

# Veridian Homes LLC Annual Report



---

## **Executive Summary:**

Veridian Homes has been a Dane County builder for many years. Throughout those years, the economic cycles have provided both opportunities and challenges for the home building industry.

Veridian has been a long-term participant in the Green Tier I Program and an original Charter Member in the Clear Waters group.

The corporate culture at Veridian is one of continual improvement. Our established quality, safety and environmental procedures are part of our normal business activities. In light of our established procedures, we continue to set and achieve energy and sediment reduction objectives. Our high rates of material reuse and recycling are maintained, and we continue our relationship with the WDNR through the Clear Waters Charter meetings, in which we are regular participants.

## **EMS Audit Report:**

Veridian completed an internal audit in 2015. The findings are summarized below.

The Internal Auditor found some opportunities for improvement, and no Major or Minor Non-Conformities. The results of this audit helped us improve our EMS in the areas of EMS document control, procedure clarification, EMS auditing and documentation of our activities.

## **Description of Progress:**

1. Early in our GT participation, we established an overall objective of building homes that demonstrate energy reduction techniques (compared to the National Reference Home) as shown by HERS score reductions. We have continued to significantly increase our energy reduction throughout 2015. For the purposes of this metric, we use the Focus New Homes testing, certification and reporting information. A summary report was provided by our Trade Partner. The data has been verified by the Wisconsin Energy Conservation Corporation independent of the Trade Partner or Veridian Homes. (*Exhibit 1*)
-

2. In 2014, we started insulating the basement rim with foam on every Veridian Home. Prior to 2014, a major source of infiltration was basement rim gaps. To increase tightness and decrease infiltration, we invested in two inches of spray foam to cover the entire basement rim. The energy-saved metrics provided in Exhibit 1 attest to the benefit of the additional insulation along the homes rim.
  3. On a similar energy-related objective, we set a goal of testing new technology that would lower our HERS score and increase tightness of each home thus increasing our energy efficiency. Each project was completed on a single residence and compared to a non-project single residence of the same model and elevation. Below is a brief description of the steps undertaken. The information and metrics were supplied by our Trade Partner. (*Exhibit 2*)
    - a. We researched and utilized an insulated house wrap to be installed beneath the siding.
    - b. An additional inch of foam was installed on the basement foundation.
  4. We maintained our goal of continually improving our erosion control performance. Beginning in 2008, we proposed new materials, methods of erosion management and inspection verification techniques. Each one-inch rainfall triggers an independent third-party review of 2-3 neighborhoods and 30-60 lots. We continue to implement an erosion control procedure. Since no erosion information is contained in the metrics, we have devised our own measures to identify trends that will help Veridian improve performance in both environmental and economic terms. A summary report for 2015 is included below and photos of each active lot continue to be available on a shared web site which is accessible to anyone. These photos and reports are also shared with the Clear Waters group with public access. (*Exhibit 3*)
  5. As in 2014, Veridian undertook a mass effort to clean-up their neighborhoods under construction. The number of participants increased two-fold from 2014 to 2015. An additional two neighborhoods were cleaned.
-

## **Environmental Performance**

### **Exhibit 1**

**Objective 1. Increase energy efficiency year over year in our new home builds.**

**Objective 2. Spray foam insulation around the basement rim of each home with 2 inch of foam insulation.**

Performance Documentation (from Trades)

*Veridian Homes  
6801 South Towne Drive  
Madison, WI 53713*

*Re: Wisconsin Focus On Energy Homes: 2015 Efficiency Analysis*

*Gary,  
From 2014 to 2015 alone, Veridian has shown constant improvement in the efficiency of your new homes as verified by performance testing and REMRATE v14.6.2.1. Energy reductions relate to the amount of emissions from fuel required for these homes. High efficiency housing minimizes the environmental impact, not only for the current year, but over the life of the house.*

*The average HERS Score from 2014 was 54 and in 2015, it improved to 50.7. There were 330 houses certified by Focus On Energy in 2015 that resulted in a REMRATE estimated total energy savings of 793,347 kWh and 153,026 Therms per year. From 2014, this is an additional 272,339 kWh and 83,867 Therms saved in 2015.*

*Sincerely,*

*Kurtis Anderson  
Perfect Environmental Performance  
529 N. Main Street  
Cottage Grove, WI 53527*

---

## **Exhibit 2**

**Objective 3. Test out new technologies on a small scale to determine the amount of possible increase in energy efficiency on a large scale.**

Performance Documentation (from Trades)

*Veridian Homes  
6801 South Towne Drive  
Madison, WI 53713*

*Re: Efficiency Analysis for Increased Foundation Insulation and Utilization of Insulated House Wrap*

*Dave,*

*A REM Rate energy analysis was completed for both new technologies tested. For comparison, additional REM Rate energy analyses were completed for the same Model Homes without the technologies.*

*The model home with an additional inch of insulation on the exterior foundation wall was found to have a 9.7% more efficient HVAC rating than the model without the additional insulation on the exterior foundation walls.*

*The model home wrapped in insulated house wrap was found to have a 12% more efficient HVAC rating than the model wrapped in standard house wrap.*

*Sincerely,*

*Karissa Anderson  
Perfect Environmental Performance  
529 N. Main Street  
Cottage Grove, WI 53527*

---

### **Exhibit 3**

#### **Objective 4. Improve Erosion Control Techniques**

##### ***Report to the Veridian Homes, LLC for the Clear Waters Initiative Charter/Green Tier***

*By: Perfect Environmental Performance, LLC*

*The purpose of the Clear Waters Initiative as a Green Tier Charter organization is to promote reduction or eliminate sources of erosion caused by construction that could contribute sediment to the waters of the State. The focus is to apply education, new ideas, information exchange and self-monitoring to improve environmental performance beyond that which regulations and enforcement can achieve. The continual improvement performance obtained is termed “superior environmental performance” within the Green Tier Program. Veridian utilizes an Environmental Management System (EMS) to implement our erosion prevention program.*

##### **Short History**

*In 2007 Veridian worked with the WDNR to form a new “Charter” within the GT Program. During the first year Veridian proposed an erosion control self-inspection program consisting of two parts. First was a personal builder staff taking routine photos of active build sites and second was an independent random inspection of neighborhoods and lots each time the rainfall exceeded one inch in a 24 hour period (rainfall event). Active lot photos would be labeled for documentation purposes and shared with regulators/public. Although the inspection routine has been modified within the Charter as it was re-vised over the years, Veridian’s EMS inspection procedure has always exceeded the Charter requirements.*

*Specifically, Veridian procedures generally require inspection of 100% of the active lots in 2-4 neighborhoods with each qualifying rainfall event. That process allows Veridian to gather meaningful data that is used to continually improve our erosion prevention activities as well as to quickly respond to any issues that may occur.*

*By having our trade partner inspecting 2-4 complete neighborhoods (during the rain event whenever possible) the observations allow us to see assignable root causes of problems. We use that data to discover trends and plan efficient preventive and corrective actions.*

##### **Performance 2015**

- 1. The 100% inspection process evidenced a low/no release rate performance for many neighborhoods. Several of the inspections showed no failures and no nonconforming issues across an entire neighborhood even at times when there were over 20 lot reviewed in a single neighborhood.*
  - 2. Our “during rainfall” and “complete inspection” procedure reduced response times to the level where Veridian made same day corrections for nearly all issues deemed as failures and in over 50% of the non-conformance cases. (See note for definitions below). It should be noted that many of the corrections not made in the same day happened when a weekend inspection was involved.*
-

3. *Third there were no blow-outs observed. Blow-outs are the situations where skid steers or other automated response equipment is needed to remove large sediment releases. No blow-out level releases were observed by our independent inspection trade in 2015.*
4. *There were approximately 10 situations observed in the 2015 season where the circumstances required our trade to make immediate notification to Veridian. These were situations where corrections needed to be made to assure there would be no release from predicted rainfall events. All notifications resulted in completion of preventive measures.*
5. *As noted above, all documented failures observed in 2015 were “shovel and broom clean-up” releases or less. Where any small release did occur there was storm drain filter material protection in place.*

*Note:*

1. *A failure happens when erosion control is missing from a potential discharge point or when a release of any magnitude has gone beyond lot perimeter. Trades that do not put the erosion control back in place after site entry or who irreparably damage it by driving over it also constitute failure by these criteria.*
2. *A non-conformance can be any number of conditions that do not conform to the established practices desired by Veridian. Non-conformances are not releases. They are conditions where a person could reasonable expect a release to occur if a condition is not changed (i.e. adding Soxx or repositioning existing erosion controls) to prevent the occurrence.*

**2015 Statistics**

- *12 one-inch rainfall inspections were performed by our independent trade (several inspections on weekends)*
  - *502 active lots/areas inspected*
  - *1441 inspection photos taken (or slightly under 3 photos per site on average. (Note that active lots due to soil or material storage often require only on photo. Complex lots may require 5-7 photos)*
  - *There were 105 non-conformances noted. This results in a rate of .2 non-conformances per lot for the season. Please be aware that any individual lot has the potential for as many as 10 non-conformances. A 0.2 rate is very low.*
  - *There were 32 failures noted. Nearly all failures and over 95% of non-conformances were immediately corrected by the combined efforts of Veridian, our erosion control service provider or by the inspection trade. This failure rate resulted in a rate of .06 failures per lot per season.*
  - *Our inspection trade talked with other trades like excavators, material deliverers, and soil management truck drivers and concrete deliverers. They reported that Veridian consistently followed up to correct or re-train their trade workers about erosion issues they could cause in the course of their work. Veridian also led a joint effort to remind trades by asking “are you going to reposition the Soxx when you are done?” to nicely remind them of the importance of that activity*
-

*Note: Although the frequency of releases is just slightly lower than 2014, the volume of the sediment released during any failure of that type continues to occur in smaller and smaller amounts. Considering there were no releases observed during the independent inspections that required more than a broom clean-up we are talking about year-over year continual improvement with release reductions down to extremely small amounts. This occurred while the number of homes increased by more than 30%. Because of the increase in active lots/homes and the observed decrease in released sediment, this measure is evidence that our continual improvement process is providing superior environmental performance.*

#### *Final observation*

*Our inspection trade stated "Veridian consistently out performs all other builders they observed in the way we applied and maintained our erosion control". They said they "saw measurable and continual improvement in our procedures and the way we carried out maintenance of installed erosion controls".*

*Please let us know if you have any questions about this report.*

*Best Regards,*

*Tim Anderson*

*General Manager, Perfect Environmental performance, LLC*

## **2016 Potential Objectives and Targets.**

### Pollution Protection:

1. At land development stage: increase erosion protection behind and in front of stone weepers.
2. Dig out driveway approaches and fill with stone ahead of the winter freeze. This process cannot be accomplished once ground the freezes and causes erosion issues during the spring thaw.
3. Install erosion soxx after backfill during winter months. This change in process helps ensure that the soxx will last, perform correctly when weather warms, and reduce wasted time, material, and energy spent on repairs or replacement.

### Energy Efficiency:

1. Test new exterior sheathing on framed walls. Analyze the benefits of the ZIP system (structural, moisture management, air barrier protection, and thermal performance)
2. Ensure a tight seal between framed wall and deck by changing process or products used. Through our performance testing for the Focus New Homes Program certification one area for improvement noted was air infiltration at the wall to deck connection.
3. Protect city sidewalk sections in front of driveways before construction begins. This should reduce time, materials, and energy spent on the replacement of sidewalk sections.

### Regulatory Requirements:

1. There were changes to the Focus New Homes Program in regards to whole house ventilation which required two bath fans to be wired together to meet the new
-

standard. Veridian's goal is to determine the most efficient way to complete this new requirement.

### **Stakeholder Involvement**

Veridian Homes includes specific environmental requirements in the Trade Agreements of every Partner, of which we have more than 200. The feedback we have received indicates that the environmental practices we require are continually implemented by our Trades as "best practices" when working for other companies.

During the harsh Wisconsin winters, we strive to maintain a sufficient number of homes being built to continue employing our Trade Partners. In this effort, we hope to maintain the high quality of our builds through low trade turn-over.

Veridian also works individually with neighbors and regulators to prevent or resolve potential issues in our neighborhoods.

### **DNR Relationship**

Our communication with our single points of contact, including Dane County, City of Madison, City of Sun Prairie, and other organizations and NGO's has been consistent since 2008 through the Clear Waters Charter meetings. Most of the innovation, collaboration and performance improvement in erosion control has been enhanced through our participation with Clear Waters. For more information about the activities of this group, please review the minutes posted by WDNR of each meeting.

### **Conclusion**

We care about our environment and our customers. Regardless of the challenges, we continued to succeed as both environmental improvements as well as business advances. We continue to build increasingly energy-efficient homes and continually test new technology that benefits home owners and the environment. We improved our methods to reduce sediment release and maintain erosion minimization goals. We developed the expertise to build and deliver homes at a higher level of Energy Star standards.

We care deeply for our community. This is demonstrated by our efforts to maintain clean neighborhoods by applying our best practices, our clean-up events and erosion control efforts.

.

---

---