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STATUS OF GEOLOGIC DATA FOR ACTIVE MATERIAL SITES
ON MENTAL HEALTH GRANT (TRUST) LANDS IN ALASKA

By

Richard D. Reger

Alaska Division of
Geological and Geophysical Surveys

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THIS REPORT HAS NOT BEEN REVIEWED FOR
TECHNICAL CONTENT (EXCEPT AS NOTED IN
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3700 Airport Way
Fairbanks, Alaska 99709

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Status of Geologic Data for Active Material Sites on Mental Health Grant (Trust) Lands in Alaska

Introduction

In a May 24 memorandum the Division of Land and Water Management (DLWM) requested that the Division of Geological and Geophysical Surveys (DGGs) prepare a work plan for evaluating geologic resources in active material sites on mental health lands in Alaska. At the June 16 meeting of the Interim Mental Health Trust Commission, the author presented a three-phase proposal: (1) to assess the status of available subsurface information for the 42 sites identified as active by DLWM, (2) to compute minimum volumes of materials in those sites with adequate subsurface geologic information, and (3) to estimate volumes of inferred and hidden resources in the sites. Because of time and data constraints, the commission directed the author to only summarize the status of available geologic data for active sites.

The purpose of this report is (1) to describe how my survey was conducted, (2) to locate active material sites identified on mental health lands, (3) to indicate which sites have subsurface data, (4) to summarize site geology, (5) to report volumes of materials proposed for removal, (6) to report volumes of materials known to be removed, and (7) to identify sources of information.

Methodology

Upon receipt of files containing documentation of land-management activities for 14 material sites in the southeastern region, eight sites in south-central Alaska, and 20 sources in the northern region, an initial survey was made of geologic information in the DLWM files (fig. 1). Parcels were plotted on 1:63,360-scale topographic maps and an intensive search was made for geologic reports containing subsurface data in the archives of DGGs and the Department of Transportation and Public Facilities (DOTPF).

For each active site, an Evaluation Form and a Summary of Mining History Form were completed using information extracted from detailed technical reports and unpublished information in DLWM and DOTPF files. Information entered on the Evaluation Form included informal site name, DOTPF material site number(s), location (section, township, range, reference meridian, and quadrangle), size of material site, summary of site geology, volumes of materials removed, and sources of information. On the Summary of Mining History Form, information entered included ADL number(s) of land-management actions relating to the subject parcel, applicants, date contracts executed, dates contracts amended, types of materials, quantities of materials contracted, and total materials removed. These data were then consolidated and summarized on one form for this report.

No attempt was made to use test-hole data to calculate volumes of materials in sites at the time of drilling, although where volumes are

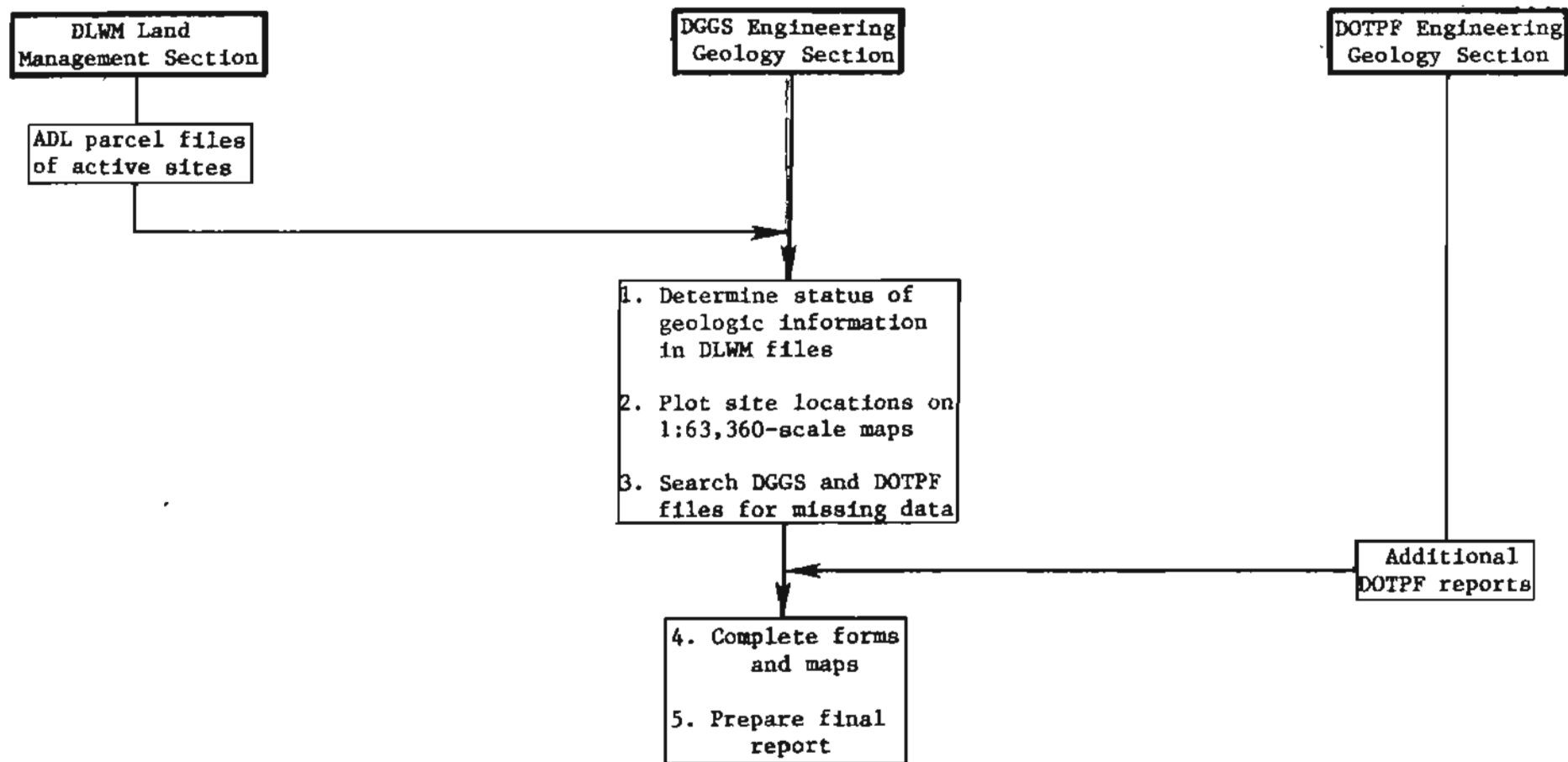


Figure 1. Work plan for DGGs evaluation of active material sites on mental health lands in Alaska.

given in reports, these figures were cited.

Data Presentation

Summaries of the geology and mining history of 24 active gravel sites and 18 active rock quarries are given in Appendices A and B, respectively. Twenty-three maps accompanying this text illustrate the locations of the 42 active sources at a scale of 1:63,360.

Discussion

Gravel Sites

This survey identified two (8.3 percent) gravel sites in the southeastern region, eight (33.3 percent) in south-central Alaska, and 14 (58.3 percent) in the northern region. The 24 gravel parcels cover 1,086.5 acres of mental health land according to documentation provided by DLWM and DOTPF. From these parcels, it was proposed to excavate 6,650,000 to 6,660,000 c.y. of sand and gravel (not counting three DOTPF sites where paperwork requested unlimited yardage and not counting two sites for which no production figures were found). However, the mining of only 3,571,902 c.y. of aggregate is documented (not including eight sites for which no production figures were found). Also proposed for excavation and removal were 13,500 c.y. of silt overburden (spoil), of which only 4,630 c.y. is documented as removed (not including one site for which proposed yardage was not stated in the information surveyed).

Of the 24 sources currently being used on mental health lands in Alaska, 19 are being intermittently mined by DOTPF. My survey located published DOTPF or consultant reports for 11 of these sites and located no published reports for eight DOTPF sites. Partial unpublished information was found for 13 gravel sources in DOTPF or DLWM archives, or both; six of these sites have information only in DLWM files. Brief field inspections by the author provided supplemental information for two sites and general site information was obtained for one site from a U.S. Geological Survey (USGS) map and for another site from an unpublished DGGs map. I could not locate reliable site-specific information for only one gravel source (Chuitna River).

The lack of detailed subsurface information in the form of logs of test holes for one-third of the gravel sources probably reflects the high cost of field exploration (Reger, 1988). The private sector can rarely afford expensive gravel-exploration programs that are routinely supported by state- and federal-funded construction projects. For this reason, most of the accessible test-hole information is in DOTPF reports prepared prior to construction and maintenance projects. Where industry expends the considerable funds needed to block out aggregate reserves, proprietary reports produced by private companies are rarely available for public scrutiny.

Rock Quarries

This survey located 12 (66.7 percent) rock quarries in the southeastern region, none in south-central Alaska, and six (33.3 percent) quarries in the northern region. According to documentation received, the 18 rock quarries cover 192.8 acres of mental health land. From these parcels, it was proposed to excavate 3,155,234 c.y. of shot rock and riprap. However, only 1,121,279 c.y. of rock were documented as removed (not counting six sites for which no production information was located).

Of the 18 quarries, 11 are being operated by DOTPF. Only three of the quarries (23 percent) in southeastern Alaska have published DOTPF reports providing test-hole information. In the northern region, two-thirds of the active quarries have published DOTPF or consultant reports available. In general, partial unpublished information in DLWM and DOTPF files is less useful for evaluating geologic conditions in rock quarries in southeastern Alaska than elsewhere. Generalized USGS maps provided important supplemental information for five of eight southeastern rock sites for which only DLWM file materials are available.

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I thank Hal Livingston, Mike Grahek, John Fritz, and Lynn Schraeder, Engineering Geologists with DOTPF, who kindly gave me unrestricted access to their archives. Bill Newman, who oversees materials sales in the DLWM northern regional office, gave me an excellent overview of how DNR conducts the sale of aggregate and rock and suggested several important sources of information; he also allowed me unlimited access to his extensive files. Tony Braden, DNR Mental Health Lands Officer, coordinated shipment of DLWM land records to me from all three regional offices of DLWM.

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APPENDIX A

Summary of Geology and Mining History of
Active Gravel Sources on Mental Health Lands in Alaska

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Southeastern

Informal Site Name: 18.5-Mile (Tee Harbor)

ADL Number(s) 21539, 100562

DOTPF Material Site Number(s) M.S. 954-001-3

Location: Section 18 Township 40S Range 65E Meridian Copper River

Quadrangle Juneau B-3 (Sheet 1 of 23)

Size (acres) 3.81

Summary of Site Geology: Sandy cobble gravel comprising a well-washed ablation till. In two samples collected in July 1981 and April 1982, gravel content was 81 and 87%, sand was 11 and 18%, and fine-fraction (clay plus silt) was 1 and 2%.

Volume of Materials Proposed for Removal: 65,000 c.y. of gravel

Reported Materials Removed: 10,537 c.y. of gravel

Source(s) of Information: Brief field inspection by author on 6-23-88

Unpublished information in files for Projects F-093-2(2) and F-093-2(10) in Materials Section of DOTPF southeastern regional office

Unpublished information in ADL 21539 and ADL 100562 files in DLWM southeastern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Southeastern

Informal Site Name: Upper Granite Creek and Extension

ADL Number(s) 79843, 100168, 100489

DOTPF Material Site Number(s) M.S. 99-3-001-3

Location: Section 15 Township 55S Range 63E Meridian Copper River

Quadrangle Sitka A-5 (Sheet 2 of 23)

Size (acres) 38.595

Summary of Site Geology: Granulometric analyses indicate sandy gravel has 30 to 60% cobbles and boulders (maximum diameter is 18 inches). Clasts are dominantly composed of graywacke with minor granitic and slaty fragments. Good to fair quality for road-construction purposes. Contains local, 1- to 5-ft-thick pods and lenses of fine silty sand with considerable volcanic ash.

Volume of Materials Proposed for Removal: 550,000 c.y. of gravel

Reported Materials Removed: 8,500 c.y. of gravel

Source(s) of Information: Franklet (1964), Swedell (1973)

Unpublished information in files for Projects F-099-3(2) and S-0933(4) in Design and Construction Section of DOTPF southeastern regional office

Unpublished information in ADL 79843, ADL 100168, and ADL 100489 files in DLWM southeastern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: South-central

Informal Site Name: Knik River #4

ADL Number(s) 203537

DOTPF Material Site Number(s) None

Location: Section 2 Township 16N Range 2E Meridian Seward

Quadrangle Anchorage C-6 (Sheet 3 of 23)

Size (acres) 140.00

Summary of Site Geology: Coarse stream alluvium exposed in bare bars of Knik River. Granulometric analysis of one sample by James P. Conway (applicant) determined that sample contained 83% gravel, 14% sand, and 3 % fine-fraction (clay plus silt).

Volume of Materials Proposed for Removal: 125,000 c.y. of gravel

Reported Materials Removed: 13,494 c.y. of gravel

Source(s) of Information: Unpublished information in ADL 203537 file in Retained Lands Section of DLWM south-central regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: South-central

Informal Site Name: Hiland Drive

ADL Number(s) 206497

DOTPF Material Site Number(s) M.S. 42-1-033-1

Location: Section 23 Township 14N Range 2W Meridian Seward

Quadrangle Anchorage B-7 (Sheet 4 of 23)

Size (acres) 72.5

Summary of Site Geology: Twenty-four test holes drilled in April 1971 encountered 0.3 to 15 ft of organic-material and silt overburden covering up to at least 10.5 ft of sandy gravel and gravelly silt with scattered boulders. Granulometric analyses of 15 gravel samples collected in April 1971 indicated 50 to 82% gravel, 14 to 38% sand, and 1 to 25% fine-fraction (clay plus silt).

Volume of Materials Proposed for Removal: 500,000 to 600,000 c.y. of gravel

Reported Materials Removed: 15,000 c.y. of gravel

Source(s) of Information: Fritz (1981)

Unpublished information in M.S. 42-1-033-1 file in
Materials Section of DOTPF south-central regional office

Unpublished information in ADL 206497 file in Retained
Lands Section of DLWM south-central regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: South-central

Informal Site Name: Weigh Scale

ADL Number(s) 24728

DOTPF Material Site Number(s) M.S. 21-2-230-1

Location: Section 12 Township 5N Range 9W Meridian Seward
Quadrangle Kenai C-3 (Sheet 5 of 23)

Size (acres) 11.830

Summary of Site Geology: Sandy gravel of outwash alluvium.

Volume of Materials Proposed for Removal: Unlimited c.y. of gravel

Reported Materials Removed: Unknown

Source(s) of Information: Brief field inspection by author in May 1977

Unpublished information in M.S. 21-2-230-1 file in
Materials Section of DOTPF south-central regional office

Unpublished information in ADL 24728 file in Retained
Lands Section of DLWM south-central regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: South-central

Informal Site Name: Funny River

ADL Number(s) 201813

DOTPF Material Site Number(s) M.S. 21-1-589-1

Location: Section 33 Township 5N Range 9W Meridian Seward

Quadrangle Kenai B-3 (Sheet 6 of 23)

Size (acres) 40.0 ±

Summary of Site Geology: Based on five test holes dug by backhoe in March 1979, 1 ft of organic material overlies 1 to 5 ft of silt and sandy silt, which caps up to at least 9 ft of complexely mixed gravelly sand, sandy gravel, sand, silty sand, and sandy silt. Granulometric analyses of three sediment samples collected in March 1979 indicate gravel content ranged from 10 to 45%, sand varied from 34 to 87%, and fines (clay plus silt) varied from 1 to 4%.

Volume of Materials Proposed for Removal: Unknown

Reported Materials Removed: Unknown

Source(s) of Information: Unpublished information in ADL 201813 file in Retained Lands Section of DLWM south-central regional office

Unpublished information in M.S. 21-1-589-1 file in Materials Section of DOTPF south-central regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: South-central

Informal Site Name: Holt Road

ADL Number(s) 28213

DOTPF Material Site Number(s) M.S. 490-014-1

Location: Section 30 Township 7N Range 1W Meridian Seward

Quadrangle Kenai C-4 (Sheet 7 of 23)

Size (acres) 19.231

Summary of Site Geology: Eight test holes drilled in March 1982 and one test hole drilled in the existing 'Holt Pit' in October 1981 indicated 0 to 0.4 ft of organic material discontinuously caps 2 to 2.5 ft of silt (loess) in undisturbed areas; this overburden covers up to at least 15 ft of complexly interlayered sandy gravel, gravelly sand, and sand. Granulometric tests of nine samples collected in March 1982 and one sample collected in August 1984 indicate the aggregate contains 59 to 71% gravel (except for thin sand layers), 28 to 40% sand, and 0 to 2% fine-fraction (clay plus silt).

Volume of Materials Proposed for Removal: Unlimited c.y. of gravel

Reported Materials Removed: Unknown

Source(s) of Information: Rowland (1982)

Unpublished information in M.S. 490-014-1 file in Materials Section of DOTPF south-central regional office

Unpublished information in ADL 28213 file in Retained Lands Section of DLWM south-central regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: South-central

Informal Site Name: Daniels Lake

ADL Number(s) 201810

DOTPF Material Site Number(s) M.S. 490-021-1

Location: Section 32 Township 8N Range 11W Meridian Seward

Quadrangle Kenai C-4 (Sheet 7 of 23)

Size (acres) 40.0 ±

Summary of Site Geology: Cover of organic materials and silty sand or sandy silt varied from 3 to 6 ft thick over sandy gravel with occasional to scattered cobbles (up to at least 10 ft thick) in nine test pits dug in March 1979. Values for gravel content ranged from 40 to 70%, sand varied from 22 to 50%, and fine-fraction (clay plus silt) ranged from 2 to 5% in 10 samples collected in February 1979.

Volume of Materials Proposed for Removal: Unlimited c.y. of gravel

Reported Materials Removed: Unknown

Source(s) of Information: Unpublished information in M.S. 490-021-1 file in Materials Section of DOTPF south-central regional office
Unpublished information in ADL 201810 file in Retained Lands Section of DLWM south-central regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: South-central

Informal Site Name: Ohlson Mountain

ADL Number(s) 27054

DOTPF Material Site Number(s) M.S. 430-625-1

Location: Section 29 Township 5S Range 13W Meridian Seward

Quadrangle Seldovia C-5 (Sheet 8 of 23)

Size (acres) 45.00

Summary of Site Geology: In three test pits dug prior to mining this summit source, the organic-silt overburden was 2 ft thick over up to at least 7 ft of poorly sorted sandy gravel. One sample collected in July 1983 contained 67% gravel, 29% sand, and 4% fine-fraction (clay plus silt).

Volume of Materials Proposed for Removal: 350,000 c.y. of gravel

Reported Materials Removed: Unknown

Source(s) of Information: Unpublished information in M.S. 430-625-1 file in Materials Section of DOTPF south-central regional office

Unpublished information in ADL 27054 file in Retained Lands Section of DLWM south-central regional office

Comments: In October 1973, based on one test boring, which encountered 16 ft of gravel, a consultant to the City of Homer estimated that 140,000 c.y. of gravel remained in the Ohlson Mountain source.

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: South-central

Informal Site Name: Chuitna River #1, #2, and #3

ADL Number(s) 222888, 224091

DOTPF Material Site Number(s) None

Location: Section 8,9,22,23,26 Township 12N Range 13W Meridian Seward

Quadrangle Tyonek A-5 (Sheet 9 of 23)

Size (acres) 10,000

Summary of Site Geology: Unknown

Volume of Materials Proposed for Removal: 25,000 c.y. of gravel

Reported Materials Removed: At least 73 c.y. of gravel

Source(s) of Information: Unpublished information in ADL 222888 and ADL 224091 files
in Retained Lands Section of DLWM south-central regional
office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: Nordale Road (Pit 1-A)

ADL Number(s) 56068, 403936

DOTPF Material Site Number(s) M.S. 650-019-2

Location: Section 1 Township 1S Range 1E Meridian Fairbanks

Quadrangle Fairbanks D-1 (Sheet 10 of 23)

Size (acres) 80.0

Summary of Site Geology: Sandy gravel terrace alluvium of Chena River. Eight test holes drilled in 1962, five drilled in 1972, four drilled in 1977, and four drilled in 1978 encountered 0.2 to 9.5 ft (average about 5 ft) of overburden (silt, sandy silt, and organic material) covering up to at least 19.5 ft of sandy gravel and gravelly sand. Granulometric analyses of nine samples collected in 1962 and eight collected in 1977 documented 31 to 88% gravel, 9 to 65% sand, and 2 to 10% fine-fraction (clay plus silt). Sand layers contained 53 to 64% sand and 36 to 47% fine-fraction.

Volume of Materials Proposed for Removal: 510,000 c.y. of gravel

Reported Materials Removed: 809,501 c.y. through 1987

Source(s) of Information: Unpublished information in M.S. 650-019-2 file in Engineering Geology Section of DOTPF interior regional office

Unpublished information in ADL 56068 and ADL 403936 files in Retained Lands Section of DLWM northern regional office

Comments: In 1962 the estimated volume of aggregate suitable for select material, subbase, and crushing was 875,000 c.y.

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: Stiles Creek

ADL Number(s) 54484

DOTPF Material Site Number(s) M.S. 650-094-2

Location: 2,3,10,11
Section / Township 1N Range 7E Meridian Fairbanks
Quadrangle Big Delta D-5 (Sheet 11 of 23)

Size (acres) 56.933

Summary of Site Geology: Floodplain alluvium of Chena River. In four test holes drilled in October and November 1978 and seven drilled in December 1980, the overburden of organic material, silt, sandy silt, and silty sand varied from 0 to 2 ft thick; these test borings encountered up to at least 21.5 ft of sandy gravel with cobbles. Gravel clasts are schist, granitic rock, and quartz; about 5% of the clasts are larger than 10 inches in diameter and 15 to 30% are 2 to 10 inches in diameter. Four samples collected in 1978 contained 76 to 85% gravel, 11 to 22% sand, and 1 to 5% fine-fraction (clay plus silt).

Volume of Materials Proposed for Removal: 130,000 c.y. of gravel

Reported Materials Removed: 146,845 c.y. through 1987

Source(s) of Information: Birch (1979)

Unpublished information in ADL 54484 file in Retained Lands Section of DLWM northern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: East Fork Chena River

ADL Number(s) 54485

DOTPF Material Site Number(s) M.S. 650-095-2

Location: Section 25,36 / Township 2N Range 7E Meridian Fairbanks

Quadrangle Big Delta D-5 (Sheet 11 of 23)

Size (acres) 58.838

Summary of Site Geology: Floodplain alluvium of North Fork Chena River. Six test holes drilled in December 1970 and two drilled in October 1978 encountered 0.2 to 4.5 ft of overburden (organic material, silt, sandy silt, and silty sand) overlying up to at least 18.7 ft of sandy gravel with cobbles. In four boreholes, decomposed granitic bedrock was encountered at depths of 13 to 19 ft. Granulometric analyses of three samples collected in 1978 indicated 35 to 77% gravel, 39 to 44% sand, and 1 to 16% fine-fraction (clay plus silt). Cobbles up to 10 inches in diameter comprise 5 to 10% of the gravel and greater than 10 inches about 5%.

Volume of Materials Proposed for Removal: 180,000 c.y. of gravel

Reported Materials Removed: 55,823 c.y. through 1985

Source(s) of Information: Birch (1979)

Unpublished information in ADL 54485 file in Retained Lands Section of DLWM northern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: North Fork Chena River

ADL Number(s) 54486

DOTPF Material Site Number(s) M.S. 650-096-2

Location: Section 13,18 Township 2N Range 7E, 8E Meridian Fairbanks

Quadrangle Big Delta D-5 (Sheet 11 of 23)
Circle A-5 (Sheet 12 of 23)

Size (acres) 77.107

Summary of Site Geology: Floodplain alluvium of North Fork Chena River. Ten test holes drilled in December 1970 and two in October 1978 indicate the organic and silt overburden is 1.5 to 7 ft thick. This layer is underlain by up to at least 18.5 ft of sandy gravel. About 20% of the gravel clasts measure 2 to 10 inches in diameter and about 5% are larger than 10 inches in diameter. Granulometric analyses of three 1970 gravels samples and one 1978 gravel sample indicate it varies from 62 to 69% gravel, 22 to 34% sand, and 4 to 11% fine-fraction (clay plus silt). Weathered granitic bedrock was encountered in two test holes at depths of 15

Volume of Materials Proposed for Removal: 140,000 c.y. of gravel and 21 ft.

Reported Materials Removed: 177,656 c.y. of gravel through 1985

Source(s) of Information: Birch (1979)

Unpublished information in ADL 54486 file in Retained Lands Section of DLWM northern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: Angel Creek

ADL Number(s) 54503

DOTPF Material Site Number(s) M.S. 650-097-2

Location: Section 1 Township 2N Range 7E Meridian Fairbanks

Quadrangle Circle A-5 (Sheet 12 of 23)

Size (acres) 51.702

Summary of Site Geology: Alluvium in terraces of North Fork Chena River and Angel Creek. In five test holes drilled and two test pits dug in December 1970, organic material and silt 1 to 4 ft thick covered up to 12.5 ft of sandy gravel. Weathered granitic bedrock was encountered at 15 ft in two boreholes drilled in the Angel Creek terrace. Granulometric analysis of one gravel sample from the North Fork Chena River terrace measured 66% gravel, 33% sand, and 1% fine-fraction (clay plus silt).

Volume of Materials Proposed for Removal: 110,000 c.y. of gravel

Reported Materials Removed: None reported through 1985

Source(s) of Information: Unpublished information in M.S. 650-097-2 file in Engineering Geology Section of DOTPF interior regional office

Unpublished information in ADL 54503 file in Retained Lands Section of DLWM northern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: 57-Mile

ADL Number(s) 54504, 400183

DOTPF Material Site Number(s) M.S. 650-099-2

Location: Section 21 Township 3N Range 8E Meridian Fairbanks

Quadrangle Circle A-5 (Sheet 12 of 23)

Size (acres) 4.0

Summary of Site Geology: Floodplain alluvium of North Fork Chena River. Eight test holes drilled in January 1967 and seven holes drilled in November 1970 encountered 0 to 6 ft of organic material and silt discontinuously covering up to at least 19 ft of sandy gravel. Granulometric analyses of four samples indicated 72 to 83% gravel, 14 to 26% sand, and 1 to 11% fine-fraction (clay plus silt). Cobbles of schist, granitic rock and quartz up to 10 inches in diameter compose about 8% of the gravel.

Volume of Materials Proposed for Removal: 182,000 c.y. of gravel

Reported Materials Removed: About 65,000 c.y. of gravel mined in 1964 and 1965. According to a 4-2-80 DOTPF memo, 89,800 c.y. remains to be removed of 180,000 c.y. requested, implying that 90,200 c.y. of gravel have been removed, including 600

Source(s) of Information: Birch (1979) c.y. in 1979.

Unpublished information in ADL 400183 file in Retained Lands Section of DLWM northern regional office

Unpublished information in M.S. 650-099-2 file in Engineering Geology Section of DOTPF interior regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: Crawford Creek

ADL Number(s) 34129

DOTPF Material Site Number(s) M.S. 650-103-2

Location: Section 13, 24 Township 1N Range 6E Meridian Fairbanks
Quadrangle Big Delta D-5 (Sheet 11 of 23)

Size (acres) 13.085

Summary of Site Geology: Floodplain alluvium of North Fork Chena River. Seventeen test holes drilled in October 1972, four test holes drilled in October 1978, and one boring made in November 1978 encountered 0 to 5 ft of organic-material and silt overburden covering up at least 22.5 ft of sandy gravel, gravelly sand and sand. Granulometric analyses of six samples collected in 1972 and two samples collected in 1978 documented 62 to 74% gravel, 23 to 34% sand, and 1 to 5% fine-fraction (clay plus silt).

Volume of Materials Proposed for Removal: 200,000 c.y. of gravel

Reported Materials Removed: 65,699 c.y. of gravel through 1985

Source(s) of Information: Saunders (1973a), Birch (1979)

Unpublished information in ADL 34129 file in Retained Lands Section of DLWM northern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: Fairbanks Sand and Gravel

ADL Number(s) 57960, 400008, 408782, 411978

DOTPF Material Site Number(s) None

Location: Section 24 Township 1S Range 1W Meridian Fairbanks

Quadrangle Fairbanks D-2 (Sheet 13 of 23)

Size (acres) 27.00

Summary of Site Geology: At least 100 ft thickness of sandy gravel alluvium
in low terrace of Tanana River

Volume of Materials Proposed for Removal: 2,800,000 c.y. of gravel

11,500 c.y. of silt overburden

Reported Materials Removed: 1,171,514 c.y. of gravel through 1986

3,960 c.y. of silt overburden through 1978

Source(s) of Information: Unpublished information in ADL 57960, ADL 400008,
ADL 408782, and ADL 411978 files in Retained Lands
Section of DLWM northern regional office

Comments: At proposed dredging depth of 100 ft, estimated total gravel volume
prior to excavation was 2,621,000 c.y.

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: Lakeview Trailer Court (Pit 1A)

ADL Number(s) 21547

DOTPF Material Site Number(s) M.S. 22-313-63, M.S. 62-4-084-2

Location: Section 25 Township 1S Range 1W Meridian Fairbanks

Quadrangle Fairbanks D-2 (Sheet 13 of 23)

Size (acres) 80.000

Summary of Site Geology: Alluvium of low terrace of Tanana River. A total of 41 test holes drilled in April and May 1963 encountered 2.5 to 11 ft of overburden (organic material, silt, and silty sand) covering up to at least 17.5 ft of sandy gravel, silty sandy gravel, and gravelly sand. Grain-size analyses of 12 samples indicated 42 to 99% gravel, 0.5 to 39% sand, and 2 to 19% fine-fraction (clay plus silt). Permafrost was discontinuous.

Volume of Materials Proposed for Removal: Unknown

Reported Materials Removed: 500,000 c.y. of gravel prior to 6-7-68;
416,500 c.y. of gravel from 1974 through 1987

Source(s) of Information: 40 c.y. of silty overburden
Price (1982)

Unpublished information in M.S. 22-313-63 and
M.S. 62-4-084-2 files in Engineering Geology Section
of DOTPF interior regional office

Unpublished information in ADL 21547 file in Retained
Lands Section of DLWM northern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: Tanana River #28

ADL Number(s) 409028, 410117, 410187, 411610

DOTPF Material Site Number(s) M.S. 37-1-045-2, M.S. 371-045-2

Location: Section 3 Township 4S Range 8W Meridian Fairbanks

Quadrangle Fairbanks C-5 (Sheet 14 of 23)

Size (acres) 30.0 ±

Summary of Site Geology: At least 37 ft of alluvium of low terrace of Tanana River has been proven by drilling. Among 18 test holes bored in October 1963, there was 1 to 10.5 ft of silty or silty sand overburden covering up to at least 32 ft of gravelly sand and sandy gravel. Sand lenses and layers up to at least 9 ft thick occur mainly in western third of source.

Volume of Materials Proposed for Removal: 225,000 c.y. of gravel

2,000 c.y. of silty overburden

Reported Materials Removed: 90,035 c.y. of gravel from 1978 through 1987

630 c.y. of silty overburden from 1983 through 1984

Source(s) of Information: Roach (1969)

Unpublished information in M.S. 371-045-2 file in Engineering Geology Section of DOTPF interior regional office

Unpublished information in ADL 409028, ADL 410117, ADL 410117, and ADL 411610 files in Retained Lands Section of DLWM northern regional office

Comments: Past excavations have removed most of the gravel and mostly sand is left.

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: Parks Highway #28

ADL Number(s) 33769

DOTPF Material Site Number(s) M.S. 37-1-130-2, M.S. 37-1-134-2

Location: Section 2 Township 4S Range 8W Meridian Fairbanks

Quadrangle Fairbanks C-5 (Sheet 14 of 23)

Size (acres) 17.917

Summary of Site Geology: Alluvium of low terrace of Tanana River. In 24 test holes drilled in October 1963, the organic-material and silt overburden ranged in thickness from 0.4 to 4.5 ft and averaged about 2 ft; it covered a widespread sand layer, which varied from 1 to 20.5 ft in thickness and covered up to at least 28 ft of sandy gravel and gravelly sand. In eight sediment samples tested for grain-size variation, gravel comprised 9 to 60%, sand 43 to 90%, and fine-fraction (clay plus silt) 1 to 5%.

Volume of Materials Proposed for Removal: 300,000 c.y. of gravel

Reported Materials Removed: 325 c.y. of gravel from 1973 through 1987

Source(s) of Information: Roach (1973), Birch (1976), Brazo (1985), Reger (1987)

Unpublished information in ADL 33769 file in Retained
Lands Section of DLWM northern regional office

Comments: Estimated 276,800 c.y. of gravel believed still available.

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: Lower Lignite Creek

ADL Number(s) 411364

DOTPF Material Site Number(s) None

Location: Section 4 Township 12S Range 7W Meridian Fairbanks

Quadrangle Healy D-4 (Sheet 15 of 23)

Size (acres) 160.00

Summary of Site Geology: Mine tailings in part of Usibelli coal lease (ADL 20633)
disturbed by coal-mining activities.

Volume of Materials Proposed for Removal: 20,000 c.y. of gravel

Reported Materials Removed: 200 c.y. of gravel in 1984

Source(s) of Information: Unpublished information in ADL 411364 file in Retained
Lands Section of DLWM northern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: Gold Run

ADL Number(s) 413648

DOTPF Material Site Number(s) None

Location: Section 3 Township 12S Range 6W Meridian Fairbanks

Quadrangle Healy D-4 (Sheet 15 of 23)

Size (acres) 1.2

Summary of Site Geology: Questionable high-level alluvium and pediment gravel.

Volume of Materials Proposed for Removal: 25,000 c.y. of gravel

Reported Materials Removed: Unknown

Source(s) of Information: Wahrhaftig (1970)

Unpublished information in ADL 413648 file in Retained
Lands Section of DLWM northern regional office

Comments: Within ADL 68139 (right-of-way) and ADL 72830 (Usibelli coal prospecting
permit).

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: Hartman Lake (Pit No. 16)

ADL Number(s) 409017

DOTPF Material Site Number(s) M.S. 62-4-027-2, M.S. 624-027-2

Location: Section 35 Township 5S Range 4E Meridian Fairbanks

Quadrangle Big Delta B-6 (Sheet 16 of 23)

Size (acres) 7.768

Summary of Site Geology: Alluvium of upper terrace of Tanana River. Sixteen test holes drilled in 1962 or early 1963 (February ?) encountered 2 to 7 ft (average 4 ft) of organic-material and silt overburden covering up to at least 9.5 ft of sandy gravel and gravelly sand. Granulometric analyses of seven samples indicated 52 to 65% gravel, 25 to 36% sand, and 7 to 19% fine-fraction (clay plus silt). Between 5 and 10% of the clasts in the gravel are 2 to 5 inches in diameter.

Volume of Materials Proposed for Removal: 123,000 c.y. of gravel

Reported Materials Removed: Although about 2 acres were excavated prior to 9-28-83, no figures are given for 1973 through 1985

Source(s) of Information: Unpublished information in M.S. 62-4-027-2 file in Engineering Geology Section of DOTPF interior regional office

Unpublished (1976) photointerpretive map of the surficial geology of the Big Delta B-6 Quadrangle by the author

Unpublished information in ADL 409017 file in Retained Lands Section of DLWM northern regional office

APPENDIX B

Summary of Geology and Mining History of
Active Rock Sources on Mental Health Lands in Alaska

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Southeastern

Informal Site Name: Petersburg Airport

ADL Number(s) 21539, 38088, 46476, 54799, 56362, 60484, 60631, 100095,
102865, 103523, 104839

DOTPF Material Site Number(s) M.S. 937-018-3

Location: Section 35 Township 58S Range 79E Meridian Copper River

Quadrangle Petersburg D-3 (Sheet 17 of 23)

Size (acres) 40.0 (only 10.0 acres is mental health land)

Summary of Site Geology: Organic material, blue clay-silt, and till at least 8 to 31 ft thick was encountered in six test holes drilled in May 1971, 31 test holes bored in January and April 1973, and five boreholes drilled in March 1981. Slate and metagraywacke bedrock was encountered in 16 test holes at depths of 2 to 23.5 ft.

Volume of Materials Proposed for Removal: 1,344,000 c.y. of shot rock

Reported Materials Removed: 184,281 c.y. of shot rock through 1987

Source(s) of Information: Brown and Lehfeldt (1981)

Unpublished information in files for Projects S-093(10) and S-093(15) in Materials and Design and Construction Sections of DOTPF southeastern regional office

Unpublished information in ADL 54799, ADL 60484, ADL 100095, ADL 103523, and ADL 104839 in DLWM southeastern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Southeastern

Informal Site Name: Falls Creek No. 1 and Extension

ADL Number(s) 32211, 49173, 52970, 62879, 103924, 104889

DOTPF Material Site Number(s) M.S. 937-003-3

Location: Section 11 Township 60S Range 79E Meridian Copper River

Quadrangle Petersburg C-3 (Sheet 18 of 23)

Size (acres) 8.33

Summary of Site Geology: Dominant bedrock lithology is weakly metamorphosed graywacke (metagraywacke). It underlay 10.5 to 19 ft of peat and gray silty and gravelly sand according to seven test holes drilled in May 1965.

Volume of Materials Proposed for Removal: 23,500 c.y. of shot rock

Reported Materials Removed: 6,030 c.y. of shot rock through 1984

Source(s) of Information: Munson (1965, 1966a)

Unpublished information in ADL 103924 and ADL 104889
Files in DLWM southeastern regional office

Comments: Opened as a material source in 1963 when it is believed 13,000 to 15,000 c.y. of shot rock were removed.

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Southeastern

Informal Site Name: Upper Falls Creek

ADL Number(s) 53158, 63257, 100844, 102927, 103462, 104324, 104797,
104884

DOTPF Material Site Number(s) None

Location: Section 11 Township 60S Range 79E Meridian Copper River

Quadrangle Petersburg C-3 (Sheet 18 of 23)

Size (acres) 10.0

Summary of Site Geology: Metagraywacke bedrock with minor, 4-inch-thick interbeds
of slate.

Volume of Materials Proposed for Removal: 57,000 c.y. of shot rock

Reported Materials Removed: 43,138 c.y. of shot rock through 1987

Source(s) of Information: Unpublished information in ADL 100844, ADL 102927,
ADL 103462, ADL 104324, ADL 104797, and ADL 104884
files in DLWM southeastern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Southeastern

Informal Site Name: Scow Bay Hill

ADL Number(s) 45045

DOTPF Material Site Number(s) M.S. 937-016-3

Location: Section 3 Township 59S Range 79E Meridian Copper River

Quadrangle Petersburg D-3 (Sheet 17 of 23)

Size (acres) 6.99

Summary of Site Geology: Granitic bedrock of monzodiorite to tonalite composition.

Volume of Materials Proposed for Removal: 200,000 c.y. of shot rock

Reported Materials Removed: Unknown

Source(s) of Information: Brew and others (1984)

Unpublished information in ADL 45045 file in
DLWM southeastern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Southeastern

Informal Site Name: 7-Mile

ADL Number(s) 45043

DOTPF Material Site Number(s) M.S. 937-017-3

Location: Section 26 Township 59S Range 79E Meridian Copper River

Quadrangle Petersburg C-3 (Sheet 18 of 23)

Size (acres) 7.224

Summary of Site Geology: Schist and hornfels bedrock

Volume of Materials Proposed for Removal: 75,000 c.y. of shot rock

Reported Materials Removed: Unknown

Source(s) of Information: Brew and others (1984)

Unpublished information in ADL 45043 file in
DLWM southeastern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Southeastern

Informal Site Name: Wrangell East

ADL Number(s) 55222, 57292, 100595, 103279, 103853, 104275

DOTPF Material Site Number(s) M.S. 943-005-3

Location: Section 19 Township 62S Range 84E Meridian Copper River

Quadrangle Petersburg B-2 (Sheet 19 of 23)

Size (acres) 4.57

Summary of Site Geology: A continuous cover of organic material and organic silt (muck) varied from 1.5 to 4.5 ft thick in six test holes drilled in August 1966. This organic deposit was locally underlain by at least 5 ft of clayey silty sand of marine or glacial origin. Bedrock is a fine- to medium-grained, hard, durable, massive quartz diorite in contact with massive, durable metagraywacke and friable phyllite-slate.

Volume of Materials Proposed for Removal: 49,500 c.y. of shot rock

Reported Materials Removed: Although only 2,285 c.y. of shot rock were reported removed through 1984, on 6-15-83 it was estimated that 35,000 to 40,000 c.y. of granitic rock had been removed.

Source(s) of Information: Munson (1966a)

Unpublished information in ADL 100595, ADL 103279, ADL 103853, ADL 104275 files in DLWM southeastern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Southeastern

Informal Site Name: Rainbow Falls

ADL Number(s) 100079, 100856, 103185, 103484, 104343, 104,931

DOTPF Material Site Number(s) None

Location: Section 7 Township 63S Range 84E Meridian Copper River

Quadrangle Petersburg B-2 (Sheet 19 of 23)

Size (acres) 7.15

Summary of Site Geology: Bedded fine to coarse slate grading to metagraywacke.
Beds are 5 to 10 ft thick.

Volume of Materials Proposed for Removal: 62,500 c.y. of shot rock

Reported Materials Removed: 18,350 c.y. of shot rock through 1987

Source(s) of Information: Unpublished information in ADL 100079, ADL 100856,
ADL 103185, ADL 103484, ADL 104343, and ADL 104931
files in DLWM southeastern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Southeastern

Informal Site Name: $3\frac{1}{4}$ -Mile

ADL Number(s) 52517, 53872, 55222, 57234, 74179, 100997, 104837

DOTPF Material Site Number(s) M.S. 943-006

Location: Section 6 Township 63S Range 84E Meridian Copper River

Quadrangle Petersburg B-2 (Sheet 19 of 23)

Size (acres) 4.0

Summary of Site Geology: Graywacke and slate bedrock

Volume of Materials Proposed for Removal: 85,700 c.y. of shot rock

Reported Materials Removed: 31,020 c.y. of shot rock through 1988

Source(s) of Information: Unpublished information in ADL 74179, ADL 100997,
and ADL 104837 files in DLWM southeastern regional
office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Southeastern

Informal Site Name: 6.5-Mile

ADL Number(s) 52814, 56839, 75925, 100999, 102387, 103310, 103840,
104331, 104557, 104757

DOTPF Material Site Number(s) None

Location: Section 20 Township 63S Range 84E Meridian Copper River

Quadrangle Petersburg B-1 (Sheet 20 of 23)
Petersburg B-2 (Sheet 19 of 23)

Size (acres) 4.06

Summary of Site Geology: Metagraywacke and interbedded slate bedrock

Volume of Materials Proposed for Removal: 220,000 c.y. of shot rock

Reported Materials Removed: 151,707 c.y. of shot rock through 1987

Source(s) of Information: Unpublished information in ADL 100999, ADL 102387,
ADL 103310, ADL 103840, ADL 104331, and ADL 104757
files in DLWM southeastern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Southeastern

Informal Site Name: Lower Pat Creek

ADL Number(s) 104875

DOTPF Material Site Number(s) None

Location: Section 5 Township 64S Range 84E Meridian Copper River

Quadrangle Petersburg B-2 (Sheet 19 of 23)

Size (acres) 2.81

Summary of Site Geology: Schist and hornfelsed metasediments near contact with
granitic intrusive of tonalite-granodiorite-quartz
monzodiorite-quartz diorite composition.

Volume of Materials Proposed for Removal: 15,000 c.y. of shot rock

Reported Materials Removed: Unknown

Source(s) of Information: Brew and others (1984)

Unpublished information in ADL 104875 file in DLWM
southeastern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Southeastern

Informal Site Name: Little Salmon River

ADL Number(s) SEJ84-101

DOTPF Material Site Number(s) None

Location: Section 1 Township 29S Range 55E Meridian Copper River

Quadrangle Skagway B-3 (Sheet 21 of 23)

Size (acres) 40.0 ±

Summary of Site Geology: Hornfelsed slate bedrock

Volume of Materials Proposed for Removal: 25 c.y. of shot rock

Reported Materials Removed: Unknown

Source(s) of Information: MacKevett and others (1974)

Unpublished information in SEJ84-101 file in DLWM
southeastern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Southeastern

Informal Site Name: Little Salmon River Road

ADL Number(s) SEJ87-183

DOTPF Material Site Number(s) None

Location: Section 2 Township 29S Range 55E Meridian Copper River

Quadrangle Skagway B-3 (Sheet 21 of 23)

Size (acres) 2.0 (approximately)

Summary of Site Geology: Hornfelsed slate bedrock

Volume of Materials Proposed for Removal: 10 c.y. of shot rock

Reported Materials Removed: Unknown

Source(s) of Information: MacKevett and others (1974)

Unpublished information in SEJ87-183 file in DLWM
southeastern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: Rock Creek

ADL Number(s) 34131

DOTPF Material Site Number(s) M.S. 650-062-2

Location: Section 17, 20 Township 1N Range 7E Meridian Fairbanks

Quadrangle Big Delta D-5 (Sheet 11 of 23)

Size (acres) 33.216

Summary of Site Geology: Light-toned, massive, hard granitic bedrock that is in contact with schist in the extreme eastern side of the rock ridge. Joint spacing is 2 to 10 ft.

Volume of Materials Proposed for Removal: 200,000 c.y. of riprap rock

Reported Materials Removed: 229,288 c.y. of riprap rock through 1985

Source(s) of Information: Unpublished information in M.S. 650-062-2 file in Engineering Geology Section of DOTPF interior regional office

Unpublished information in ADL 34131 file in Retained Lands Section of DLWM northern regional office

Comments: It is estimated that at least 302,300 c.y. of riprap rock remains.

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: Spinach Creek

ADL Number(s) 400611

DOTPF Material Site Number(s) M.S. 22-316-63, M.S. 651-006-2

Location: Section 17 Township 1N Range 3W Meridian Fairbanks

Quadrangle Fairbanks D-3 (Sheet 22 of 23)

Size (acres) 10.443

Summary of Site Geology: In 12 test holes drilled in May 1963, the overburden of organic material, silt (loess), and silty gravel colluvium varied from 0.3 to 3.5 ft in thickness. Bedrock is mica and quartz-mica schist.

Volume of Materials Proposed for Removal: 200,000 c.y. of shot rock

Reported Materials Removed: 500 c.y. of shot rock through 1987

Source(s) of Information: Unpublished information in M.S. 651-006-2 file in Engineering Geology Section of DOTPF interior regional office

Unpublished information in ADL 400611 file in Retained Lands Section of DLWM northern regional office

Comments: Prior to mining this source, it was estimated that a minimum of 230,000 c.y. of rock was present.

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: Parks Highway #10

ADL Number(s) 408772

DOTPF Material Site Number(s) M.S. 371-024-2

Location: Section 8, 17 Township 2S Range 4W Meridian Fairbanks

Quadrangle Fairbanks C-3 (Sheet 23 of 23)
Fairbanks D-3 (Sheet 22 of 23)

Size (acres) 5.04

Summary of Site Geology: In eight test holes drilled in September 1972 in the undisturbed part of this quarry, the overburden of organic material and silt (loess) was 2 to 5.5 ft thick. Dominant bedrock is mica schist, but talc schist was encountered in the eastern part of the quarry. The talc schist is suitable only for unclassified embankment fill.

Volume of Materials Proposed for Removal: 170,000 c.y. of shot rock

Reported Materials Removed: 160,052 c.y. from 1973 through 1987

Source(s) of Information: Saunders (1973b), Livingston (1986)

Unpublished information in ADL 408772 file in Retained Lands Section of DLWM northern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: Parks Monument

ADL Number(s) 59933, 409567, 411619, 411632, 413091

DOTPF Material Site Number(s) M.S. 37-1-152-2, M.S. 371-146-2, M.S. 371-152-2

Location: Section 27,28 Township 1S Range 3W Meridian Fairbanks
Quadrangle Fairbanks D-3 (Sheet 22 of 23)

Size (acres) 9.183

Summary of Site Geology: In 11 test holes drilled in August 1972, the overburden of organic material, silt (loess), and gravelly silt colluvium was 1.5 to 2.5 ft thick. Bedrock is quartz schist, mica schist, and quartzite.

Volume of Materials Proposed for Removal: 343,000 c.y. of shot rock

Reported Materials Removed: 293,728 c.y. of shot rock through 1987

Source(s) of Information: Saunders (1973b), Brazo (1985), and Livingston (1986)

Unpublished information in M.S. 371-152-2 file in Engineering Geology Section of DOTPF interior regional office

Unpublished information in ADL 59933, ADL 409567, ADL 411619, ADL 411632, and ADL 413091 files in Retained Lands Section of DLWM northern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: Ester Creek Alternate

ADL Number(s) 59932

DOTPF Material Site Number(s) M.S. 37-1-018-2 (?) , M.S. 37-1-147-2

Location: Section 32 Township 1S Range 3W Meridian Fairbanks

Quadrangle Fairbanks D-3 (Sheet 22 of 23)

Size (acres) 7.804

Summary of Site Geology: In five test holes drilled in the undisturbed part of this quarry in August 1972, the overburden of organic material and silt (loess) was 0.5 to 3 ft thick; it covered a discontinuous layer of silt with angular rock fragments (colluvium) up to at least 5.5 ft thick. The colluvial layer overlies the mica-schist bedrock.

Volume of Materials Proposed for Removal: 50,000 c.y. of shot rock

Reported Materials Removed: 900 c.y. of shot rock through 1987

Source(s) of Information: Saunders (1973b), Livingston (1986)

Unpublished information in ADL 59932 file in Retained
Lands Section of DLWM northern regional office

SUMMARY OF GEOLOGY AND MINING HISTORY OF ACTIVE MATERIAL SITES ON MENTAL HEALTH LANDS

Region: Northern

Informal Site Name: North Nenana

ADL Number(s) 413063

DOTPF Material Site Number(s) None

Location: Section 11 Township 4S Range 8W Meridian Fairbanks

Quadrangle Fairbanks C-5 (Sheet 14 of 23)

Size (acres) 20.000

Summary of Site Geology: Retransported loess, windblown silt (loess), and colluvium cover the quartz schist, garnet-mica schist, and chlorite schist bedrock

Volume of Materials Proposed for Removal: 60,000 c.y. of shot rock

Reported Materials Removed: Unknown

Source(s) of Information: Hines (1987), Reger (1987)

Unpublished information in ADL 413063 file in Retained Lands Section of DLWM northern regional office