

PRELIMINARY MATERIALS MAP, OTIS QUADRANGLE,  
MASSACHUSETTS

By G. William Holmes

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U.S. GEOLOGICAL SURVEY

Open File Report 65-74



40) field and megascopic observations:

295  
786

Station number 1

Location: County Berkshire Town Otis Pit X Active ☐ Inactive ☒

Road location 1 mi. S. of Otis Rte. 8 Coordinates 42°11'N 73°04'W

Geologic unit or occurrence Ice contact stratified drift in kame terrace

Textural description Boulder (fine) sand Eng. Soil Type SP

Dimensions of deposit: Areal extent 100x150' Estimated thickness 40'

Dimensions of pit: Areal extent 400x2000' Exposed thickness 11'

Lithologic composition (approximate %) Boulders are gneiss

Grain size: Maximum 25' Mean 1mm Est. % of sand 90 Est. % fines 5

Rounding Well Grading Poor Sorting Well-sorted sand

Soil development Thin A horizon 1-3" Color Light-yellowish brown

Oxidation or staining Faint B horizon 6" Leaching --

Secondary deposition -- Reactive matter --

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OTIS

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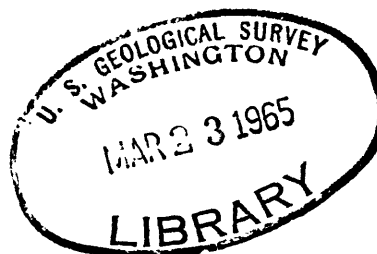
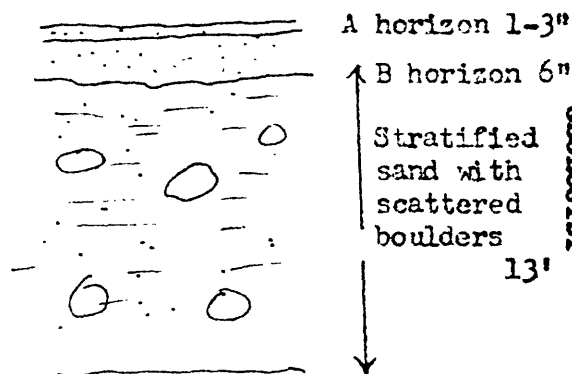
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Section:

Rock type	



General Description: Irregularly bedded boulder sand containing appreciable silt fraction. In places boulders are absent but elsewhere scattered randomly through the section mixed with a few cobbles.

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Field and megascopic observations:

Station number 2

Location: County Berkshire Town Otis Pit X Active  
Inactive

Road location Rte. 8, 1/2 mi. N. of N. Otis Coordinates 42°11'N  
73°07'W

Geologic unit or occurrence Ice-contact stratified drift: Kame

Textural description Cobble gravel Eng. Soil Type GW

Dimensions of deposit: Areal extent 8000'x800' Estimated thickness 100'

Dimensions of pit: Areal extent 50'x100' Exposed thickness 15'

Lithologic composition (approximate %) --

Grain size: Maximum 2' Mean 3" Est. % of sand 40 Est. % fines 2

Rounding Well Grading Well Sorting Fair.

Soil development Obscured Color --

Oxidation or staining Obscured Leaching --

Secondary deposition -- Reactive matter --

Section: Slumped

Rock type	
Gneiss	82
Quartzite	10
Granite/Felsite	2
Schist	4
Limestone	2
Iron-stained quartzitic ss	T
Quartz	T

General Description: Slumped pit in very extensive kame-esker complex;  
probably very sandy.

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## Field and megascopic observations:

Station number 3Location: County Berkshire Town Otis Pit X ☒ Active ☐ InactiveRoad location Rte. 8 near town line Coordinates 42°11'N  
73°07'WGeologic unit or occurrence Ice-contact stratified drift: KameTextural description Pebble-cobble gravel Eng. Soil Type GWDimensions of deposit: Areal extent 900'x500' Estimated thickness 50'Dimensions of pit: Areal extent 100'x30' Exposed thickness 18'Lithologic composition (approximate %) Gneiss 85%, quartz 10%, misc. 5%Grain size: Maximum 25' Mean 3" Est. % of sand 40 Est. % fines 3Rounding Well Grading Well Sorting Fair to poorSoil development Irregular B to 2.0'  
horizon Color Light-yellowish brownOxidation or staining Stained to 2' Leaching —Secondary deposition — Reactive matter —

Rock type	

Section: Slumped in most places, poorly stratified upper portion

General Description: Irregularly stratified gravel with a few large boulders and pockets of sand.

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Field and megascopic observations:

Station number 4  
 Location: County Berkshire Town Otis Pit X Active  
Inactive  
 Road location Rte. 8 near town line Coordinates 42°11'N  
73°07'W  
 Geologic unit or occurrence Ice-contact stratified drift in kame  
 Textural description Boulder gravel Eng. Soil Type CW  
 Dimensions of deposit: Areal extent 900x1200' Estimated thickness 25'  
 Dimensions of pit: Areal extent 100x50 Exposed thickness 8'  
 Lithologic composition (approximate %) Gneiss 90%, quartzite 5%, misc. 5%  
 Grain size: Maximum 10' Mean 3 Est. % of sand 40 Est. % fines 5  
 Rounding Subrounded Grading Well Sorting Fair to poor  
 Soil development Not exposed Color --  
 Oxidation or staining -- Leaching --  
 Secondary deposition -- Reactive matter --

Section:

Rock type	

Shallow active pit but slumped.  
 Inactive pit to west shows very  
 irregular stratification.

General Description: Extremely large boulders in this deposit are a distinct  
 disadvantage. Probably used for coarse fill.

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Field and megascopic observations:

Station number 5  
 Location: County Berkshire Town Becket Pit X Active Inactive  
 Road location Bonny Rigg Hill and Algerie Rds. Coordinates 42°15'N 73°02'W  
 Geologic unit or occurrence Ice-contact stratified drift in kame  
 Textural description Cobble sand Eng. Soil Type SW  
 Dimensions of deposit: Areal extent 1200x1200' Estimated thickness 25'  
 Dimensions of pit: Areal extent 400x400' Exposed thickness 15'  
 Lithologic composition (approximate %) \_\_\_\_\_  
 Grain size: Maximum 4' Mean 3 mm Est. % of sand 60 Est. % fines —  
 Rounding Subrounded Grading Well Sorting Fair  
 Soil development A horizon 3-6" B 15" Color Light brown  
 Oxidation or staining Distinct in B horizon Leaching —  
 Secondary deposition — Reactive matter —

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Rock type	
Quartzite	12
Gnaiss	67
Schist	2
Igneous felsic (granite)	14
Quartz	4
Misc.	1

Section:

General Description: Large poorly exposed shallow pit of clean sand with large fraction of cobbles and pebbles and a few scattered boulders.

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Field and megascopic observations:

Station number 6

Location: County Berkshire Town Otis Pit X Active  
Inactive

Road location Quarry Road 0.3 mi. E. of intersection Coordinates 42°15'N 73°02'W

Geologic unit or occurrence Ice-contact stratified drift in kame

Textural description Boulder gravel Eng. Soil Type CW

Dimensions of deposit: Areal extent 100x75' Estimated thickness 15'

Dimensions of pit: Areal extent 600x300' Exposed thickness 10'

Lithologic composition (approximate %) Gneiss 75%, granite 20%, quartzite 5%

Grain size: Maximum 6" Mean 1" Est. % of sand 40 Est. % fines --

Pebbles: well rounded

Rounding Boulders: sub-angular Grading Well Sorting Fair

Soil development Thin A horizon Color Yellow brown

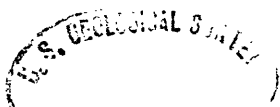
Oxidation or staining Faint and indistinct Leaching --

Secondary deposition -- Reactive matter --

Section: Slurped

Rock type	

General Description: Strongly bimodal gravel consisting of well-sorted pebbles with scattered giant boulders.



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