions (DEP Document No. 2630-PM-BECB0002, Rev. 03/2013). Based on the capacities of the proposed hexane storage tanks and the type of proposed facility, an environmental assessment was not required to be submitted with the SSIP Application for this project.
195	Perdue's good record of lost time injuries at one of its other plants may reflect positively on its applications for the proposed Conoy Township facility.	69	Additional Issues	Perdue concurs with the commenter that its lost time injury record reflects well on its ability to operate a hexane extraction facility. In addition, Perdue's implementation of environmental and process safety management systems at its other facilities is indicative of the company's commitment to protection of health and safety.
196	The proposed Perdue plant may have positive benefits, such as jobs or access for farmers.	60-61, 65-66, 69	Additional Issues	As noted in the revised Alternatives Analysis submitted with the revised Plan Approval Application, Perdue's proposed facility will have positive economic and social benefits. In creating more equitable markets for agricultural products, the facility will contribute to the sustainability of agriculture and preservation of farm lands in Lancaster County.
197	The ~35 jobs is no tradeoff for the negative impacts of this project.	45, 57, 70, 84	Additional Issues	As detailed in the revised Alternatives Analysis and other components of the revised Plan Approval Application, the benefits of the proposed soybean extraction facility far outweigh the negative impacts, if any.
198	Some of the jobs provided by the Perdue plant may be low paying.	67-68	Additional Issues	The commenter provides no support for its claim that some jobs at the project may be low-paying. According to the RCAP grant application, the project is expected to generate $1.4 million annually in wages.

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199	Area farmers will continue to enjoy a market for their soybean crops without Perdue located here in Southcentral PA.	45, 57	Additional Issues	While local farmers will still have markets for soybeans if Perdue's facility is not built, their profits will be reduced by increased transportation costs associated with shipping soybeans to out-of-state processing facilities. As explained in the revised Alternatives Analysis in the revised Plan Approval Application, there is not enough local processing capacity to handle local soybean production.
200	Perdue is planning to release an estimated 245 tons of hexane gas into the air each year. This is almost five times the allowed maximum limit.	70	Overall Permitting Issues	Based on the revised LAER Evaluation, total maximum potential VOC (hexane) emissions are 185.72 TPY. There is no "allowed maximum limit" that the 185.72 TPY would exceed. If, however, a project's emissions will exceed a threshold of 50 tons of VOC per year, the applicant must demonstrate that the project's emissions will represent LAER, which Perdue has done through its revised LAER Evaluation.
204	The figures provided by Perdue as to the amount of hexane that will be released have been revised multiple times, as has the hexane rate of recovery. Many of the provided figures conflict with the 7,000 gallons per month of hexane that Perdue has stated will be trucked to the plant every month. In at least one document Perdue has stated that it will release 220,000 pounds of hexane per year into the atmosphere.	61-62	Overall Permitting Issues	Based on the revised LAER Evaluation, total maximum potential VOC (total hexane) emissions are 185.72 TPY.
205	There is a total of 84,000 gallons of hexane delivered to the plant a year, 40,000 gallons stored. That would seem a little high to me that if you're only using 7,000 gallons a month why you would have to keep 40,000 gallons on hand in above ground storage tanks.	81	Overall Permitting Issues	See below. Roughly one truck load of hexane will be delivered per month, for a total of 65,625 gallons or 185.72 TPY. The nominal amount routinely stored in the tanks would be approximately 5,000 gallons. In addition, see the response to Comment 397.
206	How many tons of hexane will be brought onto this proposed site in a year's time?	85-86	Overall Permitting Issues	A maximum of 525,000 tons of soybeans per year will be crushed, with an SLR of .125 gallons per ton. A gallon of hexane weighs 5.66 pounds, so 65,625 gallons or 185.72 TPY of hexane would be brought on-site per year. This equates to one truckload per month.
207	How much hexane will be used and released in a 24 hour period?	85-86	Overall Permitting Issues	The amount of hexane released per 24-hour period will vary from day-to-day due to the variability of the constituents of the soybeans. As the process stabilizes after start-up, there should be less variability in solvent emissions. In any event, the proposed conditions for the plan approval/operating permit will limit the solvent loss (emissions) to 187.5 gallons per day or less per 12-month operating period.
208	Is hexane going to be evaporated, vented, scrubbed or disposed of and what percentages?	85-86	Overall Permitting Issues	The section entitled "Facility-Wide Hexane Solvent Loss Calculations for Proposed Conoy Township Facility" in the March 2014 Revision to Attachment G to the Plan Approval Application provides the type of emission and the associated percentage of total emissions.
209	How did you obtain your data for hexane and what is your reliability factor for this data?	85-86	Overall Permitting Issues	The data was compiled from a number of sources, including professional consultants, EPA databases, and Perdue's operational experience.
210	Where did you say that you were venting or allowing the hexane to escape to?	85-86	Overall Permitting Issues	See the response to Comment 208.
211	Who and what is the source of the hexane and what is the pathway of its journey to arrive at this proposed location?	85-86	Overall Permitting Issues	Various suppliers will deliver hexane solvent to the facility by tanker truck. The suppliers will adhere to federal, state and local transport requirements.
212	Where and what on and offsite monitoring is proposed with these releases [of hexane]?	85-86	Overall Permitting Issues	See Section 9.6 of the revised LAER Evaluation that discusses the fixed-location flammable gas monitors that will be used in the solvent extraction area to continuously monitor the hexane concentration in air.
213	Why has DEP not made it a requirement to monitor the health effects of a toxin (hexane) released into the air directly? Why is Perdue not required to monitor hexane release effects?	89	Overall Permitting Issues	The Risk Assessment Report submitted with the Plan Approval Application concludes that hexane emissions from the facility will not create adverse chronic or acute health risks at an SLR of .140 gallons per ton. Any effects should be even less at the revised proposed SLR of .125 gallons per ton. In addition, see the response to Comment 212.
214	If hexane monitoring is required, what will be the standard for testing, and who will do the testing?	89	Overall Permitting Issues	See response to Comment 212.
215	If such hexane testing is not required, then there must exist alternative measurement of the toxic effects that there will be a tracking, either informal or formal, of these effects, with release of this information to the public.	89	Overall Permitting Issues	See responses to Comments 212 and 213. Any monitoring data submitted to DEP will be available for public inspection and copying at the DEP Southcentral Region Office.

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218	Perdue does not want to pay for any studies exploring the health risks of hexane, which is already listed by the EPA as a hazardous air pollutant.	75	Public Health and Welfare	The health effects of commercial hexane and n-hexane have been evaluated by various agencies, including EPA, OSHA, NIOSH, and the ATSDR. See Section 2.2.3 of the Risk Assessment Report submitted as part of the revised Plan Approval. Application.
223	To my knowledge, there have been no --- there have been few, if any, serious public health studies of human populations exposed to various levels of hexane emissions around soybean extraction plants.	71-72	Public Health and Welfare	See response to Comment 218.
224	Will this plant put hexane or another toxin in the river?	89	Public Health and Welfare	The proposed facility will not discharge into the Susquehanna River.
225	Perdue emitting hexane into the air, as proposed, is not really much different than if they were dumping gasoline on people's properties.	68	Public Health and Welfare	The commenter has not provided any rationale for its statement. To the extent that the commenter is suggesting that hexane emissions will create adverse health effects, see the response to Comment 213.
229	In view of the potential health hazards caused by smog I would ask the DEP to require that Perdue carry out an air modeling screening study on the hexane emissions released from their proposed plant in Conoy Township.	71-72	Public Health and Welfare	Perdue has conducted a health risk assessment. See responses to Comments 212 and 213.
230	I recommend that you don't to Lancaster Airport to get meteorological data for the hexane air modeling study. Go to Bainbridge because that's where the temperature inversions are.	71	Public Health and Welfare	DEP provided Perdue with meteorological data from wind stations - Capital City Airport, the Brunner Island Generating Station and Lancaster Airport, and DEP's recommended upper air station. The Brunner Island station is located three miles northwest of the proposed facility on the Susquehanna River, and because its data was determined to be most representative of site conditions, the air dispersion modeling was performed with that data. Sensitivity analyses were then performed with the Capital City (15 miles northwest) and Lancaster Airport (19 miles east) data. The meteorological data accounted for temperature inversions (among other parameters) for each hour of the five years modeled. The model also accounts for topography. Additional detail is provided in Sections 2.1.4 and 2.1.5 of the Risk Assessment Report.
231	The hexane air modeling study should take into consideration the effect of the numerous temperature inversions and high levels of nitrous oxide that are known to occur in the region around the proposed new plant.	71-72	Public Health and Welfare	See response to Comment 230.
233	Mr. Black of Perdue indicated with respect to the hexane modeling and risk assessment that their consultant will conduct this model using EPA protocols. Well, our position is that that model should be conducted in advance of requesting the assessment. We know that topography in an area is a critical issue and so that's something that must be included in any kind of proper modeling. Local meteorological data should be used	88	Public Health and Welfare	See response to Comment 230.
236	Perdue has not considered using readily available technology to reduce hexane emissions.	36	BAT/LAER/NNSR Issues	The revised LAER Evaluation in the revised Plan Approval Application addresses various control technologies.
237	Better capture and control equipment would enable Perdue to greatly reduce the toxic hexane emissions and set a new industry standard nationally for the required lowest achievable emission rate (LAER) for these toxic emissions.	71-72	BAT/LAER/NNSR Issues	The revised LAER Evaluation in the revised Plan Approval Application proposes the lowest achievable emission rate for a facility such as this.
238	The question does remain about why the plant should emit so much hexane in this day and age. This hardly seems to me what should be permitted under LAER	88	BAT/LAER/NNSR Issues	See response to Comment 237.
239	The major part of the hexane emission from this plant would come from the meal dryer oven, which has no equipment on it to remove hexane emissions and allows 80 percent or up to 250 tons of the total emissions from the plant to be dumped in the air that we breathe.	71-72	BAT/LAER/NNSR Issues	Based on the revised LAER Evaluation, the meal dryer is estimated to emit approximately 24% of the total hexane emissions. See the revised LAER Evaluation that addresses various control technologies.
240	Our township officials and residents are not fooled by Perdue produced misleading statements to the press that they are removing most of the hexane from the air by using a scrubber on the part of the extraction process that removes residual hexane from soybean oil. This scrubber removes 99 percent of the hexane from the oil, but only 20 percent of the hexane emissions from the total plant.	71-72	BAT/LAER/NNSR Issues	See response to Comment 237.
247	There is a concern with the unscrubbed meal dryer. That is a critical issue that needs to be addressed properly.	88	BAT/LAER/NNSR Issues	See response to Comment 239.
251	According to a recent newspaper article, Perdue has rebutted all request related to scrubbers and requests for hexane containment	85-86	BAT/LAER/NNSR Issues	See response to Comment 236.
252	Will the hexane storage tanks have to require a venting condition to atmosphere, or to another secondary vessel?	83	BAT/LAER/NNSR Issues	The hexane storage tanks will be vented to the mineral oil scrubber system for control.
258	Other alternative extraction methods exist. We believe that when all costs are considered, and especially when health risks, explosion risks and environmental risks are included, hexane based extraction is neither a least cost nor a least risk extraction mechanism.	61-62	Alternatives Analysis Issues	See the revised Alternatives Analysis that discusses alternative extraction methods. In general, these alternative extraction methods are more energy intensive, less efficient, and/or not readily feasible for an operation of this scale.
260	I ask why DEP is not requesting the use of a cold press? It is not clear the reasoning for selecting this sort of plant when a cold press plant would serve the purpose. What is the reason for selection of this sort of plant?	89	Alternatives Analysis Issues	See response to Comment 258.

#	Comment	Commenter #	Category	N
262	The benefits of the Perdue facility to local farmers would exist even if the soybean oil processing portion of the facility were not constructed.	61-62	Alternatives Analysis Issues	See response to Comment 199.
263	Are there other methods for obtaining the oil that are significantly less harmful to human health and the environment?	59	Alternatives Analysis Issues	See response to Comment 258.
264	There is a risk of explosions from the proposed use of hexane at this facility.	65-66, 70-72, 78-79	Explosion and Accidental Release Issues	Any potential explosion risks will be minimized as a result of the facility's adherence to rigorous safety standards intended to prevent such risks. The facility will be designed, operated and maintained in compliance with National Fire Protection Association (NFPA) 36 (Standard for Solvent Extraction Plants) and 30 (Flammable and Combustible Liquids Code). The NFPA is an internationally recognized expert on fire safety. It will also be operated in accordance with OSHA Process Safety Management requirements and federal and state emergency planning requirements. Additional detail is provided in the Review and Evaluation of Blasting Analysis International Report (BAI) (Review of BAI Report) prepared by ENVIRON International and submitted as part of the SSIP Application.
266	There have been hexane explosions at numerous other soybean facilities in this and other countries.	59, 70	Explosion and Accidental Release Issues	There have been explosions at hexane extraction plants, but the incidents have occurred away from the production areas or during equipment maintenance or shut down. These incidents are addressed in the Review of BAI Report submitted with the SSIP Application.
269	There's a risk of acute exposure should an explosion or accidental release of hexane occur during a thermal inversion.	65-66	Explosion and Accidental Release Issues	See responses to Comments 213 and 266.
277	We've heard about the trains, we've heard about the truck trips necessary to supply the facilities. The associated hazards with respect to any accidents that might occur with respect to any of those kinds of sources, those are critical issues as well.	88	Explosion and Accidental Release Issues	Rail will not be used to transport soybeans to the facility or finished products from the facility. To the extent that any transportation related release occurs at the facility, it will be addressed through the Facility's response plans in coordination with local emergency responders. Any incidents related to transportation of materials and products off-site will be handled addressed through local emergency management plans.
278	I am concerned about hexane tank setbacks, and their proximity to each other.	59	Explosion and Accidental Release Issues	The proposed facility will be constructed in accordance with the set back requirements in the Conoy Township zoning requirements, and the placement of the hexane storage tanks relative to each other will be in accordance with NFPA 30 (Flammable and Combustible Liquids Code) and NFPA 36 (Standard for Solvent Extraction Plants).
279	How will the hexane be arriving at the site?	85-86	Explosion and Accidental Release Issues	The hexane will be delivered to site by truck.
280	Will hexane containment be in double walled containment vehicles during shipping and on site?	85-86	Explosion and Accidental Release Issues	Hexane will be transported in accordance with the U.S. Department of Transportation's requirements for shipment of hazardous materials.
281	Will any of the residual hexane be transported off site? If so, where to and by what method?	85-86	Explosion and Accidental Release Issues	A small residual amount of hexane remains in the meal and oil that is shipped off-site by truck.
282	Will a risk management plan be required for the hexane tanks?	78-79	Explosion and Accidental Release Issues	The hexane storage tanks will be included in the facility's Spill Prevention Response (SPR) Plan; Spill, Prevention, Control, and Countermeasure (SPCC) Plan; and OSHA Process Safety Management (PSM) Plan.
283	How does this plant propose to mitigate the safety concern with regard to explosions from hexane?	89	Explosion and Accidental Release Issues	See responses to Comments 264, 277, 278, and 282.
284	How does Perdue intend to ensure the community that it will not simply abandon us in the event of a serious event, such as a hexane explosion.	89	Explosion and Accidental Release Issues	See responses to Comments 282, 331, 332, and 443.
285	There are community concerns about this facility being located here and what kind of training would be done in case of an emergency related to the hexane storage and use.	59	Explosion and Accidental Release Issues	See responses to Comments 282, 331, 332, and 443.
286	How does this plant account for the increased need for services provided in the event of a catastrophic hexane explosion?	89	Explosion and Accidental Release Issues	See responses to Comments 282, 331, 332, and 443.
287	Will spill prevention and preparative response plans be required for the hexane tanks?	78-79	Explosion and Accidental Release Issues	See response to Comment 282.

#	Comment	Commenter #	Category	N
288	Will the risk management plan for the hexane tanks include safety and security training, plant facility training, security by chain link fencing of suitable height with barbed wire and cameras, limited access points guarded by trained personnel and security cameras, appropriate identification badges for all employees and vendors going in and out of the plant, security level outside lighting at night, identification and enforcement of restricted activity areas, security for parking of all tankers remaining on the facility overnight, blast resistant measures for all critical plant operations and tank storage areas, requirement of Chemical Security and Vulnerability Assessment by the U.S. Department of Homeland Security with assistance with the U.S. Department of Agriculture?	78-79	Explosion and Accidental Release Issues	Hexane is not a Chemical of Interest for purposes of the Department of Homeland Security's Chemical Facility Anti-Terrorism Standards. However, see responses to Comments 264, 277, 282, 482, 519, and 537-541.
289	Both terrorism, domestic and foreign, is a reality in our world today with flammable liquids --- with a flammable liquid facility of this magnitude. The old adage of an ounce of prevention is worth a pound of cure cannot be more appropriate in a situation like we have today.	78-79	Explosion and Accidental Release Issues	See response to Comment 288.
290	Based on standard MSDS publications hexane is very reactive with chlorine, bromine and fluorine. Now, I know that Norfolk Southern Railway runs tank cars up and down the river on a regular basis. In case there was a derailment would there be a collision of these tanker cars with these other chemicals that's highly reactive with [hexane]. That should be considered. I'd like to know that there's precautions being put into play for that.	83	Explosion and Accidental Release Issues	Hexane will not be transported to the facility by rail. The Norfolk Southern rail line is approximately 700 feet downslope from the extraction building and 775 feet downslope from the hexane storage tanks. In addition, see the responses to Comments 277 and 282.
291	User information related to hexane includes data relating to isolation from railroads and truck traffic along with the potential for flash explosions.	85-86	Explosion and Accidental Release Issues	See the responses to Comments 277, 280, 282, and 290.
292	Karst topography and sinkholes may cause problems for the Perdue project, due to collapses of equipment, including hexane storage tanks, and the associated risk of explosions.	, 27-28, 32, 34-35, 6	Explosion and Accidental Release Issues	See response to Comments 293 and 465.
293	Petitions for facilities with combustible substances should never be considered in this area due to sinkholes.	89	Explosion and Accidental Release Issues	The facility's stormwater collection and handling system will be designed based on the results of the soil borings and geotechnical study that were conducted at the site and provided to DEP as part of the Storage Tank SSIP Application. The stormwater system will direct flow overland to minimize infiltration and potential sinkhole formation. See also the response to Comment 465.
294	We cannot control these sinkholes and as much geotextile work we do in the ground, you cannot predict exactly where every sinkhole will occur.	82	Explosion and Accidental Release Issues	See responses to Comments 293 and 465.
295	Will the DEP require Perdue to provide an analysis of soil and related to safety for the installation of these tanks?	78-79	Explosion and Accidental Release Issues	See response to Comment 293.
298	2. Prevention of Significant Deterioration (PSD). Perdue indicates in Attachment D, Applicable Requirements that the federal PSD requirements are not applicable to the project as the calculated potential to emit (PTE) is anticipated to be less than the 250 tons per year threshold that is applicable to this type of facility. Perdue calculates the facility-wide volatile organic compound (VOC) emissions to be 248.65 tons. Based on our calculations and this comment submittal (Specific comment No. 14), the actual emissions will exceed 250 tons, thus subjecting the facility to PSD requirements including ambient impact modeling and an additional impacts analysis. As a result, the PSD requirements will apply and the application should be denied.	90	August Mack Phase 2 Comments	PSD does not apply to the project as the potential emissions for each pollutant are estimated to be below the 250 TPY threshold for PSD applicability.
300	VOC emissions from Grain Dryer no. 1 and Grain Dryer No. 2 which use a propane heating value of 91,500 British Thermal Units (BTUs/hour) instead 90,500 BTUs/hour specified in the U.S. Environmental Protection. Agency's Compilation of Air Pollutant Emission Factors (AP-42).	90	August Mack Phase 2 Comments	Based on facility design changes, the grain dryers will not be equipped with burners. Steam will be used to supply the necessary heat. Revised calculations submitted to DEP reflect this change.
301	In addition, Perdue indicated in a meeting on June 15, 2012 that 400,000,000 cubic feet of natural gas would be used in the Grain Dryers but the emission calculations are not based on this amount.	90	August Mack Phase 2 Comments	See response to Comment 300.
302	VOC emissions from boilers which are indicated as 1.46 tons in Attachment I but only 0.0455 tons in Attachment G.	90	August Mack Phase 2 Comments	The revised Attachment G potential emissions (0.0204 TPY) are based on the maximum anticipated timeframe (2 weeks) that a portable emergency boiler (if ever needed) would need to be operated at the site. There are no boilers planned for the facility. The Attachment I VOC emissions (1.46 TPY) are the potential emissions that would have been generated by a natural gas-fired boiler(s) if the facility had been sited at an alternate location without available steam.
303	Particulate Matter (PM), Particulate Matter less than ten (10) microns in diameter (PM-10), and Particulate Matter less than 2.5 microns in diameter (PM-2.5) emissions estimates are not based on operation 8,760 hours per year for the following sources: 202 - Bean Conditioning 203 - Flaking Rolls 205A Meal Dryer 205B Meal Dryer 206 Meal Screening and Grinding 207 Mill Feed (Hull) Grinding 209 Meal/Mill Feed Loadout Tank.	90	August Mack Phase 2 Comments	As provided in the Potential Emission Calculations attachment to the Plan Approval Application, the maximum potential short-term (lb/hr) emissions are based on the maximum hourly throughput rate for each source. Perdue has requested a 12-month soybean throughput limitation of 525,000 tons per year, based on plant design. This restriction is an enforceable permit limitation; therefore, potential long-term (12-month) emissions for each of the sources listed in the comment follow from this 12-month soybean processing limitation. As opposed to limiting hours of operation and in the interest of operational flexibility, Perdue has requested a 12-month soybean throughput limitation for the facility.

#	Comment	Commenter #	Category	N
309	Due to the unique air characteristics in this area of the Susquehanna River as well as the fact that Perdue claims that the overall project will allegedly emit 248.65 tons of VOCs, allegedly 1.35 tons below the PSD threshold of 250 tons specified in Title 40 Code of Federal Regulations (CFR) Part 52, PADEP should request the following from Perdue:	90	August Mack Phase 2 Comments	See response to Comment 98.
310	A recalculation of emissions of VOCs on the basis of the comments contained in this letter.	90	August Mack Phase 2 Comments	Based on available information, the revised VOC emissions are calculated accurately.
311	Information on how the source will not prevent or adversely affect the attainment or maintenance of ambient air quality standards in accordance with Title 25 of the Pennsylvania Code §127.12(a)(6).	90	August Mack Phase 2 Comments	The air modeling performed as part of the Risk Assessment Report, which assumed an SLR of .140 gallons per ton, indicates that the facility will emit low concentrations of VOCs. The concentrations will be even lower at the revised SLR of .125 gallons per ton. Given the available data on the environmental fate, transport, and effects of hexane, emissions from the facility are not expected to affect the physical properties of the atmosphere, contribute to global warming, deplete stratospheric ozone, or alter precipitation patterns. For several reasons, the impact of the proposed plant on ozone formation in the surrounding region of Lancaster and York Counties is expected to be small. The ozone-producing potential of hexane is considered low relative to other VOCs. In fact, hexane is considered to be one of the less photochemically reactive hydrocarbons, with a reactivity 17 times less than the most reactive VOC (Assessment Report on Hexane for Developing Ambient Air Quality Objectives, Alberta Environment, November 2004; Carter, Updated Maximum Environmental Reactivity Scale and Hydrocarbon Bin Reactivities for Regulatory Applications, prepared for California Air Resources Board, June 2009). The formation of ozone also is not an instantaneous process, but rather occurs over a period of hours. Over this period, VOC emissions from the plant will travel miles downwind of the plant. For example, in winds of just five (5) miles per hour and over a typical ozone formation period of four (4) to six (6) hours, emissions from the plant would travel 20 to 30 miles
312	A plan of action for the reduction of emissions during each forecast level specified in 25 Pa. Code §137.3(1) thereby preventing the occurrence of an emergency due to the effects of the pollutants on the health of persons in accordance with 25 Pa. Code §127.12(a)(7).	90	August Mack Phase 2 Comments	DEP has the discretion to request such a plan as part of the Plan Approval Application, but has not done so.
313	A plan for dealing with air pollution emergencies in accordance with 25 Pa. Code §127.12(a)(9).	90	August Mack Phase 2 Comments	DEP has the discretion to request such a plan as part of the Plan Approval Application, but has not done so. In addition, there is no requirement in the Clean Air Act or Air Pollution Control Act to do so.
316	As hexane has a low vapor pressure, a release from the ASTs or process structure would readily evaporate resulting in airborne concentrations of hexane impacting neighboring properties including properties located in Conoy Township and Hellam Township across the Susquehanna River.	90	August Mack Phase 2 Comments	Please see Section 3, Tables 3 and 4, and Figure 6 of the Risk Assessment Report. Modeled emissions of hexane at Bainbridge and Hellam were well below any health exposure benchmarks, even at the assumed SLR of .140 gallons per ton.
318	c. Safety Concerns/Explosion Hazard. Nissley Vineyards has retained Mr. Frank Chiappetta, President and Explosives Application Engineer with Blasting Analysis International, Inc. (BAI) to evaluate the safety concerns associated with the proposed hexane ASTs. A copy of the BAI report is provided in Attachment B. The results of this study indicate an explosion of the hexane tanks would result in:	90	August Mack Phase 2 Comments	ENVIRON's Review of the BAI Report, which was submitted with the SSIP Application, concluded that 1) the incidents cited in the BAI Report were not representative of the proposed facility; 2) BAI did not consider the safety measures that will be incorporated in the design and operation of the facility; and 3) the separation distances cited by BAI were not calculated correctly.
321	The oil storage tank, which is situated only 40 feet away from the hexane storage tanks, most likely catching on fire and spewing out huge amounts of heavy smoke and toxic gases.	90	August Mack Phase 2 Comments	BAI's assertions regarding the distances between the hexane storage tanks and the oil storage tank are based on the erroneous application of the Institute of Makers of Explosives (IME) minimum recommended safe separation distances. The IME recommendations apply to explosives (i.e. chemical compounds, mixtures or devices whose primary purpose is to function by explosion), and hexane is not an explosive. NFPA 30 and NFPA 36 standards address concerns such as those raised by BAI, and adherence to the NFPA standards will minimize the effects of any fire or explosion. The facility will be designed to meet the NFPA 30 and NFPA 36 requirements, including those relating to minimum separation distances, buffer zones and shell to shell spacing between tanks. See also Section 2.4 of the Review of BAI Report.

#	Comment	Commenter #	Category	N
322	There is a large propane storage tank nearby on the adjacent Lancaster County Solid Waste Authority incinerator property. Depending on the mass and velocity of a projectile, it is possible to explode the propane tank on impact, causing another secondary large scale energetic explosion.	90	August Mack Phase 2 Comments	See response to Comment 321.
328	d. Scrubbers. Due to the concerns with the use of hexane, Perdue should be required to install air pollution control devices (i.e., scrubbers) on all significant sources of VOC emissions at the proposed facility including the Meal Dryer which will emit 83.50 tons per year and the Meal Cooler which will emit 17.19 tons per year.	90	August Mack Phase 2 Comments	See responses to Comments 236 and 239.
330	4. Monitoring. Due to the concerns associated with ambient air quality in the vicinity of the facility including temperature inversions and a potential release of hexane, Perdue should be required to install monitors and continuously monitor for both hexane and VOCs at the property line.	90	August Mack Phase 2 Comments	In order to protect human health and the environment from hexane emissions, EPA has established a NESHAP Rule covering Solvent Extraction for Vegetable Oil Production facilities (40 CFR Part 63, Subpart GGGG). The proposed Perdue facility is subject to, and will comply with, Subpart GGGG. Furthermore, the air dispersion modeling in the Risk Assessment Report addresses temperature inversions. Given the NESHAP Rule and the results of the air dispersion modeling, ambient air monitoring at the facility's property line will not be necessary.
331	5. Emergency Preparedness. Due to safety concerns with the use of hexane at the facility Perdue should be required to prepare an emergency response plan that will include immediate and direct notification of all neighbors--by Perdue--within a one mile radius of the proposed plant in Conoy Township, Pennsylvania. The plan should include a warning system to be implemented by Perdue to warn nearby residents immediately, rather than rely solely on the local emergency response units (most of whom are volunteers), because valuable time would be lost for nearby residents in deciding to evacuate immediately, or to seal their homes by closing all windows/doors and turning off their A/C units until the danger has passed.	90	August Mack Phase 2 Comments	See responses to Comments 282, 443, 539 and 540. In addition, emergency planning and response is primarily the responsibility of the Local Emergency Planning Commissions and local governments under the Pennsylvania Hazardous Material Emergency Response Act and is outside of the scope of the DEP's plan approval review process. Perdue will coordinate its emergency response plans with local responders.
332	According to Perdue representatives, they plan to use the local emergency response units in dealing with such events. Perdue should take responsibility for this important aspect of emergency planning and response.	90	August Mack Phase 2 Comments	See response to Comment 331. Perdue intends to coordinate and cooperate with local emergency responders, but it will not take any action that could impede the ability of those responders to implement response actions. The most efficient and effective means of handling potential incidents will be determined in consultation with local responders.
334	a. The flow diagram in Attachment F does not include all of the requested information including the following. Perdue should be required to correct this deficiency in its permit application.:	90	August Mack Phase 2 Comments	Although not shown on the flow diagram, material flow rates, control device airflow, etc. are provided in the appropriate revised Plan Approval Application sections, the revised Potential Emission Calculations (Attachment G), and the revised LAER Evaluation (Attachment H).
335	i. Gaseous, liquid and solid flow rates	90	August Mack Phase 2 Comments	See response to Comment 334.
336	ii. The amount of raw material charged to the process in tons/hour at rated capacity	90	August Mack Phase 2 Comments	See response to Comment 334.
337	iii. The specific locations of where contaminants are controlled are not shown on the diagram, specifically the location of collection hoods or other pickup points	90	August Mack Phase 2 Comments	See response to Comment 334.
338	iv. A description of collection hoods design, airflow and capture efficiency for emissions vented through:	90	August Mack Phase 2 Comments	Although not shown on the flow diagram, a description of each control device, airflow rates, and capture/collection efficiencies are provided in the appropriate revised Plan Approval Application sections, the revised Potential Emission Calculations (Attachment G), and the revised LAER Evaluation (Attachment H).
339	1. Baghouses C201A, C201B, C201C, C20ID, C201E, C206, C207 and C210	90	August Mack Phase 2 Comments	See response to Comment 338.
340	2. Cyclones C202, C203, C205A, C205B	90	August Mack Phase 2 Comments	See response to Comment 338.
341	3. Mineral Oil Scrubber C204	90	August Mack Phase 2 Comments	See response to Comment 338.
342	4. Filters C208 and C209.	90	August Mack Phase 2 Comments	See response to Comment 338.
347	a. The applicant indicates a written plan for demonstrating compliance with Title 40 Code of Federal Regulations (CFR) Part 63, Subpart GGGG , §63.2851 will be developed and implemented and the hexane recovery system will be operated and maintained per the manufacturer's instructions. As part of the Plan Approval application the facilities provided to monitor and record process operating conditions which may affect the emission of air contaminants are to be described fully. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	The required compliance plan elements are as referenced in Subpart GGGG and are not reproduced in the revised Plan Approval Application. Given Perdue's operation of its other existing soybean processing plants, Perdue has extensive experience in meeting the Subpart GGGG compliance plan requirements. A compliance plan meeting the Subpart GGGG requirements will be developed prior to facility start-up, as required by Subpart GGGG. Furthermore, Section 9.8 of the revised LAER Assessment (Attachment H) describes the monitoring/recordkeeping procedures.

#	Comment	Commenter #	Category	N
348	b. The applicant does not identify and describe all fugitive emission points but indicates that "fugitive hexane emissions will occur at various component fittings in the extraction process/hexane recovery system." Perdue should be required to prove that fugitive emissions will be negligible or the permit should be denied.	90	August Mack Phase 2 Comments	The revised Potential Emission Calculations (Attachment G) and revised LAER Assessment (Attachment H) describe in detail the fugitive emission sources.
349	c. The applicant indicates a Startup, Shutdown, and Malfunction (SSM) plan for demonstrating compliance with Title 40 Code of Federal Regulations (CFR) Part 63, Subpart GGGG, §63.2852 will be developed prior to startup. As part of the Plan Approval application a description of how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions is to be provided. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	The required SSM plan elements are as referenced in Subpart GGGG and are not reproduced in the revised Plan Approval Application. Given Perdue's operation of its other exiting soybean processing plants, Perdue has extensive experience in meeting the Subpart GGGG SSM plan requirements. A SSM plan meeting the Subpart GGGG requirements will be developed prior to facility start-up, as required by Subpart GGGG.
350	5. Meal Dryer: a. Page 14, Process Form, Section B - Processes Information, Item 2 and Item 3. no information on fuel use or a burner for the meal dryer is provided. During a meeting in June 2012 representatives from Perdue indicated that drying in the meal dryer would be via steam. It does not appear that adequate information on how drying will be achieved in the meal dryer is provided in the event that steam becomes unavailable from the Lancaster County Solid Waste Management Authority (LCSWMA) incinerator including fuel usage and associated combustion emissions.	90	August Mack Phase 2 Comments	Meal drying in the meal dryer is via steam. Should LCSWMA go off-line, fuel usage and combustion emissions associated with a temporary portable boiler are provided in the revised Plan Approval Application's revised Potential Emission Calculations (Attachment G).
351	b. Page 16, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information the applicant indicates that the pressure drop on the cyclone will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the cyclone should be continuously monitored with continuous monitoring being incorporated into a permit condition.	90	August Mack Phase 2 Comments	A gauge will continuously monitor the control device's pressure drop. It is proposed that the pressure drop measurement will be read and recorded once per month when the source is operating, as per the revised Plan Approval Application.
352	6. Meal Cooler: Page 19, Process Form, Section B - Processes Information, Item 6. Miscellaneous Information: a. The applicant indicates that the pressure drop on the cyclone will be read monthly and recorded when the source is in operation. As the facility will operate 24 hours per day, 7 days per week the pressure drop across the cyclone should be continuously monitored with continuous monitoring being incorporated into a permit condition.	90	August Mack Phase 2 Comments	See response to Comment 351.
361	14. Section C - Air Cleaning Device: a. Page 44 provides maximum emission rates for PM, PM10, and PM2.5 for 201 - Soybean Preparation Process. The calculations in Attachment G for 201 - Grain Receiving and Processing are based on the back calculation of an uncontrolled emission factor assuming a 90% cyclone control efficiency. No documentation of a 90% cyclone control efficiency is provided in the application.	90	August Mack Phase 2 Comments	A 90% control efficiency is a generally accepted efficiency for a properly designed cyclone. Furthermore, the revised Potential Emission Calculations (Attachment G) provide the EPA reference "Air Pollution Control Technology Fact Sheet, Cyclones" (EPA-452/F-03-005).
362	b. Page 47 provides maximum emission rates for PM, PM10, and PM2.5 for 202 - Bean Conditioning. The calculations in Attachment G for 202 - Bean Conditioning Processing are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 59 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 5 of the application but indicates that only 493,500 tons will be processed for a processing time of only 8,364 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 59 tons per hour for 8,760 hours per year which equals 516,840 tons.	90	August Mack Phase 2 Comments	As provided in the revised Potential Emission Calculations attachment to the revised Plan Approval Application, the maximum potential short-term (lb/hr) emissions are based on the maximum hourly throughput rate for the source. Perdue has requested a 12-month soybean throughput limitation of 525,000 tons per year, based on plant design. This restriction is an enforceable permit limitation; therefore, potential long-term (12-month) emissions for the source are derived from this 12-month soybean processing limitation (525,000 TPY total soybeans - 31,500 TPY removed soybean hulls = 493,500 TPY dehulled soybeans through the bean conditioner). As opposed to limiting hours of operation and in the interest of operational flexibility, Perdue has requested a 12-month soybean throughput limitation for the facility.
363	In addition, documentation of the control efficiency (95%) of the high efficiency cyclone is not provided. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	This source is controlled by a baghouse. Documentation of the baghouse control efficiency is provided by the manufacturer and included in the revised BAT Evaluation (Attachment J).
364	c. Page 50 provides maximum emission rates for PM, PM10, and PM2.5 for 203 - Flaking Rolls. The calculations in Attachment G for 203 - Flaking Rolls are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 59 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 5 of the application but indicates that only 493,500 tons will be processed for a processing time of only 8,364 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 59 tons per hour for 8,760 hours per year which equals 516,840 tons.	90	August Mack Phase 2 Comments	See response to Comment 362.
365	In addition, documentation of the control efficiency (95%) of the high efficiency cyclone is not provided. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	Documentation of the cyclone control efficiency is provided by the manufacturer and included in the revised BAT Evaluation (Attachment J).

#	Comment	Commenter #	Category	N
366	d. Page 53 provides maximum emission rates for VOCs and n-Hexane for 204 - Extraction Process. Documentation of the control efficiency (99%) of the mineral oil scrubber is not provided. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	A 99% control efficiency is a generally accepted efficiency for a properly designed condensing/mineral oil scrubber system. Reference: Indiana DEM Technical Support Document (CP-129-8541-00039) for ConAgra, Marrs Township, Indiana that lists a control efficiency of 99.2%, and Iowa DNR Pre-construction Permit Application (2/22/2012) for Ag Processing, Sergeant Bluff, Iowa that lists a control efficiency of 99%+.
367	e. Page 56 provides maximum emission rates for PM, PM10, VOC, PM2.5, and n-Hexane for 205A - Meal Dryer. The calculations in Attachment G for 205A - Meal Dryer are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 59 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 14 of the application but indicates that only 393,750 tons will be processed for a processing time of only 6,674 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 59 tons per hour for 8,760 hours per year which equals 516,840 tons.	90	August Mack Phase 2 Comments	See response to Comment 362.
368	Documentation of the control efficiency (90%) of the cyclone is not provided.	90	August Mack Phase 2 Comments	See response to Comment 365.
369	In addition, emissions associated with fuel combustion in the dryer are not provided. During a meeting in June 2012 representatives from Perdue indicated that drying in the meal dryer would be via steam. It does not appear that adequate information on how drying will be achieved in the meal dryer if steam becomes unavailable from the LCSWMA incinerator including fuel usage and associated combustion emissions has been provided in the application. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	See response to Comment 350.
370	f. Page 59 provides maximum emission rates for PM, PM10, VOC, PM2.5, and n-Hexane for 205B - Meal Cooler. The calculations in Attachment G for 205B - Meal Cooler are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 59 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 17 of the application but indicates that only 393,750 tons will be processed for a processing time of only 6,674 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 59 tons per hour for 8,760 hours per year which equals 516,840 tons.	90	August Mack Phase 2 Comments	See response to Comment 362.
371	Documentation of the control efficiency (90%) of the cyclone is not provided. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	See response to Comment 365.
372	g. Page 62 provides maximum emission rates for PM, PM10, and PM2.5 £or 206 - Meal Screening and Grinding. The calculations in Attachment G for 206 - Meal Screening and Grinding are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 47 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 20 of the application but indicates that only 393,750 tons will be processed for a processing time of only 8,378 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 47 tons per hour for 8,760 hours per year which equals 411,720 tons. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	See response to Comment 362.
373	h. Page 65 provides maximum emission rates for PM, PM10, and PM2.5 for 207 - Mill Feed (Hull) Grinding. The calculations in Attachment G for 207 - Mill Feed (Hull) Grinding are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 3.75 tons per hour (the rated capacity) and operation for 8,760 hours per year as indicated on Page 23 of the application but indicates that only 31,500 tons will be processed for a processing time of only 8,400 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 3.75 tons per hour for 8,760 hours per year which equals 32,850 tons. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	See response to Comment 362.
374	i. Page 68 provides maximum emission rates for PM, PM10, and PM2.5 for 208 - Meal Loadout Area. The calculations in Attachment G for 208 - Meal Loadout Area are not potential emissions as they are not based on the maximum capacity and operating time for the source. The emissions are not based on the maximum capacity of the source which is specified as 1,314 tons per day turnover (54.75 tons per hour) and operation for 8,760 hours per year as indicated on Page 26 and 27 of the application but indicates that only 425,250 tons will be processed for a processing time of only 7,767 hours per year. Perdue's calculation is incorrect. The emission calculations should be revised to indicate emissions based on processing of 54.75 tons per hour for 8,760 hours per year which equals 479,610 tons. Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	See response to Comment 362.

#	Comment	Commenter #	Category	N
375	j. Attachment G also includes emissions for boilers in the event that steam is not available from the LCSWMA incinerator. The alternative siting analysis in Attachment I specifies 1.46 tons of VOCs would be emitted from natural gas-fired boilers if Perdue would be required to generate their own steam as opposed to using excess steam from the neighboring LCSWMA incinerator. However, Perdue indicated that only 0.0455 tons of VOCs would be generated from boilers in Attachment G. Perdue should be required to correct this deficiency in its permit application	90	August Mack Phase 2 Comments	See response to Comment 302.
376	15. Section D - Additional Information: Page 71 indicates that the project will not be subject to PSD. Perdue calculates the facility-wide VOC emissions to be 248.65 tons. Based on this comment submittal (Specific comment No. 14), revised emission calculations should be prepared which will result in an increase in the facility-wide VOC emissions to above the 250 ton threshold thus subjecting the facility to PSD requirements including ambient impact modeling and an additional impacts analysis.	90	August Mack Phase 2 Comments	Based on the revised LAER Evaluation, facility-wide VOC emissions are 185.72 TPY, as provided in the revised Potential Emission Calculations attachment to the revised Plan Approval Application. PSD does not apply to the VOC emissions since the facility is to be located in an ozone non-attainment area. NA-NSR applies to the VOC emissions.
377	16. Section D - Additional Information: Page 71 indicates the Best Available Technology (BAT) demonstration is provided in Attachment J. The permit application does not include an appropriate "top-down" Best Available Control Technology (BACT) Analysis. This would include a search of the reasonably available control technology (RACT)/BACT /LAER clearing house for available control technologies for both particulate matter and volatile organic compounds (VOCs), a ranking of the technologies based on control efficiencies, and an economic analysis including the cost per ton of pollutant removed. These elements were not included. Therefore the application should be denied.	90	August Mack Phase 2 Comments	PA DEP's BAT requirement does not stipulate a formal "top-down" BACT analysis. Furthermore, BACT only applies to projects subject to PSD. This project is subject to NA-NSR (LAER), not PSD (BACT).
378	17. Section D - Additional Information: Page 71 indicates the Lowest Achievable Emission Rate (LAER) demonstration is provided in Attachment H. The LAER demonstration does not consider vegetable oil production utilizing non-solvent extraction methods which result in lower emission rates.	90	August Mack Phase 2 Comments	The revised LAER Evaluation in Attachment H to the revised Plan Approval Application addresses non-solvent extraction methods in Section 6.10.
379	In addition, Perdue's LAER demonstration proposes a facility-wide solvent loss limit of 0.165 gallons of solvent per ton of soybeans processed (gal/ton). This solvent loss limit is higher than the solvent loss limits for eight (8) of the facilities identified in the LAER demonstration which include: 0.16 gal/ ton for Bunge North America in Morristown, Indiana; 0.16 gal/ ton for ConAgra in Morristown, Indiana; 0.15 gal/ ton for Archer Daniels Midland in Mexico, Missouri; 0.15 gal/ton for Archer Daniels Midland in Mankato, Minnesota; 0.146 gal/ton for Cargill Oil Seeds in Sidney, Ohio; 0.145 gal/ton for Ag Processing in St. Joseph, Missouri; 0.134 gal/ton for Louis Dreyfus Ag. Ind. in Claypool, Indiana; 0.125 gal/ ton for Prairie Pride in Eve, Missouri.	90	August Mack Phase 2 Comments	The revised LAER Evaluation presents an updated facility-wide solvent loss limit of 0.125 gal/ton. See updated LAER information in revised Attachment H, Table 1 and under Section 9.7.2.
380	In addition, no method of control is evaluated for the solvent losses from the meal dryer. Therefore the application should be denied.	90	August Mack Phase 2 Comments	The revised LAER Evaluation includes multiple control technologies for application on the meal dryer. See updated information on potential control technologies in revised Attachment H, Section 5.0. See updated information on control technology feasibility in revised Attachment H, Section 6.0, and Table 6.1.
381	18. Section D - Additional Information: Page 71 indicates the Analysis of Alternative Sites is provided in Attachment L. The Analysis of Alternative Sites does not specifically identify any alternative sites that were considered by Perdue.	90	August Mack Phase 2 Comments	The revised Alternatives Analysis (Attachment I) addresses alternative sites that were considered.
382	No information on the environmental or social costs associated with selection of the proposed site are included in the analysis such as the issues with public safety, air emissions and temperature inversions, and explosion hazards detailed in this comment submission. Therefore the application should be denied.	90	August Mack Phase 2 Comments	The revised Alternatives Analysis (Attachment I) addresses the environmental and social impacts, beginning on page 14 of the attachment.
383	In addition, the alternative siting analysis specifies 1.46 tons of VOCs would be emitted from natural gas-fired boilers if Perdue would be required to generate their own steam as opposed to using excess steam from the neighboring LCSWMA incinerator. Perdue included emissions from temporary boilers in their emissions calculations provided as Attachment G. However, Perdue indicated incorrectly that only 0.0455 tons of VOCs would be generated from the temporary boilers.	90	August Mack Phase 2 Comments	See response to Comment 302.
384	19. Section F - Flue and Air Contaminant Emission: Specific information has not been provided as to whether the stack height(s) meet Good Engineering Practice (GEP) on Pages 77, 79, 80, 83, 84, and 86. 20.	90	August Mack Phase 2 Comments	The Good Engineering Practice (GEP) stack height requirements under §123 of the federal Clean Air Act do not, in and of themselves, regulate stack height. Their purpose is to limit the maximum stack height credit to be used in determining emission limitations. Sources with stack heights less than or equal to 65 meters are to use the actual stack height in calculating emission limits. See, also, "Guideline for Determination of Good Engineering Practice Stack Height (Technical Support Document for the Stack Height Regulations)," EPA 450/4-80-023R, June 1985. Perdue is not seeking any such credit, but its stack heights are within the GEP limits. Further, because its stack heights are all well below 65 meters, the actual stack heights were used in the dispersion modeling and health risk assessment.

#	Comment	Commenter #	Category	N
385	Addendum A - Source Applicable Requirements and Addendum 1 - Method of Compliance Worksheets - Perdue has failed to include all applicable requirements pertaining to each source on Addendum A and Addendum 1 based on information provided by Perdue in Attachment D - Applicable Requirements. Applicable requirements that should be evaluated and included are: a. 25 Pa. Code §121 - General Provisions and b. 25 Pa. Code §127 - Construction, Modification, Reactivation, and Operation of Sources. Note, applicability of this regulation should be evaluated based on revised emission calculations (See Specific Comment 14). Perdue should be required to correct this deficiency in its permit application.	90	August Mack Phase 2 Comments	Generally, Chapter 121 (General Provisions) contains requirements of an administrative nature, as opposed to the specific limitations, monitoring, testing, reporting, recordkeeping, and work practice standards included in Addendum A/Addendum 1. These general provisions are typically referenced/included in all Plan Approvals issued by the Department. Chapter 127 (Construction, Modification, Reactivation and Operation of Sources) is addressed in Addendum A/Addendum 1 of the revised Plan Approval Application, specifically §127.205(1) relating to LAER. The applicability and non-applicability of pertinent sections of Chapter 127 is addressed in Attachment D (Applicable Requirements) of the revised Plan Approval Application.
386	21. Attachment B - Facility Site Map - The facility site map provided with the application does not include information on four (4) additional wet grain storage bins that would be part of Source ID 102 and six (6) additional, 500,000 million bushel grain tanks that would be part of Source ID 105 and are specified as plans for future expansion on an engineering drawing titled Zoning Exhibit for Perdue Grain and Oilseed, LLC Soybean Processing Facility dated Feb. 29,2012 that was presented at a public hearing before the Zoning Hearing Board of Conoy Township on March 22, 2012. Perdue should clarify their plans for future expansion with regard to their air permit requirements.	90	August Mack Phase 2 Comments	Perdue does not have current plans for full build-out of the additional grain storage tanks as indicated on the Zoning Exhibit. In the future, should Perdue develop such plans, the proper DEP permit applications and local land use approval will be filed to seek approval for such plans.
387	In addition, the facility site map also excludes equipment for degumming that one might expect to find at an oil extraction facility. Perdue should clarify their plans for use of such equipment and the VOCs that would be emitted during the operation of that equipment.	90	August Mack Phase 2 Comments	If utilized at the facility, degumming of the oil would be performed using hydration in a centrifuge. At this point, the oil has already undergone stripping to remove hexane and has been sent to crude storage. Hexane emissions, if any, would be de minimis and already accounted for in the emissions total.
388	22. Attachment D - Applicable Requirements: a. Perdue indicates that compliance with the particulate matter emission limits of 25 Pa. Code §123.13 will be demonstrated by maintaining emission calculations. Perdue is proposing the use of air pollution control equipment including baghouses, cyclones, and filters to control particulate matter and has claimed specific control efficiencies for the specified control equipment. Perdue should be required to perform a facility-wide stack test to ensure compliance with particulate matter emission limits and verify the claimed control device efficiencies. The stack test requirement should be included as a permit condition.	90	August Mack Phase 2 Comments	It is anticipated that DEP will require PM stack testing as a condition of the Plan Approval.
389	b. Perdue indicates that the federal PSD are not applicable to the project as the calculated PTE is anticipated to be less than the 250 tons per year threshold that is applicable to this type of facility. Perdue calculates the facility-wide VOC emission to be 248.65 tons. Based on this comment submittal, revised emission calculations should be prepared as specified in Comment 14. This will show an increase in the facility-wide VOC emissions to above the 250 ton threshold thus subjecting the facility to PSD requirements including ambient impact modeling and an additional impacts analysis. As a result, the PSD requirements will apply and the application should be denied.	90	August Mack Phase 2 Comments	See response to Comment 298.
391	b. On page 3 of 7, Project Information Item 2. Perdue provides information on project funding but does not include the grant expiration date. The grant contract expires on November 30, 2016 and the project is required to be completed within the term of the contract.	90	August Mack Phase 2 Comments	The grant contract expires on November 30, 2016, and Perdue will work to comply with the schedule in the grant agreement; the information pertaining to project funding through RACP is public and available for inspection and copying at the Office of the budget.
392	c. On page 5 of 7, Coordination Information Item 7.0 Perdue indicates that the project will not involve the construction and operation of industrial waste treatment facilities. However, the process flow diagram provided as Attachment F includes a hexane/water separation and wastewater stripping process.	90	August Mack Phase 2 Comments	The process wastewater/hexane undergoes separation and is recycled for reuse in the process.
396	I have some serious concerns regarding the safety of nearby homeowners, travelers, employees and businesses should an accidental explosion occur at the Perdue facilities in terms of shrapnel, fire and toxic fumes.	90	August Mack Phase 2 Comments	See responses to Comments 264, 321 and 322.
397	It is our understanding that the Perdue plant will be storing hexane in two adjacent storage tanks, each holding 20,000 gallons for a total of 40,000 gallons, and that the plant will be using 30,000 gallons of hexane at any one time in the process (we have been told by Perdue that there will be a maximum of 40,000 gallons on site at any one time).	90	August Mack Phase 2 Comments	The sizing of the (2) 20,000 gallon tanks is to ensure enough capacity to store the total amount of hexane contained within the entire processing system, should a system purge or shutdown be required. The average amount of hexane that will be kept in the tanks under normal operating circumstances would be approximately 4,000 to 5,000 gallons (total including both tanks).
398	Hexane is highly explosive and even facilities using hexane that have been well-maintained have suffered from catastrophic explosions.	90	August Mack Phase 2 Comments	See responses to Comments 321 and 322.
399	I met with a number of Perdue representatives on June 15, 2012 to discuss these concerns. Although the Perdue representatives have promised to get back to us, no information has been provided to date regarding their explosion hazard assessments, emergency plans or standard operating procedures to protect nearby residential homeowners, travelers (on River Road) and businesses, in the event of an accidental explosion.	90	August Mack Phase 2 Comments	See responses to Comments 517 and 519.

#	Comment	Commenter #	Category	N
400	Recent Soybean Manufacturing Plant Explosions Using Hexane. Unfortunately, explosions in the manufacturing of soybean oil using hexane are not uncommon. [Examples cited are AG Processing Inc. in Sioux City, Iowa (2003), the Minnesota Soybean Processors plant (May, 2009), a plant in Formosa Brazil (March, 2009), Arkansas Ricelands Food Plant (2008), Ag Processing Inc. plant (2003), Canadian CanAmera Foods plant (2002), and Indiana Central Soya plant (1994).]	90	August Mack Phase 2 Comments	See responses to Comments 321 and 322.
401	Generally speaking, the causes for explosions at soybean processing plants are from heat sources such as open flames, hexane spillages, and inadequate supervisor/employee training.	90	August Mack Phase 2 Comments	See response to Comment 543.
402	Case History of Damages, Injuries and Deaths Caused by a Massive Chemical Explosion. A very well documented hydroxylamine plant explosion, which occurred in the Lehigh Valley, PA during 1999, provides a clear example of what can be expected in the surrounding community from a massive chemical explosion. It was believed a hydroxylamine tank holding 9,000 gallons exploded during the distilling process from a nearby hot plate or Bunsen burner.	90	August Mack Phase 2 Comments	The Lehigh Valley incident is not representative of a potential hexane incident and, is therefore, not relevant. The U.S. Chemical Safety Board's investigation of the incident notes that hydroxylamine, the chemical involved in the Lehigh Valley incident, is an oxygenated derivative of ammonia and its properties are very different than those of hexane. Among other things, hydroxylamine is unstable and explosive when concentrated at high temperatures and is thermally unstable. The incident occurred when hydroxylamine in a process tank and associated piping explosively decomposed due to high concentrations and temperatures. In addition, see Section 2.3 of the Review of BAI Report submitted with the SSIP Application.
403	While hexane is not the same as hydroxylamine, for comparison of an explosion they are very similar.	90	August Mack Phase 2 Comments	See response to Comment 402.
404	Since the density of hydroxylamine is 1.21 g/cc and the density of hexane is 0.66 g/cc, the 9,000 gallon tank of hydroxylamine would be more or less equivalent to a hexane explosion of approximately 18,000 gallons. The Purdue plant in contrast will be using up to 30,000 gallons of hexane in their process, or housing up to 40,000 gallons of hexane in their two storage tanks. Thus, a hexane explosion from the proposed Perdue plant will be much more devastating than what occurred at the hydroxylamine plant explosion.	90	August Mack Phase 2 Comments	See response to Comment 402.
417	Safe Distances for Chemical (Reactive) Explosions. Figure 1 illustrates a plan view of the proposed Purdue plant property perimeter, approximate location of the two 20,000 gallon storage tanks, and distances to various points of concern in the event of an accidental explosion.	90	August Mack Phase 2 Comments	See responses to Comments 321 and 418.
418	Hexane weighs approximately 5.6 lbs/gal. Thus, one of the 20,000 gallon storage tanks would weigh approximately 112,000 lbs. Based on the Perdue layout of the plant facilities dated February 29, 2012, the two 20,000 gallon tanks show a separation distance of only 5 feet.	90	August Mack Phase 2 Comments	The tanks will comply with, and be installed in accordance with, NFPA 30 (Flammable and Combustible Liquids Code) and NFPA 36 (Standard for Solvent Extraction Plants), including the required separation distances from each other and other components in the process.
419	Because these tanks are in the open, they would be considered as being unbarricaded and more likely one would cause a sympathetic explosion of the other if one of the tanks exploded.	90	August Mack Phase 2 Comments	Hexane tank specifications, location, separation distances, and shell-to-shell spacing at the proposed plant will comply with NFPA safety requirements.
420	According to the IME (Institute Makers of Explosives) in Publication No.2, "The American Table of Distances for Storage of Explosive Materials", June, 1991, the hexane tanks should be separated by a minimum distance of 430 feet, to eliminate a sympathetic explosion if one of the hexane storage tanks exploded.	90	August Mack Phase 2 Comments	The BAI report's conclusion that separation distances between hexane tanks at the proposed soybean plant and nearby points are "unsafe" is based on incorrect calculations. Hexane tank specifications, location, separation distances, and shell-to-shell spacing at the proposed plant will comply with NFPA safety requirements. In addition, see the response to Comment 321.
421	In the case of only a 5 foot separation, it is a certainty that if one of the 20,000 gallon hexane tanks exploded, the second 20,000 gallon tank would also explode.	90	August Mack Phase 2 Comments	See responses to Comments 418 and 419.
422	Tables 1 and 2 list the minimum safe distances recommended by the IME for a 20,000 and 40,000 gallon hexane explosion, respectively. [refer to table in letter for details]	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, and 420.
423	The main difference between an explosive detonation and a hexane explosion is the degree of small fragments created at the source. I would expect that the explosion effects regarding how far the fragments or shrapnel are thrown would be similar.	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, and 420.
424	In reference to Figure I, the main points of public concern around the hexane storage tanks are listed in Table 3. [refer to table in letter for details]	90	August Mack Phase 2 Comments	See responses to Comments 418 and 419.
425	The distances coded in red in Table 3 designate unsafe distances from the hexane storage tanks. Note that even if the two 20,000 gallon hexane storage tanks were separated by a safe distance of 430 ft., a single 20,000 gallon hexane tank explosion could still result in serious injuries, death and/or property damage to the nearby public.	90	August Mack Phase 2 Comments	See responses to Comments 321, 418, and 420.
426	The minimum safe distance to cover all points of concern from a 20,000 to 30,000 gallon hexane explosion is 2,000 ft. The minimum safe distance to cover all points of concern from a 40,000 gallon hexane explosion is 2,155 ft.	90	August Mack Phase 2 Comments	See responses to Comments 321, 418, and 420.
427	Opinions Regarding the Effects of an Explosion of Hexane. In the event of an accidental hexane explosion, I would expect the following consequences:	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, 402, 403, 418, and 420.
428	1. High velocity fragments (shrapnel) will be thrown in all directions. If there were an explosion of the fully loaded hexane storage tanks, shrapnel would be formed from the tanks themselves.	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, 402, 403, 418, and 420.

#	Comment	Commenter #	Category	N
429	If the soybean processing plant (loaded with 30,000 gallons of hexane) were to explode, the plant container and building itself would become shrapnel that would be thrown a similar distance.	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, 402, 403, 418, and 420.
430	The shrapnel alone from such an explosion would have disastrous consequences. This shrapnel would be projected to Route 441 and beyond, to the neighboring homes and to the incinerator complex. The shrapnel would cause death or serious injury to anyone who was hit by it. In addition, the shrapnel would cause serious property damage to any structures that it encountered.	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, 402, 403, 418, and 420.
431	2. Multiple fires would be expected wherever any burning shrapnel/debris fell on.	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, 402, 403, 418, and 420.
432	3. The oil storage tank, which is situated only 40 ft. away from the hexane storage tanks, would most likely catch on fire and spew out huge amounts of heavy smoke and toxic gases.	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, 402, 403, 418, and 420.
433	4. BAI understands that there is a large propane storage tank nearby on the adjacent incinerator property. Depending on the mass and velocity of a projectile, it is also possible to explode the propane tank on impact, causing another secondary large scale energetic explosion.	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, 402, 403, 418, and 420.
434	5. Airblast (concussion) would occur from the explosion that in itself would kill or seriously injure people and would also cause serious damage to nearby properties.	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, 402, 403, 418, and 420.
435	The overpressure effect could result in the destruction of nearby buildings which could inflict injury or death to anyone inside or near the building(s).	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, 402, 403, 418, and 420.
436	Because it is so close, I would expect that the incinerator complex would be seriously damaged from an explosion.	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, 402, 403, 418, and 420.
437	In addition, I would expect windows in buildings as far as half a mile away to be blown out, which could also result in injury to anyone nearby.	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, 402, 403, 418, and 420.
438	6. If a hexane explosion occurred, I would expect the explosion to set off fires giving off noxious deadly fumes (as occurred at other soybean processing facilities). For example, some of the gasses often resulting from hexane explosions are oxides of nitrogen. Exposure to these gasses with concentrations of only 0.03 to 0.05% could be fatal 8 to 72 hours after exposure.	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, 402, 403, 418, and 420.
439	Recommendations. In view of the serious potential dangers to the public, BAI makes the following recommendations:	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, 402, 403, 418, and 420.
440	1. Perdue should perform a full explosion hazard assessment before proceeding with their plans, and to make their findings available to the public.	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, 402, 403, 418, and 420.
441	2. An emergency response plan needs to be prepared by Perdue that will include immediate and direct notification of all neighbors within a one mile radius of the plant. The plan should include a warning system to be implemented by Perdue to warn nearby residents immediately, rather than rely solely on the local emergency response units, because valuable time would be lost for nearby residents in deciding to evacuate immediately, or to seal their homes by closing all windows/doors and turning off their A/C units until the danger has passed.	90	August Mack Phase 2 Comments	See responses to Comments 282, 331, and 332.
442	According to Perdue representatives, they plan to use the local emergency response units in dealing with such events. As of June 15, 2012, Perdue was not planning to directly notify neighbors in the event of any emergency at the plant. Instead, they were planning to rely on local authorities. It is not clear how and/or when nearby neighbors would be warned of the dangers and precious time would be lost while Perdue communicated with the emergency responders who would then have to communicate with the community. Perdue should take responsibility for this important aspect of planning.	90	August Mack Phase 2 Comments	See responses to Comments 282, 331, 332, 443, 539 and 540.
443	3. Conoy Township and Lancaster County need to update both their emergency plans and training for emergency responders to deal with a potential explosion hazard from the Perdue facility.	90	August Mack Phase 2 Comments	The Lancaster County Local Emergency Planning Committee is required by Section 203(k) of the Hazardous Material and Emergency Response Act to prepare plans that deal with all aspects of emergency response and update the plans, as necessary. The county is also required by Section 209 (e) of the law to organize or contract for a hazardous material response team or participate in a regional response team. The commenter did not provide any documentation for why it believes that the local emergency plans do not adequately address the facility or why it believes the hazardous material response team is not properly trained to respond to any incident that may occur at the facility. In any event, Perdue has met with the Lancaster County Emergency Planning Committee and Conoy Township first responders and will coordinate its own facility response plans and procedures with the two bodies. In addition, please see the responses to Comments 282, 331 and 332.
444	4. If Perdue cannot satisfy the minimum safe distances to all points of concern, the options would be to either bury the two 20,000 gallon storage tanks and the process section of the plant which requires the use of 30,000 gallons of hexane, or to relocate the entire plant facilities elsewhere.	90	August Mack Phase 2 Comments	See response to Comment 420.

#	Comment	Commenter #	Category	N
445	1. With an ever-increasing public demand for organic, chemical-free foods, it would seem that soybean oil and the animal feed produced by the expeller method would have a better market and carry Perdue AgriBusiness farther into the future than those produced by the solvent extraction method. Recent concerns about hexane found in veggie burgers will most likely grow over time and include other soy products. Can you explain why you prefer to build a plant that uses hexane solvent rather than expeller extraction methods?	90	August Mack Phase 2 Comments	See discussion on mechanical expeller extraction in the revised Plan Approval Application, revised Attachment H, Section 6.10.1.
446	2. Please comment on the perception that using the expeller method would give large savings by eliminating the need for:	90	August Mack Phase 2 Comments	See response to Comment 445.
447	a. Hexane purchase and delivery.	90	August Mack Phase 2 Comments	See response to Comment 445.
448	b. Hexane storage tanks.	90	August Mack Phase 2 Comments	See response to Comment 445.
449	c. A distillation and hexane recovery system: evaporators, stripping columns, condensers and solvent/water separators.	90	August Mack Phase 2 Comments	See response to Comment 445.
450	d. Mineral oil scrubber.	90	August Mack Phase 2 Comments	See response to Comment 445.
451	e. Desolventizer-toaster (D-T).	90	August Mack Phase 2 Comments	See response to Comment 445.
452	f. Complex, automatic safety control systems to prevent release of toxic levels of hexane to the outside air in the event of operator errors or equipment failures	90	August Mack Phase 2 Comments	See response to Comment 445.
453	g. Purchase of pollution credits.	90	August Mack Phase 2 Comments	See response to Comment 445.
454	3. Can you cite any examples of current state of the art soybean extraction plants that use scrubbers on their meal dryer?	90	August Mack Phase 2 Comments	At present, there are no soybean facilities operating with scrubbers on the meal dryer. See revised LAER Evaluation, revised Attachment H, Section 2.
455	Do they recover the hexane from these scrubbers?	90	August Mack Phase 2 Comments	See response to Comment 454.
456	4. According to current industry-wide standards, is the proposed soybean extraction plant considered a state of the art plant with respect to hexane emissions?	90	August Mack Phase 2 Comments	Yes. See revised LAER Evaluation, revised Attachment H, Section 2.4 and Exhibit 8.
457	Are there other plants owned by other corporations that emit less hexane than that proposed by Perdue (0.15 gallons of hexane per ton of soybeans processed)? Please cite examples.	90	August Mack Phase 2 Comments	No. See revised LAER Evaluation, revised Attachment H, Table 1 and Exhibit 2 for a summary of emissions data from other plants. Additionally, the revised LAER Evaluation presents an updated facility-wide solvent loss limit of 0.125 gal/ton, the lowest solvent loss ratio of any soybean extraction plant in the United States. See updated LAER information in revised Attachment H, Table 1 and under Section 9.7.2.
458	5. For a new solvent extraction plant built in Lancaster County or York County, an area with already degraded air quality and prone to temperature inversions, would you consider installing a scrubber on the meal dryer, or vent the dryer through a common vent header to the planned mineral oil scrubber and solvent recovery system?	90	August Mack Phase 2 Comments	See responses to Comment 562 and 454, and revised LAER Evaluation, revised Attachment H, Section 6.0 and Table 6.1.
459	Advantages of such control appear to be:	90	August Mack Phase 2 Comments	See response to Comment 458.
460	a. Recapturing expensive hexane, at a cost savings of millions of dollars over five to ten years.	90	August Mack Phase 2 Comments	See response to Comment 458.
461	b. Reducing the number of pollution credits needed.	90	August Mack Phase 2 Comments	See response to Comment 458.
462	c. Protecting the public from toxic exposure to hexane especially during temperature inversions. Highly vulnerable populations would include young children, pregnant women, persons with already compromised neurological systems and the elderly.	90	August Mack Phase 2 Comments	See response to Comment 458.
463	d. Gaining excellent public relations exposure as a result of voluntarily installing equipment that would help protect the public. (Note: This advantage would be even greater if the expeller method is used.)	90	August Mack Phase 2 Comments	See response to Comment 458.
464	6. Please explain the costs involved with installing a scrubber for the meal dryer or venting the meal dryer through the planned mineral oil scrubber.	90	August Mack Phase 2 Comments	See revised LAER Evaluation, revised Attachment H, Section 6.0 and Table 6.1 on technical feasibility, and Section 8.9 on cost infeasibility.
465	7. Given the fact that the site proposed for your soybean crush plant is underlain with limestone geology and prone to random sinkholes, how would you prevent aquifer contamination in the event of an unanticipated hexane spill caused by the ground collapsing into a sinkhole cavern?	90	August Mack Phase 2 Comments	In order to minimize concerns regarding stormwater infiltration and sinkhole formation, a carbonate hazard study was conducted for the site (Carbonate Hazard Report, RETTEW, July 6, 2012). Based on the findings of the report, the stormwater management system at the Soybean Facility has been designed to direct flow overland to an inlet and pipe collection system, thereby minimizing any infiltration and potential sinkhole formation. The foundation/support will be designed and constructed in accordance with the findings of the Preliminary Geotechnical Engineering Report that was submitted to PA DEP as part of the SSIP Application.
466	Would this risk be eliminated by using the expeller method?	90	August Mack Phase 2 Comments	Mechanical expeller machines do not utilize hexane.
467	8. Do you plan to buttress any large structures/equipment you use on this site with pilings to prevent them from collapsing into sinkhole caverns?	90	August Mack Phase 2 Comments	See response to Comment 465. In addition, a licensed professional engineer will design the structures taking site geology into account.

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468	9. What type of coolant is used for cooling the mash after drying?	90	August Mack Phase 2 Comments	The meal is cooled using ambient air.
469	How much coolant is used per year and how will it be stored?	90	August Mack Phase 2 Comments	See response to Comment 468.
470	10. What are the estimated total VOC emissions from the plant in tons per year?	90	August Mack Phase 2 Comments	As provided in the revised Potential Emission Calculations (Attachment G), total facility potential VOC emissions are 185.72 TPY.
471	What percent of the total VOC emissions come from the meal dryer?	90	August Mack Phase 2 Comments	As provided in the revised Potential Emission Calculations (Attachment G), 24% of the total VOC emissions are estimated to be emitted from the meal dryer.
472	11. Please specify the other types and estimated quantities of emissions.	90	August Mack Phase 2 Comments	The revised Potential Emission Calculations (Attachment G) of the revised Plan Approval Application provides the types and estimated quantities of emissions.
473	12. Under Title 5 of the Clean Air Act, what type of emissions source permit will you seek: Minor, Synthetic Minor or Major?	90	August Mack Phase 2 Comments	The proposed facility will be required to obtain a Title V Operating Permit.
474	13. What are the elements of a soybean crush plant that cause Homeland Security to require a fence around the plant?	90	August Mack Phase 2 Comments	Fencing is required in operations such as wastewater treatment.
475	14. Why are pollution credits needed if your plant would not exceed the emissions standard for hexane (i.e., 0.2 gals. hexane/ton soybeans processed)?	90	August Mack Phase 2 Comments	Emission offsets are required because the facility is a new facility located in a nonattainment area and is subject to the requirements of 25 Pa. Code §127.205-.210.
476	13. How often is the plant shut down for maintenance?	90	August Mack Phase 2 Comments	To the extent this is relevant to the Plan Approval Application, the plant is normally shut down once per year, but this may vary considering the equipment utilized and other operational concerns.
477	What type of maintenance?	90	August Mack Phase 2 Comments	To the extent this is relevant to the Plan Approval Application, general inspection, cleaning, repair and replacement of equipment to ensure efficient operation of the extraction process.
478	How long is the typical maintenance shut down?	90	August Mack Phase 2 Comments	To the extent this is relevant to the Plan Approval Application, shutdown can range from several days to several months, depending on the work performed.
479	14. Do you plan to install a gas-fired back-up boiler to use during planned interruptions (e.g., for maintenance) of the steam supply, to insure the reliability of steam service and to minimize the frequency and duration of steam outages?	90	August Mack Phase 2 Comments	As provided in the revised Plan Approval Application, the facility will not have a boiler(s) installed. Should steam not be available from LCSWMA, a portable, temporary, fuel oil-fired boiler could be utilized and is accounted for in the revised Plan Approval Application.
480	Will this back-up boiler be included in your Air Permit Application?	90	August Mack Phase 2 Comments	See response to Comment 479.
481	15. How will hexane emissions from the soybean extraction batches already in progress at the time of an unplanned plant shutdown be prevented from escaping from the proposed plant?	90	August Mack Phase 2 Comments	In the event of a planned or an unplanned shutdown, the facility would adhere to the operating procedures outlined in its Process Safety Management Plan to suspend the extraction process, recover the hexane, and purge the facility to maintain safe conditions for workers and the public.
482	16. In the event of operator errors or equipment failures that result in releases of toxic levels of hexane that threaten public health and safety and are beyond the control of the inside plant operator/technician, who will provide the engineering expertise necessary to deal with unforeseen emergencies?	90	August Mack Phase 2 Comments	The plant manager will be an engineer, and there will also be an Environmental Manager and emergency operations team. This team will be thoroughly trained in emergency response procedures in order to respond to incidents and work with local responders in the event of an incident. Perdue corporate personnel and outside engineering and technical consultants will also be available.
483	Your suggestion that you would fly in an engineer from your plant in Salisbury would not be satisfactory if delays caused by adverse flying conditions prevented the arrival of an engineer at the plant in time to provide the expertise needed to deal with an emergency.	90	August Mack Phase 2 Comments	See response to Comment 482.
484	Would you be willing to retain a knowledgeable local engineer who can be on-call in the event of an unforeseen emergency?	90	August Mack Phase 2 Comments	See response to Comment 482.
486	1. Do you plan to install a back-up generator so that in the event of a power outage the safety monitors will continue to function?	90	August Mack Phase 2 Comments	The monitors are designed to continue to function until such time as the facility can be shutdown.
487	Could the VOC emission standards as set by the EPA and DEP be exceeded after a power outage occurs or at any time during any other plant malfunction?	90	August Mack Phase 2 Comments	An emission limit exceedance could conceivably occur at any air emission facility due to a malfunction. All air emission facilities are required by 25 Pa. Code §127.442 to report the details of any such malfunction to the DEP.
488	If so how do you plan to prevent these emission standards from being exceeded?	90	August Mack Phase 2 Comments	As discussed in the revised Plan Approval Application and as per the requirements of 40 CFR Part 63 Subpart GGGG, Perdue will maintain and comply with the provisions of a Startup, Shutdown, and Malfunction (SSM) Plan to minimize hexane emissions during any malfunction event.

#	Comment	Commenter #	Category	N
489	2. When we last met on May 11, 2010 you stated that 98% of the soybean oil produced by the plant will be used for food grade oil and 2% for biofuel. Do you have any immediate or future plans to produce biofuel at the proposed Conoy Township site?	90	August Mack Phase 2 Comments	No. The facility will produce soybean mill, soybean oil, and millfeed which will be shipped offsite for any additional processing that is necessary.
490	If so, how many gallons of biofuel will be produced per year at this site?	90	August Mack Phase 2 Comments	Not applicable.
491	3. What safe-guards will you have in place to prevent explosions caused by hexane vapors?	90	August Mack Phase 2 Comments	Perdue will provide safety training to its employees and implement process safety management, LDAR (leak detection and repair), and process monitoring systems to identify and address potential safety concerns.
492	4. What kinds of insurance will you have for your planned facility in Conoy Township?	90	August Mack Phase 2 Comments	This is irrelevant to the Plan Approval and SSIP applications. In any event, Perdue will maintain commercial general liability insurance at appropriate levels.
493	In the event of a catastrophic explosion or fire at your facility, will your insurance cover injury or harm to persons and properties including the resource recovery facility?	90	August Mack Phase 2 Comments	See response to Comment 492.
494	What will be the coverage limits in terms of distance from your facility and in terms of total dollars?	90	August Mack Phase 2 Comments	See response to Comment 492.
495	Will this coverage include reimbursement to the Township for lost revenues in the event of a major shutdown or loss of the resource recovery facility due to an accident at your facility?	90	August Mack Phase 2 Comments	See response to Comment 492.
500	Benefits of the proposed plant: Create about 35 jobs, *(Ask Perdue for a list of jobs, pay scales and required skills.)*	90	August Mack Phase 2 Comments	See responses to Comments 196-198.
501	Provide potential spin-off jobs through expansion of soybean storage facilities in area	90	August Mack Phase 2 Comments	The project is expected to generate more than 150 construction jobs, as well as 500 additional jobs in crop production and transportation. In addition, see responses to Comments 196-198 and the revised Alternatives Analysis submitted with the revised Plan Approval Application.
514	Other Central PA businesses, such as Wenger's Feed Mill Inc. extract soybean oil without using a toxic, air polluting, explosion-prone, taxpayer-subsidized hexane extraction process,	90	August Mack Phase 2 Comments	See response to Comment 445.
515	1. Additional Document Requests: We understand that the following documents already exist. We would appreciate receiving copies of the following so that we may finalize our evaluation based on your documentation rather than speculation or conjecture:	90	August Mack Phase 2 Comments	The documents relating to the revised Plan Approval and SSIP Applications are available for public inspection and copying at the DEP Southcentral Region and the Division of Storage Tanks.
516	1.1 The Environ representative (Stan Hayes?) indicated that he would provide us with the input parameters and the modeling results for the models that Environ has run, but he did not have them with him. Could you please provide this information?	90	August Mack Phase 2 Comments	See response to Comment 515.
517	1.2 Perdue indicated that there is a Standard Operating Procedure (SOP) for hexane deliveries which includes a series of checks, grounding of the truck, chocking of the wheels, etc. A copy of this SOP was requested and Perdue indicated you would be willing to provide it. Please also provide the SOPs planned for use at the plant regarding hexane storage and usage.	90	August Mack Phase 2 Comments	When finalized, copies of the Standard Operating Procedures will be included in the SPCC and Spill Prevention Response Plans. The plans will be available for public inspection and copying at the offices of DEP and other governmental agencies.
518	1.3 It is not clear that we have the latest plan view of plant facilities. Kindly provide the up-to-date plan.	90	August Mack Phase 2 Comments	See response to Comment 515. A copy of the site plan was submitted with the revised Plan Approval Application.
519	1.4 Perdue stated it is relying on local police, fire and emergency response units with which it will develop an emergency plan. We would like a copy of all the on-site and off-site emergency procedures, including any alarm signals and their meaning.	90	August Mack Phase 2 Comments	Once finalized, a copy of Perdue's Emergency Response Plan will be provided to local emergency response agencies and the Lancaster County Emergency Planning Committee. Members of the public can request copies of the plans from those agencies under the Pennsylvania Right to Know Law.
520	1.5 Please provide the health risk assessment.	90	August Mack Phase 2 Comments	See the response to Comment 515. The Risk Assessment Report is part of the revised Plan Approval Application and is available for inspection and copying at the DEP Southcentral Region Office.
521	1.6 We request a copy of the risk management plan regarding the use of hexane at the facility.	90	August Mack Phase 2 Comments	The facility is not subject to Risk Management Plan requirements.
522	1.7 Please provide the stormwater management plan for the facility.	90	August Mack Phase 2 Comments	The stormwater management plan was approved by the Lancaster County Planning Commission and Lancaster County Conservation District and is available for public inspection and copying at the offices of those agencies.
523	Additional Questions. During our meeting on June 15, Perdue was not in a position to answer some questions or could not answer fully some questions. Some answers generated additional questions. We would very much appreciate answers to the following questions:	90	August Mack Phase 2 Comments	See below.
524	2. Air. 2.1 What are the pre- and post-control potential PM/PM2.5 emissions, by source?	90	August Mack Phase 2 Comments	This data is provided in the revised Plan Approval Application forms and the revised Potential Emission Calculations (Attachment G).
525	2.2 What is the maximum hourly/daily throughput, and what is the limiting factor?	90	August Mack Phase 2 Comments	See response to Comment 240.

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526	2.3 There seems to be some discrepancy on the potential emissions of hexane. Perdue's handout from the open house on April 26, 2012 indicates the facility will use less than 100,000 gallons of hexane per year. At our June 15 meeting, the Environ representative indicated that 15,000 gallons of hexane/yr was used in the health risk modeling. A Perdue representative at the meeting indicated hexane deliveries will occur once per month. That would mean 12 deliveries per year and if the delivery truck holds 6,000 gallons, then 72,000 gallons of hexane will be used (i.e., emitted each year). Can you clarify the amount of emission of hexane from the plant (actual AND potential).	90	August Mack Phase 2 Comments	As provided in the revised Plan Approval Application, potential plant-wide hexane emissions are estimated to be 185.72 TPY. Actual emissions cannot be provided at this time and are dependent upon many factors including the quantity, type, and quality of soybeans being processed.
527	2.4 When asked specifically what technologies were considered in the "top-down" BACT analysis for control of hexane emissions as well as other pollutants, Perdue indicated they would have to get back to us as the BACT was prepared by Rettew & Associates and no one from Rettew was at the meeting. Can you provide this information?	90	August Mack Phase 2 Comments	BACT does not apply to the facility since the facility is not subject to PSD requirements. The revised LAER Evaluation (Attachment H) and revised BAT Evaluation (Attachment J) submitted with the revised Plan Approval Application contain the control technology information and are available for public review and copying.
528	3. Health and Safety 3.1 Will the Perdue facility have dedicated Environmental, Health & Safety (EHS) personnel and a dedicated Incident Commander?	90	August Mack Phase 2 Comments	The site will have an Environmental Manager in addition to an emergency operations team. This team will receive appropriate training, including incident command, so that it can respond to incidents and work with local and other responders in the event of an emergency.
529	If so, which shift(s) will have EHS coverage?	90	August Mack Phase 2 Comments	All shifts.
530	If not, where will the closest EHS professional be located (i.e. Salisbury, MD)?	90	August Mack Phase 2 Comments	Perdue personnel or outside consultants will be available for consultation as needed.
531	3.2 Where will the hexane monitors be located?	90	August Mack Phase 2 Comments	See response to Comment 212.
532	3.3 What is the highest concentration of hexane that you have measured in the extraction buildings of other Perdue facilities while in operations?	90	August Mack Phase 2 Comments	In the plants that have been tested, the test was conducted by individuals working in and around the process wearing personal exposure badges. The exposure was less than the PEL set by regulatory agencies.
533	3.4 Does Perdue have any hexane air monitoring data that is more recent than three years old?	90	August Mack Phase 2 Comments	It is unclear whether the commenter is referring to emissions, ambient air or worker exposure data. In any event, relevant data is contained in the revised Plan Approval Application.
534	3.5 What is the most hexane that will be released from the facility at any one time?	90	August Mack Phase 2 Comments	Short-term maximum emissions of hexane at any one moment in time are dependent upon many factors including the quantity, type, and quality of soybeans being processed at that moment; however, maximum potential annual hexane emissions from the proposed facility are 185.72 TPY.
535	3.6 Is there/will there be a documented calibration process for the handheld air monitoring equipment that is utilized to test for hexane at the facility?	90	August Mack Phase 2 Comments	Air monitoring equipment will be calibrated in accordance with manufacturer specifications and the calibration records will be maintained per OSHA and NFPA guidelines.
536	3.7 Where was the highest concentration of hexane located in the Health Risk Assessment in reference to the offsite residences?	90	August Mack Phase 2 Comments	The Most Exposed Individual Residence (MEIR) off-site is at the northeast corner of the facility. Even at this point and assuming an SLR of .140 gallons per ton, concentrations were well below exposure benchmarks. Please see Section 3, Tables 3 and 4, and Figure 6 of the Health Risk Assessment Report.
537	3.8 Will the facility follow OSHA's Electrical Safety Standards for combustible dust for Class II (dust hazard), Division I (dust hazard continually present), Group G (grain, corn, flour, wood and plastics) hazards?	90	August Mack Phase 2 Comments	The facility will adhere to all applicable OSHA electrical safety standards for combustible dust.
538	3.9 Will the facility follow OSHA's Electrical Safety Standards for flammable liquids?	90	August Mack Phase 2 Comments	The facility will adhere to all applicable OSHA electrical safety standards for flammable liquids.
539	3.10 Will the facility develop an Emergency Preparedness Plan per OSHA's Process Safety Management Standard (29 CFR 1910.119).	90	August Mack Phase 2 Comments	The facility will develop an Emergency Preparedness Plan as outlined in and required under OSHA's Process Safety Management Standards.
540	3.11 What is Perdue willing to do to make the facility safer for the community?	90	August Mack Phase 2 Comments	Perdue will adhere to all applicable safety requirements. In all of the communities where it operates Perdue works closely with local agencies to plan and implement emergency response measures. Local emergency planners and responders are invited to participate in facility training exercises and become familiar with facility layout and operations. In addition, see responses to Comments 282, 331, 332, 443, 538 and 539.
541	4. Explosion hazard. 4.1 The Perdue representatives did not think an explosion of the two 20,000 gallon tanks of hexane was a likely release scenario. When asked what a realistic scenario would be and what realistic scenario Perdue had considered, Perdue's attorney responded that Perdue wanted to discuss this internally. Do you now have an answer for us?	90	August Mack Phase 2 Comments	See responses to Comments 318, 321, 402, 403, 418, and 420.
542	4.2 Can you please provide for us the planned distance between the two 20,000 gallon hexane storage tanks, and distance from the storage tanks to the extraction building?	90	August Mack Phase 2 Comments	See responses to Comments 418 and 419.

#	Comment	Commenter #	Category	N
543	4.3 Perdue stated that the two 20,000 gallon hexane storage tanks did not constitute the most dangerous risk for an accidental explosion. Assuming this is the case, at what section of the process is the most dangerous risk?	90	August Mack Phase 2 Comments	The greatest potential explosion risk is where there is an exceedance of the LEL in the presence of an ignition source. To avoid such risks, the facility will strictly adhere to OSHA Process Safety Management requirements and NFPA 30 and 36 Standards.
544	Can you provide the quantity of hexane usage in that particular unit operation, and in what section of the plant it is located?	90	August Mack Phase 2 Comments	Please see response to Comment 259.
545	We would also like to know if Perdue is planning to do a hazard assessment on any type of accidental explosion pertaining to nearby residential homeowners.	90	August Mack Phase 2 Comments	This issue is addressed in ENVIRON's response to the BAI report and is part of the SSIP Application. In addition, see responses to Comments 318, 321, 402, 403, 418, and 420.
546	4.4 Perdue said it did not consider the impact of an accidental explosion on nearby surrounding residential homeowners. They relied only on complying with NFPA 30 regulations, but said they would look into this internally. Can you provide Perdue's assessment of this when it is completed?	90	August Mack Phase 2 Comments	See response to Comment 545.
547	4.5 At the meeting, Perdue was not in a position to discuss any impacts of an accidental detonation with the incinerator plant, particularly in regards to the large nearby propane tank used at the incinerator. Can you provide Perdue's assessment on this when it is completed?	90	August Mack Phase 2 Comments	The safety practices utilized in production should minimize, if not eliminate, the threat of any type of detonation. See also the response to Comment 545.
548	4.6 Purdue mentioned that the plant structure where hexane was in active use was constructed with non-flammable steel, which was designed to contain debris from flying around in the event of an accidental explosion. Can you provide more details for this design?	90	August Mack Phase 2 Comments	The plant will be designed and built in accordance with National Fire Protection Association (NFPA) 36 (Standards for Solvent Extraction Plants). In particular, it will be equipped with an approved water spray or deluge system that meets the density requirements of A4.8 and 4.8.11 of NFPA 36.
549	4.7 Perdue mentioned that the two 20,000 gallon storage tanks could not be buried underground because they could not monitor for leaks. Can you provide more details on your rationale for this?	90	August Mack Phase 2 Comments	See responses to Comments 418 and 419.
550	4.8 The distance between the two 20,000 gallon hexane storage tanks would be according to NFPA 30. Perdue indicated this distance had not yet been calculated. Wouldn't this distance be known since it would be used at other Perdue soybean processing plants? If so, can you please provide it?	90	August Mack Phase 2 Comments	The precise distance between the two tanks has not yet been finalized. See response to Comments 418 and 419.
551	4.9 Please provide a name for the carriers, if known, that will be delivering hexane.	90	August Mack Phase 2 Comments	This information is not relevant to the review of the Plan Approval or SSIP Applications. Any carrier that delivers hexane to the facility will have to adhere to all applicable standards for transportation of hexane.
556	Fugitive Emissions: As a first point of discussion, Perdue either fails to understand DEP's fugitive emission regulations at § 123.1 or else purposefully attempts to dissemble on this requirement. The Perdue explanation of compliance with § 123.1 speaks solely to fugitive particulate matter from roadways, which is actually an exempted source under this section of the regulations. In actuality, this regulation prohibits all types of fugitive air contaminants, not just particulate, unless they are specifically exempted (as are the roadways) or unless the Department determines that the emissions, after appropriate control are of minor significance in causing air pollution.	91	Hellam Township Phase 2 Comments	Perdue believes that the revised Plan Approval Application contains sufficient information for DEP to make a determination that the proposed facilty will comply with the requirements of 25 Pa. Code § 123.1. In addition, see response to Comment 562.
557	The Perdue application shows fugitive VOC emissions of 93 tons, nearly twice the level of a major VOC source.	91	Hellam Township Phase 2 Comments	Based on the revised LAER Evaluation and potential emission calculations in revised Attachment G of the revised Plan Approval Application, the facility-wide potential fugitive VOC emissions are approximately 112 TPY. Also, see response to Comment 562.
559	The fugitive hexane situation is even more alarming with fugitive emissions of 42 tons, over four times the major source threshold for HAPs.	91	Hellam Township Phase 2 Comments	Based on the revised LAER Evaluation and potential emission calculations in revised Attachment G of the revised Plan Approval Application, the facility-wide potential fugitive n-hexane emissions are approximately 56 TPY. Also, see response to Comment 562.

#	Comment	Commenter #	Category	N
562	Clearly fugitive emissions of this magnitude cannot be considered of minor significance with respect to causing air pollution.	91	Hellam Township Phase 2 Comments	The Risk Assessment Report clearly indicates no anticipated adverse effects from the hexane emissions at a solvent-loss ratio (SLR) of .140 gallons per ton of soybeans processed. Effects would be even less at the .125 gallons per ton SLR now being proposed as LAER. Furthermore, given the available data on the environmental fate, transport, and effects of hexane, emissions from the facility are not expected to affect the physical properties of the atmosphere, contribute to global warming, deplete stratospheric ozone, or alter precipitation patterns. For several reasons, the impact of the proposed plant on ozone formation in the surrounding region of Lancaster and York Counties is expected to be small. The smog-producing potential of hexane is considered low relative to other VOCs. In fact, hexane is considered to be one of the less photochemically reactive hydrocarbons, with a reactivity 17 times less than the most reactive VOC (Assessment Report on Hexane for Developing Ambient Air Quality Objectives, Alberta Environment, November 2004). The formation of ozone also is not an instantaneous process, but rather occurs over a period of hours. Over this period, VOC emissions from the plant would travel miles downwind of the plant. For example, in winds of just five (5) miles per hour and over a typical ozone formation period of four (4) to (6) hours, emissions from the plant would travel 20 to 30 miles or more before any appreciable amount of ozone would form. Thus, any contribution of plant emissions to formation of
563	Further, DEP must determine that the fugitive emissions are of minor significance *after appropriate control.* Failure to control at all is not appropriate control. These emissions must be captured and controlled in order for the facility to be lawfully permitted. The application violates DEP regulations.	91	Hellam Township Phase 2 Comments	For the reasons discussed in the revised LAER Evaluation, capture and control of fugitive VOC emissions at soybean processing facilities is not feasible due to both technical and safety issues. In addition, see the response to Comment 562.
564	LAER: Perdue's LAER analysis appears woefully inadequate. It appears to be little more than a cut and paste exercise based on Google searches with little understanding of the LAER requirements or the technical issues involving the control methods evaluated.	91	Hellam Township Phase 2 Comments	See revised LAER Evaluation, Attachment H.
565	The first major failure in Perdue's approach is their decision to conduct "this LAER Evaluation based on a facility-wide gallons of VOC per ton of soybeans processed emission limitation." That is an unlawful approach to LAER.	91	Hellam Township Phase 2 Comments	See revised LAER Evaluation, revised Attachment H, Section 9.7 for basis of facility-wide emission limit.
566	While the facility emissions are used to determine whether non-attainment new source (NNSR) review is triggered, as it is in this case, once NNSR becomes applicable, LAER must be applied to each new or modified source (§127.205(i).	91	Hellam Township Phase 2 Comments	See revised LAER Evaluation, revised Attachment H, Section 9.0 for LAER determination.
567	Additionally EPA guidance published August 29, 1988 on LAER states that "each emissions unit must achieve the lowest possible emission rate". Consequently the Perdue LAER analysis is flawed in attempting to assess LAER on a facility wide basis. Each individual source of VOCs must be evaluated, those which have proposed controls as well as those that have no proposed controls.	91	Hellam Township Phase 2 Comments	See response to Comments 565 and 566.
568	A general commitment to use BMP, which is basically what Perdue is proposing, is a far cry from LAER and is unacceptable.	91	Hellam Township Phase 2 Comments	See revised LAER Evaluation, revised Attachment H, Section 2.0 on LAER approach, Section 6.0 (including Table 6.1) on technical feasibility of controls, and Section 9.0 on selection of LAER.
569	Secondly, Perdue fails to understand the technology transfer requirements of LAER. Perdue's LAER discussion makes much of the fact that there are no other soybean extraction plants using control technologies above what they have proposed in this application. This is irrelevant. EPA requirements on LAER require sources to evaluate "any sources that produce similar gas streams that could be controlled by the same or similar technology" in evaluating LAER technology.	91	Hellam Township Phase 2 Comments	See revised LAER Evaluation, revised Attachment H, Section 3.0 on waste stream characteristics of similar industries, Section 5.0 on potential control technologies from technology transfer, and Section 6.0 on technical feasibility of controls.
570	Similar gas stream control has been demonstrated by all of the technologies Perdue rejects.	91	Hellam Township Phase 2 Comments	See revised LAER Evaluation, revised Attachment H, Sections 5.1 and 6.1 in regards to Biofilters.
571	Biofiltration: Biofiltration is a relatively new approach to air pollution control but there are installed systems treating hydrocarbon contaminated waste streams, including solvent contaminated exhausts.	91	Hellam Township Phase 2 Comments	See response to Comment 570.
572	Again the fact that they have not been installed in soybean processing plants is irrelevant to a LAER determination.	91	Hellam Township Phase 2 Comments	See response to Comment 570.
573	Perdue admits that hexane is relatively easy to biodegrade yet argues that the bed size to control their emissions, (and we suppose they mean their facility emissions based on their incorrect interpretation of LAER), would be prohibitively large. They have given no evidence to suggest that that is true either for the entire facility or for individual sources.	91	Hellam Township Phase 2 Comments	See response to Comment 570.

#	Comment	Commenter #	Category	N
574	EPA has published a technical paper on biofilters, *Using Bioreactors to Control Air Pollution* (EPA-456/R-03-003). EPA gives an example, in this document, of a biofilter controlling compost odors and treating 210,000 cfm in a biofilter bed area of approximately 200 feet by 200 feet. That is a relatively large air flow. The listed sources in the Perdue application that emit hexane have a combined air flow of only 39,500 cfm.	91	Hellam Township Phase 2 Comments	See response to Comment 570.
575	Additional flow would need to be added to capture the fugitive emissions from the extraction process, but that should be able to be easily accomplished within the 210,000 cfm total flow in the subject case.	91	Hellam Township Phase 2 Comments	See response to Comment 570.
576	And even if a biofilter were required of 200 feet by 200 feet, that scarcely rises to the level of technical infeasibility.	91	Hellam Township Phase 2 Comments	See response to Comment 570.
577	To eliminate this technology Perdue must show precisely why it is technically infeasible and provide some design details on what size the biofilter would have to be. Biofiltration cannot be eliminated on speculative assumptions.	91	Hellam Township Phase 2 Comments	See response to Comment 570.
578	Perdue goes on to describe the many challenges involved in running a biofilter system, and these are accurately characterized. However, difficulties in operating a biofilter do not make using one technically infeasible.	91	Hellam Township Phase 2 Comments	See response to Comment 570.
579	They may suggest that while technically feasible, this technology is inferior to other more reliable alternatives, but that is an entirely different analysis, yet one that must also be included in the LAER analysis.	91	Hellam Township Phase 2 Comments	See response to Comment 570.
581	Perdue mentions that many sorbents may be used but then sets up a straw man, activated carbon, and shoots that down without so much as a mention of alternative sorbents.	91	Hellam Township Phase 2 Comments	See revised LAER Evaluation, revised Attachment H, Sections 5.2 and 6.2 in regards to Carbon Adsorption systems.
582	Perdue suggests that because adsorption on carbon is exothermic and hexane is flammable the technology is too dangerous to be used. This is absurd. All adsorption processes are exothermic and all VOCs are flammable to one degree or another. Perdue's arguments would suggest that the technology would never be used and it is in fact used quite commonly.	91	Hellam Township Phase 2 Comments	See response to Comment 581.
583	Carbon is probably not the ideal sorbent for many of the gas streams to be evaluated for LAER at this facility due to high moisture content in the exhaust. Bed fires are an obvious concern for all of these systems but a proper design and proper sorbent selection will eliminate or adequately manage this risk.	91	Hellam Township Phase 2 Comments	See response to Comment 581.
584	EPA also has a technical manual on adsorption technology, *Choosing an Adsorption System for VOC: Carbon, Zeolite, or Polymers?* (EPA 456/F-99-004) which states "VOC and organic hazardous air pollutant emissions can be controlled, recovered, recycled, or concentrated for additional treatment by adsorption technology. This includes emissions from: dry cleaning, degreasing, paint spraying, solvent extracting ..."	91	Hellam Township Phase 2 Comments	See response to Comment 581.
585	Absorption technology cannot be considered a technically infeasible technology based on the data provided in the Perdue application.	91	Hellam Township Phase 2 Comments	See response to Comment 581.
587	On the RTO they argue that oil from the mineral oil scrubber or particulate from the meal dryer or cooler will either plug the RTO or cause a loss of heat transfer. Neither is an argument against technical infeasibility. Particulate (meal and oil) can be filtered prior to the RTO. Other facilities with similar exhaust characteristics are able to treat the gas and use an RTO.	91	Hellam Township Phase 2 Comments	See revised LAER Evaluation, revised Attachment H, Sections 5.4 and 6.4 in regards to incineration systems (including RTOs).
588	Interestingly, Perdue makes no specific statements as to why a catalytic oxidizer would be technically infeasible, but goes on to address safety issues for all types of incineration.	91	Hellam Township Phase 2 Comments	See response to Comment 587.
589	They argue that since hexane is highly flammable, incineration is not an acceptable option.	91	Hellam Township Phase 2 Comments	See response to Comment 587.
590	Explosion is an issue in all enclosed incineration systems, but it is an issue that is routinely managed. The lower explosive limit (LEL) for hexane is 1.1%. Typically a safety factor of 25% of LEL is used in incinerator design. In this case a design limit of 0.275% hexane would be protective against explosion hazard.	91	Hellam Township Phase 2 Comments	See response to Comment 587.
591	If we take Perdue's projected VOC emissions from the three non-fugitive sources (extraction process, meal dryer, and meal cooler) and distribute them equally over the year based on the flows for the three control systems, we find that the average concentrations of the three exhaust streams would be 0.2%, 0.01%, and 0.001% respectively. All of these are below the safety limit for enclosed incineration systems on average and can be monitored and if needed in the short term, diluted with ambient air to maintain operations below the safety level.	91	Hellam Township Phase 2 Comments	See revised LAER Evaluation, revised Attachment H, Section 6.4.1. Variations in flow and solvent concentrations during normal operation, normal shutdown procedures, process upsets, and malfunctions may result in near LEL conditions at the final vent exhaust and increase the risk of explosion. The most dangerous time for a soybean solvent extraction plant is during start-ups and shut-downs when the LEL threshold is crossed. It is during this time that plant equipment is in a solvent-rich environment and the risk of fire is highest.
592	Perdue notes the existence of an NFPA standard for Solvent Extraction Plants (NFPA 36) and opines that the standard "does not appear to prohibit the use of incineration processes".	91	Hellam Township Phase 2 Comments	See revised LAER Evaluation, revised Attachment H, Section 6.4.1.
593	Indeed, NFPA 36 has 28 pages of standards regarding safe operations of a solvent extraction plant, one paragraph of which addresses boilers and other open flame operations. The NFPA standard requires that open flames be located at least 100 feet from the extraction process. Clearly, Perdue cannot hide behind a fear of explosion regarding incineration when this is a minor issue in the NFPA standard, and one that is adequately addressed therein.	91	Hellam Township Phase 2 Comments	See response to Comment 592.
594	In addition, Perdue fails to mention the most common type of incineration control - a flare.	91	Hellam Township Phase 2 Comments	See revised LAER Evaluation, revised Attachment H, Sections 5.5 and 6.5 in regards to flares.

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595	Flares are used in natural gas well completions, (containing highly flammable gas), precisely as a safety feature. Flaring is an open combustion process that does not have an enclosed combustion chamber that can have an explosive environment. Flares also would not be subject to the plugging problems that Perdue worries about with the RTO.	91	Hellam Township Phase 2 Comments	See response to Comment 594.
596	If Perdue is convinced that operational or safety issues compel them to avoid an RTO or catalytic oxidation system, a flare will provide the same level of control without these concerns.	91	Hellam Township Phase 2 Comments	See response to Comment 594.
597	We also find it interesting that Perdue is so concerned about explosive conditions in the air exhaust from the mineral scrubber that they take *manual readings* of the hexane level in the exhaust air stream at the final vent fan every *two* (2) *hours* to ensure that the hexane concentration remains less than 20% of the LEL. And that if levels are found to be above the 20% threshold, immediate action will be taken to ascertain the probable cause and necessary corrective action will be taken, including the interruption of operations which could involve shutdown of the process. (Perdue Plan Approval Application, Attachment H, Page 8 of 9). We would humbly suggest that if the potential for explosion is a real danger, perhaps Perdue should investigate a real time process monitor for this parameter rather than relying on manual readings every two hours.	91	Hellam Township Phase 2 Comments	To ensure that the solvent recovery system is functioning properly and that a negative pressure remains on system, Perdue will upgrade the process control system to provide continuous monitoring of the hexane concentration in the exhaust air stream at the final vent fan to ensure that the hexane concentration remains less than 20% of the Lower Explosive Limit (LEL). See revised LAER Evaluation, revised Attachment H, Section 2.4.
598	Finally, Perdue notes that an incinerator would lead to increased energy consumption and the emission of more greenhouse gases. Neither factor is a component of a LAER analysis.	91	Hellam Township Phase 2 Comments	See revised LAER Evaluation,revised Attachment H, Sections 5.4 and 6.4 in regards to incineration systems.
599	LAER Summary: Purdue has not proven that biofiltration, adsorption, or incineration is a technically infeasible option for any of the sources at this facility.	91	Hellam Township Phase 2 Comments	See updated information on control technology feasibility in revised LAER Evaluation, revised Attachment H, Section 6.0, and Table 6.1.
600	One of these technologies or an alternate control technology must be installed. The argument that no controls are possible on some of these sources doesn't even pass the BAT test, let alone LAER.	91	Hellam Township Phase 2 Comments	See updated information on control technology feasibility in revised LAER Evaluation, revised Attachment H, Section 6.0, and Table 6.1.
601	Additionally, even the VOC sources that have controls must have the proposed controls evaluated to prove that they are in fact LAER, and as noted above, this must be done on a source by source basis.	91	Hellam Township Phase 2 Comments	See revised LAER Evaluation, revised Attachment H, Table 6.1 and Section 7.0 on control technology ranking.
602	In every case where Perdue wants to argue that a particular control technology is infeasible they must provide precise gas stream details, including flows, temperatures, particulate loading if applicable, moisture content, temperature and VOC concentration, and give detailed reasons why a particular control cannot be installed on a particular source.	91	Hellam Township Phase 2 Comments	See updated information on control technology feasibility in revised LAER Evaluation, revised Attachment H, Section 6.0, and Table 6.1.
603	Furthermore, they cannot argue, as they have done here, that contaminants in the gas stream prevent the use of a control technology as LAER without investigating treatment of the gas stream to remove those contaminants.	91	Hellam Township Phase 2 Comments	See updated information on control technology feasibility in revised LAER Evaluation, revised Attachment H, Section 6.0, and Table 6.1.
604	As discussed above, LAER decisions are not based on what other similar plants have installed but rather on what is technically feasible	91	Hellam Township Phase 2 Comments	See updated information on control technology feasibility in revised LAER Evaluation, revised Attachment H, Section 6.0, and Table 6.1.
605	EPA evaluated enhanced controls on these types of facilities in a document entitled *"Economic Impact Analysis for the Final Vegetable Oil Processing NESHAP Final Report (EPA-452/R-OI-005* January 2001)". In that document EPA evaluated above the floor MACT controls. "For this option, plants would be required to install a fabric filter and catalytic incinerator to the combined exhaust from the meal dryer and cooler vents (Zukor and Snyder, 2000). The fabric filter is installed to remove excess particulate matter in the exhaust stream prior to entering the catalytic incinerator. The catalytic incinerator is capable of reducing the volume of HAP and VOC emissions in the exhaust stream by approximately 95 percent."	91	Hellam Township Phase 2 Comments	See revised LAER Evaluation, revised Attachment H, Section 2.2, starting with the last paragraph on Page 9 of revised Attachment H through the middle of Page 11.
606	While EPA did not implement the "above the floor" option in the promulgated MACT standard, the analysis shows that filtration followed by catalytic incineration was a technically feasible control option over twelve years ago. Control of and would exempt the facility from NNSR. Without further data from Perdue, this is the LAER that DEP should impose.	91	Hellam Township Phase 2 Comments	See revised LAER Evaluation, revised Attachment H, Section 2.2, starting with the last paragraph on Page 9 of revised Attachment H through the middle of Page 11. Also, refer to updated information on control technology feasibility in revised Attachment H, Section 6.0, and Table 6.1.
607	Alternative Site Analysis: § *127.205(5) For a new or modified facility which meets the requirements of and is subject to this subchapter, an analysis shall be conducted of alternative sites, sizes, production processes and environmental control techniques for the proposed facility, which demonstrates that the benefits of the proposed facility significantly outweigh the environmental and social costs imposed within this Commonwealth as a result of its location, construction or modification.* The Perdue application is totally non responsive to the regulatory requirement.	91	Hellam Township Phase 2 Comments	The revised Alternatives Analysis (Attachment I) discusses the alternatives and demonstrates that the benefits of the proposed facility significantly outweigh the environmental and social costs.
608	The intent of the regulation is to actually evaluate alternative sites in the particular, not just make generic statements that alternative sites were considered and found wanting.	91	Hellam Township Phase 2 Comments	The revised Alternatives Analysis (Attachment I) Section 2.0 evaluates the alternative sites that were considered in York County.
609	Furthermore the regulation requires an evaluation of benefits and environmental and social costs (commonly called harms) from the proposed project and a determination that the benefits *significantly* outweigh the harms.	91	Hellam Township Phase 2 Comments	The revised Alternatives Analysis (Attachment I) Section 6.0 and its subsections evaluate the project benefits and environmental and social impacts and demonstrates that the benefits of the proposed facility significantly outweigh the environmental and social costs.

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610	This application doesn't even mention harms. One of the most obvious harms is the construction of a major source of VOCs in an area that already is treated as a non-attainment area for ozone and is upwind from areas of measured ozone exceedances.	91	Hellam Township Phase 2 Comments	The revised Alternatives Analysis (Attachment I) Section 2.3 and Section 6.2 and its subsections discuss the project's environmental and social impacts (harms) related to VOC and n-hexane (HAP) emissions. The referenced Health Risk Assessment Report clearly indicates no anticipated adverse effects from the hexane emissions at a proposed SLR of .140 gallons per ton; any effects would be even less at the .125 gallons per ton SLR now being proposed.
611	The way to mitigate this harm is to construct outside of non-attainment areas.	91	Hellam Township Phase 2 Comments	The revised Alternatives Analysis (Attachment I) Section 2.0 discusses why the construction of the proposed facility at a location outside of the Northeast Ozone Transport Region is not an option for this project.
612	At a minimum, Perdue should evaluate an actual location for construction of this facility outside the ozone transport region and compare the harms to the Lancaster site.	91	Hellam Township Phase 2 Comments	See response to Comment 611.
613	A second obvious harm to be investigated is the proposed emission of hexane ten times higher than the currently highest emitting source in PA and an emission higher than the total hexane currently being emitted in each region of DEP.	91	Hellam Township Phase 2 Comments	See response to Comment 610.
614	Potential harms from hexane emissions include chronic and sub-chronic inhalation risks.	91	Hellam Township Phase 2 Comments	See responses to Comments 213 and 218.
615	Other environmental and social costs that should be evaluated include health and welfare and property impacts from all air emissions, including hexane; the potential for fire and explosion and the impact on local citizens quality of life; traffic impacts on surrounding roads, including risks to school buses; impacts to future development from consumption of a large amount of the air resource; noise of the facility; the potential for off-site odors; development of sinkholes on site and downstream; mosquito risks (including West Nile risks) from storm water ponds; aesthetics (building higher than normal zoning allows); and potential impacts to the Susquehanna River, both from groundwater withdrawal, sinkhole development, and potential discharges to the river.	91	Hellam Township Phase 2 Comments	The revised Alternatives Analysis (Attachment I) Section 6.2 and its subsections discuss and evaluate the relevant environmental and social impacts.
616	Another major societal cost of this project is any state grants, which are ultimately borne by the taxpayers of Pennsylvania for the benefit of private industry, and must be included as a societal cost of the project.	91	Hellam Township Phase 2 Comments	The Office of the Budget would not have awarded the grant unless there were societal benefits in the form of improving economic growth and job creation.
617	Perdue must actually conduct these benefit-to-costs analyses and show the benefits significantly outweigh the costs, and they must include detailed analyses showing evaluation of actual alternative sites.	91	Hellam Township Phase 2 Comments	The revised Alternatives Analysis (Attachment I) of the Plan Approval Application addresses the costs and benefits of the proposed facility.
618	A second major deficiency in the alternative analysis is the evaluation of alternative production processes. Perdue does briefly discuss the flash desolventizing process and correctly determines that that process has higher emissions than the one they are proposing. However there are other potential hexane-free extraction processes that could be employed, including supercritical C02, 10% IPA in water, 10% n-propanol in water, 10% ethanol in water, to name just a few.	91	Hellam Township Phase 2 Comments	Sections 4.1 through 4.4 of the revised Alternatives Analysis (Attachment I) discuss and evaluate alternative production processes. Although neither EPA nor DEP require an applicant to redefine the design of a source (in this case, a vegetable oil solvent extraction facility) as part of a LAER evaluation, Perdue did evaluate alternative production processes in Section 6.1 of the revised LAER Evaluation (Attachment H).
619	These last three are all non-HAPS and the reduction of VOCs using predominantly water would greatly reduce the VOC emissions and eliminate the HAPs.	91	Hellam Township Phase 2 Comments	Section 4.2 of the revised Alternatives Analysis (Attachment I) and Section 6.10.3 of the revised LAER Evaluation (Attachment H) discuss and evaluate the feasibility of non-hexane solvent extraction.
620	The application must evaluate these alternative processes as well and any other alternative processes that could minimize the VOC and HAPs risks.	91	Hellam Township Phase 2 Comments	See responses to Comments 618 and 619.
621	Mr. Wayne Black, Environmental Director for Perdue Farms, Inc., was quoted as saying at a public hearing on December 13, 2012, that hexane is used in more than 90 percent of soybean processing plants today. Perdue must examine the technology used at the other 10% of the plants and determine if that has a greater benefit to harms ratio and also whether that technology could satisfy LAER requirements by virtue of less VOC emissions.	91	Hellam Township Phase 2 Comments	See responses to Comments 618 and 619.
622	It is understood that there will be decreased benefits from the use of these non-traditional solvents but they must be balanced against the reduced harms resulting from less VOC and HAP emissions.	91	Hellam Township Phase 2 Comments	See responses to Comments 618 and 619.
623	It is not enough to simply say that they are more costly to implement. Cost data must be provided and compared to the decreased harms.	91	Hellam Township Phase 2 Comments	See responses to Comments 618 and 619.
624	To the extent Perdue's LAER implementation does not result in VOC emissions below 50 tons per year, these alternative processes would also need to be considered as LAER.	91	Hellam Township Phase 2 Comments	The commenter does not provide any rationale for this statement. See responses to Comments 618 and 619.
625	In that situation these technologies would need to be implemented if they are technically feasible regardless of any increased costs of production.	91	Hellam Township Phase 2 Comments	See responses to Comments 618 and 619.

From: Rowe, Greg [mailto:Greg.Rowe@perdue.com]
Sent: Tuesday, December 23, 2014 7:34 AM
To: Hanlon, Thomas
Cc: Black, Wayne
Subject: RE: Additional Items

Tom,

See below for responses to the comments you forwarded.

Please advise if you require additional information.

Regards,

Gregory Rowe
VP Grain Operations
Safety, Health & Environment
Perdue Agribusiness
Office : (410) 341-2368
Cell : (443) 235-5417

From: "Hanlon, Thomas" <thanlon@pa.gov>
Date: December 10, 2014 at 10:59:10 AM EST
To: "Black, Wayne" <Wayne.Black@perdue.com>
Subject: Additional Items

Hello Wayne,

Following up on our phone conversation, can you please provide answers to the following comments:

1. In the LAER analysis, please address the possible use of adsorbents other than carbon, such as zeolites, activated alumina or polymers.

- As stated in Section 5.2 of the LAER evaluation, "For the control of VOC from exhaust streams, the most common adsorbent is activated carbon." In general, statements made in the LAER evaluation regarding the advantages and disadvantages of activated carbon adsorption will apply similarly to the other identified types of adsorption materials such as: synthetic zeolite, polymetric resins, and activated alumina. Specifically, the need for large volumes of adsorption material, potential of channeling within a large adsorption bed, and plugging of the adsorption bed with fine particulate matter from the vegetable oil production process. Given the described application the use of other types of adsorption media are not likely to achieve VOC emission reductions greater than potentially achieved with activated carbon.

2. Please verify that the building heights provided for the Extraction Building and the Storage Tanks are correct and verify that these were the values used in the modeling analysis. Also please

discuss any potential discrepancy between the building heights provided in the application and the heights provided to the Conoy Township Zoning Hearing Board in March 2012.

- The heights identified in the Conoy Township Zoning Hearing Board on March 22, 2012 for the Extraction building and Grain Storage tanks/silos were 90' and 101' respectively. The expected as built heights are approximately 82' and 105' respectively. The values used in the modeling analysis for these structures were 60' and 60' respectively. The values used in the modeling represent the expected eave height of these structures in order to achieve proper assimilation in the modeling and per our consultant the utilization of eave heights provides a reasonable representation of actual conditions.

2a. As a follow up to Question number 2 below, can you also verify the structure heights for the following, and verify that the correct heights were used in the modeling? These were expressed in the March 2012 submission to the Conoy township Zoning Hearing Board , Exhibit #2 as follows:

- Bucket Elevator – 148 ft (equates to 45.11 meters)

- The height of the bucket elevator, as built, is expected to be approximately 144.5 feet, however due to its dimensions is inconsequential for modeling purposes as building and other structures were modeled.

- Dust Collector – 95 ft (equates to 28.96 meters)

- The equipment we are assuming represented here is the dust collector on meal/meal feed load out which is similar to the description presented. The discharge height of the expected as built dust collector is approximately 90 feet, however due to its dimensions, is inconsequential for modeling purposes as building and other structures were modeled.

Thanks,

Tom Hanlon

Thomas J. Hanlon, P.E. | Environmental Engineering Manager
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Weaver, William

From: Rowe, Greg <Greg.Rowe@perdue.com>
Sent: Tuesday, December 30, 2014 3:24 PM
To: Wetzel, Brian
Cc: Hanlon, Thomas; Weaver, William; Black, Wayne; Rowe, Greg
Subject: PA Facility - Shakedown & Startup Plans
Attachments: PA Facility - Shakedown & Startup Plan.pdf

Brian,

Attached is the proposed plan for the Shakedown and Startup of the PA Soybean Processing facility.

Please advise if additional information is required.

Sincerely,

Gregory Rowe
VP Grain Operations
Safety, Health & Environment
Perdue Agribusiness
Office : (410) 341-2368
Cell : (443) 235-5417

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December 30, 2014

To: Brian Wetzel, PA DEP Air Quality Section South Central Regional office
From: Gregory Rowe, Perdue AgriBusiness
Re: Start-Up Plans Associated with Air Quality Plan Approval Submittal #36-0515A, Conoy Township, Pa.

Mr. Wetzel,

Per the LAER document submitted as part of the plan approval application, the proposed soybean extraction facility will implement the latest equipment and process control technology to achieve maximum efficiency in oil extraction and solvent recovery. As we have discussed, the process of soybean oil extraction does experience some variability in respect to emissions due to the variability of the quality of the raw material being processed. The physical and chemical characteristics of the soybean, being an agricultural commodity, can vary year to year, or even within a year. Factors such as soil type, weather, growing season, type of bean and age of the soybean can affect bean size, cellular structure, moisture, and oil content. These qualities in turn will impact process efficiency and solvent recovery. The vegetable oil industry has experienced fluctuating facility-wide VOC emissions over time at existing, well-established facilities where there were no changes in equipment, staff, or other operating parameters. These fluctuations are attributed to the varying quality of the soybeans. Perdue has identified process variability as a concern during the permitting process. Also, newly constructed plants typically experience variability in operations that may impact operational efficiency and solvent recovery. The start-up of a newly constructed plant coupled with the variability of raw product quality can result in operational variation until such time as the plant is able to achieve continuity, which will in turn equate to a more efficient operation and solvent recovery.

Given the aforementioned circumstances, we respectfully propose the following Shakedown and Start-Up periods once the plant is operational:

- An initial six (6) month Shakedown period of temporary operation during which time Perdue will shakedown the newly constructed facility per 25 Pa Code 127.12b. During this initial shakedown period Perdue will strive to achieve a solvent loss not to exceed 36,750 gallons. In the event that Perdue is not able to achieve a solvent loss of 36,750 gallons due to operational parameters and demonstrated need, it may request an extension of the Shakedown period by submitting, in writing, a request for extension to the Department which shall include a description of the compliance status of the source, a detailed schedule for establishing compliance and the reasons compliance has not been established. This period is necessary to facilitate the commissioning of a newly constructed facility until continuity of operations is achieved.

- Subsequent to the initial Shakedown period an eighteen (18) month Start-up period of operation at a solvent loss ratio (SLR) of .125 per compliance directives outlined under the vegetable oil MACT subpart GGGG, which will include provisions for utilizing start-up, shutdown, malfunction (SSM) protocol during applicable periods. During this period we recognize our obligation to track and report total VOC emissions not to exceed of 208 tons on a rolling twelve (12) month basis. This period will allow the operation of the facility through two (2) full growing seasons and respond to the variability of the raw agricultural commodity as indicated previously.

- Upon completion of the Shakedown and Start-up periods the plant will operate at a solvent loss ratio (SLR) of .125 with VOC emissions not to exceed 208 tons on a rolling twelve (12) month basis.

We appreciate your attention to this matter and anticipated response. If you should have any further questions please do not hesitate to contact us.

Sincerely,

Gregory Rowe

cc: Tom Hanlon, PA-DEP
Bill Weaver, PA-DEP
Wayne Black, Perdue AgriBusiness