One Green Ridge Road
Pittsford, New York 14534-2408
February 13, 1996

Mr. William R. Allen
35 Mill Road
Rhinebeck, New York 12572-2506

Dear Bill:

Last fall I saw a truck up at the farm which I didn't recognize. I thought it was the State Forester. However, about a month ago I received a letter from Gerald Smith from the National Cooperative Soil Survey Office, Westport. He has the job of doing a complete soil survey of Essex County and he sent me a copy of his findings on the tree farm. (About two years ago I received a letter asking permission to do this on my property. I gave it, requesting a copy of the results. I had completely forgotten about it, but obviously he had not.)

In essence (on our side of the lake) he characterized almost all of the soil as "low lime." In a few spots he said that the soil was very deep with acid metamorphic rock underlying it, and again, that was only in a few places. Generally, the comment about acidity was not mentioned.

As I was concerned about the acidity, I wrote him as follows:

> [It appears to me] the implication is that the underlying rock structure of the area is not alkaline — therefore it is probably acid. I presume that this does not bode well for the future of Eagle Lake, which presently is still on the alkaline side. On the other hand, there could be other minerals in the soil and rock which could compensate for this. Any comments?

I recently received a very nice note from him in which he said:

> Generally speaking, most of the bedrock geol. in area is acid meta-igneous, however, to my surprise, there are bands of marble directly adjacent to Eagle L. & in vicinity (highlighted in blue on enclosed Geol. map). These bands of marble bedrock may not only influence overlying surface deposits but the marble itself will provide buffering capacity for Eagle L. & any other surface waters w/marble in watershed.

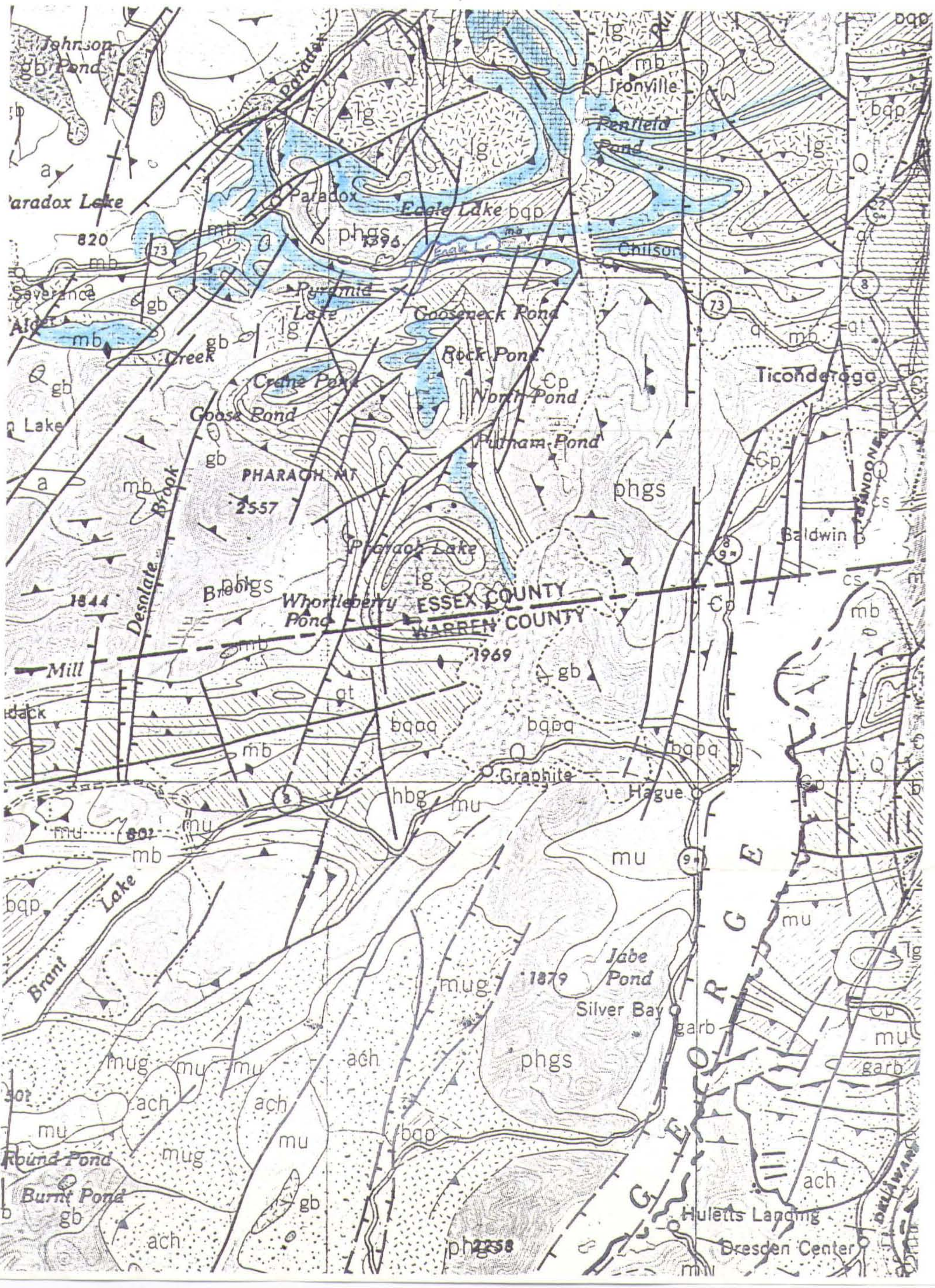
(The underlining is his.)

I had copies of his map made together with a copy of the "key" and enclose them herewith. I felt that this is good news which you would like to have.

Sincerely,

Robert C. Stevens

c: Pete Buechner ← THIS COPY FOR
Lloyd Burroughs
Wendy Davis
John DiPofi
Bill Knauss
Dianne Tiedemann



Johnson Pond
Paradox Lake
Paradox
Eagle Lake
Ironville
Penfield Pond
Chilson
Severance
Pyramid Lake
Gooseneck Pond
Rock Pond
Creek
Crane Pond
Goose Pond
North Pond
Putnam Pond
Ticonderoga
PHARAOH MT
2557
Pharaoh Lake
Desolate Brook
Brooks
1844
Whortleberry Pond
ESSEX COUNTY
WARREN COUNTY
1969
Mill
Baldwin
Graphite
Hague
Brant Lake
Jabe Pond
1879
Silver Bay
Round Pond
Burnt Pond
Huletts Landing
Dresden Center
820
lg
mb
bqp
phgs
gb
Cp
cs
Q
qt
bqpq
hbg
mu
mug
ach
garb

GLACIAL AND ALLUVIAL DEPOSITS

Q — Underlying bedrock geology unknown.

MESOZOIC INTRUSIVES

KJd — Lamprophyre, trachyte, and rhyolite dikes; not shown in Proterozoic terrane.

KJtp — Trachyte porphyry laccolith (?) at Cannon's Point near Willsboro, Essex County.

MEDINA GROUP AND QUEENSTON FORMATION
up to 100 ft. (30 m.)

SmOq — Undifferentiated Medina Group: Grimbsy Formation—sandstones, shale; and Queenston Formation—siltstone, shale.

LORRAINE, TRENTON, AND BLACK RIVER GROUPS
up to 1600 ft. (490 m.)

Oo — Oswego Sandstone.

Opw — Pulaski and Whetstone Gulf Formations—siltstone, shale.

Ou — Utica Shale

Oag — Austin Glen Formation (Pawlet in Vermont)—graywacke, shale.

Oc — Canajoharie Shale, includes Hortonville and Ira Shales in Vermont.

Oi — Iberville Shale (in Vermont)

Osp — Stony Point Shale.

Ocum — Cumberland Head Argillite.

Ot — Trenton Group.
In Black River Valley: Cobourg Formation—Hillier shale and limestone Member, Hallowell limestone Member; Denley, Sugar River, Kings Falls, and Rockland Limestones.
In Champlain Valley: Glens Falls Formation—Montreal shale and limestone Member, Larrabee limestone Member.

Obr — Black River Group.
In Black River Valley: Chaumont Limestone—locally cherty; Lowville Limestone; Pamelia Formation—dolostone, shale, arkose.
In Champlain Valley: Amsterdam, Isle La Motte, and Lowville Limestones; Pamelia Dolostone.

Otbr — Trenton and Black River Groups, undivided. Glens Falls and Orwell Limestones.
In Canada: Lindsay, Verulam, Bobcaygeon, Gull River Limestones; Shadow Lake Dolostone.

Otm — Taconic Mélange—chaotic mixture of Early Cambrian thru Middle Ordovician pebble to block-size clasts in a pelitic matrix of Middle Ordovician (Barneveld) age. Rims and floors earlier submarine gravity slides of Taconian Orogeny.

OCs — Cambrian thru Middle Ordovician (Barneveld) carbonate rocks occurring as slivers caught along thrusts of later allochthones, or carbonate blocks in Taconic Mélange.

CHAZY GROUP
0-725 ft. (0-221 m.)

Och — Valcour, Crown Point, and Day Point Limestones—locally reefy, Ste. Thérèse Siltstone at base; Middlebury Limestone in Vermont; St. Martin and Rockcliffe Limestones in St. Lawrence Valley. Includes some Otbr and Obk adjacent to Champlain Thrust in Vermont.

BEEKMANTOWN GROUP, POTSDAM SANDSTONE, AND VERMONT VALLEY SEQUENCE
up to 2,500 ft. (760 m.)

Obk — Beekmantown Group (in part).
In St. Lawrence Valley: Ogdensburg Dolostone (Beauharnois Dolostone in Canada);
In Champlain Valley: Providence Island Dolostone; Fort Cassin Formation—limestone, dolostone; Fort Ann Formation (Spellman of Clinton and Essex Counties)—limestone, dolostone; Cutting Formation—dolostone (locally cherty), limestone, siltstone.
In Vermont: includes Bridport, Bascom, Cutting, and Shelburne carbonates.

OCth — Theresa Formation—dolostone, sandstone (Chateauguay in Quebec).

OCs — slivers, as OCs above.

Cbk — Beekmantown Group (in part).
In Champlain Valley: Whitehall Formation—dolostone, limestone (with Cryptozoon reefs); Ticonderoga Formation—dolostone (locally cherty), sandstone.
In Vermont: Clarendon Springs Dolostone; Danby Formation—sandstone, quartzite, dolostone.

Cwmd — In Vermont: Winooski Dolostone, Monkton Quartzite, and Dunham (Rutland) Dolostone.

Cp — Potsdam Sandstone (Covey Hill in Quebec).

Cc — In Vermont: Cheshire Quartzite.

EUGEOSYNCLINAL (ALLOCHTHONOUS) SEQUENCE
up to 3,000 ft.? (900 m.)

Omi — Mount Merino and Indian River Formations—shale, slate, cherts.

Op — Poultney Formation ("B" and "C" Members)—shale, slate, siltstone.

Cpw — Poultney Formation ("A" Member)—shale, limestone; Hatch Hill Formation—shale, dolostone; West Castleton Formation—shale, limestone, conglomerate.

?Cm — Mettawee Slate (Bull in Vermont), includes Castleton (North Brittain) Conglomerate, Mudd Pond Quartzite, Zion Hill Quartzite, and Bomoseen Graywacke Members.

MIDDLE PROTEROZOIC

INTRUSIVE PEGMATITE DIKES

p — Granite pegmatite dike (unmetamorphosed).

METAMORPHIC ROCKS OF IGNEOUS ORIGIN

gb — Metagabbro, olivine metagabbro, derived amphibolite.

a — Metanorthosite and anorthositic gneiss; overprint signifies dark mineral content in excess of 10 percent (mainly gabbroic or noritic metanorthosite); mafic mineral percentage contoured in northwestern Marcy massif (St. Regis Quadrangle); contour value shown on high side of contour line. See also ach, ack, amu.

Relative ages of units listed below are unknown.

METAMORPHIC ROCKS OF SEDIMENTARY ORIGIN (PROBABLY INCLUDES SOME METAVOLCANICS)

bqp — Biotite-quartz-plagioclase gneiss, amphibolite, and related migmatite; locally sillimanitic; commonly garnetiferous in and adjacent to Adirondack Highlands.

bqpq — Biotite-quartz-plagioclase gneiss, commonly very low in biotite content, with interbedded feldspathic and biotitic quartzite and amphibolite; sillimanite and garnet common, graphite sporadic.

cs — Dolomitic and calcitic marbles interlayered with significant amounts of calcsilicate rock, metasedimentary amphibolite, pyroxene granulite, and various gneisses; includes interlayered diopsidic and tremolitic marble and quartzite, and talc-tremolite rock (mined in Balmat-Edwards belt, northwest Adirondacks).

garb — Quartz-feldspar gneiss with variable amounts of garnet, sillimanite, biotite.

mb — Predominantly calcitic and dolomitic marble, variably siliceous; in part with calcsilicate rock and amphibolite.

mu — Undivided metasedimentary rock and related migmatite.

qt — Quartzite, quartz schist and graphitic schist; in part feldspathic, micaceous, garnetiferous, sillimanitic.

METAMORPHIC ROCKS OF UNCERTAIN ORIGIN

Mangeritic, Syenitic, Charnockitic, and Quartz Syenitic Gneisses

ffg — Ferrohedenbergite-fayalite granite and granitic gneiss.

hqs — Hornblende-quartz syenitic gneiss. Overprint signifies inequigranular texture.

hs — Hornblende syenitic gneiss, in part biotitic. Overprint signifies inequigranular texture.

phgs — Charnockitic, granitic, and quartz syenitic gneisses, variably leucocratic, containing varying amounts of hornblende, pyroxenes, biotite; may contain interlayered amphibolite, metasedimentary gneiss, migmatite. Overprint signifies inequigranular texture or phacoidal structure.

phqs — Charnockite, mangerite, pyroxene-(hornblende)-quartz syenitic gneiss; overprint signifies inequigranular texture.

ps — Mangerite, pyroxene syenitic gneiss, pyroxene-(hornblende) syenitic gneiss; mesoperthite common. Overprint signifies inequigranular texture.

Miscellaneous

am — Amphibolite, commonly biotitic; garnetiferous, pyroxenic, in and adjacent to Adirondack Highlands.

hbg — Biotite and/or hornblende granitic gneiss, locally pyroxenic; commonly with subordinate leucogranitic gneiss, biotite-quartz-plagioclase gneiss, other metasedimentary rocks, amphibolite, migmatite. Amphibolite with porphyroblasts of K-feldspar locally prominent in northwest Adirondacks. Overprint signifies inequigranular texture or phacoidal structure. In northwest Adirondacks, grades into phg.

lg — Leucogranitic (alaskitic) gneiss; sodic plagioclase ranges from generally subordinate to locally dominant; locally, with biotite, hornblende, pyroxene, garnet, sillimanite, disseminated magnetite; commonly contains metasedimentary layers, amphibolite, migmatite; plagioclase-rich variety is host to magnetite ore bodies in eastern Adirondacks.

phg — Pyroxene and/or hornblende granitic gneiss, biotitic in part; sodic plagioclase ranges from generally subordinate to locally dominant; plagioclase-rich facies locally contain disseminated magnetite and magnetite ore bodies; grades westward into hbg, and southward into lg.

UNDIVIDED AND MIXED GNEISSES

amg — Interlayered amphibolite and granitic, charnokitic, mangeritic, or syenitic gneiss.

mug — Interlayered metasedimentary rock and granitic, charnockitic, mangeritic, or syenitic gneiss.

ach — Hybrid rock: mangeritic to charnockitic gneiss, with xenocrysts of calcic andesine and, locally, xenoliths of anorthosite; with increasing percentage of anorthosite component, passes gradationally into anorthositic rocks.

ack — Interlayered gabbroic or noritic metanorthosite, mangerite or charnockite, and the ach lithology described above.

amu — Hybrid rock: ranges from anorthositic rock with local blocks, shreds or layers of undifferentiated metasediment, to mappable roof pendants and/or xenoliths of metasediment in anorthositic rock.