

GEOLOGIC INVESTIGATIONS

ENGINEERING GEOLOGY

PHILLIPS GEOLOGIC SERVICES
10781 Butte View Drive
Grass Valley, Ca. 95945
Phone/Fax (530) 273-0559
April 28, 2003

Wallace De Hart
C/o Ken Baker
Nevada City, Engineering, Inc.
505 Coyote Street
Nevada City, ca. 95959

RE: Soil Test Pit & Percolation Test Data
10631 Oak Springs Road
Proposed Parcel # 2
APN: 51-410-05

Dear Mr. De Hart

The following are the results of the soil tests we performed on the subject parcel.

The average percolation rate @ 24 inches was 46-minutes per inch, which indicates the following leach line requirements for this parcel is based on NCDEH calculations:

Minimum of 225- Lineal Feet of Pre-Treatment
Pressurized Shallow (Genflow) Distribution, based on Future Design

We recommend that you use 1500 gallon septic and construct the leach lines as will be shown in a design package.

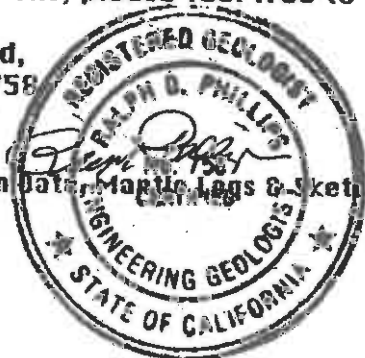
The test locations shown on the attached sketch do not constitute a property boundary survey and are shown for information only. The location of existing and future improvements will need to be confirmed prior to system design and approval. These test results do not guarantee the issuance of a permit. Other criteria such as setbacks and ground slope will need to be met.

Two wet signed copies of these results should be submitted together with the future Special Septic Design Package to the Nevada County Environmental Health Department (NCDEH) along with a comprehensive Site Plan showing the test locations plotted on it, for issuance of a Septic System Permit. The MUSDE Field is placed in the area of these tests, unless additional tests are performed.

If you have any questions, please feel free to contact us.

Respectfully Submitted,
Ralph D. Phillips, CEG 758
Engineering Geologist

Enclosures: Percolation Data, Mastic Logs & Sketch



ENCL #6

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Phone/Fax 530) 273-0559

April 28, 2004

Soil Test Pit Report

Proposed Parcel # 2

APN: 51-410--05

Excavations by Excavator:

- # 1 -- 24 in. by 8 ft. by 29 in. deep * # 3 -- 24 in. by 8 ft. by 32 in. deep
- # 2 -- 24 in. by 8 ft. by 32 in. deep # 4 -- 24 in. by 8 ft. by 29 in. deep

Test Pit # 1

- 0 to 17 inches..... Reddish brown (5YR 5/4) - sandy loam
- 17 to 29 inches Reddish yellow (7.5YR 7/6) - sandy clay loam
- 29 >>>>>> inches ... Reddish Yellow (7.5YR 7/6) - clay loam/>50% rk

Test Pit # 2

- 0 to 18 inches Similar to Test Pit # 1 - sandy clay loam
- 18 to 32 inches " " - sandy clay loam
- rock > 50 below 32 inches

Test Pit # 3

- 0 to 16 inches Similar to Test Pit # 1 - sandy clay loam
- 16 to 32 inches " " - sandy clay loam
- rock > 50% below 32 inches

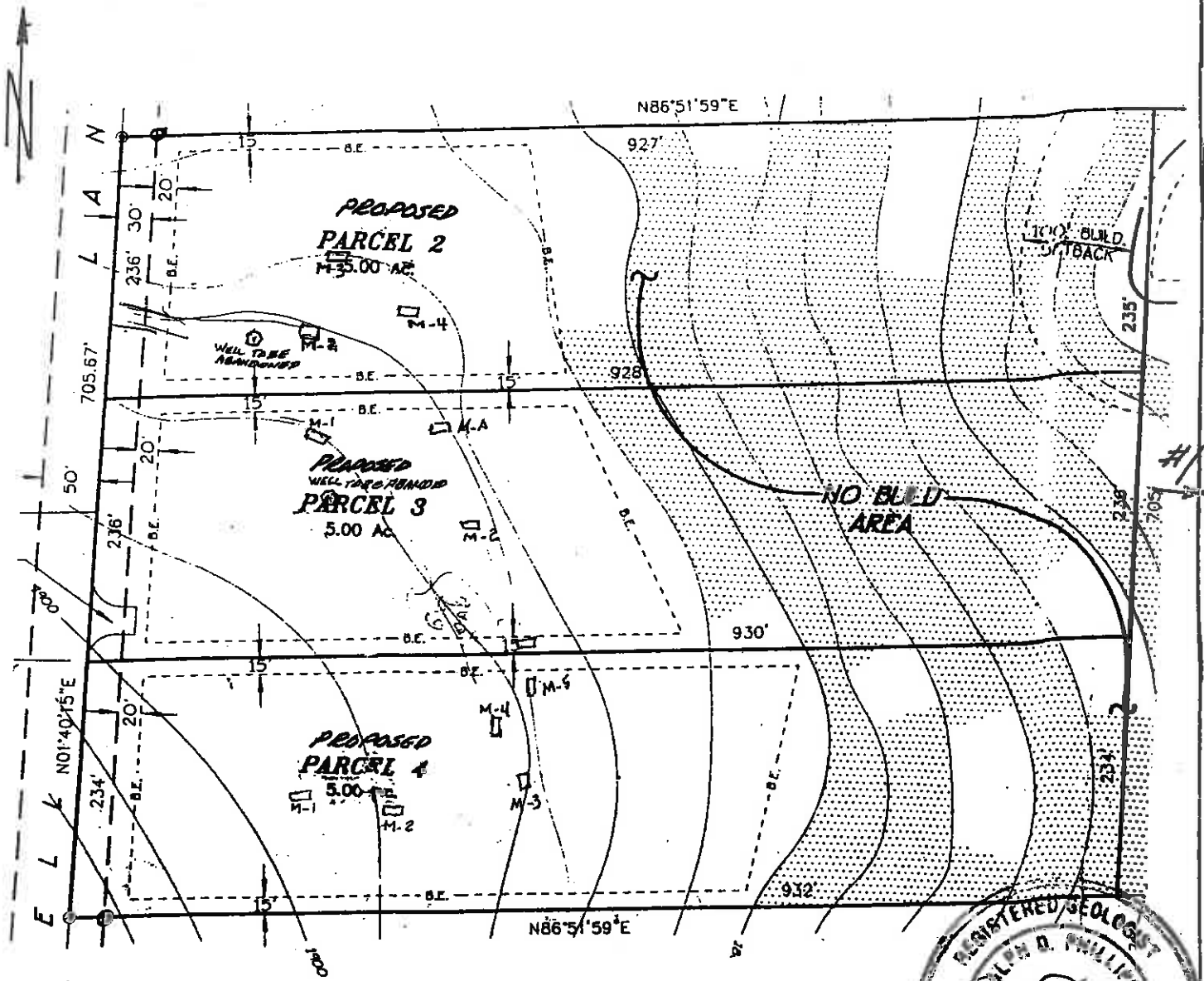
- NOTES:**
1. No evidence of moisture was observed in the test pits.
 2. Test Pit # 1 is located on Proposed Parcel # 3.
 3. Sandy clay loam soils noted in the excavations.
 4. Percolation tests were conducted at 24-inches indicating an average rate of 46-min./in. These results indicate that a Pre-Treated Shallow Disposal System should provide satisfactory effluent treatment for the parcel.
 5. Ground slopes approximately 12% in the tested area toward the east in the MUSDA.
 6. Soils Mapped by USDA -Soils Conservation Service - as Boomer - Rock clay loam, formed from weathered parent rock (diabase?).

Respectfully Submitted,

Ralph D. Phillips, CEG 758
Engineering Geologist



PHILLIPS GEOLOGIC SERVICE



NOT TO SCALE

NOTE:
 SHOWING RELATIONSHIP
 OF PROPOSED PARCELS
 #2, 3 & 4.
 #1 IS A 15-ACRE PARCEL
 REMAINDER

PROPOSED 4-WAY SPLIT
 GENERAL

PERCOLATION AND MANTLE TEST LOCATION MAP	PLATE
APN: 51-410-05 10631 OAK SPRINGS	1 R

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 Grass Valley, CA. 95945
 Phone/Fax (530) 273-0559

PROPERTY LOCATION _____
 ADDRESS 10631 Oak Springs Rd

JOB NO. 04-43
 PHONE NO. _____

OWNER _____
 PARCEL NO. #2 51-410-05 DOMESTIC WATER Well
Proposed

TEST DATE April 26, 2004

DATA OBTAINED FROM PERCOLATION TEST

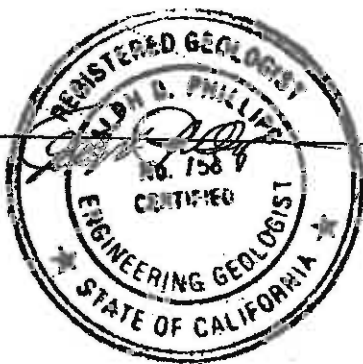
HOLE / DEPTH	P-1 24"				P-2 24"				P-3 24"			
	TIME	DEPTH TO WATER	TIME	DEPTH TO WATER	TIME	DEPTH TO WATER	TIME	DEPTH TO WATER	TIME	DEPTH TO WATER	TIME	DEPTH TO WATER
	9:30	8	10:00	4	9:32	8	10:02	4 3/8	9:34	8	10:04	7
	10:00	8	10:30	4 1/4	10:02	8	10:32	5	10:04	8	10:34	7 1/4
	10:30	8	11:00	4 1/4	10:32	8	11:02	5 3/8	10:34	8	11:04	7 1/2
	11:00	8	11:30	4 3/8	11:02	8	11:32	5 3/8	11:04	8	11:34	7 1/2
	11:30	8	12:00	4 3/8	11:32	8	12:02	5 1/2	11:34	8	12:04	7 1/2
	12:00	8	12:30	4 1/2	12:02	8	12:32	5 1/2	12:04	8	12:34	7 1/2
	12:30	8	1:00	4 1/2	12:32	8	1:02	5 1/2	12:34	8	1:04	7 1/2
	1:00	8	1:30	4 1/2	1:02	8	1:32	5 1/2	1:04	8	1:34	7 1/2
STABILIZED RATE (min/in)												
<div style="display: flex; justify-content: space-around;"> 8.6 min/in 12 min/in 60 min/in </div>												

AVERAGE PERCOLATION RATE: 40.6 (min./in.)
times 1.14 rock correction = 46 min/in

I HEREBY CERTIFY UNDER PENALTY OF PERJURY THAT THE STATEMENTS MADE ABOVE ARE TRUE AND CORRECT AND THAT THE ABOVE PERCOLATION TESTS WERE DONE IN ACCORDANCE WITH THE INSTRUCTIONS AND THE RESULTS RECORDED ARE TRUE AND CORRECT.

JANDY LEAM

PAUL HAYWARD



Parent Rock Type: V G MS A Other Consultant: R. PHILLIPS

ES Z. KARIM

ON PROPOSED PARCEL #2
 SOIL PIT# 12 1ST HORIZON Depth: 0 to 17
 Slope: 12 % Aspect: E
 Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
 Rock Fragments: gravel 5 % cobble 5 % stone %
 Color: 5YR 5/4
 Redoxymorphic Features: none few common many
 RC color NA RD color NA RM color NA
 Structure: gran platy block prism f m c single grain massive
 Soil Pores: none few common many f m c inters tubular
 Moist Consistence: 0 vfr fr f vf ef
 Plasticity: np sp mp vp Stickiness: ns ss ms vs
 Roots: none few common many vf f m c
 Boundary: Distinctness: a c 0 d Topography: s w i b
 Moisture: dry moist wet saturated
 NOTES:

Same as SOIL PIT # , Horizon #

3RD HORIZON Depth: 17 to 29
 Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
 Rock Fragments: gravel 10 % cobble % stone %
 Color: 7.5YR 7/6
 Redoxymorphic Features: none few common many
 RC color NA RD color NA RM color NA
 Structure: gran platy block prism f m c single grain massive
 Soil Pores: none few common many f m c inters tubular
 Moist Consistence: 1 vfr fr f vf ef
 Plasticity: np sp mp vp Stickiness: ns ss ms vs
 Roots: none few common many vf f m c
 Boundary: Distinctness: a c 0 d Topography: s w i b
 Moisture: dry moist wet saturated
 NOTES: Rock 750% Below 29" 29" EFFECTIVE

Same as SOIL PIT # , Horizon #

2ND HORIZON Depth: 0 to 18
 Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
 Rock Fragments: gravel 5 % cobble 10 % stone %
 Color:
 Redoxymorphic Features: none few common many
 RC color RD color RM color
 Structure: gran platy block prism f m c single grain massive
 Soil Pores: none few common many f m c inters tubular
 Moist Consistence: 1 vfr fr f vf ef
 Plasticity: np sp mp vp Stickiness: ns ss ms vs
 Roots: none few common many vf f m c
 Boundary: Distinctness: a c g d Topography: s w i b
 Moisture: dry moist wet saturated
 NOTES:

Same as SOIL PIT # , Horizon #

4TH HORIZON Depth: 18 to 32
 Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
 Rock Fragments: gravel % cobble 20 % stone %
 Color:
 Redoxymorphic Features: none few common many
 RC color RD color RM color
 Structure: gran platy block prism f m c single grain massive
 Soil Pores: none few common many f m c inters tubular
 Moist Consistence: 1 vfr fr f vf ef
 Plasticity: np sp mp vp Stickiness: ns ss ms vs
 Roots: none few common many vf f m c
 Boundary: Distinctness: a c g d Topography: s w i b
 Moisture: dry moist wet saturated
 NOTES: Rock 750% Below 32"

Same as SOIL PIT # , Horizon #
Effective Soil Depth: 30" Groundwater

Consultant Signature [Signature]

Nevada County Staff Signature [Signature]

SOIL PIT# 3 1ST HORIZON Depth: 0 to 16
 Slope: % Aspect:
 Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
 Rock Fragments: gravel % cobble % stone %
 Color:
 Redoxymorphic Features: none few common many
 RC color RD color RM color
 Structure: gran platy block prism f m c single grain massive
 Soil Pores: none few common many f m c inters tubular
 Moist Consistence: 1 vfr fr f vf ef
 Plasticity: np sp mp vp Stickiness: ns ss ms vs
 Roots: none few common many vf f m c
 Boundary: Distinctness: a c g d Topography: s w i b
 Moisture: dry moist wet saturated
 NOTES:

Same as SOIL PIT # , Horizon #

2ND HORIZON Depth: 16 to 32
 Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
 Rock Fragments: gravel % cobble % stone %
 Color:
 Redoxymorphic Features: none few common many
 RC color RD color RM color
 Structure: gran platy block prism f m c single grain massive
 Soil Pores: none few common many f m c inters tubular
 Moist Consistence: 1 vfr fr f vf ef
 Plasticity: np sp mp vp Stickiness: ns ss ms vs
 Roots: none few common many vf f m c
 Boundary: Distinctness: a c g d Topography: s w i b
 Moisture: dry moist wet saturated
 NOTES: EFFECTIVE 30"

Same as SOIL PIT # , Horizon #

1ST HORIZON Depth: 0 to 17
 Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
 Rock Fragments: gravel % cobble % stone %
 Color:
 Redoxymorphic Features: none few common many
 RC color RD color RM color
 Structure: gran platy block prism f m c single grain massive
 Soil Pores: none few common many f m c inters tubular
 Moist Consistence: 1 vfr fr f vf ef
 Plasticity: np sp mp vp Stickiness: ns ss ms vs
 Roots: none few common many vf f m c
 Boundary: Distinctness: a c g d Topography: s w i b
 Moisture: dry moist wet saturated
 NOTES:

Same as SOIL PIT # , Horizon #

4TH HORIZON Depth: 17 to 29
 Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
 Rock Fragments: gravel % cobble % stone %
 Color:
 Redoxymorphic Features: none few common many
 RC color RD color RM color
 Structure: gran platy block prism f m c single grain massive
 Soil Pores: none few common many f m c inters tubular
 Moist Consistence: 1 vfr fr f vf ef
 Plasticity: np sp mp vp Stickiness: ns ss ms vs
 Roots: none few common many vf f m c
 Boundary: Distinctness: a c g d Topography: s w i b
 Moisture: dry moist wet saturated
 NOTES:

Same as SOIL PIT # , Horizon #
Effective Soil Depth: 29" Groundwater

APN 51-410-05 JOB # 41-17432

Notes: PROPOSED PARCEL #2

