

September 27, 2006

Lennar Charleston  
1941 Savage Road, Suite 100-C  
Charleston, SC 29407

Attn: Andrew Rothenberger

Re: Subsurface Exploration Report  
[REDACTED]  
Summerville, SC  
PSI Report No.: 465-60026-1  
Page 1 of 8 pages

Dear Mr. Rothenberger:

As requested, our representatives performed subsurface exploration and testing at the above referenced site. The purpose of the exploration was to assess the current levels of methane in the interior of each residence and in the subsurface soils on each property. In addition, our exploration included an assessment of the source of the methane, and recommendations to reduce the methane levels to background concentrations in fresh air.

### Background

In late August/early September 2006, the homeowners of the above referenced properties contacted the home builder, Lennar Homes, with complaints of strong "sewer-like" odors detected in the homes, and symptoms of drowsiness, sleeplessness, and irritated eyes (among others). As a result, Lennar contacted the plumbing contractor who installed the sanitary sewer system at the homes and arranged for the piping to be pressure tested for the presence of leaks. Testing confirmed that the piping in both homes was not holding pressure as required, so measures were immediately taken to locate and repair the leaking pipe sections. Leaks were detected at damaged pipe sections located beneath the bathroom floor of [REDACTED] and beneath the bathroom and kitchen floors in [REDACTED]. After the damaged sections were replaced and the floor restored, pressure testing of the pipe system yielded satisfactory results, indicating that no other leaks were detected.

Two environmental testing agencies were contacted to perform testing of the air in the homes. Trident Environmental Services screened the air in and around the homes with a organic vapor analyzer (FID) and detected levels of methane ranging from approximately 50 to 200 ppm within the home interiors, and levels in excess of 3,000 ppm (high limit for the analyzer) at openings in the floor slabs around sewer drain and vent pipe risers, and at shrinkage cracks in the concrete slab on grade. Their reports of test results and findings were provided to Lennar.

Applied Building Services was also retained by Lennar to collect samples of the indoor air for analyses. Samples were collected into canisters over approximately 2 hour and 24 hour intervals at locations on the first floor of each home. The samples were analyzed in the laboratory for methane concentration. No other substances were included in the analysis. The results ranged from approximately 50 ppm to 750 ppm for methane.

PSI was contacted by Lennar at the recommendation of Trident Environmental Services to assess the concentrations of methane in the soil, explore the subsurface soil conditions at the site for other potential sources of methane, and to provide guidance for mitigation of the methane in the soils at the site.

### **Exploration Methodology**

PSI explored the subsurface soil conditions at the site using hand-operated bucket auger equipment on September 14 and 15, 2006. Nineteen auger borings were advanced around the perimeter of the two homes with continuous soil samples being collected at each borings until the water table was encountered. In addition, three concrete core holes were made through the interior floor slabs at each residence (six core locations total) to facilitate examination of the soil conditions beneath the buildings. Core hole locations C-1 through C-4 were extracted on September 18<sup>th</sup>, and C-5 and C-6 were extracted on September 22, 2006. Please refer to the *Hand Auger Boring Summary* attached for details of the soil and groundwater conditions encountered.

Visual inspection of the soil samples was performed during excavation. Since methane can be generated from decomposing vegetation and organic matter, as well as from leaking sewer pipe systems, borehole samples were inspected for signs of organic-rich soils (topsoil, roots, peat). Selected soil samples that appeared to contain organic matter were returned to PSI's laboratory for organic content determination testing in accordance with ASTM D-2974-00, "Test Methods for Moisture, Ash and Organic Matter of Peat and Other Organic Soils."

In addition, it is well known that methane is commonly generated at landfill sites through decomposition of the buried garbage/debris; therefore, PSI inspected the soil samples collected for evidence of such materials. No miscellaneous debris or garbage indicative of household or municipal waste disposal was observed in any of the borings.

In addition to our visual inspection of the extracted soil samples, our representatives measured methane concentration readings at each borehole location with a Q-RAE Multi-Gas Detector (Model No.: PGM50-Q, Serial No.: 270-412560) manufactured by RAE Systems. The detector was fully calibrated on September 12, 2006, and fresh air calibrations were conducted outside the residence immediately prior to and repeatedly during performance of the survey in accordance with the manufacturer's recommendations. The detector measures the levels of methane gas in percent by volume of the lower explosive limit (%LEL) for methane. It also measures hydrogen sulfide (H<sub>2</sub>S), carbon monoxide(CO), and oxygen (O<sub>2</sub>) in the air.

Extracted soil samples were periodically placed in sealed containers and head space readings were recorded during excavation of the borings. Methane concentration readings were also recorded in the head space of each borehole at various depths during excavation. Readings were again taken approximately 24 hours after excavation to allow the soil gas to accumulate and "stabilize" in the boreholes. An air-filled plastic bag was used as a temporary cap at the top of each borehole between readings. Stabilized methane readings were recorded on September 16, 22, 26 and 28, 2006 at the borehole locations. The soil gas was measured by slipping the sampling tubing past

the plastic bag cap recording the highest reading detected during a one minute interval. Please refer to Table I below for results.

Our exploration also included the performance of a screening survey of the first floor interior spaces of the each single family residence at the above-referenced addresses to assess the indoor air mainly for the presence of methane, however, readings were also noted for H<sub>2</sub>S, CO and O<sub>2</sub>. Readings were collected using the same Q-RAE Multi-Gas Detector used at the borehole locations, and were recorded at approximately 3 feet above the floor and at cracks and pipe penetrations in the concrete slab (i.e., toilet drain riser, sewer vent pipe, etc.). The detector measures the levels of methane in units of % LEL, hydrogen sulfide (H<sub>2</sub>S) in units of ppm, oxygen (O<sub>2</sub>) in units of % of total volume of air, and carbon monoxide (CO) in units of ppm. Please refer to Table 2 below for results.

### **Review of Previous Reports**

Reports pertaining to testing for in-place soil density and bearing capacity at both of the above referenced building lots were provided to PSI by Lennar. These reports were prepared by GS2 Engineering and Environmental Consultants, Inc. dated May and August, 2005. The reports indicate that the subgrade soils meet the minimum required percent compaction and the soil bearing capacity exceeds the specified 2,000 psf requirement. The reports provide recommendations for site preparation and foundation construction, and specifically "recommend that fibrous organic material found in the fill materials be no more than 5 percent by weight."

### **Findings**

Measurements of methane were recorded at the bore/core hole locations on several different days from September 16<sup>th</sup> through September 28<sup>th</sup>, 2006. Please refer to Table I below for a summary of the methane readings recorded at each boring location. In addition, we have included methane concentration plans which indicate the methane readings at each borehole and core location on various dates.

The measurements for the ambient air recorded from room to room in each of the two homes indicated that methane levels were below the detection level of 1% LEL (530 ppm) for the equipment used. Please note that readings for methane recorded by Trident Engineering during previous visits to the homes recorded approximate levels of methane in the ambient air between 0.1 and 0.4 % LEL (50 and 200 ppm). In addition, the measured levels of H<sub>2</sub>S and CO in the ambient air inside the homes were below the 1 ppm detection level for the instrument. Measured oxygen levels in the ambient air were consistently 20.9 %, which is well within the normal, acceptable range.

Measurements collected with the Q-RAE Multi-Gas Detector did not indicate concentrations of the measured gases in the ambient air; however, significantly higher levels of methane were detected at the concrete floor surface at certain locations along cracks in the concrete slab on grade floor at [REDACTED]. In addition, elevated readings for methane were also detected at the exposed piping in the first floor bathroom at each of the two homes. The toilets had been previously removed and the riser pipes were capped. Readings taken at these specific locations yielded results in excess of the

lower explosive limit for methane, 100% LEL (53,000 ppm). The results of this ambient and localized air testing are summarized in Table 2 below.

Based on the findings of this investigation, methane was detected beneath the floor slab and immediately adjacent to some exterior perimeter walls of each building. At these boring locations, silty clayey sand with trace organics (roots, root fibers, etc.) was observed. The average organic content of the soil layers visually observed to contain organic matter and/or dark color was 3.8 % by weight of sample. The average thickness of these tested layers was approximately 10 inches. This condition complies with the recommendation provided by GS2 Engineering for organic material to be less than 5% by weight.

Methane was also detected in boreholes advanced near the rear boundary of each of the two properties (approximately 30 feet south of each building) where organic rich soil was encountered from the ground surface to the boring termination depth of 5 feet. The following Table 1 summarizes the results of the methane concentrations and organic content of soils recorded at each borehole location.

**Table 1 – Summary of Methane and Organic Tests**

Core/ Boring ID	Core/Boring Location	Depth to Water Table	Methane Concentration (%LEL)		Depth of Organic layer	Organic Content (% by Weight)
			9/16/06	9/26/06 (u.n.o.)		
C-1	[REDACTED] - Entry Hall	5 ft	100+ (9/18)	100+(9/28)	21"-37"	2.9/2.2
C-2	[REDACTED] - Kitchen	5 ft	100+ (9/18)	100+(9/28)	24"-27"	3.7
					27"-34"	2.4
C-3	[REDACTED] - Family Room	5 ft	100+ (9/18)	100+(9/28)	19"-28"	3.9/4.7/ 5.6
C-4	[REDACTED] - 1st Flr. Bath	5 ft	100+ (9/18)	100+(9/22)	20"-30"	8.7
					30"-40"	4.2/3.3
C-5	[REDACTED] - Kitchen (east)	5 ft	-	100+(9/22)	18"-28"	4.9/5.3
C-6	[REDACTED] - Kitchen (west)	4.8 ft	-	0 (9/22)	25"-31"	2.7/3.2
				100+(9/26)	41"-48"	2.9/4.3
B-1	[REDACTED] - NE corner of property	3 ft	0	No Rdg. (NR)	None obsvd.	-
B-2	[REDACTED] - NE corner of bldg	4 ft	0	0	2'-3'	2.6
B-3	[REDACTED] - east wall	5 ft	0	0	2'	2.8
B-4	[REDACTED] - SE corner of bldg	5 ft	0	NR	2'	3.2
B-5	[REDACTED] - South side of rear porch	4 ft	8	0	1.5'-2.5'	2.5
B-6	[REDACTED] - rear yard, near boundary (garden)	5 ft	100+	0	0'-5'	6.7
B-7	[REDACTED] - beneath Kitchen window	4 ft	31	100+	3'-3.5'	5.7
B-8a	[REDACTED] - west wall, 12" off wall -	5 ft	3	100+	1.5'-2.5'	3.5
B-8b	[REDACTED] - west wall, 3" off wall	top of footing	10	41	None obsvd.	-
B-9	[REDACTED] - NW corner of bldg	5 ft	0	0	2'	2.0
B-10	[REDACTED] - east wall of bldg	5 ft	0	0	2'	3.0
B-11	Midpoint between two bldgs.	3 ft	0	0	None obsvd.	-
B-12	[REDACTED] - beneath Family Room window	5 ft	100+	0	2'-3'	2.7
B-13	[REDACTED] - South side of rear porch	2.5 ft	100+	0	None obsvd.	-
B-14	[REDACTED] - rear yard, near boundary	5 ft	100+	0	0' - 5'	6.9
B-15	[REDACTED] - beneath Kitchen window	5 ft	100+	100+	1.5'-2.5'	1.7
B-16	[REDACTED] - west wall	4 ft	0	0	1.5'-2.5'	2.2
B-17	[REDACTED] - NW corner of bldg	4 ft	0	0	2'	5.9
B-18	[REDACTED] - NW corner of property	Obstr.	0	NR	-	-
B-19	[REDACTED] - 10' east of NW corner of prop	3 ft	20	NR	1'-2'	6.9
Average Organic Content of Soil Beneath Buildings						3.78 %

NR – No reading recorded due to hole filled back in for safety purpose, adjacent to public sidewalk.  
 u.n.o. – unless noted otherwise

**Table 2 – Summary of Ambient and Localized Air Quality Tests**

Test No.	Test Location	Elev. above Fin. Flr.	Methane Conc. (%LEL)	H <sub>2</sub> S Conc. (ppm)	CO Conc. (ppm)	O <sub>2</sub> Conc. (% by Vol.)
1	[REDACTED] - Entry Hall @ sewer vent pipe riser	3 ft	<1	0	0	20.9
		0 ft	100+	0	0	20.9
2	[REDACTED] - Kitchen @ "crack" along edge of repaired floor area	3 ft	<1	0	0	20.9
		0 ft	100+			
3	[REDACTED] - Kitchen -inside cabinet under sink	2 ft	<1	0	0	20.9
4	[REDACTED] - Family Room @ shrinkage crack - 3 ft from south wall - 10 ft from south wall	3 ft	<1	0	0	20.9
		0 ft	100+			
		0 ft	<1			
5	[REDACTED] - 1st Flr. Bath @ toilet drain pipe riser (wood floor removed)	3 ft	<1	0	0	20.9
		0 ft	100+			
6	[REDACTED] - 1st Flr. Bath inside cabinet under sink	2 ft.	<1	0	0	20.9
7	[REDACTED] - Kitchen (east side)	3 ft	<1	0	0	20.9
		0 ft	<1			
8	[REDACTED] - Kitchen (west side)	3 ft	<1	0	0	20.9
		0 ft	<1			
9	[REDACTED] - Entry Hall	3 ft	<1	0	0	20.9
		0 ft	<1			
10	[REDACTED] - Family Room	3 ft	<1	0	0	20.9
11	[REDACTED] - 1st Flr. Bath @ toilet drain pipe riser (wood floor partially removed)	3 ft	<1	0	0	20.9
		0 ft.	100+			
12	[REDACTED] - 1st Flr. Bath inside cabinet under sink	2 ft	<1	0	0	20.9
13	[REDACTED] - Dining Room	3 ft	<1	0	0	20.9

### Conclusions and Recommendations

Based on our findings, the methane trapped beneath the building slabs appears to have been generated primarily from the leaking sewer piping beneath the buildings, and secondarily from decomposition of organic matter contained within soils at the properties. The organic content (average 3.8 %) and layer thickness (average 9 ¾ inches beneath the buildings) of the soils containing organics are not considered likely to contribute to settlement of the building slabs or foundations. According to one documented geotechnical theory currently available, at low organic concentrations (less than 20%), settlement of soil is controlled more by the inorganic components of the soil and the degree of compaction of the soil than by the organic content. Reports pertaining to testing for in-place soil density and bearing capacity provided by Lennar indicate that the soil meets the minimum required percent compaction and the soil bearing capacity exceeds the specified 2,000 psf requirement.

The concentrations of methane exceed the lower explosive limit beneath the slab, and therefore pose a potential threat to the safety of the occupants within the buildings. The methane concentrations must be reduced to a level significantly below the lower explosive limit, and sufficiently low so as not to cause elevated methane levels within the interior of the homes. We suggest setting a target threshold for methane at less than 2% LEL. Soil gas venting methods vary depending on the site conditions and desired results. PSI will be happy to assist you in designing a venting system and monitoring program specific to the site needs. Any venting program will require periodic monitoring of the vented gas to verify that the concentrations are decreasing to the desired target level. At this time, it is not possible to determine the required duration for the monitoring period, but we estimate it to be between 6 months and 2 years for a passive venting system.

According to the air quality monitoring and test reports submitted by Trident Environmental and Applied Building Services, methane levels in the building interior were observed to be at concentrations from approximately 50 ppm to 750 ppm (0.1 % to 1.4% LEL). Since the testing performed by these firms was conducted after the damaged sewer piping was repaired, but without allowing the interior air to turn over, we recommend that further sampling of the interior air be performed in order to measure the levels of methane in the interior air spaces after the repairs were completed. We suggest that the air be turned over approximately 3 to 5 times with the addition of outside, fresh air by opening windows and using ceiling fans and window mounted fans to assist in moving the old air out. Then, the home should be once again closed up for at least 3 days, followed by a final round of indoor air quality sampling. We recommend testing the air for volatile organic compounds, carbon dioxide, carbon monoxide, sulfur gas (hydrogen sulfide), and methane. Samples will be collected in Summa canisters over an 8 hour period for analysis in accordance with EPA Method TO-15 and GC/SCD.

Should the air test results indicate that the concentrations of methane or other gases are above the ambient background levels, and/or are above EPA thresholds for indoor air quality, then we recommend that the interior floor surfaces be sealed to prevent the emission of sub-slab gases into the interior air spaces. In addition, all through-slab penetrations must be sealed/caulked, as well. Monitoring of the interior air is recommended along with monitoring of the sub-slab venting system until test results

indicate that the concentrations of methane and other associated gases are near or at background levels for at least two successive monthly monitoring periods.

One alternative to venting and monitoring over time would be to remove the floor slabs at both buildings and to remove and replace the upper 2 to 3 feet of sub-slab soil, ventilate the area, and back fill the excavations with new structural fill. It may be possible to reuse much of the fill material excavated. The benefit of this alternative is to avoid the cost of design and installation of the venting system, and the associated long term monitoring.

Thank you for the opportunity to provide you with our services. Please contact our office if you have any questions.

Respectfully Submitted,  
Professional Service Industries, Inc.



Robert V. Knowles  
Vice-President



Gregory J. Mentel, P.E., P.G.  
Principal Consultant



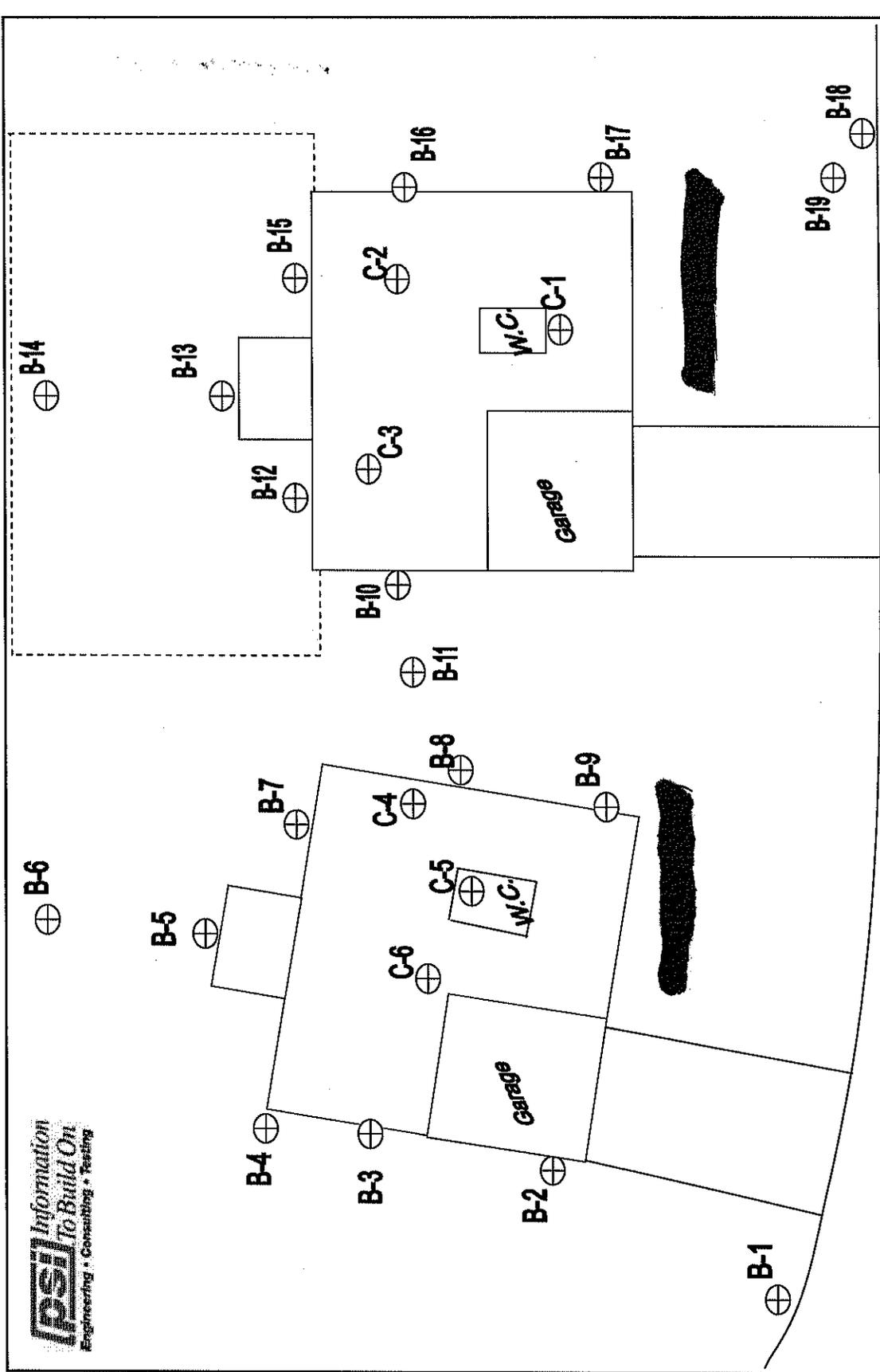
Karl Suter, P.E.  
Regional Engineer



Timothy F. Caughey, CIH  
Chief Scientist

Cc: Bryan Steen (by email)

Attachments: Boring/Core Location Plan  
Methane Concentrations (% LEL) - 9/18/06  
Methane Concentrations (% LEL) - 9/26 & 28/06  
Hand Auger Boring Summary

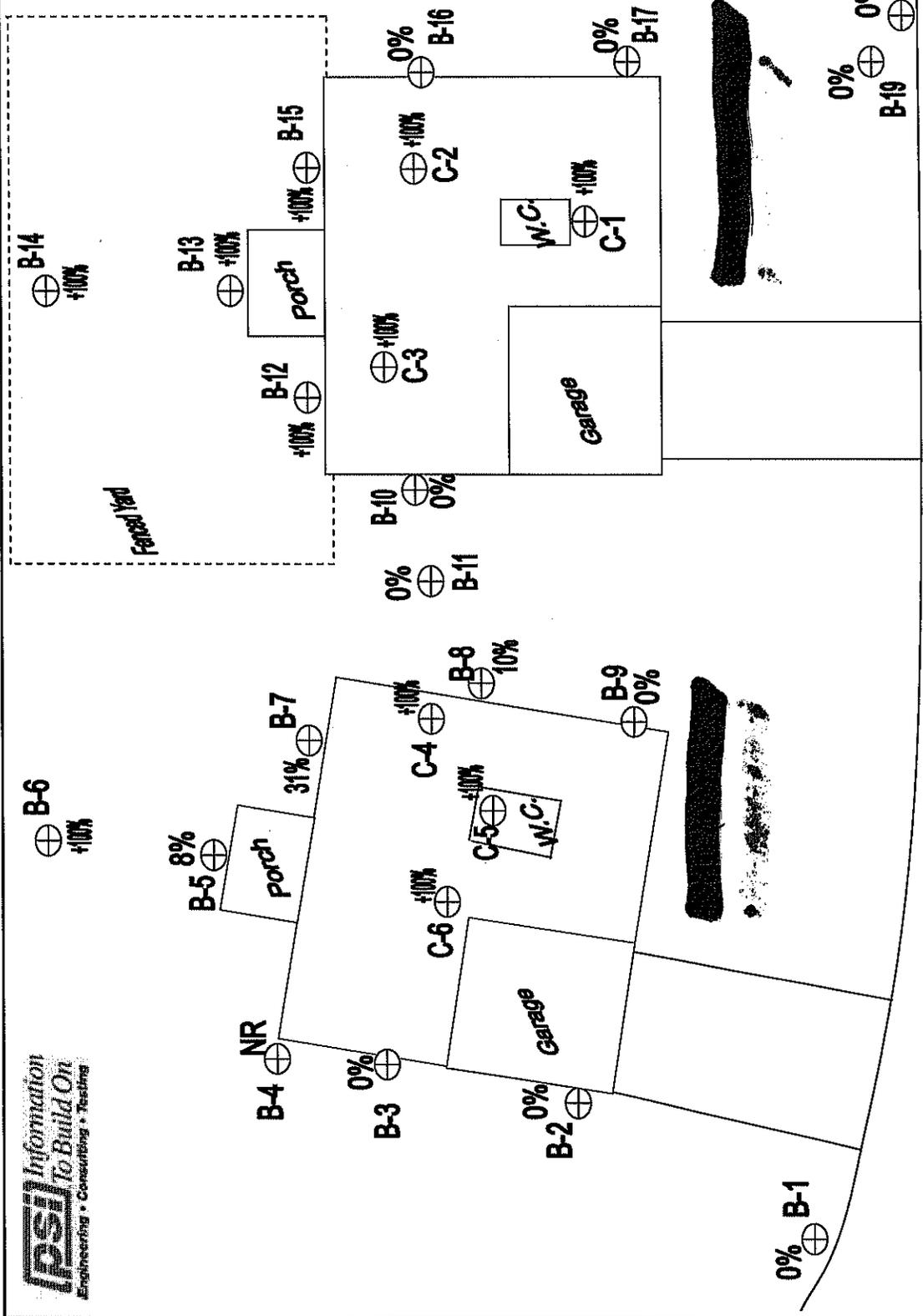


North  
 ↑

No Scale

**Boring/Core Location Plan**

Client: Lennar Homes PSI Project No. 465-60026  
 Project: Westcott Plantation, Summerville, SC  
 Drawn By: RVK Date: 9/29/06



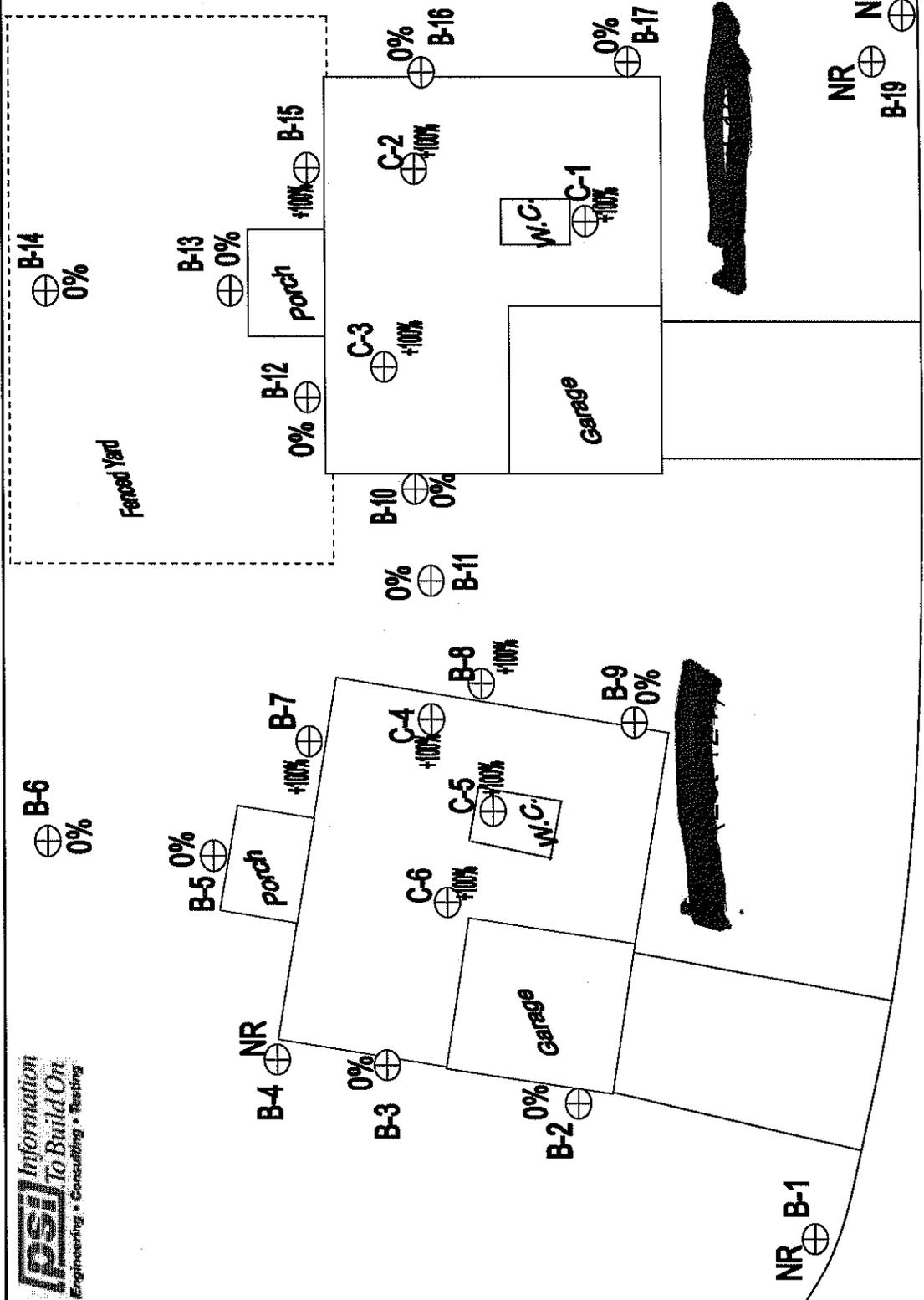
North

No Scale

NR - No Reading  
u.n.o. - unless noted otherwise  
Note: Rdgs. at core locations for  
9/21 & 9/22

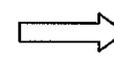
Methane Concentrations (% LEL) - 9/16/06 u.n.o.

Client: Lennar Homes  
Project: Westcott Plantation, Summerville, SC  
PSI Project No. 465-60026  
Date: 9/29/06  
Drawn By: RVK



**Methane Concentrations (% LEL) – 9/26 & 28/06**

Client: Lennar Homes PSI Project No. 465-60026  
 Project: Westcott Plantation, Summerville, SC  
 Drawn By: RVK Date: 9/29/06

**North** 

No Scale  
 NR – No Reading

Project # 465-60026

Date: 9/14/2006

Name Lennar Homes, North Charleston, SC

Boring #	Ground Water Depth	Depth	Soil Classification
B1	3 ft.	surface	Brown Silty Fine Sand w/ Organics (Topsoil)
		1'	Brown Silty Fine Sand w/ a Few Rootlets
		2'	Brown / Light Brown Silty Fine Sand
		3'	Brown / Light Brown / Red Silty Fine Sand
B2		surface	Brown Silty Fine Sand w/ Organics (Topsoil)
		1'	Brown / Red / Grey Silty Fine Sand w/ Trace Organics
		2'	Brown Silty Fine Sand w/ Trace Organics
		3'	Brown / Red Silty Fine Sand w/ Organics
B3		surface	Brown / Red Silty Sand w/ Organics (Topsoil)
		1'	Brown / Tan Silty Sand
		2'	Black / Red Clumps Silty Fine Sand w/ Small Roots
		3'	Red / Grey / Brown Silty Fine Sand w/ Rootlets
B4		4'	Red / Brown / Grey Silty Fine Sand w/ Rootlets
		5'	Grey / Red Silty Fine Sand
		surface	Brown / Tan Silty Sand w/ Rootlets (Topsoil)
		1'	Dark Grey Silty Fine Sand
B5		2'	Black Silty Fine Sand w/ Trace Organics
		3'	Grey Silty Fine Sand
		4'	Tan Silty Fine Sand w/ Trace Organics & Rootlets
		5'	Tan / Red Silty Fine Sand w/ Trace Organics
B6		surface	Black / Tan Silty Sand w/ Rootlets (Topsoil)
		1'	Tan / Red / Grey Silty Fine Sand w/ Organics
		2'	Brown / Red Silty Fine Sand w/ Roots
		3'	Tan / Red Silty Fine Sand
B7		4'	Tan / Red Silty Fine Sand w/ Trace Organics
		surface	Black Silt w/ Organics (Topsoil)
		1'	Black Silty Sand w/ Roots & Rootlets
		2'	Black Silty Sand w/ Trace Rootlets
B8		3'	Black Silty Sand w/ Organics
		4'	Black / Grey Silty Fine Sand w/ Trace Rootlets
		5'	Black Silty Fine Sand w/ Trace Rootlets
		surface	Tan / Red / Brown Sand w/ Trace Rootlets
B9		1'	Black / Grey / Red Sandy Clay w/ Trace Organics
		2'	Black / Grey / Red Sandy Clay
		3'	Grey / Red Silty Sand w/ Rootlets
		3.5'	Grey / Red Silty Sand w/ Heavy Organics
B10		4'	Brown / Grey / Red Silty Sand w/ Heavy Organics
		surface	Black / Tan Sandy Silt w/ Organics (Topsoil)
		1'	Black / Grey Sandy Silt w/ Organics
		2'	Black / Grey Silty Fine Sand w/ Heavy Rootlets
B11		3'	Dark Grey / Red Silty Fine Sand w/ Rootlets
		4'	Grey / Red / Grey Sandy Silt
		5'	Grey / Tan / Red Silty Sand

Project # 465-60026

Date: 9/14/2006

Name Lennar Homes, North Charleston, SC

Boring #	Ground Water Depth	Depth	Soil Classification
B9		surface	Brown / Tan Silty Sand w/ Heavy Organics (Topsoil)
		1'	Brown / Red Silty Fine Sand
		2'	Black / Grey Silty Fine Sand w/ Rootlets
		3'	Dark Grey / Red Sandy Silt
		4'	Dark Grey / Red Sandy Silt w/ Trace Rootlets
		5'	Grey / Red Silty Sand
B10		surface	Dark Tan / Grey / Red Sand w/ Heavy Organics (Topsoil)
		1'	Red / Tan / Grey Silty Sand w/ Trace Organics
		2'	Black Silty Fine Sand w/ Rootlets
		3'	Grey / Red w/ Trace Organics
		4'	Red/ Grey Sandy Silt
		5'	Grey Sandy Silt
B11		6"-1.5'	Dark Brown / Grey Sandy Silt
		1.5-3.0'	Brown / Grey / Red Clayey Sand w/ Silt & Rootlets Grey / Red Silty Fine Sand
B12		surface	Brown / Red Silty Sand w/ Organics (Topsoil)
		1'	Brown / Red Silty Sand w/ Organics
		2'	Black Silty Sand w/ Rootlets
		3'	Black / Grey w/ Trace Organics
		4'	Black Silty Fine Sand w/ Rootlets
		5'	Red / Tan Sandy Silt
B13		surface	Black / Tan Silty Sand w/ Organics (Topsoil)
		1'	Black / Grey Silty Sand w/ Trace Organics
		2'	Black / Brown Silty Sand
		2.6'	Grey / Brown Silty Sand
B14		surface	Black Sandy Silty w/ Heavy Organics (Topsoil)
		1'	Black Sandy Silty w/ Heavy Organics
		2'	Black Sandy Silty w/ Heavy Organics
		3'	Black Sandy Silty w/ Heavy Organics
		4'	Black Sandy Silty w/ Heavy Organics
		5'	Black Sandy Silty w/ Heavy Organics
B15		surface	Black / Red Silty Fine Sand w/ Heavy Organics (Topsoil)
		1'	Grey / Tan Sandy Silt w/ Organics
		2'	Tan / Grey / Red Fine Sand w/ Organics
		3'	Grey / Red Silty Sand w/ Trace Organics
		4'	Grey Fine Sand w/ Trace Organics
		5'	Grey Silty Sand
B16		surface	Brown / Grey Silty Sand w/ Heavy Organics (Topsoil)
		1'	Brown / Grey Silty Sand w/ Heavy Organics
		2'	Black / Grey Silty Fine Sand w/ Trace Organics
		3'	Tan Silty Fine Sand w/ Trace Organics & Rootlets
		4'	Grey Silty Fine Sand
B17		surface	Brown Silty Fine Sand w/ Rootlets (Topsoil)
		1'	Black / Grey Silty Fine Sand w/ Trace Organics
		2'	Black / Tan Sandy Silt w/ Trace Organics
		3'	Tan / Grey Silty Fine Sand
		4'	Black / Brown / Red Silty Fine Sand

**Project #** 465-60026

**Date:** 9/14/2006

**Name** Lennar Homes, North Charleston, SC

<b>Boring #</b>	<b>Ground Water Depth</b>	<b>Depth</b>	<b>Soil Classification</b>
B18		surface	Brown / Red Silty Fine Sand w/ Heavy Organics (Topsoil) Black Silt w/ Heavy Organics ***Hit Obstruction - Dense Base Stone - Moved to Boring B19)
B19		surface 1' 2' 3'	Brown / Red Silty Fine Sand w/ Heavy Organics (Topsoil) Black / Grey Sandy Silt w/ Heavy Organics Grey Silty Fine Sand w/ Clay & Trace Organics Grey Silty Sand w/ Organics