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**Appendix G**  
**Gravel Pits List and**  
**Sample Pit Management Plan**

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## APPENDIX G

### Gravel Pits List and Sample Pit Management Plan

The existing gravel pits listed below would be managed under all the alternatives. One new pit (Lake Alf) would be managed under the action alternatives. Map 10 located at the end of Appendix G displays the pits listed in this appendix. The potential use column is based on the action alternatives' transportation system as well as ongoing Forest Service, public and other agency use. The potential use is based upon the projected size of the pit in the next 10 years (the maximum life of this Project). The potential use is anticipated to be about 4 percent of the estimated total size of the pits.

Hauling cost is one of the largest considerations in road management. For this reason, it is more efficient to have pits spread throughout an area. To implement the project, one new pit would be developed to facilitate the implementation of the action alternatives' transportation system.

Extraction of the gravel in all pits would occur in an orderly fashion and some pits may not be used during Project implementation. Pit development plans would be compiled for pits prior to the use of the gravel. See the sample pit development plan at the end of this appendix for the kinds of implementation direction that would be implemented.

<b>Table G-1. Existing Gravel Pits</b>				
<b>Pit Name</b>	<b>Current Size (acres)</b>	<b>Potential use within 10 years (acres)</b>	<b>Estimated Total Size (Acres)</b>	<b>Legal Description</b>
199	1.8	1.5	4	T 66N R16W S22 NWSE
469	0.07	0.1	unknown	T 66N R15W S33 SESE
ASTRID	0.1	0.5	1	T 65N R16W S24 NWSW
BIG MOOSE	0.5	0.1	unknown	T 65N R14W S26 NWSE
CAMP 97	1	1	7	T 66N R16W S33 SESW
COLOR	.5	1.5	2.0	T 65N R15W S29 NWNW
DEJNO	1.5	4	9.6	T 64N R16W S30 NWNE
FINSTAD	0.4	0.7	6.9	T 65N R16W S17 NENW
FR488	1.5	0.8	0.8	T 66N R16W S33 NWNE
GRASSY LAKE	2.1	1.8	17.4	T 64N R12W S22 SENE
HIGH LAKE	0.02	0.5	1	T 64N R12W S34 NWNW
HILDA	1.2	1	2.7	T 64N R16W S 8 NWSE
LACROIX TRAIL	0.4	0	8	T 65N R13W S19 NENE
LAKE ALF	0	2	84.8	T 64N R16W S33 NWNW
LOST JACK	1	0.3	12.4	T 65N R16W S 8 NWSW

*Continued on following page*

<b>Table G-1. Existing Gravel Pits</b>				
<b>Pit Name</b>	<b>Current Size (acres)</b>	<b>Potential use within 10 years (acres)</b>	<b>Estimated Total Size (Acres)</b>	<b>Legal Description</b>
MARVIN CREEK	0.75	0.1	1.6	T 65N R15W S28 SENE
MUDRO LAKE	0.1	0.2	6.1	T 64N R12W S14 SENW
NORTH ARM	8.6	6.5	34.4	T 64N R12W S19 SWNE
NORTH KESSANEN	2	0.1	24.5	T 65N R14W S15 NESE
MAUDE	8	2	6.5	T 65N R16W S11 NWSW
OLES	0.2	2	82	T 64N R16W S11 NWNW
ONE WAY	0.5	1.5	5.7	T 65N R15W S20 SENW
ORINIACK	0.5	0.6	0.6	T 64N R16W S 9 NWNW
PECORE	8	2	15	T 65N R16W S24 NWSW
PENTA SAND	5	2	60	T 65N R16W S35 SWSW
PORTAGE RIVER	0.75	0.4	3.6	T 65N R13W S19 SENE
ROLANDS	1	0.7	23.9	T 65N R16W S 8 SWNE
RUTAR KNOB	0.2	0.5	1	T 64N R16W S10 NWSE
SERENADE LAKE	0.5	0.2	59.6	T 65N R14W S33 SENW
SIOUX HUSTLER	1.5	0.3	27	T 65N R15W S 2 SWSW
SNF PIT	0.1	0	24.6	T 64N R12W S19 NWSW
SOUTH KESSANEN	4.5	2	18.1	T 65N R14W S22 NWNE
SPAWN CREEK	0.1	0.3	20.5	T 64N R12W S24 SENE
SPLIT SKIDDER	0.75	0	unknown	T 64N R15W S 4 SWSE
SPRING CREEK	0.7	0.5	2	T 64N R13W S 1 SESE
TAMARACK	0.1	0.5	1	T 63N R14W S34 SENW
TIMBER WOLF	5.1	1.5	172	T 66N R16W S30 SWSW

## **SAMPLE PIT MANAGEMENT PLAN**

**Purpose:** A pit management plan provides the direction needed to mine a deposit in an efficient and environmentally acceptable manner and to leave the area in a safe and productive condition.

**Description:** A pit management plan is a combination of maps and written information that describe the many aspects of managing a gravel resource from the start of operations to final reclamation. They can be simple to complex depending on the characteristics of the deposit and its location. There are no cookbook recipes; they need to be site-specific.

**Content:**

1. A section designating the type of pit as required in 2850.3 – Policy.
2. Appropriate direction from the environmental assessment.
3. Other items that should be considered in developing a pit management plan are:

Description of the deposit:

- a. Topographic map
- b. Test hole locations and descriptions
- c. Summary of test hole results – types and quantities of materials found and their location
- d. Depth of overburden and topsoil
- e. Depth of ground water
- f. Potential for expansion
- g. Highest and best use of the materials

Site Preparation:

- a. Access – where and what controls: gates, fences, berms, signs
- b. Timber removal
- c. Vegetation retention
- d. Clearing and grubbing
- e. Salvage and storage of topsoil
- f. Storage or disposal of woody debris
- g. Storage or disposal of overburden
- h. Scales, buildings or other facilities
- i. Landline surveys
- j. Topographic survey for future volume checks

Mining:

- a. Sequence of development, mining and reclamation
- b. Limits on the type of mining equipment to be used – generally only front-end loaders are acceptable.
- c. What types of materials are to be mined from what areas?
- d. Grades of the pit floor
- e. Mining elevations above or below the water table
- f. Run-off control
- g. Grades of the side slopes
- h. Storage area for coarse or fine rejects
- i. Storage area for finished products (long term storage requires special-use permit)

Processing:

- a. Only pit run use?
- b. Screening size limits
- c. Crushing size limits
- d. Batch plants if allowed require special-use permit

Reclamation: Desired future condition of the site considering:

- a. Environmental protection
- b. Aesthetics
- c. Wildlife provisions
- d. Recreational provisions
- e. Water diversion or protection
- f. Sloping
- g. Vegetation
- h. Costs

Stipulations:

This is a list of possible stipulations that may need to be included to enforce the provisions of the pit development plan. These will be attached to authorizations for removal as appropriate. The following are some examples:

- a. Only front-end-loaders can be used for mining.
- b. Topsoil and woody debris shall be stockpiled in \_\_\_\_\_ (the area designated).
- c. All material must be taken as pit run.
- d. Minimum coarse reject size is \_\_\_\_\_ inches.
- e. No operations can occur on weekends or holidays.
- f. No vegetation shall be disturbed in the designated screen area.
- g. The floor of the pit shall be excavated \_\_\_\_\_ feet below ground water in \_\_\_\_\_ (the area designated).
- h. A vertical bank shall be left in \_\_\_\_\_ (the area designated).
- i. The section corner located \_\_\_\_\_ shall not be destroyed.
- j. The floor of the pit will be contoured to direct drainage into \_\_\_\_\_ (the area designated).
- k. No mining within \_\_\_\_\_ feet of the water table.

**The above examples of stipulations are not meant to be all-inclusive or mandatory.**

Good judgment will determine the appropriate stipulations based upon the requirements of the pit management plan and/or specific operating plan for the project.