

12020 JUMPER DR

19724172

1/9/2008

duponbj

Groundwater and Wastewater Services File Imaging Project
May 2007
Barcode Font = IDAutomationHC39M

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DC

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FEE:	100.00
DATE:	9/13/06
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APPLICATION FOR APPROVAL TO USE AN EXISTING ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM
MECKLENBURG COUNTY - GROUNDWATER & WASTEWATER SERVICES
700 N. Tryon St., Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

GWS – UES.APP 01/05

FILE #: 61148

TYPE APPLICATION:

- ☐ ADDITION - INCREASE ROOMS/OCCUPANCY/MOBILE HOME SIZE (A / M)
- ☐ ADDITION - RENOVATION OR GARAGE WITH NO MAJOR CHANGES (X)
- ☐ EXCHANGE MOBILE HOME - SAME # BEDROOMS (Y)
- ☐ COMMERCIAL OR INDUSTRIAL (N)

PERSON FILING APPLICATION:

NAME: GLENN HAENE
ADDRESS: 12020 SUMMER DAIVE
CITY: CHARLOTTE
STATE: NC ZIP: 28227
PHONE: 704-545-8263
ALTERNATE PHONE: 704-574-4404

PROPERTY OWNER:

NAME: ← SAME
ADDRESS:
CITY:
STATE: ZIP:
PHONE:
ALTERNATE PHONE:

JOB LOCATION INFORMATION

TAX/PARCEL #: 197-241-72
STREET ADDRESS: 12020 SUMMER DR.
CITY: CHARLOTTE
STATE: NC ZIP: 28227
SUBDIVISION OR MOBILE HOME PARK NAME: THE MEADOWS OF MINT HILL
LOT #:

TOWNSHIP:

- ☐ 0-MECKLENBURG
- ☐ 1-CHARLOTTE
- ☐ 2-DAVIDSON
- ☐ 3-CORNELIUS
- ☐ 4-PINEVILLE
- ☐ 5-MATTHEWS
- ☐ 6-HUNTERSVILLE
- ☒ 7-MINT HILL

WATER SUPPLY:

☒ MUNICIPAL (M) ☐ COMMUNITY (C) ☐ PRIVATE WELL (P) ☐ SHARED WELL (S) ☐ OTHER 'SPRINGS' (O)

RESIDENTIAL PROPERTY TYPE:

☒ HOUSE (H) ☐ MODULAR HOME (M) ☐ MULTIPLE FAMILY (U)
☐ SINGLE MOBILE HOME (S) ☐ DOUBLE WIDE (D)
☐ OTHER (O)

NUMBER OF BEDROOMS: 3
NUMBER OF OCCUPANTS: 2

COMMERCIAL / INDUSTRIAL PROPERTY TYPE:

TYPE OF BUSINESS:
EMPLOYEES PER SHIFT: N/A
OF SHIFTS:

INDUSTRIAL WASTES? ☐ YES ☒ NO
UNDERGROUND STORAGE TANKS? ☐ YES ☒ NO

ADDITION TYPE ATTACHED TO EXISTING STRUCTURE:

☐ BEDROOM ☐ BATHROOM ☐ KITCHEN ☐ DINING ROOM ☐ LIVING ROOM ☐ DEN
☐ GARAGE ☐ SUNROOM ☐ PORCH ☒ DECK ☐ OTHER

ADDITION TYPE DETACHED FROM EXISTING STRUCTURE:

☐ DETACHED GARAGE ☐ DETACHED GARAGE WITH PLUMBING ☐ POOL HOUSE ☐ SHOP ☐ BARN
☐ STORAGE SHED ☐ DETACHED PORCH / DECK ☐ OTHER

"The undersigned, owner, or legal agent for the owner, of the property described above as the "Job Location" has read the foregoing application, acknowledges that the contents of same are true, and authorizes the Mecklenburg County Health Department to enter onto the property for the purpose of processing this request.

Glenn Haene — Owner's/Agent's Signature
9-12-06 — Date

"The undersigned, an authorized agent of the Mecklenburg County Health Department, certifies that the Department has approved the Request for the Job Location contained in this document. This approval is granted in accordance with the provisions of Laws and Rules for Sanitary Sewage Collection, Treatment and Disposal in effect at the time of issuance of the permit and is subject to the following provisions:

- No work shall be conducted on the septic tank system until an installation, construction, alteration and/or repair approval is granted by this Department.
- This permit is not transferable.

☐ ADDITION / RENOVATION APPROVAL - VALID 1 YEAR FROM ISSUANCE
☐ MOBILE HOME EXCHANGE APPROVAL - VALID 6 MONTHS FROM ISSUANCE

ADDITION APPROVED. O.K TO USE EXISTING SYSTEM.

EHS Signature — 9/14/06 Date

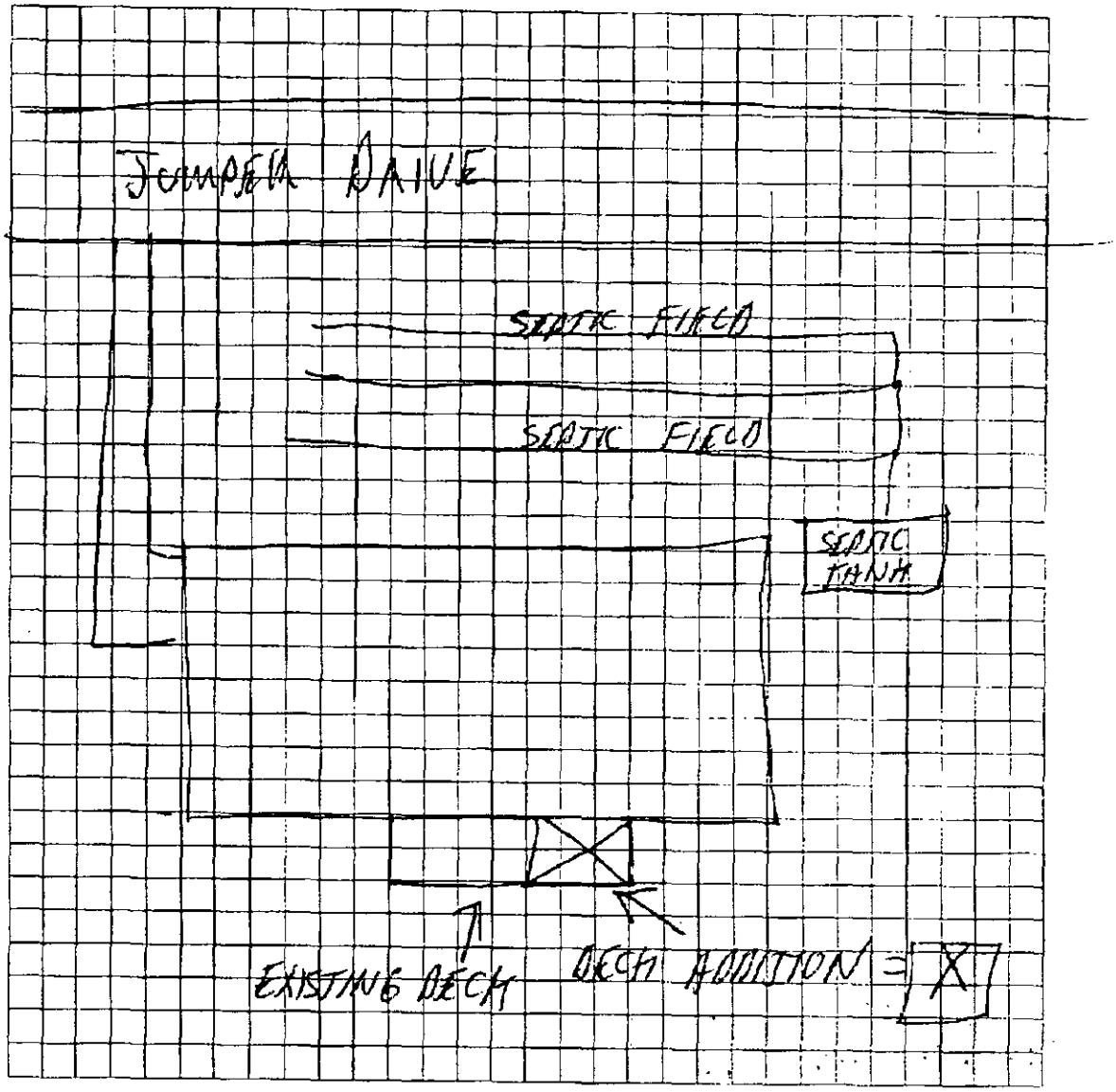
Aug 23 2002 7:53AM HP LASERJET 3330 p.1

Mecklenburg County
Land Use & Environmental Service Agency
Groundwater & Wastewater Services
700 N. Tryon St., Suite 211
Charlotte, NC 28202
Phone: (704) 336-5103
Fax: (704) 336-6894

File #_____
Date_____

PROPOSED PLOT PLAN

A map showing existing and proposed property lines and easements with dimensions, the location of the single family residence, non-single family residence, or other facility, and appurtenances, the site for the proposed well, and the location of existing or proposed sewer lines and/or sewage disposal systems, surface water bodies, aboveground or underground storage tanks. Name all roads adjoining the property. If this a repair indicate the type of repair.



Owner/Agent Signature	Glenn Haene
Date	9-12-06

Glenn Haene
704-545-8263

LEC 12/15/04

CERTIFICATE OF COMPLETION/OPERATION PERMIT

HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
700 NORTH TRYON ST., SUITE 211
CHARLOTTE, NC 28202
PHONE (704) 336-5102

FILE: 6114 B DATE: 3/29/06

TC: 197-241-1672 ☒ L ☒ CRT

SERIAL 19980

Name of Owner NVR, INC. Juris.: _____

Address of Property 12020 JUMPER DRIVE LOT 19 MEADOWS OF MINT HILL

Inspection Data:

Tank Material PCC

Total Length of Drainfield 260

Number of Lines 5 @ 52'

Cover Depth 24" SAND / 28" DEPTH

Water Supply Source COUNTY

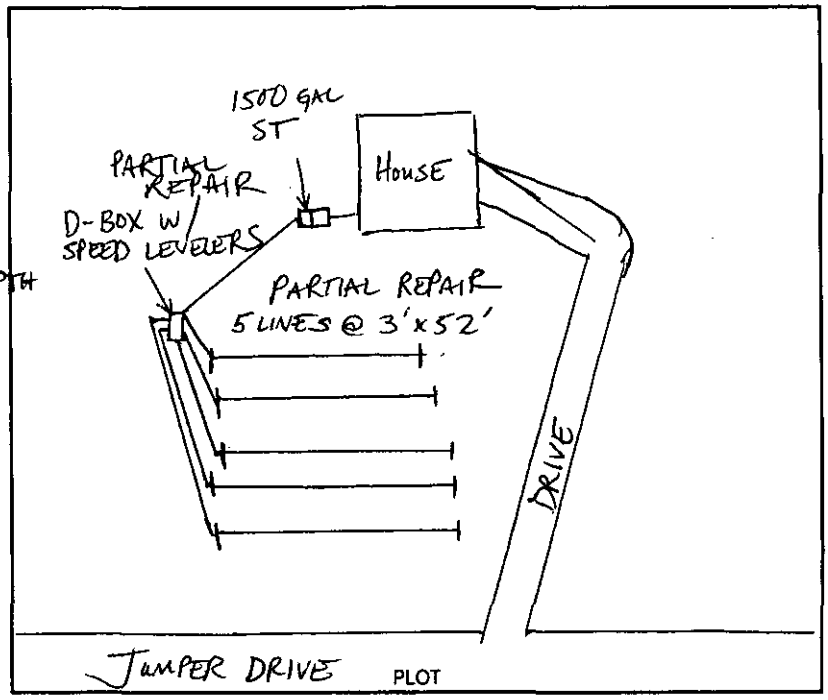
Distance to Water Source >50'

Excavation Inspected ✓

Tank(s) Inspected ✓

Wash Line Inspected NA

High Water Alarm Inspected NA



Design 2006 A/1500 GAL ST, PPBPS (50% REDUCTION), III(e), 260' DRAIN LINE CTR# RCS

The undersigned has inspected the Septic Tank System described above, and certifies it has been

☒ installed or constructed ☐ altered or repaired

☒ in accordance with the permit issued ☐ as detailed in the plot above

and meets the provisions of I5A NCAC 18A. 1900, "Laws And Rules For Sewage Treatment and Disposal Systems" in effect on the date of issuance of the permit. This issuance of this

☐ Certificate of Completion ☒ Operation Permit

does not in any way guarantee that the system will operate properly or relieve any person now or hereafter owning, controlling, or using such system from any liability resulting from the failure of the system to operate properly. This document is issued subject to those restrictions and conditions shown on the permit(s) and the provisions of I5A NCAC 18A. 1990 in addition to those listed below under "COMMENTS." This document shall be null and void if any information contained in the application is untrue or if any additions are made to the property which would increase the requirements for said system.

Notice: Disturbance of the designated repair area may result in the suspension/revocation of this permit.

COMMENTS: INSTALL IN ACCORDANCE W/ PROPOSED PLAN OF CONSULTANT

Christopher M Shenk, RS, LSS
Environmental Health Specialist

Mecklenburg County services are available without regard to ethnic origin, sex, or disability.

INSTALLATION, CONSTRUCTION, ALTERATION, AND/OR REPAIR APPROVAL

HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
700 NORTH TRYON ST., SUITE 211
CHARLOTTE, NC 28202
PHONE (704) 336-5103

FILE: 6114B DATE: 3/17/06

TC: 197-241-1672 ☐ L

SERIAL Nº 20671

Permission is hereby given to _____ (Install) or Construct, _____ Alter or Repair the individual septic tank wastewater treatment system with subsurface, soil absorption, effluent discharge as specified herein at the described location. This permit is granted based upon the information supplied in the application dated 1/3/06. All work shall be completed on or before 4/17/06, after which date this permit shall be null and void. The system shall meet all of the construction requirements of 15A NCAC 18A. 1900 which are in effect on the date of the granting of this permit. A Certificate of Completion or an Operation Permit must be obtained from the Mecklenburg County Health Department before any system can be covered up or placed into service. The issuance of this permit does not in any way guarantee that the system anticipated to be constructed will operate properly, or relieve any person now or hereafter owning, controlling or using such system from any liability resulting from the failure of the system to operate properly.

INSTALL IN ACCORDANCE

W/ SYSTEM ON FILE +

K_{SAT} STUDY.

PLOT OF SYSTEM

Liquid Capacity of Septic Tank 1500 gallons

Liquid Capacity of Dosing Tank NA gallons

Tank Construction PCC

Trench Depth 28" MAX

Absorption and/or Nitrification Lines:

Trench Width 3 feet

Trench Walls Scored and Porous ✓

Total Line Length 260 feet

Number of Lines 5

Depth of Stone NA 24" SAND inches

Distance from House >5 feet

Distance from Property Line >10 feet

Distance from Well >50 feet

NOTICE: This system shall not be installed while soils are in a wet condition.

NAME OF OWNER NVR, INC.

LOCATION OF PROPERTY 12020 JUMPER DRIVE LOT 19

Comments: _____

Christa M Steen, REHS, LSS

Environmental Health Specialist

FEE: 300.00

DATE: 4/3/2006

CONSTRUCTION AUTHORIZATION FOR AN ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

MECKLENBURG COUNTY

GROUNDWATER & WASTEWATER SERVICES

FILE NUMBER: 6114B

PERMIT NUMBER: 30000567

PARCEL NUMBER: 19724172

JOB LOCATION INFORMATION

ADDRESS: 12020 JUMPER DR

CITY: CHARLOTTE **STATE: NC** **ZIP:** 28227

ISSUED TO: NVR INC

CONSTRUCTION AUTHORIZATION ISSUANCE DATE: 1/3/2005

CONSTRUCTION AUTHORIZATION CONDITIONS

1. WASTEWATER SYSTEM CONSTRUCTION AND INSTALLATION MUST MEET ALL CONDITIONS AND SPECIFICATIONS AS SET FORTH IN IMPROVEMENT PERMIT NUMBER 30000567, AND THE ATTACHED SITE PLAN WITH SYSTEM DETAILS. CONSTRUCTION AND INSTALLATION MUST ALSO MEET ALL REQUIREMENTS SET FORTH IN THE RULES GOVERNING SANITARY SEWAGE COLLECTION, TREATMENT, AND DISPOSAL AND ANY OTHER APPLICABLE RULES AND LAWS.

2. AN INSTALLATION APPROVAL MUST BE SECURED PRIOR TO INSTALLATION OF THE SEPTIC TANK SYSTEM. THE INSTALLER OF THE SYSTEM SHALL BE A REGISTERED SEPTIC TANK CONTRACTOR WITH THE MECKLENBURG COUNTY HEALTH DEPARTMENT.

3. ANY ALTERATION IN SITE OR SOIL CONDITIONS (INCLUDING LOCATION OF STRUCTURES AND APPURTENANCES) OR MODIFICATION IN USE, DESIGN WASTEWATER FLOW, OR WASTEWATER CHARACTERISTICS AS SPECIFIED IN THE ASSOCIATED IMPROVEMENT PERMIT AND APPLICATION, MAY SUBJECT THIS CONSTRUCTION AUTHORIZATION AND ASSOCIATED PERMIT(S) TO REVOCATION.

4. THIS CONSTRUCTION AUTHORIZATION AS PROVIDED IN G.S. 130A-335(f) AND G.S. 130A-336(b) SHALL BE VALID FOR A PERIOD EQUAL TO THE VALIDITY OF THE IMPROVEMENT PERMIT, NOT TO EXCEED 60 MONTHS.
   *CONSTRUCTION AUTHORIZATION EXPIRATION DATE: 4/3/2011

FEE: $300.00 V.W.
DATE: 1/10/06
X33575

AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION

ASC

ND 159840

PERMIT NUMBER: 6114B
PARCEL NUMBER: 197-241-16 PO

JOB LOCATION ADDRESS: The Meadows of Mint Hill Lot #19
PROPERTY OWNER: NVR, Inc.
BUILDING CONTRACTOR: Ryan Homes
SUBDIVISION NAME: The Meadows of Mint Hill
AUTHORIZATION ISSUED BY: David Cornelius RS DATE: 01/03/05

DENR/DEH AUTHORIZED AGENT 1/3/05

AUTHORIZATION CONDITIONS

1. WASTEWATER SYSTEM CONSTRUCTION AND INSTALLATION MUST MEET ALL CONDITIONS AND SPECIFICATIONS AS SET FORTH IN IMPROVEMENT PERMIT NUMBER 6114B, AND THE ATTACHED SITE PLAN WITH SYSTEM DETAILS. CONSTRUCTION AND INSTALLATION MUST ALSO MEET ALL REQUIREMENTS SET FORTH IN THE RULES GOVERNING SANITARY SEWAGE COLLECTION, TREATMENT, AND DISPOSAL AND ANY OTHER APPLICABLE RULES AND LAWS.

2. AN *INSTALLATION, CONSTRUCTION, ALTERATION AND/OR REPAIR APPROVAL* MUST BE SECURED PRIOR TO INSTALLATION OF THE SEPTIC TANK SYSTEM. THE INSTALLER OF THE SYSTEM SHALL BE A REGISTERED SEPTIC TANK CONTRACTOR WITH THE MECKLENBURG COUNTY HEALTH DEPARTMENT.

3. ANY ALTERATION IN SITE OR SOIL CONDITIONS (INCLUDING LOCATION OF STRUCTURES AND APPURTENANCES) OR MODIFICATION IN USE, DESIGN WASTEWATER FLOW, OR WASTEWATER CHARACTERISTICS AS SPECIFIED IN THE ASSOCIATED IMPROVEMENT PERMIT AND APPLICATION, MAY SUBJECT THIS CONSTRUCTION AUTHORIZATION AND ASSOCIATED PERMIT(S) TO REVOCATION.

4. THIS CONSTRUCTION AUTHORIZATION AS PROVIDED IN G.S. 130A-335(f) AND G.S. 130A-336(b) SHALL BE VALID FOR A PERIOD EQUAL TO THE VALIDITY OF THE IMPROVEMENT PERMIT, NOT TO EXCEED 60 MONTHS.

5. OTHER CONDITIONS:
   Install according to plans on file submitted by Larry Thompson @ The Catena Group, 12/29/05.
   Agreement forms must be completed and on file before CO release.

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date:	01/10/06	**Amount:**	150.00
Receipt #:	39900	**Tendered:**	0.00
Check / Auth #:	CHARGE	**Returned:**	0.00
Received By:	WALKEVA		

Account Information

Account #: X33575
Contractor: NVR INC (EAST)
Attn:
Address: 10815 DAVID TAYLOR DR 100
Address:
City/State/Zip: CHARLOTTE, NC 28262

Item	Description	Permit#	Quantity	Unit Price	Total Price
0734	Auth for Waste Wtr Sys Constr 12020 JUMPER DRIVE LOT#19		1	150.00	150.00

Outstanding Balances

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
306.92	26,719.51	2,378.68			

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date:	01/10/06	**Amount:**	150.00
Receipt #:	39902	**Tendered:**	0.00
Check / Auth #:	CHARGE	**Returned:**	0.00
Received By:	WALKEVA		

Account Information

Account #: X33575
Contractor: NVR INC (EAST)
Attn:
Address: 10815 DAVID TAYLOR DR 100
Address:
City/State/Zip: CHARLOTTE, NC 28262

Item	Description	Permit#	Quantity	Unit Price	Total Price
0703	Installation/Final Approval 12020 DRIVE LOT 19		1	150.00	150.00

Outstanding Balances

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
456.92	26,719.51	2,378.68			

CONDITIONS OF IMPROVEMENT PERMIT / CONSTRUCTION AUTHORIZATON

Permit Number: **6114B** Tax Number: **197-241-16**

- The IMPROVEMENT PERMIT is subject to revocation if site plans or the intended use change. There is to be **NO** grading, filling, or disturbance of the soil in the area of the septic tank system or repair area.
- CONSTRUCTION AUTHORIZATION must be obtained prior to receiving a Building Permit. The Construction Authorization is **NOT** transferable. Do not clear, grade, fill or disturb soil prior to obtaining a Construction Authorization.
- Domestic-type wastewater only. No industrial process wastewater may be discharged into the system.

Basement: ☐ Yes ☒ No ☐ Partial Basement

Primary Wastewater System

Type: ☐ I ☐ II ☒ III ☐ IV ☐ V ☐ VI

☐ Conventional
☒ Prefabricated, permeable block panel system
☐ Shallow Placed Conventional
☐ Low Pressure Pipe
☐ Large Diameter Pipe
☐ Fill
☐ Other
☐ Innovative or Experimental:

0.3 Long-term acceptance rate (GPD/ft^2)	480 Max gallons/day wastewater flow	780 Absorption Area (ft^2)	8 Trench spacing (min. on centers) (ft)
Serviced by private well: ☐ Yes ☒ No	1500 Gallon septic tank	260 Total trench length (ft)	28 Maximum trench depth (in) (At least 12" of provisionally suitable soil must remain between trench bottom and unsuitable soil conditions.)
4 Bedrooms in residence	na Gallon pump tank	na Depth of stone (in)	

Any surface water present: **Yes** Type: **No** Minimum separation distance (ft):

Additional conditions: **Install according to plans on file submitted by Larry Thompson @ The Catena Group. Agreement forms must be completed and on file before CO release.**

Repair Area System

Type: ☐ I ☐ II ☒ III ☐ IV ☐ V ☐ VI

☐ Conventional
☒ Prefabricated, permeable block panel system
☐ Shallow Placed Conventional
☐ Low Pressure Pipe
☐ Large Diameter Pipe
☐ Fill
☐ Other
☐ Innovative or Experimental:

780 Absorption Area (ft^2) 260 Total trench length (ft)	na Depth of stone (in)	8 Trench spacing (min. on centers) (ft)	28 Maximum trench depth (in)

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department has approved the Request for the Job Location contained in this document. The approval is granted in accordance with the provisions of Laws and Rules For Sewage Treatment, and Disposal Systems in effect at the time of issuance of the permit and is subject to the following provisions:

*** No work shall be conducted on the septic tank system until an Installation, Construction, Alteration and/or Repair Approval is granted by this Department.

*** This Improvement permit is transferable.

DENR Authorized Agent — Date 1/3/05

Owner/Agent Signature — Date 1/10/06

MECKLENBURG COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
700 N. TRYON ST., SUITE 211
CHARLOTTE, NC 28202
PHONE: (704) 336-5103
FAX: (704) 336-6894

NC DENR
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

Project No. 159840

COPY

FILED FOR REGISTRATION	DOC. # 910536
DATE 12/16/05	TIME 9:54 am
BOOK 19766	PAGE 945
STAMPS	REC FEE 20.00

RICHARD A. GIBSON, REGISTER OF DEEDS
MECKLENBURG COUNTY, NC

STATE OF NORTH CAROLINA

COUNTY OF MECKLENBURG

WASTEWATER TREATMENT AND DISPOSAL SYSTEM DESIGN AGREEMENT: 15A NCAC 18A .1948 AND ANY OF THE FOLLOWING RULES: .1956; .1957(a); .1957(b); or .1957(c); OR .1969
MA1019

FILE # 6114B
PARCEL # 197-241-72

The undersigned, NUR, INC DBA Ryan Homes, owner of property located at 12020 Jumper Dr, (the "site") and described in an instrument recorded in Book 44 at Page 521, Mecklenburg Public Registry, hereby acknowledges that the undersigned applied to the Mecklenburg County Health Department (the 'Department") for a permit to install a septic tank sewage disposal system on the site; that the Department evaluated the site for suitability for such a system in accordance with the regulations promulgated by the North Carolina Commission for Health Services as 15A NCAC 18A .1900 et seq.; that the Department originally classified the site as "unsuitable" pursuant to the standards set forth in the regulations; that the undersigned requested that the Department reclassify the site as "provisionally suitable" in light of the particular septic tank system proposed by the undersigned; that the Department considered various studies, data, and other information which indicate to the Department that the septic tank system proposed by the undersigned is allowed by the rules; and that the Department therefore reclassified the site as "provisionally suitable" and issued an appropriate permit for such proposed septic tank system.

The undersigned further acknowledges that the proper design, construction, operation and maintenance of such septic tank system is the responsibility of the designer, owner, developer, installer, or user of the system, as applicable, and that neither the Department nor its officials, employees, or agents warrant or guarantee that the said system installed pursuant to the permit issued by the Department will function in a satisfactory manner for any given period of time or that the Department, its officials, employees or agents assume any liability for any damages of any kind which are caused, or which may be caused, by a malfunction of such system.

The undersigned further acknowledges that the following conditions will apply to the site:

This instrument was prepared by: NUR, INC DBA Ryan Homes
Mail after recording to: 10815 David Taylor Dr
Charlotte, NC 28262

Residential Subsurface Wastewater Treatment and Disposal System Design

for

Lot 19 – The Meadows of Mint Hill
Jumper Drive
Mint Hill, North Carolina

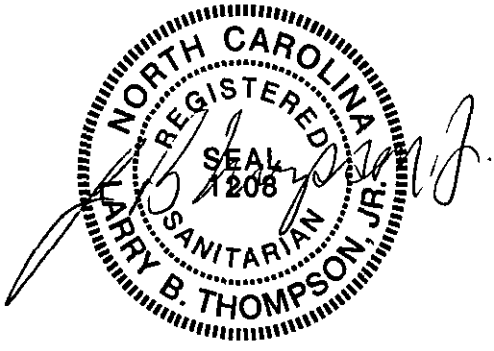
Tax Parcel # 197-241-16 PO
Mecklenburg County File # 6114B
December 29, 2005

Prepared for:

NVR, Inc.
10815 David Taylor Drive, Ste. 100
Charlotte, NC 28262

Prepared by:

Larry Thompson, RS, PWS
Steve Melin, LSS
The Catena Group, Inc.
410-B Millstone Drive
Hillsborough, NC 27278
Phone: 704-301-4881
Fax: 704-888-1496



CC: Mr. David Cornelius, RS
Mecklenburg County Environmental Health

Details

In an application for an Improvement Permit filed with the Mecklenburg County Health Department (MCHD) by NVR, Inc., the subject property was proposed to be developed with a single family 5-bedroom residence served by a municipal water supply. Based upon this information, a soil and site evaluation was conducted by the MCHD where the subject lot was determined to be "Unsuitable" for the installation of a conventional subsurface wastewater treatment and disposal system in accordance with the *Laws and Rules for Sewage Treatment, and Disposal Systems* 15A NCAC 18A .1900 (North Carolina Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section).

After revising the original site plan and performing additional soil and saturated hydraulic conductivity investigations, The Catena Group, Inc. (TCG), has determined that a sufficient amount of "Suitable" Group IV soils are located on the property which would allow for the installation of a Type III(e) pre-fabricated porous block panel system (PPBPS) to serve as the wastewater treatment and disposal system for a 4-bedroom residence. It is the desire of the owner that the MCHD consider reclassifying this lot as "Suitable", allowing for the issuance of a Construction Authorization, based upon the following proposal.

Location

The subject property is located in The Meadows of Mint Hill (Lot 19 – Jumper Drive) in the town of Mint Hill, North Carolina. From NC 51, travel south on SR 1004 (Bain School Road) approximately 0.8 mile, turn left onto Gait Drive and right onto Canter Lane, left onto Filly Road, and left onto Jumper Drive. Lot 19 is located on the left hand side of Jumper Drive.

References

Laws and Rules for Sewage Treatment and Disposal Systems, 15A NCAC 18A, Section .1900, Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section, February 1, 2005.

Onsite Wastewater Treatment and Disposal Systems; EPA 625/R-00/008 Design Manual, February 2002.

Design, Installation and Maintenance of the T & J Panel Wastewater Treatment System; Sixth Edition, published by T & J Panel.

Plans and Specifications

Septic Tank

- The septic tank shall be State approved (Section .1953 of 15A NCAC 18A), watertight, structurally sound, and 1500 gallons in capacity.
- The septic tank will be fitted with an approved effluent filter and riser for easy access and periodic maintenance.
- It is the responsibility of the septic contractor to thoroughly inspect the septic tank prior to accepting delivery to assure that the tank has had time to properly cure and is free of cracks or other structural deficiencies.

Distribution Method

- Wastewater from the septic tank will be directed to a distribution box for equal distribution to the (5) five drain lines.
- The distribution box shall be level, watertight, and the flow adjusted (equalized) at the time of the final inspection.

Pipe and Fittings

- All discharge piping and supply lines should be made of Schedule 40 PVC.
- All joints must be properly "welded" utilizing the appropriate PVC cement for each application.

Drain Field Installation

- The drain fields have been previously laid out on-site utilizing metal stemmed flags. Once these areas have been approved by the MCHD, the property owner/builder should mark these areas and isolate them much as possible from construction traffic. Prior to the installation of these systems, the septic contractor shall contact the MCHD for a preconstruction conference at which time the drainfield area will be re-verified.
- Under no circumstances shall any construction take place within the drainfield area while the soil is in a wet condition. If the installer has doubts as to whether or not the drainfield area is dry enough to begin construction, the Mecklenburg County Health Department should be contacted for permission to proceed with the installation.
- The specified septic system drain field is a Type III(e) pre-fabricated porous block panel system (PPBPS).
- The septic system drain field will consist of (5) lateral trenches to be constructed 3 feet wide by 52 feet in length at a maximum trench depth of 28 inches.
- All laterals are to be installed on contour with the land, keeping the individual trench bottoms level from beginning to end.
- The trenches should be left open for the final inspection by the MCHD.

PPBS Details

- The septic system drain field shall consist of a pre-fabricated permeable block panel system – specifically the 16 inch high panel system manufactured by T&J Panel Wastewater Treatment System, Patent No. 4013559; telephone: 1-800-222-2577. The installer must follow the manufacturer's guidelines for installing the T&J Panel System and should request an installation manual from the manufacturer prior to beginning construction.
- The drain field consists of four (5) lateral trenches to be constructed 3-feet wide by 52-feet in length. It is essential that the lateral trenches be constructed on contour with the land, with each trench being excavated level from beginning to end. The use of a tripod mounted engineer's level is essential to assure that each trench is constructed as level as possible.
- The maximum trench depth for this system shall be 28 inches and each trench shall be placed on 9 foot centers.
- Once trenches are dug, the side walls shall be raked and a light dusting of lime applied.
- Backfill the trench with 6-inches of sand and level to grade. Once leveled, place 1 x 4 or 6-inch boards on top of the sand the entire length of each trench. Once the grade boards have been set, the panels may be set into the trench. The panels should be placed 6-inches apart.
- Once the panels have been set, line the top chamber of each panel with 10 – 12 pounds of clean particle sand (medium sand blasting sand). Coverage depth should be approximately 1 inch thick. *Please note that this sand is not the same material specified for backfill.*
- Tar seal rope should be placed in the "U" outs of each end of the panel to form seals. Once the tar rope is in place, the PVC connections can be added and the seal completed by the addition of more tar rope on the top and sides of the pipe. Now that the connection and seals are complete, a block cap is placed on each end of the panel so that all openings are covered.

Final Landscaping

- The drain fields shall be shaped to shed rainwater and be free from low spots.
- The entire area of the drain fields should be planted with grass as soon as possible to prevent erosion. The soil should be properly tilled, limed (if necessary) and fertilized prior to planting. After applying grass seed, the area should be heavily mulched with straw or other suitable material.

Utility Conflicts

- The builder and property owner must take special care in planning for water, power, gas, telephone and cable lines. These utilities shall be kept clear of all parts of the septic system and its proposed repair area. Improper planning for underground utilities can negatively impact the installation and, in some cases, cause irreparable

damage. If there are any questions regarding preferred routes, contact the MCHD as soon as possible.

Maintenance

In General

- The septic tank shall be pumped every 4 years or when the solids within the septic tank reach an elevation that is equivalent to 1/3 of the volume of the tank. In some situations, the tank may need to be pumped more frequently. If using a garbage disposal, it is recommended that the homeowner have the septic tank cleaned out annually.
- When it becomes necessary to clean the effluent filters, the filters should be removed and the accumulated debris washed back into the septic tank/washer box – not onto the lawn.
- The drain field areas should be maintained to prevent over growth of vegetation. Any damp areas, leakages or malfunctions should be addressed immediately.
- Divert gutter downspouts and surface water runoff away from the septic and pump tanks.

Suggestions to the Homeowner

- As previously mentioned, if you plan to use a garbage disposal in your home you should plan to have your septic and pump tanks cleaned out annually. The ground up garbage adds large amounts of solids into a septic tank that tend to degrade at a very slow rate.
- Grease, cooking oils, coffee grounds and non-degradable solids (disposable diapers, cigarettes and solid paper wastes) should never be put into a septic tank.
- Used motor oil or any oily liquids should not be disposed of in a septic tank.
- Be aware of the amount of water that you are using in your home. Water saving fixtures and devices can be installed on sinks, toilets and showers to reduce the volume of wastewater that you are sending to your drain field.
- Run dishwashers and washing machines only when you have a full load.
- Use liquid detergents. Powdered detergents have binding agents in them that may precipitate in the drain field and lead to a premature failure.
- Repair leaky faucets and toilets. Small drips equal large volumes of water over time and can over burden your drain field.
- Do not use chemical additives in your system. Studies have indicated that they do not increase the biological activity that naturally occurs in the septic system and, in some cases, certain additives have been found to be detrimental to the life of a system.
- Finally, taking good care of your septic system will help to assure that you experience years of trouble free service at a relatively low cost. On-site wastewater treatment and disposal is still the most environmentally friendly method of treating residential/commercial waste and you should keep your system in use for as long as it is properly functioning! If you have additional questions, please feel free to contact your system designer or the MCHD.

Design Specifics

Daily Design Flow:	480 GPD – 4 bedroom house
Septic Tank Size:	1500 gallons (2 compartments)
Pump Tank Size:	N/A
Effluent Loading Rate:	Design = 0.3 GPD per sq. ft. (Based upon 10% of measured K_{sat} value)
Drainline Required:	533 linear feet – use 260 (50 % reduction for the PPBPS)
Supply Length and Diameter:	Approx. 20 feet of 4 inch Sch. 40 PVC
Number of Drainlines:	(5) 3 feet wide x 52 feet long
Distribution Method:	Distribution Box
Number of Panels:	12 per line = 60 total

The Catena Group

410-B Millstone Drive
Hillsborough, NC 27278
(919) 732-1300

Onsite Wastewater Evaluation

Lot 19- The Meadows of Mint Hill

Mecklenburg County, NC

Prepared for:

Ryan Homes

Prepared by:

The Catena Group
410-B Millstone Drive
Hillsborough, North Carolina 27278



Steven J. Melin #1254

Steven J. Melin, LSS

December 2005

INTRODUCTION

Previously the Mecklenburg County Health Department investigated Lot 19 in The Meadows of Mint Hill Subdivision to determine the potential for an on-site subsurface septic system. The site was given a 0.25 loading rate. As a follow-up to this investigation, The Catena Group's services were retained to conduct saturated hydraulic conductivity tests (Ksat's) and to determine appropriate loading rates. Accordingly, this report is submitted to report the findings of the additional tests and to provide hydraulic loading recommendations for system layout in support of a 0.34 LTAR for the site.

PRIMARY INVESTIGATOR'S CREDENTIALS

Steven J. Melin: N.C. Licensed Soil Scientist (Certification # 1254)

Education: M.S. Natural Resource Administration - Soil Science Emphasis, North Carolina State University; Raleigh, NC

B.S. Watershed Management, Soil Science Minor, University of Wisconsin-Stevens Point, Stevens Point, WI

INVESTIGATION

Lot 19 in The Meadows of Mint Hill was investigated on December 26, 2005. This lot is located on Jumper Road, and the Subdivision is located off of Bain School Road, just inside of I-485 in Mecklenburg County, North Carolina. Mecklenburg County is located in the located in the center of the Piedmont physiographic region of North Carolina and the soils derived from felsic and mafic igneous rocks. The upland soils on the site can be classified as well drained and shallow to saprolite that formed in material weathered from mafic or intermediate crystalline rocks. These soils are representative of Cecil or Pacolet sandy loam. The site is predominately cleared of vegetation.

The Catena Group personnel made its determinations of the site through observations of the landscape (slope, drainage patterns, past use, etc.) as well as soil properties (depth, texture, structure, seasonal wetness, restrictive horizons, etc.) with hand auger borings within the parent material (BC / C horizons). Soil series found on-site in forested areas were similar to soils mapped as Cecil andy loam on the NRCS Soil Survey map for Mecklenburg County (1995). According to the Mecklenburg County Soil Survey, these soils are moderately deep, well drained, and moderately permeability.

In order to utilize the lot, further investigations such as hydraulic conductivity were necessary to determine the permeability of the most restrictive horizon. Saturated hydraulic conductivity is a quantitative measure of a saturated soil's ability to transmit water. It can be thought of as the ease with which pores of a saturated soil permit water movement. These K_{SAT} tests take into

account soil morphologic factors other than texture, because soil structure and clay mineralogy have been found to have a significant impact on the rate of water movement through soils (Bouma et al., 1983; Schoeneberger et al, 1995, Vepraskas et al, 1996). Based upon this information, representative loading rates were determined.

Tests were done within entire soil layers in the Bt and BC horizons. The Bt horizon was a red clay with moderate medium subangular blocky structure. The BC horizon had a clay loam texture and had weak medium subangular blocky structure. This is typical of Cecil soils. These hydraulic conductivity tests indicate the Bt horizon was more restrictive then the BC horizon. These tests indicate that water movement is moderate, yielding an average Ksat of 3.4 gallons per day / square foot (gpd/ft^2) in the more restrictive Bt horizon, and 5.9 gpd/ft^2 in the BC horizon. The results of these tests are in Table 1.

		Results		
Location	**Depth**	**in/hr**	**gal/sq ft/day**	**10% Ksat g/ft^2/d**
1 (Bt)	21.0 - 26.0"	0.216	3.2	0.32
1 (BC)	36.0 - 42.0"	0.414	6.2	0.62
2 (Bt)	19.0 - 24.0"	0.227	3.4	0.34
3 (Bt2)	17.0 - 22.0"	0.240	3.6	0.36
3 (BC)	30.0 - 35.0"	0.368	5.5	0.55
	Avg	**0.228**	**3.4**	**0.34**

Typically, between 4 – 10% of the final measured K_{SAT} value of the most restrictive layer is used in the water budget calculations. This range is recommended for a new system based on the potential accumulation of organic matter and migration of soil fine particles with the addition of irrigation water. These results in the Bt horizon indicate a 0.34 LTAR is within this range.

CONCLUSION

The findings presented herein represent The Catena Group's professional opinion based on our site and soils evaluation and knowledge of the current laws and regulations governing on-site wastewater systems in North Carolina (Section .1900 of the North Carolina Administrative Code). The tests run in the Bt horizon indicate a loading rate of 0.34 gallons/ft^2/day is possible, however a 0.3 gal/ft^2/day loading rate is recommended. It is also recommended that an inceptor drain be placed around the system to convey water away from drainlines. Overall, this report details the work completed for determining that **an LTAR of 0.30 is recommended for the site.** The final determination and subsequent issuance of an Improvement Permit must be made by the Mecklenburg County Health Department. Any concurrence with the findings of this report would be made at that time.

HYDRAULIC CONDUCTIVITY STUDY - Lot 19
Mecklenburg County - The Meadows of Mint Hill - Location #1

Date: 12/26/2005
Hole Depth 26"

SET UP

	cm	inches
Hole Depth (cm):	66.0	26.0
Reference (cm):	+ 10.2	4.0
Head (cm):	- 15.2	6.0
CHT Tube(s) setting:	= 61.0	

Valve Setting: 1-ON x 2-ON

	cm	inches
Target Water Level:	50.8	20.0
Beginning Water Level:	52.1	20.5
Ending Water Level:	53.3	21.0

Hole diameter (cm): 5.2
Hole radius (r): 2.6
coefficient A: 0.00145403

NOTE: Readings based on Ending Water Level

Coversion Factor (C.F.): 105.0

Water Reading	change in water level	Chamber C.F.	clock time (min)	Elapsed Time (min)	Elapsed Time (hr)	Q (cm3/hr)	K (cm/hr)	K (in/hr)	K (gpd/sq foot)
37.9	0.0	105.0	0.0						
37.6	0.3	105.0	1.0	1.00	0.017	1890.0	2.7481	1.0819	16.188
37.4	0.2	105.0	6.0	5.00	0.083	252.0	0.3664	0.1443	2.158
37.2	0.2	105.0	11.0	5.00	0.083	252.0	0.3664	0.1443	2.158
36.8	0.4	105.0	36.0	25.00	0.417	100.8	0.1466	0.0577	0.863
36.3	0.5	105.0	41.0	5.00	0.083	630.0	0.9160	0.3606	5.396
36	0.3	105.0	46.0	5.00	0.083	378.0	0.5496	0.2164	3.238
35.7	0.3	105.0	51.0	5.00	0.083	378.0	0.5496	0.2164	3.238
35	0.7	105.0	61.0	10.00	0.167	441.0	0.6412	0.2525	3.777
34.5	0.5	105.0	71.0	10.00	0.167	315.0	0.4580	0.1803	2.698
33.9	0.6	105.0	81.0	10.00	0.167	378.0	0.5496	0.2164	3.238
33.3	0.6	105.0	91.0	10.00	0.167	378.0	0.5496	0.2164	3.238
						Final Ksat	**0.550**	**0.216**	**3.238**

HYDRAULIC CONDUCTIVITY STUDY - Lot 19
Mecklenburg County - The Meadows of Mint Hill - Location #1

Date: 12/26/2005
Hole Depth 42"

SET UP

	cm	inches
Hole Depth (cm):	106.7	42.0
Reference (cm):	+ 10.2	4.0
Head (cm):	- 17.8	7.0
CHT Tube(s) setting:	= 99.1	

Valve Setting: 1-ON x 2-ON

	cm	inches
Target Water Level:	88.9	35.0
Beginning Water Level:	91.4	36.0
Ending Water Level:	91.4	36.0

Hole diameter (cm): 5.2
Hole radius (r): 2.6
coefficient A: 0.00111347

NOTE: Readings based on Ending Water Level

Coversion Factor (C.F.): 105.0

Water Reading	change in water level	Chamber C.F.	clock time (min)	Elapsed Time (min)	Elapsed Time (hr)	Q (cm3/hr)	K (cm/hr)	K (in/hr)	K (gpd/sq foot)
41	0.0	105.0	38.0						
37	4.0	105.0	39.0	1.00	0.017	25200.0	28.0596	11.0471	165.282
35.5	1.5	105.0	41.0	2.00	0.033	4725.0	5.2612	2.0713	30.990
32.1	3.4	105.0	46.0	5.00	0.083	4284.0	4.7701	1.8780	28.098
30.9	1.2	105.0	51.0	5.00	0.083	1512.0	1.6836	0.6628	9.917
29.4	1.5	105.0	61.0	10.00	0.167	945.0	1.0522	0.4143	6.198
27.9	1.5	105.0	71.0	10.00	0.167	945.0	1.0522	0.4143	6.198
26.4	1.5	105.0	81.0	10.00	0.167	945.0	1.0522	0.4143	6.198
						Final Ksat	**1.052**	**0.414**	**6.198**

HYDRAULIC CONDUCTIVITY STUDY - Lot 19
Mecklenburg County - The Meadows of Mint Hill - Location #2

Date: 12/26/2005
Hole Depth 24"

SET UP

	cm	inches
Hole Depth (cm):	61.0	24.0
Reference (cm):	+ 10.2	4.0
Head (cm):	- 15.2	6.0
CHT Tube(s) setting:	= 55.9	

Valve Setting: 1-ON x 2-ON

Coversion Factor (C.F.): 105.0

	cm	inches
Target Water Level:	45.7	18.0
Beginning Water Level:	47.0	18.5
	48.3	19.0

Hole diameter (cm): 5.2
Hole radius (r): 2.6
coefficient A: 0.001454

NOTE: Readings based on Ending Water Level

Water Reading	change in water level	Chamber C.F.	clock time (min)	Elapsed Time (min)	Elapsed Time (hr)	Q (cm3/hr)	K (cm/hr)	K (in/hr)	K (gpd/sq foot)
42.5	0.0	105.0	0.0						
41.9	0.6	105.0	1.0	1.00	0.017	3780.0	5.4962	2.1639	32.375
41.5	0.4	105.0	6.0	5.00	0.083	504.0	0.7328	0.2885	4.317
41.5	0.0	105.0	10.0	4.00	0.067	0.0	0.0000	0.0000	0.000
41.2	0.3	105.0	21.0	11.00	0.183	171.8	0.2498	0.0984	1.472
40.8	0.4	105.0	28.0	7.00	0.117	360.0	0.5235	0.2061	3.083
40.3	0.5	105.0	35.0	7.00	0.117	450.0	0.6543	0.2576	3.854
39.9	0.4	105.0	42.0	7.00	0.117	360.0	0.5235	0.2061	3.083
39.5	0.4	105.0	49.0	7.00	0.117	360.0	0.5235	0.2061	3.083
39	0.5	105.0	56.0	7.00	0.117	450.0	0.6543	0.2576	3.854
						Final Ksat	**0.576**	**0.227**	**3.392**

HYDRAULIC CONDUCTIVITY STUDY - Lot 19
Mecklenburg County - The Meadows of Mint Hill - Location #3

Date: 12/26/2005
Hole Depth 35"

SET UP	cm	inches
Hole Depth (cm):	88.9	35.0
Reference (cm):	+ 10.2	4.0
Head (cm):	- 17.8	7.0
CHT Tube(s) setting:	= 81.3	

	cm	inches
Target Water Level:	71.1	28.0
Beginning Water Level:	74.9	29.5
Ending Water Level:	76.2	30.0

Hole diameter (cm): 5.2
Hole radius (r): 2.6
coefficient A: 0.001454

Valve Setting: 1-ON x 2-ON

NOTE: Readings based on Ending Water Level

Coversion Factor (C.F.): 105.0

Water Reading	change in water level	Chamber C.F.	clock time (min)	Elapsed Time (min)	Elapsed Time (hr)	Q (cm3/hr)	K (cm/hr)	K (in/hr)	K (gpd/sq foot)
33	0.0	105.0	0.0						
32.8	0.2	105.0	1.0	1.00	0.017	1260.0	1.8321	0.7213	10.792
32.3	0.5	105.0	5.0	4.00	0.067	787.5	1.1451	0.4508	6.745
32	0.3	105.0	11.0	6.00	0.100	315.0	0.4580	0.1803	2.698
31.8	0.2	105.0	18.0	7.00	0.117	180.0	0.2617	0.1030	1.542
31.6	0.2	105.0	24.0	6.00	0.100	210.0	0.3053	0.1202	1.799
31.2	0.4	105.0	31.0	7.00	0.117	360.0	0.5235	0.2061	3.083
30.8	0.4	105.0	38.0	7.00	0.117	360.0	0.5235	0.2061	3.083
30.4	0.4	105.0	44.0	6.00	0.100	420.0	0.6107	0.2404	3.597
30	0.4	105.0	50.0	6.00	0.100	420.0	0.6107	0.2404	3.597
29.6	0.4	105.0	56.0	6.00	0.100	420.0	0.6107	0.2404	3.597
29.2	0.4	105.0	62.0	6.00	0.100	420.0	0.6107	0.2404	3.597
						Final Ksat	**0.611**	**0.240**	**3.597**

HYDRAULIC CONDUCTIVITY STUDY - Lot 19
Mecklenburg County - The Meadows of Mint Hill - Location #3

Date: 12/26/2005
Hole Depth 29"

SET UP	cm	inches
Hole Depth (cm):	73.7	29.0
Reference (cm):	+ 10.2	4.0
Head (cm):	- 15.2	6.0
CHT Tube(s) setting:	= 68.6	

	cm	inches
Target Water Level:	58.4	23.0
Beginning Water Level:	58.4	23.0
Ending Water Level:	58.4	23.0

Hole diameter (cm): 5.2
Hole radius (r): 2.6
coefficient A: 0.0011135

Valve Setting: 1-ON x 2-ON

NOTE: Readings based on Ending Water Level

Coversion Factor (C.F.): 105.0

Water Reading	change in water level	Chamber C.F.	clock time (min)	Elapsed Time (min)	Elapsed Time (hr)	Q (cm3/hr)	K (cm/hr)	K (in/hr)	K (gpd/sq foot)
36.3	0.0	105.0	17.0						
36.2	0.1	105.0	18.0	1.00	0.017	630.0	0.7015	0.2762	4.132
35.8	0.4	105.0	20.0	2.00	0.033	1260.0	1.4030	0.5524	8.264
35.2	0.6	105.0	24.0	4.00	0.067	945.0	1.0522	0.4143	6.198
34.6	0.6	105.0	28.0	4.00	0.067	945.0	1.0522	0.4143	6.198
33.7	0.9	105.0	38.0	10.00	0.167	567.0	0.6313	0.2486	3.719
32.8	0.9	105.0	44.0	6.00	0.100	945.0	1.0522	0.4143	6.198
32	0.8	105.0	50.0	6.00	0.100	840.0	0.9353	0.3682	5.509
31.2	0.8	105.0	56.0	6.00	0.100	840.0	0.9353	0.3682	5.509
30.4	0.8	105.0	62.0	6.00	0.100	840.0	0.9353	0.3682	5.509
29.5	0.9	105.0	68.0	6.00	0.100	945.0	1.0522	0.4143	6.198
28.7	0.8	105.0	74.0	6.00	0.100	840.0	0.9353	0.3682	5.509
						Final Ksat	**0.935**	**0.368**	**5.509**

Table 1. Summary of Hydraulic Conductivity (Ksat) Measurments in Bt horizons; Lot 19 - Meadows of Mint Hill

Location	Depth	Results			
		in/hr	gal/sq ft/day	4% Ksat g/ft^2/d	10% Ksat g/ft^2/d
1 (Bt)	21.0 - 26.0"	0.216	3.2	0.13	0.32
1 (BC)	36.0 - 42.0"	0.414	6.2	0.25	0.62
2 (Bt)	19.0 - 24.0"	0.227	3.4	0.14	0.34
3 (Bt2)	17.0 - 22.0"	0.240	3.6	0.14	0.36
3 (BC)	30.0 - 35.0"	0.368	5.5	0.22	0.55
	Avg	**0.228**	**3.4**	**0.14**	**0.34**

PROJECT The Mr. Docs of Mint Hill DATE 12/16/05 COUNTY Meck.
PROPOSAL (LOT) #19
Parent material (res/coll/all) clay mineralogy: (kl exp / exp.?)

	Boring # 1	Boring # 2	~~Boring #~~	Boring # 3
DEPTH HORIZON I	10-15 Ab	0-? A		3-16 BA
COLOR	5 YR 4/3	5 YR 5/3		5 YR 5/6
TEXTURE	L	SL		SCL
STRUCTURE	1 f sbk	G?		1 m sbk
CONSISTENCE	SS/NE/FR	VFR		FR/SS
DEPTH HORIZON II	15-21 BA1	3-14 BA	27-35 BA2	16-29 BA
COLOR	2.5 YR 5/8	5 YR 5/6	2.5 YR 5/8	2.5 YR 5/8
TEXTURE	CL	SCL	CL (almost SCL w/ quartz frags)	C
STRUCTURE	2 m sbk	1 m sbk	2 m sbk	2 m sbk
CONSISTENCE	FI/SS/Sticky	FR/SS	FI/Stick./Sloppy	FI/St/Sl. sticky
%CLAY	0.35 LTAR		(C,2) yellow mottles	-
			- many quartz	
DEPTH HORIZON III	21-35 BA2	14-27 BA1	35-46 BC	29-44 BC
COLOR	2.5 YR 5/8	2.5 YR 4/8	2.5 YR 6/8	2.5 YR 6/8
TEXTURE	C	C	SCL	CL
STRUCTURE	2 m sbk	2 m sbk	1 m sbk	1 m sbk
CONSISTENCE	FI/Sl sticky/Sl sticky	FI/Sl sticky/Sl sticky	FR/SS/Sl sticky	FR/SS/Sl sticky
%CLAY	0.3 LTAR	→ yellow mottles	- many quartz	→ yellow mottles
	10 YR 7/6 mottles	- quartz frags	- many yellow mottles	→ quartz
DEPTH HORIZON IV	35-50+ BC		46-50+ C	44-48 C
COLOR			mica (SM)	mica (SM)
TEXTURE	CL (loc)		CL	SL - 19% clay
STRUCTURE	1 (fn) m sbk		M	M to SG
CONSISTENCE	FI-/St sticky/Sl sticky			FR
	10 YR 6/1 mottles (C,P) & quartz			
Soil Depth ? Restrict. Hor?	>50 >50		>50 46	>48 44
Ldy pos.? Wet? % slope	LS 0-4%		LS (CC) 0-4%	LS 0-6%
LTAR/soil group/ CLASSIFICATION (PS/U)	IV 0.3		IV 0.3	IV 0.3
Notes:	0-10" (Fill material)			0-3 SL A horiz 44" → C (SL SM)

Described by: SJM 12/SY

3BR NO POOL

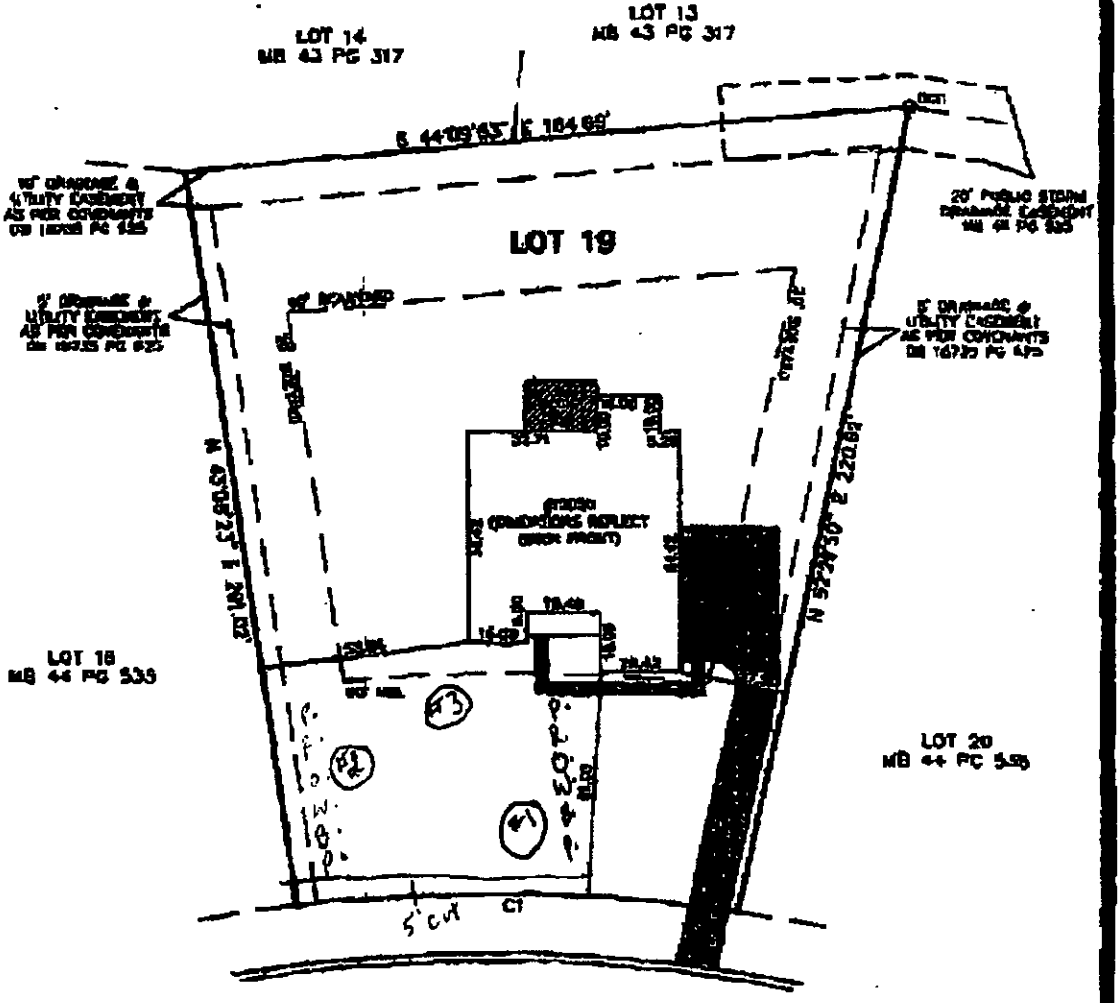
SITE DEVELOPMENT PLAN

PREPARED BY:

DELTA LAND SERVICES, INC.
6053 FLORENCE AVENUE, SUITE 100
CHARLOTTE, NORTH CAROLINA 28212
(704) 535-6190

THIS SITE PLAN IS TO SHOW THE PROPOSED LOCATION OF THE HOUSE ON THE LOT AND IS NOT TO BE RELIED UPON FOR CONSTRUCTION.

THE MEADOWS OF MINT HILL
MAP 1



JUMPER DRIVE

50' PUBLIC R/W

CURVE TABLE					
CURVE	RADIUS	LENGTH	CHORD	BEARING	DELTA
C1	400.00	113.85	113.48	S 36°16'41" E	16°18'35"

ESTIMATED DRIVEWAY AREA = 1795.7 SQ.FT.±

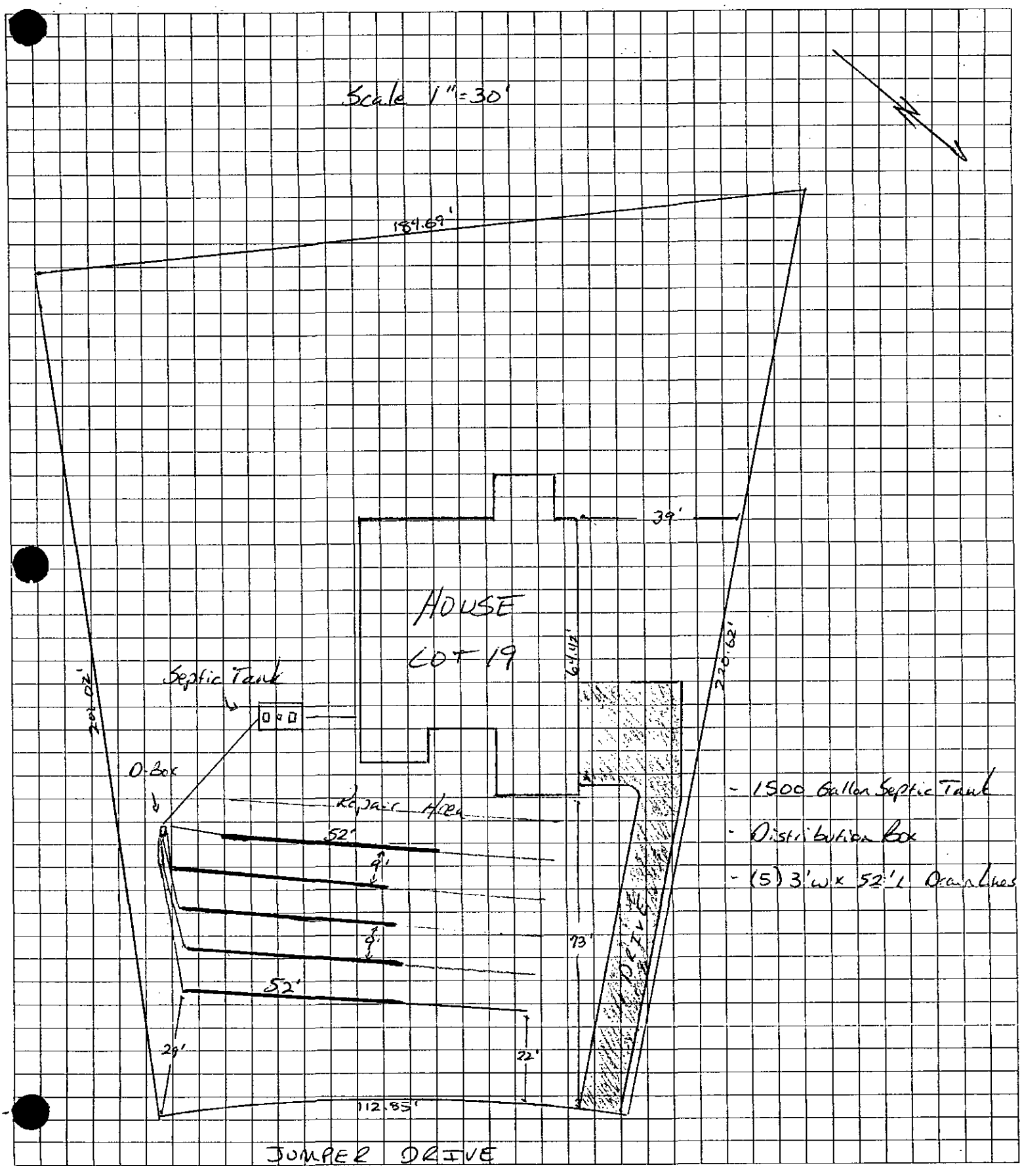
STAKEOUT

NOT FOR RECORDATION, CONVEYANCES OR SALES

Subdivision THE MEADOWS OF MINT HILL MAP 3 County MECKLENBURG
Address 12920 JUMPER DRIVE
Lot 18 Block ___ Plan ROMSEY Elevation E Drive (Left) ___ Owner RYAN HOMES
(Right) Side ___ (Courtyard) ___ Deck X
Patio ___ Fireplace X Garage (1 Car) ___ (2 Car) X (3 Car) ___ Brick FRONT Basement ___ Curtain Wall X
Crawl ___ Slab ___ Other MORNING ROOM PARTIAL PATIO PORCH BONUS ROOM

The Catena Group
410-B Millstone Drive
Hillsborough, NC 27278

Permit Number: 6114B
Location: Lot 19 - The Meadows
Date: December 19, 2005



MECKLENBURG COUNTY
Health Department

December 16, 2005

NVR, Inc.
10815 David Taylor Drive, Suite 100
Charlotte, NC 28262

Re: Application for improvement permit for
Property Site: Lot 19, Meadows of Mint Hill
Health Department file number: **6114B**

Dear Property Owner or Owner's Agent:

The Mecklenburg County Health Department, Environmental Health Division on **October 19, 2005** evaluated the above-referenced property at the site designated on the site plan that accompanied your improvement permit application. According to your application the site is to serve a 5-bedroom residence, with a design wastewater flow of 600 gallons per day. The evaluation was done in accordance with the laws and rules governing wastewater systems in North Carolina General Statute 130A-333 and related statutes and Title 15A, Subchapter 18A, of the North Carolina Administrative Code, Rule .1900 and related rules.

Based on the criteria set out in Title 15A, Subchapter 18A, of the North Carolina Administrative Code, Rules .1940 through .1948, the evaluation indicated that the site is **UNSUITABLE for** a ground absorption sewage system. Therefore, your request for an improvement permit is **DENIED.** A copy of the site evaluation is enclosed. The site is unsuitable based on the following:

- ☐ Unsuitable soil topography and/or landscape position (Rule .1940)
- ☒ Unsuitable soil characteristics (structure or clay mineralogy) (Rule .1941)
- ☐ Unsuitable soil wetness condition (Rule .1942)
- ☒ Unsuitable soil depth (Rule .1943)
- ☐ Presence of restrictive horizon (Rule .1944)
- ☒ Insufficient space for septic system and repair area (Rule .1945)
- ☐ Unsuitable for meeting required setbacks (Rule .1950)
- ☒ Other (Rule .1946) Fill

These severe soil or site limitations could cause premature system failure, leading to the discharge of untreated sewage on the ground surface, into surface waters, directly to ground water or inside your structure.

The site evaluation included consideration of possible site modifications, and modified, innovative or alternative systems. However, the Health Department has determined that none of the above options will overcome the severe conditions on this site. A possible option might be a system designed to dispose of

sewage to another area of suitable soil or off-site to additional property.

For the reasons set out above, the property is currently classified **UNSUITABLE,** and an improvement permit shall not be issued for this site in accordance with Rule .1948 (c).

However, the site classified as **UNSUITABLE** may be classified as **PROVISIONALLY SUITABLE** if written documentation is provided that meets the requirements of Rule .1948(d). A copy of this rule is enclosed. You may hire a consultant to assist you if you wish to try to develop a plan under which your site could be reclassified as **PROVISIONALLY SUITABLE.**

You have a right to an informal review of this decision. You may request an informal review by the soil scientist or environmental health supervisor at the local health department. You may also request an informal review by the
N. C. Department of Environment and Natural Resources regional soil specialist. A request for informal review must be made in writing to the local health department.

You also have a right to a formal appeal of this decision. To pursue a formal appeal, you must file a petition for a contested case hearing with the Office of Administrative Hearings, 6714 Mail Center, Raleigh, NC 27699-6714. To get a copy of a petition form, you may write the Office of Administrative Hearings or call the office at (919) 733-0926 or from the OAH web site at www.oah.state.nc.us/form.htm. The petition for a contested case hearing must be filed in accordance with the provision of North Carolina General Statutes 130A-24 and 150B-23 and all other applicable provisions of Chapter 150B. N. C. General Statue 130A-335(g) provides that your hearing would be held in the county where your property is located.

Please note: If you wish to pursue a formal appeal, you must file the petition form with the Office of Administrative Hearings **WITHIN 30 DAYS OF THE DATE OF THIS LETTER.** The date of this letter is **December 16, 2005**. Meeting the 30-day deadline is critical to your right to a formal appeal. Beginning a formal appeal within 30 days will not interfere with any informal review that you might request. Do not wait for the outcome of any informal review if you wish to file a formal appeal.

If you file a petition for a contested case hearing with the Office of Administrative Hearings, you are required by law (N.C. General Statute 150B-23) to send a copy of your petition to the North Carolina Department of Environment and Natural Resources. Send the copy to: Office of General Counsel, N. C. Department of Environment and Natural Resources, 1601 Mail Service Center, Raleigh, NC. 27699-1601. Do **NOT** send the copy of the petition to your local health department. Sending a copy of your petition to the local health department will **NOT** satisfy the legal requirement in N.C. General Statute 150B-23 that you send a copy to the Office of General Counsel, NCDENR.

You may call or write the local health department if you need any additional information or assistance.

Sincerely,

Chris Sherrill, R.S, L.S.S.
Authorized Agent - DENR

Encl: (2)

Department of Environment, Health, and Natural Resources
Division of Environmental Health
On-site Wastewater Section

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

2nd site

Sheet: 1 OF 2
Property ID: PO 197-241-16
Lot #: 19
File #: 6114B
Code: 2

ACS

Owner: NVR, INC
Applicant: KIM STANLEY
Address: 10815 DAVID TAYLOR DRIVE, SUITE 100, CHARLOTTE, NC 28262
Date Evaluated: 11/18/05
Proposed Facility: 5 BR
Design Flow (.1949): 600 GPD
Property Size: 1
Location of Site: JUMPER DRIVE, MINT HILL, NC 28227
Property Recorded: NO
Water Supply: [X] Public [ ] Individual [ ] Well [ ] Spring [ ] Other
Evaluation Method: [ ] Auger Boring [X] Pit [ ] Cut
Type of Wastewater: [X] Sewage [ ] Industrial Process [ ] Mixed

PROFILE #	.1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY .1941 .1941 Structure/ Texture	.1941 Consistence Mineralogy	OTHER PROFILE FACTORS .1942 Soil Wetness/ Color	.1943 Soil Depth (IN.)	.1956 Sapro Class	.1944 Restr Horiz	Profile Class & LTAR
	LS, 7	0-9	SBK SCL	FR SS SP SEXP	NA	NA	NA	NA	U, NA
		9+	EXISTING	DRAIN FIELD					
	LS, 5	0-7	SBK SCL	FR SS SP SEXP	2.5Y 6/2 @32"	>32"	"	"	PS, IV
		7-32	SBK/ ABK C	FI S P SEXP					.25

Description	Initial System	Repair System
Available Space (.1945)	U	U
System Type(s)		
Site LTAR	.25	.25

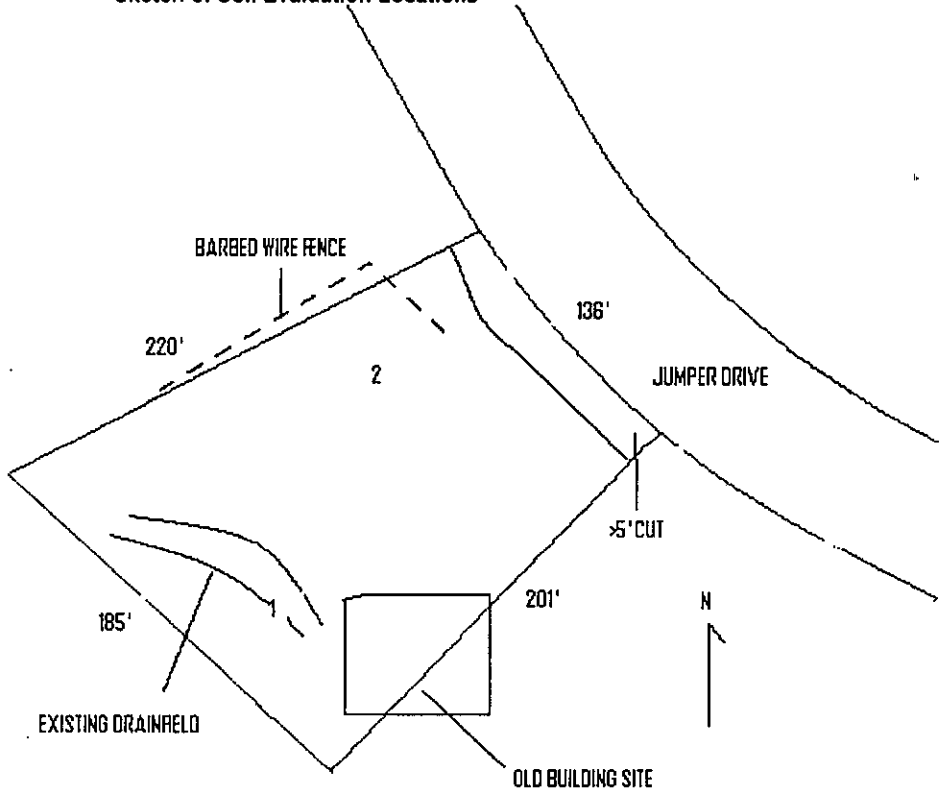
Other Factors (.1946):
Site Classification (.1948): UNSUITABLE
Evaluated By: CHRIS SHERRILL, RS, LSS CMS
Others Present: BILL MARLIN, LSS, RICK PRICE, RYAN HOMES

COMMENTS: : 100% REPAIR

Landscape Position	Group	Texture	.1955 LTAR	Structure
R-Ridge	I	S-Sand	1.2 - 0.8	SG-Single Grain
SS-Shoulder Slope		LS-Loamy Sand		M-Massive
LS-Linear Slope				CR-Crumb
FS-Food Slope	II	SL-Sandy Loam	0.8 - 0.6	GR-Granular
NS-Nose Slope		L-Loam		SBK-Subangular Blocky
HS-Head Slope				ABK-Angular Blocky
CC-Concave Slope	III	SI-Silt	0.6 - 0.3	PL-Platy
CV-Convex Slope		SICL-Silty Clay Loam		PR-Prismatic
T-Terrace		CL-Clay Loam		
FP-Flood Plain		SCL-Sandy Clay Loam		
	IV	SC-Sandy Clay	0.4 - 0.1	
		SIC-Silty Clay		
		C-Clay		

Consistence Moist	Consistence Wet	Mineralogy
VFR-Very Friable	NS-Non-Sticky	SEXP-Slightly Expansive
FR-Friable	SS-Slightly Sticky	EXP-Expansive
FI-Firm	S-Sticky	
VFI-Very Firm	VS-Very Sticky	
EFI-Extremely Firm	NP-Non-Plastic	
	SP-Slightly Plastic	
	P-Plastic	
	VP-Very Plastic	

Sketch of Soil Evaluation Locations



Department of Environment, Health, and Natural Resources
Division of Environmental Health
On-site Wastewater Section

Sheet: 1 OF 2
Property ID: 197-241-16
Lot #: 19
File #: 6114B
Code: 3

ACS

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

Owner: NVR, INC
Applicant: KIM STANLEY
Address: 10815 DAVID TAYLOR DRIVE, SUITE 100, CHARLOTTE, NC 28262
Date Evaluated: 10/27/05
Proposed Facility: 5 BR
Design Flow (.1949): 600 GPD
Property Size: 1
Location of Site: JUMPER DRIVE, MINT HILL, NC 28027
Property Recorded: YES
Water Supply: [X] Public [ ] Individual [ ] Well [ ] Spring [ ] Other
Evaluation Method: [X] Auger Boring [ ] Pit [ ] Cut
Type of Wastewater: [X] Sewage [ ] Industrial Process [ ] Mixed

PROFILE #	1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY 1941		OTHER PROFILE FACTORS				
			1941 Structure/ Texture	1941 Consistence Mineralogy	1942 Soil Wetness/ Color	1943 Soil Depth (IN.)	1956 Sapro Class	1944 Restr Horiz	Profile Class & LTAR
	LS, 7	0-10	FILL	MASSIVE	NA	NA	NA	NA	U
		10+	ROCK	MASSIVE					NA
	LS,8	0-32	FILL/MISC	MASSIVE	"	"	"	"	U
									NA
	LS,8	0-7	SBK CL	FR SS SP SEXP	2.5Y 7/2 @ 36"	>48"	"	"	PS, IV
		7-48	ABK C	FI S P SEXP					.25
	LS, 6	0-12	SBK CL	FR SS SP SEXP	>48"	"	"	"	PS, IV
		12-42	ABK C	FI S P SEXP					.3
		42-48	ABK SCL	FR S P SEXP					
	LS,6	0-7	SBK SCL	FR SS SP SEXP	32"	"	"	"	PS, IV
		7-32	ABK SCL	FI S P SEXP					0.2

Description	Initial System	Repair System
Available Space (.1945)	U	U
System Type(s)		
Site LTAR	.25	.25

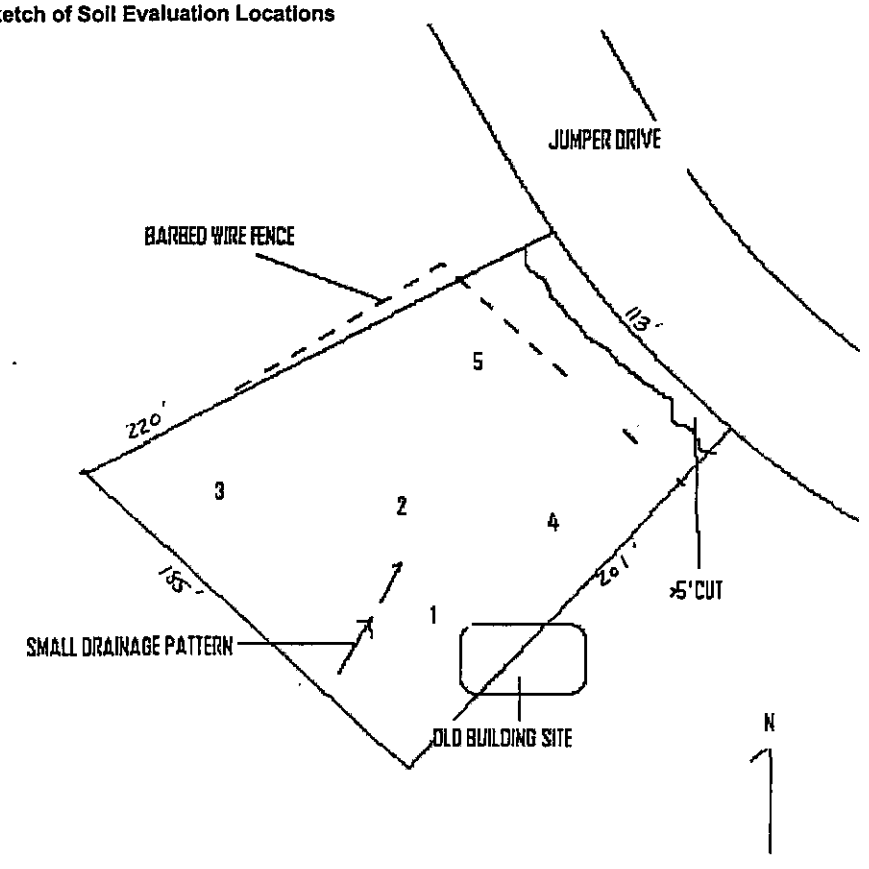
Other Factors (.1946): SITE WILL REQUIRE PITS FOR FURTHER EVALUATI
Site Classification (.1948): UNSUITABLE
Evaluated By: CHRIS SHERRILL, RS, LSS
Others Present: NONE

COMMENTS:

Landscape Position	Group	Texture	.1955 LTAR	Structure
R-Ridge	I	S-Sand	1.2 - 0.8	SG-Single Grain
SS-Shoulder Slope		LS-Loamy Sand		M-Massive
LS-Linear Slope				CR-Crumb
FS-Food Slope	II	SL-Sandy Loam	0.8 - 0.6	GR-Granular
NS-Nose Slope		L-Loam		SBK-Subangular Blocky
HS-Head Slope				ABK-Angular Blocky
CC-Concave Slope	III	SI-Silt	0.6 - 0.3	PL-Platy
CV-Convex Slope		SICL-Silty Clay Loam		PR-Prismatic
T-Terrace		CL-Clay Loam		
FP-Flood Plain		SCL-Sandy Clay Loam		
	IV	SC-Sandy Clay	0.4 - 0.1	
		SIC-Silty Clay		
		C-Clay		

Consistence Moist	Consistence Wet	Mineralogy
VFR-Very Friable	NS-Non-Sticky	SEXP-Slightly Expansive
FR-Friable	SS-Slightly Sticky	EXP-Expansive
FI-Firm	S-Sticky	
VFI-Very Firm	VS-Very Sticky	
EFI-Extremely Firm	NP-Non-Plastic	
	SP-Slightly Plastic	
	P-Plastic	
	VP-Very Plastic	

Sketch of Soil Evaluation Locations



2nd site Evaluation
100% 12/5/05 JKA X33575 # 5607

GWS – RES. APP 12/04

SEPTIC FEE: 200.00
DATE: 8/31/05
CRT [ ] X 33575 V.W.

PERMIT APPLICATION FOR A RESIDENTIAL SITE IMPROVEMENT PERMIT / CONSTRUCTION AUTHORIZATION FOR ON-SITE WASTEWATER SYSTEM NEW WELL INSTALLATION OR *REPAIR OF EXISTING WELL* MECKLENBURG COUNTY GROUNDWATER & WASTEWATER SERVICES

WELL FEE: _____
DATE: _____
CRT [ ]

FILE # 61148

SEPTIC / TYPE APPLICATION: ☐ NONE ☒ NEW SYSTEM EXISTING SYSTEM: ☐ EXPANSION/ALTERATION ☐ REPAIR

WELL / TYPE APPLICATION: ☒ NONE ☐ NEW WELL ☐ MAJOR REPAIR ☐ ABANDONMENT

JOB LOCATION INFORMATION:

TAX/PARCEL #: 19724116
STREET ADDRESS: Jumper Dr.
CITY: Mint Hill
STATE: NC ZIP: 28027
SUBDIVISION OR MOBILE HOME PARK NAME: Meadows of Mint Hill
LOT #: 19
TOWNSHIP:

☐ 0-MECKLENBURG ☐ 4-PINEVILLE
☐ 1-CHARLOTTE ☐ 5-MATTHEWS
☐ 2-DAVIDSON ☐ 6-HUNTERSVILLE
☐ 3-CORNELIUS ☒ 7-MINT HILL

BUILDING INFORMATION:

TYPE OF BUILDING:

☐ SINGLE MOBILE HOME (S) ☐ MODULAR HOME (M)
☐ DOUBLE WIDE (D) ☐ MULTIPLE FAMILY (U)
☒ HOUSE (H) ☐ OTHER

HEATED SQUARE FOOTAGE: 3,500
NUMBER OF BEDROOMS: 5
NUMBER OF OCCUPANTS: 4

FOUNDATION FOR RESIDENCE:

☐ CONCRETE SLAB ☐ BASEMENT WITH PLUMBING
☒ CRAWLSPACE ☐ BASEMENT WITH NO PLUMBING

IF PLANNING TO EXPAND/ALTER THE EXISTING SYSTEM INDICATE THE FOLLOWING CHANGES:

NUMBER OF BEDROOMS TO BE ADDED: NUMBER OF ADDITIONAL OCCUPANTS IN THE RESIDENCE:

WILL THERE BE A HOME BUSINESS IN THE RESIDENCE? ☐ YES ☐ NO TYPE:

WATER SUPPLY:

☒ MUNICIPAL (M) ☐ PUBLIC (C) ☐ PRIVATE WELL (P) ☐ SHARED WELL (S) ☐ OTHER 'SPRINGS' (O)

PROPOSED USE OF WELL: ☐ N/A ☐ IRRIGATION ☐ POTABLE ☐ GEOTHERMAL ☐ OTHER

ARE ANY OF THE FOLLOWING LOCATED ON THE PROPERTY? IF SO, PLEASE SHOW LOCATION ON SITE PLAN/PLAT.

BURIED CABLES, LANDFILLS, STUMPHOLES	☐ YES	☒ NO	WELLS, SPRINGS, OR WATER LINES	☐ YES	☒ NO
EXISTING WASTEWATER SYSTEMS	☐ YES	☒ NO	DESIGNATED WETLANDS	☐ YES	☒ NO
EASEMENTS OR RIGHT-OF-WAYS	☒ YES	☐ NO	GRADING/SOIL REMOVAL PERFORMED	☐ YES	☒ NO

PROPERTY OWNER:

NAME: NVR, INC.
ADDRESS: 10815 David Taylor Dr., Ste 100
CITY: Charlotte
STATE: NC ZIP: 28262
HOME PHONE: WORK PHONE: 704-548-3534
MOBILE PHONE: FAX:

LEGAL AGENT FOR PROPERTY OWNER, IF APPLICABLE:

NAME: Kim Stanley
ADDRESS: PO Box 176
CITY: Stanfield
STATE: NC ZIP: 28163
HOME PHONE: WORK PHONE: 792-9639
MOBILE PHONE: FAX: 704-785-8721

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED?
WHAT IS THE ANTICIPATED CLOSING DATE FOR THIS PROPERTY? Feb 2006

*An Improvement Permit is subject to suspension or revocation if site plans or the intended use change or if information submitted in this application is falsified or changed. The undersigned, owner, or legal agent for the owner, of the property described above as the "Job Location" has read the foregoing application, acknowledges that the contents of same are true, and authorizes the Mecklenburg County Health Department to enter onto the property for the purpose of processing this request.

Kim Stanley 8/29/05
Owner's/Agent's Signature Date

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT & NATURAL RESOURCES DIVISION
OF ENVIRONMENTAL HEALTH ON-SITE
WASTEWATER SECTION

*A Well Permit is subject to suspension or revocation if site plans or the intended use change or if information submitted in this application is falsified or changed. The undersigned, owner, or legal agent for the owner, of the property described above as the "Job Location" has read the foregoing application, acknowledges that the contents of same are true, and authorizes the Mecklenburg County Health Department to enter onto the property for the purpose of processing this request.

Owner's/Agent's Signature Date

MECKLENBURG COUNTY HEALTH DEPARTMENT
GROUNDWATER & WASTEWATER SERVICES
700 N. TRYON ST., SUITE 211
CHARLOTTE, NC 28202
704-336-5103 / FAX: 704-336-6894

PROPOSED MODEL FIT

PREPARED BY:

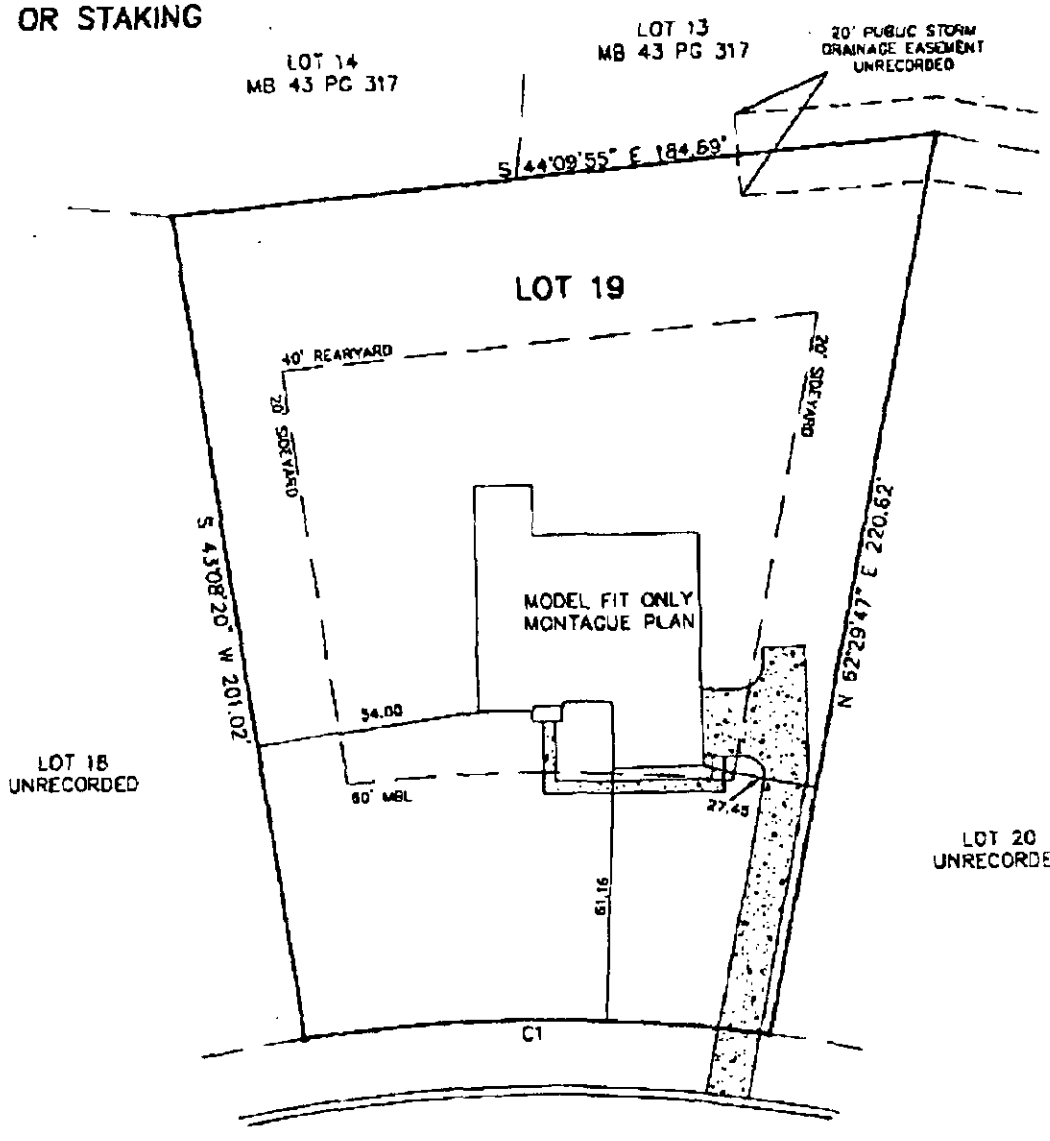
DELTA LAND SERVICES, INC.
6033 FLORENCE AVENUE, SUITE 100
CHARLOTTE, NORTH CAROLINA 28212
(704) 536-6190

UNRECORDED

SCALE: 1"=40'

**MODEL FIT ONLY
NOT TO BE USED
FOR CONSTRUCTION
OR STAKING**

THE MEADOWS AT MINT HILL
MAP 1



JUMPER DRIVE

60' PUBLIC R/W
UNRECORDED

ESTIMATED DRIVEWAY
AREA = 1193.1 SQ.FT.±

NOTE: DELTA LAND SERVICES IS NOT RESPONSIBLE FOR ANY CHANGES DUE TO UNRECORDED COVENANTS AND RESTRICTIONS

CURVE TABLE					
CURVE	RADIUS	LENGTH	CHORD	BEARING	DELTA
C1	400.00	112.85	112.48	S38°46'43"E	16°09'53"

STAKEOUT ☐

NOT FOR RECORDATION, CONVEYANCES OR SALES

Subdivision MEADOWS @ MINT HILL, MAP 2 UNRECORDED County MECKLENBURG
Address JUMPER DRIVE Owner RYAN HOMES

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date:	08/31/05	**Amount:**	200.00
Receipt #:	36699	**Tendered:**	0.00
Check / Auth #:	CHARGE	**Returned:**	0.00
Received By:	WALKEVA		

Account Information

Account #: X33575
Contractor: NVR INC (EAST)
Attn:
Address: 10815 DAVID TAYLOR DR 100
Address:
City/State/Zip: CHARLOTTE, NC 28262

Item	Description	Permit#	Quantity	Unit Price	Total Price
0701	Improvment Permit App-Residen JUMPER DRIVE LOT 19		1	200.00	200.00

----------Outstanding Balances----------

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
14,498.75					