TAURIAINEN ENGINEERING & TESTING

35186 Spur Hwy Soldotna, AK 99669 (907)262-4624 FAX 262-5777 engineeringalaska@gci.net

AMENDED SOILS REPORT

Date: 15 Sep 2021

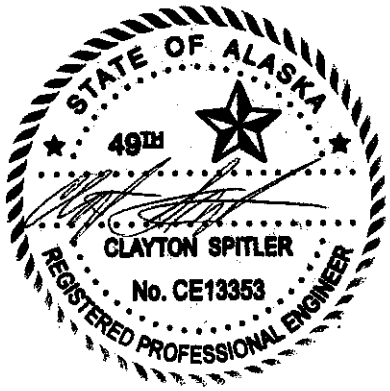
20177

To: Scott Huff, KPB Planning Department

Copy: Jerry Johnson, Johnson Surveying
E-mail: johnsonsurveying@hotmail.com

From: Clayton Spitler, Project Engineer

Subject: Hylen 2021 Addition
Subdivision Soils Report
2 pages + Attachments



This report has been amended per 14 Sep 2021 e-mail comments received from Kenai Peninsula Borough.

We have performed a soils investigation to determine suitability of Hylen 2021 Addition for onsite wastewater systems. The proposed subdivision creates 11 lots and one tract from the 19.04-acre parent parcel of Hylen 2008 Addition Tract B. Soil conditions encountered are suitable for conventional soil absorption systems (SAS).

The new lots are denoted Lots 1 through 11 and contain between 0.95 and 1.28 acres each. Tract C is greater than 200,000 square feet and therefore is not subject to KPB soils report requirements. Based on test holes observed 23 July 2021, soils are primarily sand and gravel in likely locations for wastewater systems. Groundwater table was not encountered in any test holes. See attached test hole logs for more information.

The subdivision is bounded by state land to the north, Cecilia Street right-of-way (ROW), state land, and private land to the east, Aspen Avenue ROW to the south, and private land to the west. The subdivision is accessed via Cecilia Street, Tovarish Road, and Aspen Avenue. The property is within the SE ¼ of Section 34, T 1S, R 14W S.M., near Ninilchik, Alaska.

Topography in the proposed subdivision ranges from nearly level to steep. Vegetation in uncleared areas includes primarily white spruce, balsam poplar, paper birch, and shrubs and grasses. No private or public wells exist within the subdivision. No private wells were observed within 100' of the subdivision boundary, and no public wells were observed within 200' of the subdivision boundary.

According to the *USDA Soil Survey of Homer-Ninilchik Area, Alaska*, soils within upland portions of the proposed subdivision are primarily Cohoe silt loam, nearly level. "The Cohoe series consists of deep, well-drained, nearly level to steep soils... They formed in silty, wind-laid deposits that have an admixture of volcanic ash. In most places this silty material is above layered silty and sandy sediments of the Kenai formation. The natural vegetation is a forest of white spruce and paper birch." The soils observed by us were similar to the USDA description.

In our professional opinion, sufficient soils information is available based on our site soils investigation, USDA Soil Survey, and knowledge of the area. We recommend installing deep trench SAS in native gravelly sand, sized at 150 square feet/bedroom. Beds or shallow trench SAS should be sized slightly larger. If soils encountered at time and location of SAS installation are determined to be predominately gravel (GW or GP), a 2' thick ADEC-spec sand liner will likely be required beneath the SAS, and SAS type will need to be bed or shallow trench (sand liners cannot be installed under a deep trench SAS). Soil conditions, percolation rates (if applicable), and separation distances to water table and impermeable soils should be verified at time and location of SAS construction. Considerable depths of silt soils exist on site, which will likely result in deeper-buried SAS, and deeper test holes excavated prior to SAS construction to verify depth to groundwater and impermeable soils.

Based on the soils investigation, all lots have at least 20,000 contiguous square feet available for on-site wastewater systems. We recommend that the developer of each lot carefully consider locations of existing and future on-lot and nearby wells and septic systems prior to construction. Wastewater treatment and disposal systems must be at least 100' from private wells and 200' from public wells. For other than single-family or duplex dwellings, ADEC or a qualified engineer should be consulted to determine water supply and wastewater treatment and disposal system requirements.

This investigation was performed according to TET standard procedures to evaluate subdivision soil conditions. This report was prepared solely for Johnson Surveying to present the findings of our investigation to the Kenai Peninsula Borough for Hylen 2021 Addition regarding suitability for on-site wastewater disposal, and is provided based on our knowledge of the area and information collected during our investigation. Information from others considered in this report is believed to be reliable, but no responsibility is assumed for accuracy. Any use of this report, or conclusions drawn, by third parties is at their own risk.

This report is based upon application of scientific principles and professional judgement with resultant subjective interpretation based on information currently available within the limits of scope of service, budget and schedule. Conclusions and recommendations stated herein are intended as guidance and not necessarily a firm course of action, unless explicitly stated. If more definitive conclusions are desired than are warranted by currently available information, additional investigation is recommended.

TET makes no warranties as to merchantability or fitness for a particular purpose. Due to the variable nature of site soils and geology, limited investigation, and lack of a complete record of previous site activities, subsurface conditions may vary from information presented. If conditions are found to differ significantly from those described in this report, please contact us. Please call or e-mail if you have any questions.

End of Report Text

Attachments

Test Hole Logs (2 pages)

Working Map

Hylen 2021 Addition: Test Hole Logs

TEST HOLE 1 (23 July 2021)

0 - 0.5'	Organics
0.5 - 3'	SILT, red-brown-gray, soft-firm, sl moist (ML)
3 - 7'	Gravelly Sandy SILT, sm Sand pockets, gray, firm-stiff, sl moist (SM)
7 - 16'	Gravelly SAND, tr-sm Cobbles, occ small Boulder, gray, mod dense, sl moist, sloughing (SP)
TD 16'	No Groundwater Table Encountered

TEST HOLE 2 (23 July 2021)

0 - 0.5'	Organics
0.5 - 3'	SILT, red-brown, soft-firm, sl moist (ML)
3 - 8'	SILT, gray, firm-stiff, sl moist (ML)
8 - 12'	Gravelly SAND, tr-sm Cobbles, gray, mod dense, sl moist, sloughing (SP)
TD 12'	No Groundwater Table Encountered

TEST HOLE 3 (23 July 2021)

0 - 0.5'	Organics
0.5 - 3'	SILT, red-brown, soft-firm, sl moist (ML)
3 - 7.5'	SILT, tr-sm Sand & Gravel, gray, firm-stiff, sl moist (ML-SM)
7.5 - 12'	Gravelly SAND, tr-sm Cobbles, gray, mod dense, sl moist, sloughing (SP)
TD 12'	No Groundwater Table Encountered

TEST HOLE 4 (23 July 2021)

0 - 0.5'	Organics
0.5 - 1.5'	SILT, red-brown, soft, sl moist (ML)
1.5 - 4'	SILT, tr-sm Sand & Gravel, gray, firm-stiff, sl moist (ML-SM)
4 - 12'	SAND/GRAVEL, tr-sm Cobbles, gray, mod dense, sl moist, sloughing (SP/GP)
TD 12'	No Groundwater Table Encountered

TEST HOLE 5 (23 July 2021)

0 - 0.5'	Organics
0.5 - 2'	SILT, red-brown, soft, sl moist (ML)
2 - 5.5'	SILT, tan-gray, firm-stiff, sl moist (ML)
5.5 - 12'	Gravelly SAND, gray, mod dense, sl moist, sloughing (SP)
TD 12'	No Groundwater Table Encountered

TEST HOLE 6 (23 July 2021)

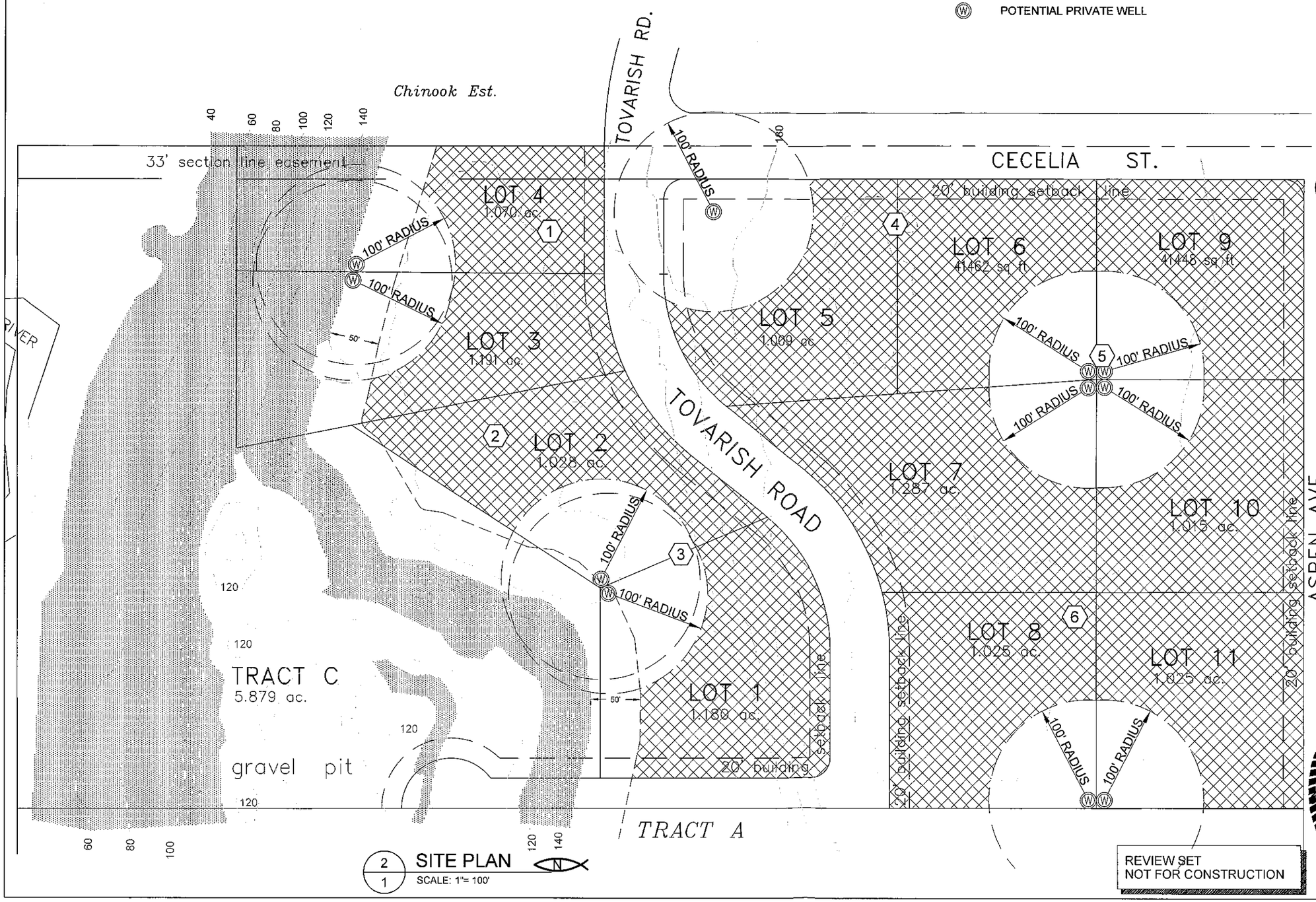
0 - 0.5'	Organics
0.5 - 2.5'	SILT, red-brown, soft, sl moist (ML)
2.5 - 4'	SILT, tr-sm Sand, tan-gray, firm-stiff, sl moist (ML-SM)
4 - 12'	Gravelly SAND, tr Cobbles, gray, mod dense, sl moist, sloughing (SP)
TD 12'	No Groundwater Table Encountered

NOTES

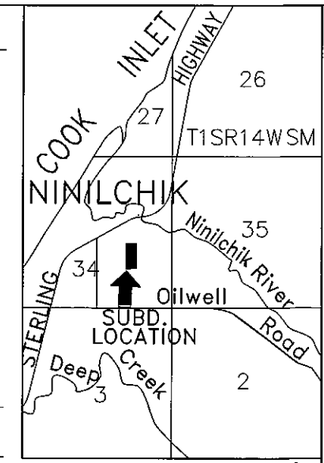
1. BACKGROUND INFORMATION PROVIDED BY JOHNSON SURVEYING.

LEGEND

- APPARENT SUITABLE WASTEWATER DISPOSAL AREA
- (1) TEST HOLE - APPROXIMATE LOCATION
- GROUND SLOPES >25% (1)
- 120 GROUND ELEVATION CONTOUR
- (W) POTENTIAL PRIVATE WELL



2/1 SITE PLAN
SCALE: 1"= 100'



1/1 VICINITY MAP
SCALE: 1"= 1 MILE

REVISIONS
1 15 SEPT 2021
CHANGED LOT # TO MATCH PLAT

REVIEW SET
NOT FOR CONSTRUCTION

STATE OF ALASKA
49th
15 Sep '21
CLAYTON SPITLER
No. CE 13353
REGISTERED PROFESSIONAL ENGINEER

WORKING MAP

HYLEN 2021 ADDITION
NINILCHIK, ALASKA

35186 Spur Hwy Soldotna, AK 99669 (907)262-4624 FAX 262-5777 engineeringalaska@gci.net
TAURIAINEN ENGINEERING & TESTING

DATE	JULY 2021
DRAWN	HSW
CHECKED	CS
FILE NAME	WM11X17
PROJ #	20177

SHEET 1 OF 1