Pebble Project
Water Withdrawal Plan

February 18, 2010

Background

The State of Alaska has the responsibility to ensure its lands and waters are used in a manner to provide the maximum benefit to Alaskans while protecting Alaska's lands and waters from abusive uses. The Department of Natural Resources (ADNR) has the responsibility under AS 46.15 to ensure water use, whether through providing water rights or Temporary Water Use Permits (TWUPs), is consistent with the common good of the people and other natural resources. For the Pebble Limited Partnership's (PLP) drilling program, which requires the use of water, PLP must apply for and receive permission from the ADNR Water Resources Section for TWUPs that identify specific sources of water that may be used, the amount of water that may be used each day, and the total amount of water that may be used each year.

In addition to receiving the necessary TWUPs, under AS 16.05 PLP must also receive Fish Habitat Permits from the Alaska Department of Fish and Game (ADFG) Habitat Division when fish may be present. These Fish Habitat Permits do not authorize water withdrawals. Rather, they stipulate conditions under which water may be withdrawn from a permitted water source (as identified in a TWUP) that may support fish populations. These conditions include screened water intakes of a specific mesh size to prevent removal of fish from the waterbody, and specific water velocities to prevent entrainment of fish against the water intake structure.

Purpose

The purpose of this plan is to ensure all water sources used in PLP's field exploration program that require an authorization have been permitted by the ADNR Water Resources Section and the ADFG Habitat Division.

The plan consists of four parts – procedures for:

I. Obtaining Temporary Water Use Permits and Fish Habitat Permits

II. Taking Water

III. Reporting

IV. Coordination and Training of Field Staff for Adherence to TWUP and Fish Habitat Permit Stipulations.

In practice, this plan will be modified on a regular basis to address changing conditions and to improve efficiency as experience dictates.

I. Obtaining Temporary Water Use Permits and Fish Habitat Permits

Under 11 AAC 93.220 PLP will submit to ADNR's Water Resources Section one or more completed application(s) for temporary use of water listing the previously drilled artesian holes and lakes, ponds, or stream segments from which it plans to take water.

And, under AS 16.05, PLP will submit to ADF&G's Habitat Division one or more completed application(s) for Fish Habitat Permits for protection of fish resources that may be present in the waters associated with the TWUPs applied for above.

In addition to the standard application form(s), PLP also will submit:

1. The following information for each prospective water source in tabular format similar to that shown below.

Example Table. Requested Water Sources.

Water Source		Township Range Section[2]	Drill Hole, Pond or Lake Coordinates3		Upstream Coordinates		Downstream Coordinates	
Type	Number		Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
Drill hole	SFK-D6352[1]	*T38N,R34W, SE1/4 NW1/4 Sec.23*	59.917 N	155.255 W	-----	-----	-----	-----
Lake	NFK-L6	*T38N,R35W, NW1/4 NE1/4 Sec.34*	59.899 N	155.267 W	-----	-----	-----	-----
Pond	SFK-P12	*T38N,R35W, NE1/4 SE1/4 Sec.17*	59.905 N	155.242 W	-----	-----	-----	-----
Stream	UTC-S10	*T38N,R65W, NE1/4 NW1/4 Sec.6*	-----	-----	59.920 N	155.255 W	59.879 N	155.227 W

[1] P – Pond D - Drill hole L – Lake S - Stream
[2] To ¼ ¼ section
[3] Decimal degrees using WGS 1984

2. An orthophoto map figure, with both township/range/section and latitude/longitude grids, showing the location of each already drilled artesian hole and lake, pond, or stream segment for which a TWUP is requested.

II. Taking Water

This second part of the plan is based on the water sources themselves having been approved as described above in Part I, and the appropriate TWUPs and Fish Habitat Permits having been issued.

Pre-Water Take Actions

1. Once planned drill hole locations are identified, the Site Data Manager or designee will determine on a GIS base whether a permitted water source is reasonably proximate and note the tentative GIS latitude/longitude map coordinates of that location.
2. The Site Field Operations Coordinator & Surveyor will check that the GIS map coordinates for a planned drill hole, and the planned water take location, are manageable and achievable in the field by going to each planned drill hole and associated water take location.
3. At the preferred water take location, the Site Field Operations Coordinator & Surveyor will:
    a. Erect a clearly visible rebar/stake/pipe (ID Post), clearly labeled with the water take point number, such that the drill crew will know where the water intake structure is to be placed.
    b. Record the latitude/longitude coordinates using a hand-held GPS unit.
4. The Site Field Operations Coordinator & Surveyor will report to the Manager of Technical Operations in Iliamna to confirm the drill hole and water take locations meet permit requirements.

Water Take Actions

1. A copy of the relevant TWUP and Fish Habitat Permit for each water take location will be kept in PLP's Iliamna office when conducting the permitted water take activity.
2. Water will be taken only from a source that is marked by rebar/stake/pipe, clearly labeled with the water take point number signifying the location is an approved water take source.
3. No activities will occur in the stream, pond, or lake except for placement, adjustment, inspection and removal of the hose and screened pump intake enclosure.
4. There shall be no wheeled, tracked, excavating or other machinery or equipment (excepting the non-motorized screened intake structure) operated below the ordinary high water line.
5. Waterbodies shall not be altered to facilitate water appropriation or disturbed in any way. If banks, shores, or beds are inadvertently disturbed, excavated, compacted, or filled, they shall be immediately stabilized to prevent erosion and sedimentation of the waterbody which could occur both during and after operations. Any disturbed areas shall be recountoured and revegetated.
6. Adequate flow must remain to support indigenous aquatic life and the water course must not be blocked to the passage of fish.
7. Gas fueled pumps and related equipment will not be fueled or serviced within 100 ft of a water body unless the pumps are situated within a catch basin designed to contain any spills.

8. The suction hose at the water extraction site must be clean and free from contamination at all times, and should be in water of sufficient depth so that stream sediments are not disturbed during the extraction process.
9. Each water take point in a water source containing fish at that location must be surrounded by a screened intake enclosure that meets the screen specifications contained in that source's Fish Habitat Permit.
10. Before and after each use, and prior to deployment:
    a. The screened pump intake enclosure must be inspected for damage (torn, crushed, separated from intake ends, etc.).
    b. Any damage to the screened pump intake enclosure must be repaired prior to use.
    c. The screened pump intake enclosure must always conform, as a minimum, to the original design specifications while in use.
11. Unless the permit specifically states otherwise, water may be withdrawn at a rate of up to 25 gallons per minute (gpm).
12. The water will be used for exploration operations.
13. If any activity would significantly deviate from the permitted plan, the ADNR Water Resources Section and ADFG Habitat Division must be notified and written approval received in the form of a permit amendment before beginning the activity.
14. Photo documentation of the installed water intake equipment will be made as follows:
    a. Close up of the installed water intake equipment
    b. Wider view of water intake equipment relative to the water source and surrounding area.

Post-Water Take Actions

1. Water intake equipment will be removed from the water source.
2. Photo documentation of the site after removal of the water intake equipment as follows:
    a. Close up of the location of the removed water intake equipment
    b. Wider view of water take location relative to the water source and surrounding area.

III. Reporting

With respect to the specific water take locations it proposes to use in support of its exploration drilling program, PLP will provide ADNR and ADFG with written and photographic information concerning the:

- Location of planned water take points
- Location of actual water take points
- Confirmation water take has been completed

At least 30 days before seasonal drilling commences, and by the first of each month thereafter for the duration of the drilling season, PLP will submit by email to the ADNR Water Resources Section and ADFG Habitat Division tables and figures presenting information about completed, active, and planned drill hole and water take locations as described below. This submission will constitute 30-day advance notice for planned drill holes.

1. Drill Hole Locations

a. **Drill Hole Table** -- This table, on a monthly basis, will cumulatively display information about all completed, active and planned drill holes, respectively, during the course of the annual drilling program. Note that planned drill holes have a pre-drill number (EX…) until drilling begins, at which time they take the next chronological drill hole number (09….).

Information in the three rows in the drill hole table below represent, respectively, a:

- Completed drill hole
- Active drill hole
- Planned drill hole

Example Table. Completed, Active and Planned Drill Holes[1]

Drill Hole			Date Drilling		Township Range Section[3]	Coordinates[4]	
Pre-Drill #	Number	Status[2]	Began	Ended		Latitude	Longitude
EX09-D	09487	C	6/4/09	6/23/09	*T38N,R35W, NE1/4 SW1/4 Sec.17*	59.879 N	155.227 W
EX09-E	09488	A	6/06/09	N/A[5]	*T38N,R35W, NW1/4 SE1/4 Sec.34*	59.899 N	155.267 W
EX09-F[6]	N/A	P	N/A	N/A	*T38N,R34W, SW1/4 NE1/4 Sec.32*	59.920 N	155.255 W

[1] This table, on a monthly basis, will cumulatively display information about all completed, active and planned drill holes, respectively, during the course of the annual drilling program. Note that planned drill holes have a pre-drill number (EX…) until drilling begins, at which time they take the next chronological number (09….). Information in the three rows in the table above represent, respectively, a:
- Completed drill hole
- Active drill hole
- Planned drill hole

[2] C = Completed, A = Active, P = Planned

[3] To ¼ ¼ section

[4] Decimal degrees using WGS 1984

[5] Not applicable as of reporting date

[6] Planned locations for drill holes with a pre-drill number are based on GIS mapping only and have not been field located yet.

b. **Drill Hole Orthophoto Map Figure** -- This map figure, on a monthly basis, will cumulatively display locations of all completed, active and planned drill holes during the course of the annual drilling program.

2. Water Take Points

a. **Water Take Table** -- This table, on a monthly basis, will cumulatively display information about all completed, active and planned water take points, respectively, during the course of the annual drilling program. Note that planned water take points have a pre-drill number (EX…-W [water]) until drilling begins, at which time they take the next chronological drill hole number (09…-W).

Information in the three rows in the water take location table below represent, respectively, a:

- Completed water take point
- Active water take point
- Planned water take point

b. **Water Take Point Orthophoto Map Figure** -- This map figure, on a monthly basis, will cumulatively display locations of all completed, active and planned water take points, respectively, during the course of the annual drilling program.

c. **Water Take Point Site Photos** -- These photos will document installation and removal of water intake equipment following:

i. Installation:

1. Close up of the installed water intake equipment
2. Wider view of water intake equipment relative to the water source and surrounding area

ii. Removal

1. Close up of the location from which the water intake equipment was removed
2. Wider view of water take location relative to the water source and surrounding area

Example Table. Completed, Active and Planned Water Take Locations[1]

Water Take Point			Date Intake Equipment/Operation				TWUP #	Fish Habitat Permit Number	Water Source Number	Township Range Section[3]	Coordinates[4]	
Pre-Drill #	Number	Status[2]	Installed	Began	Ended	Removed					Latitude	Longitude
EX09-D-W	09487-W	C	6/3/09	6/4/09	6/23/09	6/24/09	A2010-123	FH-09-II-0106	SFK-D6352[5]	*T38N,R35W, NE1/4 SW1/4 Sec.17*	59.879 N	155.227 W
EX09-E-W	09488-W	A	6/6/09	6/6/09	N/A[6]	N/A	A2010-125	FH-09-II-0107	NFK-L6	*T38N,R35W, NW1/4 SE1/4 Sec.34*	59.899 N	155.267 W
EX09-F-W[7]	N/A	P	N/A	N/A	N/A	N/A	A2010-125	FH-09-II-0108	UTC-S10	*T38N,R34W, SW1/4 NE1/4 Sec.32*	59.920 N	155.255 W

[1] This table, on a monthly basis, will cumulatively display information about all completed, active and planned water take locations, respectively, during the course of the annual drilling program. Note that planned water take locations have a pre-drill number (EX…-W) until drilling begins, at which time they take the next chronological drill hole number (09…-W). Information in the three rows in the table above represent, respectively, a:

- Completed water take location
- Active water take location
- Planned water take location

[2] C = Completed, A = Active, P = Planned

[3] To ¼ ¼ section

[4] Decimal degrees using WGS 1984

[5] P – Pond D - Drill hole L – Lake S - Stream

[6] Not applicable as of reporting date

[7] Planned locations for water take locations with a pre-drill number are based on GIS mapping only and have not been field located yet.

IV. Coordination and Training of Field Staff for Adherence to TWUP and Fish Habitat Permit Stipulations

Prior to the commencement of drilling operations, the Site Field Operations Coordinator & Surveyor will be informed by the Manager of Technical Operations of all stipulations and guidelines necessary to stay in compliance with the drilling, temporary water use permits, and Fish Habitat Permits required for drilling.

A training program will be developed and supervised by the Site Environmental Compliance Officer. The program will cover all stipulations found in both the TWUPs and Fish Habitat Permits, and procedures and timelines for application and submission of water use information as found in Plan Parts II and III above. The training will be provided at site to all field personnel involved in drilling activities in a formal training atmosphere prior to entering the field.

This training program will be developed as a PowerPoint presentation and will cover regulatory authorities of both ADNR and ADFG as they relate to water use, as well as the environmental rationale for each stipulation developed under these authorities. The training program will also cover the reporting requirements and timelines for activities conducted under these authorities, and identify those individuals responsible for reporting.