# STATEWIDE MATERIAL SITE INVENTORY

## MATERIAL SITE INSPECTION REPORT

**Federal Project No. STP-000S(530)**
**AKSAS Project No. 76174**

**DALTON HIGHWAY**

# MS 65-9-102-2

November 2, 2009

CONTENTS PAGE

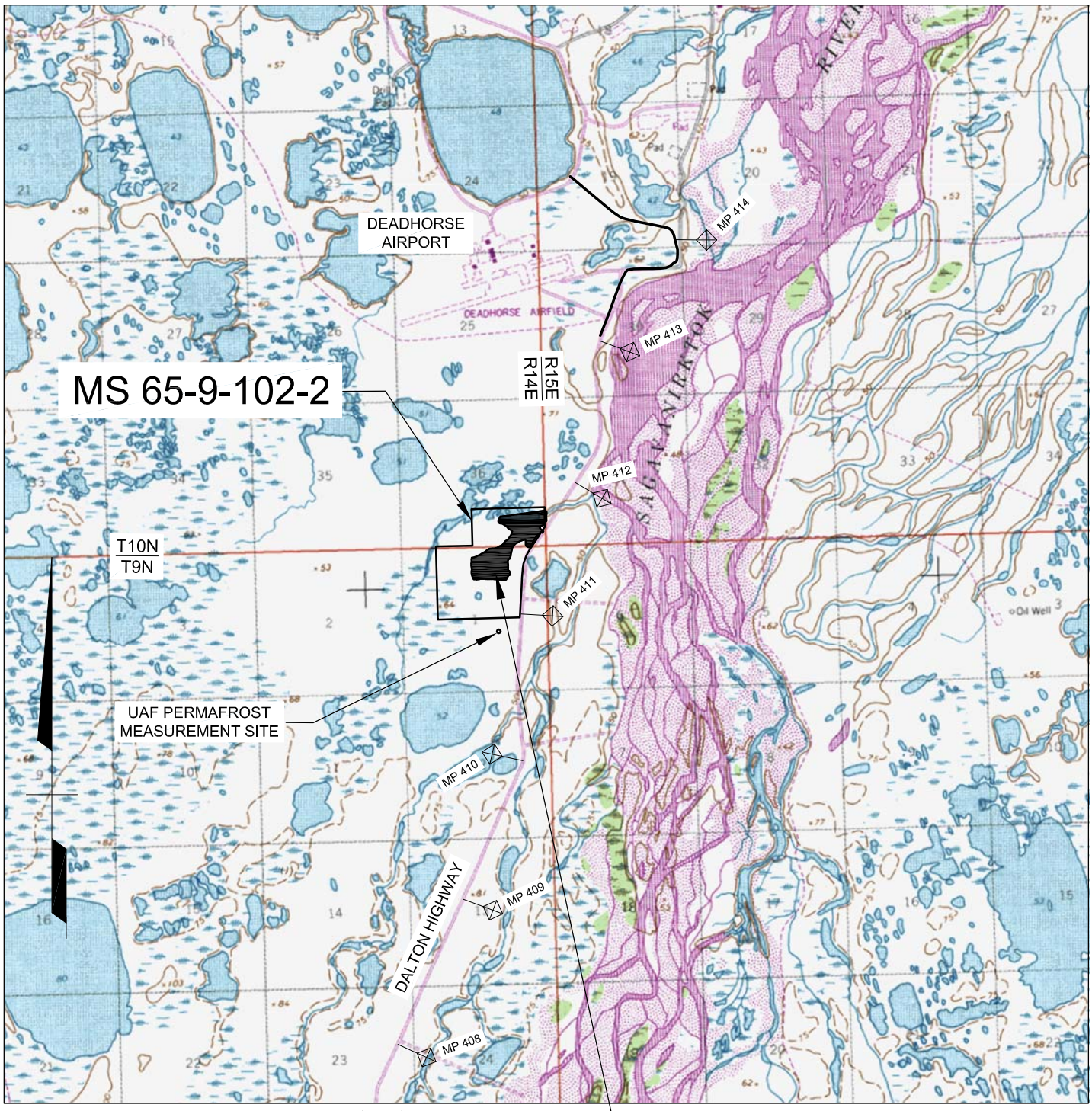


# CATEGORY:

## ACTIVE –OPEN

According to information found in the DOT&PF EDMS system in January 2009 and DNR case file abstracts, this site lies on State of Alaska lands managed by DNR. The site was not developed during Dalton Highway or Alyeska Pipeline construction. DOT&PF is operating under a negotiated material sales contract (ADL 416891) which expires April 22, 2015. The site has had multiple users and material has reportedly been utilized for the Deadhorse Airport and for oilfield pads. The DNR material sale contract for DOT&PF states: “DNR will approve extraction of material from this site only in Section 1 Township 9, Range 14E UM; Section 36, Township 10N, R14E, UM will be used as a staging area and for access to the mined area.” The reclamation plan states the site “will be reclaimed for fish use”. The University of Alaska Fairbanks had a permafrost measurement site approximately 500 feet south of the site limits on the west side of the highway. There is an existing access road connecting the site to the Dalton Highway. The DOT&PF site limits abut the Dalton Highway right-of-way. The site appears to contain significant quantities of sand and gravel and should be retained by DOT&PF for future use.

# LOCATION MAP




U.S.G.S. QUADRANGLE: BEECHEY POINT (A–3)

GPS COORDINATES FROM GOOGLE EARTH

UTM (WGS84–METERS)
ZONE 6: N7,785,370 E444,511
AK STATE PLANE (NAD83–US SURVEY FT)
ZONE 4: N5,913,549 E1,831,049

# ACTIVE - OPEN

0 0.5 1 2 3

GRAPHIC SCALE IN MILES

BASE MAP CREATED WITH TERRAIN NAVIGATOR PRO

Prepared By:
R&M CONSULTANTS, INC.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

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| SCALE | DESIGNED | DRAWN | PAGE |
|---|---|---|---|
| AS SHOWN | P.K.H. | A.T.B. | 2 |
| | CHECKED C.H.R. | DATE MAY 2009 | |

Plotted 1/26/2010 3:27 PM by Aaron Banks Z:\project\1443.03\65_Dalton_Highway\MS 65-9-102-2\acad\geo\acad\MS_Topo_Map_65-9-102-2.dwg

# SITE MAP


BASE MAP IS AUGUST 15, 2006 SATELLITE IMAGERY.
THIS IS A PLANNING DOCUMENT ONLY. THE MATERIAL SITE BOUNDARIES SHOWN ON THIS DRAWING ARE APPROXIMATE. OWNERSHIP OF THE LANDS ADJACENT TO THIS SITE ARE UNKNOWN. THE ACCESS ROW SHOULD BE VERIFIED.

# ACTIVE - OPEN

0 300 600 1200 1800

GRAPHIC SCALE IN FEET

BASE MAP FROM GOOGLE EARTH PRO 6/1/09

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| AS SHOWN | P.K.H. | P.K.H. | 3A |
| | CHECKED C.H.R. | DATE JUNE 2009 | |

Plotted 1/26/2010 3:30 PM by Aaron Banks
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# SITE MAP


BASE MAP IS AUGUST 15, 2006 SATELLITE IMAGERY.
THIS IS A PLANNING DOCUMENT ONLY. THE MATERIAL SITE BOUNDARIES SHOWN ON THIS DRAWING ARE APPROXIMATE. OWNERSHIP OF THE LANDS ADJACENT TO THIS SITE ARE UNKNOWN. THE ACCESS ROW SHOULD BE VERIFIED.

# ACTIVE - OPEN

0 150 300 600 900

GRAPHIC SCALE IN FEET

BASE MAP FROM GOOGLE EARTH PRO 6/1/09

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| SCALE | DESIGNED | DRAWN | PAGE |
|---|---|---|---|
| AS SHOWN | P.K.H. | P.K.H. | 3B |
| | CHECKED C.H.R. | DATE JUNE 2009 | |

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Plotted 1/26/2010 3:35 PM by Aaron Banks

**STATEWIDE MATERIAL SITE INVENTORY**
**DRAFT MATERIAL SITE INSPECTION FORM**

**THIS REPORT IS BASED ON A REVIEW OF EXISTING DATA AND BRIEF FIELD INSPECTIONS. THUS THE DATA CONTAINED HEREIN SHOULD BE CONSIDERED PRELIMINARY AND USED FOR PLANNING PURPOSES ONLY. USERS OF THIS DATA SHOULD VERIFY THE INFORMATION PRIOR TO USING IT FOR DESIGN OR CONSTRUCTION PURPOSES.**

**IF OTHER IS SELECTED FOR A SECTION, EXPLAIN IT IN SECTION 44. NOTES.**
**IF AN ANSWER IS UNKNOWN SELECT "UNKNOWN" OR LEAVE BLANK**

1. **MS_ID** **65-9-102-2**
   Enter the full material site number e.g.. 65-9-045-2
2. **DATE_INSPECT** 7/9/2009 & 7/10/2009
   Date of field inspection
3. **FLD INSPEC_ORG** AARON BANKS / R&M CONSULTANTS
   Name of inspector / Organization or Company
4. **REGION** NORTHERN
5. **LOCATION** DALTON HIGHWAY
   Name of Highway
   Enter Name of Facility or Secondary Route Name (i.e.Kotzebue Airport, Nash Road, etc.)
6. **MILEPOST** 411.5
   List the closest main highway milepost
7. **NAME**
   Enter commonly used name (s), e.g. Hess pit, Gobblers Knob, Midway. List all that apply separated by commas.
8. **MAINT_DIST/STAT** District INTERIOR/DALTON Station DEADHORSE
   Highway Maintenance District and Station, for locations not on highways select other.
9. **QUAD** BEECHEY POINT A-3
   U.S.G.S. Quad. Map
10. **TOWNSHIP /RANGE** T#S R#E T9N R14E Meridian UM
    Section 36 & T10N R14E Section 1
11. **COOR_UTM**

| | |
|---|---|
| ZONE | 6 |
| NORTHING | 7,785,370 |
| EASTING | 444,511 |

UTM WGS84 - Meters

12. **COOR_STATE_PLANE**

| | |
|---|---|
| ZONE | 4 |
| NORTHING | 5,913,549 |
| EASTING | 1,831,049 |

Alaska State Plane NAD83 - Survey Feet

13. **BOROUGH** NORTH SLOPE BOROUGH **TAX ID NO.**
14. **DNR_LAND_USE_PLAN** DALTON HIGHWAY MASTER PLAN
15. **CATEGORY** (To be filled in the office)
15a. **CLASSIFICATION** ACTIVE
15b. **STATUS** OPEN

16. **POTENTIAL_STATUS** SIGNIFICANT

Estimated quantity of material in the site at the time of inspection.

| | |
|---|---|
| NONE | There appeared to be no useable material in the site. |
| LIMITED | There appeared to be less than 25,000 c.y. available within the developed site. |
| SIGNIFICANT | There appeared to be greater than 25,000 c.y. available within the developed site. |
| EXPANDABLE | There was limited material within the developed site, but there appeared to be significant material outside existing site limits. |
| UNDEVELOPED | The pit has not been mined (used only for new sites). |
| CLOSED | There may be useable material left in the pit but it is not available. |
| UNKNOWN | |
| OTHER | The site does not fit any of the categories above. Explain in Section 44, Notes. |

17. **PRESENT_USERS**

17a. **PRESENT_USER_1** DOT&PF MAINTENANCE

17b. **PRESENT_USER_2** DOT&PF CONSTRUCTION

17c. **PRESENT_USER_3** OTHER USER

18. **PERMITTED _ACREAGE** 265

Area within site permit or R.O.W. boundaries, from permit application or property plat.

19. **DEVELOPED_ACREAGE** 65

Area within an existing pit, excluding spoil berms lying outside the pit, access roads etc. Explain below.

There was approximately 65 acres developed in the site with approx. 34 acres in Section 1.

20. **ACREAGE_COMP_METHOD** FROM MAP/PHOTO

Method used to determine developed acreage.

21. **EST_QUAN_AVAIL** 2,600,000 ROUGH ESTIMATE

Estimated quantity available (b.c.y.), may be based on acreage computed above plus expansion area. Explain computation assumptions and calculations below.

The site covered approx. 187 acres in Section 1 (area permitted to mine) with about 34 acres having been developed. There is an average 8 feet of overburden, composed of silt and organics in the undisturbed area and spoil in the disturbed area. Assuming that approx. two thirds of the site will be useable (~100 acres) due to permit limitations and overburden stockpiling plus a 30-foot working depth, there is approx. 2,600,000 c.y. (100 acres x 22 feet x 1,000 c.y. per acre-foot) in the undisturbed area. By moving the waste berms into the existing excavations, about one-half of the developed area may be mined and approx. an additional 374,000 c. y. (17 acres x 22 feet x 1,000 c.y. per acre-foot) would become available in the disturbed area. Additionally, it may be possible to deepen the pit by bailing if the permafrost thaws. It should be noted that there are other users in this site and the estimated quantity available is for all users.

22. **ACCESS_TYPE** EXISTING ROAD / OPEN

| | |
|---|---|
| NONE | No access road has been built. |
| EXISTING ROAD / OPEN | Drivable. May have gate. |
| EXISTING ROAD / REVEG | Can be reopened with little effort. |
| EXISTING ROAD / CLOSED W/BERMS | Can be reopened with little effort. |
| EXISTING ACCESS / REMOVED | Can be reopened with much effort. |
| SNOW ROAD | Can only be accessed during winter. |
| ICE ROAD | Requires crossing river or lake ice in the winter. |
| BARGE | Material can only be moved by barge. |
| OTHER | The site does not fit any of the categories above. Describe in Section 44, Notes. |

23. **ACCESS_LENGTH** 100
Approx. length from edge of pit to highway/secondary route (ft.)

24. **VEGETATION**

Arctic tundra and grasses.

25. **TYPE_1** BORROW PIT 26. **TYPE_2** BAILING

Dominant type Subordinate type
General Types of Materials Available Enter data in Type_2 only if two types of material site available

| | |
|---|---|
| QUARRY | Bedrock sources requiring blasting |
| BORROW PIT | Soils or soft bedrock (rippable), above water table |
| BAILING | Requires production below the water table |
| RIVER BAR | Sand/gravel bars in active channels |

27. **OB_CLASS_1** >6 FT. 28. **OB_CLASS_2** >6 FT.
New Site or expansion Area Existing Pit (Spoil)
A site may have both. Data should be based on actual subsurface exploration, otherwise unknown.
Estimated average depth over the area.

| | | |
|---|---|---|
| NONE | 3 TO 6 FT. | UNKNOWN |
| <3 FT. | >6 FT. | OTHER |

29. **OB_TYPE_1** SILT 30. **OB_TYPE_2** SPOIL
New Site or expansion Area Existing Pit (Spoil)
A site may have both.

| | | | |
|---|---|---|---|
| SILT | PEAT | SOLID WASTE | OTHER |
| COLLUVIUM | SPOIL | UNKNOWN | |

**STATEWIDE MATERIAL SITE INVENTORY**
**DRAFT MATERIAL SITE INSPECTION FORM**

31. **MAT_TYPE_1** FLUVIAL — Dominant type

32. **MAT_TYPE_2** — Subordinate type

| | |
|---|---|
| BEDROCK | Bedrock sources requiring blasting |
| WEATHER. BEDROCK | Bedrock sources requiring ripping |
| FLUVIAL | Water deposited sand and gravel, includes glaciofluvial |
| GLACIAL | Glacial till |
| COLLUVIAL | Talus slopes, etc. |
| EOLIAN | Sand Dunes, etc. |
| SILT | Silt deposits, loess, fluvial, etc. |

33. **PERMAFROST_1** DETECTED IN MOST TEST HOLES OR PITS
New Site or Expansion Area

34. **PERMAFROST_2** DATA OUTDATED
Existing Site

DETECTED IN MOST TEST HOLES
DETECTED IN SOME TEST HOLES
DETECTED IN IMMEDIATE VICINITY
DETECTED IN NO TEST HOLES
DATA OUTDATED
UNKNOWN
OTHER

35. **GROUNDWATER**

The water table is perched on the underlying permafrost during the summer. The exposed water table was noted to be approximately 25 feet below the natural ground surface during the July 2009 inspection. Water level marking stakes were also noted and indicate a water table fluctuation of at least six feet.

36. **LITHOLOGY_1** FLUVIAL — Dominant type

37. **LITHOLOGY_2** _____ — Subordinate type

| | |
|---|---|
| IGNEOUS ROCK | Undifferentiated Igneous Rocks |
| GRANITIC | Granite/Monzonite/Granodiorite |
| DIORITE/GABBRO | Diorite/Gabbro |
| BASALT | Dark colored fine-grained Igneous Rocks |
| GREENSTONE | Altered Volcanic Rocks w/green tint |
| METAMORPHIC ROCK | Undifferentiated Metamorphic Rocks |
| SCHIST/PHYLLITE | Includes rocks ranging from slate to schist |
| GNEISS | Includes hard schistose rocks |
| MARBLE | |
| CATACLASTIC | Incl. Valdez Formation Rocks, Kenai Penn. |
| MÉLANGE | Incl. McHugh Formation Rocks, Kenai Penn. |
| SEDIMENTARY ROCK | Undifferentiated Sedimentary Rocks |
| CONGLOMERATE | |
| SANDSTONE | Includes greywacke, etc. |
| SHALE/MUDSTONE | |
| LIMESTONE | |
| FLUVIAL | River and stream deposits (floodplain), includes outwash. |
| ALLUVIAL | Alluvial / Debris Fan deposits |
| GLACIOFLUVIAL | Eskers, kames, etc. |
| GLACIAL | Till |
| COLLUVIAL | Talus, etc. |
| EOLIAN | Sand Dunes, etc. |
| SILT | Loess, fluvial silts, etc. |
| OTHER | Explain in Section 44. |

38. **MATERIAL_CLASSIFICATION**

ASTM Classification, generally they should range from coarse to fine.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 38a. | GW-GM | 38c. | SM | 38e. | | 38g. | |
| 38b. | GP-GM | 38d. | | 38f. | | 38h. | |

## 39. COBBLES_AND_BOULDERS

Test Boring Callout / ASTM Classification, either a. or b. and c. (Can use ranges i.e. 0 to 20)

| | | | |
|---|---|---|---|
| 39a. | CONTAINS | | |
| 39b. | Est. % by VOL. | 5 | (Est. From Visual Observations) |
| 39c. | MAX. SIZE (in.) | 10 | (Observed Size) |

## 40. AGG_TEST_RESULTS

Year of test or report- Test result / Year of test or report- Test Results

| | |
|---|---|
| 40a. SG APP COARSE | |
| 40b. SG APP FINE | |
| 40c. ABSORPTION CRSE | |
| 40d. ABSORPTION FINE | |
| 40e. NORDIC ABRASION | |
| 40f. L.A. ABRASION | 2002- 17, 18 |
| 40g. DEGRADATION (T-13) | 2002- 81, 84, 84, 88 |
| 40h. NASO4 LOSS COARSE | 2002- 1.6 |
| 40i. NASO4 LOSS FINE | 2002- 2.2 |

## 41. POTENTIAL_USABILITY TYPES A AND B MATERIAL AVAILABLE

Best known potential use of the material, based on records, exploration and laboratory data.

| | |
|---|---|
| CONCRETE AGGREGATE PRODUCED | The site has produced concrete aggregate |
| PAVING AGGREGATE PRODUCED | The site has produced paving aggregate |
| CRUSHED PRODUCTS PRODUCED | Base, Surface Coarse, Subbase, etc. has been produced. |
| TYPE A AND B MATERIAL AVAILABLE | 0 to 10 percent passing 200 |
| TYPE C AVAILABLE | Compactable material |
| TYPE C NOT AVAILABLE | Uncompactable material (Lower Kuskokwim and Yukon River, etc.) |
| UNKNOWN | |
| OTHER | Explain in Section 44. |

## 42. SPECIAL_PROBLEMS

Special problems encountered or anticipated with use of the material, based on records, exploration and laboratory data.

| | |
|---|---|
| ORGANIC CONTENT | The material is very difficult to compact. |
| HIGHLY WEATHERED GRAVEL | The gravel is highly weathered and may break down when handled. |
| BREAKS DOWN UNDER USE | Material breaks down on grade. |
| SENSITIVE TO WATER CONTENT | Material is sensitive to water content, i.e.. some glacial tills, soft bedrock. |
| VARIABLE MATERIAL | Deposit contains mixture of suitable and unsuitable material. |
| POSSIBLE CONTAMINATION | Site may be contaminated by petroleum products or hazardous materials. |
| CONTAINS ASBESTOS | Site contains naturally occurring asbestos. |
| POTENTIAL ASBESTOS | Site in area where naturally occurring asbestos is mapped. |
| ACID ROCK DRAINAGE | Site contains rock susceptible to producing acid rock drainage. |
| UNKNOWN | |
| OTHER | Explain in Section 44, Notes. |

43. **RIPRAP** NOT POSSIBLE

Class II or larger. Does not include production for erosion control riprap for ditches or culverts.

| | |
|---|---|
| PREVIOUS PRODUCTION | There is a record of production. |
| POSSIBLE FURTHER INVESTIGATION NEEDED | The site is a bedrock quarry containing hard rock |
| NOT POSSIBLE | The site has soft rock or soil. |
| UNKNOWN | |
| OTHER | Explain in Section 44, Notes. |

44. **NOTES**

Note number of item being discussed.

17c: Alaska Interstate Construction had a contract to remove gravel from the site (ADL 418125) that expired 11-20-2008. DNR has left the case file open with the comment "Due to inability to extract gravel from MS 102 DNR has not closed this file but will see if AIC would like to extend their contract."

17c; Peak Oilfield Service Company has a complete application with DNR (ADL 417931) that reportedly expired on 12-01-2008 and a closed contract (ADL 417945) that expired on 12-01-2008.

17c: Jack Barber has a material contract (ADL 417866) issued in 2006 that may still be active.

17c. Brice, Inc. had a material contract (ADL 417861) issued in 2006 that expired 4-9-2009.