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**From:** Cory Warnock  
**Sent:** Monday, April 01, 2013 4:36 PM  
**To:** claire.leclair@alaska.gov  
**Cc:** Emily Andersen  
**Subject:** Wetlands Work on State Land (Grant Creek)

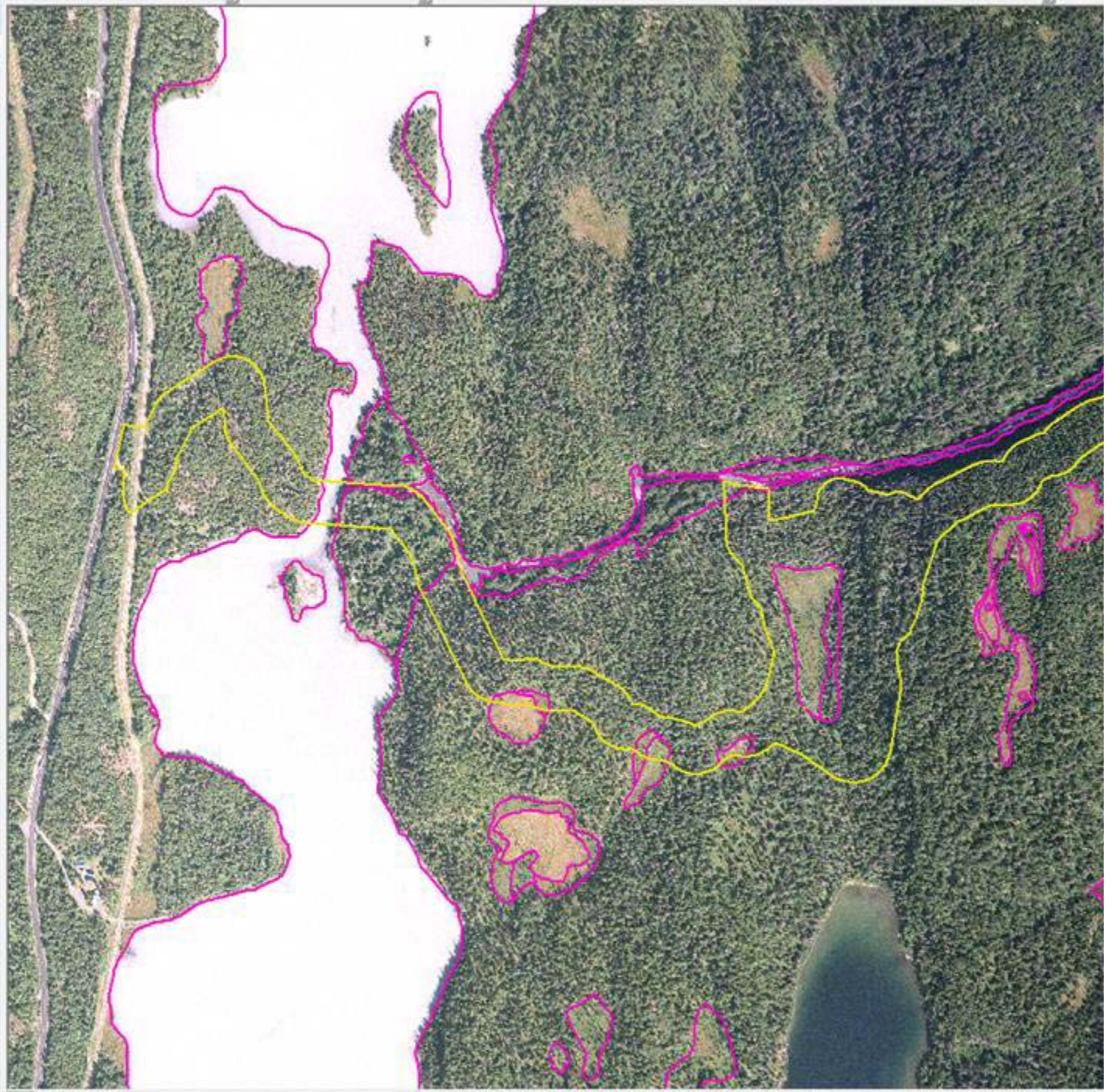
Hi Claire,

Thanks for the quick call-back. I think this will answer your questions but if you need anything else, let me know.....

Thanks!

1. Description - We will place ~2-4 soil pits around the boundary areas of each of the polygons but won't know exactly where until we're in the field. The "vicinity" is within the wetland assessment area (100 ft buffer either side of transmission corridor centerline, w/in 100 ft of all project facilities and any TBD assessment that occurs within the inundation area along the Grant Cr corridor). We have a map with preliminary wetland polygons mapped between Grant Lk and Trail Lk (below).
2. How many pits will be dug? - Approximately 50 soil pits
3. Specifics related to the pits (depth, diameter, how long after they are dug will they be filled in?) - Depth: 18-24" depending on depth to refusal; diameter: ~8-12"; the pit will only be open for ~1 hr during the wetland determination, then the soil plugs will be replaced.

The screenshot below shows the assessment areas between the lakes outlined in yellow. Preliminary mapped wetland polygons are outlined in pink. Wherever a wetland polygon falls entirely or partially w/in the yellow assessment area is where we'll place wetland determination points (2-4 soil pits per polygon assessed).



Cory

**Cory Warnock**

*Senior Licensing and Regulatory Consultant*

McMillen, LLC

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5771 Applegrove Ln.

Ferndale, Wa. 98248

O – 360-384-2662

C – 360-739-0187

F – 360-542-2264

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**From:** Cory Warnock  
**Sent:** Monday, April 01, 2013 12:06 PM  
**To:** pamela.russell@alaska.gov  
**Cc:** Emily Andersen  
**Subject:** Grant Lake Permitting

Hi Pam,

I'm writing to request a bit of information associated with the need for a permit to conduct wetlands work for the Grant Lake Project. As you know, we've been through the multi-agency permitting process for the aquatics and water resources work for the project (thanks for your help). Up until recently, I was certain that all of our permitting needs associated with some small wetlands pits that we need to temporarily dig would be covered via our Special Use Permit (for USFS lands) and via the Army Corps of Engineers for State lands. I'm in the process of working with the Corps and our Special User Permit is in the process of being amended. I wanted to check with you to see if the Corps permit will suffice for State lands (I'm assuming this is the case) or if we need something supplemental from you as well. In an effort to assure that we are compliant with all requirements, your input would be greatly appreciated. More than willing to chat in more detail at your convenience.

Thanks,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

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F – 360-542-2264



---

**From:** Cory Warnock  
**Sent:** Monday, April 01, 2013 1:03 PM  
**To:** Van Massenhove, Katherine B -FS; Mike Salzetti (msalzetti@HomerElectric.com)  
**Cc:** Cory Warnock; Emily Andersen  
**Subject:** RE: Bill for collection: Kenai Hydro, LLC. Application processing fees for Grant Lake Project Cultural Resource Study Plan

I would like to discuss those exact same details so I think we are on the same page. I've spoken with Mike Yarborough and he is prepared to discuss as well. Their (cultural) plan is to be out in the field (at the lake) in June, which would be in advance of the terrestrial work we are discussing. I'm assuming that this could benefit our permitting process for the wetlands work.

Look forward to talking on Wednesday,

Cory

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**From:** Van Massenhove, Katherine B -FS [mailto:kvanmassenhove@fs.fed.us]  
**Sent:** Monday, April 01, 2013 12:57 PM  
**To:** Cory Warnock; Mike Salzetti (msalzetti@HomerElectric.com)  
**Cc:** Cory Warnock; Emily Andersen  
**Subject:** RE: Bill for collection: Kenai Hydro, LLC. Application processing fees for Grant Lake Project Cultural Resource Study Plan

Thanks for checking. The shovel test nomenclature comes from the application, that is what I recall how the work was described that elevated the level of the heritage departments involvement. I'm still waiting to hear from Deidre St. Louis regarding attending the meeting Wed., but plan to attend unless I hear otherwise from her. I'm hoping we can discuss what work needs to be done in regards to heritage requirements, SHPO consultation requirements, time lines, etc., to authorize the terrestrial work request at that meeting. That will play a role in the cost for processing that request.

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

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**From:** Cory Warnock [mailto:cory.warnock@mcmillen-llc.net]  
**Sent:** Monday, April 01, 2013 11:47 AM  
**To:** Van Massenhove, Katherine B -FS; Mike Salzetti ([msalzetti@HomerElectric.com](mailto:msalzetti@HomerElectric.com))  
**Cc:** Cory Warnock; Emily Andersen  
**Subject:** RE: Bill for collection: Kenai Hydro, LLC. Application processing fees for Grant Lake Project Cultural Resource Study Plan

Hi Kathy,

Before I advise Mike to go ahead and pay this, I see reference to "shovel tests" in the comments area. I wanted to make sure that these "shovel tests" were in reference to the cultural work and not the work that we discussed on the phone (and will be discussing Wednesday) related to the Terrestrial work. Could you please confirm?

Thanks,

Cory

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**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]  
**Sent:** Friday, March 29, 2013 1:31 PM  
**To:** Mike Salzetti ([msalzetti@HomerElectric.com](mailto:msalzetti@HomerElectric.com))  
**Cc:** Cory Warnock; Cory Warnock; Sarah Meitl ([meitl.sarah@gmail.com](mailto:meitl.sarah@gmail.com))  
**Subject:** Bill for collection: Kenai Hydro, LLC. Application processing fees for Grant Lake Project Cultural Resource Study Plan

Hi Mike,

It was nice to speak with you today on the phone. As I mentioned in our discussion, the Forest Archeologist has determined that the level of work proposed on National Forest System lands for the cultural work does not require an ARPA permit after all. Ed is recommending we authorized use under the Organic Act, which Kenai Hydro, LLC currently holds for investigative studies related to the Grant Lake Project (FERC No. 13212). We will continue to evaluate the methodology and qualifications based on the information supplied on the ARPA application, however the issuance of a permit to do the work will go to Kenai Hydro, LLC., with the stipulations that they follow methodology and use the archeologist that was proposed, or submit changed methodology or personnel to the permit administrator for additional approval. Additionally, what this change means is that the bill cover the cost to process the application and amend the permit is issued to Kenai Hydro. We will not require an additional permit fee (as we quoted for the ARPA permit) of the Regional minimum \$104.74, as Kenai Hydro has already paid the annual fee to conduct investigative studies, of which this cultural study is considered.

Attached is the bill for collection for application processing fees. Instructions for mailing payment (check or money order) or paying online with credit cards are on the bill for collection. Our policy instructs to allow for 30 days to pay, however we are also supposed to wait until the bill is paid to have the specialists begin the work, so it would be to your benefit to send payment ASAP. Please let me know when this has happened.

Thanks Mike,

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

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No virus found in this message.

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Version: 2013.0.2904 / Virus Database: 2641/6203 - Release Date: 03/25/13

USDA FOREST SERVICE  
BILL FOR COLLECTION

1. BILL DATE: 03/20/2013

PAGE: 1 OF 1

TO ENSURE PROPER CREDIT PLEASE HAVE YOUR BILL AVAILABLE AND CHOOSE ONE OF THE FOLLOWING OPTIONS:

**. PAY ONLINE AT:** WWW.FS.FED.US/BILLPAY

**. PAY BY MAIL.** INCLUDE A COPY OF THIS BILL WITH YOUR PAYMENT. PLEASE INCLUDE THE BILL NUMBER ON YOUR CHECK OR MONEY ORDER. DO NOT SEND CASH. PLEASE MAKE YOUR PAYMENT FOR THE EXACT AMOUNT DUE. MAKE YOUR PAYMENT PAYABLE TO : USDA FOREST SERVICE (SEE ADDRESS AT RIGHT).

PAY BY MAIL ADDRESS:  
USDA FOREST SERVICE  
C/O CITIBANK  
P.O. BOX 301550  
LOS ANGELES, CA 90030-1550

**AMOUNT DUE: \$410.00**

AMOUNT ENCLOSED:\$\_\_\_\_\_

TO: KENAI HYDRO, LLC  
MIKE SALZETTI  
280 AIRPORT WAY  
KENAI, AK 99611 UNITED STATES

2. NET AMOUNT DUE: \$410.00  
3. DUE DATE: **04/29/2013**  
4. BILL NUMBER: BF 10043000024  
5. PAYER CODE: 0003339807

6. AGREEMENT NO: CONTRACT NO:  
8. REMARKS:  
FAILURE TO PAY FEES BY DUE DATE CONSTITUTES NON-COMPLIANCE WITH AUTHORIZATION.  
COST RECOVERY FEE

7. DESCRIPTION:  
9. PRINCIPAL: **\$410.00**  
10. INTEREST:  
11. ADMINISTRATIVE COSTS:  
12. PENALTY:  
13. AMOUNT DUE: \$410.00  
14. ADJ. + CREDIT: \$.00  
15. NET AMOUNT DUE: **\$410.00**

NOTE:  
PLEASE SEND ALL CORRESPONDENCE, INQUIRIES, AND CHANGE OF ADDRESS TO:

USDA FOREST SERVICE (907) 224-3374  
SEWARD RANGER DISTRICT  
P.O. BOX 390  
SEWARD, AK 99664-0390

FAILURE TO MAKE PAYMENT BY DUE DATE WILL RESULT IN THE ASSESSMENT OF LATE PAYMENT CHARGES (INTEREST, ADMINISTRATIVE COST,AND/OR PENALTY CHARGES) IN ACCORDANCE WITH YOUR CONTRACT, PERMIT,OR THE DEBT COLLECTION ACT OF 1982, AS AMENDED. POSTMARKS ARE NOT HONORED.

DATE/PERIOD	DESCRIPTION	AMOUNT
To	2720 SPECIAL USES SEW457 Seward Ranger District	\$410.00
	PERMIT ISSUED: 06/24/2009	
	COMMENTS: Processing of application to amend permit to allow for shovel tests.	

**FOR OFFICIAL USE ONLY**

16. ORG	17. JOB	18. AMOUNT
1004	URMN0113	\$410.00

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**From:** Cory Warnock  
**Sent:** Tuesday, April 02, 2013 1:35 PM  
**To:** Leclair, Claire H (DNR)  
**Cc:** Emily Andersen  
**Subject:** RE: Checking-in

Great. Thanks again for all your help, Claire.

Cory

---

**From:** Leclair, Claire H (DNR) [<mailto:claire.leclair@alaska.gov>]  
**Sent:** Tuesday, April 02, 2013 1:35 PM  
**To:** Cory Warnock  
**Subject:** RE: Checking-in

Yes, I will send them to you and to Mike Salzetti

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Tuesday, April 02, 2013 12:34 PM  
**To:** Leclair, Claire H (DNR)  
**Cc:** Emily Andersen  
**Subject:** RE: Checking-in

That all sounds good and I totally understand what you are running into relative to the wetlands work. I apologize for getting to you about that issue so late in the game. As I mentioned yesterday, it was a product of some additional information coming to light that modified my understanding of that task. If it turns out that that piece needs to be treated as an amendment later, that is fine given that work won't occur until July. I'm assuming that one way or the other, we'll see the authorizations for the temporary camp, smolt traps, weir, sediment analysis and stream gage today sometime. Is that correct?

---

**From:** Leclair, Claire H (DNR) [<mailto:claire.leclair@alaska.gov>]  
**Sent:** Tuesday, April 02, 2013 1:30 PM  
**To:** Cory Warnock  
**Subject:** RE: Checking-in

Cory-

Trying to get a hold of staff to review addition of wetlands work. If I can't get a review from them today will issue decision and permit for the following work only: temporary camp, smolt traps, weir and sediment analysis. Am going to permit stream gage separately as it will be in place multiple years. Other authorizations will be for this calendar year only.

-Claire

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Tuesday, April 02, 2013 10:50 AM  
**To:** Leclair, Claire H (DNR)  
**Cc:** Emily Andersen  
**Subject:** Checking-in



Hi Claire,

Just checking in to see how the final phases of the permit for Grant Lake/Creek are coming. As we discussed, we will be doing our helicopter lift tomorrow. I appreciate the discussion yesterday related to wetland work.

When you have a chance, if you could let me know the status, I'd appreciate it.

Thanks,

Cory

**Cory Warnock**

*Senior Licensing and Regulatory Consultant*

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F – 360-542-2264

---

**From:** Cory Warnock  
**Sent:** Tuesday, April 02, 2013 4:53 PM  
**To:** Mike Salzetti  
**Cc:** Emily Andersen  
**Subject:** FW: LAS 29044 Special Park Use Permit for environmental studies Grant Lake FERC P-13212

I spoke with Claire. See below.

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**From:** Leclair, Claire H (DNR) [<mailto:claire.leclair@alaska.gov>]  
**Sent:** Tuesday, April 02, 2013 4:41 PM  
**To:** Cory Warnock  
**Cc:** Blackwell, Jack D (DNR)  
**Subject:** RE: LAS 29044 Special Park Use Permit for environmental studies Grant Lake FERC P-13212

Cory-

The permit stipulation regarding vegetation clearing is:

**Clearing of vegetation**

The removal or destruction of vegetation is not authorized under this permit.

What this means is that the crews working on site may not remove or cut down a tree or bush. However, they may trim branches up to 1" in diameter in order to clear a pathway to the collection sites.

-Claire

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Tuesday, April 02, 2013 3:00 PM  
**To:** Leclair, Claire H (DNR)  
**Cc:** Mike Salzetti; Emily Andersen  
**Subject:** RE: LAS 29044 Special Park Use Permit for environmental studies Grant Lake FERC P-13212

Thanks, Claire. I have one question. In our prior discussions, I informed you that we would like to do some brush clearing associated with the man camp and up and down the creek to essentially provide us a very rough path to our various collection sites. At that time, you indicated that as long as the brush we were clearing wasn't in excess of a certain diameter, we would be ok. Is this still correct? If so, what is that diameter?

Thanks,

Cory

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**From:** Leclair, Claire H (DNR) [<mailto:claire.leclair@alaska.gov>]  
**Sent:** Tuesday, April 02, 2013 3:44 PM  
**To:** Cory Warnock; Salzetti, Mikel  
**Subject:** LAS 29044 Special Park Use Permit for environmental studies Grant Lake FERC P-13212

Mike and Cory-

Attached are two documents: stipulations for a special park use permit and a signature page.

There is an application fee of \$50 which I understand from Pam Russell that you've already paid. The permit fee is \$500 and can be sent regular mail to the address in my email signature.

Please sign the signature page and return to me today.

Thank you.

***Claire Holland LeClair***

Deputy Director/Chief of Field Operations

Division of Parks & Outdoor Recreation

550 W 7<sup>th</sup> Ave., Suite 1380

Anchorage, Alaska 99501

P: 907-269-8702

F: 907-269-8907

*The Division of Parks and Outdoor Recreation provides outdoor recreation opportunities and conserves and interprets natural, cultural, and historic resources for the use, enjoyment and welfare of the people.*



**STATE OF ALASKA**  
**Department of Natural Resources**  
**Division of Parks and Outdoor Recreation**

**Special Park Use Permit**  
**11 AAC 18.010**

**PERMIT #: LAS 29043**

**Name of Permittee:** Mike Salzetti  
**Business Name (if applicable):** Kenai Hydro, LLC  
**Address:** 280 Airport Way  
**City/State/Zip Code:** Kenai, Alaska 99611

This permit authorizes use of state owned land and water adjacent to Grant Creek and Lower Trail Lake managed by the Division of Parks and Outdoor Recreation according to a management agreement for the Special Use Area described in ADL 226527.

**This permit specifically authorizes the following activities:**

- Excavate up to 10 test pits 1 meter in diameter and 1 meter deep below OHW line of Grant Creek and remove up to 20 cubic feet of natural material for sediment analysis.
- Excavate up to 50 test pits 8-12 inches in diameter and 18-24 inches deep for wetland assessment; test pits will remain open for one hour before backfilled with native material.
- Install a fixed picket weir and two smolt traps in Grant Creek.
- Establish a field camp for up to 6 people between May 1 and October 31.

This permit is effective beginning April 2, 2013 and ending December 31, 2013 unless sooner terminated at the State of Alaska's discretion. This permit does not convey an interest in state land and as such is revocable immediately, with or without cause. No preference right for use or conveyance of the land is granted or implied by this authorization.

All activities shall be conducted in accordance with the attached Special and General Stipulations.

Mike Salzetti Fuel Supply & Engineering Manager 4/2/2013  
Signature of Permittee or Authorized Representative Title Date

\_\_\_\_\_  
Issuing Official Title Date



**The contact information for this permit is as follows:**

Kenai/Prince William Sound Area Superintendent-Jack Blackwell-907-262-5581 ext. 1  
Jacques Kosto-Kenai River Special Management Area District Ranger-907-398-2441

**Special Stipulations**

**1. Field camp**

- Human waste must be removed from the field camp; a pit latrine is not authorized under this permit.
- Ground fires are not authorized; personnel staying in the field camp may use a portable fire pan.
- State park staff will give approval for location of the field camp. Kenai Hydro will contact one or both of the park staff listed above to schedule a site inspection prior to establishing the camp.
- All areas shall be kept clean and maintained in an orderly manner.
- Propane and up to 10 gallons of gasoline may be stored at the camp within a secondary containment area and at least 150 feet from Grant Creek or Trail Lake.
- Site disturbance shall be kept to a minimum to protect local habitats. All activities at the site shall be conducted in a manner that will minimize the disturbance of soil and vegetation and changes in the character of natural drainage systems.
- All garbage and debris will be stored so it does not attract wildlife. Food and refuse will be stored in bear-resistant containers.

**2. Structures**

This permit allows for the establishment of short-term temporary structures. The short-term temporary structures authorized under this permit must be constructed to allow for their removal from the site within 48 hours. Structures authorized under this permit must be removed by December 31, 2013.

**3. Test pits for sedimentary analysis and wetland assessment**

Test pits may be dug only by hand. After sediment samples are removed from excavated material or after wetland assessment work is completed the test pits will be backfilled, foot compacted and graded to resemble the site before excavation.

**4. Clearing of vegetation**

The removal or destruction of vegetation is not authorized under this permit.

**5. Permit fees**

Pursuant to 11 AAC 05.010(a)(12)(H)(ii) this permit is subject to:

1) an application/filing fee of \$50, and (2) an annual permit fee of \$500.

6. **Archaeological and historical resources**

The permittee will maintain a minimum 100' buffer around known archaeological and historic sites, inside which no ground disturbance is permitted, and will report to DPOR any previously unknown archaeological or historic resources discovered during project activities within 24 hours of discovery.

### **General Stipulations**

1. **Non-assignment:** This permit may not be assigned without the written approval and acceptance of the assignee by the director or his/her designee. Further, the permittee shall not sublet or enter into any third party agreements involving the privileges authorized by this permit.
2. **Non-waiver Provision:** The failure to enforce provision of this permit or any default on the part of the permittee in observance or performance of any of the conditions or requirements of this permit is not a waiver of the forfeiture provision or any other provision of the permit.
3. **Permanent Structures:** Permanent structures are prohibited from being placed by the permittee on state park lands or waters.
4. **Personal Property:** If personal property is authorized to be place or located on park lands or waters under the provisions of this permit said personal property shall be removed prior to the expiration of the permit or may be impounded by the state.
5. **Forfeiture:** Permittee shall forfeit the permit if he/she defaults in the performance or observance of any of the permit terms, covenants or stipulations or of a statute or regulation.
6. **State Held Harmless:** The permittee agrees to indemnify, defend and hold harmless the State of Alaska from any and all liability claims arising from the actions of the permittee or his/her agents, employees or clients while conducting activities under this permit on state park lands or waters.
7. **Litter Removal:** The licensee shall remove all litter caused by their activities and shall make a reasonable effort to pick up and remove from the park litter which they find in the vicinity of their activities within the park.

8. **Valid Claims and Applicable Laws:** This permit is subject to all valid claims and applicable laws and regulations.
9. **Forest Fire Suppression:** The permittee and his/her agents and employees agree to take all reasonable precautions to prevent, make diligent efforts to suppress, and report promptly all fires on or endangering state park lands. No material shall be disposed of by burning during closed season established by law or regulation without a written permit from the state forester.
10. **Protection of Park Land or Property from Damage:** Permittee shall exercise diligence in protecting from damage the land, property and resources of the State of Alaska in the area covered by and used in connection with this permit and shall pay the state for any damage resulting from negligence or from the violation of the terms of this permit or any law or regulation applicable to the use of state parks by the permittee or by his/her agents and employees when acting within the scope of their employment or by his/her contractors and subcontractors.
11. **Repair of Damage:** Permittee shall fully repair all damage, other than ordinary wear and tear, to state park roads and trails caused in the exercise of the privilege authorized by this permit.
12. **Non-obstruction of Public Use:** Permittee, employees, agents or clients shall not interfere with free public use of roads and trails in the area of their activities except as may be authorized by special stipulation in this permit.
13. **Geographic Limitation:** This permit is applicable only for the use areas described.
14. **Selling Prohibited:** It is expressly agreed and understood that this permit does not authorize the permittee to solicit business, advertise, collect any fee or sell any goods or services on state park lands or waters.
15. **No Preferential Right of Renewal:** No rights of renewal or preferential rights for renewal are attached to this permit.
16. **Wheeled or Tracked Vehicles:** Activities employing wheeled or tracked vehicles when specifically allowed under the description of activities of the permit or in the special stipulations shall be conducted in such a manner as to minimize surface damage to park lands and resources.
17. **Activity Area and Campsite Cleanliness:** All activity areas and campsites shall be kept clean and maintained in a work person-like manner.
18. **Survey Monuments:** Survey monuments, witness corridors, reference monuments, mining claim posts and bearing trees shall be protected against

destruction, obliteration or damage. Any damaged or obliterated markers caused by actions of the permittee or his/her agents shall be reestablished in accordance with accepted survey practices of the state.

19. **Natural Hazards:** The permittee recognizes and understands that natural hazards are likely to exist within the area of his/her operation. The permittee agrees to take all reasonable precautions to make himself/herself aware of these hazards and to avoid injury to persons or property.
20. **Signs:** No signs or advertising devices shall be erected on the area covered by this permit, or highway leading thereto, without prior approval of the state as to location, design, size, color and message. Erected signs shall be maintained and renewed as necessary to neat and presentable standards.
21. **State Inspection of Permit Area:** The state reserves the right to inspect areas of activity under this permit. It is understood, however, that the state will only inspect the site during normal periods of activity by the permittee or at other times that are convenient to the permittee unless in an emergency situation.
22. **Alaska Historic Preservation Act.** The Alaska Historic Preservation Act (AS 41.35.200) prohibits the appropriation, excavation, removal, injury, or destruction of any state-owned historic, prehistoric (paleontological) or archaeological site without a permit from the commissioner. Should any sites be discovered during the course of field operations, activities that may damage the site will cease and the Office of History and Archaeology in DPOR (907) 269-8721 shall be notified immediately. Improvements shall not be sited within one-half mile of identified cultural sites.
23. **Other Authorizations.** The issuance of this authorization does not alleviate the necessity of the permittee to obtain authorizations required by other agencies for this activity.
24. **Bald Eagle Protection Act:** Activities shall avoid harming or disturbing bald eagles or their nest sites in accordance with the Bald Eagle Protection Act (16 USC 668).
25. **Boat & Air Charter Operators.** Any air or boat charter operators used by the permittee to access state park lands must have a current and valid commercial use permit issued by DPOR.
26. **Special Stipulations:** Any special stipulations attached to this permit are a part of this permit.



**27. Advisory Regarding Violations of the Permit Guidelines:** Pursuant to 11 AAC 18.025(e), a person who violates a provision of a permit issued under this chapter (11 AAC 18) may have their permit revoked by the Director or local park officer for failure to abide by any permit condition or limitation.

**28. Permit modification:** The Director reserves the right to modify these stipulations or use additional stipulations as deemed necessary. The permittee will be advised before any such modifications or additions are finalized.

Any correspondence on this permit may be directed to Claire LeClair, Department of Natural Resources, Division of Parks and Outdoor Recreation, Director's Office, 550 W. 7th Ave., Suite 1380, Anchorage, AK 99501-3577, telephone (907) 269-8702, [claire.leclair@alaska.gov](mailto:claire.leclair@alaska.gov).

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**From:** Cory Warnock  
**Sent:** Tuesday, April 02, 2013 7:02 PM  
**To:** claire.leclair@alaska.gov  
**Cc:** Mike Salzetti; Emily Andersen  
**Subject:** FW: LAS 29044 Special Park Use Permit for environmental studies Grant Lake FERC P-13212

Hi Claire,

To supplement the email below, I spoke with CIAA staff regarding their use of a pit toilet and the measures they take. A description is below and hopefully it will assist in amending the permit to allow for a pit toilet. Thanks and I'll give you a call tomorrow....

*In most of our remote field camps we dig a deep hole by shovel in the ground at least 150 ft. from the water body and a plywood box toilet covers the hole. After each use the crew covers the waste with hydrated lime. At the end of the season the hole is filled in and materials are removed.*

---

**From:** Cory Warnock  
**Sent:** Tuesday, April 02, 2013 5:35 PM  
**To:** 'Leclair, Claire H (DNR)'; Salzetti, Mikel  
**Cc:** Emily Andersen; Gary Fandrei  
**Subject:** RE: LAS 29044 Special Park Use Permit for environmental studies Grant Lake FERC P-13212

Hi Claire,

One more question/request for you. In talking with Gary Fandrei (CIAA), he has indicated that the stipulation associated with hauling out human waste has not applied to many of the other man camps that he has had authorized by your agency. In this situation, it will be very difficult, time consuming and costly to the project to remove that waste. In the past he has used approved pit toilets for similar projects. I'm wondering if there isn't a way to get the permit amended to allow this.

Your input would be appreciated.

Thanks,

Cory

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**From:** Leclair, Claire H (DNR) [<mailto:claire.leclair@alaska.gov>]  
**Sent:** Tuesday, April 02, 2013 3:44 PM  
**To:** Cory Warnock; Salzetti, Mikel  
**Subject:** LAS 29044 Special Park Use Permit for environmental studies Grant Lake FERC P-13212

Mike and Cory-

Attached are two documents: stipulations for a special park use permit and a signature page.

There is an application fee of \$50 which I understand from Pam Russell that you've already paid. The permit fee is \$500 and can be sent regular mail to the address in my email signature.

Please sign the signature page and return to me today.

Thank you.

***Claire Holland LeClair***

Deputy Director/Chief of Field Operations

Division of Parks & Outdoor Recreation

550 W 7<sup>th</sup> Ave., Suite 1380

Anchorage, Alaska 99501

P: 907-269-8702

F: 907-269-8907

*The Division of Parks and Outdoor Recreation provides outdoor recreation opportunities and conserves and interprets natural, cultural, and historic resources for the use, enjoyment and welfare of the people.*

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**From:** meitl.sarah@gmail.com on behalf of Sarah Meitl <s.meitl@crcalaska.com>  
**Sent:** Tuesday, April 02, 2013 4:31 PM  
**To:** Dara Glass; Nelson, Sherry D -FS; Frank Winchell; Shina duVall  
**Cc:** Cory Warnock; Emily Andersen  
**Subject:** Grant Lake APE Discussion Agenda  
**Attachments:** Grant Lake APE Discussion Agenda.docx

Hello,

Attached is an agenda for our meeting tomorrow. I'm looking forward to talking with you all again.

Cheers,  
Sarah

Sarah Meitl  
Project Archaeologist  
Cultural Resource Consultants LLC  
Anchorage, AK 99577  
907-229-4357

Grant Lake APE Discussion Agenda  
April 3, 2:00 pm AKST

1. Introductions (Michael Yarborough, CRC LLC)
2. Brief outline of past consultations. (Michael Yarborough & Cory Warnock, McMillen LLC)
3. Discussion of an appropriate project Area of Potential Effects (Michael Yarborough)
4. Artifact collection (Michael Yarborough)
5. Wetland data analysis related to the USFS Special Use Permit (Cory Warnock & Kathy VanMassenhove)
6. Concluding remarks

Connect to the Meeting

1. Please join my meeting.  
<https://global.gotomeeting.com/join/527083341>
2. Use your microphone and speakers (VoIP) - a headset is recommended. Or, call in using your telephone.

Dial +1 (626) 521-0015

Access Code: 527-083-341

Audio PIN: Shown after joining the meeting

Meeting ID: 527-083-341

**Grant Lake Hydro Project  
Cultural Resources Area of Potential Effect Discussion  
Webinar/teleconference  
April 3, 2013, 2pm AKST**

**In attendance:**

Mike Yarborough, Cultural Resource Consultants LLC (CRC)  
Sarah Meitl, CRC  
Shina Duvall, Review and Compliance, State Office of History and Archaeology (OHA)  
Dara Glass, CIRI  
Frank Winchell, Federal Energy Regulatory Commission (FERC)  
Sherry Nelson, U.S. Forest Service, Seward Ranger District (USFS)  
Cory Warnock, McMillen LLC (McMillen)

**Meeting Summary**

Agenda

- Introductions
- Brief outline of past consultations
- Discussion of an appropriate project Area of Potential Effects
- Artifact collection
- Wetland data analysis related to the USFS Special Use Permit
- Concluding remarks

**Introduction**

Mike Yarborough (CRC) welcomed meeting participants and thanked them for making time for this discussion in their busy schedules. Mike led roundtable introductions where meeting participants introduced themselves. Mike outlined that the meeting's main goal was to establish an appropriate Area of Potential Effects (APE) for the project so that cultural resources field studies could proceed, as planned, in June.

**Project Overview and Past Consultations**

Cory Warnock (McMillen) provided some project background. Work on this project began in 2009 with HDR, but the Homer Electric Association (HEA) suspended the project in 2010 after receiving substantive comments from agencies and other interested parties during the comment period that necessitated a revaluation of the natural resource study plans, including cultural resources. In 2012, HEA changed environmental contractors to McMillen. The project then moved forward with updated natural resource study plans and a revised project design.

Mr. Yarborough gave a brief history of the study plan. A draft study plan was written in April 2010, was the basis for comments and Section 106 consultation that occurred during that year. Comments and concerns received during the formal comment period were integrated into a study plan dated January 2012. HEA subsequently amended this plan to accommodate the altered project design. A slightly revised version of this plan, dated March 2013, was distributed as "final". However, Mr. Yarborough noted that we still lack agreement on what would constitute an appropriate APE

Mr. Warnock outlined how the current project design differs from the 2010 version. The access road is approximately two miles shorter, crosses the proposed Iditarod Commemorative Trail in only one location instead of paralleling it for some distance, and takes a more direct route to the Seward Highway instead of extending south to Falls Creek and then east to the Seward Highway. The current project proposal does not include a dam and will have less effect on the water level of the lake.

#### **APE Discussion**

Frank Winchell (FERC) stated his concerns about the Iditarod Trail and how it would be an important issue moving forward.

Mr. Warnock noted that HEA is aware of the importance of the trail and will be continuing discussions with the agencies on how to minimize project impacts on the commemorative trail. The commemorative trail is not yet built, but there is an established easement and the proposed route for the trail has been flagged on the ground.

Mr. Yarborough discussed what the nature of the “Iditarod Trail” in the vicinity of Grant Lake. Despite an earlier assumption (noted in the AHRs and HDR’s draft work plan) that the “historic” trail is now beneath the highway and railroad, a circa 1900 map shows that the trail through the project area may have actually run along the eastern side of the Trail Lakes. If this is indeed the case, then CRC will include both the historic and commemorative trails during our fieldwork and subsequent evaluations.

Mr. Yarborough called the participants attention to section 4.1 on page 7 of the 2013 study plan to steer the discussion toward establishing an APE from the study area description in the text. This led to a general discussion about the currently available maps for the project. Mr. Warnock had provided a Google Earth image on the webinar screen that he used for his reference. Sherry Nelson (USFS) commented that the project architecture on the Google Earth image did not match the alignment seen in the 2013 study plan (Figure 2, Proposed Area of Potential Effect, on page 9). Mr. Warnock clarified that the image was only used for personal reference and display and that the map on page 9 of the study plan should be used for accuracy. Mr. Warnock displayed this image on the webinar screen.

Mr. Yarborough described Figure 2, noting that the red striped area demarks a proposed APE around the lake shore that equates to 30 feet above the shoreline and buffers the 2010 project architecture by 100 feet. He pointed out that the depicted APE area corresponds to the 2010 version of the access road and transmission line.

Mr. Winchell expressed concern about the methodology in section 4.3 of the 2013 study plan, namely that there was a general lack of an ethnographic dimension to the plan as a whole. He stated that an ethnographic component was important to both a subsistence study and for the identification of Traditional Cultural Properties (TCPs). Mr. Yarborough responded by saying that Ron Stanek, recently retired from the State of Alaska, Fish and Game Subsistence Unit, was the subsistence lead and he should be the one able to address questions about the subsistence aspect of the project.

Dara Glass (CIRI) concurred with Mr. Winchell’s concern about the presence of TCPs near the project area. She was happy to hear that Mr. Stanek would be a part of the project staff, but she felt that a person of Native Alaskan descent should be the one to evaluate whether there were TCPs that may be affected by the project.



Mr. Yarborough explained his company's past experience with investigating for TCPs on the interior of the Kenai Peninsula during the Cooper Lake Hydro Project. He described how that project utilized two APEs: a smaller, demarked APE for archaeological and historic resources and a broader APE for TCPs. He stated his belief that this two-part APE would be appropriate for the Grant Lake project.

Ms. Glass expressed concern about how a desktop study would be insufficient to identify TCPs, as not a lot of work has been done on the interior Kenai Peninsula. There has not been a systematic study for the area, unlike other regions.

Mr. Yarborough stated that the investigation for TCPs would not rely wholly on written literature, but would include continued discussion with Tribal groups.

Mr. Winchell concurred that the next stage of the APE process should include two APEs. He commented that any interactions would not be government-to-government, as the federal government would not be involved in those proceedings.

Ms. Glass commented that the use of native hire would increase the possibility that elders would be more willing to discuss TCPs in the project area.

Mr. Warnock remarked that there seems to be several areas where the study plan is lacking in details and asked if the meeting's participants would feel more comfortable with the project if they could submit, in written form, informal comments concerning areas or methodology with which they were most concerned. He added that there would be no guarantee that any submitted comments would be integrated into the planned study given the current status within the FERC process, but that this may be an appropriate mechanism to ensure that CRC and McMillen understood the concerns that the participating parties have at the present time.

Ms. Glass asked whether there was sufficient time to execute Mr. Warnock's suggestion based on the project timeline. Mr. Warnock responded by asking Mr. Yarborough whether he felt that this mechanism would be useful to him and if it would fit into his timeline.

Mr. Yarborough stated that he felt that he understood the concerns that had been expressed during the meeting and that written comments were not necessary. He continued by saying that CRC planned to do the archaeological and historical field study in June.

### **Artifact Collection**

Mr. Yarborough then asked if the subject of the meeting could move forward to item four on the agenda: Artifact collection. He outlined why this item was included for discussion. The study plan was reviewed in 2010 and no comments were received about the proposed provision that all materials, surface and sub-surface, would be documented and left in the field. However, in reviewing CRC's permit application, Dave McMahan, OHA, noted that this provision did not meet current state permit stipulations. For the permit to be approved, the study plan would need to be altered so that sub-surface materials would be collected and curated. Doing so would necessitate changing the approved study plan and leaves unresolved whether sub-surface artifacts should be collected on U.S. Forest Service land. Mr. Yarborough asked Sherry Nelson (USFS) her opinion on what should be done on Forest Service land.

Ms. Nelson expressed reluctance to voice an opinion on procedure on Forest Service land until it is determined whether the proposed fieldwork will be operating under the Organic Act or will need an ARPA permit.

Mr. Warnock stated that in conversations with Kathy Van Massenhove, U.S. Forest Service, that he was under the impression that the permit issue was resolved and that the Forest Service was moving forward with allowing the cultural resources study to operate under an amendment of the existing special uses permit for the other natural resources studies. Ms. Nelson replied that she felt that the issued was not yet resolved. Mr. Warnock asked whether he should be addressing the project correspondence to Ms. Nelson instead of Ms. Van Massenhove. Ms. Nelson replied that he should continue to correspond with Ms. Van Massenhove who would forward the information to her.

Mr. Winchell asked for clarification on what kinds of sub-surface investigation would be done. He felt that contextual investigation would necessitate the collection of artifacts.

Ms. Nelson stated that the type of sub-surface investigation is important towards determining whether the project would need an ARPA permit or could be authorized under the Organic Act.

Mr. Yarborough stated that he will have further discussions with OHA and the Forest Service to resolve the collection issue.

#### **Wetland Data Analysis**

Mr. Warnock described why wetland delineation is a cultural resource issue. USFS cultural resource staff had expressed concern that wetland tests could disturb historic properties on Forest Service lands.

Mr. Yarborough asked Shina Duvall (OHA) and Ms. Nelson for their comments

Ms. Nelson and Ms. Duvall were in agreement that they needed more information, including the location of tests, the number of tests, the quality of tests, and whether the area had undergone cultural resources survey before.

Mr. Warnock responded that this information is already available and that he would forward that information on to them.

Mr. Yarborough added that the planned cultural resources survey would occur several weeks before the wetland study. CRC could apprise the wetland people of areas to avoid during their testing. He was also willing to aid continued consultation to resolve the matter.

All parties thought that Mr. Yarborough coordinating with the wetlands study personnel to avoid archaeological sites was a good idea.

Mr. Warnock provided clarification to Ms. Nelson about the number of wetland test areas on Forest Service lands. A previous email to Ms. Van Massenhove indicated that for the entire project, 30 to 40 tests will be done. Only 3 to 7 of these tests will be done on Forest Service lands. The remainder will occur on State of Alaska Lands and the project is already in the process of acquiring permits for those lands from the State of Alaska and the Army Corps of Engineers.

#### **Concluding Remarks**

Mr. Yarborough asked if there were any remaining questions or concerns for the project. He re-iterated the plan to resolve the APE, acquire the pertinent permits, and complete the field study by the end of June.

Mr. Winchell expressed concern that there was not much time between now and the proposed field study and, while he does not need to be a part of the process, that the APE needs to be approved by SHPO. He will need to have the documentation in the final licensing package showing that the APE was approved by SHPO before the field study was conducted.

Mr. Yarborough assured Mr. Winchell that proper procedures would be observed and that the APE will be approved by SHPO. Mr. Yarborough again thanked the attendees for their time and input.

The meeting was adjourned.

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**From:** Cory Warnock  
**Sent:** Thursday, April 04, 2013 8:02 PM  
**To:** claire.leclair@alaska.gov  
**Cc:** Emily Andersen  
**Subject:** Fwd: Special park use permit for stream gage in Grant Creek

Hi Claire,

Attached is a signed copy of the stream gauge permit

Thanks,

Cory

Begin forwarded message:

**From:** "Salzetti, Mikel" <[MSalzetti@HomerElectric.com](mailto:MSalzetti@HomerElectric.com)>  
**Date:** April 4, 2013, 10:15:24 AM PDT  
**To:** Cory Warnock <[cory.warnock@mcmillen-llc.net](mailto:cory.warnock@mcmillen-llc.net)>  
**Subject:** FW: Special park use permit for stream gage in Grant Creek





**STATE OF ALASKA**  
**Department of Natural Resources**  
**Division of Parks and Outdoor Recreation**

**Special Park Use Permit**

**PERMIT #:** LAS 29043

**Name of Permittee:** Mike Salzetti  
**Business Name (if applicable):** Kenai Hydro, LLC  
**Address:** 280 Airport Way  
**City/State/Zip Code:** Kenai, Alaska 99611

This permit authorizes use of state owned land and water adjacent to Grant Creek and Lower Trail Lake managed by the Division of Parks and Outdoor Recreation according to a management agreement for the Special Use Area described in ADL 226527.

**This permit specifically authorizes the following activities:**

- Install a data logger and stream gage in and alongside Grant Creek at approximately .5 mile.

This permit is effective beginning April, 2013 and ending December 31, 2017 unless sooner terminated at the State of Alaska's discretion. This permit does not convey an interest in state land and as such is revocable immediately, with or without cause. No preference right for use or conveyance of the land is granted or implied by this authorization.

All activities shall be conducted in accordance with the attached Special and General Stipulations.

I have read and understand all of the foregoing and attached stipulations. By signing this permit, I agree to conduct the authorized activity in accordance with the terms and conditions of this permit.

Mike Salzetti Fuel Supply & Generation Engineering Manager 4/4/2013  
Signature of Permittee or Authorized Representative Title Date

\_\_\_\_\_  
Issuing official Title Date

**The contact information for this permit is as follows:**

Kenai/Prince William Sound Area Superintendent-Jack Blackwell-907-262-5581 ext. 1  
Jacques Kosto-Kenai River Special Management Area District Ranger-907-398-2441

**Special Stipulations**

**1. Structures**

This permit allows for the establishment of temporary structures. The temporary structures authorized under this permit must be constructed to allow for their removal from the site within 48 hours. Structures authorized under this permit must be removed by December 31, 2017.

**2. Clearing of vegetation**

The removal or destruction of vegetation is not authorized under this permit.

**3. Permit fees**

Pursuant to 11 AAC 05.010(a)(12)(H)(ii) this permit is subject to:

1) an application/filing fee of \$50, and (2) an annual permit fee of \$500.

**4. Archaeological and historical resources**

The permittee will maintain a minimum 100' buffer around known archaeological and historic sites, inside which no ground disturbance is permitted, and will report to DPOR any previously unknown archaeological or historic resources discovered during project activities within 24 hours of discovery.

**General Stipulations**

1. **Non-assignment:** This permit may not be assigned without the written approval and acceptance of the assignee by the director or his/her designee. Further, the permittee shall not sublet or enter into any third party agreements involving the privileges authorized by this permit.
2. **Non-waiver Provision:** The failure to enforce provision of this permit or any default on the part of the permittee in observance or performance of any of the conditions or requirements of this permit is not a waiver of the forfeiture provision or any other provision of the permit.

3. **Permanent Structures:** Permanent structures are prohibited from being placed by the permittee on state park lands or waters.
4. **Personal Property:** If personal property is authorized to be placed or located on park lands or waters under the provisions of this permit said personal property shall be removed prior to the expiration of the permit or may be impounded by the state.
5. **Forfeiture:** Permittee shall forfeit the permit if he/she defaults in the performance or observance of any of the permit terms, covenants or stipulations or of a statute or regulation.
6. **State Held Harmless:** The permittee agrees to indemnify, defend and hold harmless the State of Alaska from any and all liability claims arising from the actions of the permittee or his/her agents, employees or clients while conducting activities under this permit on state park lands or waters.
7. **Litter Removal:** The licensee shall remove all litter caused by their activities and shall make a reasonable effort to pick up and remove from the park litter which they find in the vicinity of their activities within the park.
8. **Valid Claims and Applicable Laws:** This permit is subject to all valid claims and applicable laws and regulations.
9. **Forest Fire Suppression:** The permittee and his/her agents and employees agree to take all reasonable precautions to prevent, make diligent efforts to suppress, and report promptly all fires on or endangering state park lands. No material shall be disposed of by burning during closed season established by law or regulation without a written permit from the state forester.
10. **Protection of Park Land or Property from Damage:** Permittee shall exercise diligence in protecting from damage the land, property and resources of the State of Alaska in the area covered by and used in connection with this permit and shall pay the state for any damage resulting from negligence or from the violation of the terms of this permit or any law or regulation applicable to the use of state parks by the permittee or by his/her agents and employees when acting within the scope of their employment or by his/her contractors and subcontractors.
11. **Repair of Damage:** Permittee shall fully repair all damage, other than ordinary wear and tear, to state park roads and trails caused in the exercise of the privilege authorized by this permit.
12. **Non-obstruction of Public Use:** Permittee, employees, agents or clients shall not interfere with free public use of roads and trails in the area of their activities except as may be authorized by special stipulation in this permit.

13. **Geographic Limitation:** This permit is applicable only for the use areas described.
14. **Selling Prohibited:** It is expressly agreed and understood that this permit does not authorize the permittee to solicit business, advertise, collect any fee or sell any goods or services on state park lands or waters.
15. **No Preferential Right of Renewal:** No rights of renewal or preferential rights for renewal are attached to this permit.
16. **Wheeled or Tracked Vehicles:** Activities employing wheeled or tracked vehicles when specifically allowed under the description of activities of the permit or in the special stipulations shall be conducted in such a manner as to minimize surface damage to park lands and resources.
17. **Activity Area and Campsite Cleanliness:** All activity areas and campsites shall be kept clean and maintained in a work person-like manner.
18. **Survey Monuments:** Survey monuments, witness corridors, reference monuments, mining claim posts and bearing trees shall be protected against destruction, obliteration or damage. Any damaged or obliterated markers caused by actions of the permittee or his/her agents shall be reestablished in accordance with accepted survey practices of the state.
19. **Natural Hazards:** The permittee recognizes and understands that natural hazards are likely to exist within the area of his/her operation. The permittee agrees to take all reasonable precautions to make himself/herself aware of these hazards and to avoid injury to persons or property.
20. **Signs:** No signs or advertising devices shall be erected on the area covered by this permit, or highway leading thereto, without prior approval of the state as to location, design, size, color and message. Erected signs shall be maintained and renewed as necessary to neat and presentable standards.
21. **State Inspection of Permit Area:** The state reserves the right to inspect areas of activity under this permit. It is understood, however, that the state will only inspect the site during normal periods of activity by the permittee or at other times that are convenient to the permittee unless in an emergency situation.
22. **Alaska Historic Preservation Act.** The Alaska Historic Preservation Act (AS 41.35.200) prohibits the appropriation, excavation, removal, injury, or destruction of any state-owned historic, prehistoric (paleontological) or archaeological site without a permit from the commissioner. Should any sites be discovered during the course of field operations, activities that may damage the site will cease and the Office of



History and Archaeology in DPOR (907) 269-8721 shall be notified immediately. Improvements shall not be sited within one-half mile of identified cultural sites.

23. **Other Authorizations.** The issuance of this authorization does not alleviate the necessity of the permittee to obtain authorizations required by other agencies for this activity.
24. **Bald Eagle Protection Act:** Activities shall avoid harming or disturbing bald eagles or their nest sites in accordance with the Bald Eagle Protection Act (16 USC 668).
25. **Boat & Air Charter Operators.** Any air or boat charter operators used by the permittee to access state park lands must have a current and valid commercial use permit issued by DPOR.
26. **Special Stipulations:** Any special stipulations attached to this permit are a part of this permit.
27. **Advisory Regarding Violations of the Permit Guidelines:** Pursuant to 11 AAC 18.025(e), a person who violates a provision of a permit issued under this chapter (11 AAC 18) may have their permit revoked by the Director or local park officer for failure to abide by any permit condition or limitation.
28. **Stipulations:** The Director reserves the right to modify these stipulations or use additional stipulations as deemed necessary. The permittee will be advised before any such modifications or additions are finalized.

Any correspondence on this permit may be directed to Claire LeClair, Department of Natural Resources, Division of Parks and Outdoor Recreation, Director's Office, 550 W. 7th Ave., Suite 1380, Anchorage, AK 99501-3577, telephone (907) 269-8702, [claire.leclair@alaska.gov](mailto:claire.leclair@alaska.gov).

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**From:** Cory Warnock  
**Sent:** Thursday, April 04, 2013 9:58 AM  
**To:** Blackwell, Jack D (DNR)  
**Cc:** Leclair, Claire H (DNR); Gary Fandrei; Emily Andersen  
**Subject:** Re: Grant Creek Man Camp Viist

Hi Jack,

As Gary will be leading the visit from our end, I'll defer to him for logistics. Gary, will you please coordinate with Jack and keep me in the loop? Thanks.

Thanks, Jack.

Cory

On Apr 4, 2013, at 9:52 AM, "Blackwell, Jack D (DNR)" <[jack.blackwell@alaska.gov](mailto:jack.blackwell@alaska.gov)> wrote:

Cory,

I checked with staff and the earliest we can meet on site is April 15<sup>th</sup> at 10:00 am. Where would you like to meet?

Jack

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Wednesday, April 03, 2013 7:57 PM  
**To:** Blackwell, Jack D (DNR)  
**Cc:** Leclair, Claire H (DNR); Gary Fandrei; Emily Andersen  
**Subject:** Grant Creek Man Camp Viist

Hi Jack,

I spoke with Gary Fandrei (CIAA lead) this evening regarding his availability to do a site visit with you during the week of the 15<sup>th</sup>. Gary will be able to accommodate it but requests that it be as early in the week as possible (preferably Monday) as he has other projects requiring similar attention and wants to make sure his crew availability is such that set-up, not only on this camp but others, can still be facilitated prior to studies beginning. If you could please let me know as soon as possible what day that week will work for you, I'd appreciate it.

Thanks, Jack.

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

McMillen, LLC  
[www.mcmillen-llc.com](http://www.mcmillen-llc.com)  
5771 Applegrove Ln.  
Ferndale, Wa. 98248

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**From:** Cory Warnock  
**Sent:** Friday, April 05, 2013 9:37 AM  
**To:** Leclair, Claire H (DNR)  
**Cc:** Mike Salzetti; Emily Andersen  
**Subject:** RE: Special Park Use Permit

**Categories:**

Thanks, Claire.

-----Original Message-----

From: Leclair, Claire H (DNR) [<mailto:claire.leclair@alaska.gov>]  
Sent: Friday, April 05, 2013 8:57 AM  
To: Cory Warnock  
Subject: Re: Special Park Use Permit

I'm out of office today  
Will make correction first thing Monday.

Sent from my iPhone

On Apr 4, 2013, at 7:08 PM, "Cory Warnock" <[cory.warnock@mcmillen-llc.net](mailto:cory.warnock@mcmillen-llc.net)> wrote:

>  
> We discovered an error in the numbering of our Special Park Use Permit. In the process of preparing payment for these permits, HEA's accounting folks noticed that the Signature page for LAS 29044 has it listed as Permit # LAS 29043 in the body of the document (including our signed copy - attached). Could you please amend and I'll have Mike sign another copy.  
>  
> Thanks,  
>  
> Cory  
>  
>  
> Cory Warnock  
> Senior Licensing and Regulatory Consultant  
>  
> McMillen, LLC  
> [www.mcmillen-llc.com](http://www.mcmillen-llc.com)<<http://www.mcmillen-llc.com/>>  
> 5771 Applegrove Ln.  
> Ferndale, Wa. 98248  
> O – 360-384-2662  
> C – 360-739-0187  
> F – 360-542-2264  
>  
>  
> <LAS 29044 Permit stipulations 4.13.pdf> <LAS 29044 Permit signature  
> page 4.13.pdf> <SKMBT\_C22013040217090.pdf>

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**From:** Leclair, Claire H (DNR) [<mailto:claire.leclair@alaska.gov>]

**Sent:** Thursday, April 04, 2013 10:41 AM

**To:** Cory Warnock

**Subject:** tools for managing human waste in remote camps

Cory-

Here are a couple links to two different tools for managing human waste in remote camps:

<http://www.rei.com/product/692303/cleanwaste-wag-bag-toilet-in-a-bag-waste-kit>

<http://kayakcamping.amongstitt.com/2010/03/25/the-groover-aka-personal-human-waste-management-system/>

*Claire Holland LeClair*

Deputy Director/Chief of Field Operations

Division of Parks & Outdoor Recreation

907-269-8702

*The Division of Parks & Outdoor Recreation provides outdoor recreation opportunities and conserves and interprets natural, cultural, and historic resources for the use, enjoyment and welfare of the people.*

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**From:** McCafferty, Katherine A POA <Katherine.A.McCafferty2@usace.army.mil>  
**Sent:** Friday, April 05, 2013 1:23 PM  
**To:** Cory Warnock  
**Cc:** Emily Andersen  
**Subject:** RE: Quick Call (Grant Lake) (UNCLASSIFIED)

Classification: UNCLASSIFIED  
Caveats: NONE

Sorry Cory, it's been one meeting after another this week. I am free for the rest of the day. We can talk this afternoon, or Tuesday or Thursday of next week.

Katie McCafferty  
Team Leader, Acting  
Regulatory Division, South Branch  
U.S. Army Corps of Engineers  
phone: 907-753-5556  
fax: 907-279-0064

Please note the new phone number.

-----Original Message-----

From: Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
Sent: Friday, April 05, 2013 9:06 AM  
To: McCafferty, Katherine A POA  
Cc: Emily Andersen  
Subject: FW: Quick Call (Grant Lake)

Hi Katie,

I haven't heard back from you regarding the request below. Are you available sometime next week to discuss further?

Thanks,

Cory

From: Cory Warnock  
Sent: Wednesday, April 03, 2013 8:06 AM  
To: 'Katherine McCafferty' ([katherine.a.mccafferty2@usace.army.mil](mailto:katherine.a.mccafferty2@usace.army.mil))'

Cc: Levia Shoutis; 'Emily Andersen'  
Subject: Quick Call (Grant Lake)

Hi Katie,

As a follow-up to our conversation yesterday, I'm wondering if you and I along with our wetlands person (Levia) can't have a brief call to answer a couple questions to ensure we are filling out the application appropriate to our project. What is your schedule like today? If today doesn't work, how about the rest of the week?

Thanks,

Cory

Cory Warnock

Senior Licensing and Regulatory Consultant

McMillen, LLC

[www.mcmillen-llc.com](http://www.mcmillen-llc.com) <<http://www.mcmillen-llc.com/>>

5771 Applegrove Ln.

Ferndale, Wa. 98248

O - 360-384-2662

C - 360-739-0187

F - 360-542-2264

Classification: UNCLASSIFIED  
Caveats: NONE

---

**From:** Cory Warnock  
**Sent:** Monday, April 15, 2013 8:41 AM  
**To:** Snow, Candice S (DNR)  
**Cc:** Charles Sauvageau; Emily Andersen; Mike Salzetti  
**Subject:** RE: Kenai Hydro LLC  
**Attachments:** Grant Lake Map.pdf

Hi Candice,

Would a call tomorrow work. How about 2pm PST (1 AK)?

Again, I was a little surprised to hear that we may need a permit from you for the thermistor string on the lake given all of the efforts we've gone to with the USFS for work on and around the lake and the global efforts we've applied to our work with ADNR. I've attached a map that generally outlines ownership information.

Thanks and let me know if that time will work for you,

Cory

---

**From:** Snow, Candice S (DNR) [<mailto:candice.snow@alaska.gov>]  
**Sent:** Friday, April 12, 2013 9:41 AM  
**To:** Cory Warnock  
**Subject:** RE: Kenai Hydro LLC

Good morning, I would be more than happy to talk to you next week about this. Almost all the land surrounding Grant Lake is Forest Service land with some small exceptions, the west and southern end of the lake is State owned as far as I can tell. My schedule is completely open next week so any time you wish to talk is fine by me.

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Thursday, April 11, 2013 2:58 PM  
**To:** Snow, Candice S (DNR); Charles Sauvageau  
**Cc:** Emily Andersen  
**Subject:** RE: Kenai Hydro LLC

Hi Candice,

I am the project manager for the Natural Resources and Licensing components of the Grant Lake Project. Chuck (Cc'd) forwarded your email to me. We have been very diligent in seeking out and securing the permits associated with our studies in 2013 which is why your email surprised me. This was the first I'd heard about the State managing Grant Lake given that all of our other dealings with that area of the project have been with the US Forest Service given that the land surrounding the lake is managed by that agency. If required, we'd be more than happy to fill out the application and return it to you very soon. I would like to have a bit of additional dialogue if possible prior to doing so. Would a call early next week with you, Chuck and myself be a possibility? Let me know and I'll get it set up.

Thanks,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

McMillen, LLC  
[www.mcmillen-llc.com](http://www.mcmillen-llc.com)  
5771 Applegrove Ln.  
Ferndale, Wa. 98248  
O – 360-384-2662  
C – 360-739-0187  
F – 360-542-2264

---

**From:** Charles Sauvageau [<mailto:charles.sauvageau@mcmillen-llc.com>]  
**Sent:** Thursday, April 11, 2013 1:54 PM  
**To:** Cory Warnock  
**Subject:** FW: Kenai Hydro LLC

Do you want me to handle this or would you prefer that I get this going?

**Charles Sauvageau**  
Aquatic Scientist - McMillen, LLC

---

**From:** Snow, Candice S (DNR) [<mailto:candice.snow@alaska.gov>]  
**Sent:** Thursday, April 11, 2013 12:45 PM  
**To:** [charles.sauvageau@mcmillen-llc.com](mailto:charles.sauvageau@mcmillen-llc.com)  
**Subject:** Kenai Hydro LLC

Good afternoon, I have been made aware that you are wanting to install thermistors at Grant Lake. This location is considered generally state land and is managed by my office. I have attached land use permit application for you to fill out and return to me. Please feel free to contact me if you have any questions.

Thanks!

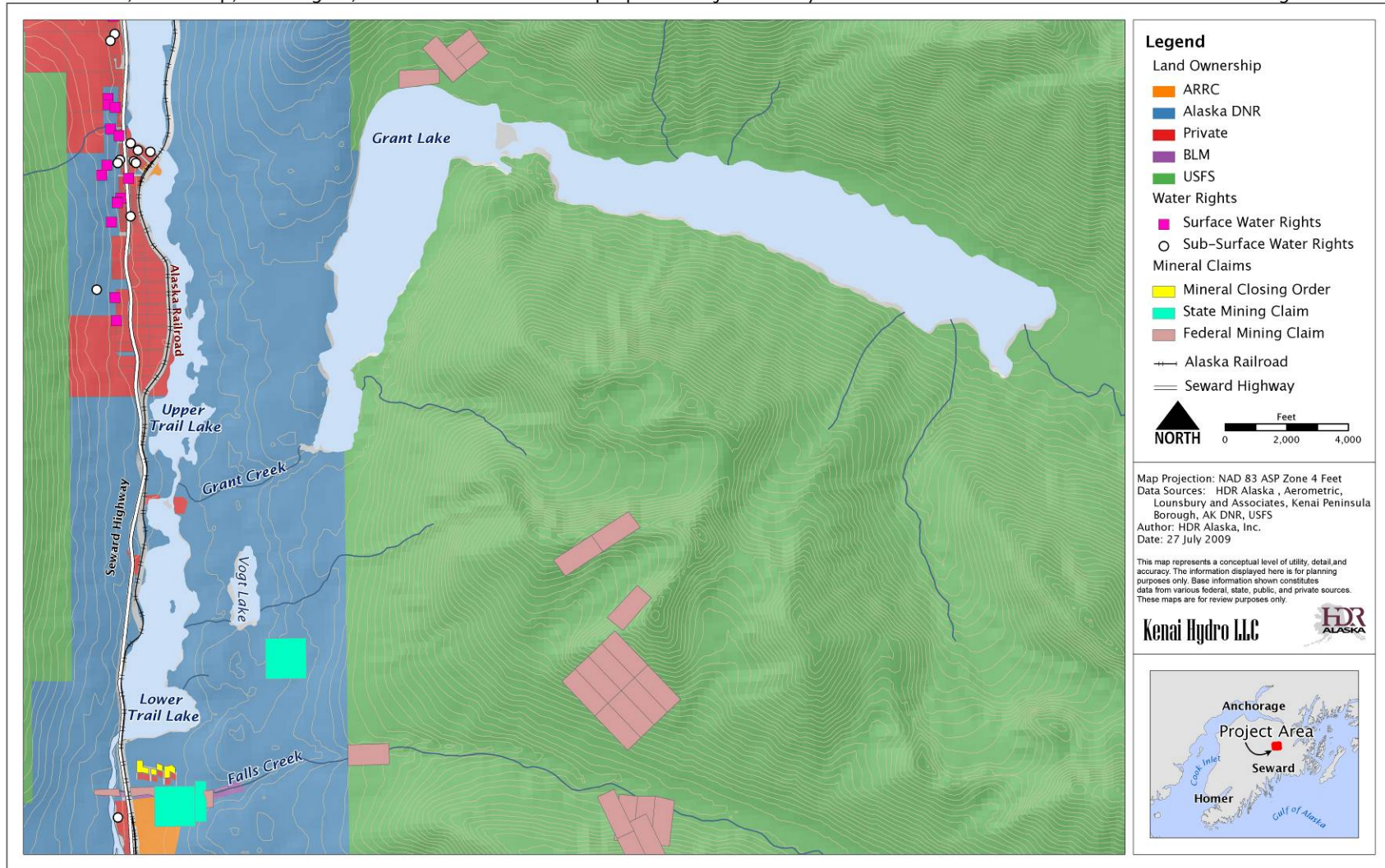


Candy Snow  
Natural Resource Specialist I  
907-269-8569  
[candice.snow@alaska.gov](mailto:candice.snow@alaska.gov)



Land status, ownership, water rights, and mineral claims in the proposed Project vicinity

Figure 4.2-1



**Figure 4.2-1.** Land status, ownership, water rights, and mineral claims in the Project vicinity.

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**From:** Cory Warnock  
**Sent:** Tuesday, April 16, 2013 2:47 PM  
**To:** Ayers, Scott D (DFG)  
**Cc:** John Stevenson; Emily Andersen  
**Subject:** RE: Fish Work (Grant Creek)

Thanks, Scott. Understood and I will act accordingly from now on.

Cory

---

**From:** Ayers, Scott D (DFG) [<mailto:scott.ayers@alaska.gov>]  
**Sent:** Tuesday, April 16, 2013 2:46 PM  
**To:** Cory Warnock  
**Cc:** John Stevenson; Emily Andersen  
**Subject:** RE: Fish Work (Grant Creek)

Cory,  
I'll look into this and get back to you as soon as I can.  
For future reference, please use the correct subject line (as given on the email that contained your permit) for future correspondence about this permit. As a one person shop, this saves me a considerable amount of time.  
Thank you,  
-Scott

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Tuesday, April 16, 2013 1:41 PM  
**To:** Ayers, Scott D (DFG)  
**Cc:** John Stevenson; Emily Andersen  
**Subject:** Fish Work (Grant Creek)

Hi Scott,

I was just coordinating with our Aquatics Lead, John Stevenson (Cc'd) about some of the upcoming work we will be doing and we have a question related to our work and the associated permit. As you know, we will have two smolt traps in place on the creek. One will be low (near the mouth) and the other will be upstream near the downstream end of the canyon reach. In an effort to both distinguish between the two sets of juveniles and minimize the amount of mortality associated with handling certain species for lengthy periods, we would like to take a very small fin clip out of the upper or lower lobe of the caudal fin. This is particularly important for the very small sockeye that we will be working with as they will be very fragile and the less handling, the better. However, we would like to follow a similar marking/distinguishing methodology for all of our species (Chinook, coho, rainbow and Dolly Varden), if possible. While I see nothing specific in our permit indicating that this would be prohibited, I wanted to make sure that this was acceptable before proceeding. This would only be at the upper (canyon) site and we don't anticipate high numbers of juveniles being collected in this area. That said, it would be very helpful from an analytical standpoint, to be able to distinguish juvenile fish captured at the upper and lower traps. If you'd like more detailed information related to our methodology for marking fish on the creek, please let me know and I'll set up a call with you, John Stevenson and myself.

Thanks, Scott. I'll look forward to hearing from you,

Cory

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**Attachments:** 1 - LUP Application with cover ltr (Rev. 04-07).pdf; 2- LUP Upland & Non-Marine Supplement (Rev. 05-11).pdf

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**From:** Charles Sauvageau [<mailto:charles.sauvageau@mcmillen-llc.com>]  
**Sent:** Tuesday, April 16, 2013 2:26 PM  
**To:** Cory Warnock  
**Subject:** FW: Kenai Hydro LLC

Copies of Thermistor String Permits to fill out, if you need them.

**Charles Sauvageau**  
Aquatic Scientist - McMillen, LLC

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**From:** Snow, Candice S (DNR) [<mailto:candice.snow@alaska.gov>]  
**Sent:** Thursday, April 11, 2013 12:45 PM  
**To:** [charles.sauvageau@mcmillen-llc.com](mailto:charles.sauvageau@mcmillen-llc.com)  
**Subject:** Kenai Hydro LLC

Good afternoon, I have been made aware that you are wanting to install thermistors at Grant Lake. This location is considered generally state land and is managed by my office. I have attached land use permit application for you to fill out and return to me. Please feel free to contact me if you have any questions.

Thanks!



Candy Snow  
Natural Resource Specialist I  
907-269-8569  
[candice.snow@alaska.gov](mailto:candice.snow@alaska.gov)

# STATE OF ALASKA

## DEPARTMENT OF NATURAL RESOURCES

### Division of Mining, Land and Water

Northern Region Land Office,  
Fairbanks  
(907) 451-2740

Southcentral Region Land Office,  
Anchorage  
(907) 269-8552

Southeast Region Land Office,  
Juneau  
(907) 465-3400

Dear Applicant:

The Department of Natural Resources, Division of Mining, Land and Water's (DMLW) regional land offices are responsible for managing state land and resources. Certain activities on state land require a land use permit, while other activities are considered "generally allowed" or require other authorizations. Commercial recreation facilities that remain no longer than 14 days in any one site may obtain a commercial recreation permit rather than a land use permit. Additional information and forms are available at any Division of Mining, Land and Water regional land office and the Public Information Centers in Anchorage and Fairbanks.

#### **Land Use Permits:**

- authorize the temporary use of state land or resources;
- can be issued for up to five years;
- do not convey any interest in state land;
- are revocable with or without cause;
- are not transferable;
- do not constitute waiver of any other state, federal, or local laws; and

#### **A Complete Land Use Permit Application Package includes the following items:**

**A Land Use Permit application form completed and signed by the applicant.** Applicants proposing:

- the use of the uplands and non marine waters must also complete the Supplemental Questionnaire for Use of Uplands and/or Non Marine Waters accompanying this application;
- off-road travel must also complete the Supplemental Questionnaire for Off-Road Travel accompanying this application; and/or
- the use of tide and submerged lands must also complete the Supplemental Questionnaire for Use of Marine Waters accompanying this application.

The **site development diagram** required in the Supplemental Questionnaire for Use of Uplands and/or Non-Marine Waters and the Supplemental Questionnaire for Use of Marine Waters should show each item labeled so that it corresponds with your description in the Questionnaire. **The site development diagram must include:**

- **Location** - Section, Township, and Range lines; North arrow; scale; title; legend (may be attached).
- **Boundaries** – Boundaries and dimensions of proposed area of use and their relation to geographic features, including water bodies, and existing trails or rights-of-way.
- **Structures and Storage** - Location and dimensions of buildings, tent platforms, out-buildings and other improvements, and of equipment parking and storage areas, including snow storage areas.
- **Hazardous substances** – Location and dimensions of storage facilities for hazardous substances, including but not limited to oil, lubricants, fuel oil, gasoline, solvents, and diesel fuel. Include method and dimensions of storage (tank, drum, etc.).

#### **Other items that must accompany the application package are:**

Land Use Permit Application  
Cover Letter (04/07)  
Page 1 of 2

**Map** - a topographic map of sufficient scale to show the location of the proposed activity. The map may be either 1:250,000 or 1:63,360.

**Coastal Project Questionnaire (CPQ)** - A CPQ is required to identify which state and federal permits are required for activities within the coastal zone. The DMLW will help you determine if the proposed activity is within the coastal zone by referring to the Coastal Zone Boundaries of Alaska (June 1995). If your project is within the coastal zone, please request a Coastal Project Questionnaire from the DMLW office.

**Filing Fees** - A \$100.00 non-refundable filing fee is required by regulation (11 AAC 05.010(5)(B)). Make checks payable to the "State of Alaska".

**Other Miscellaneous Items:** Items specifically identified and required in any of the supplemental questionnaires.

**Completed Land Use Permit Applications should be mailed to one of the following offices:**

**Public Information Center**  
550 W. 7<sup>th</sup> Ave, Suite 1260  
Anchorage, AK 99501  
(907) 269-8400

**Public Information Center**  
3700 Airport Way  
Fairbanks, AK 99709  
(907) 451-2705

**MLW Information Office**  
P.O Box 111020  
Juneau, AK 99811-1020  
(907) 465-3400

**Pre-Permit Issuance Requirements:** Prior to issuance of a permit, an applicant is required to submit one or more of the following:

**Use Fees** - The use fee depends on the type of activity, length of use and the acreage authorized for use. Regulations under 11 AAC 05.010(e)(6)-(9) describe use fees for different activities authorized under land use permits.

**Performance Guaranty (Bond)** - A performance guaranty is held by the state to assure performance and to pay for corrective action if the use of state land fails to comply with the requirements of the permit. The DMLW uses a bonding matrix to determine the amount of a performance guaranty. Acceptable types of performance guaranties include:

- a. cash or check made out to the State of Alaska;
- b. a Certificate of Deposit (CD) in the state's name; or
- c. a corporate surety bond.

**Insurance** - Insurance to protect you and the state from liabilities incurred through the use of state property.

**Survey** - Surveys are generally not required for land use permits. Some authorizations may require a Global Positioning System (GPS) to determine the location of the project.

If you have any questions prior to submitting your application, you are encouraged to meet with a member of the Division of Mining, Land and Water staff about your proposed activity.

**ONLY COMPLETE APPLICATIONS WILL BE ACCEPTED**

**STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINING, LAND AND WATER**

**LAND USE PERMIT APPLICATION**

**AS 38.05.850**

**Applicants must complete all sections of this application. In addition, applicants proposing:**

- the use of the uplands and non marine waters must also complete the Supplemental Questionnaire for Use of Uplands and Non Marine Waters accompanying this application;
- off-road travel must also complete the Supplemental Questionnaire for Off-Road Travel accompanying this application; and/or
- the use of tide and submerged lands must also complete the Supplemental Questionnaire for Use of Marine Waters accompanying this application.

**Other items that must accompany the completed application are:**

- **a (non-refundable) \$100 application filing fee;**
- a 1:250,000 or 1:63,360 scale USGS map showing the location of the proposed activity;
- additional items identified and required in any supplemental questionnaire(s) to this application;
- an Alaska Coastal Management Questionnaire if the proposed use is within the Coastal Zone; and
- additional pages if more space is necessary to answer the questions completely.

**Completed Land Use Permit Applications should be mailed to one of the following offices:**

**Public Information Center**  
550 W. 7<sup>th</sup> Ave, Suite 1260  
Anchorage, AK 99501  
(907) 269-8400

**Public Information Center**  
3700 Airport Way  
Fairbanks, AK 99709  
(907) 451-2705

**MLW Information Office**  
P.O. Box 111020  
Juneau, AK 99811-1020  
(907) 465-3400

**LAS # \_\_\_\_\_**

**Applicant Information:**

Applicant Name			Date of Birth
Doing Business As		Contact Person	EIN
Mailing Address with City, State and Zip			Email Address
( ) ( ) ( )	( ) ( ) ( )	( ) ( ) ( )	( ) ( ) ( )
Home Phone	Work Phone	Cell Phone	FAX
If you are applying for a corporation, give the following information:			
Name, address and place of incorporation: _____			
Is the corporation qualified to do business in Alaska? Yes [ ] No [ ]. If yes, provide name, address and phone number of resident agent: _____			
<b>Type of User, Select one:</b> [ ] Private non-commercial (personal use) [ ] Commercial Recreation or Tourism			
[ ] Public Non-profit including Federal, State, Municipal Government Agency [ ] Other commercial or industrial			

**Duration of Project:** The proposed activity will require the use of state land for: **(Check one)**

[ ] a single term of less than one year. **Beginning month:** \_\_\_\_\_ **Ending month:** \_\_\_\_\_

[ ] a multi year term for up to 5 years. **Beginning year:** \_\_\_\_\_ **Ending year:** \_\_\_\_\_

If multi year and seasonal, circle months of use in each year. **Jan., Feb., Mar., Apr., May, Jun., Jul., Aug., Sept., Oct., Nov., Dec.**

**Project Location**

Latitude/Longitude or UTM: \_\_\_\_\_ or

\_\_\_\_ Section: \_\_\_\_\_, Township: \_\_\_\_\_, Range: \_\_\_\_\_, Meridian: \_\_\_\_\_  
(The spaces below are to be used if the boundaries of the proposed project cross section lines.)

\_\_\_\_ Section: \_\_\_\_\_, Township: \_\_\_\_\_, Range: \_\_\_\_\_, Meridian: \_\_\_\_\_

\_\_\_\_ Section: \_\_\_\_\_, Township: \_\_\_\_\_, Range: \_\_\_\_\_, Meridian: \_\_\_\_\_

Proposed project will require the use of up to \_\_\_\_\_ acres. (Add additional sheets as necessary)

**Project Description** - Describe in detail your intended use of state land. (State land also includes all tide and submerged lands beneath coastal waters and all shorelands beneath other navigable water bodies of the state.) Discuss development and activities. (Attach additional pages as necessary.)

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Should a portion of the permitted area be closed to the general public? Yes [ ] No [ ]. If yes, explain which portion and provide justification for exclusive use:

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**Site Description** - Briefly describe the current condition of the proposed site of use, noting any trash, garbage, debris or signs of possible site contamination (If significant, we recommend you provide pictures to establish initial conditions):

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Are there improvements or materials on the site now? Yes [ ] No [ ] If yes, briefly describe the improvements, their approximate value, and who owns them (We recommend you provide pictures of improvements):

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**Site Description continued** - Describe the natural vegetation --- ground cover, trees, shrubs --- and any proposed changes. Describe the location of any estuarine, riparian, or wetlands and any noticeable animal use of area.

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**Site Access** - Describe how you plan to access the site, and your mode of transportation.

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If your access is by aircraft, specify the type and size of aircraft: \_\_\_\_\_

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To access the site, the aircraft is equipped with **floats** ☐ **wheels** ☐ **skis** ☐.

**Number of people**

1. Indicate the number of employees and supervisors who will be working on the site. \_\_\_\_\_
2. Indicate the number of customers who will be using the site per year or season. \_\_\_\_\_
3. Indicate the number of days the site will be used per year or season. \_\_\_\_\_

**Environmental Risk / Hazardous Substances** - In the course of your proposed activity will you generate, use, store, transport, dispose of, or otherwise come in contact with toxic and/or hazardous materials, and/or hydrocarbons? **Yes** ☐ **No** ☐. **If yes**, please describe:

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The types and volumes of fuel or other hazardous substances present or proposed: \_\_\_\_\_

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The specific storage location(s): \_\_\_\_\_

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The spill plan and prevention methods: \_\_\_\_\_

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**Environmental Risk/Hazardous Substances (continued)** - If you plan to use either above or below ground storage containers (like tanks, drums, or other containers) for hazardous material storage, answer the following questions for each container:

Where will the container be located? \_\_\_\_\_

What will be stored in the container? \_\_\_\_\_

What will be the container's size in gallons? \_\_\_\_\_

Give a description of any secondary containment structure, including volume in gallons, the type of lining material, and configuration:

\_\_\_\_\_

Will the container be tested for leaks? **Yes** ☐ **No** ☐

Will the container be equipped with leak detection devices? **Yes** ☐ **No** ☐. **If no**, describe: \_\_\_\_\_

\_\_\_\_\_

Do you have any reason to suspect, or do you know if the site may have been previously contaminated? **Yes** ☐ **No** ☐. **If yes**, please explain:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Date Stamp:

\_\_\_\_\_  
Signature of Applicant or Authorized Representative

\_\_\_\_\_  
Title

AS 38.05.035(a) authorizes the director to decide what information is needed to process an application for the sale or use of state land and resources. This information is made part of the state public record and becomes public information under AS 09.25.110 and 09.25.120 (unless the information qualifies for confidentiality under AS 38.05.035(a)(9) and confidentiality is requested.) Public information is open to inspection by you or any member of the public. A person who is the subject of the information may challenge its accuracy or completeness under AS 44.99.310, by giving a written description of the challenged information, the changes needed to correct it, and a name and address where the person can be reached. False statements made in an application for a benefit is punishable under AS 11.56.210.

## Land Use Permit Application Supplemental Questionnaire for: Use of Uplands and Non Marine Waters

To be completed to provide more detailed information about projects or activities requiring the use of state owned uplands and non marine waters. All site development details identified in this section must be represented graphically in the scaled drawings on Page 4 of the supplement.

**Temporary Structures** – 1) Describe all temporary improvements (including buildings, tent platforms, out-buildings, docks, floats, and floating facilities), including their dimensions and building materials. 2) Label improvements to be maintained on a year round basis as year round. **Note:** Seasonal improvements must be completely dismantled and removed or stored on or before the end of authorized terms of use.

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Distance structures including pit privies will be located from the ordinary highwater mark of the nearest freshwater body (lake, stream, river, etc), or the mean high water mark of a saltwater body: \_\_\_\_\_

**Harvest of Non-Timber Related Forest Products** – Please list the type and quantity of each non-timber related forest product (berries, ferns, willow, mushrooms, birch bark, etc.) to be harvested for commercial use:

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Contact the DNR Division of Forestry to obtain authorizations for the harvest of small trees.

**Motorized Equipment** - List mechanized/motorized equipment to be used, including type, size, purpose, and number of each.

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For stream and water body crossings, note who you contacted in the ADF&G, Division of Habitat:

Date: \_\_\_\_\_ Person: \_\_\_\_\_

**Storage and Parking** - If you plan to store items or park boats, vehicles and/or heavy equipment on the site, describe complete the following:

Describe and give dimensions of long term and short term parking and or storage areas. \_\_\_\_\_

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Is parking or storage planned to take place on filled tidelands. **Yes**[ ] **No**[ ]

Does storage involve structures or materials floating in a waterbody? **Yes**[ ] **No**[ ] If yes, describe. \_\_\_\_\_

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**Storage and Parking (continued)**

Number of disassembled tent frames \_\_\_\_\_

Number of tent platforms \_\_\_\_\_

List and describe items that are large and difficult to transport. Include dimensions: \_\_\_\_\_

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Will barrel(s) or an equivalent type of storage container be used? **Yes**[ ☐ ] **No**[ ☐ ] If using something other than barrels for storage containers, describe the alternative container.

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Describe any measures you plan to take to minimize drips or spills from leaking vehicles or equipment. \_\_\_\_\_

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**Water / Wastewater****Water Supply** – Describe the water supply and proposed use. \_\_\_\_\_

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**Wastewater** – Describe the wastewater type and quantity and proposed method of wastewater disposal: (for the marine environment, also describe the proposed gray and black water systems or out fall pipeline).

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**Waste** – Describe the types of waste that will be generated on-site, including solid waste, the source of the waste, and the method of waste disposal, i.e. pit privy, or self-contained system, or outfall line; indicate distance from the nearest waterbody.

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### **Animal Use**

Will there be any use of animals (horses, llamas, dogs, etc.)? Yes[ ] No[ ]

Will there be commercial use of the animals (horseback rides, packing, dog sled rides, etc.)? Yes[ ] No[ ] If yes, please explain:

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**Dismantle, Removal, Restoration Plan** – Provide a plan for dismantling and removing temporary structures. Include method and timeline for total site restoration:

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**SHORT TERM (PORTABLE) COMMERCIAL RECREATION CAMPS:** Identify commercial recreation activity/activities for which short term (portable) camps **will be** established to accommodate employees and clients, and provide a general description of the location(s) (e.g. guide use area, game management sub-unit, river, stream, lake, etc.) where the recreational activity/activities and short term (portable) camp use will occur.

\_\_\_ **Big Game Guiding: (List up to 3 Guide Use Areas.)** \_\_\_\_\_

\_\_\_ **Sportfishing (List river corridors, lakes, etc.)** \_\_\_\_\_

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\_\_\_ **Boating/Rafting/Kayaking: (List river corridors, lakes, etc.)** \_\_\_\_\_

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\_\_\_ **Other Recreation: (Type and general geographic description.)** \_\_\_\_\_

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- Is all or a portion of any of the above identified areas located within the Bering Straits CRSA? Yes \_\_\_\_ No \_\_\_\_

- Identify any State of Alaska Refuge, Sanctuary and/or Critical Habitat Area where short term (portable) camps will be used. \_\_\_\_\_

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Will activities include “day use” of state land managed under the Haines State Forest Management Plan? Yes \_\_\_\_ No \_\_\_\_

## Site Development Diagram

<b>VICINITY MAP</b>	
<b>ALASKA DEPARTEMENT OF NATURAL RESOURCES DIV. OF MINING, LAND , WATER LAND USE PERMIT</b>	
<b>SITE DEVELOPMENT DIAGRAM</b>	
Sec.(s) _____ T._____ S., R._____ E., _____M	
SHEET    OF	

LAS # \_\_\_\_\_

# Grant Lake Hydroelectric Project (FERC No. 13212) Licensing

## Consultation Record

### Phone/E-mail /One on One Meeting Log

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*Contact Name:* Candice Snow

*Agency/Organization:* ADNR

*Phone No./E-mail Address:* 907-269-8569; [candice.snow@alaska.gov](mailto:candice.snow@alaska.gov)

---

*Date:* 4/16/13

*Time:* 2:00 PST

---

*Grant Lake Licensing Team Contact:* Cory Warnock & Chuck Sauvageau

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#### *Summary of Conversation and/or E-mail Exchange:*

Mr. Warnock and Mr. Sauvageau discussed the need for an ADNR permit and the associated requirements with Ms. Snow. Ms. Snow stated that since the south and west portions of the outlet area of Grant Lake were on state land, a permit for the thermistor string would be required. She indicated that there are many similar studies currently being conducted on state land, the permitting process is very straight forward and getting it approved in time for the study to commence shouldn't be an issue. Mr. Warnock and Mr. Sauvageau committed to getting Ms. Snow the permit application later in the week.

Call Duration: 10 minutes

# Grant Lake Hydroelectric Project (FERC No. 13212) Licensing

## Consultation Record

### Phone/E-mail /One on One Meeting Log

---

*Contact Name:* Katie McCafferty

*Agency/Organization:* ACOE

*Phone No./E-mail Address:* 907-753-5556; [katherine.a.mccafferty@usace.army.mil](mailto:katherine.a.mccafferty@usace.army.mil)

---

*Date:* 4/16/13

*Time:* 3:00 PST

---

*Grant Lake Licensing Team Contact:* Cory Warnock, Levia Shoutis and Jeanette Blank

---

#### *Summary of Conversation and/or E-mail Exchange:*

Mr. Warnock, Ms. Shoutis and Ms. Blank had a call to discuss the need for a permit to conduct wetlands work near Grant Creek, on state land. Previous email discussions between Ms. McCafferty and Mr. Warnock had indicated that the HEA would need a permit from the ACOE to do this work. Mr. Warnock and Ms. Shoutis clarified that the work that would be conducted was not for geotechnical purposes associated with construction and that it was for natural resources work in conjunction with determining potential impacts related to the project. Once Ms. McCafferty fully understood the scope of the current effort, she determined that a permit for wetlands work was not needed.

Other topics discussed included:

- Secondary impact analysis
- Function assessment
- 404 permitting

It was determined that all of these topics would be revisited at a later date.

Call Duration: 20 minutes

---

**From:** Cory Warnock  
**Sent:** Tuesday, April 16, 2013 1:41 PM  
**To:** Van Massenhove, Katherine B -FS; Duvall, Shina A (DNR)  
**Cc:** Nelson, Sherry D -FS; Mike Salzetti; Emily Andersen; Michael Yarborough  
**Subject:** RE: Cultural Meeting

Thanks for the response, Kathy.

At this point, it appears that you don't need much else in the way of documentation from us. I'll wait to hear from Sherry about the appropriate approach for dealing with SHPO prior to taking action. Once I hear from her, I'll act accordingly and work with Shina to get concurrence as that appears to be the catalyst for getting the permit amended to allow for the wetland work.

Thanks,

Cory

---

**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]  
**Sent:** Tuesday, April 16, 2013 1:36 PM  
**To:** Cory Warnock; Duvall, Shina A (DNR)  
**Cc:** Nelson, Sherry D -FS; Mike Salzetti; Emily Andersen; Michael Yarborough  
**Subject:** RE: Cultural Meeting

Hi Cory,

I've responded to your answers below in green text, with the exception of number 1, as I would like to defer to Sherry if that is the appropriate method and timing for SHPO concurrence, although Shina may also know. I'm just not sure how that process plays out, I just know I need to have SHPO concurrence to issue the amendment.

Cheers,

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Tuesday, April 16, 2013 11:34 AM  
**To:** Van Massenhove, Katherine B -FS; Duvall, Shina A (DNR)  
**Cc:** Nelson, Sherry D -FS; Mike Salzetti; Emily Andersen; Michael Yarborough  
**Subject:** RE: Cultural Meeting

Hi Kathy,

Thanks for the update. Couple questions/comments:

1. If I understand the path you've laid out correctly, would it make sense for me to get in touch with Frank Winchell (FERC) for his input and to get official concurrence from SHPO? I will need to defer to Sherry or Shina for the correct procedure for engaging SHPO.



2. You mention that you'll amend for the cultural work first? Can I then assume that you and Sherry have discussed the amendment vs. an AARPA and are going with the amendment? I'm only asking this because Sherry indicated during the APE meeting that she wasn't sure if the amendment path had been formally chosen. **Yes, we will amend the current permit and do not need to go the more formal route of ARPA permit.**
3. If this is the case, you don't need anything else from our cultural folks to finalize that amendment, correct? **I sent a message to Sarah M, regarding information Sherry needs for the review to amend the permit for the cultural study. I'll forward the email so you know what we are looking for, Sarah is tracking down the information.**
4. Finally, I believe the path that we have most intensively discussed involves either your #1 or #2 below (depending on if any cultural resources are found). To that end, Mike Yarborough (CRC) is prepared to conduct the work in June during his other work at the lake. What type of reporting memo would you need to see after his assessment is conducted. **Hmm, I'm not sure if there is a specific format, I will defer to Sherry, but it's likely just a copy of his report and findings is all we would need.**

Once I hear back from you, I will act proactively and accordingly to get you, SHPO and FERC all of the information they will need to get everything finalized.

Thanks,

Cory

---

**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]  
**Sent:** Tuesday, April 16, 2013 11:30 AM  
**To:** Duvall, Shina A (DNR); Cory Warnock  
**Cc:** Nelson, Sherry D -FS; Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Hi All,

The Forest Service will be amending the special use permit for both the cultural and wetlands study issued to Kenai Hydro, LLC for investigative studies. We will amend first for the cultural work

As for the wetland study, there are three possible scenarios that would be acceptable with the FS as long as SHPO concurs: 1) If the area is surveyed prior to the wetland tests and no cultural resources are documented, the wetland tests could be conducted; 2) If the area is surveyed prior to wetland testing and cultural resources are documented, and the cultural resources could be flagged and avoided, the wetland tests could be conducted; 3) If the area is not surveyed in time to meet the test deadline, a qualified archaeologist (contractor or FS personnel) could monitor the activities provided an archaeologist is available.

It would be up to the lead agency to get SHPO concurrence, not Forest Service personnel (FERC?)

Once we have SHPO concurrence, the amendment for the wetlands survey can be finalized prior to the cultural resource survey actually occurring.

Hope this helps,

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

---

**From:** Duvall, Shina A (DNR) [<mailto:shina.duvall@alaska.gov>]  
**Sent:** Monday, April 15, 2013 10:48 AM

**To:** Cory Warnock; Van Massenhove, Katherine B -FS  
**Cc:** Nelson, Sherry D -FS; Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Oh ok – sorry. Yes, I'll have to leave that question to Kathy and/or Sherry to answer. ☺

Best regards,  
Shina

Shina duVall, RPA  
Archaeologist, Review and Compliance Coordinator  
Alaska State Historic Preservation Office / Office of History and Archaeology  
550 W. 7th Ave., Suite 1310  
907-269-8720 (phone) 907-269-8908 (fax)  
[shina.duvall@alaska.gov](mailto:shina.duvall@alaska.gov)

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Monday, April 15, 2013 10:42 AM  
**To:** Duvall, Shina A (DNR); Van Massenhove, Katherine B -FS  
**Cc:** Nelson, Sherry D -FS ([snelson@fs.fed.us](mailto:snelson@fs.fed.us)); Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Hi Shina,

As I understand it in talking with Kathy and subsequently you and Sherry, there would be an amendment to the existing Special Use Permit from the Forest Service that would allow us to do the wetlands work at the head of the lake. It will be good to hear from Kathy and/or Sherry regarding my question below related to timing now that we have an approach with CRC that is acceptable to everyone.

Cory

---

**From:** Duvall, Shina A (DNR) [<mailto:shina.duvall@alaska.gov>]  
**Sent:** Monday, April 15, 2013 11:32 AM  
**To:** Cory Warnock; Van Massenhove, Katherine B -FS  
**Cc:** Nelson, Sherry D -FS ([snelson@fs.fed.us](mailto:snelson@fs.fed.us)); Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Hi Cory,

Sorry for the delayed reply. I believe that you have accurately captured what I recall from our discussion. However, I am not sure which "amendment" you are referring to...?

Best regards,  
Shina

Shina duVall, RPA  
Archaeologist, Review and Compliance Coordinator  
Alaska State Historic Preservation Office / Office of History and Archaeology  
550 W. 7th Ave., Suite 1310  
907-269-8720 (phone) 907-269-8908 (fax)  
[shina.duvall@alaska.gov](mailto:shina.duvall@alaska.gov)

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**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Wednesday, April 03, 2013 8:16 PM  
**To:** Van Massenhove, Katherine B -FS  
**Cc:** Nelson, Sherry D -FS ([snelson@fs.fed.us](mailto:snelson@fs.fed.us)); Duvall, Shina A (DNR); Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Hi Kathy,

The meeting went well and we were able to discuss a path forward as it relates to the wetlands work at the head of Grant Lake. I've Cc'd Sherry and Shina so they can elaborate/clarify what I think I heard during our meeting.

The approach we discussed today involved Mike Yarborough (our Cultural consultant) doing a review of wetlands at the head of Grant Lake in association with his Cultural work at the lake in June. He would examine the area, make note of culturally relevant sites in the area of proposed wetland analysis (if any), and relay this information to you and Sherry along with our terrestrial folks. Presumably, you and Sherry would then review it for your agencies purposes and review it with Shina (SHPO) for her ok. Sherry and Shina, did I accurately capture the approach we discussed?

The one question I have is, if we all agree that this approach is acceptable, can the amendment be finalized in advance of the June Cultural work or will it happen once that work has occurred? In other words, does the fact that we have an acceptable process in place allow us to get the proposed amendment completed or do we wait for the Cultural review to finalize? Either is fine assuming the timeline will work. I'm just trying to have a full understanding of the process.

As an aside and in an effort to answer the questions posed today by you, Shina and Sherry, here is a general description of the wetlands work that will take place at the head of Grant Lake. If you need more information, please let me know and I'll get with our terrestrial folks to get you the details you need.....

- We will place ~2-4 soil pits around the boundary areas of each of our sites but won't know exactly where until we're in the field. The "vicinity" is within the wetland assessment area (head of Grant Lk on USFS land).
- Estimated 3-7 soil pits at the head of Grant Lake. It would be nice to have an allowance for 10 in case a few additional are needed.
- Depth: 18-24" depending on depth to refusal; diameter: ~8-12"; the pit will only be open for ~1 hr during the wetland determination, then the soil plugs will be replaced.

I'll look forward to hearing from you. Thanks and again, let me know if you need additional information,

Cory

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**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]  
**Sent:** Wednesday, April 03, 2013 5:56 PM  
**To:** Cory Warnock  
**Subject:** RE: Cultural Meeting

Hey Cory,

I hope the meeting went well. I wasn't able to skip out of the other meeting as I was hoping, but did brief Sherry on the questions we had, so hopefully we were able to resolve some of the questions we had.

Kathy

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Wednesday, April 03, 2013 12:05 PM  
**To:** Van Massenhove, Katherine B -FS  
**Subject:** Cultural Meeting

Hi Kathy,

Are you going to be able to join us at 2PM AK time for the APE meeting? If so, do you have all of the connection details?

Thanks,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

McMillen, LLC  
[www.mcmillen-llc.com](http://www.mcmillen-llc.com)  
5771 Applegrove Ln.  
Ferndale, Wa. 98248  
O – 360-384-2662  
C – 360-739-0187  
F – 360-542-2264

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**From:** Cory Warnock  
**Sent:** Wednesday, April 17, 2013 9:43 AM  
**To:** Ayers, Scott D (DFG)  
**Cc:** John Stevenson; Emily Andersen; Begich, Robert N (DFG); Oxman, Dion S (DFG)  
**Subject:** RE: PERMIT: Fish Resource Permit SF2013-105 (Salzetti/Homer Electric-grant creek/trail lake narrows-local species)

Hi Scott,

Thanks for the quick response. Just so that we are all on the same page with what is an acceptable protocol and what isn't, would it be possible to have a brief call with you, John Stevenson and myself in the next couple days? John is on-site and can much more succinctly describe the need and methods that they have at their disposal. I'm relatively flexible the rest of the week so I'll defer to you and John to let me know a time that will work.

Again, thanks.

Cory

---

**From:** Ayers, Scott D (DFG) [<mailto:scott.ayers@alaska.gov>]  
**Sent:** Wednesday, April 17, 2013 9:38 AM  
**To:** Cory Warnock  
**Cc:** John Stevenson; Emily Andersen; Begich, Robert N (DFG); Oxman, Dion S (DFG)  
**Subject:** RE: PERMIT: Fish Resource Permit SF2013-105 (Salzetti/Homer Electric-grant creek/trail lake narrows-local species)

Cory,  
Good morning. Thank you for the questions about Fish Resource Permit SF2013-105. As it is currently written, there is no language that allows for marking of fish. However, we are open to this option, especially as it is apparent that there is a need to differentiate between fish captured in each of the two smolt traps that you have in place. It is our preference that a dye (such as Bismark Brown) be used to mark the fish from the trap on the downstream side of the canyon. Dyes have a long history of being used as a fish marking tool, and Bismark Brown is commonly used in Alaska as a means to estimate smolt trap efficiency by marking captured fish, moving them back upstream of the trap, and then recapturing them. The primary concern with using fin clips is that some studies have suggested mortality rates of up to 50% on small fish whose fins have been clipped, which is exacerbated in the presence of stressors such as predators.

Please let me know if this plan will work for you. If so, I will draft an amendment to your permit and get it out to you today.

Cheers,  
-Scott

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Tuesday, April 16, 2013 1:41 PM  
**To:** Ayers, Scott D (DFG)  
**Cc:** John Stevenson; Emily Andersen  
**Subject:** Fish Work (Grant Creek)

Hi Scott,

I was just coordinating with our Aquatics Lead, John Stevenson (Cc'd) about some of the upcoming work we will be doing and we have a question related to our work and the associated permit. As you know, we will have two smolt

traps in place on the creek. One will be low (near the mouth) and the other will be upstream near the downstream end of the canyon reach. In an effort to both distinguish between the two sets of juveniles and minimize the amount of mortality associated with handling certain species for lengthy periods, we would like to take a very small fin clip out of the upper or lower lobe of the caudal fin. This is particularly important for the very small sockeye that we will be working with as they will be very fragile and the less handling, the better. However, we would like to follow a similar marking/distinguishing methodology for all of our species (Chinook, coho, rainbow and Dolly Varden), if possible. While I see nothing specific in our permit indicating that this would be prohibited, I wanted to make sure that this was acceptable before proceeding. This would only be at the upper (canyon) site and we don't anticipate high numbers of juveniles being collected in this area. That said, it would be very helpful from an analytical standpoint, to be able to distinguish juvenile fish captured at the upper and lower traps. If you'd like more detailed information related to our methodology for marking fish on the creek, please let me know and I'll set up a call with you, John Stevenson and myself.

Thanks, Scott. I'll look forward to hearing from you,

Cory

**Cory Warnock**

*Senior Licensing and Regulatory Consultant*

McMillen, LLC

[www.mcmillen-llc.com](http://www.mcmillen-llc.com)

5771 Applegrove Ln.

Ferndale, Wa. 98248

O – 360-384-2662

C – 360-739-0187

F – 360-542-2264

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**From:** Ayers, Scott D (DFG) <scott.ayers@alaska.gov>  
**Sent:** Wednesday, April 17, 2013 11:16 AM  
**To:** Cory Warnock  
**Cc:** John Stevenson; 'Mark Miller (mark.miller@bioanalysts.net)'; Emily Andersen  
**Subject:** RE: Call for Grant Lake

That would work just fine. I'll expect a call at that time.

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Wednesday, April 17, 2013 10:15 AM  
**To:** Ayers, Scott D (DFG)  
**Cc:** John Stevenson; 'Mark Miller ([mark.miller@bioanalysts.net](mailto:mark.miller@bioanalysts.net))'; Emily Andersen  
**Subject:** Call for Grant Lake

Hi Scott,

I just spoke with John Stevenson and he is available tomorrow at 11 AK time. Would that work for you?

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

McMillen, LLC  
[www.mcmillen-llc.com](http://www.mcmillen-llc.com)  
5771 Applegrove Ln.  
Ferndale, Wa. 98248  
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C – 360-739-0187  
F – 360-542-2264

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**From:** Cory Warnock  
**Sent:** Wednesday, April 17, 2013 9:40 AM  
**To:** Snow, Candice S (DNR)  
**Cc:** Charles Sauvageau; Emily Andersen  
**Subject:** RE: Land Use Permit (Grant Lake)

Ok, thanks.

We will fill it out by hand.

Cory

---

**From:** Snow, Candice S (DNR) [<mailto:candice.snow@alaska.gov>]  
**Sent:** Wednesday, April 17, 2013 9:39 AM  
**To:** Cory Warnock  
**Subject:** RE: Land Use Permit (Grant Lake)

Good morning, sorry we don't have an editable PDF application.

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Wednesday, April 17, 2013 8:30 AM  
**To:** Snow, Candice S (DNR)  
**Cc:** Charles Sauvageau  
**Subject:** Land Use Permit (Grant Lake)

Hi Candice,

Do you happen to have the LUP in a format that would allow us to type in our responses as opposed to hand write them?

Thanks,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

McMillen, LLC  
[www.mcmillen-llc.com](http://www.mcmillen-llc.com)  
5771 Applegrove Ln.  
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C – 360-739-0187  
F – 360-542-2264



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**From:** Cory Warnock  
**Sent:** Wednesday, April 17, 2013 10:18 AM  
**To:** Emily Andersen  
**Subject:** FW: Grant Lake cultural survey

FYI

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**From:** Nelson, Sherry D -FS [<mailto:snelson@fs.fed.us>]  
**Sent:** Wednesday, April 17, 2013 10:18 AM  
**To:** Sarah Meitl; Van Massenhove, Katherine B -FS  
**Cc:** Michael Yarborough; Cory Warnock  
**Subject:** RE: Grant Lake cultural survey

Good Morning Sarah and Kathy,  
Sarah thank you for providing the requested information. I've reviewed it and am satisfied that we can amend the existing permit that was issued through the Organic Act. An ARPA permit will not be necessary. Thank you!

**From:** Sarah Meitl [<mailto:meitl.sarah@gmail.com>]  
**Sent:** Wednesday, April 17, 2013 8:59 AM  
**To:** Van Massenhove, Katherine B -FS  
**Cc:** Nelson, Sherry D -FS; Michael Yarborough; Cory Warnock  
**Subject:** Re: Grant Lake cultural survey

Hi Kathy,

Attached is a document containing the information you requested.

Best,  
Sarah

On Tue, Apr 16, 2013 at 11:09 AM, Van Massenhove, Katherine B -FS <[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)> wrote:

Hi Sarah,

In order for Sherry Nelson to properly review the request for the cultural survey, there are a few outstanding items that will need to be provided to the Forest Service. Please send us the following:

1. A current map identifying the change in the access route, Forest Service boundaries, and known cultural sites.
2. Indicate if all of the known sites on Forest Service System lands have been evaluated for National Register eligibility.
3. If there are any known prehistoric sites in existing data review and if so, is the applicant planning subsurface testing at those sites.



## **CULTURAL RESOURCE CONSULTANTS LLC**

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3504 East 67th Avenue  
Anchorage, Alaska 99507  
(907) 349-3445

**Grant Lake Project**  
**FERC No. 13212**  
**April 16, 2013**

Kathy Van Massenhove  
Special Uses Service Team

Dear Ms. Van Massenhove:

This letter was written in response to your request for information dated April 16, 2013, concerning the Cultural Resources compliance work for the Grant Lake Hydro Project. The information you requested included:

1. A current map identifying the change in the access route, Forest Service boundaries, and known cultural sites.
2. Indicate if all of the known sites on Forest Service System lands have been evaluated for National Register eligibility.
3. If there are any known prehistoric sites in existing data review and if so, is the applicant planning subsurface testing at those sites.

Item 1: Please see Figures 1 and 2. Both figures show the proposed Area of Potential Effects (APE)<sup>1</sup> illustrated with red hashing. Figure 1 shows the entire project area, while Figure 2 is a detail shot of proposed project infrastructure. Forest Service lands are depicted in green; none of the project infrastructure construction will occur on Forest Service lands.

Item 2: There are four AHRS sites on Forest Service Lands that are within our APE, but only two have been evaluated for National Register of Historic Places (National Register) eligibility.

Item 3: SEW-00768 and SEW-00823 have not been evaluated for eligibility to the National Register and will be evaluated as part of the proposed survey. These sites are associated with historic mining.

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<sup>1</sup> A more detailed description of the APE will be addressed in a forthcoming document.

According to section 4.4.1 of the project study plan:

For those archaeological resources that have been identified but not formally evaluated for eligibility for listing in the NRHP, a one square meter test unit will be excavated within site boundaries to evaluate vertical integrity of any identified cultural deposits, as appropriate. All recovered artifacts from subsurface evaluations will be photographed, measured, described, and recorded in detail. Artifacts will not be collected, except in the rare cases of items that may be considered threatened by erosion or looting. Any materials collected will be curated at a facility meeting the Secretary of the Interior's standards for appropriate cultural resource storage.

CRC plans to identify site boundaries for SEW-00768 and SEW-00823 and excavate a one meter square test unit at each site. Similar evaluation level documentation may need to occur at any sites discovered during survey. No excavations are planned at SEW-00659 and SEW-01454.

Table 1. Updated listing of AHRS sites located within the proposed direct APE on Forest Service lands. Sites listed in bold do not have a determination of eligibility.

<b>AHRS No.</b>	<b>Site Name</b>	<b>Description</b>	<b>Eligibility</b>
SEW-00659	Case Mine (Grant Lake Placer Mine)	Cabin, bunkhouse, and 4 associated structures, 1900-1940s	Determined Eligible
<b>SEW-00768</b>	<b>Grant Lake Cabin</b>	<b>Frame cabin, dating to historic prospecting, mining, hunting, or trapping</b>	<b>No Determination of Eligibility</b>
<b>SEW-00823</b>	<b>North Grant Lake Cabin (Case Mine Dynamite Shack)</b>	<b>Log cabin/dynamite storage for area mines</b>	<b>No Determination of Eligibility</b>
SEW-01454	Grant Lake Road to Case Mine	Access trail to the Case Mine	Determined Eligible

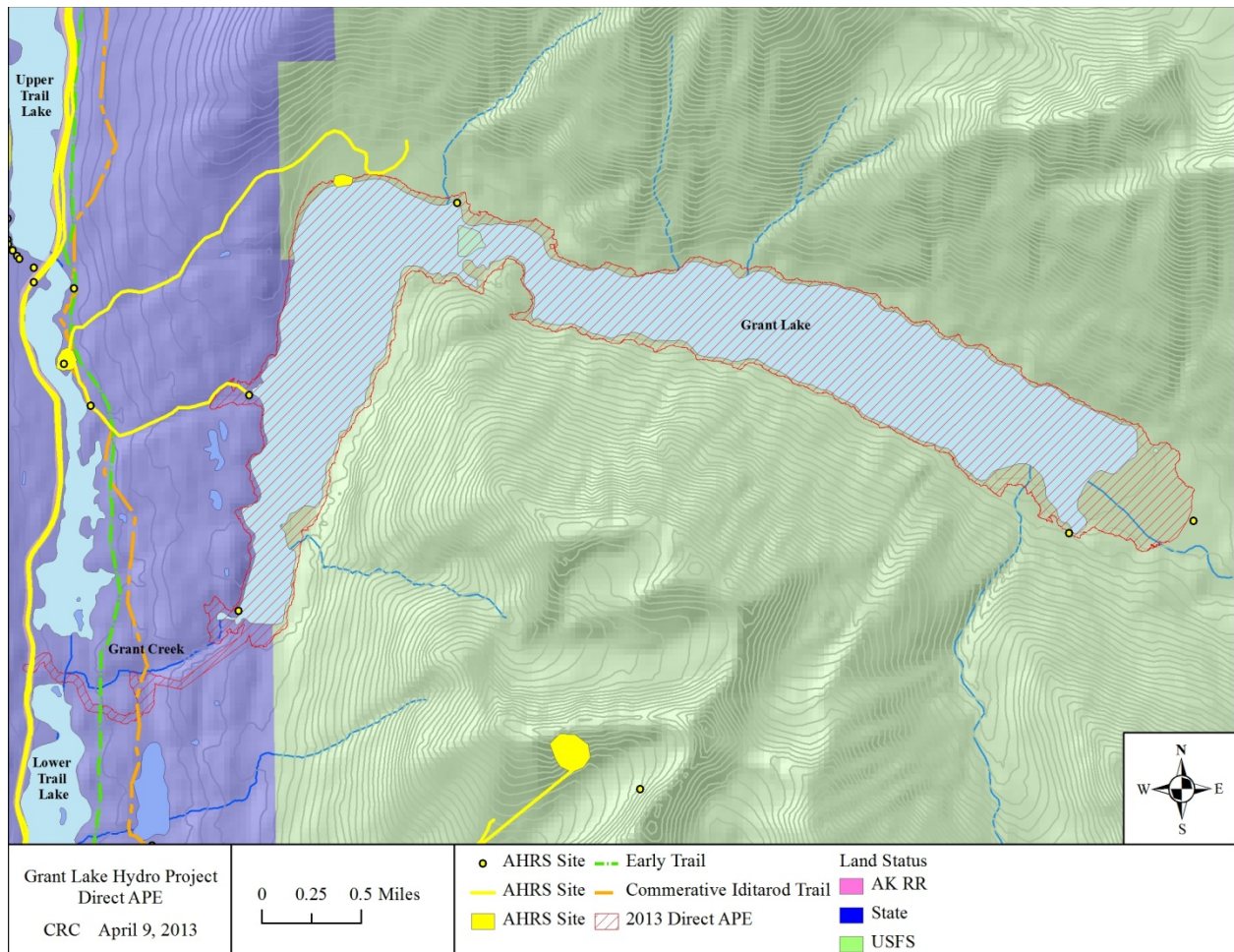


Figure 1. Proposed APE for direct and indirect project effects.

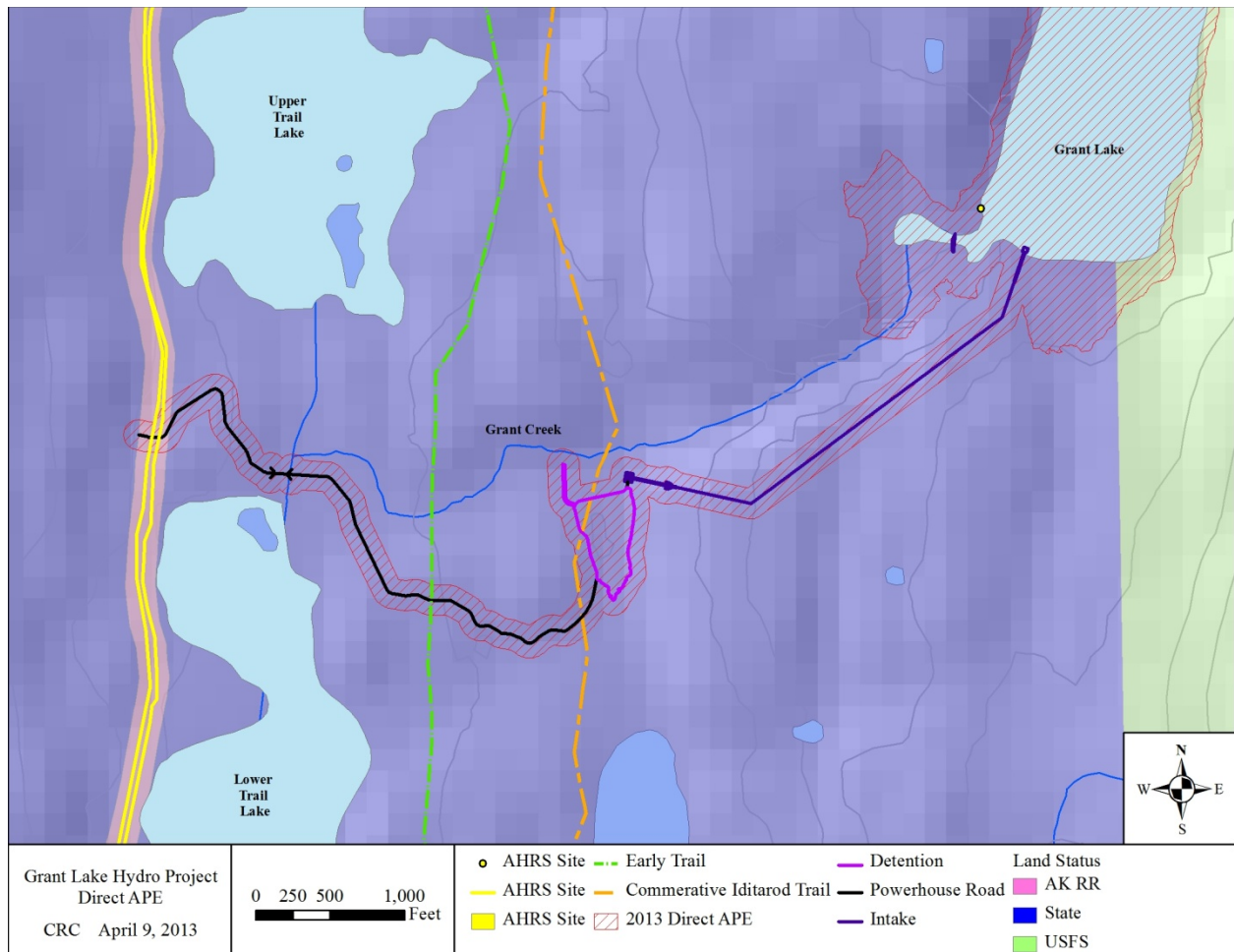


Figure 1. Proposed APE and project infrastructure.

If you have any further questions or comments related to this proposed project, please contact our cultural resources lead, Michael Yarborough, by telephone at 907-349-3445, or by e-mail at [myr@crcalaska.com](mailto:myr@crcalaska.com) or Sarah Meitl, by telephone at 907-229-4357, or by email at [s.meitl@crcalaska.com](mailto:s.meitl@crcalaska.com).

Sincerely,

**Sarah Meitl**  
Project Archaeologist  
Cultural Resource Consultants LLC

# Grant Lake Hydroelectric Project (FERC No. 13212) Licensing

## Consultation Record

### Phone/E-mail /One on One Meeting Log

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*Contact Name:* Scott Ayers

*Agency/Organization:* ADF&G

*Phone No./E-mail Address:* 907-267-2517; scott.ayers@alaska.gov

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*Date:* 4/18/13

*Time:* 12:00 PST

---

*Grant Lake Licensing Team Contact:* Cory Warnock, John Stevenson, Mark Miller

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#### *Summary of Conversation and/or E-mail Exchange:*

Mr. Warnock, Mr. Stevenson and Mr. Miller discussed the potential need for an amendment to the existing Fish Resource Permit to allow for the marking of smolt (primarily Chinook and sockeye) at the upper trap site to differentiate them from fish from lower in the system, captured at the lower trap. They explained that this needed to be done to determine trap efficiency and were hoping that they could make a small fin clip in fish captured at the upstream site to differentiate. Mr. Ayers said that typically this is not allowed due to the potential for increased mortality but would ask the appropriate folks within the marking department in Juneau if this would be acceptable and get back to the group.

Production estimates related to resident species was also discussed and questions were raised by Mr. Miller about acceptable marking options for residents to appropriately conduct this study. Mr. Ayers stated that he would speak with a biologist and respond soon.

Mr. Ayers stated that we should expect a response by early the following week.

Call Duration: 15 minutes

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**From:** Cory Warnock  
**Sent:** Thursday, April 18, 2013 10:48 AM  
**To:** candice.snow@alaska.gov  
**Cc:** Mike Salzetti; Emily Andersen  
**Subject:** Grant Lake Thermistor String Permit Application  
**Attachments:** ADNR Thermistor String Application Signed (Grant Lake).pdf

Hi Candice,

Attached is a signed copy of the Grant Lake Thermistor String Permit Application. Please let me know if you need additional information to fully process and I'll do my best to get it to you as quickly as possible.

Thanks,

Cory

***Cory Warnock***  
*Senior Licensing and Regulatory Consultant*

McMillen, LLC  
[www.mcmillen-llc.com](http://www.mcmillen-llc.com)  
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F – 360-542-2264



**STATE OF ALASKA**  
**DEPARTMENT OF NATURAL RESOURCES**  
**Division of Mining, Land and Water**

Northern Region Land Office,  
Fairbanks  
(907) 451-2740

Southcentral Region Land Office,  
Anchorage  
(907) 269-8552

Southeast Region Land Office,  
Juneau  
(907) 465-3400

Dear Applicant:

The Department of Natural Resources, Division of Mining, Land and Water's (DMLW) regional land offices are responsible for managing state land and resources. Certain activities on state land require a land use permit, while other activities are considered "generally allowed" or require other authorizations. Commercial recreation facilities that remain no longer than 14 days in any one site may obtain a commercial recreation permit rather than a land use permit. Additional information and forms are available at any Division of Mining, Land and Water regional land office and the Public Information Centers in Anchorage and Fairbanks.

**Land Use Permits:**

- authorize the temporary use of state land or resources;
- can be issued for up to five years;
- do not convey any interest in state land;
- are revocable with or without cause;
- are not transferable;
- do not constitute waiver of any other state, federal, or local laws; and

**A Complete Land Use Permit Application Package includes the following items:**

**A Land Use Permit application form completed and signed by the applicant.** Applicants proposing:

- the use of the uplands and non marine waters must also complete the Supplemental Questionnaire for Use of Uplands and/or Non Marine Waters accompanying this application;
- off-road travel must also complete the Supplemental Questionnaire for Off-Road Travel accompanying this application; and/or
- the use of tide and submerged lands must also complete the Supplemental Questionnaire for Use of Marine Waters accompanying this application.

The **site development diagram** required in the Supplemental Questionnaire for Use of Uplands and/or Non-Marine Waters and the Supplemental Questionnaire for Use of Marine Waters should show each item labeled so that it corresponds with your description in the Questionnaire. **The site development diagram must include:**

- **Location** - Section, Township, and Range lines; North arrow; scale; title; legend (may be attached).
- **Boundaries** - Boundaries and dimensions of proposed area of use and their relation to geographic features, including water bodies, and existing trails or rights-of-way.
- **Structures and Storage** - Location and dimensions of buildings, tent platforms, out-buildings and other improvements, and of equipment parking and storage areas, including snow storage areas.
- **Hazardous substances** - Location and dimensions of storage facilities for hazardous substances, including but not limited to oil, lubricants, fuel oil, gasoline, solvents, and diesel fuel. Include method and dimensions of storage (tank, drum, etc.).

**Other items that must accompany the application package are:**

Land Use Permit Application  
Cover Letter (04/07)  
Page 1 of 2



**Map** - a topographic map of sufficient scale to show the location of the proposed activity. The map may be either 1:250,000 or 1:63,360.

**Coastal Project Questionnaire (CPQ)** - A CPQ is required to identify which state and federal permits are required for activities within the coastal zone. The DMLW will help you determine if the proposed activity is within the coastal zone by referring to the Coastal Zone Boundaries of Alaska (June 1995). If your project is within the coastal zone, please request a Coastal Project Questionnaire from the DMLW office.

**Filing Fees** - A \$100.00 non-refundable filing fee is required by regulation (11 AAC 05.010(5)(B)). Make checks payable to the "State of Alaska".

**Other Miscellaneous Items:** Items specifically identified and required in any of the supplemental questionnaires.

**Completed Land Use Permit Applications should be mailed to one of the following offices:**

**Public Information Center**  
550 W. 7<sup>th</sup> Ave, Suite 1260  
Anchorage, AK 99501  
(907) 269-8400

**Public Information Center**  
3700 Airport Way  
Fairbanks, AK 99709  
(907) 451-2705

**MLW Information Office**  
P.O Box 111020  
Juneau, AK 99811-1020  
(907) 465-3400

**Pre-Permit Issuance Requirements:** Prior to issuance of a permit, an applicant is required to submit one or more of the following:

**Use Fees** - The use fee depends on the type of activity, length of use and the acreage authorized for use. Regulations under 11 AAC 05.010(e)(6)-(9) describe use fees for different activities authorized under land use permits.

**Performance Guaranty (Bond)** - A performance guaranty is held by the state to assure performance and to pay for corrective action if the use of state land fails to comply with the requirements of the permit. The DMLW uses a bonding matrix to determine the amount of a performance guaranty. Acceptable types of performance guaranties include:

- a. cash or check made out to the State of Alaska;
- b. a Certificate of Deposit (CD) in the state's name; or
- c. a corporate surety bond.

**Insurance** - Insurance to protect you and the state from liabilities incurred through the use of state property.

**Survey** - Surveys are generally not required for land use permits. Some authorizations may require a Global Positioning System (GPS) to determine the location of the project.

If you have any questions prior to submitting your application, you are encouraged to meet with a member of the Division of Mining, Land and Water staff about your proposed activity.

**ONLY COMPLETE APPLICATIONS WILL BE ACCEPTED**

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINING, LAND AND WATER

LAND USE PERMIT APPLICATION

AS 38.05.850

Applicants must complete all sections of this application. In addition, applicants proposing:

- the use of the uplands and non marine waters must also complete the Supplemental Questionnaire for Use of Uplands and Non Marine Waters accompanying this application;
- off-road travel must also complete the Supplemental Questionnaire for Off-Road Travel accompanying this application; and/or
- the use of tide and submerged lands must also complete the Supplemental Questionnaire for Use of Marine Waters accompanying this application.

Other items that must accompany the completed application are:

- a (non-refundable) \$100 application filing fee;
- a 1:250,000 or 1:63,360 scale USGS map showing the location of the proposed activity;
- additional items identified and required in any supplemental questionnaire(s) to this application;
- an Alaska Coastal Management Questionnaire if the proposed use is within the Coastal Zone; and
- additional pages if more space is necessary to answer the questions completely.

Completed Land Use Permit Applications should be mailed to one of the following offices:

Public Information Center  
550 W. 7<sup>th</sup> Ave, Suite 1260  
Anchorage, AK 99501  
(907) 269-8400

Public Information Center  
3700 Airport Way  
Fairbanks, AK 99709  
(907) 451-2705

MLW Information Office  
P.O. Box 111020  
Juneau, AK 99811-1020  
(907) 465-3400

LAS # \_\_\_\_\_

**Applicant Information:**

Mike Salzetti  
Applicant Name \_\_\_\_\_ Date of Birth \_\_\_\_\_  
Homer Electric Association Mike Salzetti  
Doing Business As \_\_\_\_\_ Contact Person \_\_\_\_\_ EIN \_\_\_\_\_  
280 Airport Way Kenai, AK. 99611 MSalzetti@homerelectric.com  
Mailing Address with City, State and Zip \_\_\_\_\_ Email Address \_\_\_\_\_  
( ) (907) 283-2375 ( ) ( )  
Home Phone \_\_\_\_\_ Work Phone \_\_\_\_\_ Cell Phone \_\_\_\_\_ FAX \_\_\_\_\_

If you are applying for a corporation, give the following information:

Name, address and place of incorporation: Same as above.

Is the corporation qualified to do business in Alaska? ☒ Yes ☐ No ☐ . If yes, provide name, address and phone number of resident agent: Same as above

Type of User, Select one: ☐ Private non-commercial (personal use) ☐ Commercial Recreation or Tourism  
☐ Public Non-profit including Federal, State, Municipal Government Agency ☒ Other commercial or industrial

**Duration of Project:** The proposed activity will require the use of state land for: (Check one)

a single term of less than one year. Beginning month: \_\_\_\_\_ Ending month: \_\_\_\_\_

☒ a multi year term for up to 5 years. Beginning year: June 2013 Ending year: October 2015

If multi year and seasonal, circle months of use in each year. Jan., Feb., Mar., Apr., May, Jun., Jul., Aug., Sept., Oct., Nov., Dec.

### Project Location

Latitude/Longitude or UTM: 60° 27' 41.50" N / 149° 20' 04.99" W or

Section: 6, Township: 4N, Range: 1E, Meridian: \_\_\_\_\_  
(The spaces below are to be used if the boundaries of the proposed project cross section lines.)

Section: \_\_\_\_\_, Township: \_\_\_\_\_, Range: \_\_\_\_\_, Meridian: \_\_\_\_\_

Section: \_\_\_\_\_, Township: \_\_\_\_\_, Range: \_\_\_\_\_, Meridian: \_\_\_\_\_

Proposed project will require the use of up to \_\_\_\_\_ acres. (Add additional sheets as necessary)

**Project Description** - Describe in detail your intended use of state land. (State land also includes all tide and submerged lands beneath coastal waters and all shorelands beneath other navigable water bodies of the state.) Discuss development and activities. (Attach additional pages as necessary.)

The proposed scientific sampling is to support a series of environmental studies to support the FERC license application process. This study element involves the installation of a thermistor string in Grant Lake near the proposed intake site (Figure 1). Water temperature will be logged at 10 depths within a vertical transect.

Should a portion of the permitted area be closed to the general public? Yes ☐ No ☒ If yes, explain which portion and provide justification for exclusive use:

**Site Description** - Briefly describe the current condition of the proposed site of use, noting any trash, garbage, debris or signs of possible site contamination (If significant, we recommend you provide pictures to establish initial conditions):

The site is currently in pristine condition as access is limited and the amount of recreation occurring is minimal. The thermistor string will only be on-site for the allowed period and will not result in any long-term degradation of the site.

Are there improvements or materials on the site now? Yes ☐ No ☒ If yes, briefly describe the improvements, their approximate value, and who owns them (We recommend you provide pictures of improvements):

**Site Description continued** - Describe the natural vegetation --- ground cover, trees, shrubs --- and any proposed changes. Describe the location of any estuarine, riparian, or wetlands and any noticeable animal use of area.

Given that the proposed thermistor string would be on Grant Lake, no natural vegetation will be impacted. No estuary, riparian or wetland concerns exist.

**Site Access** - Describe how you plan to access the site, and your mode of transportation.

The site will be accessed via a trail from Upper Trail Lake and then a small, inflatable boat that has been stored at the lake. There may be a need to utilize a float plane if the boat is being used. If your access is by aircraft, specify the type and size of aircraft: Small float plane

To access the site, the aircraft is equipped with ☒ floats ☐ wheels ☐ skis ☐.

**Number of people**

1. Indicate the number of employees and supervisors who will be working on the site. 2
2. Indicate the number of customers who will be using the site per year or season. N/A
3. Indicate the number of days the site will be used per year or season. 5 (+download data and re-deploy)

**Environmental Risk / Hazardous Substances** - In the course of your proposed activity will you generate, use, store, transport, dispose of, or otherwise come in contact with toxic and/or hazardous materials, and/or hydrocarbons? Yes ☐ No ☒. If yes, please describe:

The types and volumes of fuel or other hazardous substances present or proposed: N/A

The specific storage location(s): N/A

The spill plan and prevention methods: N/A

**Environmental Risk/Hazardous Substances (continued)** - If you plan to use either above or below ground storage containers (like tanks, drums, or other containers) for hazardous material storage, answer the following questions for each container:

Where will the container be located? N/A

What will be stored in the container? N/A

What will be the container's size in gallons? N/A

Give a description of any secondary containment structure, including volume in gallons, the type of lining material, and configuration:  
N/A

Will the container be tested for leaks? Yes ☐ No ☐ N/A

Will the container be equipped with leak detection devices? Yes ☐ No ☐. If no, describe: N/A

Do you have any reason to suspect, or do you know if the site may have been previously contaminated? Yes ☐ No ☒. If yes, please explain:

Date Stamp:

Mike Sefeth Fuel Supply & Generation Engineering Manager  
Signature of Applicant or Authorized Representative Title

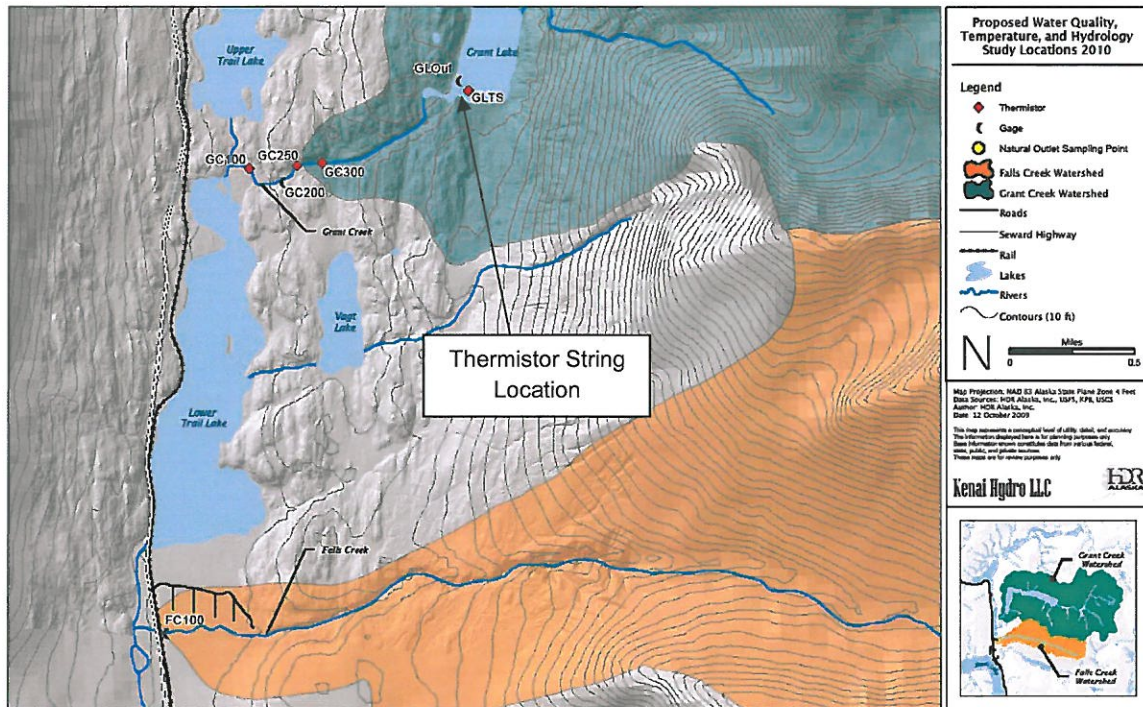
AS 38.05.035(a) authorizes the director to decide what information is needed to process an application for the sale or use of state land and resources. This information is made part of the state public record and becomes public information under AS 09.25.110 and 09.25.120 (unless the information qualifies for confidentiality under AS 38.05.035(a)(9) and confidentiality is requested.) Public information is open to inspection by you or any member of the public. A person who is the subject of the information may challenge its accuracy or completeness under AS 44.99.310, by giving a written description of the challenged information, the changes needed to correct it, and a name and address where the person can be reached. False statements made in an application for a benefit is punishable under AS 11.56.210.



**Figure 1: Proposed Grant Lake Thermistor String Location**

Kenai Hydro Environmental Baseline Studies

Figure 1



**Land Use Permit Application Supplemental Questionnaire for:  
Use of Uplands and Non Marine Waters**

To be completed to provide more detailed information about projects or activities requiring the use of state owned uplands and non marine waters. All site development details identified in this section must be represented graphically in the scaled drawings on Page 4 of the supplement.

**Temporary Structures** – 1) Describe all temporary improvements (including buildings, tent platforms, out-buildings, docks, floats, and floating facilities), including their dimensions and building materials. 2) Label improvements to be maintained on a year round basis as year round. **Note:** Seasonal improvements must be completely dismantled and removed or stored on or before the end of authorized terms of use.

A small buoy will be visible in the lake that the string will suspend from. A concrete block or pyramid anchor will be attached to the other end and used as an anchor. The entire string will be removed at the end of the study.

Distance structures including pit privies will be located from the ordinary highwater mark of the nearest freshwater body (lake, stream, river, etc), or the mean high water mark of a saltwater body: \_\_\_\_\_

**Harvest of Non-Timber Related Forest Products** – Please list the type and quantity of each non-timber related forest product (berries, ferns, willow, mushrooms, birch bark, etc.) to be harvested for commercial use:

N/A

Contact the DNR Division of Forestry to obtain authorizations for the harvest of small trees.

**Motorized Equipment** - List mechanized/motorized equipment to be used, including type, size, purpose, and number of each.

A 7 horsepower motor will be used with the aforementioned inflatable boat to access the thermistor string.

For stream and water body crossings, note who you contacted in the ADF&G, Division of Habitat:

Date: \_\_\_\_\_ Person: \_\_\_\_\_

**Storage and Parking** - If you plan to store items or park boats, vehicles and/or heavy equipment on the site, describe complete the following:

Describe and give dimensions of long term and short term parking and or storage areas. \_\_\_\_\_

A 12' inflatable boat will be tied off to a tree near the shoreline during open water periods (June - October).

Is parking or storage planned to take place on filled tidelands. Yes ☐ No ☒

Does storage involve structures or materials floating in a waterbody? Yes ☐ No ☒ If yes, describe. \_\_\_\_\_

**Storage and Parking (continued)**

Number of disassembled tent frames 0

Number of tent platforms 0

List and describe items that are large and difficult to transport. Include dimensions: N/A

Will barrel(s) or an equivalent type of storage container be used? Yes ☐ No ☒ If using something other than barrels for storage containers, describe the alternative container.

Describe any measures you plan to take to minimize drips or spills from leaking vehicles or equipment. N/A

**Water / Wastewater**

**Water Supply** – Describe the water supply and proposed use. N/A

**Wastewater** – Describe the wastewater type and quantity and proposed method of wastewater disposal: (for the marine environment, also describe the proposed gray and black water systems or out fall pipeline.

N/A

**Waste** – Describe the types of waste that will be generated on-site, including solid waste, the source of the waste, and the method of waste disposal, i.e. pit privy, or self-contained system, or outfall line; indicate distance from the nearest waterbody.

N/A



### Animal Use

Will there be any use of animals (horses, llamas, dogs, etc.)? Yes ☐ No ☒

Will there be commercial use of the animals (horseback rides, packing, dog sled rides, etc.)? Yes ☐ No ☒ If yes, please explain:

**Dismantle, Removal, Restoration Plan** – Provide a plan for dismantling and removing temporary structures. Include method and timeline for total site restoration:

The thermistor string and all associated infrastructure will be removed and taken off-site at the end of the study period.

**SHORT TERM (PORTABLE) COMMERCIAL RECREATION CAMPS:** Identify commercial recreation activity/activities for which short term (portable) camps will be established to accommodate employees and clients, and provide a general description of the location(s) (e.g. guide use area, game management sub-unit, river, stream, lake, etc.) where the recreational activity/activities and short term (portable) camp use will occur.

\_\_\_ Big Game Guiding: (List up to 3 Guide Use Areas.) N/A

\_\_\_ Sportfishing (List river corridors, lakes, etc.) N/A

\_\_\_ Boating/Rafting/Kayaking: (List river corridors, lakes, etc.) N/A

\_\_\_ Other Recreation: (Type and general geographic description.) N/A

- Is all or a portion of any of the above identified areas located within the Bering Straits CRSA? Yes \_\_\_ No ☒

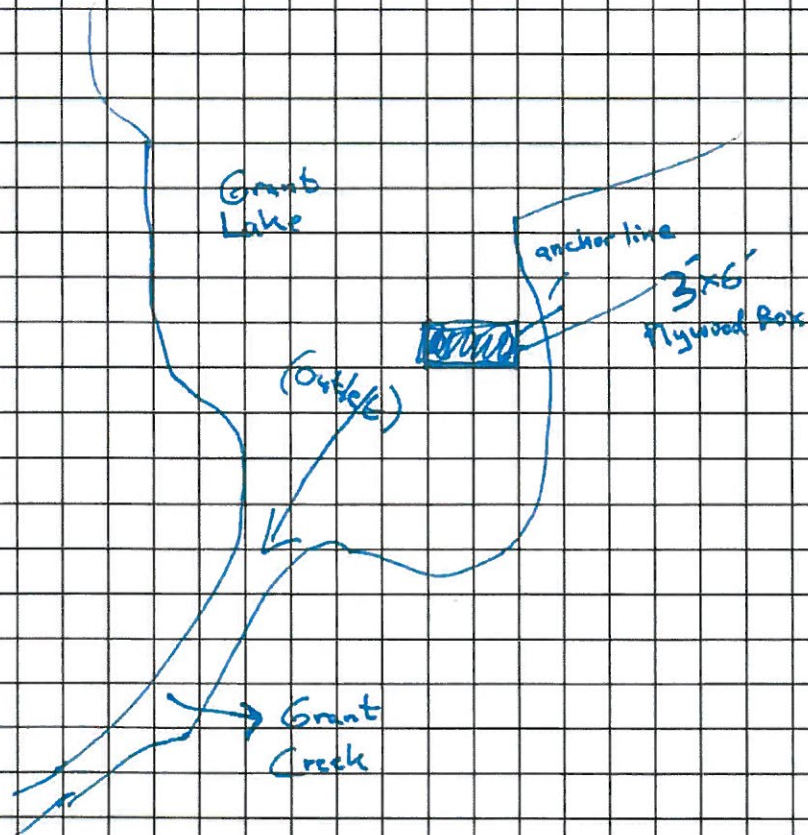
- Identify any State of Alaska Refuge, Sanctuary and/or Critical Habitat Area where short term (portable) camps will be used.

N/A

Will activities include "day use" of state land managed under the Haines State Forest Management Plan? Yes \_\_\_ No ☒

# SITE PLAN: TOP VIEW

See Attached Description



## Title block

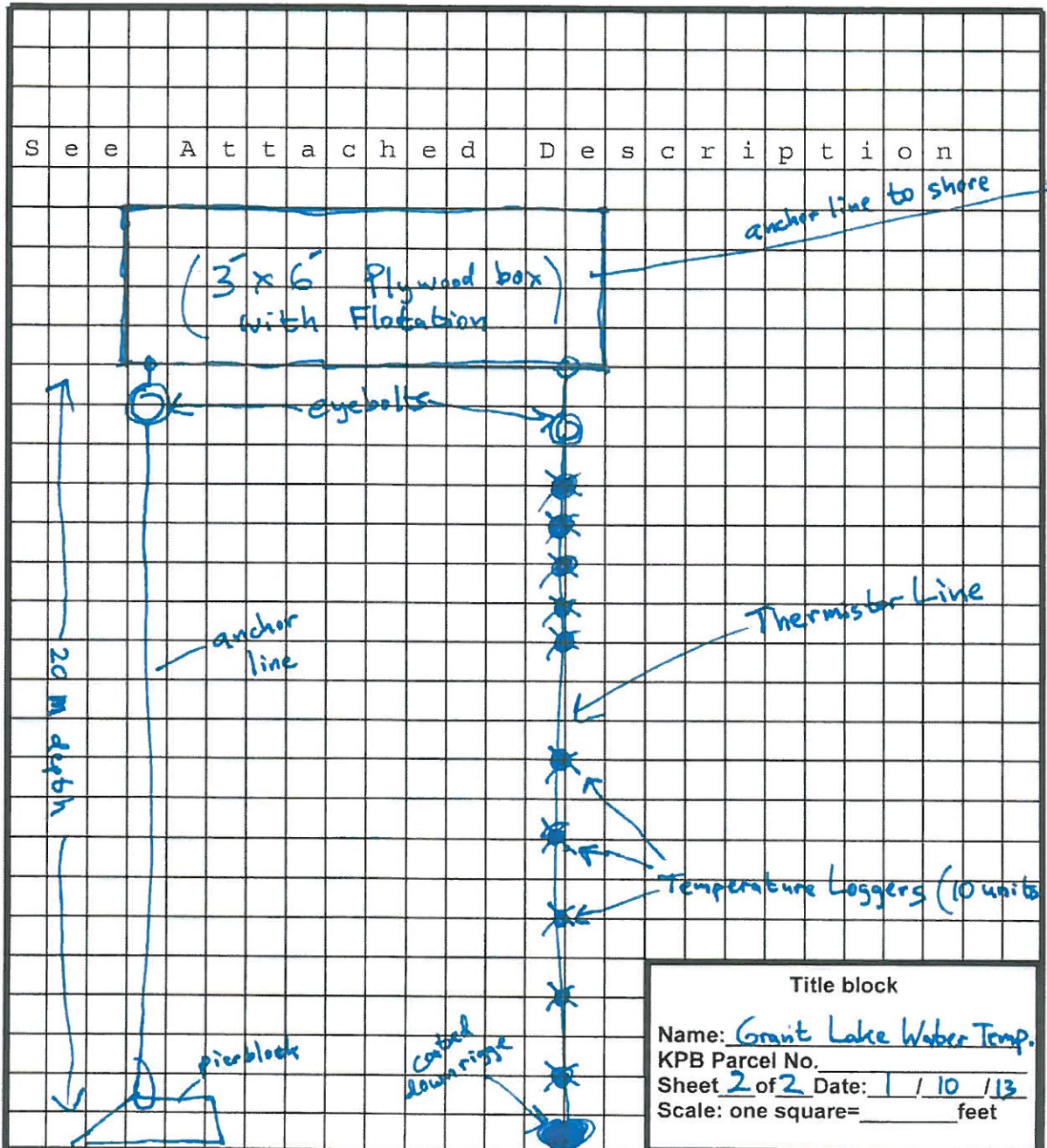
Name: Grant Lake Water Temp

KPB Parcel No. \_\_\_\_\_

Sheet 1 of 2 Date: 1 / 10 / 13

Scale: one square = \_\_\_\_\_ feet

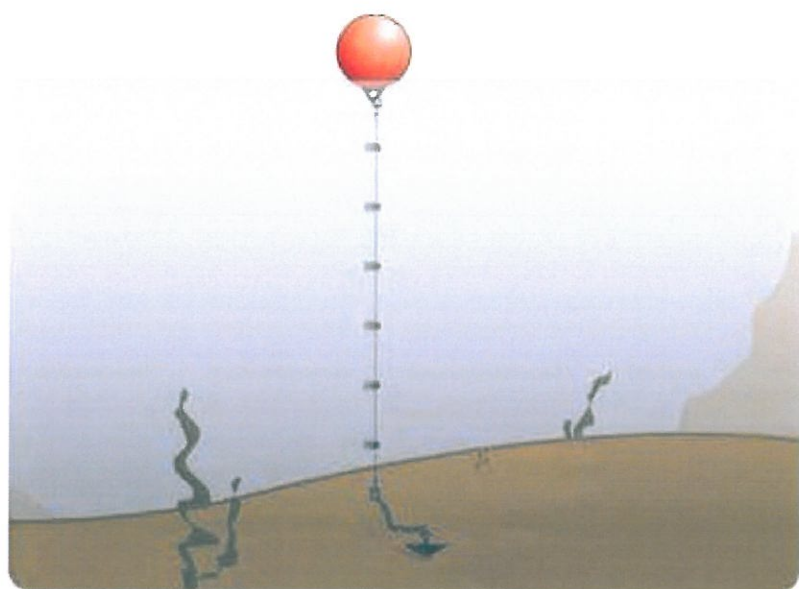
# SITE PLAN: ELEVATION OR SIDE VIEW



## Additional Comments or Descriptions:

Refurbishing of existing Thermistor String to measure water temperature (continuously) throughout water column, a proposed intake structure for Grant Lake Hydro Project





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**From:** Cory Warnock  
**Sent:** Friday, April 19, 2013 1:07 PM  
**To:** Ayers, Scott D (DFG); John Stevenson; Mark Miller  
**Cc:** Begich, Robert N (DFG); Oxman, Dion S (DFG); Emily Andersen  
**Subject:** RE: PERMIT: Fish Resource Permit SF2013-105 (Salzetti/Homer Electric-grant creek/trail lake narrows-local species)

Hi Scott,

Thanks for your internal investigation and this response. Mark is going to look into a few things with respect to your suggestions below and I anticipate getting back to you next week relative to the specifics related to an amendment.

Again, thanks and I'll talk to you next week,

Cory

---

**From:** Ayers, Scott D (DFG) [<mailto:scott.ayers@alaska.gov>]  
**Sent:** Friday, April 19, 2013 11:03 AM  
**To:** John Stevenson; Cory Warnock; Mark Miller  
**Cc:** Begich, Robert N (DFG); Oxman, Dion S (DFG)  
**Subject:** RE: PERMIT: Fish Resource Permit SF2013-105 (Salzetti/Homer Electric-grant creek/trail lake narrows-local species)

Hi John, Mark, and Cory,

Thank you for sending along this clarified request.

After speaking with the Area Management Biologist (Robert Begich) and a representative from our Mark, Tag, and Age Lab (Dion Oxman), it was decided that the most appropriate secondary external mark to be used for juvenile fish captured in the furthest upstream smolt trap would be visible implant elastomers (VIE). This has been used in salmonids less than 30 mm in length, with retention lengths of over 80 days, and comes in a variety of colors. I have been informed that marking the anal fin works particularly well as the mark is then visible from both sides of the fish. This would allow you to mark different fish species with different colors if you wanted.

As for the question about production estimates in residents species, I'd prefer not give you direction. This sounds like a question better suited to biometric review of some sort and I do not want to provide information that could potentially add any uncertainty to your project.

Please do let me know if the VIE option sounds like it will work for you. If so, I will draft an amendment to your permit to allow for this marking.

If you have any further methodology questions I would suggest first contacting Robert Begich (907) 260-2920; [robert.begich@alaska.gov](mailto:robert.begich@alaska.gov). This would cut out one step in the process as I forward all of this information to him for review anyway.

Wishing you all well.

Cheers,  
-Scott

---

**From:** John Stevenson [<mailto:john.stevenson@bioanalysts.net>]  
**Sent:** Thursday, April 18, 2013 2:50 PM  
**To:** Ayers, Scott D (DFG)  
**Cc:** 'Cory Warnock'; Mark Miller  
**Subject:** Grant Creek Juvenile Marking

Scott,

As a follow-up to our earlier discussion this morning, the two questions we had for ADFG were:

1. As you are aware, we will have two juvenile incline plane traps in Grant Creek; one located approximately 0.125 miles upstream of the confluence, and a second located at approximately R.M. 0.5. We would like to get overall production estimates for the anadromous species (i.e., Chinook, coho, and sockeye) above each trap. In order to get efficiency estimates for each trap, we would like to differentially mark fish collected at the upper and lower traps. Our thought was to dye fish collected at the upper site with a bath of Bismark Brown dye with a fin clip (sockeye). At the lower site, we would like to dye the fish without additional marks. For other anadromous species at the upper site (i.e., Chinook and coho), we would like to mark them with a small tattoo on the caudal fin, distinguishing them from their counterparts at the lower site. In lieu of fin clipping, and perhaps tattooing, does the state of Alaska recommend an alternative marking technique?
2. As we discussed earlier, we are also interested in getting production estimates for the resident species in Grant Creek (i.e., rainbow trout and Dolly Varden). Given the propensity of these species to migrate downstream at multiple age classes, does ADFG have a methodology that it would recommend as to getting trap efficiency estimates for both resident species? Any thoughts you or your colleagues have on this issue would be greatly appreciated.

Thanks, John

John R. Stevenson  
Fisheries Biologist  
BioAnalysts, Inc.  
16541 Redmond Way, #339  
Redmond, WA 98052  
(425) 883-8295; (206) 390-7116 (cell)



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**From:** Cory Warnock  
**Sent:** Friday, April 19, 2013 1:39 PM  
**To:** Blackwell, Jack D (DNR); Leclair, Claire H (DNR)  
**Cc:** Mike Salzetti; Nathan Weber; Emily Andersen  
**Subject:** RE: Man Camp Site Visit (Grant Lake)

Hi Jack,

Thanks for taking the time to visit the site and for agreeing to amend the permit.

Much appreciated,

Cory

---

**From:** Blackwell, Jack D (DNR) [<mailto:jack.blackwell@alaska.gov>]  
**Sent:** Friday, April 19, 2013 1:38 PM  
**To:** Cory Warnock; Leclair, Claire H (DNR)  
**Cc:** Mike Salzetti; Nathan Weber; Emily Andersen  
**Subject:** RE: Man Camp Site Visit (Grant Lake)

After looking at the site and discussing options with Nathan, the permit will be modified to allow a pit toilet.

Jack

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Wednesday, April 17, 2013 2:19 PM  
**To:** Leclair, Claire H (DNR)  
**Cc:** Blackwell, Jack D (DNR); Mike Salzetti; Nathan Weber; Emily Andersen  
**Subject:** Man Camp Site Visit (Grant Lake)

Hi Claire,

Not sure if you have had a chance to talk with Jack since his site visit with CIAA on Monday but everything went well and we will be proceeding soon with setting up the man camp. To that end, Nathan and Jack had a conversation on the human waste issue and not to speak for Jack (Cc'd) but it sounds as if, after seeing the site and discussing methodology with Nathan, he is open to allowing the pit toilet at the man camp. As such, I'm assuming that an amendment to the permit would be necessary? I'm basically sending this message to open a dialogue related to getting that amendment in place. Jack and Nathan, I'd welcome your thoughts as you both were on site and have first-hand knowledge of the topic and discussion that took place.

Thanks and I'll look forward to hearing from folks,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

McMillen, LLC  
[www.mcmillen-llc.com](http://www.mcmillen-llc.com)  
5771 Applegrove Ln.



# Homer Electric Association, Inc.

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**Corporate Office**  
3977 Lake Street  
Homer, Alaska 99603-7680  
Phone (907) 235-8551  
FAX (907) 235-3313

**Central Peninsula Service Center**  
280 Airport Way  
Kenai, Alaska 99611-5280  
Phone (907) 283-5831  
FAX (907) 283-7122

In Reply Refer To:  
Grant Lake Project  
FERC No. 13212  
April 19, 2013

Ms. Judith Bittner  
State Historic Preservation Officer  
Alaska Office of History and Archaeology  
550 W. 7<sup>th</sup> Avenue, Suite 1310  
Anchorage, Alaska 99501-3565

Dear Ms. Bittner:

Kenai Hydro, LLC seeks to continue consultation on behalf of the Federal Energy Regulatory Commission (FERC) with regards to the Grant Lake Hydro Project and seeks concurrence on a proposed Area of Potential Effects (APE) for the project. A cultural resources working group of stakeholders met on April 3, 2013, by telephone and webinar to discuss an appropriate APE.

The primary APE for the Grant Lake Hydro Project consists of lands where project-related activities might affect (directly or indirectly) cultural resources (Figures 1 and 2). The proposed undertaking has the potential to affect historic properties near the shores of Grant Lake and Grant Creek, and along the proposed alignments of project facilities. Project operations, as proposed, would cause the lake level to fluctuate between a minimum of 687 ft MSL (natural min 691ft MSL) and a maximum of 700 ft MSL (natural max 698ft MSL), potentially affecting cultural sites or exposing previously unidentified sites. Flows in Grant Creek will be altered and a powerhouse, retention pond, and tailrace will be constructed near the channel. Clearing, construction, and maintenance of the intake, penstock, access road, and transmission line could also potentially disturb cultural sites.

The proposed APE will include an area 100 feet beyond areas that would be impacted by powerhouse, access road, and transmission line construction; and areas along Grant Creek that may experience increased recreational use. The proposed APE will also include an area around Grant Lake extending from the current waterline to 30 feet above the proposed high water mark or up to 730 feet MSL. Possible archaeological resources that are currently under water, but may be exposed in the future due to drawdown or decreased lake level, will be addressed in a Historic Properties Management Plan (HPMP). This proposed APE should encompass any archaeological and historical properties, with a conservative buffer, that may be directly or indirectly affected by the project.

The APE for traditional cultural properties (TCPs) is larger than the APE for archeological and historical sites. As such, it will include the general project area surrounding the Grant Lake



watershed and Upper and Lower Trail lakes. It is less rigidly defined and functionally similar to a study area. The broader APE will be sufficiently large to accommodate large

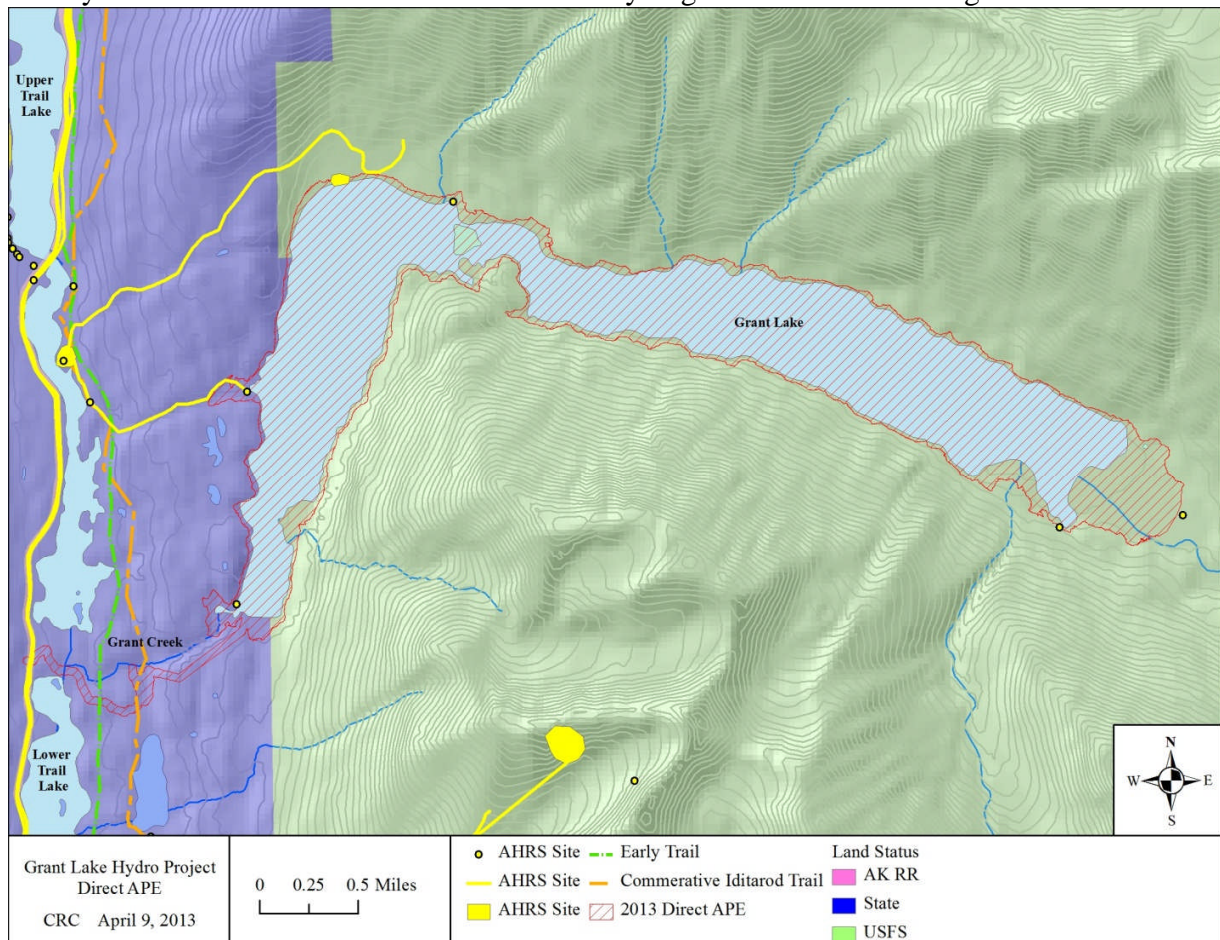


Figure 1. Proposed primary APE for the Grant Lake Hydro Project.

properties or potential view sheds. This large area will likely be refined as consultation continues.

The inventory and assessment of TCPs will include continued consultation with the Kenaitze Indian Tribe, the Salamatof Native Association, the Ninilchik Traditional Council, the Kenai Natives Association, the Native Village of Eklutna, and any other groups and individuals “who may ascribe traditional cultural significance to locations within the study area” (Parker and King 1990). Survey and inventory will be conducted on a case-by-case basis whenever activities are identified that may affect TCPs. Field inspection of potential TCPs will be combined with surveys to identify other kinds of historic properties, such as archeological and historic sites.

The APE can be modified if needed during the course of the cultural resources evaluation. It will also evolve during the course of studies as more information on cultural resources in the project area is developed. Information about the extent of project-related use and activities will be clarified during the pre-filing phase of licensing. Areas that may not be identified at the

beginning of the process, such as mitigation lands or recreation facilities proposed for the license, will also be included in the APE.

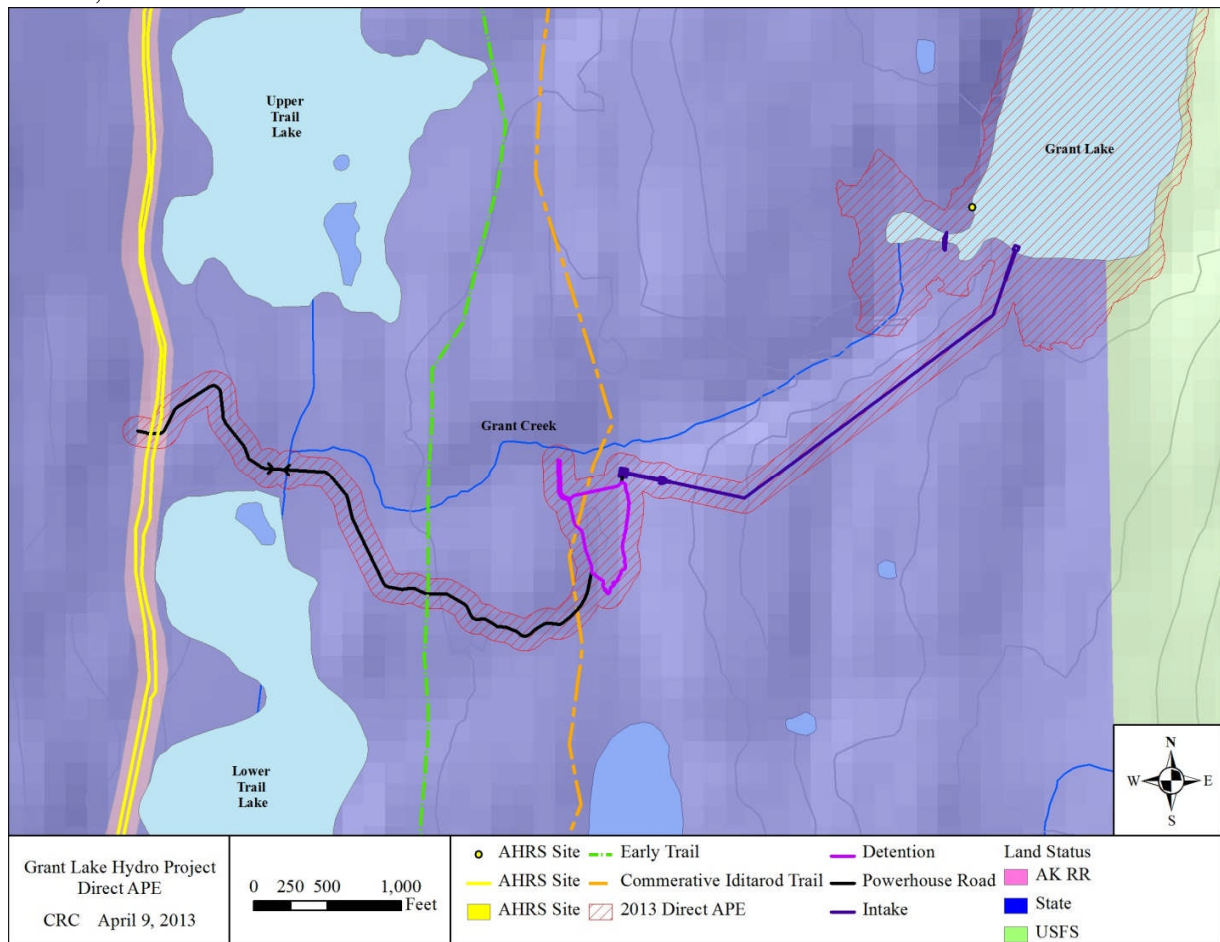


Figure 2. Proposed APE and project infrastructure.

The project's *Cultural Resources Study Plan* (Kenai Hydro 2013) contains a detailed description of previously conducted field studies and what steps the Grant Lake Hydro Project has taken and will continue concerning the identification and evaluation of cultural resources near the project area.

At least ten cultural resources studies have been completed within one mile of the direct APE. Most of the recent studies were conducted in association with the Iditarod Trail and the planned construction of a commemorative trail. Portions of the northern shore of Grant Lake were surveyed as part of a habitat improvement project and prescribed burns in 1996 and 2004 (Alden 1996a, 1996b, 1996c, Vinson 1997, and Schick 2005). Katherine Arndt (1982) surveyed portions of the APE in the early 1980s for an early design of the Grant Lake Hydro Project, but her efforts focused on the proposed project footprint located roughly between the mouth of Grant Lake and the area between the Trail Lakes. A survey of the entire lakeshore has not yet been done.

Table 1. Updated listing of AHRS sites located within the proposed APE.

AHRS No.	Site Name	Description	Eligibility
SEW-00029	Alaska Railroad	One of three railroads built by the U.S. Government	Nomination Closed
SEW-00148	Seward-Moose Pass Trail	Part of the Iditarod National Historic Trail	National Historic Trail
SEW-00285	Solars Sawmill	Collection of wooden structures, operated between 1920-1941	Determined Not Eligible
SEW-00659	Case Mine (Grant Lake Placer Mine)	Cabin, bunkhouse, and 4 associated structures, 1900-1940s	Determined Eligible
SEW-00768	Grant Lake Cabin	Frame cabin, dating to historic prospecting, mining, hunting, or trapping	No Determination of Eligibility
SEW-00823	North Grant Lake Cabin (Case Mine Dynamite Shack)	Log cabin/dynamite storage for area mines	No Determination of Eligibility
SEW-01144	Dock Site at Grant Lake	Scatter of cut timbers, logs, cans, and other debris	Determined Not Eligible
SEW-01454	Grant Lake Road to Case Mine	Access trail to the Case Mine	Determined Eligible
SEW-01455	Grant Lake Trail	Trail that connects Upper Trail Dock Site with the Grant Lake Dock Site	Determined Eligible

Only two of the known AHRS sites in the APE have not been evaluated for eligibility to the National Register of Historic Places: SEW-00768 and SEW-00823. Additional information will be gathered about these sites during the 2013 field season through additional documentation of surface remains and the excavation of a one square meter test unit within site boundaries. Similar evaluation level documentation will occur at sites discovered during survey.

If you have questions or comments related to this proposed project, please contact our cultural resources lead, Michael Yarborough, by telephone at 907-349-3445, or by e-mail at [myr@crcalaska.com](mailto:myr@crcalaska.com).

We request your concurrence with our proposed APE. Your timely response will greatly assist our compliance efforts and the preparation of any required environmental documentation. For that purpose, we request that you respond within thirty days of your receipt of this correspondence.

Sincerely,

Mike Salzetti  
Fuels Supply & Engineering Manager

Enclosures:  
CC w/o enclosures:

**Grant Lake Hydro Project  
Cultural Resources Area of Potential Effect Discussion  
Webinar/teleconference  
April 3, 2013, 2pm AKST**

**In attendance:**

Mike Yarborough, Cultural Resource Consultants LLC (CRC)  
Sarah Meitl, CRC  
Shina Duvall, Review and Compliance, State Office of History and Archaeology (OHA)  
Dara Glass, CIRI  
Frank Winchell, Federal Energy Regulatory Commission (FERC)  
Sherry Nelson, U.S. Forest Service, Seward Ranger District (USFS)  
Cory Warnock, McMillen LLC (McMillen)

**Meeting Summary**

Agenda

- Introductions
- Brief outline of past consultations
- Discussion of an appropriate project Area of Potential Effects
- Artifact collection
- Wetland data analysis related to the USFS Special Use Permit
- Concluding remarks

**Introduction**

Mike Yarborough (CRC) welcomed meeting participants and thanked them for making time for this discussion in their busy schedules. Mike led roundtable introductions where meeting participants introduced themselves. Mike outlined that the meeting's main goal was to establish an appropriate Area of Potential Effects (APE) for the project so that cultural resources field studies could proceed, as planned, in June.

**Project Overview and Past Consultations**

Cory Warnock (McMillen) provided some project background. Work on this project began in 2009 with HDR, but the Homer Electric Association (HEA) suspended the project in 2010 after receiving substantive comments from agencies and other interested parties during the comment period that necessitated a revaluation of the natural resource study plans, including cultural resources. In 2012, HEA changed environmental contractors to McMillen. The project then moved forward with updated natural resource study plans and a revised project design.

Mr. Yarborough gave a brief history of the study plan. A draft study plan was written in April 2010, was the basis for comments and Section 106 consultation that occurred during that year. Comments and concerns received during the formal comment period were integrated into a study plan dated January 2012. HEA subsequently amended this plan to accommodate the altered project design. A slightly revised version of this plan, dated March 2013, was distributed as "final". However, Mr. Yarborough noted that we still lack agreement on what would constitute an appropriate APE

Mr. Warnock outlined how the current project design differs from the 2010 version. The access road is approximately two miles shorter, crosses the proposed Iditarod Commemorative Trail in only one location instead of paralleling it for some distance, and takes a more direct route to the Seward Highway instead of extending south to Falls Creek and then east to the Seward Highway. The current project proposal does not include a dam and will have less effect on the water level of the lake.

### **APE Discussion**

Frank Winchell (FERC) stated his concerns about the Iditarod Trail and how it would be an important issue moving forward.

Mr. Warnock noted that HEA is aware of the importance of the trail and will be continuing discussions with the agencies on how to minimize project impacts on the commemorative trail. The commemorative trail is not yet built, but there is an established easement and the proposed route for the trail has been flagged on the ground.

Mr. Yarborough discussed what the nature of the “Iditarod Trail” in the vicinity of Grant Lake. Despite an earlier assumption (noted in the AHRs and HDR’s draft work plan) that the “historic” trail is now beneath the highway and railroad, a circa 1900 map shows that the trail through the project area may have actually run along the eastern side of the Trail Lakes. If this is indeed the case, then CRC will include both the historic and commemorative trails during our fieldwork and subsequent evaluations.

Mr. Yarborough called the participants attention to section 4.1 on page 7 of the 2013 study plan to steer the discussion toward establishing an APE from the study area description in the text. This led to a general discussion about the currently available maps for the project. Mr. Warnock had provided a Google Earth image on the webinar screen that he used for his reference. Sherry Nelson (USFS) commented that the project architecture on the Google Earth image did not match the alignment seen in the 2013 study plan (Figure 2, Proposed Area of Potential Effect, on page 9). Mr. Warnock clarified that the image was only used for personal reference and display and that the map on page 9 of the study plan should be used for accuracy. Mr. Warnock displayed this image on the webinar screen.

Mr. Yarborough described Figure 2, noting that the red striped area demarks a proposed APE around the lake shore that equates to 30 feet above the shoreline and buffers the 2010 project architecture by 100 feet. He pointed out that the depicted APE area corresponds to the 2010 version of the access road and transmission line.

Mr. Winchell expressed concern about the methodology in section 4.3 of the 2013 study plan, namely that there was a general lack of an ethnographic dimension to the plan as a whole. He stated that an ethnographic component was important to both a subsistence study and for the identification of Traditional Cultural Properties (TCPs). Mr. Yarborough responded by saying that Ron Stanek, recently retired from the State of Alaska, Fish and Game Subsistence Unit, was the subsistence lead and he should be the one able to address questions about the subsistence aspect of the project.

Dara Glass (CIRI) concurred with Mr. Winchell’s concern about the presence of TCPs near the project area. She was happy to hear that Mr. Stanek would be a part of the project staff, but she felt that a person of Native Alaskan descent should be the one to evaluate whether there were TCPs that may be affected by the project.



Mr. Yarborough explained his company's past experience with investigating for TCPs on the interior of the Kenai Peninsula during the Cooper Lake Hydro Project. He described how that project utilized two APEs: a smaller, demarked APE for archaeological and historic resources and a broader APE for TCPs. He stated his belief that this two-part APE would be appropriate for the Grant Lake project.

Ms. Glass expressed concern about how a desktop study would be insufficient to identify TCPs, as not a lot of work has been done on the interior Kenai Peninsula. There has not been a systematic study for the area, unlike other regions.

Mr. Yarborough stated that the investigation for TCPs would not rely wholly on written literature, but would include continued discussion with Tribal groups.

Mr. Winchell concurred that the next stage of the APE process should include two APEs. He commented that any interactions would not be government-to-government, as the federal government would not be involved in those proceedings.

Ms. Glass commented that the use of native hire would increase the possibility that elders would be more willing to discuss TCPs in the project area.

Mr. Warnock remarked that there seems to be several areas where the study plan is lacking in details and asked if the meeting's participants would feel more comfortable with the project if they could submit, in written form, informal comments concerning areas or methodology with which they were most concerned. He added that there would be no guarantee that any submitted comments would be integrated into the planned study given the current status within the FERC process, but that this may be an appropriate mechanism to ensure that CRC and McMillen understood the concerns that the participating parties have at the present time.

Ms. Glass asked whether there was sufficient time to execute Mr. Warnock's suggestion based on the project timeline. Mr. Warnock responded by asking Mr. Yarborough whether he felt that this mechanism would be useful to him and if it would fit into his timeline.

Mr. Yarborough stated that he felt that he understood the concerns that had been expressed during the meeting and that written comments were not necessary. He continued by saying that CRC planned to do the archaeological and historical field study in June.

### **Artifact Collection**

Mr. Yarborough then asked if the subject of the meeting could move forward to item four on the agenda: Artifact collection. He outlined why this item was included for discussion. The study plan was reviewed in 2010 and no comments were received about the proposed provision that all materials, surface and sub-surface, would be documented and left in the field. However, in reviewing CRC's permit application, Dave McMahan, OHA, noted that this provision did not meet current state permit stipulations. For the permit to be approved, the study plan would need to be altered so that sub-surface materials would be collected and curated. Doing so would necessitate changing the approved study plan and leaves unresolved whether sub-surface artifacts should be collected on U.S. Forest Service land. Mr. Yarborough asked Sherry Nelson (USFS) her opinion on what should be done on Forest Service land.

Ms. Nelson expressed reluctance to voice an opinion on procedure on Forest Service land until it is determined whether the proposed fieldwork will be operating under the Organic Act or will need an ARPA permit.

Mr. Warnock stated that in conversations with Kathy Van Massenhove, U.S. Forest Service, that he was under the impression that the permit issue was resolved and that the Forest Service was moving forward with allowing the cultural resources study to operate under an amendment of the existing special uses permit for the other natural resources studies. Ms. Nelson replied that she felt that the issued was not yet resolved. Mr. Warnock asked whether he should be addressing the project correspondence to Ms. Nelson instead of Ms. Van Massenhove. Ms. Nelson replied that he should continue to correspond with Ms. Van Massenhove who would forward the information to her.

Mr. Winchell asked for clarification on what kinds of sub-surface investigation would be done. He felt that contextual investigation would necessitate the collection of artifacts.

Ms. Nelson stated that the type of sub-surface investigation is important towards determining whether the project would need an ARPA permit or could be authorized under the Organic Act.

Mr. Yarborough stated that he will have further discussions with OHA and the Forest Service to resolve the collection issue.

#### **Wetland Data Analysis**

Mr. Warnock described why wetland delineation is a cultural resource issue. USFS cultural resource staff had expressed concern that wetland tests could disturb historic properties on Forest Service lands.

Mr. Yarborough asked Shina Duvall (OHA) and Ms. Nelson for their comments

Ms. Nelson and Ms. Duvall were in agreement that they needed more information, including the location of tests, the number of tests, the quality of tests, and whether the area had undergone cultural resources survey before.

Mr. Warnock responded that this information is already available and that he would forward that information on to them.

Mr. Yarborough added that the planned cultural resources survey would occur several weeks before the wetland study. CRC could apprise the wetland people of areas to avoid during their testing. He was also willing to aid continued consultation to resolve the matter.

All parties thought that Mr. Yarborough coordinating with the wetlands study personnel to avoid archaeological sites was a good idea.

Mr. Warnock provided clarification to Ms. Nelson about the number of wetland test areas on Forest Service lands. A previous email to Ms. Van Massenhove indicated that for the entire project, 30 to 40 tests will be done. Only 3 to 7 of these tests will be done on Forest Service lands. The remainder will occur on State of Alaska Lands and the project is already in the process of acquiring permits for those lands from the State of Alaska and the Army Corps of Engineers.

#### **Concluding Remarks**

Mr. Yarborough asked if there were any remaining questions or concerns for the project. He re-iterated the plan to resolve the APE, acquire the pertinent permits, and complete the field study by the end of June.

Mr. Winchell expressed concern that there was not much time between now and the proposed field study and, while he does not need to be a part of the process, that the APE needs to be approved by SHPO. He will need to have the documentation in the final licensing package showing that the APE was approved by SHPO before the field study was conducted.

Mr. Yarborough assured Mr. Winchell that proper procedures would be observed and that the APE will be approved by SHPO. Mr. Yarborough again thanked the attendees for their time and input.

The meeting was adjourned.



# Grant Lake Hydroelectric Project (FERC No. 13212) Licensing

## Consultation Record

### Phone/E-mail /One on One Meeting Log

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*Contact Name:* Scott Ayers

*Agency/Organization:* ADF&G

*Phone No./E-mail Address:* 907-267-2517; scott.ayers@alaska.gov

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*Date:* 4/23/13

*Time:* 11:00am PST

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*Grant Lake Licensing Team Contact:* Cory Warnock

---

Mr. Warnock spoke with Mr. Ayers regarding the potential for utilizing staining baths for upstream and downstream captured juveniles in Grant Creek. Mr. Ayers stated that ADF&G would prefer that the natural resource team utilize the previously discussed VIE tags suggested by ADF&G. Mr. Warnock stated that that would work and requested that Mr. Ayers amend the Fish Resource Permit accordingly. Mr Ayers committed to doing so.

Call Duration: 5 minutes

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**From:** Cory Warnock  
**Sent:** Wednesday, April 24, 2013 9:50 AM  
**To:** Emily Andersen  
**Subject:** FW: Special Park Use Permit  
**Attachments:** LAS 29044 Permit signature page 4.13.pdf

---

**From:** Leclair, Claire H (DNR) [<mailto:claire.leclair@alaska.gov>]  
**Sent:** Monday, April 08, 2013 1:54 PM  
**To:** Cory Warnock  
**Cc:** Mike Salzetti  
**Subject:** RE: Special Park Use Permit

Sorry about that, here is the corrected copy of the signature page for LAS 29044.

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Thursday, April 04, 2013 7:09 PM  
**To:** Leclair, Claire H (DNR)  
**Cc:** Mike Salzetti  
**Subject:** Special Park Use Permit

We discovered an error in the numbering of our Special Park Use Permit. In the process of preparing payment for these permits, HEA's accounting folks noticed that the Signature page for LAS 29044 has it listed as Permit # LAS 29043 in the body of the document (including our signed copy - attached). Could you please amend and I'll have Mike sign another copy.

Thanks,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

McMillen, LLC  
[www.mcmillen-llc.com](http://www.mcmillen-llc.com)  
5771 Applegrove Ln.  
Ferndale, Wa. 98248  
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C – 360-739-0187  
F – 360-542-2264



**STATE OF ALASKA**  
**Department of Natural Resources**  
**Division of Parks and Outdoor Recreation**

**Special Park Use Permit**  
**11 AAC 18.010**

**PERMIT #:** LAS 29044

**Name of Permittee:** Mike Salzetti  
**Business Name (if applicable):** Kenai Hydro, LLC  
**Address:** 280 Airport Way  
**City/State/Zip Code:** Kenai, Alaska 99611

This permit authorizes use of state owned land and water adjacent to Grant Creek and Lower Trail Lake managed by the Division of Parks and Outdoor Recreation according to a management agreement for the Special Use Area described in ADL 226527.

**This permit specifically authorizes the following activities:**

- Excavate up to 10 test pits 1 meter in diameter and 1 meter deep below OHW line of Grant Creek and remove up to 20 cubic feet of natural material for sediment analysis.
- Excavate up to 50 test pits 8-12 inches in diameter and 18-24 inches deep for wetland assessment; test pits will remain open for one hour before backfilled with native material.
- Install a fixed picket weir and two smolt traps in Grant Creek.
- Establish a field camp for up to 6 people between May 1 and October 31.

This permit is effective beginning **April 2, 2013** and ending **December 31, 2013** unless sooner terminated at the State of Alaska's discretion. This permit does not convey an interest in state land and as such is revocable immediately, with or without cause. No preference right for use or conveyance of the land is granted or implied by this authorization.

All activities shall be conducted in accordance with the attached Special and General Stipulations.

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Signature of Permittee or Authorized Representative	Title	Date
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Ben Ellis, Director, DPOR

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Date

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**From:** Cory Warnock  
**Sent:** Wednesday, April 24, 2013 12:10 PM  
**To:** Duvall, Shina A (DNR); Van Massenhove, Katherine B -FS  
**Cc:** Nelson, Sherry D -FS; Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Hi Sherry,

Just checking in as I haven't heard back from you regarding the email string below. As you have time, it would be good to know if the approach outlined below is acceptable to you and your agency. I want to make sure that we have done everything we can to make sure this process moves forward in an expedient fashion. Ideally, receiving the amendment prior well in advance of the wetlands work would be appreciated.

Thanks,

Cory

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**From:** Cory Warnock  
**Sent:** Wednesday, April 17, 2013 3:13 PM  
**To:** 'Duvall, Shina A (DNR)'; Van Massenhove, Katherine B -FS  
**Cc:** Nelson, Sherry D -FS; Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Thanks, Shina.

All,

Based upon the responses from Kathy and Shina, can I then assume that once Sherry has evaluated, she will be sending it to Shina (SHPO) for a formal review/comment/approval? Our plan is to move forward with the approach outlined in #1 and #2 which would have CRC conduct an assessment in June. Unless there is anything else we need to provide at this time, I'll leave it to Sherry to confer with Shina and reach a consensus. Once that occurs, it sounds as though we can proceed with amending the Special Use Permit accordingly, is that all correct?

Thanks,

Cory

---

**From:** Duvall, Shina A (DNR) [<mailto:shina.duvall@alaska.gov>]  
**Sent:** Wednesday, April 17, 2013 12:41 PM  
**To:** Van Massenhove, Katherine B -FS; Cory Warnock  
**Cc:** Nelson, Sherry D -FS; Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

All,

I imagine that Sherry will be sending this information in to our office for a formal review and comment, however, upon preliminary review of these three scenarios, our preference is typically for the inventory to be conducted in advance so that (in the case of 1 below), we can determine that there are no cultural resources in the wetlands testing areas or (in the case of 2 below), any cultural resources identified can be flagged and avoided. That being said, number 3 below is also an option, considering the nature of the areas where the testing will be conducted (wetlands) and the likelihood of

encountering cultural resources (I would guess it to be low, but would rely on Sherry to assess that in coordination with the other archaeologists more familiar with the area).

Hope this helps! Let me know if there are additional questions.

Best regards,  
Shina

Shina duVall, RPA  
Archaeologist, Review and Compliance Coordinator  
Alaska State Historic Preservation Office / Office of History and Archaeology  
550 W. 7th Ave., Suite 1310  
907-269-8720 (phone) 907-269-8908 (fax)  
[shina.duvall@alaska.gov](mailto:shina.duvall@alaska.gov)

---

**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]  
**Sent:** Tuesday, April 16, 2013 10:30 AM  
**To:** Duvall, Shina A (DNR); Cory Warnock  
**Cc:** Nelson, Sherry D -FS; Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Hi All,

The Forest Service will be amending the special use permit for both the cultural and wetlands study issued to Kenai Hydro, LLC for investigative studies. We will amend first for the cultural work  
As for the wetland study, there are three possible scenarios that would be acceptable with the FS as long as SHPO concurs: 1) If the area is surveyed prior to the wetland tests and no cultural resources are documented, the wetland tests could be conducted; 2) If the area is surveyed prior to wetland testing and cultural resources are documented, and the cultural resources could be flagged and avoided, the wetland tests could be conducted; 3) If the area is not surveyed in time to meet the test deadline, a qualified archaeologist (contractor or FS personnel) could monitor the activities provided an archaeologist is available.

It would be up to the lead agency to get SHPO concurrence, not Forest Service personnel (FERC?)

Once we have SHPO concurrence, the amendment for the wetlands survey can be finalized prior to the cultural resource survey actually occurring.

Hope this helps,

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

---

**From:** Duvall, Shina A (DNR) [<mailto:shina.duvall@alaska.gov>]  
**Sent:** Monday, April 15, 2013 10:48 AM  
**To:** Cory Warnock; Van Massenhove, Katherine B -FS  
**Cc:** Nelson, Sherry D -FS; Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Oh ok – sorry. Yes, I'll have to leave that question to Kathy and/or Sherry to answer. ☺

Best regards,  
Shina

Shina duVall, RPA  
Archaeologist, Review and Compliance Coordinator  
Alaska State Historic Preservation Office / Office of History and Archaeology  
550 W. 7th Ave., Suite 1310  
907-269-8720 (phone) 907-269-8908 (fax)  
[shina.duvall@alaska.gov](mailto:shina.duvall@alaska.gov)

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Monday, April 15, 2013 10:42 AM  
**To:** Duvall, Shina A (DNR); Van Massenhove, Katherine B -FS  
**Cc:** Nelson, Sherry D -FS ([snelson@fs.fed.us](mailto:snelson@fs.fed.us)); Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Hi Shina,

As I understand it in talking with Kathy and subsequently you and Sherry, there would be an amendment to the existing Special Use Permit from the Forest Service that would allow us to do the wetlands work at the head of the lake. It will be good to hear from Kathy and/or Sherry regarding my question below related to timing now that we have an approach with CRC that is acceptable to everyone.

Cory

---

**From:** Duvall, Shina A (DNR) [<mailto:shina.duvall@alaska.gov>]  
**Sent:** Monday, April 15, 2013 11:32 AM  
**To:** Cory Warnock; Van Massenhove, Katherine B -FS  
**Cc:** Nelson, Sherry D -FS ([snelson@fs.fed.us](mailto:snelson@fs.fed.us)); Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Hi Cory,

Sorry for the delayed reply. I believe that you have accurately captured what I recall from our discussion. However, I am not sure which "amendment" you are referring to...?

Best regards,  
Shina

Shina duVall, RPA  
Archaeologist, Review and Compliance Coordinator  
Alaska State Historic Preservation Office / Office of History and Archaeology  
550 W. 7th Ave., Suite 1310  
907-269-8720 (phone) 907-269-8908 (fax)  
[shina.duvall@alaska.gov](mailto:shina.duvall@alaska.gov)

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**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Wednesday, April 03, 2013 8:16 PM  
**To:** Van Massenhove, Katherine B -FS  
**Cc:** Nelson, Sherry D -FS ([snelson@fs.fed.us](mailto:snelson@fs.fed.us)); Duvall, Shina A (DNR); Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Hi Kathy,

The meeting went well and we were able to discuss a path forward as it relates to the wetlands work at the head of Grant Lake. I've Cc'd Sherry and Shina so they can elaborate/clarify what I think I heard during our meeting.

The approach we discussed today involved Mike Yarborough (our Cultural consultant) doing a review of wetlands at the head of Grant Lake in association with his Cultural work at the lake in June. He would examine the area, make note of culturally relevant sites in the area of proposed wetland analysis (if any), and relay this information to you and Sherry along with our terrestrial folks. Presumably, you and Sherry would then review it for your agencies purposes and review it with Shina (SHPO) for her ok. Sherry and Shina, did I accurately capture the approach we discussed?

The one question I have is, if we all agree that this approach is acceptable, can the amendment be finalized in advance of the June Cultural work or will it happen once that work has occurred? In other words, does the fact that we have an acceptable process in place allow us to get the proposed amendment completed or do we wait for the Cultural review to finalize? Either is fine assuming the timeline will work. I'm just trying to have a full understanding of the process.

As an aside and in an effort to answer the questions posed today by you, Shina and Sherry, here is a general description of the wetlands work that will take place at the head of Grant Lake. If you need more information, please let me know and I'll get with our terrestrial folks to get you the details you need.....

- We will place ~2-4 soil pits around the boundary areas of each of our sites but won't know exactly where until we're in the field. The "vicinity" is within the wetland assessment area (head of Grant Lk on USFS land).
- Estimated 3-7 soil pits at the head of Grant Lake. It would be nice to have an allowance for 10 in case a few additional are needed.
- Depth: 18-24" depending on depth to refusal; diameter: ~8-12"; the pit will only be open for ~1 hr during the wetland determination, then the soil plugs will be replaced.

I'll look forward to hearing from you. Thanks and again, let me know if you need additional information,

Cory

---

**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]  
**Sent:** Wednesday, April 03, 2013 5:56 PM  
**To:** Cory Warnock  
**Subject:** RE: Cultural Meeting

Hey Cory,

I hope the meeting went well. I wasn't able to skip out of the other meeting as I was hoping, but did brief Sherry on the questions we had, so hopefully we were able to resolve some of the questions we had.

Kathy

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Wednesday, April 03, 2013 12:05 PM  
**To:** Van Massenhove, Katherine B -FS  
**Subject:** Cultural Meeting

Hi Kathy,

Are you going to be able to join us at 2PM AK time for the APE meeting? If so, do you have all of the connection details?

Thanks,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

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**From:** Cory Warnock  
**Sent:** Thursday, April 25, 2013 8:20 PM  
**To:** Ayers, Scott D (DFG); MSalzetti@HomerElectric.com  
**Cc:** John Stevenson; Emily Andersen; Begich, Robert N (DFG); Pawluk, Jason A (DFG); Lewis, Bert A (DFG); Litchfield, Virginia P (DFG); Daigneault, Michael J (DFG); Emily Andersen  
**Subject:** RE: AMENDMENT2: Fish Resource Permit SF2013-105 (Salzetti/Homer Electric-grant creek/trail lake narrows-local species)

Again Scott, thanks for your attention and assistance on this. It is much appreciated.

Cory

---

**From:** Ayers, Scott D (DFG) [<mailto:scott.ayers@alaska.gov>]  
**Sent:** Thursday, April 25, 2013 5:06 PM  
**To:** [MSalzetti@HomerElectric.com](mailto:MSalzetti@HomerElectric.com)  
**Cc:** Cory Warnock; John Stevenson; Emily Andersen; Begich, Robert N (DFG); Pawluk, Jason A (DFG); Lewis, Bert A (DFG); Litchfield, Virginia P (DFG); Daigneault, Michael J (DFG)  
**Subject:** AMENDMENT2: Fish Resource Permit SF2013-105 (Salzetti/Homer Electric-grant creek/trail lake narrows-local species)

Mr. Salzetti,

Please see the attached amendment to Fish Resource Permit SF2013-105, which allows secondary marks on some fish for smolt trap efficiency testing as specified in the amendment. Note that all other conditions in the permit remain in effect, and that a copy of this amendment must be attached to the original.

Wishing you well.

Cheers,

-Scott

Scott D Ayers  
Fish Resource Permit Program Coordinator  
Alaska Department of Fish and Game  
Division of Sport Fish  
333 Raspberry Road  
Anchorage, AK 99518  
(907) 267-2517 – phone (907) 267-2464 – fax  
[scott.ayers@alaska.gov](mailto:scott.ayers@alaska.gov)



STATE OF ALASKA  
DEPARTMENT OF FISH AND GAME-SPORT FISH  
P.O. BOX 115525  
JUNEAU, ALASKA 99811-5525

FISH RESOURCE PERMIT AMENDMENT #2  
Permit No. SF2013-105

Permit Issued To: **Mike Salzetti** *(signature required below for permit validation)*

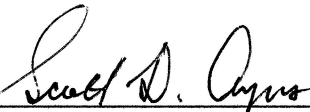
**This amendment of Fish Resource Permit SF2013-105:**

- 1) under **Final Disposition**; adds the following:

Fish captured at the furthest upstream smolt trap may be given a secondary mark (in addition to the Bismark Brown stain) using visible implant elastomers (VIE) in their anal fin, during smolt trap efficiency testing.

**All other conditions specified in Fish Resource Permit SF2013-105 remain in effect.**

***This amendment must be attached to the original permit.***

  
\_\_\_\_\_  
Division of Sport Fish

4/25/2013  
\_\_\_\_\_  
Date

**PERMIT AMENDMENT VALIDATION requires permittee's signature agreeing to abide by conditions of this permit amendment:**

\_\_\_\_\_  
**Signature of Permittee**

cc: Robert Begich, Division of Sport Fish, Soldotna  
Jason Pawluk, Division of Sport Fish, Soldotna  
Bert Lewis, Division of Commercial Fisheries, Anchorage  
Ginny Litchfield, Division of Habitat, Soldotna  
Mike Daigneault, Division of Habitat, Anchorage  
Fish and Wildlife Protection, Soldotna

# Grant Lake Hydroelectric Project (FERC No. 13212) Licensing

## Consultation Record

### Phone/E-mail /One on One Meeting Log

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*Contact Name:* Sherry Nelson

*Agency/Organization:* USFS

*Phone No./E-mail Address:* [snelson@fs.fed.us](mailto:snelson@fs.fed.us)

---

*Date:* 4/25/13

*Time:* 12:00 PST

---

*Grant Lake Licensing Team Contact:* Cory Warnock

---

#### *Summary of Conversation and/or E-mail Exchange:*

Ms. Nelson called Mr. Warnock to inform him that the appropriate approach to retain an amendment to the existing USFS Special Use Permit related to wetland studies at Grant Lake was to have HEA develop a letter to SHPO documenting the approved plan. The approved plan would consist of HEA's cultural consultant, CRC, conducting a preliminary assessment of the wetlands at Grant Lake to document any existing cultural sites. Once these are identified (if any), they would be marked and the wetlands biologists, SHPO and the USFS would be briefed and these areas would be avoided during the wetlands assessment.

Mr. Warnock committed to working with HEA to develop a letter documenting this approach for review and final signature by SHPO. Additionally, he verified that the amendment could be finalized prior to the cultural fieldwork being conducted in June. Ms. Nelson confirmed this.

Call Duration: 5 minutes

---

**From:** Cory Warnock  
**Sent:** Monday, April 29, 2013 9:33 AM  
**To:** Ayers, Scott D (DFG); MSalzetti@HomerElectric.com  
**Cc:** John Stevenson; Emily Andersen; Begich, Robert N (DFG); Pawluk, Jason A (DFG); Lewis, Bert A (DFG); Litchfield, Virginia P (DFG); Daigneault, Michael J (DFG)  
**Subject:** RE: AMENDMENT 3: Fish Resource Permit SF2013-105 (Salzetti/Homer Electric-grant creek/trail lake narrows-local species)

Thanks, Scott

---

**From:** Ayers, Scott D (DFG) [<mailto:scott.ayers@alaska.gov>]  
**Sent:** Monday, April 29, 2013 9:27 AM  
**To:** Cory Warnock; [MSalzetti@HomerElectric.com](mailto:MSalzetti@HomerElectric.com)  
**Cc:** John Stevenson; Emily Andersen; Begich, Robert N (DFG); Pawluk, Jason A (DFG); Lewis, Bert A (DFG); Litchfield, Virginia P (DFG); Daigneault, Michael J (DFG)  
**Subject:** AMENDMENT 3: Fish Resource Permit SF2013-105 (Salzetti/Homer Electric-grant creek/trail lake narrows-local species)

Mr. Salzetti,

Please see the attached amendment to your Fish Resource Permit SF2013-105, which allows secondary marks with VIE to be given to some fish captured with smolt traps for trap efficiency testing. Please note that all other conditions in the permit remain in effect, and that a copy of this amendment must be attached to the original.

Thank you,  
-Scott

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Monday, April 29, 2013 7:33 AM  
**To:** Ayers, Scott D (DFG); [MSalzetti@HomerElectric.com](mailto:MSalzetti@HomerElectric.com)  
**Cc:** John Stevenson; Emily Andersen; Begich, Robert N (DFG); Pawluk, Jason A (DFG); Lewis, Bert A (DFG); Litchfield, Virginia P (DFG); Daigneault, Michael J (DFG); Emily Andersen  
**Subject:** RE: AMENDMENT 2: Fish Resource Permit SF2013-105 (Salzetti/Homer Electric-grant creek/trail lake narrows-local species)

Hi Scott,

After speaking with our Aquatics lead, his hope was that the VIE could be placed in the dorsal fin as opposed to the anal fin. Injection into the anal fin requires inserting the needle into the vent of the fish. Would it be possible to amend the permit to allow this?

Thanks,

Cory



STATE OF ALASKA  
DEPARTMENT OF FISH AND GAME-SPORT FISH  
P.O. BOX 115525  
JUNEAU, ALASKA 99811-5525

FISH RESOURCE PERMIT AMENDMENT #3  
Permit No. SF2013-105

Permit Issued To: **Mike Salzetti** (*signature required below for permit validation*)

**This amendment of Fish Resource Permit SF2013-105:**

- 1) under **Final Disposition**; *changes the following:*

**From:**

Fish captured at the furthest upstream smolt trap may be given a secondary mark (in addition to the Bismark Brown stain) using visible implant elastomers (VIE) in their anal fin, during smolt trap efficiency testing.

**To:**

Fish captured at the furthest upstream smolt trap may be given a secondary mark (in addition to the Bismark Brown stain) using visible implant elastomers (VIE) in a single fin, during smolt trap efficiency testing.

**All other conditions specified in Fish Resource Permit SF2013-105 remain in effect.**

***This amendment must be attached to the original permit.***

  
\_\_\_\_\_  
Division of Sport Fish

4/29/2013  
\_\_\_\_\_  
Date

**PERMIT AMENDMENT VALIDATION requires permittee's signature agreeing to abide by conditions of this permit amendment:**

\_\_\_\_\_  
**Signature of Permittee**

cc: Robert Begich, Division of Sport Fish, Soldotna  
Jason Pawluk, Division of Sport Fish, Soldotna  
Bert Lewis, Division of Commercial Fisheries, Anchorage  
Ginny Litchfield, Division of Habitat, Soldotna  
Mike Daigneault, Division of Habitat, Anchorage  
Fish and Wildlife Protection, Soldotna

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**From:** Cory Warnock  
**Sent:** Monday, April 29, 2013 9:13 AM  
**To:** Leclair, Claire H (DNR); Blackwell, Jack D (DNR)  
**Cc:** Mike Salzetti; Nathan Weber; Emily Andersen; Gary Fandrei  
**Subject:** RE: Man Camp Site Visit (Grant Lake)

Thanks, Claire

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**From:** Leclair, Claire H (DNR) [<mailto:claire.leclair@alaska.gov>]  
**Sent:** Monday, April 29, 2013 9:10 AM  
**To:** Cory Warnock; Blackwell, Jack D (DNR)  
**Cc:** Mike Salzetti; Nathan Weber; Emily Andersen; Gary Fandrei  
**Subject:** RE: Man Camp Site Visit (Grant Lake)

Cory-

Thank you for the reminder. I will send out an amendment either today or tomorrow.

-Claire

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Monday, April 29, 2013 7:37 AM  
**To:** Blackwell, Jack D (DNR); Leclair, Claire H (DNR)  
**Cc:** Mike Salzetti; Nathan Weber; Emily Andersen; Gary Fandrei  
**Subject:** RE: Man Camp Site Visit (Grant Lake)

Hi Jack and Claire,

I'm just checking in to gauge the timeline for receiving the amendment referred to below (Pit Toilet). The CIAA folks will be installing the weir in the next few days. I understand that we have verbal documentation allowing the modification but I'm always more comfortable having things finalized to ensure that we are in compliance.

No rush, just checking in.

Thanks,

Cory

---

**From:** Blackwell, Jack D (DNR) [<mailto:jack.blackwell@alaska.gov>]  
**Sent:** Friday, April 19, 2013 1:38 PM  
**To:** Cory Warnock; Leclair, Claire H (DNR)  
**Cc:** Mike Salzetti; Nathan Weber; Emily Andersen  
**Subject:** RE: Man Camp Site Visit (Grant Lake)

After looking at the site and discussing options with Nathan, the permit will be modified to allow a pit toilet.

Jack

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Wednesday, April 17, 2013 2:19 PM

**To:** Leclair, Claire H (DNR)  
**Cc:** Blackwell, Jack D (DNR); Mike Salzetti; Nathan Weber; Emily Andersen  
**Subject:** Man Camp Site Visit (Grant Lake)

Hi Claire,

Not sure if you have had a chance to talk with Jack since his site visit with CIAA on Monday but everything went well and we will be proceeding soon with setting up the man camp. To that end, Nathan and Jack had a conversation on the human waste issue and not to speak for Jack (Cc'd) but it sounds as if, after seeing the site and discussing methodology with Nathan, he is open to allowing the pit toilet at the man camp. As such, I'm assuming that an amendment to the permit would be necessary? I'm basically sending this message to open a dialogue related to getting that amendment in place. Jack and Nathan, I'd welcome your thoughts as you both were on site and have first-hand knowledge of the topic and discussion that took place.

Thanks and I'll look forward to hearing from folks,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

McMillen, LLC  
[www.mcmillen-llc.com](http://www.mcmillen-llc.com)  
5771 Applegrove Ln.  
Ferndale, Wa. 98248  
O – 360-384-2662  
C – 360-739-0187  
F – 360-542-2264

---

**From:** Cory Warnock  
**Sent:** Monday, April 29, 2013 3:22 PM  
**To:** Duvall, Shina A (DNR)  
**Cc:** Mike Salzetti; Emily Andersen  
**Subject:** RE: APE Letter (Grant Lake)

Perfect. Thanks, Shina.

---

**From:** Duvall, Shina A (DNR) [<mailto:shina.duvall@alaska.gov>]  
**Sent:** Monday, April 29, 2013 3:21 PM  
**To:** Cory Warnock  
**Subject:** RE: APE Letter (Grant Lake)

Hi Cory,

Judy forwarded your message to me. The letter we received was dated 4/19 and received 4/25. It is in the queue for review and comment.

Best regards,  
Shina

Shina duVall, RPA  
Archaeologist, Review and Compliance Coordinator  
Alaska State Historic Preservation Office / Office of History and Archaeology  
550 W. 7th Ave., Suite 1310  
907-269-8720 (phone) 907-269-8908 (fax)  
[shina.duvall@alaska.gov](mailto:shina.duvall@alaska.gov)

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**From:** Bittner, Judith E (DNR)  
**Sent:** Monday, April 29, 2013 10:31 AM  
**To:** Duvall, Shina A (DNR)  
**Subject:** FW: APE Letter (Grant Lake)

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**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Monday, April 29, 2013 8:55 AM  
**To:** Bittner, Judith E (DNR)  
**Cc:** Mike Salzetti; Emily Andersen  
**Subject:** APE Letter (Grant Lake)

Hi Judy,

Mike Salzetti (HEA) put a letter in the mail documenting our APE meeting that took place on April 3<sup>rd</sup>. I'm just checking in to make sure that you received the letter.

Thanks,



Cory

**Cory Warnock**

*Senior Licensing and Regulatory Consultant*

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5771 Applegrove Ln.

Ferndale, Wa. 98248

O – 360-384-2662

C – 360-739-0187

F – 360-542-2264

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**From:** Cory Warnock  
**Sent:** Tuesday, April 30, 2013 9:18 PM  
**To:** Leclair, Claire H (DNR)  
**Cc:** Blackwell, Jack D (DNR); Emily Andersen  
**Subject:** RE: LAS 29044

Thanks, Claire.

---

**From:** Leclair, Claire H (DNR) [<mailto:claire.leclair@alaska.gov>]  
**Sent:** Tuesday, April 30, 2013 2:12 PM  
**To:** Cory Warnock  
**Cc:** Blackwell, Jack D (DNR)  
**Subject:** LAS 29044

Cory-

Here are amended stips and the signature page for permit for your work on Grant Lake hydro feasibility studies.

*Claire Holland LeClair*  
Deputy Director/Chief of Field Operations  
Division of Parks & Outdoor Recreation  
907-269-8702

*The Division of Parks & Outdoor Recreation provides outdoor recreation opportunities and conserves and interprets natural, cultural, and historic resources for the use, enjoyment and welfare of the people.*

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**STATE OF ALASKA**  
**Department of Natural Resources**  
**Division of Parks and Outdoor Recreation**

**Special Park Use Permit**  
**11 AAC 18.010**

**PERMIT #:** LAS 29044

**Name of Permittee:** Mike Salzetti  
**Business Name (if applicable):** Kenai Hydro, LLC  
**Address:** 280 Airport Way  
**City/State/Zip Code:** Kenai, Alaska 99611

This permit authorizes use of state owned land and water adjacent to Grant Creek and Lower Trail Lake managed by the Division of Parks and Outdoor Recreation according to a management agreement for the Special Use Area described in ADL 226527.

**This permit specifically authorizes the following activities:**

- Excavate up to 10 test pits 1 meter in diameter and 1 meter deep below OHW line of Grant Creek and remove up to 20 cubic feet of natural material for sediment analysis.
- Excavate up to 50 test pits 8-12 inches in diameter and 18-24 inches deep for wetland assessment; test pits will remain open for one hour before backfilled with native material.
- Install a fixed picket weir and two smolt traps in Grant Creek.
- Establish a field camp for up to 6 people between May 1 and October 31.

This permit is effective beginning **April 2, 2013** and ending **December 31, 2013** unless sooner terminated at the State of Alaska's discretion. This permit does not convey an interest in state land and as such is revocable immediately, with or without cause. No preference right for use or conveyance of the land is granted or implied by this authorization.

All activities shall be conducted in accordance with the attached Special and General Stipulations.

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Signature of Permittee or Authorized Representative	Title	Date
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Ben Ellis, Director, DPOR

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Date

**The contact information for this permit is as follows:**

Kenai/Prince William Sound Area Superintendent-Jack Blackwell-907-262-5581 ext. 1  
Jacques Kosto-Kenai River Special Management Area District Ranger-907-398-2441

**Special Stipulations**

**1. Field camp**

- A pit latrine may be used for human waste; the latrine must be at least 6 feet deep and 100 feet from Grant Creek or Trail Lake. When the camp is closed down, the latrine hole must be filled to grade. Permittee will routinely use lime to cover human waste in the latrine.
- Ground fires are not authorized; personnel staying in the field camp may use a portable fire pan.
- State park staff will give approval for location of the field camp. Kenai Hydro will contact one or both of the park staff listed above to schedule a site inspection prior to establishing the camp.
- All areas shall be kept clean and maintained in an orderly manner.
- Propane and up to 10 gallons of gasoline may be stored at the camp within a secondary containment area and at least 150 feet from Grant Creek or Trail Lake.
- Site disturbance shall be kept to a minimum to protect local habitats. All activities at the site shall be conducted in a manner that will minimize the disturbance of soil and vegetation and changes in the character of natural drainage systems.
- All garbage and debris will be stored so it does not attract wildlife. Food and refuse will be stored in bear-resistant containers.

**2. Structures**

This permit allows for the establishment of short-term temporary structures. The short-term temporary structures authorized under this permit must be constructed to allow for their removal from the site within 48 hours. Structures authorized under this permit must be removed by December 31, 2013.

**3. Test pits for sedimentary analysis and wetland assessment**

Test pits may be dug only by hand. After sediment samples are removed from excavated material or after wetland assessment work is completed the test pits will be backfilled, foot compacted and graded to resemble the site before excavation.

**4. Clearing of vegetation**

The removal or destruction of vegetation is not authorized under this permit.

**5. Permit fees**

Pursuant to 11 AAC 05.010(a)(12)(H)(ii) this permit is subject to:

1) an application/filing fee of \$50, and (2) an annual permit fee of \$500.

**6. Archaeological and historical resources**

The permittee will maintain a minimum 100' buffer around known archaeological and historic sites, inside which no ground disturbance is permitted, and will report to DPOR any previously unknown archaeological or historic resources discovered during project activities within 24 hours of discovery.

**General Stipulations**

1. **Non-assignment:** This permit may not be assigned without the written approval and acceptance of the assignee by the director or his/her designee. Further, the permittee shall not sublet or enter into any third party agreements involving the privileges authorized by this permit.
2. **Non-waiver Provision:** The failure to enforce provision of this permit or any default on the part of the permittee in observance or performance of any of the conditions or requirements of this permit is not a waiver of the forfeiture provision or any other provision of the permit.
3. **Permanent Structures:** Permanent structures are prohibited from being placed by the permittee on state park lands or waters.
4. **Personal Property:** If personal property is authorized to be placed or located on park lands or waters under the provisions of this permit said personal property shall be removed prior to the expiration of the permit or may be impounded by the state.
5. **Forfeiture:** Permittee shall forfeit the permit if he/she defaults in the performance or observance of any of the permit terms, covenants or stipulations or of a statute or regulation.
6. **State Held Harmless:** The permittee agrees to indemnify, defend and hold harmless the State of Alaska from any and all liability claims arising from the actions of the permittee or his/her agents, employees or clients while conducting activities under this permit on state park lands or waters.
7. **Litter Removal:** The licensee shall remove all litter caused by their activities and shall make a reasonable effort to pick up and remove from the park litter which they find in the vicinity of their activities within the park.

8. **Valid Claims and Applicable Laws:** This permit is subject to all valid claims and applicable laws and regulations.
9. **Forest Fire Suppression:** The permittee and his/her agents and employees agree to take all reasonable precautions to prevent, make diligent efforts to suppress, and report promptly all fires on or endangering state park lands. No material shall be disposed of by burning during closed season established by law or regulation without a written permit from the state forester.
10. **Protection of Park Land or Property from Damage:** Permittee shall exercise diligence in protecting from damage the land, property and resources of the State of Alaska in the area covered by and used in connection with this permit and shall pay the state for any damage resulting from negligence or from the violation of the terms of this permit or any law or regulation applicable to the use of state parks by the permittee or by his/her agents and employees when acting within the scope of their employment or by his/her contractors and subcontractors.
11. **Repair of Damage:** Permittee shall fully repair all damage, other than ordinary wear and tear, to state park roads and trails caused in the exercise of the privilege authorized by this permit.
12. **Non-obstruction of Public Use:** Permittee, employees, agents or clients shall not interfere with free public use of roads and trails in the area of their activities except as may be authorized by special stipulation in this permit.
13. **Geographic Limitation:** This permit is applicable only for the use areas described.
14. **Selling Prohibited:** It is expressly agreed and understood that this permit does not authorize the permittee to solicit business, advertise, collect any fee or sell any goods or services on state park lands or waters.
15. **No Preferential Right of Renewal:** No rights of renewal or preferential rights for renewal are attached to this permit.
16. **Wheeled or Tracked Vehicles:** Activities employing wheeled or tracked vehicles when specifically allowed under the description of activities of the permit or in the special stipulations shall be conducted in such a manner as to minimize surface damage to park lands and resources.
17. **Activity Area and Campsite Cleanliness:** All activity areas and campsites shall be kept clean and maintained in a work person-like manner.

18. **Survey Monuments:** Survey monuments, witness corridors, reference monuments, mining claim posts and bearing trees shall be protected against destruction, obliteration or damage. Any damaged or obliterated markers caused by actions of the permittee or his/her agents shall be reestablished in accordance with accepted survey practices of the state.
19. **Natural Hazards:** The permittee recognizes and understands that natural hazards are likely to exist within the area of his/her operation. The permittee agrees to take all reasonable precautions to make himself/herself aware of these hazards and to avoid injury to persons or property.
20. **Signs:** No signs or advertising devices shall be erected on the area covered by this permit, or highway leading thereto, without prior approval of the state as to location, design, size, color and message. Erected signs shall be maintained and renewed as necessary to neat and presentable standards.
21. **State Inspection of Permit Area:** The state reserves the right to inspect areas of activity under this permit. It is understood, however, that the state will only inspect the site during normal periods of activity by the permittee or at other times that are convenient to the permittee unless in an emergency situation.
22. **Alaska Historic Preservation Act.** The Alaska Historic Preservation Act (AS 41.35.200) prohibits the appropriation, excavation, removal, injury, or destruction of any state-owned historic, prehistoric (paleontological) or archaeological site without a permit from the commissioner. Should any sites be discovered during the course of field operations, activities that may damage the site will cease and the Office of History and Archaeology in DPOR (907) 269-8721 shall be notified immediately. Improvements shall not be sited within one-half mile of identified cultural sites.
23. **Other Authorizations.** The issuance of this authorization does not alleviate the necessity of the permittee to obtain authorizations required by other agencies for this activity.
24. **Bald Eagle Protection Act:** Activities shall avoid harming or disturbing bald eagles or their nest sites in accordance with the Bald Eagle Protection Act (16 USC 668).
25. **Boat & Air Charter Operators.** Any air or boat charter operators used by the permittee to access state park lands must have a current and valid commercial use permit issued by DPOR.
26. **Special Stipulations:** Any special stipulations attached to this permit are a part of this permit.

**27. Advisory Regarding Violations of the Permit Guidelines:** Pursuant to 11 AAC 18.025(e), a person who violates a provision of a permit issued under this chapter (11 AAC 18) may have their permit revoked by the Director or local park officer for failure to abide by any permit condition or limitation.

**28. Permit modification:** The Director reserves the right to modify these stipulations or use additional stipulations as deemed necessary. The permittee will be advised before any such modifications or additions are finalized.

Any correspondence on this permit may be directed to Claire LeClair, Department of Natural Resources, Division of Parks and Outdoor Recreation, Director's Office, 550 W. 7th Ave., Suite 1380, Anchorage, AK 99501-3577, telephone (907) 269-8702, [claire.leclair@alaska.gov](mailto:claire.leclair@alaska.gov).



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**From:** Cory Warnock  
**Sent:** Friday, May 03, 2013 5:25 PM  
**To:** Van Massenhove, Katherine B -FS; Duvall, Shina A (DNR)  
**Cc:** Nelson, Sherry D -FS; Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Per a conversation I had with Sherry last week, I do understand that and have drafted a letter to this effect which is currently being reviewed internally. Once that review is finished, Mike Salzetti (HEA) will be sending it to Shina and Cc'ing you, Sherry, and Frank Winchell (FERC). Thanks for the check-in and as long as you, like Sherry, are ok with this approach, you'll be seeing a letter shortly.

Cory

---

**From:** Van Massenhove, Katherine B -FS [mailto:kvanmassenhove@fs.fed.us]  
**Sent:** Friday, May 03, 2013 5:22 PM  
**To:** Duvall, Shina A (DNR); Cory Warnock  
**Cc:** Nelson, Sherry D -FS; Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Hi Cory,

I think there seems to be some confusion on who will be consulting with SHPO. I understand from Sherry Nelson and Ed Decleva that the Forest Service is not the lead agency in this project, and FERC or the operator should consult with SHPO on this matter. The project is more than just on FS managed lands, and Section 106 is more than just the bit on the Chugach NF.

Please confirm that you understand that the FS will not be consulting with SHPO, that this formal consultation will be conducted by FERC or Kenai Hydro, LLC (or Homer Electric).

Thanks,

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

**From:** Nelson, Sherry D -FS  
**Sent:** Wednesday, April 17, 2013 1:15 PM  
**To:** DeCleva, Ed -FS  
**Subject:** FW: Cultural Meeting

Hi Ed,

I hope you're feeling better. Was wondering if you could take a look at this response from Shina. It looks like she is expecting the FS to consult with SHPO rather than the lead agency. I was thinking you had told me the lead agency should get SHPO concurrence, but I could be mistaken. Can you give me direction before I respond? Thanks!

---

**From:** Duvall, Shina A (DNR) [<mailto:shina.duvall@alaska.gov>]  
**Sent:** Wednesday, April 17, 2013 11:41 AM  
**To:** Van Massenhove, Katherine B -FS; Cory Warnock  
**Cc:** Nelson, Sherry D -FS; Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

All,

I imagine that Sherry will be sending this information in to our office for a formal review and comment, however, upon preliminary review of these three scenarios, our preference is typically for the inventory to be conducted in advance so that (in the case of 1 below), we can determine that there are no cultural resources in the wetlands testing areas or (in the case of 2 below), any cultural resources identified can be flagged and avoided. That being said, number 3 below is also an option, considering the nature of the areas where the testing will be conducted (wetlands) and the likelihood of encountering cultural resources (I would guess it to be low, but would rely on Sherry to assess that in coordination with the other archaeologists more familiar with the area).

Hope this helps! Let me know if there are additional questions.

Best regards,  
Shina

Shina duVall, RPA  
Archaeologist, Review and Compliance Coordinator  
Alaska State Historic Preservation Office / Office of History and Archaeology  
550 W. 7th Ave., Suite 1310  
907-269-8720 (phone) 907-269-8908 (fax)  
[shina.duvall@alaska.gov](mailto:shina.duvall@alaska.gov)

---

**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]  
**Sent:** Tuesday, April 16, 2013 10:30 AM  
**To:** Duvall, Shina A (DNR); Cory Warnock  
**Cc:** Nelson, Sherry D -FS; Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Hi All,

The Forest Service will be amending the special use permit for both the cultural and wetlands study issued to Kenai Hydro, LLC for investigative studies. We will amend first for the cultural work  
As for the wetland study, there are three possible scenarios that would be acceptable with the FS as long as SHPO concurs: 1) If the area is surveyed prior to the wetland tests and no cultural resources are documented, the wetland tests could be conducted; 2) If the area is surveyed prior to wetland testing and cultural resources are documented, and the cultural resources could be flagged and avoided, the wetland tests could be conducted; 3) If the area is not surveyed in time to meet the test deadline, a qualified archaeologist (contractor or FS personnel) could monitor the activities provided an archaeologist is available.

It would be up to the lead agency to get SHPO concurrence, not Forest Service personnel (FERC?)

Once we have SHPO concurrence, the amendment for the wetlands survey can be finalized prior to the cultural resource survey actually occurring.

Hope this helps,

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

---

**From:** Duvall, Shina A (DNR) [<mailto:shina.duvall@alaska.gov>]  
**Sent:** Monday, April 15, 2013 10:48 AM  
**To:** Cory Warnock; Van Massenhove, Katherine B -FS  
**Cc:** Nelson, Sherry D -FS; Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Oh ok – sorry. Yes, I'll have to leave that question to Kathy and/or Sherry to answer. ☺

Best regards,  
Shina

Shina duVall, RPA  
Archaeologist, Review and Compliance Coordinator  
Alaska State Historic Preservation Office / Office of History and Archaeology  
550 W. 7th Ave., Suite 1310  
907-269-8720 (phone) 907-269-8908 (fax)  
[shina.duvall@alaska.gov](mailto:shina.duvall@alaska.gov)

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Monday, April 15, 2013 10:42 AM  
**To:** Duvall, Shina A (DNR); Van Massenhove, Katherine B -FS  
**Cc:** Nelson, Sherry D -FS ([snelson@fs.fed.us](mailto:snelson@fs.fed.us)); Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Hi Shina,

As I understand it in talking with Kathy and subsequently you and Sherry, there would be an amendment to the existing Special Use Permit from the Forest Service that would allow us to do the wetlands work at the head of the lake. It will be good to hear from Kathy and/or Sherry regarding my question below related to timing now that we have an approach with CRC that is acceptable to everyone.

Cory

---

**From:** Duvall, Shina A (DNR) [<mailto:shina.duvall@alaska.gov>]  
**Sent:** Monday, April 15, 2013 11:32 AM  
**To:** Cory Warnock; Van Massenhove, Katherine B -FS  
**Cc:** Nelson, Sherry D -FS ([snelson@fs.fed.us](mailto:snelson@fs.fed.us)); Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Hi Cory,

Sorry for the delayed reply. I believe that you have accurately captured what I recall from our discussion. However, I am not sure which “amendment” you are referring to...?

Best regards,  
Shina

Shina duVall, RPA  
Archaeologist, Review and Compliance Coordinator  
Alaska State Historic Preservation Office / Office of History and Archaeology  
550 W. 7th Ave., Suite 1310  
907-269-8720 (phone) 907-269-8908 (fax)  
[shina.duvall@alaska.gov](mailto:shina.duvall@alaska.gov)

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Wednesday, April 03, 2013 8:16 PM  
**To:** Van Massenhove, Katherine B -FS  
**Cc:** Nelson, Sherry D -FS ([snelson@fs.fed.us](mailto:snelson@fs.fed.us)); Duvall, Shina A (DNR); Mike Salzetti; Emily Andersen  
**Subject:** RE: Cultural Meeting

Hi Kathy,

The meeting went well and we were able to discuss a path forward as it relates to the wetlands work at the head of Grant Lake. I've Cc'd Sherry and Shina so they can elaborate/clarify what I think I heard during our meeting.

The approach we discussed today involved Mike Yarborough (our Cultural consultant) doing a review of wetlands at the head of Grant Lake in association with his Cultural work at the lake in June. He would examine the area, make note of culturally relevant sites in the area of proposed wetland analysis (if any), and relay this information to you and Sherry along with our terrestrial folks. Presumably, you and Sherry would then review it for your agencies purposes and review it with Shina (SHPO) for her ok. Sherry and Shina, did I accurately capture the approach we discussed?

The one question I have is, if we all agree that this approach is acceptable, can the amendment be finalized in advance of the June Cultural work or will it happen once that work has occurred? In other words, does the fact that we have an acceptable process in place allow us to get the proposed amendment completed or do we wait for the Cultural review to finalize? Either is fine assuming the timeline will work. I'm just trying to have a full understanding of the process.

As an aside and in an effort to answer the questions posed today by you, Shina and Sherry, here is a general description of the wetlands work that will take place at the head of Grant Lake. If you need more information, please let me know and I'll get with our terrestrial folks to get you the details you need.....

- We will place ~2-4 soil pits around the boundary areas of each of our sites but won't know exactly where until we're in the field. The "vicinity" is within the wetland assessment area (head of Grant Lk on USFS land).
- Estimated 3-7 soil pits at the head of Grant Lake. It would be nice to have an allowance for 10 in case a few additional are needed.
- Depth: 18-24" depending on depth to refusal; diameter: ~8-12"; the pit will only be open for ~1 hr during the wetland determination, then the soil plugs will be replaced.

I'll look forward to hearing from you. Thanks and again, let me know if you need additional information,

Cory

---

**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]  
**Sent:** Wednesday, April 03, 2013 5:56 PM  
**To:** Cory Warnock  
**Subject:** RE: Cultural Meeting

Hey Cory,

I hope the meeting went well. I wasn't able to skip out of the other meeting as I was hoping, but did brief Sherry on the questions we had, so hopefully we were able to resolve some of the questions we had.

Kathy

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Wednesday, April 03, 2013 12:05 PM  
**To:** Van Massenhove, Katherine B -FS  
**Subject:** Cultural Meeting

Hi Kathy,

Are you going to be able to join us at 2PM AK time for the APE meeting? If so, do you have all of the connection details?

Thanks,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

McMillen, LLC  
[www.mcmillen-llc.com](http://www.mcmillen-llc.com)  
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**From:** Cory Warnock  
**Sent:** Tuesday, May 07, 2013 11:19 AM  
**To:** Snow, Candice S (DNR)  
**Cc:** Emily Andersen  
**Subject:** Re: Grant Lake Thermistor String Permit Application

Thanks, Candice.

Cory

On May 7, 2013, at 10:51 AM, "Snow, Candice S (DNR)" <[candice.snow@alaska.gov](mailto:candice.snow@alaska.gov)> wrote:

I sent this out for a short agency review until the 16<sup>th</sup> of May so hopefully I will get a permit out to you for signature that Friday the 17<sup>th</sup>.

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Monday, May 06, 2013 2:17 PM  
**To:** Snow, Candice S (DNR)  
**Subject:** RE: Grant Lake Thermistor String Permit Application

Hi Candice,

Just checking in on progress related to our permit.

Thanks,

Cory

---

**From:** Snow, Candice S (DNR) [<mailto:candice.snow@alaska.gov>]  
**Sent:** Tuesday, April 23, 2013 12:32 PM  
**To:** Cory Warnock  
**Subject:** RE: Grant Lake Thermistor String Permit Application

Great, I will look out for it. Thanks.

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Tuesday, April 23, 2013 11:29 AM  
**To:** Snow, Candice S (DNR)  
**Subject:** RE: Grant Lake Thermistor String Permit Application

Hi Candice,

It is my understanding that Sue from HEA's Accounts Payable Department, sent a check last Friday to:

Alaska Department of Natural Resources  
Public Information Center  
550 W. 7<sup>th</sup> Ave, Suite 1260  
Anchorage, AK 99501

---

**From:** Snow, Candice S (DNR) [<mailto:candice.snow@alaska.gov>]  
**Sent:** Tuesday, April 23, 2013 12:15 PM  
**To:** Cory Warnock  
**Subject:** RE: Grant Lake Thermistor String Permit Application

Also, have you submitted the \$100.00 application fee?

---

**From:** Snow, Candice S (DNR)  
**Sent:** Thursday, April 18, 2013 10:02 AM  
**To:** 'Cory Warnock'  
**Subject:** RE: Grant Lake Thermistor String Permit Application

Got it, I will get to working on it.

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Thursday, April 18, 2013 9:48 AM  
**To:** Snow, Candice S (DNR)  
**Cc:** Mike Salzetti; Emily Andersen  
**Subject:** Grant Lake Thermistor String Permit Application

Hi Candice,

Attached is a signed copy of the Grant Lake Thermistor String Permit Application. Please let me know if you need additional information to fully process and I'll do my best to get it to you as quickly as possible.

Thanks,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

McMillen, LLC  
[www.mcmillen-llc.com](http://www.mcmillen-llc.com)  
5771 Applegrove Ln.  
Ferndale, Wa. 98248  
O – 360-384-2662  
C – 360-739-0187  
F – 360-542-2264

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**From:** Cory Warnock  
**Sent:** Tuesday, May 07, 2013 12:25 PM  
**To:** Shina Duvall  
**Cc:** Nelson, Sherry D -FS (snelson@fs.fed.us); Van Massenhove, Katherine B -FS (kvanmassenhove@fs.fed.us); frank.winchell@ferc.gov; Mike Salzetti; Emily Andersen  
**Subject:** Grant Lake Special Use Permit Amendment Request Letter (SEW457)  
**Attachments:** KHL Special Use Permit Amendment Letter\_5\_7\_13.pdf

Hi Shina,

Per our discussion at the APE meeting for the proposed Grant Lake Project and subsequent conversations via phone and email, please find attached a formal letter requesting an amendment to Kenai Hydro, LLC's existing Special Use Permit which will allow for wetlands work to be conducted on Grant Lake. The previously discussed and agreed upon methodology is outlined along with the appropriate approaches depending on the findings of our Cultural survey that will precede the wetlands work. It is my understanding that once you have reviewed, approved and collaborated with the USFS, that Sherry and/or Kathy (USFS) will amend the Special Use Permit accordingly. Is this correct? A general idea of timelines for various milestones associated with the remainder of the process would be appreciated.

Don't hesitate to give me a call if you have any questions/concerns. I'm having Mike Salzetti (HEA) drop a paper copy of this letter in the mail to you as well just to cover our bases. Thanks, Shina. I'll look forward to hearing from you,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

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[www.mcmillen-llc.com](http://www.mcmillen-llc.com)  
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C – 360-739-0187  
F – 360-542-2264





# Homer Electric Association, Inc.

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**Corporate Office**  
3977 Lake Street  
Homer, Alaska 99603-7680  
Phone (907) 235-8551  
FAX (907) 235-3313

**Central Peninsula Service Center**  
280 Airport Way  
Kenai, Alaska 99611-5280  
Phone (907) 283-5831  
FAX (907) 283-7122

In Reply Refer To:  
Grant Lake Project  
FERC No. 13212  
May 7, 2013

Ms. Shina Duvall  
Review and Compliance Archaeologist  
Alaska Office of History and Archaeology  
550 W. 7<sup>th</sup> Avenue, Suite 1310  
Anchorage, Alaska 99501-3565

Dear Ms. Duvall:

Based upon prior conversations and consultation with the State Historic Preservation Office (SHPO) and the US Forest Service (USFS), Kenai Hydro, LLC (KHL) is seeking concurrence on the approach collaboratively developed to amend the USFS Special Use Permit to allow wetlands studies to be conducted in association with the licensing effort for the proposed Grant Lake Hydroelectric Project.

A wetland study near the headwaters of Grant Lake is being proposed on USFS land. The study would require a series (no more than 10) of small core samples (8-12 inches in diameter and 18-24 inches deep) to be temporarily taken and analyzed. Once the analysis is concluded (approximately 1 hour), the soil samples would be replaced. The study is currently scheduled to take place in July 2013. Prior to amending the Special Use Permit for this work, SHPO and the USFS would like to have an archaeological survey conducted of the specific wetland area in question to ensure that no significant archaeological or historical sites will be affected as a result of the wetland study.

Based upon KHL's discussions with SHPO and the USFS, an approach has been identified as being acceptable to all parties for adequately assessing the cultural significance of the wetland study area near Grant Lake and allowing for the USFS Special Use Permit to be amended accordingly. Cultural Resource Consultants LLC (CRC) is the cultural resource lead for KHL and will be conducting the fieldwork and analysis related to the licensing of the Grant Lake Project. Concurrent with their work at Grant Lake in June 2013, CRC will assess the area at the head of Grant Lake for any culturally significant sites.

Based upon this assessment, one of two paths will be followed which will allow for the USFS Special Use Permit to be amended:

1. If no significant sites or areas of special interest are documented, CRC will notify the SHPO and the USFS and the wetland study can be conducted as currently proposed.

2. If significant sites or areas of special interest are documented, CRC will flag and GPS the specific areas and notify the SHPO, the USFS and the terrestrial contractor of their locations. The terrestrial contractor conducting the wetland work will then amend their field plan to accommodate for avoiding the areas that have been identified as archaeologically sensitive. CRC will develop a short memo documenting locations and detailing specifics of what was discovered. The memo will be submitted to the SHPO and the USFS for review.

Given the comprehensive approach outlined above, it is KHL's understanding that once this letter is signed by both parties (KHL and the SHPO), the USFS will move forward with amending the Special Use Permit in advance of the cultural assessment being conducted.

If you have questions or comments related to this approach, please contact our licensing and natural resources project manager, Cory Warnock, by telephone at 360-384-2662, or by e-mail at [cory.warnock@mcmillen-llc.com](mailto:cory.warnock@mcmillen-llc.com).

We request your concurrence with the proposed approach. Your timely response will greatly assist our study efforts and the preparation of any required documentation. For that purpose, we request that you respond within thirty days of your receipt of this correspondence.

Sincerely,



Mike Salzetti  
Fuels Supply & Engineering Manager

CC:  
Sherry Nelson (USFS)  
Kathy Van Massenhove (USFS)  
Frank Winchell (FERC)





THE STATE  
of **ALASKA**  
GOVERNOR SEAN PARNELL

**Department of Natural Resources**

DIVISION OF PARKS AND OUTDOOR RECREATION  
Office of History and Archaeology

550 West 7<sup>th</sup> Avenue, Suite 1310  
Anchorage, Alaska 99501-3565  
Web: <http://dnr.alaska.gov/parks/oha>  
Phone: 907.269.8721  
Fax: 907.269.8908

May 8, 2013

File No.: 3130-1R FERC

Mike Salzetti  
Homer Electric Association, Inc.  
3977 Lake Street  
Homer, Alaska 99603-7680

Subject: Grant Lake Hydro Project Proposed Area of Potential Effects (APE) and proposed approach to identify historic properties in areas proposed for July 2013 wetland studies

Dear Mr. Salzetti:

The Alaska State Historic Preservation Office (AK SHPO) received your correspondence (dated April 19, 2013) on April 25, 2013 regarding the proposed area of potential effects (APE) for the Grant Lake Hydro project. Additionally, on May 7, 2013, we received documentation outlining a proposed approach to identify historic properties in areas proposed for July 2013 wetland studies.

Following our review of the documentation provided, we have no objections to the proposed area of potential effects (APE) as it is presently defined, with the understanding that as the project develops or changes, the APE can be amended accordingly. Please note that the existing Kenai Area Plan (available here: <http://dnr.alaska.gov/mlw/planning/areaplans/kenai/>) states that the Iditarod National Historic Trail (INHT) "will be protected by a 1,000-foot-wide corridor (500 feet on each side of the centerline)... No permanent structures or equipment should be placed within the trail corridor if they could adversely affect the trail experience..." The provisions of the Kenai Area Plan should be taken into consideration as the identification and evaluation efforts proceed for the subject undertaking.

We agree that the identification approach outlined in the May 7 letter regarding cultural resource investigations in advance of the wetland studies is appropriate. As such, we have no objections should the Forest Service amend the Special Use Permit in advance of the cultural resource assessments being conducted.

Thank you for the opportunity to comment. We look forward to continued consultation on the subject project. Please contact Shina duVall at 269-8720 or [shina.duvall@alaska.gov](mailto:shina.duvall@alaska.gov) if you have any questions or if we can be of further assistance.

Sincerely,

A handwritten signature in blue ink, appearing to read "Judith E. Bittner".

Judith E. Bittner  
State Historic Preservation Officer

JEB:sad

cc: Mike Yarborough, CRC LLC, by email

---

**From:** Cory Warnock  
**Sent:** Friday, May 10, 2013 7:53 AM  
**To:** Emily Andersen  
**Subject:** FW: Grant Lake Wetland Functional Assessment Write-Up for Review  
**Attachments:** Grant Lk Wetland Fx Assessment memo.pdf

**Categories:** Green Category

FYI

---

**From:** Jeannette Blank [<mailto:Jeannette.Blank@erm.com>]  
**Sent:** Friday, May 10, 2013 7:33 AM  
**To:** [Katherine.a.mccafferty2@usace.army.mil](mailto:Katherine.a.mccafferty2@usace.army.mil)  
**Cc:** Cory Warnock  
**Subject:** Grant Lake Wetland Functional Assessment Write-Up for Review

Dear Ms. McCafferty,

Per our April 16, 2013 phone conversation with Cory Warnock about wetland related field study and permitting requirements for the proposed Grant Lake hydroelectric project, ERM has prepared a memo summarizing our proposed wetland functional assessment methodology for your review (attached). Cory and I would like to schedule a conference call with you at your earliest convenience to discuss any comments or questions you may have. Please let us know when you are available for a call and we will make the arrangements.

Thank you in advance for your time and your input.

Sincerely,

Jeannette Blank  
Wetland Scientist

ERM  
PO Box 582  
Livingston, MT 59047

Tel: 406-222-7600 x 223  
[www.erm.com](http://www.erm.com)  
[jeannette.blank@erm.com](mailto:jeannette.blank@erm.com)

**Environmental  
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(907) 258-4033 (fax)  
www.ermalaska.com

May 10, 2013

Katie McCafferty  
805 Frontage Road, Suite 200C  
Kenai, Alaska 99611-7755



**Subject: Proposed Grant Lake Project Wetlands Functional  
Assessment Method**

Dear Ms. McCafferty:

On behalf of Homer Electric Association (HEA), ERM Alaska, Inc. ("ERM") has prepared a summary of the wetlands functional assessment method that we propose to use for the Grant Lake Hydroelectric Project in Moose Pass, Alaska (project). The purpose of the letter is to present the proposed functional assessment method, and provide the U.S. Army Corps of Engineers ("Corps") an opportunity to comment on the proposed method.

The capacity of Waters of the U.S. (referred to here as "wetlands") to perform certain functions must be assessed as part of the Clean Water Act Section 404 permit application, per the Corps Alaska District Regulatory Guidance Letter RGL-0901 (Corps 2009). Wetland functions are the natural chemical, physical and biological processes occurring within a wetland, and between a wetland and adjacent non-wetland areas, that support overall ecosystem processes. Commonly-assessed wetland functions include the ability to moderate or convey floods, or to provide habitat for sensitive wildlife or plant species. Due to variables such as geomorphology, water source, and plant and animal communities, not all wetlands perform these functions equally.

Since many wetland functions are difficult and time-consuming to measure directly, ecosystem characteristics (e.g. vegetation, hydrologic regime, soil, and landscape variables) have traditionally been used as a guide to determine wetland function. Functional assessments are typically done at the scale of an individual wetland, where wetland characteristics are documented in the field, and the presence or absence of each function is assigned.

Numerous functional assessment methods exist, however there is no established, Corps-endorsed functional assessment method for use within the project area. ERM proposes to use a primarily field-based method, requiring limited post-field modeling of wetland functions (e.g. in a GIS). The functional assessment method proposed below is based on

the method outlined in RGL 09-01 with modifications from the following commonly-used methods to better assess the wetlands occurring within the project area:

- Corps Alaska District Regulatory Guidance Letter RGL-0901 (Corps 2009)
- A Rapid Procedure for Assessing Wetland Functional Capacity Based on Hydrogeomorphic (HGM) Classification Magee and Hollands (1998),
- Wetland Evaluation Technique (WET), Adamus (1991)

ERM proposes to assess the following wetland functions:

#### **A. Flood Flow Alteration**

This function is defined as a wetland's capacity to reduce flood flows (e.g. channelized, sheet flow, or tidal) through storage and desynchronization in any area of a watershed, including streams, floodplains, or coastal areas, by temporarily storing or slowing water passage. Most wetlands have topographic, soil and vegetation attributes that contribute to their ability to retain and detain storm flows and snowmelt runoff. Precipitation and flood water is stored or used in wetlands via percolation into the soil, transpiration by plants, evaporation from surface waters, and detention in depressions, microtopography or low-lying landforms. Wetlands with no outlets, or constricted outlets, perform this function best.

#### **B. Sediment Removal**

Sediment removal, also referred to as sediment stabilization (e.g. Adamus 1991), refers to a wetland's capacity to remove suspended sediment from surface water and stabilize it within the wetland. This can occur when the energy associated with moving water is dissipated by dense wetland vegetation or allowed to spread out and pool in wetland microtopography or depressions for example.

#### **C. Nutrient and Toxicant Removal**

This function is defined as the capacity of a wetland to remove suspended or dissolved nutrients and/or toxicants from groundwater and/or surface water through the conversion to other forms (e.g. detention in vegetation, or transformation to a gas). Wetland soils, plants and organisms provide complex physical, chemical and biological mechanisms for improving water quality. Nutrients, metals and contaminants are retained by vegetation and the physical structure of the wetland; nutrients are incorporated into the vegetation biomass, absorbed by soils, or transformed by chemical and microbial pathways. Wetlands that have restricted outlets, ponding, a low slope angle, pronounced microtopography, or are located in depressions provide a high level of this function because they can detain or retain water for longer periods of time.

#### **D. Erosion Control and Shoreline Stabilization**

This function is defined as the capacity of a wetland to dissipate the erosive forces of waves and streamflow, due to the ability of wetland vegetation to bind and stabilize

soil within the root zone. This function is only evaluated for wetlands that are associated with shorelines of ponds or lakes and stream banks.

#### **E. Production and Export of Organic Matter**

This function is defined as the capacity of a wetland to produce organic matter (e.g. dissolved or particulate carbon, or detritus), and to export this organic matter to downstream or downflow environments. The exported organic matter is important for the support of primary and secondary productivity.

#### **F. General Wildlife Habitat Suitability**

This function is defined as the capacity of a wetland to provide general wildlife habitat support to birds and terrestrial mammals, including denning, forage, or breeding/nesting habitat. This includes habitat support for species that spend part or all of their life cycle in wetlands individually, or as part of a mosaic of wetlands in a local landscape.

#### **G. General Fish Habitat**

This function is defined as the capacity of a wetland to provide or contribute towards fish habitat in adjacent stream and lake system. Habitat includes those biological, physical, and chemical attributes that support all life stages of fish. This function is only evaluated for wetlands that are associated with fish-bearing streams or lakes.

#### **H. Native Plant Richness**

The Native Plant Richness function is the capacity of a wetland to produce an abundance and diversity of hydrophytic plant species. Wetland plant communities contribute to many of the other functions (e.g. wildlife habitat). The production and support of abundant wetland vegetation is vital to the maintenance of energy and nutrient cycling as well as other fundamental processes that are unique to wetlands and which are a significant part of overall ecosystem functioning at the landscape level.

#### **I. Educational or Scientific Value**

This function is defined as the capacity of a wetland to provide educational or scientific opportunities to the public. These opportunities are limited to those that are water dependent and are directly related to wetlands. This function does not include general recreational activities.

#### **J. Uniqueness and Heritage**

The Uniqueness and Heritage function is defined as the capacity of a wetland to provide unique habitat due to biological, geological or other features that are considered to be rare. This includes wetlands that provide niche or designated critical habitat for threatened or endangered species, or wetland types that are considered highly valuable and/or vulnerable by the State.



## K. Groundwater Interchange

Groundwater interchange is defined as the capacity of a wetland to recharge and/or discharge to groundwater. Groundwater recharge is the infiltration of groundwater from a wetland into the underlying aquifer. Recharge replenishes the local or regional groundwater supply. Groundwater discharge is the net upward movement of water from an aquifer source to the wetland. Discharge creates and maintains wetlands, stream flows, supports plant and animal populations and provides water for other uses.

The functional assessment evaluation will be conducted concurrently with the wetland delineation in July 2013 and will be based on existing conditions. The likelihood that a given wetland performs a given function will be based on the professional judgment of the project's wetland scientists. Field observations, wetland data sheets, photographs, GIS data, and additional data collected by other project field teams (e.g. rare plants, fish studies, wildlife studies, and hydrology data) will also be incorporated into the functional assessment. The functional capacity of individual wetlands will be documented in the attached Wetlands Functions Data Form.

The results of the wetland functional assessment will be part of the Wetlands and Waters Report to be produced by ERM, including an individual map for each evaluated function displaying the wetlands within which each function was determined to be present.

We selected this methodology based on our experience using various functional assessments for other projects throughout Alaska. The method outlined in RGL 09-01 includes functions (and the attributes that help characterize those functions) that are consistent with other methods we've used and are very applicable to this particular project. Only a few minor adjustments were needed to tailor the RGL 09-01 method to the Grant Lake project area. Those adjustments include the following:

- All functions - Added the option to select "No Function" to any function if the evaluator is reasonably certain the wetland does not perform the given function. For example, a wetland that is not associated with a fish-bearing waterbody would not support the General Fish Habitat function.
- Erosion Control and Shoreline Stabilization – Adjusted the rating to allow for a 'moderate' functional score.
- General Fish Habitat – Broadened the applicability of this function to include streams and lakes as opposed to just streams.
- Uniqueness and Heritage – Changed attribute #4 to read "Wetland is considered a highly valuable wetland type of the State". Highly valuable/vulnerable wetland types in Alaska are defined in Alaska's Wildlife Action Plan report



(ADFG 2006). Removed RGL 09-01 attribute #5 as this would be now captured by the revised attribute #4.

- Uniqueness and Heritage – Added a directive to automatically assign a high rating to this function if attribute #1, #2 or #4 is present.
- Groundwater Interchange – Added this function to the assessment because there may be some wetlands within the project area that have a groundwater connection.

The modified RGL 09-01 method is also attractive because it already includes an option to rate each function as high, medium or low/none based on the number of attributes observed. This may be valuable information when making final design changes to avoid and minimize impacts to wetland performing important functions at a high level for example. It will also allow for a more straight-forward approach to categorize the wetlands into Category I, II, III, and IV during the Section 404 mitigation ratio determination process when this project reaches the permitting phase.

Following your review of this methodology, ERM would like to discuss any questions or comments you may have, preferably via a phone conversation, so that we may finalize our method in a timely and efficient manner. We appreciate your early involvement in this process and look forward to discussing your thoughts on our proposed methodology.

Sincerely,

A handwritten signature in blue ink that reads "Jeannette Blank". The signature is fluid and cursive, with the first name being more prominent.

Jeannette Blank  
Wetland Scientist, ERM

CC: Cory Warnock  
Mike Salzetti

## REFERENCES

- Adamus, P., E. Clairain, R. Smith, and R. Young. 1987. Wetland Evaluation Technique (WET); Volume II: Methodology. Operation Draft Technical Report Y-87. U.S. Army Corps of Engineers Waterways Experiment Station. Vicksburg, Mississippi.
- Alaska Department of Fish and Game (ADFG). 2006. Our Wealth Maintained: A Strategy for Conserving Alaska's Diverse Wildlife and Fish Resources. Alaska Department of Fish and Game, Juneau, Alaska. xviii+824p. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=species.wapview> . Accessed March 28, 2013)
- Magee, D.W. and Hollands, G.G. 1998. A Rapid Procedure for Assessing Wetland Functional Capacity
- Sather, J. H., and P. J. R. Stuber, tech. cords. 1984. Proceedings of the National Wetland Values Assessment Workshop. U.S. Fish and Wildlife Service, Western Energy and Land Use Team. FWS/OBS-84/12. 100 pp.
- USACE. 2009. Alaska District Regulatory Guidance Letter, RGL No. 09-01. "Guidance on Alaska District implementation of the Federal Rule on Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (33 CFR Parts 325 and 332), dated April 10, 2008"

## **ATTACHMENT A**

### **Wetlands Functions Data Form**

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# Kenia Hydro, LLC - Grant Lake Project

## WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization

Adapted from Regulatory Guidance Letter 09-01

Wetland ID:

Date:

Wetland Type:

Investigators:

<p><b>A. Flood Flow Alteration</b> (Storage and Desynchronization)</p> <p>1 Wetland occurs in the upper portion of its watershed.</p> <p>2 Wetland is relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall events.</p> <p>3 Wetland is a closed (depressional) system.</p> <p>4 If flowthrough, wetland has constructed outlet with signs of fluctuating water levels, algal mats, and/or lodged debris.</p> <p>5 Wetland has dense woody vegetation.</p> <p>6 Wetland receives floodwater from an adjacent water course.</p> <p>7 Floodwater come as sheet flow rather than channel flow.</p>	<p><b>Likely or not likely to Provide (Y or N)</b></p> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p> <p>4 _____</p> <p>5 _____</p> <p>6 _____</p> <p>7 _____</p> <p>5-7 (Y) - High Function 1-4 (Y) - Moderate Function None - Low or No Function</p>
<p><b>B. Sediment Removal</b></p> <p>1 Sources of excess sediment (from tillage, mining or construction) are present upgradient of the wetland.</p> <p>2 Slow-moving water and/or a deepwater habitat are present in the wetland.</p> <p>3 Dense herbaceous vegetation is present.</p> <p>4 Inerspersion of vegetation and water is high in wetland.</p> <p>5 Ponding of water is high in wetland.</p> <p>6 Sediment deposits are present in wetland.</p>	<p><b>Likely or not likely to Provide (Y or N)</b></p> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p> <p>4 _____</p> <p>5 _____</p> <p>6 _____</p> <p>4-6 (Y) - High Function 1-3 (Y) - Moderate Function None - Low or No Function</p>
<p><b>C. Nutrient and Toxicant Removal</b></p> <p>1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland.</p> <p>2 Wetland is inundated or has indicators that flooding is a seasonal event during the growing season.</p> <p>3 Wetland provides long duration for water detention.</p> <p>4 Wetland has at least 30% aerial cover of live dense herbaceous vegetation.</p> <p>5 Fine grained mineral or organic materials are present for the wetland.</p>	<p><b>Likely or not likely to Provide (Y or N)</b></p> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p> <p>4 _____</p> <p>5 _____</p> <p>3-5 (Y) - High Function 1-2 (Y) - Moderate Function None - Low or No Function</p>

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

<b>D. Erosion Control and Shoreline Stabilization</b> <i>(if associated with a watercourse or shoreline)</i> <p>1 Wetland has dense, energy absorbing vegetation bordering the water course and no evidence of erosion.</p> <p>2 A herbaceous layer is part of this dense vegetation.</p> <p>3 Trees and shrubs able to withstand erosive flood events are also part of this dense vegetation.</p>	<b>Likely or not likely to Provide (Y or N)</b> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p> <p>2-3 (Y) - High Function 1 (Y) - Moderate Function None - Low or No Function</p>
<b>E. Production of Organic Matter and its Export</b> <p>1 Wetland has at least 30% aerial cover of dense herbaceous vegetation.</p> <p>2 Woody plants in wetland are mostly deciduous.</p> <p>3 High degree of plant community structure, vegetation density, and species richness present.</p> <p>4 Interspersion of vegetation and water is high in wetland.</p> <p>5 Wetland is inundated or has indicators that flooding is a seasonal event during the growing season.</p> <p>6 Wetland has outlet from which organic matter is flushed.** **If #6 is No, then wetland automatically rated as low or No function</p>	<b>Likely or not likely to Provide (Y or N)</b> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p> <p>4 _____</p> <p>5 _____</p> <p>6** _____</p> <p>4-6 (Y) - High Function 1-3 (Y) - Moderate Function None - Low or No Function</p>
<b>F. General Wildlife Habitat Suitability</b> <p>1 Wetland is not fragmented by development.</p> <p>2 Upland surround wetland is undeveloped.</p> <p>3 Wetland has connectivity with other habitat types.</p> <p>4 Diversity of plant species is high.</p> <p>5 Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM...)</p> <p>6 Has high degree of Cowardin Class interspersion</p> <p>7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.</p>	<b>Likely or not likely to Provide (Y or N)</b> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p> <p>4 _____</p> <p>5 _____</p> <p>6 _____</p> <p>7 _____</p> <p>5-7 (Y) - High Function 1-4 (Y) - Moderate Function None - Low or No Function</p>
<b>G. General Fish Habitat</b> <i>(Must be associated with a fish-bearing stream or lake)</i> <p>1 Wetland has perennial or intermittent surface-water connection to a fish-bearing water body.</p> <p>2 Wetland has sufficient size and depth of open water so as not to freeze completely during winter.</p> <p>3 Observation of fish.</p> <p>4 Herbaceous and/or woody vegetation is present in wetland and/or buffer to provide cover, shade, and/or detrital matter.</p> <p>5 Spawning areas are present (aquatic vegetation and/or gravel beds).</p> <p>6 Juvenile rearing areas.</p>	<b>Likely or not likely to Provide (Y or N)</b> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p> <p>4 _____</p> <p>5 _____</p> <p>6 _____</p> <p>4-6 (Y) - High Function 1-3 (Y) - Moderate Function None - Low or No Function</p>
<b>H. Native Plant Richness</b> <p>1 Dominant and codominant plants are native.</p> <p>2 Wetland contains two or more Cowardin Classes.</p> <p>3 Wetland has three or more strata of vegetation.</p> <p>4 Wetland has mature trees.</p>	<b>Likely or not likely to Provide (Y or N)</b> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p> <p>4 _____</p> <p>3-4 (Y) - High Function 1-2 (Y) - Moderate Function None - Low or No Function</p>

<b>I. Educational or Scientific Value</b>  1 Site has documented scientific or educational use. 2 Wetland is in public ownership 3 Accessible trails available.	<b>Likely or not likely to Provide (Y or N)</b>  1 _____ 2 _____ 3 _____  2-3 (Y) - High Function 1 (Y) - Moderate Function None - Low or No Function
<b>J. Uniqueness and Heritage</b>  1 Wetland contains documented occurrences of a state or federally listed threatened or endangered species.** 2 Wetland contains documented critical habitat, high quality ecosystems, or priority species respectively designated by the USFWS.** 3 Wetland has biological, geological, or other features that are determined to be rare. 4 Wetland type is a highly valuable wetland type of the State.** **If #1, #2, or #4 is Yes, then wetland is automatically rated as high	<b>Likely or not likely to Provide (Y or N)</b>  1** _____ 2** _____ 3 _____ 4** _____  3-4 (Y) - High Function 1-2 (Y) - Moderate Function None - Low or No Function
<b>K. Groundwater Interchange</b>  1 Presence of seeps or springs 2 Microrelief of wetland surface 3 Surficial geologic deposits under wetland are permeable (e.g. alluvium)	<b>Likely or not likely to Provide (Y or N)</b>  1 _____ 2 _____ 3 _____  2-3 (Y) - High Function 1 (Y) - Moderate Function None - Low or No Function

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**From:** Cory Warnock  
**Sent:** Monday, May 13, 2013 11:43 AM  
**To:** Leclair, Claire H (DNR)  
**Cc:** Emily Andersen; Blackwell, Jack D (DNR)  
**Subject:** RE: Grant Lake Permit

Thanks, Claire.....

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**From:** Leclair, Claire H (DNR) [<mailto:claire.leclair@alaska.gov>]  
**Sent:** Monday, May 13, 2013 11:42 AM  
**To:** Cory Warnock  
**Cc:** Emily Andersen; Blackwell, Jack D (DNR)  
**Subject:** RE: Grant Lake Permit

Cory-

Your assumption is correct. The crew may cut the two dead logs and move them out of the way to facilitate the fish tagging project.

-Claire

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Monday, May 13, 2013 8:01 AM  
**To:** Leclair, Claire H (DNR)  
**Cc:** Emily Andersen  
**Subject:** Grant Lake Permit

Hi Claire,

I received a question from our aquatics lead at Grant Creek late Friday and wanted to run it by you prior to getting back to him. They are in the process of doing some fish trapping and as numbers of fish captured picks up, a direct route to the on-shore area where tagging takes place makes things much more efficient and provides the highest level of certainty that survival rates will be at the highest level possible. To that end, at one of the sites, there are a couple downed (dead) logs that preclude the most direct access to their tagging area and they are wondering if those dead logs can essentially have a notch cut out of them large enough to allow access back and forth. Again, these trees are not alive nor have they been for a long time. They are downed, dead logs. In reading the permit, I'm assuming this would be ok but as always, want to check with you to confirm.

Thanks,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

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Ferndale, Wa. 98248  
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C – 360-739-0187



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**From:** Cory Warnock  
**Sent:** Tuesday, May 14, 2013 9:01 AM  
**To:** Snow, Candice S (DNR)  
**Cc:** Emily Andersen  
**Subject:** RE: Grant Lake Thermistor String Permit Application

Hi Candice,

Is it still safe to assume that the schedule you discuss below is accurate?

Just checking in.

Thanks,

Cory

---

**From:** Snow, Candice S (DNR) [<mailto:candice.snow@alaska.gov>]  
**Sent:** Tuesday, May 07, 2013 10:51 AM  
**To:** Cory Warnock  
**Subject:** RE: Grant Lake Thermistor String Permit Application

I sent this out for a short agency review until the 16<sup>th</sup> of May so hopefully I will get a permit out to you for signature that Friday the 17<sup>th</sup>.

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Monday, May 06, 2013 2:17 PM  
**To:** Snow, Candice S (DNR)  
**Subject:** RE: Grant Lake Thermistor String Permit Application

Hi Candice,

Just checking in on progress related to our permit.

Thanks,

Cory

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**From:** Snow, Candice S (DNR) [<mailto:candice.snow@alaska.gov>]  
**Sent:** Tuesday, April 23, 2013 12:32 PM  
**To:** Cory Warnock  
**Subject:** RE: Grant Lake Thermistor String Permit Application

Great, I will look out for it. Thanks.

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Tuesday, April 23, 2013 11:29 AM  
**To:** Snow, Candice S (DNR)  
**Subject:** RE: Grant Lake Thermistor String Permit Application

Hi Candice,

It is my understanding that Sue from HEA's Accounts Payable Department, sent a check last Friday to:

Alaska Department of Natural Resources  
Public Information Center  
550 W. 7<sup>th</sup> Ave, Suite 1260  
Anchorage, AK 99501

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**From:** Snow, Candice S (DNR) [<mailto:candice.snow@alaska.gov>]  
**Sent:** Tuesday, April 23, 2013 12:15 PM  
**To:** Cory Warnock  
**Subject:** RE: Grant Lake Thermistor String Permit Application

Also, have you submitted the \$100.00 application fee?

---

**From:** Snow, Candice S (DNR)  
**Sent:** Thursday, April 18, 2013 10:02 AM  
**To:** 'Cory Warnock'  
**Subject:** RE: Grant Lake Thermistor String Permit Application

Got it, I will get to working on it.

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Thursday, April 18, 2013 9:48 AM  
**To:** Snow, Candice S (DNR)  
**Cc:** Mike Salzetti; Emily Andersen  
**Subject:** Grant Lake Thermistor String Permit Application

Hi Candice,

Attached is a signed copy of the Grant Lake Thermistor String Permit Application. Please let me know if you need additional information to fully process and I'll do my best to get it to you as quickly as possible.

Thanks,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

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C – 360-739-0187  
F – 360-542-2264

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**From:** DeCleva, Ed -FS [<mailto:edecleva@fs.fed.us>]  
**Sent:** Tuesday, May 21, 2013 2:21 PM  
**To:** Nelson, Sherry D -FS  
**Cc:** Cory Warnock; Van Massenhove, Katherine B -FS  
**Subject:** RE: Grant Lake Special Use Permit Amendment

Hi Sherry,

Good timing as Kathy is here at the SO today. I spoke with her and she indicated she has what she needs.

---

**From:** Nelson, Sherry D -FS  
**Sent:** Tuesday, May 21, 2013 11:37 AM  
**To:** DeCleva, Ed -FS  
**Cc:** Cory Warnock ([cory.warnock@mcmillen-llc.net](mailto:cory.warnock@mcmillen-llc.net)); Van Massenhove, Katherine B -FS  
**Subject:** FW: Grant Lake Special Use Permit Amendment

Hi Ed,  
Now that the lead agency has consulted with SHPO does Kathy need anything from FS Heritage in order to issue the SUP Amendment? Thanks!

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Monday, May 20, 2013 12:50 PM  
**To:** Van Massenhove, Katherine B -FS; Nelson, Sherry D -FS  
**Cc:** Shina Duvall; Mike Salzetti; Emily Andersen  
**Subject:** Grant Lake Special Use Permit Amendment

Hi Kathy and Sherry,

Now that we've received official confirmation from SHPO that they are ok with our proposed approach to assess the wetlands at Grant Lake in June (from a cultural perspective) in advance of the actual Grant Lake wetlands work, I'm wondering if you need anything additional from us to amend the special use permit to allow for the wetland activities we've proposed? Per previous conversations, I believe that we are now in a position where that permit can be amended.

If you could provide me with an approximate schedule for when we could expect that amendment and/or anything else that you need from us, I'd really appreciate it.

Thanks,

Cory

**Cory Warnock**

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**From:** Hutchison, Emily  
**Sent:** Thursday, May 23, 2013 4:30 PM  
**To:** 'candice.snow@alaska.gov'  
**Cc:** Salzetti, Mikel  
**Subject:** Evidence of Insurance for Land Use Permit LAS 29076

Hi Candy,

Attached please find Homer Electric Association's certificate of insurance.

~Emily



*Emily Hutchison*

Budget/Regulatory Analyst

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**From:** Cory Warnock  
**Sent:** Thursday, May 23, 2013 12:53 PM  
**To:** Emily Andersen  
**Subject:** FW: Grant Lake Wetland Functional Assessment Write-Up for Review  
**Attachments:** Grant Lk Wetland Fx Assessment memo.pdf

FYI

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**From:** Jeannette Blank [<mailto:Jeannette.Blank@erm.com>]  
**Sent:** Thursday, May 23, 2013 12:52 PM  
**To:** 'Katherine McCafferty' ([katherine.a.mccafferty2@usace.army.mil](mailto:katherine.a.mccafferty2@usace.army.mil))' ([katherine.a.mccafferty2@usace.army.mil](mailto:katherine.a.mccafferty2@usace.army.mil))  
**Cc:** Cory Warnock  
**Subject:** Grant Lake Wetland Functional Assessment Write-Up for Review

Dear Ms. McCafferty,

This is Jeannette Blank with ERM – I am the wetland lead for the proposed Grant Lake hydropower project. Back in mid-April Cory Warnock and I spoke with you about the wetland delineation work that we will be doing around Grant Lake this July - during that call you had asked us to send you a write-up of our proposed wetland functional assessment methodology for your review. Attached is summary of our proposed methodology. I sent this same attachment to you a couple of weeks ago (May 10th) so you may have already had a chance to review it? Cory and I would like to schedule a call with you to make sure you are in agreement with our approach before I begin our field work in July. I'm sure you are very busy and we'd be happy to work around your schedule for the call. Do you have any availability next week between Tuesday May 28 – Friday May 31st? Or is there a day/time during the week of June 3rd that would work better for you?

Thank you again in advance for your time and your input.  
Sincerely,

Jeannette Blank  
Wetland Scientist

ERM  
PO Box 582  
Livingston, MT 59047

Tel: 406-222-7600 x 223  
[www.erm.com](http://www.erm.com)  
[jeannette.blank@erm.com](mailto:jeannette.blank@erm.com)

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(907) 258-4033 (fax)  
www.ermalaska.com

May 10, 2013

Katie McCafferty  
805 Frontage Road, Suite 200C  
Kenai, Alaska 99611-7755



**Subject: Proposed Grant Lake Project Wetlands Functional  
Assessment Method**

Dear Ms. McCafferty:

On behalf of Homer Electric Association (HEA), ERM Alaska, Inc. ("ERM") has prepared a summary of the wetlands functional assessment method that we propose to use for the Grant Lake Hydroelectric Project in Moose Pass, Alaska (project). The purpose of the letter is to present the proposed functional assessment method, and provide the U.S. Army Corps of Engineers ("Corps") an opportunity to comment on the proposed method.

The capacity of Waters of the U.S. (referred to here as "wetlands") to perform certain functions must be assessed as part of the Clean Water Act Section 404 permit application, per the Corps Alaska District Regulatory Guidance Letter RGL-0901 (Corps 2009). Wetland functions are the natural chemical, physical and biological processes occurring within a wetland, and between a wetland and adjacent non-wetland areas, that support overall ecosystem processes. Commonly-assessed wetland functions include the ability to moderate or convey floods, or to provide habitat for sensitive wildlife or plant species. Due to variables such as geomorphology, water source, and plant and animal communities, not all wetlands perform these functions equally.

Since many wetland functions are difficult and time-consuming to measure directly, ecosystem characteristics (e.g. vegetation, hydrologic regime, soil, and landscape variables) have traditionally been used as a guide to determine wetland function. Functional assessments are typically done at the scale of an individual wetland, where wetland characteristics are documented in the field, and the presence or absence of each function is assigned.

Numerous functional assessment methods exist, however there is no established, Corps-endorsed functional assessment method for use within the project area. ERM proposes to use a primarily field-based method, requiring limited post-field modeling of wetland functions (e.g. in a GIS). The functional assessment method proposed below is based on

the method outlined in RGL 09-01 with modifications from the following commonly-used methods to better assess the wetlands occurring within the project area:

- Corps Alaska District Regulatory Guidance Letter RGL-0901 (Corps 2009)
- A Rapid Procedure for Assessing Wetland Functional Capacity Based on Hydrogeomorphic (HGM) Classification Magee and Hollands (1998),
- Wetland Evaluation Technique (WET), Adamus (1991)

ERM proposes to assess the following wetland functions:

#### **A. Flood Flow Alteration**

This function is defined as a wetland's capacity to reduce flood flows (e.g. channelized, sheet flow, or tidal) through storage and desynchronization in any area of a watershed, including streams, floodplains, or coastal areas, by temporarily storing or slowing water passage. Most wetlands have topographic, soil and vegetation attributes that contribute to their ability to retain and detain storm flows and snowmelt runoff. Precipitation and flood water is stored or used in wetlands via percolation into the soil, transpiration by plants, evaporation from surface waters, and detention in depressions, microtopography or low-lying landforms. Wetlands with no outlets, or constricted outlets, perform this function best.

#### **B. Sediment Removal**

Sediment removal, also referred to as sediment stabilization (e.g. Adamus 1991), refers to a wetland's capacity to remove suspended sediment from surface water and stabilize it within the wetland. This can occur when the energy associated with moving water is dissipated by dense wetland vegetation or allowed to spread out and pool in wetland microtopography or depressions for example.

#### **C. Nutrient and Toxicant Removal**

This function is defined as the capacity of a wetland to remove suspended or dissolved nutrients and/or toxicants from groundwater and/or surface water through the conversion to other forms (e.g. detention in vegetation, or transformation to a gas). Wetland soils, plants and organisms provide complex physical, chemical and biological mechanisms for improving water quality. Nutrients, metals and contaminants are retained by vegetation and the physical structure of the wetland; nutrients are incorporated into the vegetation biomass, absorbed by soils, or transformed by chemical and microbial pathways. Wetlands that have restricted outlets, ponding, a low slope angle, pronounced microtopography, or are located in depressions provide a high level of this function because they can detain or retain water for longer periods of time.

#### **D. Erosion Control and Shoreline Stabilization**

This function is defined as the capacity of a wetland to dissipate the erosive forces of waves and streamflow, due to the ability of wetland vegetation to bind and stabilize

soil within the root zone. This function is only evaluated for wetlands that are associated with shorelines of ponds or lakes and stream banks.

#### **E. Production and Export of Organic Matter**

This function is defined as the capacity of a wetland to produce organic matter (e.g. dissolved or particulate carbon, or detritus), and to export this organic matter to downstream or downflow environments. The exported organic matter is important for the support of primary and secondary productivity.

#### **F. General Wildlife Habitat Suitability**

This function is defined as the capacity of a wetland to provide general wildlife habitat support to birds and terrestrial mammals, including denning, forage, or breeding/nesting habitat. This includes habitat support for species that spend part or all of their life cycle in wetlands individually, or as part of a mosaic of wetlands in a local landscape.

#### **G. General Fish Habitat**

This function is defined as the capacity of a wetland to provide or contribute towards fish habitat in adjacent stream and lake system. Habitat includes those biological, physical, and chemical attributes that support all life stages of fish. This function is only evaluated for wetlands that are associated with fish-bearing streams or lakes.

#### **H. Native Plant Richness**

The Native Plant Richness function is the capacity of a wetland to produce an abundance and diversity of hydrophytic plant species. Wetland plant communities contribute to many of the other functions (e.g. wildlife habitat). The production and support of abundant wetland vegetation is vital to the maintenance of energy and nutrient cycling as well as other fundamental processes that are unique to wetlands and which are a significant part of overall ecosystem functioning at the landscape level.

#### **I. Educational or Scientific Value**

This function is defined as the capacity of a wetland to provide educational or scientific opportunities to the public. These opportunities are limited to those that are water dependent and are directly related to wetlands. This function does not include general recreational activities.

#### **J. Uniqueness and Heritage**

The Uniqueness and Heritage function is defined as the capacity of a wetland to provide unique habitat due to biological, geological or other features that are considered to be rare. This includes wetlands that provide niche or designated critical habitat for threatened or endangered species, or wetland types that are considered highly valuable and/or vulnerable by the State.



## K. Groundwater Interchange

Groundwater interchange is defined as the capacity of a wetland to recharge and/or discharge to groundwater. Groundwater recharge is the infiltration of groundwater from a wetland into the underlying aquifer. Recharge replenishes the local or regional groundwater supply. Groundwater discharge is the net upward movement of water from an aquifer source to the wetland. Discharge creates and maintains wetlands, stream flows, supports plant and animal populations and provides water for other uses.

The functional assessment evaluation will be conducted concurrently with the wetland delineation in July 2013 and will be based on existing conditions. The likelihood that a given wetland performs a given function will be based on the professional judgment of the project's wetland scientists. Field observations, wetland data sheets, photographs, GIS data, and additional data collected by other project field teams (e.g. rare plants, fish studies, wildlife studies, and hydrology data) will also be incorporated into the functional assessment. The functional capacity of individual wetlands will be documented in the attached Wetlands Functions Data Form.

The results of the wetland functional assessment will be part of the Wetlands and Waters Report to be produced by ERM, including an individual map for each evaluated function displaying the wetlands within which each function was determined to be present.

We selected this methodology based on our experience using various functional assessments for other projects throughout Alaska. The method outlined in RGL 09-01 includes functions (and the attributes that help characterize those functions) that are consistent with other methods we've used and are very applicable to this particular project. Only a few minor adjustments were needed to tailor the RGL 09-01 method to the Grant Lake project area. Those adjustments include the following:

- All functions - Added the option to select "No Function" to any function if the evaluator is reasonably certain the wetland does not perform the given function. For example, a wetland that is not associated with a fish-bearing waterbody would not support the General Fish Habitat function.
- Erosion Control and Shoreline Stabilization – Adjusted the rating to allow for a 'moderate' functional score.
- General Fish Habitat – Broadened the applicability of this function to include streams and lakes as opposed to just streams.
- Uniqueness and Heritage – Changed attribute #4 to read "Wetland is considered a highly valuable wetland type of the State". Highly valuable/vulnerable wetland types in Alaska are defined in Alaska's Wildlife Action Plan report

(ADFG 2006). Removed RGL 09-01 attribute #5 as this would be now captured by the revised attribute #4.

- Uniqueness and Heritage – Added a directive to automatically assign a high rating to this function if attribute #1, #2 or #4 is present.
- Groundwater Interchange – Added this function to the assessment because there may be some wetlands within the project area that have a groundwater connection.

The modified RGL 09-01 method is also attractive because it already includes an option to rate each function as high, medium or low/none based on the number of attributes observed. This may be valuable information when making final design changes to avoid and minimize impacts to wetland performing important functions at a high level for example. It will also allow for a more straight-forward approach to categorize the wetlands into Category I, II, III, and IV during the Section 404 mitigation ratio determination process when this project reaches the permitting phase.

Following your review of this methodology, ERM would like to discuss any questions or comments you may have, preferably via a phone conversation, so that we may finalize our method in a timely and efficient manner. We appreciate your early involvement in this process and look forward to discussing your thoughts on our proposed methodology.

Sincerely,

A handwritten signature in blue ink that reads "Jeannette Blank". The signature is fluid and cursive, with the first name being more prominent.

Jeannette Blank  
Wetland Scientist, ERM

CC: Cory Warnock  
Mike Salzetti

## REFERENCES

- Adamus, P., E. Clairain, R. Smith, and R. Young. 1987. Wetland Evaluation Technique (WET); Volume II: Methodology. Operation Draft Technical Report Y-87. U.S. Army Corps of Engineers Waterways Experiment Station. Vicksburg, Mississippi.
- Alaska Department of Fish and Game (ADFG). 2006. Our Wealth Maintained: A Strategy for Conserving Alaska's Diverse Wildlife and Fish Resources. Alaska Department of Fish and Game, Juneau, Alaska. xviii+824p. Available at: <http://www.adfg.alaska.gov/index.cfm?adfg=species.wapview> . Accessed March 28, 2013)
- Magee, D.W. and Hollands, G.G. 1998. A Rapid Procedure for Assessing Wetland Functional Capacity
- Sather, J. H., and P. J. R. Stuber, tech. cords. 1984. Proceedings of the National Wetland Values Assessment Workshop. U.S. Fish and Wildlife Service, Western Energy and Land Use Team. FWS/OBS-84/12. 100 pp.
- USACE. 2009. Alaska District Regulatory Guidance Letter, RGL No. 09-01. "Guidance on Alaska District implementation of the Federal Rule on Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (33 CFR Parts 325 and 332), dated April 10, 2008"

# **ATTACHMENT A**

## **Wetlands Functions Data Form**

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## Kenia Hydro, LLC - Grant Lake Project

### WETLAND FUNCTIONS DATA FORM

Alaska Regulatory Best Professional Judgement Characterization

Adapted from Regulatory Guidance Letter 09-01

Wetland ID:

Date:

Wetland Type:

Investigators:

<b>A. Flood Flow Alteration</b> (Storage and Desynchronization)	<b>Likely or not likely to Provide (Y or N)</b>
1 Wetland occurs in the upper portion of its watershed.	1 _____
2 Wetland is relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall events.	2 _____
3 Wetland is a closed (depressional) system.	3 _____
4 If flowthrough, wetland has constructed outlet with signs of fluctuating water levels, algal mats, and/or lodged debris.	4 _____
5 Wetland has dense woody vegetation.	5 _____
6 Wetland receives floodwater from an adjacent water course.	6 _____
7 Floodwater come as sheet flow rather than channel flow.	7 _____
	5-7 (Y) - High Function 1-4 (Y) - Moderate Function None - Low or No Function
<b>B. Sediment Removal</b>	<b>Likely or not likely to Provide (Y or N)</b>
1 Sources of excess sediment (from tillage, mining or construction) are present upgradient of the wetland.	1 _____
2 Slow-moving water and/or a deepwater habitat are present in the wetland.	2 _____
3 Dense herbaceous vegetation is present.	3 _____
4 Inerspersion of vegetation and water is high in wetland.	4 _____
5 Ponding of water is high in wetland.	5 _____
6 Sediment deposits are present in wetland.	6 _____
	4-6 (Y) - High Function 1-3 (Y) - Moderate Function None - Low or No Function
<b>C. Nutrient and Toxicant Removal</b>	<b>Likely or not likely to Provide (Y or N)</b>
1 Sources of excess nutrients (fertilizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland.	1 _____
2 Wetland is inundated or has indicators that flooding is a seasonal event during the growing season.	2 _____
3 Wetland provides long duration for water detention.	3 _____
4 Wetland has at least 30% aerial cover of live dense herbaceous vegetation.	4 _____
5 Fine grained mineral or organic materials are present for the wetland.	5 _____
	3-5 (Y) - High Function 1-2 (Y) - Moderate Function None - Low or No Function

NOTE: Base wetland function assessment on existing conditions, not future conditions.

Example Ranking: If ranking the capacity for a wetland to perform a given wetland function into high, moderate, low or none categories, use the following example as guidance. For Flood Flow Alteration, answering yes to five to seven attributes would rate the wetland as high functioning; answering yes to one to four attributes would rate the wetland as moderate; and not answering yes to any attributes would rate the wetland as low, or if evaluator is certain the wetland does not perform this function, it can be rated as none.

<b>D. Erosion Control and Shoreline Stabilization</b> <i>(if associated with a watercourse or shoreline)</i> <p>1 Wetland has dense, energy absorbing vegetation bordering the water course and no evidence of erosion.</p> <p>2 A herbaceous layer is part of this dense vegetation.</p> <p>3 Trees and shrubs able to withstand erosive flood events are also part of this dense vegetation.</p>	<b>Likely or not likely to Provide (Y or N)</b> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p> <p>2-3 (Y) - High Function 1 (Y) - Moderate Function None - Low or No Function</p>
<b>E. Production of Organic Matter and its Export</b> <p>1 Wetland has at least 30% aerial cover of dense herbaceous vegetation.</p> <p>2 Woody plants in wetland are mostly deciduous.</p> <p>3 High degree of plant community structure, vegetation density, and species richness present.</p> <p>4 Interspersion of vegetation and water is high in wetland.</p> <p>5 Wetland is inundated or has indicators that flooding is a seasonal event during the growing season.</p> <p>6 Wetland has outlet from which organic matter is flushed.** **If #6 is No, then wetland automatically rated as low or No function</p>	<b>Likely or not likely to Provide (Y or N)</b> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p> <p>4 _____</p> <p>5 _____</p> <p>6** _____</p> <p>4-6 (Y) - High Function 1-3 (Y) - Moderate Function None - Low or No Function</p>
<b>F. General Wildlife Habitat Suitability</b> <p>1 Wetland is not fragmented by development.</p> <p>2 Upland surround wetland is undeveloped.</p> <p>3 Wetland has connectivity with other habitat types.</p> <p>4 Diversity of plant species is high.</p> <p>5 Wetland has more than one Cowardin Class (e.g. PFO, PSS, PEM...)</p> <p>6 Has high degree of Cowardin Class interspersion</p> <p>7 Evidence of wildlife use (e.g. tracks, scat, gnawed stumps) present.</p>	<b>Likely or not likely to Provide (Y or N)</b> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p> <p>4 _____</p> <p>5 _____</p> <p>6 _____</p> <p>7 _____</p> <p>5-7 (Y) - High Function 1-4 (Y) - Moderate Function None - Low or No Function</p>
<b>G. General Fish Habitat</b> <i>(Must be associated with a fish-bearing stream or lake)</i> <p>1 Wetland has perennial or intermittent surface-water connection to a fish-bearing water body.</p> <p>2 Wetland has sufficient size and depth of open water so as not to freeze completely during winter.</p> <p>3 Observation of fish.</p> <p>4 Herbaceous and/or woody vegetation is present in wetland and/or buffer to provide cover, shade, and/or detrital matter.</p> <p>5 Spawning areas are present (aquatic vegetation and/or gravel beds).</p> <p>6 Juvenile rearing areas.</p>	<b>Likely or not likely to Provide (Y or N)</b> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p> <p>4 _____</p> <p>5 _____</p> <p>6 _____</p> <p>4-6 (Y) - High Function 1-3 (Y) - Moderate Function None - Low or No Function</p>
<b>H. Native Plant Richness</b> <p>1 Dominant and codominant plants are native.</p> <p>2 Wetland contains two or more Cowardin Classes.</p> <p>3 Wetland has three or more strata of vegetation.</p> <p>4 Wetland has mature trees.</p>	<b>Likely or not likely to Provide (Y or N)</b> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p> <p>4 _____</p> <p>3-4 (Y) - High Function 1-2 (Y) - Moderate Function None - Low or No Function</p>

<b>I. Educational or Scientific Value</b>  1 Site has documented scientific or educational use. 2 Wetland is in public ownership 3 Accessible trails available.	<b>Likely or not likely to Provide (Y or N)</b>  1 _____ 2 _____ 3 _____  2-3 (Y) - High Function 1 (Y) - Moderate Function None - Low or No Function
<b>J. Uniqueness and Heritage</b>  1 Wetland contains documented occurrences of a state or federally listed threatened or endangered species.** 2 Wetland contains documented critical habitat, high quality ecosystems, or priority species respectively designated by the USFWS.** 3 Wetland has biological, geological, or other features that are determined to be rare. 4 Wetland type is a highly valuable wetland type of the State.** **If #1, #2, or #4 is Yes, then wetland is automatically rated as high	<b>Likely or not likely to Provide (Y or N)</b>  1** _____ 2** _____ 3 _____ 4** _____  3-4 (Y) - High Function 1-2 (Y) - Moderate Function None - Low or No Function
<b>K. Groundwater Interchange</b>  1 Presence of seeps or springs 2 Microrelief of wetland surface 3 Surficial geologic deposits under wetland are permeable (e.g. alluvium)	<b>Likely or not likely to Provide (Y or N)</b>  1 _____ 2 _____ 3 _____  2-3 (Y) - High Function 1 (Y) - Moderate Function None - Low or No Function



---

**From:** Cory Warnock  
**Sent:** Friday, May 24, 2013 11:00 AM  
**To:** Van Massenhove, Katherine B -FS; Nelson, Sherry D -FS  
**Cc:** Shina Duvall; Mike Salzetti; Emily Andersen  
**Subject:** RE: Grant Lake Special Use Permit Amendment

Hi Kathy,

I really appreciate the update on process and timeframe. And to all on the message, I believe what you have from HEA now should be sufficient to make all necessary determinations but if you need anything additional, please don't hesitate to let me know.

Thanks,

Cory

---

**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]  
**Sent:** Friday, May 24, 2013 10:55 AM  
**To:** Cory Warnock; Nelson, Sherry D -FS  
**Cc:** Shina Duvall; Mike Salzetti; Emily Andersen  
**Subject:** RE: Grant Lake Special Use Permit Amendment

Hi Cory,

I will not have the amendment for the wetlands work ready to be process until mid-June, you requested to do the wetlands work in July, not June, so I have a date of June 15<sup>th</sup> for the other specialists (beyond Heritage) to respond to any concerns and mitigations they want to see before moving forward with issuing that amendment. For the amendment for the cultural work, in order to issue the amendment, I need to hear from Sherry that the methodology and person doing the cultural surveys are to the FS standard, so that we can include language in the amendment that specifies that this approval is contingent on using the reviewed and approved methodology and person. Once I have that, I can move forward with the amendment. So, it will likely shape up to be 2 amendments for these two studies.

Sherry – can you let me know if you've reviewed the information submitted by Mike Y.'s company and if it meets our standard and they can conduct the work?

Thanks,

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Monday, May 20, 2013 12:50 PM  
**To:** Van Massenhove, Katherine B -FS; Nelson, Sherry D -FS  
**Cc:** Shina Duvall; Mike Salzetti; Emily Andersen  
**Subject:** Grant Lake Special Use Permit Amendment

Hi Kathy and Sherry,

Now that we've received official confirmation from SHPO that they are ok with our proposed approach to assess the wetlands at Grant Lake in June (from a cultural perspective) in advance of the actual Grant Lake wetlands work, I'm wondering if you need anything additional from us to amend the special use permit to allow for the wetland activities we've proposed? Per previous conversations, I believe that we are now in a position where that permit can be amended.

If you could provide me with an approximate schedule for when we could expect that amendment and/or anything else that you need from us, I'd really appreciate it.

Thanks,

Cory

**Cory Warnock**

*Senior Licensing and Regulatory Consultant*

McMillen, LLC

[www.mcmillen-llc.com](http://www.mcmillen-llc.com)

5771 Applegrove Ln.

Ferndale, Wa. 98248

O – 360-384-2662

C – 360-739-0187

F – 360-542-2264

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---

**From:** Nelson, Sherry D -FS <snelson@fs.fed.us>  
**Sent:** Tuesday, May 28, 2013 5:25 PM  
**To:** Van Massenhove, Katherine B -FS; Cory Warnock  
**Cc:** Shina Duvall; Mike Salzetti; Emily Andersen  
**Subject:** RE: Grant Lake Special Use Permit Amendment

Hi Kathy,

I have reviewed the Project Study Plan provided by Cultural Resource Consultants LLC, as well as the additional information I had requested and am satisfied that the proposed work is in accordance with Section 106 of the National Historic Preservation Act, 36 CFR 800, and FSH 2360.

---

**From:** Van Massenhove, Katherine B -FS  
**Sent:** Friday, May 24, 2013 9:55 AM  
**To:** Cory Warnock; Nelson, Sherry D -FS  
**Cc:** Shina Duvall; Mike Salzetti; Emily Andersen  
**Subject:** RE: Grant Lake Special Use Permit Amendment

Hi Cory,

I will not have the amendment for the wetlands work ready to be process until mid-June, you requested to do the wetlands work in July, not June, so I have a date of June 15<sup>th</sup> for the other specialists (beyond Heritage) to respond to any concerns and mitigations they want to see before moving forward with issuing that amendment. For the amendment for the cultural work, in order to issue the amendment, I need to hear from Sherry that the methodology and person doing the cultural surveys are to the FS standard, so that we can include language in the amendment that specifies that this approval is contingent on using the reviewed and approved methodology and person. Once I have that, I can move forward with the amendment. So, it will likely shape up to be 2 amendments for these two studies.

Sherry – can you let me know if you’ve reviewed the information submitted by Mike Y.’s company and if it meets our standard and they can conduct the work?

Thanks,

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Monday, May 20, 2013 12:50 PM  
**To:** Van Massenhove, Katherine B -FS; Nelson, Sherry D -FS  
**Cc:** Shina Duvall; Mike Salzetti; Emily Andersen  
**Subject:** Grant Lake Special Use Permit Amendment

Hi Kathy and Sherry,

Now that we’ve received official confirmation from SHPO that they are ok with our proposed approach to assess the wetlands at Grant Lake in June (from a cultural perspective) in advance of the actual Grant Lake wetlands work, I’m wondering if you need anything additional from us to amend the special use permit to allow for the wetland activities

we've proposed? Per previous conversations, I believe that we are now in a position where that permit can be amended.

If you could provide me with an approximate schedule for when we could expect that amendment and/or anything else that you need from us, I'd really appreciate it.

Thanks,

Cory

**Cory Warnock**

*Senior Licensing and Regulatory Consultant*

McMillen, LLC

[www.mcmillen-llc.com](http://www.mcmillen-llc.com)

5771 Applegrove Ln.

Ferndale, Wa. 98248

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---

**From:** Cory Warnock  
**Sent:** Thursday, May 30, 2013 3:30 PM  
**To:** Van Massenhove, Katherine B -FS; Mike Salzetti (msalzetti@HomerElectric.com)  
**Subject:** RE: Grant Lake Special Use Permit Amendment, Cultural Resource Studies

Thanks, Kathy.

---

**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]  
**Sent:** Thursday, May 30, 2013 3:01 PM  
**To:** Mike Salzetti ([msalzetti@HomerElectric.com](mailto:msalzetti@HomerElectric.com)); Cory Warnock  
**Subject:** FW: Grant Lake Special Use Permit Amendment, Cultural Resource Studies

Hi Guys,  
Here is the permit amendment, which incorporates the cultural study plan and supplemental information. Please keep in mind that if anything is found of cultural significance, you must notify the Forest Service.  
Thanks,

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

---

**From:** Stovall, Robert -FS  
**Sent:** Thursday, May 30, 2013 12:36 PM  
**To:** Van Massenhove, Katherine B -FS  
**Cc:** Knauth, Kevin S -FS  
**Subject:** RE: Grant Lake Special Use Permit Amendment, Cultural Resource Studies

Kathy:

I printed, reviewed, and signed this amendment as requested. I have a new scanner and was able to scan the signed copy and have attached as requested. I will put in an envelope headed towards Girdwood today.

One comment, these folks are doing cultural studies but if they find anything of cultural significance they are required to stop work and notify the FS?? *Smile*

Robert  
Deputy District Ranger  
Chugach NF, Seward RD  
334 Fourth Avenue  
Seward, AK 99664  
Seward Office # 907 743-9474; KLWC Office # 288-7707  
Govt Cell # 907 399-3966

---

**From:** Van Massenhove, Katherine B -FS  
**Sent:** Thursday, May 30, 2013 8:43 AM  
**To:** Stovall, Robert -FS  
**Subject:** FW: Grant Lake Special Use Permit Amendment, Cultural Resource Studies

Hi Robert,

Here is the amendment for Kenai Hydro to conduct the investigative studies for cultural resources. Let me know if you have any questions. Once signed, please scan and email me a copy, and put the original in the mail to me for the file.  
Thanks,

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

---

**From:** Salzetti, Mikel [<mailto:MSalzetti@HomerElectric.com>]  
**Sent:** Thursday, May 30, 2013 8:26 AM  
**To:** Van Massenhove, Katherine B -FS  
**Cc:** Cory Warnock  
**Subject:** RE: Grant Lake Special Use Permit Amendment, Cultural Resource Studies

Kathy:

Attached is a signed copy of the amended permit.

Thanks for your assistance,

**Mike Salzetti**  
Fuel Supply & Generation Engineering Manager  
(907) 283-2375 *work*  
(907) 398-5073 *Mobile*

---

**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]  
**Sent:** Wednesday, May 29, 2013 2:09 PM  
**To:** Cory Warnock  
**Cc:** Salzetti, Mikel  
**Subject:** Grant Lake Special Use Permit Amendment, Cultural Resource Studies

Hi Cory,

Attached is the permit amendment for the cultural resource survey work being conducted by Cultural Resource Consultants, LLC. Please keep in mind, the amendment is only valid for work completed by CRC, LLC. as spelled out in the Cultural Study Plan, and if there is a change in plans either in the consulting firm used, or a change in the methodology spelled out in the Cultural Study Plan, these changes would need to be submitted to the Forest Service so that we could evaluate the new firm or methodology to be certain it meets FS standards.

Thanks,

Auth ID: SEW457  
Contact ID: KENAI HYDRO LLC  
Use Code: 413

FS-2700-23 (v. 10/09)  
OMB No. 0596-0082

U.S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
AMENDMENT  
FOR

SPECIAL-USE AUTHORIZATION



Amendment#: 2

This amendment is attached to and made a part of the special use authorization for investigative studies issued to Kenai Hydro, LLC on 06/24/2009 which is hereby amended as follows:

Authorizes Cultural Resource Consultant, LLC to complete the cultural studies required for the Grant Lake Project (FERC No. 13212) as described in the Cultural Resources Study Plan submitted with application on March 19, 2013, and supplemental information submitted on April 16, 2013. Work will be completed during the 2013 summer season. Any deviations from the methodology in the Cultural Study Plan or supplemented information must be submitted for review and approved prior to work being done on National Forest System lands.

A. Archaeological-Paleontological Discoveries (R10-X106). Items of historic, prehistoric, or paleontological value are protected under various Federal laws, including the Antiquities Act of 1906 (16 U.S.C. 433), the Archaeological Resource Protection Act of 1979 (16 U.S.C. 47033) as amended, and Federal regulations. If historic, prehistoric, or paleontological objects or sites are discovered during ground disturbing activities under this permit, the holder must cease such activities in the vicinity of the discovery. The holder is responsible for protecting the objects or sites from further disturbance until the Forest Service is notified. The holder must not resume activities in the area of the objects or sites until written approval from the Forest Supervisor is given. Failure to comply with this clause may result in criminal prosecution of the holder for violation of a Federal law or regulation.

This Amendment is accepted subject to the conditions set forth herein and made a part of this Amendment.

		FOR
Kenai Hydro, LLC.	KEVIN KNAUTH, District Ranger	
5/29/2013	5/30/2013	
Date	Date	

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0082. The time required to complete this information collection is estimated to average one (1) hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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The Privacy Act of 1974 (5 U.S.C. 552a) and the Freedom of Information Act (5 U.S.C. 552) govern the confidentiality to be provided for information received by the Forest Service.



---

**From:** Cory Warnock  
**Sent:** Wednesday, June 05, 2013 1:21 PM  
**To:** Emily Andersen  
**Subject:** FW: Bond  
**Attachments:** HEA Bond.pdf

FYI

---

**From:** Salzetti, Mikel [<mailto:MSalzetti@HomerElectric.com>]  
**Sent:** Wednesday, June 05, 2013 1:20 PM  
**To:** Snow, Candice S (DNR)  
**Cc:** Cory Warnock  
**Subject:** RE: Bond

Candice:

Attached is a scan of the Bond. I will put a hard copy in the mail tomorrow. Can you please confirm the mailing address for me?

Thanks,

Mike

---

**From:** Snow, Candice S (DNR) [<mailto:candice.snow@alaska.gov>]  
**Sent:** Wednesday, June 05, 2013 9:16 AM  
**To:** Salzetti, Mikel  
**Subject:** Bond

Good morning, I have received the permit and the annual fee but not the bond, is that on its way?

Thanks!



Candy Snow

Natural Resource Specialist I

907-269-8569

[candice.snow@alaska.gov](mailto:candice.snow@alaska.gov)

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LICENSE OR  
PERMIT BOND

Bond 52BSBGK8086

LICENSE OR PERMIT BOND

KNOW ALL BY THESE PRESENTS, That we, Homer Electric Association, Inc.

as Principal, and the Hartford Fire Insurance Company, a CT corporation,  
as Surety, are held and firmly bound unto State of Alaska

, as Oblige,

in the sum of Five Hundred Dollars And Zero Cents

Dollars (\$ 500.00 )

for which sum, well and truly to be paid, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Signed and sealed this 29th day of May, 2013.

THE CONDITION OF THIS OBLIGATION IS SUCH, That WHEREAS, the Principal has been or is about to be granted a license or permit to ~~do business as~~ for installation, maintenance and use of one thermistor string for the purpose of monitoring water temperature and 10 depths, per Permit # LAS 29076 by the Oblige.

NOW, Therefore, if the Principal well and truly comply with applicable local ordinances, and conduct business in conformity therewith, then this obligation to be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER; 1. This bond shall continue in force:

☐ Until \_\_\_\_\_, \_\_\_\_\_, or until the date of expiration of any Continuation Certificate executed by the Surety


OR

☒ Until canceled as herein provided.

2 This bond may be canceled by the Surety by the sending of notice in writing to the Oblige, stating when, not less than thirty days thereafter, liability hereunder shall terminate as to subsequent acts or omissions of the Principal.

Homer Electric Association, Inc.

Principal

By , Controller

Hartford Fire Insurance Company

By   
Elizabeth R. Hahn Attorney-in-Fact

# POWER OF ATTORNEY

Direct Inquiries/Claims to:

THE HARTFORD

BOND, T-4

One Hartford Plaza

Hartford, Connecticut 06155

call: 888-266-3488 or fax: 860-757-5835

KNOW ALL PERSONS BY THESE PRESENTS THAT:

Agency Code: 52-815037

- ☒ **Hartford Fire Insurance Company**, a corporation duly organized under the laws of the State of Connecticut
- ☒ **Hartford Casualty Insurance Company**, a corporation duly organized under the laws of the State of Indiana
- ☒ **Hartford Accident and Indemnity Company**, a corporation duly organized under the laws of the State of Connecticut
- ☐ **Hartford Underwriters Insurance Company**, a corporation duly organized under the laws of the State of Connecticut
- ☐ **Twin City Fire Insurance Company**, a corporation duly organized under the laws of the State of Indiana
- ☐ **Hartford Insurance Company of Illinois**, a corporation duly organized under the laws of the State of Illinois
- ☐ **Hartford Insurance Company of the Midwest**, a corporation duly organized under the laws of the State of Indiana
- ☐ **Hartford Insurance Company of the Southeast**, a corporation duly organized under the laws of the State of Florida

having their home office in Hartford, Connecticut, (hereinafter collectively referred to as the "Companies") do hereby make, constitute and appoint, **up to the amount of unlimited:**

*Barbara R. Johnson, Marie I. Matetich, David L. Eckroth, Christin M. Hubble, Sherisa M. Crevier, Jennifer L. Schultz of Anchorage AK;  
Karen P. Dever, Deanna M. Meyer, Jill A. Boyle, Stuart A. O'Farrell, Susan B. Larson, Scott Fisher, Elizabeth R. Hahn, Jana M. Roy,  
Scott McGilvray, Mindee L. Rankin, Ellen Bell*

of

*Bellevue, WA*

their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign its name as surety(ies) only as delineated above by ☒, and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

In Witness Whereof, and as authorized by a Resolution of the Board of Directors of the Companies on August 1, 2009 the Companies have caused these presents to be signed by its Vice President and its corporate seals to be hereto affixed, duly attested by its Assistant Secretary. Further, pursuant to Resolution of the Board of Directors of the Companies, the Companies hereby unambiguously affirm that they are and will be bound by any mechanically applied signatures applied to this Power of Attorney.



*Wesley W. Cowling*

Wesley W. Cowling, Assistant Secretary

*M. Ross Fisher*

M. Ross Fisher, Vice President

STATE OF CONNECTICUT }  
COUNTY OF HARTFORD } ss. Hartford

On this 12<sup>th</sup> day of July, 2012, before me personally came M. Ross Fisher, to me known, who being by me duly sworn, did depose and say: that he resides in the County of Hartford, State of Connecticut; that he is the Vice President of the Companies, the corporations described in and which executed the above instrument; that he knows the seals of the said corporations; that the seals affixed to the said instrument are such corporate seals; that they were so affixed by authority of the Boards of Directors of said corporations and that he signed his name thereto by like authority.



CERTIFICATE

*Kathleen T. Maynard*  
Kathleen T. Maynard  
Notary Public  
My Commission Expires July 31, 2016

I, the undersigned, Vice President of the Companies, DO HEREBY CERTIFY that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is still in full force effective as of May 29<sup>th</sup>, 2013.

Signed and sealed at the City of Hartford.



*Gary W. Stumper*  
Gary W. Stumper, Vice President

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**From:** Cory Warnock [cory.warnock@mcmillen-llc.net]  
**Sent:** Wednesday, June 12, 2013 9:29 AM  
**To:** Mike Salzetti  
**Subject:** FW: Grant Lake Study Plans  
**Attachments:** Aquatic Resources Study Plan Comments- Miller 5-14-2013.docx; Terrestrial Resources Study Plan Comments-Miller 5-14-2013.doc; Water Resources Study Plan Comments-Miller 5-6-2013.doc

**From:** Miller, Monte D (DFG) [<mailto:monte.miller@alaska.gov>]  
**Sent:** Tuesday, June 11, 2013 10:20 AM  
**To:** Cory Warnock  
**Subject:** Grant Lake Study Plans

Cory,

Attached are my comments on the study plans presented as we discussed in Ketchikan recently. You may have finalized many things about this year studies since these plans were developed. Updates are needed. I appreciated the opportunity to bring these issues to your attention. Please feel free to contact me with any additional questions.

Monte D. Miller  
Statewide FERC Hydropower Coordinator  
Alaska Department of Fish and Game  
Division of Sport Fish / RTS  
333 Raspberry Road  
Anchorage, Alaska, 99518-1565  
(907) 267-2312

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**Grant Lake Project  
FERC No. 13212**

**Water Resources Draft Study Plan  
November 12, 2012**

**Alaska Department of Fish and Game Comments (M. D. Miller)  
May 6, 2013**

**General Comments**

ADF&G provided comments on the Water Resources Study Plan on July 6, 2010. One comment identified the necessity that objectives needed to be revised to be more specific in detail. The Kenai Hydro, LLC response (Summary of Comments on Draft Study Plans for the Grant Lake Project, November 2012) stated that the study plans were modified. We continue to have issue with vague objectives in this Study Plan. Other concerns with identification of sediment transport were raised with the KHL response that this had been addressed on page 14 of the Water Resources Study Plan. This is not adequately discussed in the Water Study Plan, page 14, as stated.

**4.2 Field Study Design**

**Quantitative Objectives, Page 6**

This section states that water quality standards were selected and criteria were established. What standards and what criteria? The next three sections list Table 1 but this table only states what will be sampled for and not what the standard or criteria is for each parameter. If you are using Alaska DEC standards, state that is the standard being used, and what range is considered acceptable.

**Baseline water quality studies in Grant Lake, Page 7**

The last line of the last bullet contains bidding information and is not relevant to the study plan. *“The prospective bidders should provide individual costs for the installation of a new thermistor string and the cost associated with restoring the potentially functional existing string.”* This belongs in a bidding document

**Baseline water quality studies in Trail Lake Narrows, Page 7**

This information will not inform environmental aspects of this project except for immediate construction of the bridge. Even that would be of limited use since water at this point is mixed from Grant Creek and Upper Trail Lakes. Since no evaluation of the area above the narrows and the intersection of Grant Creek with the Trail Lakes system is proposed, it will be impossible to determine if differences in water chemistry are project related.

**Page 8**

Following Table 1, there appears to be a methods section which is not labeled. If this is a methods section, label correctly. In this section, DH-81 bottles will collect subsamples which will be combined in a bucket or a single sample if width and depths allow. The method states that width and depth of the stream will determine the method of sampling but fails to identify what those width and depth criteria are.

This section identifies the HOBO Pro V2 temperature loggers and the HOBO U20 Water Level Loggers as the instruments to be used. There are four different models of the HOBO U20 with different specifications for depths and resolution. Different models will be required for lake or stream work. If they are mixed up, data will potentially be lost due to equipment failure. Identify the loggers to be used at each location.

**Page 8, Paragraph 3, second sentence**

*“Water temperature in Grant Lake will be measured both instantaneously and continuously using recording data loggers.”*

Data loggers do not provide instantaneous measurements. It is believed that you intend to use a YSI or Hydrolab meter to provide instantaneous readings. Correct this statement.

Further in the same paragraph, the abandoned data loggers are discussed and stated to be inactive. These loggers were maintained into 2010 so we assume data was field downloaded at that time. These loggers were placed back into the water and would have recorded data until the memory was full or the internal batteries were depleted. The batteries usually last five years on these units so it is possible that there is recorded data which may be accessed. Every attempt to recover this data should be used, including sending units back to the manufacturer to recover data from “dead” units. This section should include those data recovery efforts but only identifies testing, reinstallation or replacement.

**4.2.2 Hydrology**

This section discusses stream gage installation and identifies some USGS approved equipment but fails to identify the standards used for installation or who installs and maintains the gage and downloads data. Apparently there will be no winter record. This may be problematic in that project operation appears to be year round. The existing stream flow data is very dated (1947-1958) with limited recent data (2009) and will need to be appropriately updated.

*“All installed equipment will be removed by late October or prior to freeze-up.”* Is this a single effort for the summer and fall of 2013 only? The installation of a stream gage and associated measurements for only six months will not be adequate to provide a correlation to the historic record.

**4.2.2.2 Instantaneous Discharge Measurements, Page 12**

Stream gage sites are identified but the plan also states: *“Measurements at other sites within the Grant Creek drainage will be conducted as those sites are determined, and when stream conditions permit.”*

Will discharge measurements be taken at the 18 transects identified in other the Aquatic Resources study plan? There has been no mapping provided to identify those transects. What other discharge measurement sites may be determined and how will they be determined?

**Page 13, Boat or ADCP Method**

Safety of personnel is always a primary concern for field work. This section calls for a River Cat trimaran to be used to work the ADCP unit across the stream during periods of high water levels or high flows. This will require a rope or cable to be stretched across the stream at cross section locations. How will the personnel be able to establish these ropes or cables during periods of

high water or high velocity. Most likely, these ropes or cables would not be allowed to remain in place over this stream for several months. This would be a safety concern as an attractive nuisance to hikers or people using the trails along Grant Creek.

#### **Page 14, paragraph 2**

The salt dilution method to measure stream discharge is described in general terms in this paragraph. The method is vaguely described and lacks the procedure details similar to those provided in the Wading Method on page 12. For example, is raw salt just dumped into the stream or is a brine solution mixed and used? Where will the measurements be taken and is distance from input point important? The plan states common table salt may be used....Is there a difference between iodized salt and un-iodized salt? This method, while recognized by USGS, is one of the least conclusive methods recognized and should only be used as a last resort. The plan states that the salt is preferred because it is non-toxic to aquatic organisms at the concentrations and exposure times used, but fails to identify concentrations and exposure times. Salinity can cause chemical burning of gill structures in salmon alevin which may result in reduced vitality and/or delayed mortality. The time of year proposed would impact alevin in the stream gravels. A complete study plan using this method must identify concentrations, duration and potential impacts. This plan falls well short of providing adequate information.

#### **4.2.3.2 Grant Creek spawning substrate recruitment study, Page 15**

*“Qualitative geomorphic assessment will be based on detailed observations of the Cooper Lake watershed, known geological conditions, and professional interpretation of observed geomorphic processes.”*

The Cooper Lake watershed is an impacted system which has changed the way the watershed functions. There is no outflow from Cooper Lake to Cooper Creek, therefore caution must be exercised in transferring geomorphic condition evaluation from that watershed to another which is currently not impacted.

### **6 Project Nexus**

#### **6.1 Water Quality and Temperature, Page 16**

Discussion of the HOBO U20 water level logger again fails to identify the specific units to be used. See comment for discussion of these units (from page 8 of study plan).

### **7 Consistency with Generally Accepted Practices**

#### **7.1 Water Quality and Temperature, Page 17**

Discussion of the HOBO U20 water level logger again fails to identify the specific units to be used. See comment for discussion of these units (from page 8 of study plan).

**Grant Lake Project  
FERC No. 13212**

**Aquatic Resources Final Study Plan  
November 2012**

Alaska Department of Fish and Game Comments (M. D. Miller)  
May 14, 2013

**General Comments**

ADF&G comments on the draft study plan were submitted on July 6, 2010. We commented on the lack of specific objectives and methods to be used. The Kenai Hydro, LLC (KHL) response delivered in the Summary of Comments on draft study plans for the Grant Lake Project matrix document dated November 2012, was that they were trying to be consistent with the PAD document, and that the revision is more specific. We continue to question the adequacy of this study plan. This plan, as presented, lacks specificity required to fully evaluate the plan. As such, this plan is not a complete guide to proposed 2013 fieldwork. This plan needs to be modified/corrected/updated to comply with FERC study plan expectations prior to initiation of 2013 fieldwork. Statements throughout the matrix document indicate that information will be provided with the DLA and FLA. Study reports need to be submitted to the agencies well before a DLA or FLA is filed with FERC. The timeline identified in KHL responses in the matrix is unacceptable.

In obtaining the ADF&G 2013 Fish Resources Permit (FRP) and through three different amendments to the FRP, many questions were asked of the applicant. A series of e-mail communications took place between the ADF&G permit issuer and the applicant to identify study methods and weir specifications. These methods and specifications need to be added to the study plan to facilitate proper evaluation of this project. The FERC record must be updated to reflect corrected and complete study plans.

A description of project facilities is needed that includes proposed locations of the powerhouse and associated tailrace.

**Specific Comments**

**1 Introduction**

**Proposed Project Description, Page 1**

No maps are included in this section.

The figures/maps provided later (Figures 1 and 2 on pages 5 and 7) do not provide the resolution necessary to be of much use. The extent of anadromous waters needs to be clearly shown on maps.

**2 Overall Goals Identified during Project Scoping, Page 2**

This section lists seven goals for this study. There is no mention of a goal for the Trail Lakes Narrows component of this study.

### **3 Existing Information**

#### **3.1 Pre-2009 Studies**

##### **Grant Creek Fish Resources, Page 3-7**

This section lists Johnson and Klein, 2009 in multiple places to describe anadromous fish resources present in Grant Creek. This is the ADF&G Anadromous Waters Catalog (AWC) which has been updated several times since the cited version. The description of resources may or may not have changed in the updated version. Please verify information and cite the current version of the AWC.

Current version of the AWC:

Johnson, J. and P. Blanche. 2012. Catalog of waters important for spawning, rearing, or migration of anadromous fishes – Southcentral Region, Effective June 1, 2012. Alaska Department of Fish and Game, Special Publication No. 12-06, Anchorage.

A citation on page 6 refers to Johnson and Daigneault, 2008 version of the AWC, as not listing Grant Lake or its tributaries in the AWC. The next sentence lists resident species (sculpin and stickleback) in Grant Lake and lists the Johnson and Klein, 2009 version of the AWC as cited. The AWC generally does not list resident fish species, therefore we must question the citation. Additionally Figure 2, on page 7, identifies the ADF&G anadromous fish distribution limit at a point several hundred feet below the lake outlet but again fails to identify any AWC version used to establish that limit. The plan needs to be updated to correctly cite the current AWC version

##### **Figure 1, Page 5**

This map of the fish and aquatics resources study area is inadequate in that it does not clearly identify the study area, is blurry on an 8 ½" X 11" page, is split with two colors which make use difficult, and is not of sufficient resolution to properly view project features or read map labels.

#### **3.2 2009 and 2010 Aquatic Resources Studies**

##### **Fish, Page 6-8**

This section describes previous studies and their methods. The first bullet under the 2009 studies was “*Determine the relative abundance and distribution of juvenile fish in Grant Creek.*” The study descriptions provided are not sufficient to develop relative abundance estimates. From page 8: “*Relative abundance and distribution of juvenile fish were determined by minnow trapping and calculating the catch-per-unit-effort (CPUE) for each reach.*” The discussion describes the number of minnow traps used, some catch results, and determinations of distribution and relative abundance. The presence of sockeye salmon was noted but not included in the determinations of distribution and relative abundance. This highlights the flaws in this study in that the methods used in this study fail to recruit sockeye juveniles. This results in sockeye juvenile underestimation or the appearance that few sockeye utilize the area. Neither are acceptable conditions.

This study utilized angling to determine relative abundance for adult fish. This is a very selective method for sampling adult fish. Different species require different tackle and different approaches. The determination of spawning timing of resident fish failed in this study. Information of use included: Rainbow trout (RBT) were caught throughout the creek with more caught in reaches 3-5, spawning condition was seen in adult RBT, and adult RBT were observed



in the upper portions of the canyon reach. These factors will help inform instream flow release prescriptions.

### **Instream Flow, Page 9**

A statement that the Technical Work Group (TWG) and Kenai Hydro, LLC (KHL) decided to select an instream flow methodology based on 2009 Aquatic Resources and Hydrology studies. Was this the selection of the Instream Flow Incremental methodology (IFIM) and Physical Habitat Simulation (PHABSIM) model now being proposed? Provide mapping of the location of the 18 transects utilized in 2010 along with mesohabitat identification of each transect and association with microhabitats.

### **Macroinvertebrates, Plankton and Periphyton, Page 9**

The results of the 2009 sampling may have been impacted by a large rain event which required postponement of the sampling. The flushing effect of high streamflow may affect both macroinvertebrate (MI) counts as well as species diversity. Flushing will also reduce the counts of available plankton important to filter feeders such as sockeye juveniles.

### **3.3 Need for additional information, Page 9-10**

This section should also identify the development of site specific Habitat Suitability Index Curves (HSC) for use in modeling.

## **4 Methods**

### **4.1 Study Area, Page 10**

This section fails to identify the Trail Lake Narrows study area near the proposed bridge crossing. The text identifies Figure 1 as showing the study area. This map of the fish and aquatics resources study area is inadequate in that it does not clearly identify the study area, is blurry on an 8 1/2" X 11" page, is split with two colors which make use difficult, and is not of sufficient resolution to properly view project features or read map labels.

### **4.3 Grant Creek Fish Weir, Pages 10**

We have concern that the proposed width between the pickets is not well defined. A maximum of three inches of spacing between pickets is identified. How will the spacing be determined? What will be the response if fish begin to gill themselves in the weir? Is this proposed to be a one size fits all weir? Correct picket spacing will be important or smaller resident fish will be gilled in the weir or trap. Is there an associated trap box? The size of the trap box is important when dealing with small fish as well as large fish, such as chinook salmon. It is stated that the weir will be monitored at least twice per day. Previously in this study plan it was reported that estimated escapement of chinook and sockeye salmon was 231 chinook and 6293 sockeye in 2009. This escapement level will require constant monitoring with sufficient staff during the spawning season to prevent crowding and mortality associated with the weir and trap. Monitoring will be required over a full 24 hour period as many fish tend to move more at night or during twilight hours here in Alaska.

*"Captured fish will also be measured if time allows and fish quantity is not too large to allow safe handling."* All captured fish should be measured. This will also identify if unintentional size selectivity occurs during tag placement efforts and will promote utilization of all size fish in

the study. Size selectivity may result in age class discrimination or spawning area identification bias due to size related access issues.

When a weir is in place there will be increasing demand for removal of accumulated dead fish as the season progresses. All dead fish accumulating on the upper face of the weir should be checked to determine if they spawned and to recover radio tags. Excessive numbers of dead fish, which have not spawned, are an indication of watershed failures, such as low flows or low oxygen, or of improper handling during their capture at the weir. Improper handling may occur through insufficient monitoring of the weir which allows crowding and causes stress and reduced vitality, or physical handling such as fingers in gills or excessive time out of water due to insufficient staffing. These fish are nearing the end of their spawning run and many will be in a condition of diminished energy and vitality. Adequate staffing and 24 hour monitoring will reduce handling times and reduce possible effects of crowding and damage related to handling.

#### **4.4 Grant Creek Spawning Distribution and Abundance, Page 13**

The first primary bullet in this section states *“Use of a counting weir to obtain a direct count of all salmon entering Grant Creek during the open water season.”*

This is probably flawed in that there will be high water events during spring breakup or during storm events which will either overtop the weir, damage the weir, or otherwise allow fish to pass uncounted. Since fish tend to follow freshets, it is probable that substantial fish movement could occur during these times. Once this happens, there will be no comparison to previous data and no evaluation of relative abundance will be possible.

Additionally, lack of instream visibility may hamper foot survey sampling during high flow events. The secondary bullet seeks to estimate observer error by comparison to foot surveys, and will also be problematic. Any comparison to 2009 foot surveys would be suspect due to differences in turbidity and visibility between years, and the use of different observers with different skill sets. Observer error may include incorrect identification of species, miscount of numbers (either too many or too few), or just not seeing fish due to low light conditions, water disturbance or depth of fish in the stream. Bank estimates are prone to problems if fish are spooked by the proximity of the observer, if the observer is too far from the stream on a trail, or if the observer is at an angle that makes viewing difficult due to glare, ripples etc. Any estimation of error would change under differing conditions.

The second primary bullet states: *“A radio telemetry study to further assess the spawning distribution of Chinook and Sockeye salmon, with emphasis on Reach 5(Canyon Reach). Coho salmon may be included in the study if conditions allow.”*

Spawning distribution of salmon in the study area should not be restricted to chinook and sockeye salmon spawning. Spawning of all salmon species within the project area are a concern and needs to be assessed. The statement that *“coho salmon may be included in the study”* fails to address complete assessment. The periodicity of coho may be a problem for researchers, but they are also important to the system, and understanding potential impacts of project development on this species is important in developing instream flow prescriptions.

#### **4.4.1 Salmon Escapement to Grant Creek – Relative Species Abundance Project-Related Objectives, Page 13**

Two of the four bullets under this section include:

*“Assessment of numbers and species of salmon in Grant Creek as a whole.” and  
“Calibration of escapement estimates from foot surveys conducted in 2009.”*

The species of salmon in Grant Creek have been identified. Assessment of numbers of each salmon species may be problematic in that not all salmon present will receive equal treatment under this study (coho), and further that salmon escapement and return to streams varies from year to year based on many factors, including strength of parent run, instream juvenile survival, and fishery impacts on adult salmon. Thus, this objective is not attainable.

Issues with calibration of escapement estimates from foot surveys conducted in 2009 are discussed above, under comments on Section 4.4, Grant Creek Salmon Spawning Distribution and Abundance.

#### **Quantitative Objectives, Page 13-14**

- *“The primary objective is to obtain a nearly complete count of salmon of each species entering Grant Creek.”*

The presence of fish within the system will require instream flow protections. If we know the fish are present and the timing of their presence, why are complete counts necessary and how will that information be used? A bullet also identifies calibration of 2009 foot surveys. Issues with calibration of escapement estimates from foot surveys conducted in 2009 are discussed above, under comments on Section 4.4, Grant Creek Salmon Spawning Distribution and Abundance. Need for statistical determination should be reviewed by a biometrician. The statement that no statistical analysis is needed is unsupported.

The use of Floy spaghetti tags and associated collection of scale samples, are briefly mentioned but there is no mention of methods to be used for tagging and scale collection. Scale sample collection may be problematic in fish close to spawning. Ageing of spawning salmon may be better accomplished by collecting otoliths from spawned out salmon.

*“During the salmon runs, personnel will monitor the weir and empty the catch box at least twice per day, more often if necessary.”*

There are no drawings of the weir or associated catch box provided. The dimensions of a catch box are important, as previously discussed under comments on Section 4.3 Grant Creek Fish Weir.

One of the expected species in Grant Creek is the Chinook salmon. Regional issues with decline in Chinook salmon in 2012, triggered regulatory protections and has increased vigilance on interaction with these fish. It is imperative that Chinook salmon be handled as expeditiously as possible with appropriate safeguards and adequate care. Handling mortality of Chinook salmon may force removal of the weir and termination of some portions of this study.

*“Floy tags and radio tags will be recorded at the weir if carcasses are encountered.”*

All recovered tags shall be recorded by date recovered and retained until acceptance of the final study report.

#### **4.4.2 Distribution of Spawning Salmon in Grant Creek**

## **Quantitative Objectives Pages 14-16**

On page 15, discussion of the number of fish to be tagged (we assume radio tags) states that the number of tags to be placed is based on 2009 total escapement estimates. It is unclear how the tag allocation by species was determined. The tag by species numbers cited later in this paragraph and in the ADF&G issued 2013 FRP state that up to 65 King salmon, 65 sockeye salmon and 20 coho salmon are permitted to be marked with esophageal radio tags. It is very unclear how this allocation of tags is based on 2009 escapement estimates. The discussion also states that the timing of the coho run is not known, therefore coho estimates could not have been used to determine allocation of tags. Coho run timing must also be determined in Grant Creek. The coho run begins in August and may have fish actively spawning into December or even January. The periodicity is important in determination of instream flow requirements to develop instream flow prescriptions.

Discussion of the installation of a fixed telemetry site occurs on page 16 and uses language “*will likely be pursued*” and “*If deployed...*” If such a system is going to be installed, a complete description of the system, its deployment and how it identifies and reports the presence of radio tagged fish must be included in this plan. The statements about this system, its deployment, maintenance and reporting are vague and do not inform an evaluator.

## **4.5 Grant Creek Resident and Rearing Fish Abundance and Distribution, Page 16**

This section identifies using minnow traps to assess juvenile fish presence. Sockeye juveniles do not recruit to baited minnow traps, therefore, the sampling will be incomplete. Some sockeye juveniles may be seen during snorkeling surveys but turbid water conditions may make that method unreliable. Dolly Varden are not mentioned in this section, yet have a presence in the system.

### **4.5.1 Adult Rainbow Trout Abundance, Distribution, and Spawning in Grant Creek Quantitative Objectives, Page 16-17**

“*Obtain a count of adult Rainbow trout entering Grant Creek during the open water season.*” Define “adult”...Is this a length consideration? The ADF&G FRP has been amended to reduce the minimum length for rainbows to be tagged with radio telemetry tags from 500mm to 300mm. Is a less than 12 inch rainbow trout considered an adult? 300mm fish probably would not spawn in the near future so how does the telemetry study inform of rainbow trout spawning habitat utilization identified as a need under 4.5? The FRP identifies March 25 to June 30 as the time period allowed for rainbow trout radio tag surgical implantation. If larger rainbows spawn above the weir in Grant Creek, it will also be imperative that rainbow trout moving back down the stream must be quickly passed over the weir. Reconditioning kelts have limited energy and will not be able to avoid being held against the weir by streamflow and may not survive if delayed at the weir. Weir caused mortality of rainbow trout kelts will not be acceptable.

Angling is proposed to help with obtaining more complete information. Angling would be of very limited use because the weir is supposed to trap all large fish accessing Grant Creek. Angling for selective size classes will skew the representativeness of the data collected and may also have collection overlap with fish headed for Upper Trail Lakes and tributaries. Again, proposed methods are lacking.

*“Surgical method will generally follow those described by Summerfelt and Smith (1990).”*  
The use of the term “generally” is not acceptable. Methods are vague and subject to unknown change.

*“Fish within the dominant size range of mature Rainbow trout (500 - 700 mm) will likely weigh 1800-6000 grams (Russell 1977).”*

Fish Resource Permit (FRP) SF2013-105, amendment #1, identified up to 40 Rainbow trout to be radio tagged and reduced their size from greater than 500 mm to greater than 300 mm. From the citation above (Russell 1977), how are 300 mm fish considered to be adults? If sub-adults or non spawning adults are tagged there will be no correlation with spawning areas. These smaller fish may simply be seeking food sources.

#### **4.5.2 Resident and Rearing Fish Use of Study Reach 5**

##### **Quantitative Objectives**

###### **On-site Sampling, Page 18-19**

This section is confusing in that it discusses 2009 efforts and apparently expanded 2010 efforts. It is not clear if efforts will be expanded again for 2013 studies. The use of minnow traps to sample fish juveniles has been previously discussed as being selective and excluding sockeye salmon juveniles. A determination of lack of sockeye salmon spawning in Reach 5 needs to occur before this method can be said to sample all juveniles which may be present. The entire section is not clear on the level of effort to be expended in Reach 5 juvenile sampling during 2013.

*“Weir operation, as described in Section 4.3, may provide information on the timing of upstream movements of adult Dolly Varden. If sufficient numbers of spawning condition Dolly Varden are observed, mobile surveys of radio tagged fish will be utilized to identify their final destination. Given the historical data associated with Dolly Varden numbers in Grant Creek, HEA believes 10 radio tags will be sufficient for this analysis.”*

There is no tagging of Dolly Varden identified in Fish Resource Permit SF2013-105. Either there is an omission in the FRP which needs to be corrected, or the study plan is in error and it needs to be corrected. The weir, as described in this study plan with 3” picket spacing, will probably catch only very large Dolly Varden.

###### **Outmigrant Monitoring, Page 19**

Dolly Varden have not been included as species of primary interest in the study plan. The previous section identifies a potential radio tagging effort which would seem to identify Dolly Varden as a species of primary interest.

Define acceptable loss for outmigrant trapping. This is especially important for winter use of incline plane traps described under **Quantitative Objectives**, on page 19. Describe how fish will be handled and transported during winter conditions.

- **Winter Sampling, Page 19-20**

*“The results of the 2009 snorkel and minnow trapping surveys provided evidence that very few juvenile salmon observed were older than young-of-year fish (YOY; i.e., hatched in spring).”*

*Based on these results, there is some question as to whether Grant Creek provided favorable overwintering habitat for juvenile salmon and other species.”*

This is a contradictory statement and is unclear. YOY fish are also juveniles. If YOY fish were found, then there is wintering habitat in Grant Creek being used by juvenile fish. Again baited minnow traps are proposed and again we point to lack of sockeye salmon recruitment to that method of sampling.

Spring Outmigrant Monitoring, Page 20

Since Grant Creek is not boatable, how will incline plane or screw traps be transported and deployed?

A fine mesh live box is identified but again there is no information provided. The mesh size and size of the live box needs to be provided. Acceptable loss needs to be identified. Will there be an evaluation of effects attributed to marking, handling, and transport of these fish?

#### **4.5.3 Resident and Rearing Fish Use of Open Water Habitats in Lower Grant Creek Quantitative Objectives, Page 21**

- *“Obtain a count of adult Rainbow trout and Dolly Varden, and other resident species entering Grant Creek during the open water season.”*

There appears to be little understanding of Dolly Varden life history, including size at maturity, by the study plan authors. Life stage information for Dolly Varden is presented in the Alaska Wildlife Notebook Series<sup>1</sup>, and includes the following information:

*“Dolly Varden belong to a group of trout-like fish called char (Salvelinus sp). The primary visual distinction between char and trout and salmon are that char have light spots on their dark body sides while trout and salmon usually have black spots on their light colored sides. Dolly Varden are fall spawners and usually spawn between September and November in small headwater streams. The female, depending on her size, may deposit from 600 to 6,000 eggs (2,500 to 10,000 in the northern form) in depressions, or redds, which she constructs in the streambed gravel by digging with her tail fin. The male usually takes no part in nest building and spends most of his time defending the redd by chasing, biting or threatening intruders. When the female is ready to deposit her eggs, the male moves to her side and spawning begins. Sperm and eggs are released simultaneously into the redd where fertilization occurs. After spawning the female then forces the exposed eggs into the crevices by undulating her body and tail before covering the eggs with gravel.*

*The eggs develop slowly in the cold water temperatures and hatch in March approximately four to five months after fertilization. After hatching, the young Dolly Varden absorb the food from their yolk sac and usually do not emerge from the gravel until this food source is used. Emergence from the gravel usually occurs in April or May for the southern form and in June for the northern form.*

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<sup>1</sup> Alaska Wildlife Notebook Series, Dolly Varden, Alaska Department of Fish and Game, [www.adfg.alaska.gov/static/education/wns/dolly\\_varden.pdf](http://www.adfg.alaska.gov/static/education/wns/dolly_varden.pdf).

*The young Dolly Varden rear in streams for 2 to 4 years before beginning their first migration to sea, but some may rear as long as six years. During this rearing period, their growth is slow, a fact which may be attributed to their somewhat inactive habits. Young Dolly Varden often remain on the bottom, hidden from view under stones and logs, or in undercut areas along the stream bank, and appear to select most of their food from the stream bottom.*

*Prior to their seaward migration Dolly Varden go through a series of physical changes called smoltification which allows them to survive in saltwater and during this process the fish lose their parr marks and become silvery in color. The fish are now about 5 inches long and are called smolt. This seaward migration usually occurs in May or June, although significant but smaller numbers have been recorded migrating to sea in September and October. After their first seaward migration, Dolly Varden usually spend the rest of their lives migrating to and from fresh water in an interesting and often complicated pattern of migration.*

*The southern form migrate into lakes during the fall where they spend the winter while most northern Dolly Varden migrate into rivers to spend the winter. Dolly Varden hatched and reared in a lake system typically carry on annual spring migrations to saltwater seeking food before returning to a lake or river each fall to spend the winter. However, southern Dolly Varden originating from nonlake systems must seek a lake in which to winter and research suggests that they may find lakes by random searching, migrating from one stream system to another until they find one with a lake. Once a lake is found, these fish typically conduct annual seaward migrations in the spring, sometimes entering other freshwater systems in their search for food. Dolly Varden are known to follow salmon during upstream spawning migrations where there are lots of nutritious salmon eggs for the Dolly Varden to feed on.*

*Dolly Varden return to spawn in their stream of origin or “natal stream” upon reaching sexual maturity. Most southern forms of Dolly Varden reach maturity at age 5 or 6. At this age they may be 12-16 inches long and may weigh from 1/2 to 1 pound. Northern Dolly Varden reach maturity at age 5 to 9 after having spent three or four summers at sea, and may be 16 to 24 inches long. Dolly Varden possess the ability to find their natal stream without randomly searching, as was the case in their original search for a wintering area. Those of the southern form that survive the rigors of spawning return to a lake to spend the winter, while northern form Dolly Varden usually overwinter in the river system in which they have spawned.*

*Mortality after spawning varies depending on the sex and age of the fish. Males suffer a much higher mortality rate after spawning, partly due to fighting and the subsequent damage inflicted on each other. It is doubtful that much more than 50 percent of the Dolly Varden live to spawn a second time but a small number may live to spawn more than twice. Few southern Dolly Varden appear to live longer than 8 years while northern Dolly Varden may live as long as 16 years, but individuals over age 10 are uncommon. Maximum size for southern Dolly Varden is between 15 and 22 inches and up to 4 pounds*

*but an occasional 9-to 12-pound fish have been reported, especially in northern populations.”*

This study plan should also provide a periodicity table for all fish species utilizing Grant Creek.

Weir Data, Page 21-22

Define the weir in the study plan. Please note that spawning Dolly Varden may be as small as 12 inches in length and may be difficult to capture in a weir.

*“All resident fish passing the weir will be recorded.”*

This is not possible due to size of fish and potential storms which will breach the weir. Small resident fish will not be collected.

*“When the weir is in capture mode, the lengths of all fish will be measured if possible without harming the fish or requiring extra effort.”*

This statement implies that if someone decides that it is too much work, length measuring could be abandoned. Define “extra effort” and in what scenarios length measurements could be abandoned. Provide adequate staffing to do the job correctly and completely.

*“...the presence of an obvious pulse of Dolly Varden will trigger a need for foot surveys to identify spawning locations.”*

Spawning Dolly Varden may use Reach 5 which has limited access and poor observation areas. See previous comments under 4.5.2 regarding radio tagging of Dolly Varden. Also these fish may spawn in October and November, after the weir has been removed and personnel have left the area.

Outmigrant Monitoring, Page 22

*“Combining the results of spring and fall outmigration monitoring will provide an indication of the total annual production of the creek.”*

If there are no problems encountered with outmigration, such as floods or equipment failure you may be able to develop an estimate for the current year only. The estimate is not transferrable from year to year. It would only be valid for the year sampled. What is the value to the project? How will this inform the agencies and aid in development of agency recommended 10 (j) terms and conditions, to be filed with FERC, on this project.

Since Grant Creek is not accessible by boat, how will incline plane or screw traps be transported and deployed?

#### **4.6 Grant Creek Aquatic Habitat Mapping**

**Quantitative Objectives, Page 23**

- *Prepare an office-based aquatic habitat map (i.e., based on habitat observations assembled throughout the 2009 and 2010 field seasons.”*

On this map/s, locate and identify transects used on this project. Provide maps at a scale that allows readability and clearly shows habitat areas and transects. Identify the proposed mesohabitat classifications. This is key information necessary for the agencies to assure that the sampling design is adequate.



*“The team will conduct surveys to ground-truth the preliminary aquatic habitat delineation.....”*  
Is this a single exercise? At what flows will the habitat be identified during this exercise?  
Habitat use by fish will change with changing flows and water velocities.

#### **4.7 Grant Creek Instream Flow Study, Page 24-25**

Identify and provide maps of the 18 transects. Identify how data will be collected when the creek is unwadeable.

##### **4.7.1 Habitat Availability, Page 25**

The use of the PHABSIM method requires transects which represent all habitat types. The biological component is added into the modeling through the development and use of habitat suitability index curves. Additional transects may be added where fish are observed, but the model remains habitat oriented. What is presented will not correctly assess habitat because it will only address known fish use at the time the study is being conducted. The proposed study plan falls short in that it will be incomplete.

##### **4.7.2 Habitat Utilization, Page 26-28**

Described is the development of site-specific habitat suitability criteria (HSC). Then described is the use of that data combined with literature searches and professional judgment. Blending this information together will reduce the specificity of site-developed HSC's. How will depths and velocities be measured without disturbing spawning fish? The text mentions that 16 sampling sites were established in 2009. Provide habitat associated mapping of those sites for evaluation of study applicability.

##### **Table 2, Page 27**

Resident rearing and spawning parameters should be collected onsite. It may not be appropriate to use salmon rearing as a surrogate.

On page 28 snorkeling and electrofishing are presented as sampling methods. Snorkeling avoidance is not discussed and electrofishing methods are not presented. If electrofishing is used, will block nets be employed? Further discussion is needed on data collection during unwadeable flow events which may occur during at lower flows than expected.

Collection of water temperature data is identified to be recorded where fish are observed, at mid water column. Why this much detail? Are water temperatures expected to vary? If there is interest in redd locations then intergravel flow and temperatures may be important to show upwelling, but other than location of redds, how will this information inform the agencies and aid in development of agency recommended 10 (j) terms and conditions, to be filed with FERC, on this project.

##### **4.7.4 Analysis Methods, Page 30**

Use of RHABSIM is identified. The RHABSIM package was developed by Thomas R. Payne and Associates, who have developed a newer, improved, and more complex program called System for Environmental Flow Analysis (SEFA).

#### **4.7.5 Reach 5 (Canyon Reach) Analysis, Page 30**

*“It is expected that available post-Project habitats will be limited to pools which contain sufficient water to support fish.”*

This premise is unacceptable. Connectivity will have to be maintained to provide minimum environmental protections to this reach. Expect the requirement of an instream flow release.

*“A simplified modeling effort will be employed to obtain insight into effects that small changes in flow might have on pool depth, pool connectivity, and fish passage availability.”*

The use of the Oregon method follows this statement after a large break in the text. It is not clear if this is the simplified modeling proposed. The Oregon Method has been acknowledged by Oregon as a crude tool which is used in cases where other methods are not available and for use until other more complex methods can be utilized. Few verification studies have been conducted, which is also problematic.

Identify:

- how many flow calculation sets will be used,
- velocity calculation sets will be used,
- upstream & downstream transect/mesohabitat weighing methods,
- what WSL model(s) will be used, and
- development of composite habitat suitability indexes.

Provide mapping of transects and mesohabitat units at an appropriate scale to clearly identify details. Reach 5 should have 1 to 2 transects included in the habitat model analysis. Also needed is a Habitat Time Series.

#### **4.8 Baseline Studies of Benthic Macroinvertebrates in Grant Creek**

##### **Quantitative Objectives, Page 31**

Will sampling only in August provide accurate and complete information? Prior studies (2009) suffered when floods and washouts occurred and sample richness was affected (Aquatic Resources Study Plan page 9).

#### **5 Agency Resource Management Goals, Page 33**

The first bullet under this topic identifies incorrect and obsolete Alaska Statutes. We use the following language in FERC Motions to Intervene (MOI):

“ADF&G is mandated under state law to “manage, protect, maintain, improve, and extend the fish, game, and aquatic plant resources of the state in the interest of the economy and general well-being of the state . . .” (AS 16.05.020). Among the ADF&G’s various powers and duties are “to assist the United States Fish and Wildlife Service in the enforcement of federal laws and regulations pertaining to fish and game . . .” (AS 16.05.050), and protect fish habitat (AS 16.05.841 and AS 16.05.871).”

#### **8 Schedule for Conducting the Study, Page 35**

This schedule does not identify timing for deployment incline planes, telemetry station installation, installation of the counting weir, or inclusion of the genetic analysis in reports.

End of ADF&G Comments.

Grant Lake Project  
FERC No. 13212

Terrestrial Resources Study Plan  
November 2012

Alaska Department of Fish and Game Comments (M. D. Miller)  
May 14, 2013

On July 6, 2010, our department provided the following comment on the Draft Terrestrial Study Plan.

*“We support the delineation of the zone of inundation potential along the entire shore of Grant Lake and recommend quantifying the distribution of each riparian/terrestrial habitat type and the relative abundance of aquatic and riparian species utilizing each habitat. We are primarily concerned with habitats selected by waterbirds (waterfowl, shorebirds, loons, gulls, and terns) for breeding and those selected by moose for browse, cover and thermoregulation. To evaluate the proposal of increasing the lake levels, a quantitative summary of the relative abundance of these species by specific habitat types is needed along with the extent to which these habitats will be inundated. Waterbird surveys should also be conducted for Grant Creek by noting habitat associations with the meso habitats identified in the Aquatic Resources Study and with particular riparian habitat types being mapped in the Terrestrial Resources Study.”*

The Kenai Hydro, LLC (KHL) response is taken from the Summary of Comments matrix provided to the agencies in December 2012:

*“The Terrestrial Resources Study Plan is designed to collect vegetation and wildlife data in potentially affected areas along the Grant Lake shoreline. If inundation will occur based on the final Project design proposal, potential effects of this inundation will be discussed in the Terrestrial Resources Study Report and presented in the draft and final license applications.”*

The area of inundation does need to be determined and provided to supply reviewers with information to determine the extent of potential resource impacts which may be caused by this project. Other projects have developed an inundation study to determine impacts. The attempt to delay identification and study of the area of inundation until the Draft License Application is filed with FERC is not acceptable. The response of KHL is not accepted by this agency. Define your project so that there is little or no speculation about what will occur, how the project will be operated and provide correct studies for timely evaluation.

---

**From:** Cory Warnock  
**Sent:** Wednesday, June 12, 2013 10:17 AM  
**To:** Snow, Candice S (DNR)  
**Cc:** Emily Andersen  
**Subject:** RE: Bond

Perfect.

Thanks, Candice.

---

**From:** Snow, Candice S (DNR) [<mailto:candice.snow@alaska.gov>]  
**Sent:** Wednesday, June 12, 2013 10:17 AM  
**To:** Cory Warnock  
**Cc:** Emily Andersen  
**Subject:** RE: Bond

I mailed it last week, so you should be getting it any day. Please let me know if you don't receive it by the end of the week.

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Wednesday, June 12, 2013 8:01 AM  
**To:** Snow, Candice S (DNR)  
**Cc:** Emily Andersen  
**Subject:** FW: Bond

Hi Candice,

Per the email below, I'm assuming that you have everything you need to co-sign a copy of the permit and get back to us. Is this correct? If so, could you let me know when we might be seeing that co-signed copy?

Thanks,

Cory

---

**From:** Salzetti, Mikel [<mailto:MSalzetti@HomerElectric.com>]  
**Sent:** Wednesday, June 05, 2013 1:20 PM  
**To:** Snow, Candice S (DNR)  
**Cc:** Cory Warnock  
**Subject:** RE: Bond

Candice:

Attached is a scan of the Bond. I will put a hard copy in the mail tomorrow. Can you please confirm the mailing address for me?

Thanks,

Mike

---

**From:** Snow, Candice S (DNR) [<mailto:candice.snow@alaska.gov>]  
**Sent:** Wednesday, June 05, 2013 9:16 AM  
**To:** Salzetti, Mikel  
**Subject:** Bond

Good morning, I have received the permit and the annual fee but not the bond, is that on its way?

Thanks!



Candy Snow  
Natural Resource Specialist I  
907-269-8569  
[candice.snow@alaska.gov](mailto:candice.snow@alaska.gov)

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No virus found in this message.  
Checked by AVG - [www.avg.com](http://www.avg.com)  
Version: 2013.0.3343 / Virus Database: 3184/6378 - Release Date: 06/02/13

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No virus found in this message.  
Checked by AVG - [www.avg.com](http://www.avg.com)  
Version: 2013.0.3345 / Virus Database: 3199/6403 - Release Date: 06/11/13

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No virus found in this message.  
Checked by AVG - [www.avg.com](http://www.avg.com)  
Version: 2013.0.3345 / Virus Database: 3199/6403 - Release Date: 06/11/13

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**From:** Cory Warnock  
**Sent:** Wednesday, June 12, 2013 11:18 AM  
**To:** Emily Andersen  
**Subject:** FW: Bond  
**Attachments:** Signed Permit LAS 29076.pdf

FYI

---

**From:** Snow, Candice S (DNR) [<mailto:candice.snow@alaska.gov>]  
**Sent:** Wednesday, June 12, 2013 11:01 AM  
**To:** Salzetti, Mikel  
**Cc:** Cory Warnock  
**Subject:** RE: Bond

Good morning, just to be safe I have attached a signed copy of the permit.

---

**From:** Salzetti, Mikel [<mailto:MSalzetti@HomerElectric.com>]  
**Sent:** Wednesday, June 12, 2013 9:26 AM  
**To:** Snow, Candice S (DNR)  
**Cc:** Cory Warnock ([cory.warnock@mcmillen-llc.net](mailto:cory.warnock@mcmillen-llc.net))  
**Subject:** RE: Bond

Candice:

You mention that you have the permit below but for some reason, I cannot find record of having sent you the signed permit. I do have record of sending you the permit fee, the insurance certificate and the bond. Just in case you don't have a signed permit, I have included a signed copy of the permit. Could you please send me a counter signed permit. We plan to do this work on Monday and would like our field guys to have a copy of the signed permit in hand.

Thanks,

**Mike Salzetti**

Fuel Supply & Generation Engineering Manager  
(907) 283-2375 *work*  
(907) 398-5073 *Mobile*

---

**From:** Snow, Candice S (DNR) [<mailto:candice.snow@alaska.gov>]  
**Sent:** Wednesday, June 05, 2013 4:51 PM  
**To:** Salzetti, Mikel  
**Subject:** RE: Bond

550 W 7<sup>th</sup> Ave Ste 900c, Anchorage, AK 99501

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**From:** Salzetti, Mikel [<mailto:MSalzetti@HomerElectric.com>]  
**Sent:** Wednesday, June 05, 2013 4:50 PM  
**To:** Snow, Candice S (DNR)  
**Subject:** RE: Bond

Candice:

Can you provide the appropriate mailing address for sending the Bond?

Thanks,

Mike

---

**From:** Snow, Candice S (DNR) [<mailto:candice.snow@alaska.gov>]  
**Sent:** Wednesday, June 05, 2013 1:38 PM  
**To:** Salzetti, Mikel  
**Subject:** RE: Bond

Thanks.

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**From:** Salzetti, Mikel [<mailto:MSalzetti@HomerElectric.com>]  
**Sent:** Wednesday, June 05, 2013 12:20 PM  
**To:** Snow, Candice S (DNR)  
**Cc:** Cory Warnock ([cory.warnock@mcmillen-llc.net](mailto:cory.warnock@mcmillen-llc.net))  
**Subject:** RE: Bond

Candice:

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**Sent:** Wednesday, June 05, 2013 9:16 AM  
**To:** Salzetti, Mikel  
**Subject:** Bond

Good morning, I have received the permit and the annual fee but not the bond, is that on its way?

Thanks!



Candy Snow  
Natural Resource Specialist I  
907-269-8569  
[candice.snow@alaska.gov](mailto:candice.snow@alaska.gov)

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THE STATE  
of **ALASKA**  
GOVERNOR SEAN PARNELL

**Department of Natural Resources**

Division of Mining Land & Water  
Southcentral Region Land Office

550 West 7th Ave  
Anchorage, Alaska 99501  
Main: (907) 269-8552  
Fax: (907) 269-8913

**LAND USE PERMIT  
AS 38.05.850**

**PERMIT # LAS 29076**

Homer Electric Association herein known as the Permittee, is issued this permit authorizing the use of state land within:

**Legal Description:**

Section 6, of Township 004 North, Range 001 East, of the Seward Meridian.

**This permit is issued for the purpose of authorizing the following:**

Installation, maintenance, and use of one thermistor string for the purpose of monitoring water temperature and 10 depths.

This permit is effective beginning **June 1, 2013** and ending **October 31, 2015** unless sooner terminated at the state's discretion. This permit does not convey an interest in state land and as such is revocable immediately, with or without cause. No preference right for use or conveyance of the land is granted or implied by this authorization.

This permit is issued subject to the following:

- Payment of the annual use fee in the amount of \$ 100.00 due on or before the annual anniversary date and any additional fees identified in the stipulations below.
- Remittance of a Performance Guaranty in the amount of \$500.00 as required in the stipulations below.
- Proof of insurance as described in stipulations below.

The non-receipt of a courtesy billing notice does not relieve the permittee from the responsibility of paying fees on or before the due date.

All activities shall be conducted in accordance with the following stipulations:

1. **Authorized Officer:** The Authorized Officer for the Department of Natural Resources is the Regional Manager or designee. The Authorized Officer may be contacted at the address and phone number on the front of the authorization. The Authorized Officer reserves the right to modify these stipulations or use additional stipulations as deemed necessary. The permittee will be advised before any such modifications or additions are finalized.

2. **Indemnification:** Permittee assumes all responsibility, risk and liability for its activities and those of its employees, agents, contractors, subcontractors, licensees, or invitees, directly or indirectly related to this permit, including environmental and hazardous substance risk and liability, whether



accruing during or after the term of this permit. Permittee shall defend, indemnify, and hold harmless the State of Alaska, its agents and employees, from and against any and all suits, claims, actions, losses, costs, penalties, and damages of whatever kind or nature, including all attorney's fees and litigation costs, arising out of, in connection with, or incident to any act or omission by Permittee, its employees, agents, contractors, subcontractors, licensees, or invitees, unless the proximate cause of the injury or damage is the sole negligence or willful misconduct of the State or a person acting on the State's behalf. Within 15 days, Permittee shall accept any such cause, action or proceeding upon tender by the State. This indemnification shall survive the termination of the permit.

3. **Performance Guaranty:** The permittee shall provide a surety bond or other form of security acceptable to the Division in the amount of \$500.00 payable to the State of Alaska. A performance guaranty shall remain in effect for the term of this authorization and shall secure performance of the permittee's obligations hereunder. The amount of the performance guaranty may be adjusted by the Authorized Officer upon approval of amendments to this authorization, changes in the development plan, upon any change in the activities conducted or performance of operations conducted on the premises. If Permittee fails to perform the obligations under this permit within a reasonable time, the State may perform Permittee's obligations at Permittee's expense. Permittee agrees to pay within 20 days following demand, all costs and expenses reasonably incurred by the State of Alaska as a result of the permittee noncompliance with the terms of this permit. Failure to do so may result in the termination of an authorization and/or forfeiture of the performance guaranty. The provisions of this permit shall not prejudice the State's right to obtain a remedy under any law or regulation. If the authorized officer determines that the permittee has satisfied the terms and conditions of this authorization, including any required reports, the performance guaranty may be released. The performance guaranty may only be released in a writing signed by the Authorized Officer.

4. **Insurance:** The permittee shall secure or purchase at its own expense, and maintain in force at all times during the term of this permit, the following policies of insurance to protect both the permittee and the permittor (the State, its officers, agents and employees). If the permittee's policy contains higher limits, the State shall be entitled to coverage to the extent of such higher limits. Certificates of Insurance must be furnished to the Authorized Officer prior to the issuance of this permit and must provide for a notice of cancellation, non-renewal, or material change of conditions in accordance with policy provisions. The permittee must provide for a 60-day prior notice to the State before they cancel, not renew or make material changes to conditions to the policy. Failure to furnish satisfactory evidence of insurance, or lapse of the policy, are material breaches of this permit and shall be grounds, at the option of the State, for termination of the permit. All insurance policies shall comply with, and be issued by, insurers licensed to transact the business of insurance under Alaska Statute, Title 21. The policy shall be written on an "occurrence" form and shall not be written as a "claims-made" form unless specifically reviewed and agreed to by the Division of Risk Management, Department of Administration. The State must be named as an additional named insured on the policy with respect to the operations of the permittee on or in conjunction with the permitted premises, referred to as LAS 29076.

5. **Commercial General Liability Insurance:** Such policy shall have minimum coverage limits of \$300,000.00 combined single limit per occurrence.

6. Valid Existing Rights: This authorization is subject to all valid existing rights in and to the land. The State of Alaska makes no representations or warranties whatsoever, either expressed or implied, as to the existence, number, or nature of such valid existing rights.

7. Reservation of Rights: The Division reserves the right to grant additional authorizations to third parties for compatible uses on or adjacent to the land under this authorization.

8. Reservation of Rights: Authorized concurrent users of state land, their agents, employees, contractors, subcontractors, and licensees, shall not interfere with the operation or maintenance activities of each user.

9. Assignment: This permit may not be transferred or assigned to another individual or corporation.

10. Amendments: To conduct activities other than that in the approved plan of operations or development plan, the applicant must have prior authorization from the Authorized Officer. A map of the new location or an amended plan of operations or development plan is required.

11. Permit Extensions/Renewal: Any request for permit extension or renewal should be submitted at least 90 days prior to the end of the authorized term.

- If there have been and will be no changes to the approved development/operations plan, a statement certifying there have been and will be no changes, an application filing fee and a comprehensive set of photographs accurately depicting the site in its current condition (including existing improvements) will be accepted as a complete application.

- If there have been and/or will be changes in the development/operations plan, a new permit application package, application filing fee and photographs of improvements occupying the site will be required

12. Inspections: Authorized representatives of the State of Alaska shall have reasonable access to the subject parcel for purposes of inspection.

13. Inspections: The permittee may be charged fees under 11 AAC 05.010(a)(7)(M) for routine inspections of the subject parcel, inspections concerning non-compliance, and a final close-out inspection. Failure to submit any required completion reports may subject the permittee to inspection fees for a final field inspection.

14. Compliance with Governmental Requirements; Recovery of Costs: Permittee shall, at its expense, comply with all applicable laws, regulations, rules and orders, and the requirements and stipulations included in this authorization. Permittee shall ensure compliance by its employees, agents, contractors, subcontractors, licensees, or invitees.

15. Other Authorizations: The issuance of this authorization does not alleviate the necessity of the permittee to obtain authorizations required by other agencies for this activity.

16. Violations: This authorization is revocable immediately upon violation of any of its terms, conditions, stipulations, nonpayment of fees, or upon failure to comply with any other applicable laws, statutes and regulations (federal and state). Should any unlawful discharge, leakage, spillage,

emission, or pollution of any type occur due to permittee's, or its employees', agents', contractors', subcontractors', licensees', or invitees' act or omission, permittee, at its expense shall be obligated to clean the area to the reasonable satisfaction of the State of Alaska.

17. Violations: Pursuant to 11 AAC 96.145, a person who violates a provision of a permit issued under this chapter (11 AAC 96) is subject to any action available to the department for enforcement and remedies, including revocation of the permit, civil action for forcible entry and detainer, ejectment, trespass, damages, and associated costs, or arrest and prosecution for criminal trespass in the second degree. The department may seek damages available under a civil action, including restoration damages, compensatory damages, and treble damages under AS 09.45.730 or 09.45.735 for violations involving injuring or removing trees or shrubs, gathering geotechnical data, or taking mineral resources.

18. Violations: If a person responsible for an unremedied violation of 11 AAC 96 or a provision of a permit issued under this chapter (11 AAC 96) applies for a new authorization from the department under AS 38.05.035 or 38.05.850, the department may require the applicant to remedy the violation as a condition of the new authorization, or to begin remediation and provide security under 11 AAC 96.060 to complete the remediation before receiving the new authorization. If a person who applies for a new authorization under AS 38.05.035 or 38.05.850 has previously been responsible for a violation of this chapter or a provision of a permit issued under this chapter, whether remedied or unremedied, that resulted in substantial damage to the environment or to the public, the department will consider that violation in determining the amount of the security to be furnished under 11 AAC 96.060 and may require the applicant to furnish three times the security that would otherwise be required.

19. Development Plan/Plan of Operations: The development of the site authorized by this permit shall be limited to the area and improvements specified in the attached development plan/plan of operations or subsequent modifications approved by the Authorized Officer. The permittee is responsible for accurately siting development and operations within this area. Any proposed revisions to the development plan/plan of operations must be approved in writing by the Authorized Officer before the change in use or development occurs.

20. Alaska Historic Preservation Act: The permittee shall consult the Alaska Heritage Resources Survey (907) 269-8721 so that known historic, archaeological and paleontological sites may be avoided.

The Alaska Historic Preservation Act (AS 41.35.200) prohibits the appropriation, excavation, removal, injury, or destruction of any state-owned historic, prehistoric (paleontological) or archaeological site without a permit from the commissioner. Should any sites be discovered during the course of field operations, activities that may damage the site will cease and the Office of History and Archaeology in the Division of Parks and Outdoor Recreation (907) 269-8721 and shall be notified immediately.

21. Public Trust Doctrine: The Public Trust Doctrine guarantees public access to, and the public right to use, navigable and public waters and the land beneath them for navigation, commerce, fishing, and other purposes. This authorization is issued subject to the principles of the Public Trust Doctrine regarding navigable or public waters. The Division of Mining, Land and Water reserves the right to grant other interests consistent with the Public Trust Doctrine.

22. Public Access: The Permittee shall not close landing areas or trails. The ability of all users to use or access state land or public water must not be restricted in any manner.

23. Site Restoration: On or before permit expiration, or termination of this authorization by the Permittee, the site shall be vacated and all improvements, personal property, and other chattels shall be removed. In the event Permittee fails to comply with this requirement, the State, at its discretion, may remove and dispose of improvements and restore the site at the expense of Permittee.

24. Fire Prevention, Protection, and Liability: The permittee shall take all reasonable precautions to prevent and suppress forest, brush, and grass fires and shall assume full liability for any damages to state land resulting from the negligent use of fire.

25. Fire Prevention, Protection, and Liability: The State of Alaska is not liable for damage to the permittee's personal property and is not responsible for forest fire protection of the permittee's activity.

26. General Operation of Vehicles: Vehicles shall be operated without disturbing the vegetative mat and underlying substrate.

27. General Operation of Vehicles: Vehicular travel is restricted to existing roads and trails. The lessee/permittee must obtain a permit from the Division of Land for any off road vehicular travel with the exception of generally authorized vehicles.

28. Wastewater Disposal: All greywater and human waste must be disposed of in a pit, or containment which can easily be transported and disposed of at a DEC approved disposal site. If a pit is used, it must be located at least 100 feet from the ordinary high water mark or any water body, limed and back-filled on or before permit expiration.

29. Solid Waste: All solid waste and debris generated from the activities conducted under this authorization shall be removed to a facility approved by the ADEC prior to the expiration, completion, or termination of the authorization or activities.

30. Improvements: Any improvements/structures that may be authorized under this permit must be constructed in a manner that will allow for removal from the permitted site within 48 hours of receiving a notice to vacate. The establishment of permanent foundations and structures is prohibited under this permit.

31. Authorized Use of Improvements: Any use of these improvements for purposes other than those explicitly authorized by this permit are prohibited.

32. Site Disturbance : (a) Site disturbance shall be kept to a minimum to protect local habitats. All activities at the site shall be conducted in a manner that will minimize the disturbance of soil and vegetation and changes in the character of natural drainage systems. Additionally, any ground disturbances which may have occurred shall be contoured to blend with the natural topography to protect human and wildlife health and safety. Particular attentions must be paid to prevent pollution and siltation of streams, lakes, ponds, waterholes seeps and marshes, and disturbances to fish and wildlife populations and habitats.

(b) Brush clearing is allowed, but should be kept to the minimum necessary to set up the camp. Removal or destruction of the vegetative mat is not authorized under this permit.

(c) Establishment of or improvements to landing areas (i.e. leveling the ground or removing or modifying a substantial amount of vegetation) is prohibited.

33. Timber Use: The permittee may use dead and down timber, but shall not cut standing timber on the premises unless specifically authorized by the DNR, Division of Forestry.

34. Permit Term: Expiration and effective dates of use authorized by a permit shall not extend beyond the seasonal use necessary to support the activity.

35. Sitting: Improvements must be sited in a manner which impacts the least amount of ground consistent with the purpose of the facility, and shall be consolidated on no more than one acre of land unless additional acreage has been explicitly approved in writing.

36. Completion Report: (a) Permit Expiration or Termination by the State of Alaska: A completion report shall be submitted to DNR within the 30 day period following permit expiration, or termination of this permit by the State of Alaska. The report must include a statement and photographs verifying that the site was vacated and restored to a clean, safe condition.

(b) Termination by the Permittee: A completion report must accompany the permittee's written request to terminate this permit. The report must include a statement and photographs verifying that the site was vacated and restored to a clean, safe condition.

37. Hazardous Substances: The use and/or storage of hazardous substances by the permittee must be done in accordance with existing federal, state and local laws, regulations and ordinances. Debris (such as soil) contaminated with used motor oil, solvents, or other chemicals may be classified as a hazardous substance and must be removed and disposed of in accordance with existing federal, state and local laws, regulations and ordinances.

38. Spill Notification: The lessee or permittee shall immediately notify DEC by telephone, and immediately afterwards send DEC a written notice by facsimile, hand delivery, or first class mail, informing DEC of: any unauthorized discharges of oil to water, any discharge of hazardous substances other than oil; and any discharge or cumulative discharge of oil greater than 55 gallons solely to land and outside an impermeable containment area. If a discharge, including a cumulative discharge, of oil is greater than 10 gallons but less than 55 gallons, or a discharge of oil greater than 55 gallons is made to an impermeable secondary containment area, the lessee or permittee shall report the discharge within 48 hours, and immediately afterwards send DEC a written notice by facsimile, hand delivery, or first class mail. Any discharge of oil, including a cumulative discharge, solely to land greater than one gallon up to 10 gallons must be reported in writing on a monthly basis. The posting of information requirements of 18 AAC75.305 shall be met. The provisions of 18 AAC 75.310 (Scope and Duration of Initial Response Actions) and other reporting requirements of 18 AAC 75.300 – 18 AAC 75.396 also apply.

The lessee or permittee shall supply DEC with all follow-up incident reports. Notification of a discharge must be made to the nearest DEC Area Response Team during working hours: Anchorage (907) 269-7500, fax (907) 269-7648; Fairbanks (907) 451-2121, fax (907) 451-

2362; Juneau (907) 465-5340, fax (907) 465-2237. The DEC oil spill report number outside normal business hours is (800) 478-9300.

All fires and explosions must also be reported. The DNR 24 hour report number is (907) 451-2678; the fax number is (907) 451-2751. DNR or the appropriate land manager and DEC shall be supplied with all follow-up incident reports.

The Authorized Officer reserves the right to modify these stipulations or use additional stipulations as deemed necessary. The permittee will be advised before any such modifications or additions are finalized. DNR has the authority to implement and enforce these conditions under AS 38.05.850. Any correspondence on this permit may be directed to the Department of Natural Resources, Division of Mining, Land and Water, Southcentral Region Land Office, 550 West 7th Ave, Anchorage, AK 99501, (907) 269-8552.

I have read and understand all of the foregoing and attached stipulations. By signing this permit, I agree to conduct the authorized activity in accordance with the terms and conditions of this permit.

<u>Mikel Salzetti</u>		<u>Fuel Supply &amp; Generation Engineering Manager</u>		<u>5/24/2013</u>
Signature of Permittee or Authorized Representative		Title		Date
<u>280 Airport Way</u>	<u>Kenai</u>	<u>Alaska</u>	<u>99611</u>	
Permittee's Address	City	State	Zip	
<u>Mikel Salzetti</u>	<u>(907) 398-5073</u>	<u>(907) 283-2375</u>		
Contact Person	Cell - Home Phone	Work Phone		
<u>[Signature]</u>	<u>NRMT</u>	<u>6-5-13</u>		
Signature of Authorized State Representative		Title		Date

# Grant Lake Hydroelectric Project (FERC No. 13212) Licensing

## Consultation Record

### Phone/E-mail /One on One Meeting Log

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*Contact Name:* Ken Hogan

*Agency/Organization:* FERC

*Phone No./E-mail Address:* (202) 502-8434/kenneth.hogan@ferc.gov

*Date:* 6/13/13

*Time:* 12:00 PST

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*Grant Lake Licensing Team Contact:* Cory Warnock

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#### *Summary of Conversation and/or E-mail Exchange:*

Mr. Warnock called Ken Hogan to discuss 3 separate items:

1. Mr. Warnock and Mr. Hogan discussed a pending mining claim associated with the Falls Creek drainage on behalf of White Rock Mining (WRM). WRM had called HEA asking about the current status of the Falls Creek proposal. HEA explained that that particular Preliminary Permit had been surrendered. WRM was curious who the appropriate contact was at FERC for the Bureau of Land Management (BLM) to contact to confirm that FERC had formally noted that the Falls Creek Permit was surrendered. Mr. Hogan said the best approach was for the BLM to send a letter to the Secretary inquiring about the status of the permit and requesting that it formally be noticed.
2. Mr. Warnock discussed the potential/pending Kenai Peninsula Borough ordinance that would prohibit development within 50ft. of streams with anadromous presence. He inquired about the potential for this ordinance to not apply to the Grant Lake Project given the FERC Preliminary Permit was in effect long before any such ordinance was formalized. Mr. Hogan explained that the federal Preliminary Permit would likely make the ordinance void and even in instances where an ordinance like this one was in effect prior to a permit being approved, FERC has the authority to declare the power of eminent domain over the area which would exclude the Project from the ordinance. Mr. Warnock stated that at this time, he didn't think any action would be necessary since the KPB had

expressed the desire to work with HEA in an effort to allow for the proposed infrastructure. He thanked Mr. Hogan for the information and said he'd be in touch if additional follow-up was needed.

3. Mr. Warnock explained that he'd received a set of informal comments from the Alaska Department of Fish and Game (ADF&G) on June 11, 2013 related to the set of natural resource study plans for the Grant Lake Project that were finalized and filed with FERC in March 2013. He reminded Mr. Hogan of the history of the Project and that a meeting took place on December 12, 2012 during which, a 2<sup>nd</sup> round of informal comments were requested from Stakeholders by February 1<sup>st</sup>. Comments were received and although not required per the Traditional Licensing Process (TLP), many of them were incorporated into the study plans before finalizing and filing with FERC. Mr. Warnock explained that since finalizing, much collaboration had taken place with the Stakeholders related to permitting, logistics, scheduling and technical details. He also explained that per the final plans, field work has been ongoing since late March and these comments were over 4 ½ months past expectation related to any sort of incorporation into plans and associated study techniques. Mr. Warnock explained that he respected the efforts and intent of the comments from ADF&G and intended on responding to all of them and incorporating updates on study efforts to date into the responses which may assist in clarification of certain comments. He explained that he'd create a matrix to respond and would incorporate a cover letter describing HEA's approach with these particular comments as well as document the chronology of proactive and communicative events that had led to HEA's current status. He stated that he intended to respond to ADF&G directly as well as file the package with FERC. Mr. Hogan concurred that this sounded like an appropriate approach.

Call Duration: 30 minutes.



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**From:** Cory Warnock  
**Sent:** Friday, June 14, 2013 9:28 AM  
**To:** Tom Harkreader  
**Cc:** Mike Salzetti  
**Subject:** RE: Grant Lake Project Boundary Clarification for BLM

Hi Tom,

My apologies for taking so long to get back to you. I just heard back from our contact at FERC. I explained the situation as it relates to Falls Creek and your interest in a mining claim in the area. He is currently checking with an associate on the current status at Falls Creek. Essentially what happens when an entity asks for and receives approval to explore hydro on a site is that FERC issues a "Section 24 Land Reserve" on the defined area which basically means that no other entity has priority on exploring the area for infrastructural reasons. As you know, HEA no longer has interest in this particular area and has surrendered their Falls Creek Preliminary Permit. If, through discussion with his associate, it turns out that Section 24 has already been lifted for Falls Creek, then the BLM should be ok to authorize your claim. If the reserve has not been lifted yet, BLM would need to send a letter to FERC "Seeking concurrence that the Section 24 status for Falls Creek be lifted due to the fact that the Preliminary Permit has been surrendered and there is a pending mining claim that the BLM would like to process". My suggestion to you (and the BLM) would be for you to relay this to the appropriate folks at the BLM and have them draft the letter and send it in. This would ensure that things were moving forward and likely do the most to expedite your process. If you or the BLM would like a little additional text citing the chronology of events as it relates to the Falls Creek Preliminary Permit, let me know and I can get you something.

The letter should be addressed to:

Secretary Kimberly D. Bose  
Federal Energy Regulatory Commission Attn: DHAC, PJ-  
12.2  
888 First Street, NE  
Washington, DC 20426

\*Please Cc both Ken Hogan and Henry Woo (both at FERC)

Hopefully this helps and if you have any further questions or needs, don't hesitate to let me know.

Cory

***Cory Warnock***  
*Senior Licensing and Regulatory Consultant*

McMillen, LLC  
[www.mcmillen-llc.com](http://www.mcmillen-llc.com)  
5771 Applegrove Ln.  
Ferndale, Wa. 98248  
O – 360-384-2662  
C – 360-739-0187  
F – 360-542-2264

**From:** Tom Harkreader [<mailto:tomharkreader@gmail.com>]  
**Sent:** Wednesday, May 15, 2013 8:29 PM  
**To:** Cory Warnock  
**Subject:** Re: Grant Lake Project Boundary Clarification for BLM

Cory  
Thankyou for looking into the matter for us any help would be great,  
My mining partner Paul Torgerson maybe in contact with you down the line  
as he is heading up our project and I will be out of State later this summer  
Tom  
White Rock Mining

On Tue, May 14, 2013 at 9:02 AM, Cory Warnock <[cory.warnock@mcmillen-llc.net](mailto:cory.warnock@mcmillen-llc.net)> wrote:

Hi Tom,

My name is Cory Warnock. I'm the consulting project manager for the licensing and natural resources components of the proposed Grant Lake Hydro Project. Mike Salzetti and I have been talking about your concerns related to the changes in project boundary since 2010 and making sure (for your benefit) that the appropriate folks at the BLM were adequately informed. I wanted to let you know that I'm working on this and have a couple messages into our FERC representative. As soon as I hear from him and inform him a bit on the situation, I will get you the appropriate contact information for you to share with your contacts at the BLM.

In the meantime, if you have any questions or concerns, don't hesitate to let me know.

Thanks,

Cory

***Cory Warnock***

*Senior Licensing and Regulatory Consultant*

McMillen, LLC

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**From:** Cory Warnock  
**Sent:** Friday, June 14, 2013 1:26 PM  
**To:** tomharkreader@gmail.com  
**Cc:** Mike Salzetti  
**Subject:** FW: Section 24 reserve for P-13211 Fall Creek project

Hi Tom,

Below is confirmation that FERC has not vacated the Section 24. Per my earlier email, the best thing to do would be to have the BLM send the letter to FERC.

Let me know if you have any questions,

Cory

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**From:** Kenneth Hogan [<mailto:kenneth.hogan@ferc.gov>]  
**Sent:** Friday, June 14, 2013 1:17 PM  
**To:** Cory Warnock  
**Subject:** FW: Section 24 reserve for P-13211 Fall Creek project

FYI

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**From:** Henry Woo [<mailto:henry.woo@ferc.gov>]  
**Sent:** Friday, June 14, 2013 3:34 PM  
**To:** Kenneth Hogan  
**Subject:** RE: Section 24 reserve for P-13211 Fall Creek project

I don't have anything showing that we vacated the withdrawal. BLM can send a letter requesting that we vacate the withdrawal if they wish.

**From:** Kenneth Hogan [<mailto:kenneth.hogan@ferc.gov>]  
**Sent:** Friday, June 14, 2013 7:35 AM  
**To:** Henry Woo  
**Cc:** Cory Warnock  
**Subject:** Section 24 reserve for P-13211 Fall Creek project

Henry,

Can you tell me if then Section 24 land withdrawal was rescinded for the Fall Creek project? The preliminary permit was surrendered (I think in 2009). BLM now has a mining claim request for a site within the withdrawal and BLM is attempting to figure out if they can simply move forward or if they need to seek our concurrence. I didn't see any issuance in eLibrary under the permit' docket.

Thanks,

Ken

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**From:** Salzetti, Mikel <MSalzetti@HomerElectric.com>  
**Sent:** Monday, June 17, 2013 11:02 AM  
**To:** Grant Lake Mining  
**Cc:** 'Tom Harkreader '; Cory Warnock  
**Subject:** RE: 2nd FERC Preliminary Permit Boundaries for the Proposed Grant Lake Hydro Electric Project  
**Attachments:** RE Grant Lake Project Boundary Clarification for BLM

Paul:

It was nice meeting you in person as well.

I want to make sure that you understand that the Grant Lake Hydro Electric project is still in the licensing process and that there is no guarantee that the project will be licensed and constructed. Additionally, Homer Electric Associations Certificate of Public Convenience and Need does not currently allow us to serve customers in this area. The Moose Pass Area has traditionally been served by either the City of Seward or Chugach Electric Association. If the location of your proposed mine falls within one of the currently established utility boundaries you will need to apply with that utility for service. If your proposed mine is outside of a current electric utility service territory and the Grant Lake Project is licensed and constructed within a timeframe that is commensurate with your construction schedule then we could discuss the possibilities of serving your facility. This will require an official request for service and the formal engineering that accompanies that process. If the Grant Lake Hydro Electric project is licensed and constructed, HEA would be interested in working cooperatively with White Rock Mining and any other electric utility involved to discuss solutions to best serve your proposed mining facilities.

Since Tom is outside, I have attached an email that was recently sent to Tom regarding Grant Lake Project boundary clarifications.

A copy of our second Preliminary Permit Application can be found on our web site at [kenaihydro.com](http://www.kenaihydro.com). Here is a direct link:

[http://www.kenaihydro.com/documents/documents/GrantLake\\_P-13212\\_PreliminaryPermitApplicationNo2.pdf](http://www.kenaihydro.com/documents/documents/GrantLake_P-13212_PreliminaryPermitApplicationNo2.pdf)

I wish White Rock Mining success in developing their mining project,

**Mike Salzetti**

Fuel Supply & Generation Engineering Manager

(907) 283-2375 *work*

(907) 398-5073 *Mobile*

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**From:** Grant Lake Mining [<mailto:paul@grantlakemining.com>]  
**Sent:** Sunday, June 16, 2013 12:13 PM  
**To:** Salzetti, Mikel  
**Cc:** 'Tom Harkreader '

**Subject:** FW: 2nd FERC Preliminary Permit Boundaries for the Proposed Grant Lake Hydro Electric Project  
**Importance:** High

Mike,

It was very nice speaking with you in person at Trail Lake last week. As you know I wear two hats in this venture; one as a partner in the White Rock claim group and a second as the President of the mining entity being formed to identify, extract, process and export the minerals from the property on a commercial basis.

It was very encouraging to hear that Homer Electric will be able to supply my mining company's proposed milling plant on Grant Lake with more power than just the 2.5 MW base load produced by the new Hydro on Grant Creek. Your comment gives me much greater flexibility in mill design. It also gives impetus to expanding my core drilling program and mining plan once the issue of staking additional claims above your 700' msl project boundary on Lark Mountain are resolved.

As you may know, my partner in the White Rock Claim Group on Grant Lake -- Tom Harkreader -- is going outside for the remainder of the year so I will be dealing with all issues involving our claim group including staking additional claims needed to complete our mining program. Please direct all comments to me with copy to Tom Harkreader as you deem appropriate.

As a deliverable, would you please send me a complete pdf copy of the Kenai Hydro, LLC, Preliminary Permit Application dated October 2011? Please feel free to contact me with any questions or comments. I look forward to your response and too working with Homer Electric over the coming years.

Very Best Regards,

Paul Torgerson  
(865) 803-1416  
[paul@grantlakemining.com](mailto:paul@grantlakemining.com)

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**From:** Tom Harkreader [<mailto:tomharkreader@yahoo.com>]  
**Sent:** Friday, June 14, 2013 11:24 PM  
**To:** [paul@wespeak.net](mailto:paul@wespeak.net)  
**Subject:** Fw: 2nd FERC Preliminary Permit Boundaries for the Proposed Grant Lake Hydro Electric Project

----- Forwarded Message -----

**From:** "Salzetti, Mikel" <[MSalzetti@HomerElectric.com](mailto:MSalzetti@HomerElectric.com)>  
**To:** Tom Harkreader <[tomharkreader@yahoo.com](mailto:tomharkreader@yahoo.com)>  
**Cc:** "Cory Warnock" ([cory.warnock@mcmillen-llc.com](mailto:cory.warnock@mcmillen-llc.com))" <[cory.warnock@mcmillen-llc.com](mailto:cory.warnock@mcmillen-llc.com)>  
**Sent:** Friday, January 25, 2013 9:25 AM  
**Subject:** 2nd FERC Preliminary Permit Boundaries for the Proposed Grant Lake Hydro Electric Project

Tom:

Attached are the Grant Lake project boundaries as approved in the 2<sup>nd</sup> FERC Preliminary Permit for the proposed Grant Lake Hydro Electric Project.

Regards,

**Mike Salzetti**

Fuel Supply & Generation Engineering Manager

(907) 283-2375 *work*

(907) 398-5073 *Mobile*

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**From:** Cory Warnock  
**Sent:** Friday, June 21, 2013 11:36 AM  
**To:** Ayers, Scott D (DFG)  
**Subject:** RE: Fish Resource Permit SF2013-105 (Grant Creek Amendment Request)

To be safe, we would like to have the capability of tagging Dolly Varden about mid-August. We will probably start looking at Dolly Varden as they follow the anadromous spawners in August. However, we probably will not tag until September or October when site specific literature suggests most Dolly Varden are spawning in the Kenai. To be clear, our intent is not to tag that early (mid-August) but to get a reference as we start looking at the fish during that time.

Thanks, Scott and let me know if you need anything else,

Cory

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**From:** Ayers, Scott D (DFG) [<mailto:scott.ayers@alaska.gov>]  
**Sent:** Friday, June 21, 2013 10:19 AM  
**To:** Cory Warnock  
**Subject:** RE: Fish Resource Permit SF2013-105 (Grant Creek Amendment Request)

Cory,

Glad to help. Are you planning to put these tags out in fish returning to spawn, as suggested in the study plan? And, if so, are you planning to do so in September as suggested in the text? Or do you plan to tag fish throughout the course of the summer? Again, I'm looking for background materials to take to Robert and I want to be sure we're all on the same page.

Cheers,  
-Scott

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Friday, June 21, 2013 9:13 AM  
**To:** Ayers, Scott D (DFG)  
**Subject:** RE: Fish Resource Permit SF2013-105 (Grant Creek Amendment Request)

Hi Scott,

As always, I really appreciate your quick responses.

Please see the attached, final study plan. At the bottom of pg. 17 we discuss the proposed tagging of up to 10 Dolly Varden over the course of our 2013 work. I think the surrounding text should be sufficient background but if you need more, don't hesitate to let me know.

Thanks, Scott.

Cory

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**From:** Ayers, Scott D (DFG) [<mailto:scott.ayers@alaska.gov>]  
**Sent:** Friday, June 21, 2013 10:05 AM

**To:** Cory Warnock  
**Subject:** RE: Fish Resource Permit SF2013-105 (Grant Creek Amendment Request)

Good morning Cory,

You are correct that I am still waiting to hear back from Robert. I am more than happy to forward this additional request to him for to review, however I would imagine that he would like some background information on why you are looking to tag these Dolly Varden as it was not in the initial study plan. I'll hold off on sending this request until I hear back from you on this.

Wishing you well,  
-Scott

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**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Friday, June 21, 2013 8:41 AM  
**To:** Ayers, Scott D (DFG)  
**Subject:** RE: Fish Resource Permit SF2013-105 (Grant Creek Amendment Request)

Hi Scott,

As you are waiting to hear back from Robert, I was talking to my folks on the ground and they are also wondering if they can receive permission to tag a few (up to 10) Dolly Varden if and when they are captured at the weir. This isn't as pressing of an issue as the extension for rainbow but if they can be amended synonymously, that might make things more efficient.

Thanks,

Cory

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**From:** Ayers, Scott D (DFG) [<mailto:scott.ayers@alaska.gov>]  
**Sent:** Wednesday, June 19, 2013 12:41 PM  
**To:** Cory Warnock  
**Cc:** 'Mark Miller ([mark.miller@bioanalysts.net](mailto:mark.miller@bioanalysts.net))'; John Stevenson; Denny Snyder ([denny.snyder@bioanalysts.net](mailto:denny.snyder@bioanalysts.net))  
**Subject:** RE: Fish Resource Permit SF2013-105 (Grant Creek Amendment Request)

Cory,  
I'm glad to hear that things are going well with the project. I have forwarded your request to the Area Management Biologist, Robert Begich, for his comment, and will be in contact as soon as I have more information.  
Cheers,  
-Scott

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Wednesday, June 19, 2013 11:36 AM  
**To:** Ayers, Scott D (DFG)  
**Cc:** 'Mark Miller ([mark.miller@bioanalysts.net](mailto:mark.miller@bioanalysts.net))'; John Stevenson; Denny Snyder ([denny.snyder@bioanalysts.net](mailto:denny.snyder@bioanalysts.net))  
**Subject:** Fish Resource Permit SF2013-105 (Grant Creek Amendment Request)

Hi Scott,

Our fieldwork at Grant Creek is moving along nicely and we are beginning to see some rainbow trout moving up Grant Creek. Very recently, we have tagged five that are of the allowable size (over 300mm). Based upon what we are seeing relative to fish movement and flows in the creek, we are concerned that the current stipulation that requires us



to stop tagging rainbow at the end of June will prohibit us from tagging a bulk of the fish that, based upon past data, should be moving up the stream relatively soon. With that, would it be possible for the Fish Resource Permit to be amended to allow for continued tagging of rainbow through the month of July (preferred) or at a minimum, for the first 15 days of July?

Your thoughts would be appreciated.

Thanks,

Cory

**Cory Warnock**

*Senior Licensing and Regulatory Consultant*

McMillen, LLC

[www.mcmillen-llc.com](http://www.mcmillen-llc.com)

5771 Applegrove Ln.

Ferndale, Wa. 98248

O – 360-384-2662

C – 360-739-0187

F – 360-542-2264

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**From:** Cory Warnock  
**Sent:** Friday, June 21, 2013 12:41 PM  
**To:** Van Massenhove, Katherine B -FS  
**Cc:** Emily Andersen; Mike Salzetti  
**Subject:** RE: Grant Lake Special Use Permit Amendment, Cultural Resource Studies

Sounds great.

Thanks, Kathy.

---

**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]  
**Sent:** Friday, June 21, 2013 12:41 PM  
**To:** Cory Warnock  
**Cc:** Emily Andersen  
**Subject:** RE: Grant Lake Special Use Permit Amendment, Cultural Resource Studies

Hi Cory,  
Thanks for checking in, and the update on the cultural survey work. I do plan to have the amendment to you sometime next week for signature.

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

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**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Friday, June 21, 2013 8:51 AM  
**To:** Van Massenhove, Katherine B -FS  
**Cc:** Emily Andersen  
**Subject:** RE: Grant Lake Special Use Permit Amendment, Cultural Resource Studies

Hi Kathy,

Just checking in to give you an update and check on the status of things. Mike Yarborough and his crew are currently finishing up their 10 day stint at the lake. Sounds like all went very well.

Wondering if there have been any updates on the status of the second amendment (wetlands work). No pressure at all, just doing what my outlook calendar tells me to do ☺. Our plan is still the same; conduct the wetlands work at the lake between mid and late July.

Thanks, hope all is well,

Cory

---

**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]  
**Sent:** Wednesday, May 29, 2013 3:58 PM

**To:** Cory Warnock

**Subject:** RE: Grant Lake Special Use Permit Amendment, Cultural Resource Studies

Yes, that's correct, amendment 3 will come to you sometime after June 15<sup>th</sup> for the wetlands study.  
Thanks,

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

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**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]

**Sent:** Wednesday, May 29, 2013 2:53 PM

**To:** Van Massenhove, Katherine B -FS

**Cc:** Mike Salzetti ([msalzetti@HomerElectric.com](mailto:msalzetti@HomerElectric.com))

**Subject:** RE: Grant Lake Special Use Permit Amendment, Cultural Resource Studies

Thanks, Kathy.

I'm sure Mike will review and return a signed copy to you soon.

Just to confirm, we should still expect another amendment associated with the wetlands work at the lake sometime after June 15<sup>th</sup>, correct?

Again, thanks.

Cory

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**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]

**Sent:** Wednesday, May 29, 2013 3:09 PM

**To:** Cory Warnock

**Cc:** Mike Salzetti ([msalzetti@HomerElectric.com](mailto:msalzetti@HomerElectric.com))

**Subject:** Grant Lake Special Use Permit Amendment, Cultural Resource Studies

Hi Cory,

Attached is the permit amendment for the cultural resource survey work being conducted by Cultural Resource Consultants, LLC. Please keep in mind, the amendment is only valid for work completed by CRC, LLC. as spelled out in the Cultural Study Plan, and if there is a change in plans either in the consulting firm used, or a change in the methodology spelled out in the Cultural Study Plan, these changes would need to be submitted to the Forest Service so that we could evaluate the new firm or methodology to be certain it meets FS standards.

Thanks,

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

---

**From:** Cory Warnock  
**Sent:** Monday, June 24, 2013 6:25 PM  
**To:** Emily Andersen  
**Subject:** Fwd: AMENDMENT 4: Fish Resource Permit SF2013-105 (Salzetti/Homer Electric-grant creek/trail lake narrows-local species)  
**Attachments:** SF2013-105d-amendment4 Signed.pdf; ATT00001.htm

FYI

Cory

Begin forwarded message:

**From:** "Salzetti, Mikel" <[MSalzetti@HomerElectric.com](mailto:MSalzetti@HomerElectric.com)>  
**Date:** June 24, 2013, 4:31:34 PM AKDT  
**To:** "Ayers, Scott D (DFG)" <[scott.ayers@alaska.gov](mailto:scott.ayers@alaska.gov)>, Cory Warnock <[cory.warnock@mcmillen-llc.net](mailto:cory.warnock@mcmillen-llc.net)>  
**Cc:** 'Mark Miller' <[mark.miller@bioanalysts.net](mailto:mark.miller@bioanalysts.net)>, "John Stevenson" (<[john.stevenson@bioanalysts.net](mailto:john.stevenson@bioanalysts.net)>)" <[john.stevenson@bioanalysts.net](mailto:john.stevenson@bioanalysts.net)>, Denny Snyder <[denny.snyder@bioanalysts.net](mailto:denny.snyder@bioanalysts.net)>, "Begich, Robert N (DFG)" <[robert.begich@alaska.gov](mailto:robert.begich@alaska.gov)>, "Pawluk, Jason A (DFG)" <[jason.pawluk@alaska.gov](mailto:jason.pawluk@alaska.gov)>, "Lewis, Bert A (DFG)" <[bert.lewis@alaska.gov](mailto:bert.lewis@alaska.gov)>, "Litchfield, Virginia P (DFG)" <[ginny.litchfield@alaska.gov](mailto:ginny.litchfield@alaska.gov)>, "Daigneault, Michael J (DFG)" <[michael.daigneault@alaska.gov](mailto:michael.daigneault@alaska.gov)>  
**Subject:** RE: AMENDMENT 4: Fish Resource Permit SF2013-105 (Salzetti/Homer Electric-grant creek/trail lake narrows-local species)

Attached is a signed copy.

---

**From:** Ayers, Scott D (DFG) [<mailto:scott.ayers@alaska.gov>]  
**Sent:** Monday, June 24, 2013 4:01 PM  
**To:** Cory Warnock; Salzetti, Mikel  
**Cc:** 'Mark Miller; John Stevenson' (<[john.stevenson@bioanalysts.net](mailto:john.stevenson@bioanalysts.net)>); Denny Snyder; Begich, Robert N (DFG); Pawluk, Jason A (DFG); Lewis, Bert A (DFG); Litchfield, Virginia P (DFG); Daigneault, Michael J (DFG)  
**Subject:** AMENDMENT 4: Fish Resource Permit SF2013-105 (Salzetti/Homer Electric-grant creek/trail lake narrows-local species)

Mr. Salzetti,

Please see the attached amendment to your Fish Resource Permit SF2013-105, which extends the date range for your rainbow trout radio tagging operations and also adds a Dolly Varden tagging component. Please note that all other conditions in the permit remain in effect, and that a signed copy of this, and all amendments, must be attached to a signed copy of the original permit.

Thank you,

-Scott

Scott D Ayers  
Fish Resource Permit Program Coordinator  
Alaska Department of Fish and Game  
Division of Sport Fish  
333 Raspberry Road  
Anchorage, AK 99518



STATE OF ALASKA  
DEPARTMENT OF FISH AND GAME-SPORT FISH  
P.O. BOX 115525  
JUNEAU, ALASKA 99811-5525

**FISH RESOURCE PERMIT AMENDMENT #4**

**Permit No. SF2013-105**

Permit Issued To: **Mike Salzetti** (signature required below for permit validation)

**This amendment of Fish Resource Permit SF2013-105:**

- 1) **under Final Disposition:** changes the allowable date range of rainbow trout radio-tagging:

From: March 25 – June 30

To: March 25 – July 15

- 2) **under Final Disposition:** adds the following:

≤10 Dolly Varden >300 mm may be marked with surgically implanted radio tags, and released alive between August 15 and October 30. These fish must also be tagged with an external tag.

**All other conditions specified in Fish Resource Permit SF2013-105 remain in effect.**

***This amendment must be attached to the original permit.***

  
\_\_\_\_\_  
Division of Sport Fish

6/24/2013  
\_\_\_\_\_  
Date

**PERMIT AMENDMENT VALIDATION requires permittee's signature agreeing to abide by conditions of this permit amendment:**

  
\_\_\_\_\_  
Signature of Permittee

cc: Robert Begich, Division of Sport Fish, Soldotna  
Jason Pawluk, Division of Sport Fish, Soldotna  
Bert Lewis, Division of Commercial Fisheries, Anchorage  
Ginny Litchfield, Division of Habitat, Soldotna  
Mike Daigneault, Division of Habitat, Anchorage  
Fish and Wildlife Protection, Soldotna

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**From:** Kathryn Beck <calypso@openaccess.org>  
**Sent:** Wednesday, June 26, 2013 4:52 PM  
**To:** 'Charnon, Betty -FS'  
**Cc:** Cory Warnock; Emily Andersen  
**Subject:** Grant Lake Pre-field Review  
**Attachments:** Prefield\_Review\_Grant Lake 2013.doc

Betty – Nice to check in with you about Sensitive plants for the Grant Lake Project.  
Attached here is the Pre-field Review for the Sensitive plant survey there.  
I appreciate you getting me information about invasive plants in the area.  
Thanks, Katy

~~~~~  
Kathryn Beck  
Beck Botanical Services  
1708 McKenzie Ave.  
Bellingham, WA 98225  
360-671-6913 office  
360-305-0654 cell  
[calypso@openaccess.org](mailto:calypso@openaccess.org)  
~~~~~

**PRE-FIELD REVIEW WORKSHEET FOR SENSITIVE PLANTS**  
**Biological Evaluation for Sensitive Plants**  
**USDA Forest Service, Alaska Region (Revised Feb. 2009)**

In some cases this document can serve as a Biological Evaluation (BE)

**PROJECT NAME** (from Project Initiation Form, insert here): Grant Lake Project (FERC No. 13212)

**PROJECT DESCRIPTION** (from Project Initiation Form, include description of vegetation types, insert here):

Diversion dam at the outlet of Grant Lake, Kenai Hydro, LLC

**LOCATION** (from Project Initiation Form, insert here):

The project area is in the Moose Pass area on the Seward Ranger District.

**SENSITIVE PLANTS KNOWN:** Check maps (GIS, herbarium databases, ANHP records, floras, hand-made), contact the Regional Botanist, Forest/District Botanists/Ecologists. Document sources of information. Record the plant's habitat, location and distance from the project area:

Species:

Papaver alboroseum

Aphragmus eschscholtzianus

Cypripedium guttatum (historic)

Location:

Ptarmigan Lake area

Portage Valley

Date of records search: 4/2/2013 (by Linda Kelley)

**SENSITIVE PLANT HABITAT & SENSITIVE PLANTS SUSPECTED IN THE PROJECT AREA:**

A) Obtain habitat information from people familiar with the project area, project proponent, GIS (eg. soil map units, timber types, channel type covers), aerial photo interpretation, and/or site visits. Highlight methods used.

**Highlight or underline the following habitats that are likely to occur in the project area:**

coniferous forest, deciduous forest, mixed conifer/deciduous forest, dwarf tree forest, forest edge, tall shrublands, low shrublands, rocky areas, rock outcrops, ridgetops, cliffs, serpentine, calcareous areas, gravel, scree, talus, boulder fields, seeps, wet areas, riparian areas (give channel type, if known), streambanks, waterfalls, lake margins, ponds, shallow freshwater, marshes, swamps, estuaries, sphagnum bogs, fens, heath, subalpine meadows, alpine, area dominated by moss or lichen, dry meadows, moist-wet meadows, upper beach meadows, grasslands, maritime beaches, sandy areas, other (describe here)

B) Using your knowledge of sensitive plant habitat needs, or any other sources, indicate the plants (R-10 sensitive plants listed below) suspected that correspond to the above habitats (highlight them below):

<i>Aphragmus eschscholtzianus</i>	<i>Ligusticum calderi</i>
<i>Botrychium spathulatum</i>	<i>Lobaria amplissima</i>
<i>Botrychium tunux</i>	<i>Papaver alboroseum</i>
<i>Botrychium yaaxudakeit</i>	<i>Piperia unalasensis</i>
<i>Cochlearia sessilifolia</i>	<i>Platanthera orbiculata</i>
<i>Cirsium edule</i> var. <i>macounii</i>	<i>Polystichum kruckebergii</i>
<i>Cypripedium guttatum</i>	<i>Romanzoffia unalaschensis</i>
<i>Cypripedium montanum</i>	<i>Sidalcea hendersonii</i>
<i>Cypripedium parviflorum</i> var. <i>pubescens</i>	<i>Tanacetum bipinnatum</i> subsp. <i>huronense</i>

**PRE-FIELD REVIEW WORKSHEET FOR SENSITIVE PLANTS  
DETERMINATIONS POSSIBLE PRIOR TO FIELD SURVEY  
USDA Forest Service, Alaska Region (Revised Feb. 2009)  
In some cases this document can serve as a Biological Evaluation (BE)**

1) Does the evidence indicate that no sensitive plants or possible habitat exists within the project area (e.g. parking lot)?

☐ **YES.** Explain exactly why (insert here) and sign and date this document. BE is complete.

☒ **NO.** Go on to question 2.

2) Based on knowledge of the proposed project and the species involved, can a "no impact" statement be made?

☐ **YES.** Explain exactly why (insert here) and sign and date this document. BE is complete.

☒ **NO.** Go on to question 3.

3) Based on knowledge of the project and the species involved, can a statement be made that "implementation of the proposed project, including mitigation measures, May adversely impact individuals, but not likely to result in a loss of viability in the Planning area, nor cause a trend toward federal listing?"

☐ **YES.** Explain exactly why (insert here) and explain the mitigation measures that are part of the proposed project. Sign and date this document. BE is complete.

☒ **CANNOT BE DETERMINED WITH AVAILABLE INFORMATION.** Go to the Field Reconnaissance step of the BE process. Make survey recommendations (insert here), check one of the boxes below, sign and date this document.

☒ Field surveys are recommended to be performed during the following months in order to identify all of the species indicated above that could potentially occur within the project area. Document using personal knowledge and the "identifiable times" table in BE appendices to determine which months are ideal for surveys (insert here): PIUN3 begins to wilt mid to late August, and is identified later by its seed stalk that holds on longer. PLOR4 lasts well into September. The lichen Lobaria amplissima can be identified year round.

☐ Field surveys are not recommended for the following reasons: (insert here)

Prepared By: \_\_\_/s/ Kathryn Beck\_\_\_\_\_

Date: 6/26/2013\_\_\_\_\_

Reviewed By: \_\_\_/s/ \_\_\_\_\_

Date: \_\_\_/2013\_\_\_\_\_

Journey Level Biologist or Botanist as appropriate for taxon group.



---

**From:** Tabor, Brock N (DEC) [<mailto:brock.tabor@alaska.gov>]  
**Sent:** Thursday, June 27, 2013 9:59 AM  
**To:** 'Andrew Scott'  
**Cc:** Kolwaite, Douglas S (DEC)  
**Subject:** RE: Water Body Classifications-near Seward

Got it.

Thanks Andrew. I am looking for a good example of a hydropower-specific QAPP for you to consider. Will try to get that to you by the end of the day.

In the meantime, here's a link that has all of the generic information that you will want to consider.  
[http://www.dec.state.ak.us/water/wqapp/wqapp\\_index.htm](http://www.dec.state.ak.us/water/wqapp/wqapp_index.htm)

Brock Tabor  
[brock.tabor@alaska.gov](mailto:brock.tabor@alaska.gov)  
Alaska Dept. of Environmental Conservation  
Division of Water: Water Quality Standards, Assessment & Restoration  
(907) 465-5185  
<http://www.dec.alaska.gov/water/wqsar/index.htm>

---

**From:** Andrew Scott [<mailto:andrew.scott@mcmillen-llc.com>]  
**Sent:** Wednesday, June 26, 2013 11:27 AM  
**To:** Tabor, Brock N (DEC)  
**Subject:** Water Body Classifications-near Seward

Brock:

I am doing some water quality work near Moose Pass, AK. I am trying determine water quality standards for the following water bodies:

- Grant Lake
- Grant Creek
- Trail Lake Narrows

ADEC water quality standards appear to be dependent upon what the designated use classification is for each water body. Can you tell me if any of the above water bodies have specific designated use classifications? If so, can you send me a specific link so I can view it? If not, what is the DEC default classifications for these water bodies.

Thank you in advance for any information you can offer.

Andrew

**Andrew M. Scott**  
Aquatic Scientist

McMillen, LLC  
27091 HWY 41, Blanchard, ID 83804  
p/f 208-437-1205 /c 208-255-8672  
[andrew.scott@mcmillen-llc.com](mailto:andrew.scott@mcmillen-llc.com) [www.mcmillen-llc.com](http://www.mcmillen-llc.com)

# Grant Lake Hydroelectric Project (FERC No. 13212) Licensing

## Consultation Record

### Phone/E-mail /One on One Meeting Log

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*Contact Name:* Brock Tabor

*Agency/Organization:* Alaska Dept. of Environmental Conservation  
*Division of Water:* Water Quality Standards, Assessment & Restoration  
*Phone No./E-mail Address:* (907) 465-5185/brock.tabor@alaska.gov

---

*Date:* 6-27-13

*Time:* 10:00 AM

---

*Grant Lake Licensing Team Contact:* Andrew Scott- McMillen LLC

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*Summary of Conversation and/or E-mail Exchange:*

*Discussed designated use classifications (as applicable to water quality standards) for Grant Lake, Grant Creek and Trail Narrows. All water bodies mentioned are classified as Freshwater 1(a) which signifies which standards are applicable for which parameters. Brock also asked if a QAPP had been filed with ADEC for review? A. Scott was unsure but referred this question to C. Warnock (PM) for determination.*

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**From:** Matthew L Carlson [<mailto:mlcarlson@uaa.alaska.edu>]  
**Sent:** Thursday, June 27, 2013 2:28 PM  
**To:** 'Kathryn Beck'  
**Subject:** RE: Grant Lake data request

The data Nancy sent to you was an ArcGIS file. I can get Nancy to give you a list and pdf map or something of approximate locations – I don't think we have records of any globally rare taxa in that area. I'd have to dig around some, but I recall *Podagrostis thurberiana* and *Boechera stricta* from near Grant Lake and some disjuncts from your neck of the woods that are only known from a few places in AK on the Kenai like *Festuca occidentalis*, *Potentilla drummondii*, I think I'm forgetting others. I'd keep your eyes out for *Aphragmus eschscholtzianus*, *Papaver alboroseum*, and *Carex phaeocephala* too – we're seeing more and more of these species and they are dropping down in rank, but they are pretty cool. We are starting to track lichens too – so if you are including those it would be good to look for *Erioderma pedicellatum* and maybe some others.

Let me know what you pick up there Katy!  
-Matt

Matthew L. Carlson, Ph.D.  
Associate Professor &  
Program Botanist  
Biological Sciences Department &  
Alaska Natural Heritage Program  
University of Alaska Anchorage  
707 A Street, Anchorage, Alaska 99501  
aknbp: (907) 786-6390  
cell: (907) 268-8040

---

**From:** Kathryn Beck [<mailto:calypso@openaccess.org>]  
**Sent:** Thursday, June 27, 2013 12:32 PM  
**To:** Matthew L Carlson  
**Subject:** RE: Grant Lake data request

Matt – Please, have no worries about the data.  
It is not particularly understandable anyway.  
I am looking forward to my “Alaska Vacation” ☺.  
Have a great summer. Katy

~~~~~  
Kathryn Beck  
Beck Botanical Services  
1708 McKenzie Ave.  
Bellingham, WA 98225  
360-671-6913 office

360-305-0654 cell  
[calypso@openaccess.org](mailto:calypso@openaccess.org)

~~~~~

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**From:** Matthew L Carlson [<mailto:mlcarlson@uaa.alaska.edu>]  
**Sent:** Thursday, June 27, 2013 12:10 PM  
**To:** 'calypso@openaccess.org'  
**Subject:** Grant Lake data request

I was out yesterday Kate and missed your call – I talked with Nancy and it looks like she just sent you the correct file. Please delete the previous file she sent – our policy is not to share our complete database. My apologies.

Please let me know if you need anything else.

Have a nice time around Grant Lake – it is a beautiful spot (lots of downed beetle killed trees last time I was in there though).

-Matt

Matthew L. Carlson, Ph.D.  
Associate Professor &  
Program Botanist  
Biological Sciences Department &  
Alaska Natural Heritage Program  
University of Alaska Anchorage  
707 A Street, Anchorage, Alaska 99501  
aknhp: (907) 786-6390  
cell: (907) 268-8040

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

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**Subject:** FW: GrantLake rare plants  
**Attachments:** GrantLake\_aknhp\_rareplants\_6\_2013.zip; \_Certification\_.htm

**From:** Nancy Norvell [<mailto:nnorvell@uaa.alaska.edu>]  
**Sent:** Thursday, June 27, 2013 11:21 AM  
**To:** Kathryn Beck  
**Cc:** Matthew L Carlson  
**Subject:** GrantLake rare plants

---

Katy,

My apologies about the mix-up. There are only 3 points in the area you requested. This dataset will be easier to deal with.

Nancy

Nancy Norvell  
Data Manager  
Alaska Natural Heritage Program  
707 A Street  
Anchorage, Alaska 99501  
[nnorvell@uaa.alaska.edu](mailto:nnorvell@uaa.alaska.edu)

---

907.786.6385

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**Subject:** FW: Grant Lake Pre-field Review  
**Attachments:** grant\_lake\_weeds.xls; grant\_lake.xls; \_Certification\_.htm  
**Categories:** Green Category

---

**From:** Charnon, Betty -FS [<mailto:bcharnon@fs.fed.us>]  
**Sent:** Thursday, June 27, 2013 12:32 PM  
**To:** Kathryn Beck  
**Subject:** RE: Grant Lake Pre-field Review

The most invasive species that could occur in the project area are:

Canada Thistle (*Cirsium arvense*)

Orange Hawkweed (*Hieracium auratiacum*)

Butter and eggs (*Linaria vulgaris*)

Bird's foot trefoil (*Lotus corniculatus*)

White sweetclover (*Melilotus alba*)

Yellow sweetclover (*Melilotus officinalis*)

Reed canarygrass (*Phalaris arundinacea*)

Field sowthistle (*Sonchus arvensis*)

Bird vetch (*Vicia cracca*)

Also, attached are 2 spreadsheets. One is the raw data from the GIS layer you received. In the other file, I deleted records of the same species so you have just a list of species that occur in the GIS layer you received. The raw data file can be used to determine frequency of species.

I took a quick look at the pre-field review and the only comment I have is that *Ligusticum calderii* could also potentially occur in the project area. However, this species has not been found on the Chugach.

- Betty

Betty Charnon  
Kenai Peninsula Zone Ecologist  
Phone: 907-754-2326  
email: [bcharnon@fs.fed.us](mailto:bcharnon@fs.fed.us)

---

**From:** Kathryn Beck [<mailto:calypso@openaccess.org>]  
**Sent:** Wednesday, June 26, 2013 3:52 PM  
**To:** Charnon, Betty -FS  
**Cc:** Cory Warnock; Emily Andersen  
**Subject:** Grant Lake Pre-field Review

Betty – Nice to check in with you about Sensitive plants for the Grant Lake Project.

Attached here is the Pre-field Review for the Sensitive plant survey there.  
I appreciate you getting me information about invasive plants in the area.  
Thanks, Katy

~~~~~  
Kathryn Beck  
Beck Botanical Services  
1708 McKenzie Ave.  
Bellingham, WA 98225  
360-671-6913 office  
360-305-0654 cell  
[calypso@openaccess.org](mailto:calypso@openaccess.org)  
~~~~~



---

**Subject:** FW: Grant Lake Invasive Plants  
**Attachments:** Grant Lake Invasive Plants.pdf; \_Certification\_.htm

---

**From:** Kelly, Linda -FS [<mailto:lkelly01@fs.fed.us>]  
**Sent:** Thursday, June 27, 2013 7:30 PM  
**To:** Kathryn Beck  
**Subject:** RE: Grant Lake Invasive Plants

See if this map suits your purposes. Does it cover enough area? Let me know. Actually the count on the legend for plant code sites apply to the entire Grant Lake Watershed, not just the area on the map. So that is an inaccuracy, I should have fixed before sending to you, so consider this a draft.

Linda B. Kelly  
GIS Analyst  
Chugach National Forest  
[lkelly01@fs.fed.us](mailto:lkelly01@fs.fed.us)  
(907)-743-9527

---

**From:** Kathryn Beck [<mailto:calypso@openaccess.org>]  
**Sent:** Wednesday, June 26, 2013 2:53 PM  
**To:** Kelly, Linda -FS  
**Subject:** RE: Grant Lake Sensitive Plants

Hi Linda – I just left you a message on your phone. I was able to download the map of invasive plant occurrences in the Grant Lake area, but would like more information, if possible on what species of invasive plants these are and if there is a report associated with this map.  
It sounds like there aren't any Sensitive plant occurrences in the Grant Lake area.  
I am set to do the survey during the week of July 17, so it would be great to have the information by then if possible.  
Give me a call (at the number below) if you have questions about this request.  
Thank you, Katy Beck

~~~~~  
Kathryn Beck  
Beck Botanical Services  
1708 McKenzie Ave.  
Bellingham, WA 98225  
360-671-6913 office  
360-305-0654 cell  
[calypso@openaccess.org](mailto:calypso@openaccess.org)  
~~~~~

---

**From:** Kelly, Linda -FS [<mailto:lkelly01@fs.fed.us>]  
**Sent:** Tuesday, April 02, 2013 12:48 PM  
**To:** [calypso@openaccess.org](mailto:calypso@openaccess.org)

**Cc:** Charnon, Betty -FS  
**Subject:** RE: Grant Lake Sensitive Plants

I don't find any records of sensitive plant occurrences in the area around Grant Lake. Attached is a map of the invasive plants, with a shapefile of the data identified with watersheds (6<sup>th</sup> level hydrologic units) that they are present in.

Let me know if you have any questions.

Linda B. Kelly  
GIS Analyst  
Chugach National Forest  
[lkelly01@fs.fed.us](mailto:lkelly01@fs.fed.us)  
(907)-743-9527

---

**From:** Charnon, Betty -FS  
**Sent:** Thursday, March 28, 2013 10:53 AM  
**To:** Kelly, Linda -FS; Smith, Paula J -FS  
**Subject:** FW: Grant Lake Sensitive Plants

Would one of you be able to get this data to Kate Beck? Or you can send it to me and I can forward?

- Betty

Betty Charnon  
Kenai Peninsula Zone Ecologist  
Phone: 907-754-2326  
email: [bcharnon@fs.fed.us](mailto:bcharnon@fs.fed.us)

---

**From:** Kathryn Beck [<mailto:calypso@openaccess.org>]  
**Sent:** Monday, March 25, 2013 5:28 PM  
**To:** Charnon, Betty -FS  
**Subject:** Grant Lake Sensitive Plants

Hi Betty – I am just checking in with you about getting a database and/or map of Sensitive plant occurrences and invasive weed populations on USFS lands in the vicinity of Grant Lake near Moose Pass on the Kenai Peninsula. When we talked last month, I think you also mentioned that there was an invasives/Sensitive Plant inventory on nearby Highways and Trails.

Thank you,  
Katy Beck

~~~~~  
Kathryn Beck  
Beck Botanical Services  
1708 McKenzie Ave.  
Bellingham, WA 98225  
360-671-6913 office  
360-305-0654 cell  
[calypso@openaccess.org](mailto:calypso@openaccess.org)  
~~~~~

# Grant Lake - Invasive Plant Occurrences



Rowid	Count	Species Code	Common Name
1	7	ACMIM2	common yarrow
2	1	ALGE2	water foxtail
3	4	ALPR3	meadow foxtail
4	1	ARGL	tower rockcress
5	1	BRRA	field mustard
6	7	CABU2	shepherd's purse
7	3	CEFO2	common mouse-ear chickweed
8	10	CEFOV2	big chickweed
9	1	CEGL2	sticky chickweed
10	5	CHALA	lambsquarters
11	4	CRT3	narrowleaf hawksbeard
12	4	DAGL	orchardgrass
13	6	ELRE4	quackgrass
14	2	FRAN	
15	4	GABI3	splitlip hempnettle
16	1	HIUM	narrowleaf hawkweed
17	4	HOJU	foxtail barley
18	1	LEDE	common pepperweed
19	11	LEVU	oxeye daisy
20	4	LIVU2	butter and eggs
21	1	LOPEP	perennial ryegrass
22	2	LUPOP4	bigleaf lupine
23	42	MADI6	disc mayweed
24	1	MEAL12	yellow sweetclover
25	3	PANU3	Icelandic poppy
26	45	PHPR3	timothy
27	47	PLMA2	common plantain
28	57	POAN	annual bluegrass
29	9	POAV	prostrate knotweed
30	10	PONO3	Norwegian cinquefoil
31	37	POPR	Kentucky bluegrass
32	5	RUAC3	common sheep sorrel
33	8	RUCR	curly dock
34	1	SINO	nightflowering silene
35	2	SPRU	red sandspurry
36	9	STME2	common chickweed
37	38	TAOF	common dandelion
38	32	TAOFO	common dandelion
39	26	TRHY	alsike clover
40	2	TRPE21	scentless false mayweed
41	5	TRPR2	red clover
42	37	TRRE3	white clover
43	6	VESES	thymeleaf speedwell
44	1	VICRC	bird vetch

---

**From:** Cory Warnock  
**Sent:** Monday, July 08, 2013 12:25 PM  
**To:** Emily Andersen  
**Subject:** FW: Grant Lake Special Use Permit Amendment  
**Attachments:** SEW457\_Amendment3.pdf

---

**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]  
**Sent:** Monday, July 08, 2013 12:14 PM  
**To:** Salzetti, Mikel  
**Cc:** Cory Warnock  
**Subject:** RE: Grant Lake Special Use Permit Amendment

Hi Mike,

Attached is the signed and fully executed permit for the soil surveys. Let me know if you have any questions.

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

---

**From:** Salzetti, Mikel [<mailto:MSalzetti@HomerElectric.com>]  
**Sent:** Wednesday, July 03, 2013 9:37 AM  
**To:** Van Massenhove, Katherine B -FS  
**Cc:** Cory Warnock  
**Subject:** RE: Grant Lake Special Use Permit Amendment

Kathy:

Thank you for your assistance. Attached is a signed copy of the permit amendment.

Regards,

**Mike Salzetti**  
Fuel Supply & Generation Engineering Manager  
(907) 283-2375 *work*  
(907) 398-5073 *Mobile*

---

**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]  
**Sent:** Thursday, June 27, 2013 12:38 PM  
**To:** Cory Warnock  
**Cc:** Salzetti, Mikel  
**Subject:** RE: Grant Lake Special Use Permit Amendment

Hi Cory,

I've attached amendment 3, map, and permit stipulations for Kenai Hydro's permit to allow for the wetlands survey. Please read over and if acceptable, sign and return to me for district ranger's signature.

Thanks,

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

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**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Friday, May 24, 2013 10:00 AM  
**To:** Van Massenhove, Katherine B -FS; Nelson, Sherry D -FS  
**Cc:** Shina Duvall; Mike Salzetti; Emily Andersen  
**Subject:** RE: Grant Lake Special Use Permit Amendment

Hi Kathy,

I really appreciate the update on process and timeframe. And to all on the message, I believe what you have from HEA now should be sufficient to make all necessary determinations but if you need anything additional, please don't hesitate to let me know.

Thanks,

Cory

---

**From:** Van Massenhove, Katherine B -FS [<mailto:kvanmassenhove@fs.fed.us>]  
**Sent:** Friday, May 24, 2013 10:55 AM  
**To:** Cory Warnock; Nelson, Sherry D -FS  
**Cc:** Shina Duvall; Mike Salzetti; Emily Andersen  
**Subject:** RE: Grant Lake Special Use Permit Amendment

Hi Cory,

I will not have the amendment for the wetlands work ready to be process until mid-June, you requested to do the wetlands work in July, not June, so I have a date of June 15<sup>th</sup> for the other specialists (beyond Heritage) to respond to any concerns and mitigations they want to see before moving forward with issuing that amendment. For the amendment for the cultural work, in order to issue the amendment, I need to hear from Sherry that the methodology and person doing the cultural surveys are to the FS standard, so that we can include language in the amendment that specifies that this approval is contingent on using the reviewed and approved methodology and person. Once I have that, I can move forward with the amendment. So, it will likely shape up to be 2 amendments for these two studies.

Sherry – can you let me know if you've reviewed the information submitted by Mike Y.'s company and if it meets our standard and they can conduct the work?

Thanks,

Kathy Van Massenhove  
Special Uses Service Team  
Chugach National Forest/ Glacier RD  
[kvanmassenhove@fs.fed.us](mailto:kvanmassenhove@fs.fed.us)  
(907) 754-2315

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]  
**Sent:** Monday, May 20, 2013 12:50 PM  
**To:** Van Massenhove, Katherine B -FS; Nelson, Sherry D -FS  
**Cc:** Shina Duvall; Mike Salzetti; Emily Andersen  
**Subject:** Grant Lake Special Use Permit Amendment

Hi Kathy and Sherry,

Now that we've received official confirmation from SHPO that they are ok with our proposed approach to assess the wetlands at Grant Lake in June (from a cultural perspective) in advance of the actual Grant Lake wetlands work, I'm wondering if you need anything additional from us to amend the special use permit to allow for the wetland activities we've proposed? Per previous conversations, I believe that we are now in a position where that permit can be amended.

If you could provide me with an approximate schedule for when we could expect that amendment and/or anything else that you need from us, I'd really appreciate it.

Thanks,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

McMillen, LLC  
[www.mcmillen-llc.com](http://www.mcmillen-llc.com)  
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C – 360-739-0187  
F – 360-542-2264

U.S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
AMENDMENT  
FOR

SPECIAL-USE AUTHORIZATION

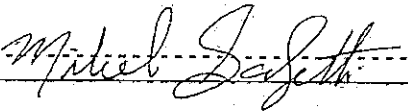
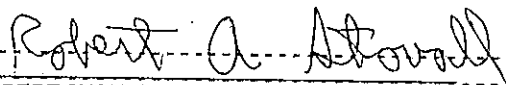
Amendment#: 3

This amendment is attached to and made a part of the special use authorization for issued to Kenai Hydro, LLC on 06/24/2009 which is hereby amended as follows:

Wetlands assessment performed on National Forest System Lands along the lake shore and in wetter lands near Grant Lake as shown on Appendix A, Location map.

- 60-40 approximately 18-24" deep pit will be dug for soil profiling. Pits will be filled after measurements are taken for the soil profile.

This Amendment is accepted subject to the conditions set forth herein, and to Appendix B, Stipulations attached hereto and made a part of this Amendment.

	
Holder	ROBERT STOVALL, Acting District Ranger
7/3/2013	7/3/2013
Date	Date

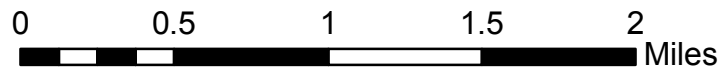
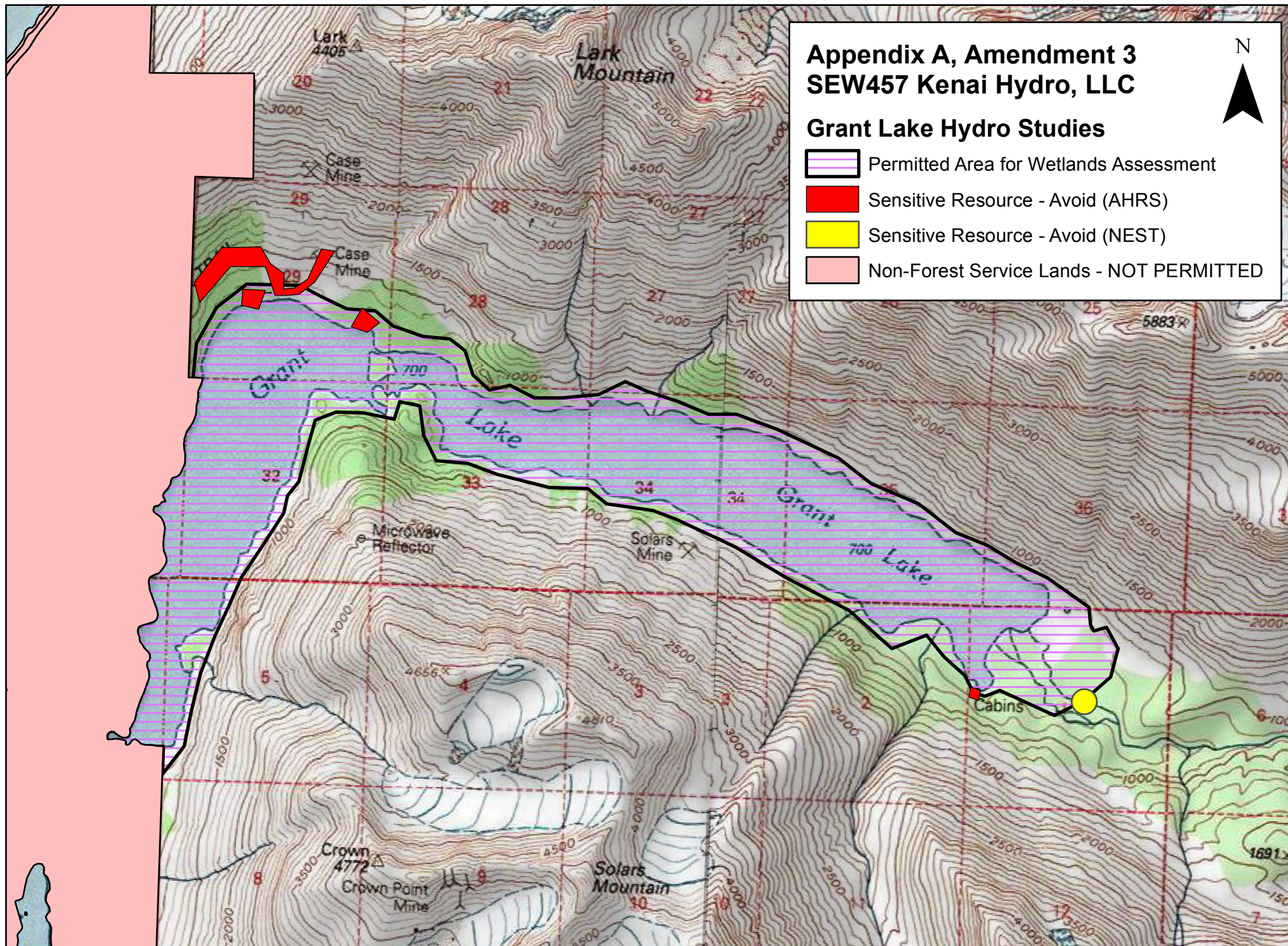
According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0082. The time required to complete this information collection is estimated to average one (1) hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call toll free (866) 632-9992 (voice). TDD users can contact USDA through local relay or the Federal relay at (800) 877-8339 (TDD) or (866) 377-8642 (relay voice). USDA is an equal opportunity provider and employer.

The Privacy Act of 1974 (5 U.S.C. 552a) and the Freedom of Information Act (5 U.S.C. 552) govern the confidentiality to be provided for information received by the Forest Service.







Appendix B  
Stipulations  
Kenai Hydro, LLC  
Special Use Permit #SEW457, Amendment 3

**The following stipulations are attached to and made a part of this permit:**

1. A buffer zone of 500 feet shall be established around any archeological site located while conducting outfitter/guide activities. The permit holder shall go around the site, not through it.
2. The Forest Archeologist shall be notified of the specific location of sites identified by the permittee or the clients by a GPS location and/or a dot on a map.
3. Collection and/or disturbance of artifacts is illegal and is not allowed.
4. Any cultural resources documented during the course of the cultural surveys completed in the summer of 2013 by Cultural Resource Consultants, LLC shall be flagged on the ground for avoidance. Known cultural sites are identified on Appendix A.
5. Clients shall be briefed on safety in bear country prior to any hiking activities. Clients shall be informed of species they might encounter and appropriate behavior should an encounter occur.
6. To help prevent the spread of invasive weeds, the permit holder shall:
  - a. Prevent ground disturbances that would create favorable seedbeds for non-native plants.
  - b. Avoid walking through patches of non-native plants, particularly when they have gone to seed to prevent their spread into new areas.
  - c. Not bring any plants onto NF system lands.
7. No stationary activities are to occur within 330-foot avoidance buffer from all active bald eagle nests identified on Appendix A during the March 1 to August 31 breeding season. People may travel within 330 feet of the bald eagle nests without stopping as needed.
8. If additional bald eagle nests are located in or near the units, the permit administrator will be notified, and all project activities will be avoided during the breeding season.
9. All food, garbage and odorous attractants should be attended by humans or stored in a bear resistant manner. Garbage should be removed from the site daily.
10. If any previously undiscovered endangered, threatened, or sensitive species are encountered during the operation of activities authorized by this permit, the permit holder shall notify the permit administrator for consultation and recommendations of appropriate mitigating measures to be enacted. Notification shall be included in their final use statement.
11. This permit does not authorize any use of or trespass on lands outside of the National Forest System. The holder shall respect private property.

---

**Subject:** FW: Grant Lake data request  
**Attachments:** grantLake\_rareplants\_aknhp\_6\_2013.pdf; \_Certification\_.htm

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**From:** Nancy Norvell [<mailto:nnorvell@uaa.alaska.edu>]  
**Sent:** Thursday, July 11, 2013 10:07 AM  
**To:** Kathryn Beck  
**Cc:** Matthew L Carlson  
**Subject:** RE: Grant Lake data request

Kathryn,

In addition to the shape file I sent in regards to your data request, here is a .pdf of the map. Please let me know if that is not what you want.

*Nancy*

Nancy Norvell  
Data Manager  
**Alaska Natural Heritage Program**  
University of Alaska Anchorage  
707 A Street, Suite 102A  
Anchorage, Ak 99501-3600  
(907) 786-6385 (w)  
[nnorvell@uaa.alaska.edu](mailto:nnorvell@uaa.alaska.edu)

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**From:** Kathryn Beck [<mailto:calypso@openaccess.org>]  
**Sent:** Wednesday, July 10, 2013 5:41 PM  
**To:** Matthew L Carlson; Nancy Norvell  
**Subject:** RE: Grant Lake data request

Matt - Nancy sent me a zipped file which I haven't unzipped yet.  
Truly though, a map or screenshot would most helpful.  
I am flying up next Wednesday. I hope the weather is cooperative.  
Thanks, Katy

---

**From:** Matthew L Carlson [<mailto:mlcarlson@uaa.alaska.edu>]  
**Sent:** Wednesday, July 10, 2013 1:20 PM  
**To:** Nancy Norvell

**Cc:** 'calypso@openaccess.org'

**Subject:** FW: Grant Lake data request

Nancy – I didn't get a chance to ask you to put a map or screenshot together for Katy Beck's Grant Lake project before I zipped out in the field. So in case she hasn't already asked you about it:

Could you please get her a map and list of rare species & ranks in her project area and around it, Katy doesn't have ArcGIS. That would be great.

-Matt

Matthew L. Carlson, Ph.D.  
Associate Professor &  
Program Botanist  
Biological Sciences Department &  
Alaska Natural Heritage Program  
University of Alaska Anchorage  
707 A Street, Anchorage, Alaska 99501  
aknhp: (907) 786-6390  
cell: (907) 268-8040

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**From:** Kathryn Beck [<mailto:calypso@openaccess.org>]

**Sent:** Thursday, June 27, 2013 3:20 PM

**To:** Matthew L Carlson

**Subject:** RE: Grant Lake data request

Matt – If Nancy sent me a pdf map and list that would be most usable for me.

It's always good to have a heads up for particular species to search for.

I will be making a complete species list, so if I run across the ones you mention below, I will definitely take note, and let you know.

I am also interested in lichens.

Thanks, Katy

---

**From:** Matthew L Carlson [<mailto:mlcarlson@uaa.alaska.edu>]

**Sent:** Thursday, June 27, 2013 2:28 PM

**To:** 'Kathryn Beck'

**Subject:** RE: Grant Lake data request

The data Nancy sent to you was an ArcGIS file. I can get Nancy to give you a list and pdf map or something of approximate locations – I don't think we have records of any globally rare taxa in that area. I'd have to dig around some, but I recall *Podagrostis thurberiana* and *Boechera stricta* from near Grant Lake and some disjuncts from your neck of the woods that are only known from a few places in AK on the Kenai like *Festuca occidentalis*, *Potentilla drummondii*, I think I'm forgetting others. I'd keep your eyes out for *Aphragmus eschscholtzianus*, *Papaver alboroseum*, and *Carex phaeocephala* too – we're seeing more and more of these species and they are dropping down in rank, but they are pretty cool. We are starting to track lichens too – so if you are including those it would be good to look for *Erioderma pedicellatum* and maybe some others.

Let me know what you pick up there Katy!

-Matt

Matthew L. Carlson, Ph.D.  
Associate Professor &  
Program Botanist

Biological Sciences Department &  
Alaska Natural Heritage Program  
University of Alaska Anchorage  
707 A Street, Anchorage, Alaska 99501  
aknhp: (907) 786-6390  
cell: (907) 268-8040

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NOTE: Because of the potentially sensitive nature of the information regarding sensitive plant species, the map attached to the July 11 email from the Alaska Natural Heritage Program is not being distributed to the general public. This document may be obtained by request to Homer Electric Association (HEA) or Federal Energy Regulatory Commission (FERC), subject to confidentiality provisions.



# Memorandum

**Date:** July 22, 2013

**W.O.#:** 1371300

**To:** File

**cc:** Sharepoint

**From:** Dwayne Adams

**Subject:** Meeting w/ Lesli Schlick, ADNR

I met with Lesli Schlick to discuss the approach for the INHT relocation from its currently planned location and easement.

- Lesli was familiar with the proposed change of the roadway from its early location downriver on the Kenai River to the new narrows location closer to Grant Creek.
- The key buy-off for the proposal is the USFS. Without their buy-off the proposal won't go anywhere.
  - In talking to USFS we need to be explicit that we are looking at alternative layouts.
- KRSMA approval is also important and will be necessary. Pam Russell is the contact for KRSMA.
- The first step is to talk to USFS.
- Kenai Peninsula Borough will also have to provide approval since KRSMA is adopted by the Borough.
- We should arrange a meeting on site after talking to USFS. Lesli would like to be a part of any site walk.
- After talking to USFS, we should then begin contacting the Alliance and BLM. First step is the easement agencies, which is Lesli and USFS.
- Lesli asked if KHL was looking for a contribution from someone for the bridge construction or if KHL was fully funding it. I told her I hadn't heard that they were since the costs were generally in the neighborhood of the cost of the road construction but I'd verify that.
- Lesli wanted to make sure that KHL understood that the party that is proposing the realignment of the easement must pay the costs for the realignment. KHL must shoulder all costs.

# Grant Lake Hydroelectric Project (FERC No. 13212) Licensing

## Consultation Record

### Phone/E-mail/One-on-One Meeting Log

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*Contact Name:* Katherine Van Massenhove

*Agency/Organization:* USFS

*Phone No./E-mail Address:* 907 754 2315

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*Date:* July 26, 2013

*Time:* 10:09am

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*Grant Lake Licensing Team Contact:* Dwayne Adams

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#### *Summary of Conversation and/or E-mail Exchange:*

Katherine is with the Glacier Ranger District. I asked whether she might be the contact for the Grant Lake project related to the INHT. She said she only does special use trials and is probably not the contact. She said Alison Rein (754-2329) deals with matters related to INHT. Alison was out and would be back 8/7/2013.

---

**From:** Cory Warnock  
**Sent:** Tuesday, July 30, 2013 8:17 AM  
**To:** Gates, Kenneth  
**Subject:** RE: Grant Creek Update

Sounds good, Ken. I can tell you that no Chinook have hit our weir on Grant Creek yet. Is that your primary area of interest or would you like to no some other information related to the weir and our efforts to collect out migrating juveniles? If Chinook escapement is your focus, I can just make a note to keep you updated as they begin to show up and subsequently, throughout the remainder of the season.

Let me know your preference and I'll make it happen,

Cory

**From:** Gates, Kenneth [[mailto:kenneth\\_gates@fws.gov](mailto:kenneth_gates@fws.gov)]  
**Sent:** Monday, July 29, 2013 4:53 PM  
**To:** Cory Warnock  
**Subject:** Re: Grant Creek Update

That would be great Cory--I appreciate it. We have several weirs throughout the Kenai Watershed that are run for Chinook escapement and I was curious what the numbers, run-timing, and length and sex compositions were looking like. I look forward to chatting with you. --Ken

On Mon, Jul 29, 2013 at 1:55 PM, Cory Warnock <[cory.warnock@mcmillen-llc.net](mailto:cory.warnock@mcmillen-llc.net)> wrote:

Hi Ken,

I understand that you called CIAA recently to get an update on our current fish capture numbers on Grant Creek. My apologies for not getting back to you sooner. I was on vacation all last week. I receive periodic and scheduled updates on trapping numbers from our on-site field crew but given your request (and my delayed response), I've asked them to get me an expedited update which I'm expecting later this week. If there is anything specific you'd like to know, please give me a heads-up. Otherwise, I'll be giving you a call late this week to give you a general summary and update you on progress.

Thanks,

Cory

*Cory Warnock*



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**From:** Cory Warnock  
**Sent:** Monday, August 05, 2013 1:58 PM  
**To:** Gates, Kenneth  
**Subject:** RE: Grant Creek Update

Hi Ken,

Just dropping you a quick note to let you know that you have not fallen off my radar. Our folks on the ground finally started to have some sockeye hit the weir late last week so their workload increased markedly as a result. I spoke with my aquatics lead this morning and he assures me that I'll see some numbers by Wednesday at the latest. I will get them to you as soon as I see them.

Cory

**From:** Gates, Kenneth [[mailto:kenneth\\_gates@fws.gov](mailto:kenneth_gates@fws.gov)]  
**Sent:** Monday, July 29, 2013 4:53 PM  
**To:** Cory Warnock  
**Subject:** Re: Grant Creek Update

That would be great Cory--I appreciate it. We have several weirs throughout the Kenai Watershed that are run for Chinook escapement and I was curious what the numbers, run-timing, and length and sex compositions were looking like. I look forward to chatting with you. --Ken

On Mon, Jul 29, 2013 at 1:55 PM, Cory Warnock <[cory.warnock@mcmillen-llc.net](mailto:cory.warnock@mcmillen-llc.net)> wrote:

Hi Ken,

I understand that you called CIAA recently to get an update on our current fish capture numbers on Grant Creek. My apologies for not getting back to you sooner. I was on vacation all last week. I receive periodic and scheduled updates on trapping numbers from our on-site field crew but given your request (and my delayed response), I've asked them to get me an expedited update which I'm expecting later this week. If there is anything specific you'd like to know, please give me a heads-up. Otherwise, I'll be giving you a call late this week to give you a general summary and update you on progress.

Thanks,

Cory

*Cory Warnock*

# Grant Lake Hydroelectric Project (FERC No. 13212) Licensing

## Consultation Record

### Phone/E-mail/One-on-One Meeting Log

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*Contact Name: Alison Rein*

*Agency/Organization: USFS*

*Phone No./E-mail Address: One on one meeting*

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*Date: August 7, 2013*

*Time: 11am*

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*Grant Lake Licensing Team Contact: Dwayne Adams, Kim Graham*

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#### *Summary of Conversation and/or E-mail Exchange:*

Alison said she was only the contact for the Glacier Ranger District. We would need to work with John Eaves at the Seward Ranger District also. He is located at the Kenai Lake Work Center. We may also need to work with Paul Clark who is at the Freight Shed down in Ship Creek. We discussed possible upcoming dates for an initial meeting regarding INHT in September and said we'd keep her in the loop as things developed. We reviewed the changes that KHL had made in their road alignment which Alison said seemed helpful.

---

**From:** Cory Warnock  
**Sent:** Thursday, August 08, 2013 8:27 AM  
**To:** Ashton, William S (DEC)  
**Cc:** Rypkema, James (DEC); Tabor, Brock N (DEC); Kolwaite, Douglas S (DEC); Sonafrank, Nancy B (DEC)  
**Subject:** RE: Grant Lake Project Water Quality

Thanks, Ashton.

---

**From:** Ashton, William S (DEC) [<mailto:william.ashton@alaska.gov>]  
**Sent:** Monday, August 05, 2013 11:47 AM  
**To:** Cory Warnock  
**Cc:** Rypkema, James (DEC); Tabor, Brock N (DEC); Kolwaite, Douglas S (DEC); Sonafrank, Nancy B (DEC)  
**Subject:** RE: Grant Lake Project Water Quality

Cory,

For the Susitna Hydroelectric Project DEC required a QAPP for the pre-application water quality sampling (see Attached). Your project may not need to develop a QAPP for the smaller amount of water quality data collected.

Thanks

William Ashton  
Storm Water & Wetlands  
Wastewater Discharge Authorization Program, Division of Water  
Alaska Dept. of Environmental Conservation  
555 Cordova St  
Anchorage, AK 99501  
ph 907-269-6283  
[william.ashton@alaska.gov](mailto:william.ashton@alaska.gov)

---

**From:** Sonafrank, Nancy B (DEC)  
**Sent:** Monday, August 05, 2013 10:30 AM  
**To:** Ashton, William S (DEC); Kolwaite, Douglas S (DEC)  
**Cc:** Rypkema, James (DEC); Crapps, Earl L (DEC); Tabor, Brock N (DEC)  
**Subject:** FW: Grant Lake Project Water Quality

Can provide Cory Warnock (see email below) with any information you may have on water quality baseline data collection for the Susitna-Watana hydro project? Maybe you can send him to whoever is lead for this project. It sounds like he has a similar project in the Great Lakes.

---

**From:** Tabor, Brock N (DEC)  
**Sent:** Monday, August 05, 2013 10:13 AM  
**To:** Sonafrank, Nancy B (DEC)  
**Cc:** Kolwaite, Douglas S (DEC)  
**Subject:** FW: Grant Lake Project Water Quality

Nancy,

Rick was working on the Susitna-Watana hydro project before he left-did you glean anything from his work that would be helpful to these folks? Can we provide a copy of that QAPP to them for consideration as to parameters and expectations?

Brock Tabor

[brock.tabor@alaska.gov](mailto:brock.tabor@alaska.gov)

Alaska Dept. of Environmental Conservation

Division of Water: Water Quality Standards, Assessment & Restoration

(907) 465-5185

<http://www.dec.alaska.gov/water/wqsar/index.htm>

---

**From:** Cory Warnock [<mailto:cory.warnock@mcmillen-llc.net>]

**Sent:** Monday, August 05, 2013 9:50 AM

**To:** Tabor, Brock N (DEC)

**Cc:** Charles Sauvageau

**Subject:** Grant Lake Project Water Quality

*Hi Brock,*

*My name is Cory Warnock. I'm the consulting project manager for the licensing and natural resources components of the proposed Grant Lake Hydroelectric Project. Back in late June, you had some correspondence with Andrew Scott, our water quality specialist, inquiring about water quality standards in the region. I appreciate your willingness to share a QAPP from an Alaska-based project for our reference. I wanted to touch base with you and make sure that we were on the same page as to the typical timeline for a QAPP-type document as it relates to proposed and/or modified hydroelectric facilities. It has been my experience that a QAPP is typically required prior to commencing construction activities related to project infrastructure. In our case, this will occur at a later date once all baseline and impact studies have been completed, discussed with the agencies and very likely, incorporated into a Final License Application for FERC's review. I have not been a part of a hydro project in which a QAPP was required prior to this general timeline. We have had some extensive discussions with all requisite Stakeholders related to their environmental requirements on the Project and modified our study plans prior to commencing fieldwork accordingly.*

*It very well may be that you passed the Bokan QAPP on to Andrew as simply a good QAPP example that includes the general water quality parameters that will need to be monitored. However, in the interest of being comprehensive, I want to make sure that your agencies needs are being met as best as possible relative FERC licensing process. Let me know when you have a chance.*

*Again, thanks for the help Brock and let me know if you have any further questions/concerns,*

*Cory*

**Cory Warnock**

*Senior Licensing and Regulatory Consultant*

McMillen, LLC

[www.mcmillen-llc.com](http://www.mcmillen-llc.com)

5771 Applegrove Ln.

Ferndale, Wa. 98248

O – 360-384-2662

C – 360-739-0187

F – 360-542-2264

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**From:** Cory Warnock  
**Sent:** Thursday, August 08, 2013 1:12 PM  
**To:** Audrey Alstrom (aalstrom@aidea.org); Jeffry Anderson (Jeffry\_Anderson@fws.gov); Patricia Berkhahn (patricia.berkhahn@alaska.gov); Valerie Conner (valerie@akcenter.org); Ted Deats (ted.deats@alaska.gov); Shina Duvall (shina.duvall@alaska.gov); Ricky Gease (ricky@kenairiversportfishing.com); David Griffin (david.griffin@alaska.gov); Ken Hogan (kenneth.hogan@ferc.gov); Jan Konigsberg (jan@hydroreform.org); Denise Koopman (denise.koopman@usace.army.mil); Ginny Litchfield (ginny.litchfield@alaska.gov); Katherine McCafferty (katherine.a.mccafferty2@usace.army.mil); Monte Miller (monte.miller@alaska.gov); Travis Moseley (tmoseley@fs.fed.us); Krissy Plett (krissy.plett@alaska.gov); Eric Rothwell (eric.rothwell@noaa.gov); Pamela Russell (pamela.russell@alaska.gov); Kim Sager (kimberly.sager@alaska.gov); Lesli Schick (lesli.schick@alaska.gov); Robert Stovall (rstovall@fs.fed.us); Cassie Thomas (cassie\_thomas@nps.gov); Sue Walker (susan.walker@noaa.gov); Lynnda Kahn (Lynnda\_Kahn@fws.gov); Judith Bittner (judy.bittner@alaska.gov); Barbara Stanley (bstanley@fs.fed.us); Brenda Trefon (btrefon@kenaitze.org)  
**Cc:** Mike Salzetti; John Stevenson; 'Mark Miller (mark.miller@bioanalysts.net)'; Cory Warnock; Emily Andersen  
**Subject:** Grant Lake Project Site Visit  
**Attachments:** Moose Pass Field Visit Meeting Location.pdf

**Grant Lake Hydroelectric Project (FERC No. 13212) Natural Resources Study Stakeholder Group:**

HEA would like to invite all of you to a site visit for the proposed Grant Lake Hydro Project. The visit will take place on September 5<sup>th</sup> and will likely last a majority of the day when taking both the visit and associated travel to and from the site into consideration. We will be focusing our tour on the Grant Creek study effort given that is where a majority of our field effort and study infrastructure will be located during this time. As such, waders or hip boots should be brought as we will be accessing the site via boat from Moose Pass and spending a majority of our time on the creek. Rain gear and/or bug spray would also be advisable depending on the weather! Mike Salzetti (HEA), John Stevenson (lead aquatics) and myself will be on site during the tour to lend a hand and answer any questions that come up during the day. We'd like to have everyone meet at the boat dock in Moose Pass at 9am. Directions from both Anchorage and Seward to Moose Pass are linked below and a specific parking instructions map is attached. We have the intention of having everyone back to their vehicles by 3pm. HEA will be providing sack lunches for everyone who can attend so please let me know (respond to this email) by Monday, August 19<sup>th</sup> if you will be able to attend and/or if you have any specific dietary needs and we will begin to make logistical preparations accordingly.

HEA looks forward to providing you a first-hand view of the environment and study infrastructure, updating you on the status of the field season and continuing the process which will ultimately lead to the development of the 2013 study reports and our associated study results meeting.

**Anchorage to Moose Pass -**

<https://maps.google.com/maps?saddr=anchorage,+ak&daddr=moose+pass,+ak&hl=en&sl=48.753312,-122.46131&sspn=0.153468,0.349846&geocode=FQgdpgMdCrQQ9yIBP7MEdpHIVjHjaISnWrp9JQ%3BFUz3mgMdx88Y9ymfMujZPsHHVjGGkQzkXT9UfA&mra=ls&t=m&z=9>

**Seward to Moose Pass -**

[https://maps.google.com/maps?saddr=seward,+ak&daddr=moose+pass,+ak&hl=en&sl=48.753312,-122.46131&sspn=0.153468,0.349846&geocode=FecdlQMdUrEX9ynF\\_yrybpvHVjG\\_Edl2wmDhWw%3BFUz3mgMdx88Y9ymfMujZPsHHVjGGkQzkXT9UfA&mra=ls&t=m&z=10](https://maps.google.com/maps?saddr=seward,+ak&daddr=moose+pass,+ak&hl=en&sl=48.753312,-122.46131&sspn=0.153468,0.349846&geocode=FecdlQMdUrEX9ynF_yrybpvHVjG_Edl2wmDhWw%3BFUz3mgMdx88Y9ymfMujZPsHHVjGGkQzkXT9UfA&mra=ls&t=m&z=10)

**Cory Warnock**

*Senior Licensing and Regulatory Consultant*

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[www.mcmillen-llc.com](http://www.mcmillen-llc.com)

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C – 360-739-0187

F – 360-542-2264

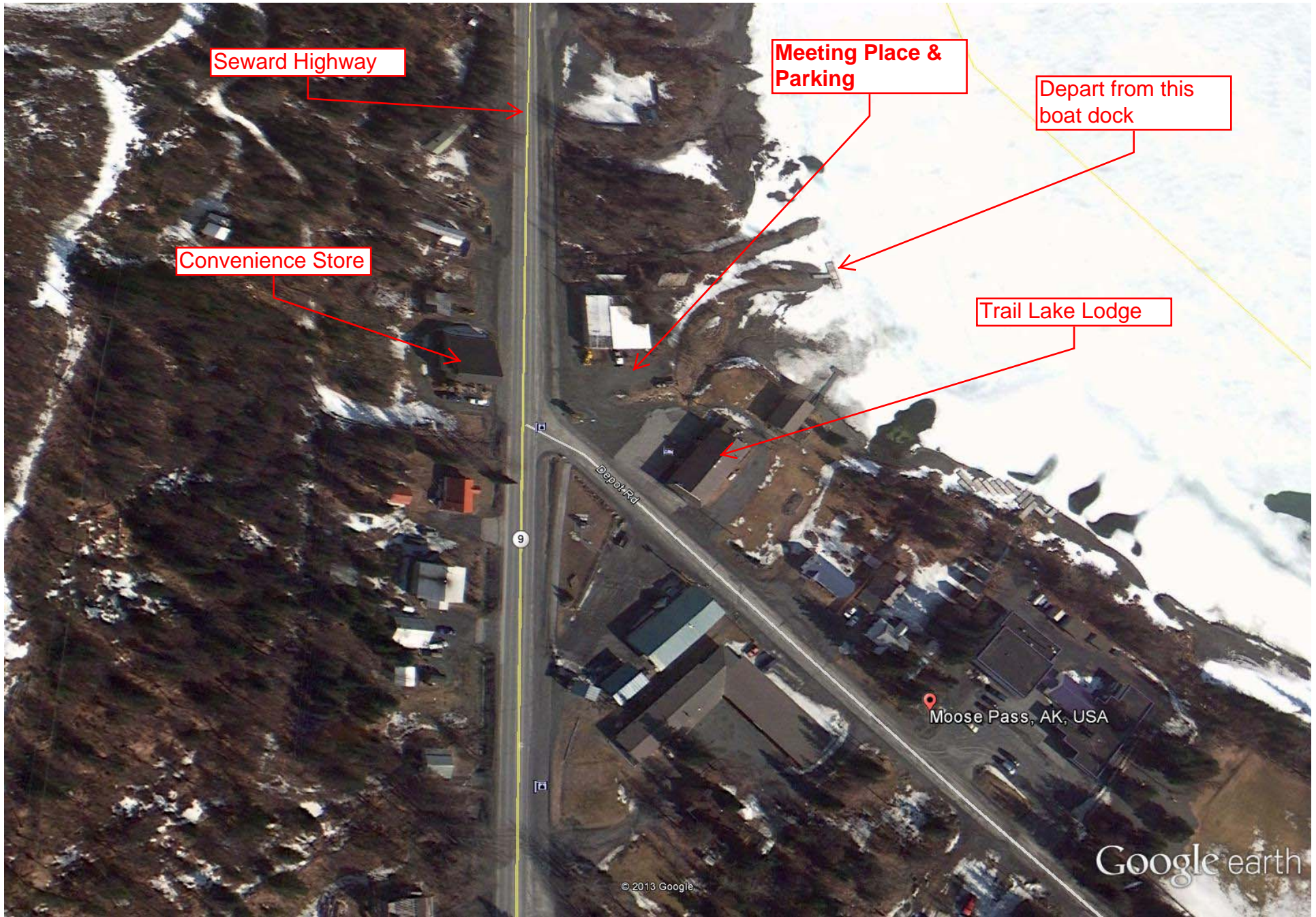
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No virus found in this message.

Checked by AVG - [www.avg.com](http://www.avg.com)

Version: 2013.0.3392 / Virus Database: 3209/6559 - Release Date: 08/08/13





Google earth

feet  
meters



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**From:** Cory Warnock  
**Sent:** Thursday, August 08, 2013 1:49 PM  
**To:** Anderson, Jeffry  
**Subject:** RE: Grant Lake Project Site Visit

Understood. If you have anyone that can attend in your absence, we'd be more than willing to show them around.

Cory

**From:** Anderson, Jeffry [[mailto:jeffry\\_anderson@fws.gov](mailto:jeffry_anderson@fws.gov)]  
**Sent:** Thursday, August 08, 2013 1:44 PM  
**To:** Cory Warnock  
**Subject:** Re: Grant Lake Project Site Visit

Sorry, Cory. I have a previous commitment on the 5th and won't be able to attend.

Jeffry Anderson  
Field Supervisor  
USFWS, Kenai Fish & Wildlife Field Office  
43655 Kalifornsky Beach Road, Soldotna, AK 99669  
Office: 907-260-0132  
Cell: 907-252-4896

On Thu, Aug 8, 2013 at 12:12 PM, Cory Warnock <[cory.warnock@mcmillen-llc.net](mailto:cory.warnock@mcmillen-llc.net)> wrote:

**Grant Lake Hydroelectric Project (FERC No. 13212) Natural Resources Study Stakeholder Group:**

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<https://maps.google.com/maps?saddr=anchorage,+ak&daddr=moose+pass,+ak&hl=en&sll=48.753312,-122.46131&sspn=0.153468,0.349846&geocode=FQgdpgMdCrQQ9ylBP7MEdpHIVjHjaISnWrp9JQ%3BFUz3mgMdx88Y9ymfMujZPsHHVjGGkQzkXT9UfA&mra=ls&t=m&z=9>

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---

**From:** Cory Warnock  
**Sent:** Thursday, August 08, 2013 1:34 PM  
**To:** Gates, Kenneth  
**Subject:** RE: Grant Creek Update  
**Attachments:** Grant Creek Preliminary Weir Data.pdf

Hi Ken,

Attached you'll find a summary of weir passage on Grant Creek through yesterday. I'm sorry I couldn't provide something more exciting for you but as you'll see, we have yet to see an adult Chinook and actually, very few sockeye relative to our expectations. Below, I've also embedded some preliminary data from our lower incline plane trap. Again, this is preliminary and it is likely that some changes will be made to the source data during final data processing.

I'd be more than happy to have a conversation to discuss and/or answer any questions you may have. Let me know if this meets your needs or if you'd like to have some follow-up and I'll give you a call. I appreciate your patience. As I'm sure you know, getting data mid-field season can sometimes take a bit longer than I'd like! ☺

Cory

Species	Collected			Bismarke Brown Dye Tests		
	Total	Morts	%	Released	Recovered	%
Chinook	149	4	2.7%	96	13	13.5%
Coho	135	3	2.2%	93	8	8.6%
Dolly Varden	561	10	1.8%	439	27	6.2%
Rainbow Trout	26	2	7.7%	6	0	0.0%
Unknown						
Salmonid	1	1	100.0%	---	---	---
Whitefish	31	1	3.2%	3	0	0.0%
	903	21		637	48	

**From:** Gates, Kenneth [[mailto:kenneth\\_gates@fws.gov](mailto:kenneth_gates@fws.gov)]  
**Sent:** Tuesday, July 30, 2013 9:09 AM  
**To:** Cory Warnock  
**Subject:** Re: Grant Creek Update

Hey Cory,

Thanks for the quick reply. Yes, for now adult Chinook is my primary interest but smolt and juvenile migration timing is something that I would like to look at as well. I would expect some adult Chinook to start and show up at any point. They seem to have a delayed migration timing compared to other systems in the Kenai. Talk to you soon. --Ken

On Tue, Jul 30, 2013 at 7:16 AM, Cory Warnock <[cory.warnock@mcmillen-llc.net](mailto:cory.warnock@mcmillen-llc.net)> wrote:

Sounds good, Ken. I can tell you that no Chinook have hit our weir on Grant Creek yet. Is that your primary area of interest or would you like to no some other information related to the weir and our efforts to collect out migrating juveniles? If Chinook escapement is your focus, I can just make a note to keep you updated as they begin to show up and subsequently, throughout the remainder of the season.

Let me know your preference and I'll make it happen,

Cory

**From:** Gates, Kenneth [mailto:[kenneth\\_gates@fws.gov](mailto:kenneth_gates@fws.gov)]  
**Sent:** Monday, July 29, 2013 4:53 PM  
**To:** Cory Warnock  
**Subject:** Re: Grant Creek Update

That would be great Cory--I appreciate it. We have several weirs throughout the Kenai Watershed that are run for Chinook escapement and I was curious what the numbers, run-timing, and length and sex compositions were looking like. I look forward to chatting with you. --Ken

On Mon, Jul 29, 2013 at 1:55 PM, Cory Warnock <[cory.warnock@mcmillen-llc.net](mailto:cory.warnock@mcmillen-llc.net)> wrote:

Hi Ken,

I understand that you called CIAA recently to get an update on our current fish capture numbers on Grant Creek. My apologies for not getting back to you sooner. I was on vacation all last week. I receive periodic and scheduled updates on trapping numbers from our on-site field crew but given your request (and my delayed response), I've asked them to get me an expedited update which I'm expecting later this week. If there is anything specific you'd like to know, please give me a heads-up. Otherwise, I'll be giving you a call late this week to give you a general summary and update you on progress.

Thanks,

Cory

# Preliminary Data

## Grant Lake

Adult

	Sockeye		Pink		Chum		King		Coho		Rainbow		Dolly Varden	
	Daily	Cumm	Daily	Cumm	Daily	Cumm	Daily	Cumm	Daily	Cumm	Daily	Cumm	Daily	Cumm
18-May							Working on weir							
19-May							Working on weir							
20-May							Safety Check							
21-May							Safety Check							
22-May							Safety Check							
23-May							Safety Check							
24-May											1	1		
25-May							Trap put in				2	3		
26-May											1	4		
27-May											0	4		
28-May											0	4		
29-May											0	4		
30-May											0	4		
31-May											0	4		
1-Jun											0	4		
2-Jun											0	4		
3-Jun											0	4		
4-Jun											0	4		
5-Jun											0	4		
6-Jun											1	5		
7-Jun											0	5		
8-Jun											0	5		
9-Jun											0	5		
10-Jun											0	5		
11-Jun											0	5		
12-Jun											0	5		
13-Jun											0	5		
14-Jun											0	5		
15-Jun											1	6		
16-Jun											1	7		
17-Jun											2	9		
18-Jun									High water			9		
19-Jun									High water			9		
20-Jun									High water			9		
21-Jun									High water			9		
22-Jun									High water			9		
23-Jun			Weir and live box back in a	1250 pm							1	10		
24-Jun											0	10		
25-Jun											1	11		
26-Jun											0	11		
27-Jun											0	11		

# Preliminary Data

## Grant Lake

Adult

	Sockeye		Pink		Chum		King		Coho		Rainbow		Dolly Varden	
	Daily	Cumm	Daily	Cumm	Daily	Cumm	Daily	Cumm	Daily	Cumm	Daily	Cumm	Daily	Cumm
28-Jun											1	12		
29-Jun											1	13		
30-Jun											0	13		
1-Jul											0	13		
2-Jul											0	13		
3-Jul											1	14		
4-Jul											0	14		
5-Jul											0	14		
6-Jul											0	14		
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24-Jul											0	14		
25-Jul											0	14		
26-Jul											0	14		
27-Jul											0	14		
28-Jul		0									0	14		
29-Jul	1	1									0	14		
30-Jul	1	2									0	14		
31-Jul	0	2									0	14		
1-Aug	0	2									0	14		
2-Aug	3	5									0	14		
3-Aug	0	5									0	14		
4-Aug	0	5	2	2							0	14		
5-Aug	0	5	1	3							0	14		
6-Aug	0	5	2	5							0	14		
7-Aug	2	7	1	6							0	14		

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**From:** Cory Warnock  
**Sent:** Thursday, August 08, 2013 1:37 PM  
**To:** 'Kahn, Lynnda'  
**Subject:** RE: Grant Lake Project Site Visit

Thanks, Lynnda. He was attached on the initial email as well. I covered my bases for once!! ☺

Have a good day.

**From:** Kahn, Lynnda [[mailto:lynnda\\_kahn@fws.gov](mailto:lynnda_kahn@fws.gov)]  
**Sent:** Thursday, August 08, 2013 1:36 PM  
**To:** Cory Warnock  
**Subject:** Re: Grant Lake Project Site Visit

Cory, I no longer work in the Fisheries Office so Jeff Anderson will be your point of contact from now on, on this project.  
Have a good day.

Lynnda

Lynnda Kahn | Refuge Operations Specialist | (907) 260-2818  
Kenai National Wildlife Refuge  
1 Ski Hill Rd., P.O. Box 2139 | Soldotna, AK 99669

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**From:** "Gates, Kenneth" <[kenneth\\_gates@fws.gov](mailto:kenneth_gates@fws.gov)>  
**Date:** August 13, 2013, 12:23:31 PM PDT  
**To:** Cory Warnock <[cory.warnock@mcmillen-llc.net](mailto:cory.warnock@mcmillen-llc.net)>  
**Subject:** Re: Grant Creek Update

Cory,

I just got back in from working in the field for the past week. I appreciate the update. The info that you sent is great. I would have expected a few more sockeye by now, maybe they will pick up soon. I look forward to talking more in the future. --Ken

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**To:** Cory Warnock  
**Subject:** Re: Grant Creek Update

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Thanks,

Cory

***Cory Warnock***

*Senior Licensing and Regulatory Consultant*

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5771 Applegrove Ln.

Ferndale, Wa. 98248

---

**From:** Cory Warnock  
**Sent:** Thursday, August 15, 2013 12:13 PM  
**To:** Audrey Alstrom (aalstrom@aidea.org); Jeffry Anderson (Jeffry\_Anderson@fws.gov); Patricia Berkhahn (patricia.berkhahn@alaska.gov); Valerie Conner (valerie@akcenter.org); Ted Deats (ted.deats@alaska.gov); Shina Duvall (shina.duvall@alaska.gov); Ricky Gease (ricky@kenairiversportfishing.com); David Griffin (david.griffin@alaska.gov); Ken Hogan (kenneth.hogan@ferc.gov); Jan Konigsberg (jan@hydroreform.org); Denise Koopman (denise.koopman@usace.army.mil); Ginny Litchfield (ginny.litchfield@alaska.gov); Katherine McCafferty (katherine.a.mccafferty2@usace.army.mil); Monte Miller (monte.miller@alaska.gov); Krissy Plett (krissy.plett@alaska.gov); Eric Rothwell (eric.rothwell@noaa.gov); Pamela Russell (pamela.russell@alaska.gov); Kim Sager (kimberly.sager@alaska.gov); Lesli Schick (lesli.schick@alaska.gov); Robert Stovall (rstovall@fs.fed.us); Cassie Thomas (cassie\_thomas@nps.gov); Sue Walker (susan.walker@noaa.gov); Lynnda Kahn (Lynnda\_Kahn@fws.gov); Judith Bittner (judy.bittner@alaska.gov); Barbara Stanley (bstanley@fs.fed.us); Brenda Trefon (btrefon@kenaitze.org)  
**Cc:** Mike Salzetti; John Stevenson; 'Mark Miller (mark.miller@bioanalysts.net)'; Cory Warnock; Emily Andersen  
**Subject:** RE: Grant Lake Project Site Visit

Hi all,

Just a reminder to those who haven't responded yet to please let me know soon (preferably by next Monday, August 19<sup>th</sup>) if you will/will not be attending the site visit on Grant Creek on September 5<sup>th</sup> (specifics repeated below). This advanced notice will allow us to plan appropriately from a logistical perspective.

A couple supplementary reminders for those who will be attending:

- Recent rain has brought flows up so I would advise chest waders as opposed to hip boots.
- Probably preaching to the choir here but, per our Fish Resource Permit, "Gloves, boots and collecting gear should be disinfected between streams to reduce pathogen transmission".

Thanks and looking forward to seeing as many of you as can attend,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

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**Sent:** Thursday, August 08, 2013 1:12 PM

**To:** Audrey Alstrom (aalstrom@aidea.org); Jeffry Anderson (Jeffry\_Anderson@fws.gov); Patricia Berkahn (patricia.berkahn@alaska.gov); Valerie Conner (valerie@akcenter.org); Ted Deats (ted.deats@alaska.gov); Shina Duvall (shina.duvall@alaska.gov); Ricky Gease (ricky@kenairiversportfishing.com); David Griffin (david.griffin@alaska.gov); Ken Hogan (kenneth.hogan@ferc.gov); Jan Konigsberg (jan@hydroreform.org); Denise Koopman (denise.koopman@usace.army.mil); Ginny Litchfield (ginny.litchfield@alaska.gov); Katherine McCafferty (katherine.a.mccafferty2@usace.army.mil); Monte Miller (monte.miller@alaska.gov); Travis Moseley (tmoseley@fs.fed.us); Krissy Plett (krissy.plett@alaska.gov); Eric Rothwell (eric.rothwell@noaa.gov); Pamela Russell (pamela.russell@alaska.gov); Kim Sager (kimberly.sager@alaska.gov); Lesli Schick (lesli.schick@alaska.gov); Robert Stovall (rstovall@fs.fed.us); Cassie Thomas (cassie\_thomas@nps.gov); Sue Walker (susan.walker@noaa.gov); Lynnda Kahn (Lynnda\_Kahn@fws.gov); Judith Bittner (judy.bittner@alaska.gov); Barbara Stanley (bstanley@fs.fed.us); Brenda Trefon (btrefon@kenaitze.org)

**Cc:** Mike Salzetti; John Stevenson; 'Mark Miller (mark.miller@bioanalysts.net)'; Cory Warnock; Emily Andersen

**Subject:** Grant Lake Project Site Visit

**Grant Lake Hydroelectric Project (FERC No. 13212) Natural Resources Study Stakeholder Group:**

HEA would like to invite all of you to a site visit for the proposed Grant Lake Hydro Project. The visit will take place on September 5<sup>th</sup> and will likely last a majority of the day when taking both the visit and associated travel to and from the site into consideration. We will be focusing our tour on the Grant Creek study effort given that is where a majority of our field effort and study infrastructure will be located during this time. As such, waders or hip boots should be brought as we will be accessing the site via boat from Moose Pass and spending a majority of our time on the creek. Rain gear and/or bug spray would also be advisable depending on the weather! Mike Salzetti (HEA), John Stevenson (lead aquatics) and myself will be on site during the tour to lend a hand and answer any questions that come up during the day. We'd like to have everyone meet at the boat dock in Moose Pass at 9am. Directions from both Anchorage and Seward to Moose Pass are linked below and a specific parking instructions map is attached. We have the intention of having everyone back to their vehicles by 3pm. HEA will be providing sack lunches for everyone who can attend so please let me know (respond to this email) by Monday, August 19<sup>th</sup> if you will be able to attend and/or if you have any specific dietary needs and we will begin to make logistical preparations accordingly.

HEA looks forward to providing you a first-hand view of the environment and study infrastructure, updating you on the status of the field season and continuing the process which will ultimately lead to the development of the 2013 study reports and our associated study results meeting.

**Anchorage to Moose Pass -**

<https://maps.google.com/maps?saddr=anchorage,+ak&daddr=moose+pass,+ak&hl=en&sll=48.753312,-122.46131&sspn=0.153468,0.349846&geocode=FQgdpgMdCrQQ9yIBP7MEdpHIVjHjalSnWrp9JQ%3BFUz3mgMdx88Y9ymfMujZPsHHVjGGkQzkXT9UfA&mra=ls&t=m&z=9>

**Seward to Moose Pass -**

[https://maps.google.com/maps?saddr=seward,+ak&daddr=moose+pass,+ak&hl=en&sll=48.753312,-122.46131&sspn=0.153468,0.349846&geocode=FecdlQMdUrEX9ynF\\_yrybpvHVjG\\_Edl2wmDhWw%3BFUz3mgMdx88Y9ymfMujZPsHHVjGGkQzkXT9UfA&mra=ls&t=m&z=10](https://maps.google.com/maps?saddr=seward,+ak&daddr=moose+pass,+ak&hl=en&sll=48.753312,-122.46131&sspn=0.153468,0.349846&geocode=FecdlQMdUrEX9ynF_yrybpvHVjG_Edl2wmDhWw%3BFUz3mgMdx88Y9ymfMujZPsHHVjGGkQzkXT9UfA&mra=ls&t=m&z=10)

**Cory Warnock**

*Senior Licensing and Regulatory Consultant*

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**From:** Cory Warnock  
**Sent:** Tuesday, August 20, 2013 11:34 AM  
**To:** Lesli Schick (lesli.schick@alaska.gov); pamela.russell@alaska.gov  
**Cc:** Mike Salzetti  
**Subject:** September 5th Site Visit (Grant Creek)

Hi Lesli and Pam,

I'm glad that you will both be able to attend the site visit on Grant Creek on September 5<sup>th</sup>. Given your involvement in both the overall natural resources effort and the Iditarod National Historic Trail (INHT) discussions, I wanted to send you both a quick email to let you know that while we are anticipating a free-flowing discussion while we tour the creek, we'd like to keep it as centric to the natural resources studies as possible. HEA is in the initial planning phase of a separate site visit strictly devoted to the INHT to hopefully occur later in September. You two (along with other representatives) will obviously be invited to that visit as well and in-depth dialogue related to the trail will be discussed at that time.

Just a quick heads-up related to planning and I'll look forward to seeing you both on the 5<sup>th</sup>,

Cory

***Cory Warnock***  
*Senior Licensing and Regulatory Consultant*

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**From:** Amal Ajmi  
**Sent:** Friday, August 23, 2013 7:09 AM  
**To:** Jeff Selinger ([jeff.selinger@alaska.gov](mailto:jeff.selinger@alaska.gov))  
**Subject:** Moose Surveys for Grant Lake

Hello Mr. Selinger,

It has been a long summer and would like to touch base with you regarding our conversation at the beginning of this year. I was very appreciative of you taking the time to briefly discuss the possibility of conducting aerial surveys to investigate winter use of moose in the Grant Lake area. I looked over my notes and recall speaking with Jose Decreft regarding the surveys, he was not very interested at the time of our conversation. I also had Matt Keller, Dave Philkills and Mike Litzen on my list.

I would like to propose the following providing there is still interest:

- I found a Palmer pilot Mike Meekin (Meekin's Air Service) who is interested in doing the work. He comes highly recommended by Fish and Game and other contract pilots. He has extensive moose survey work experience and is familiar with the area. I think this would be cheaper also than driving to Nikiski or Homer. Weather factors in and it would be cheaper to hold out in Anchorage waiting out weather and working on other projects.
- Fly a modified survey utilizing contours rather than straight line (like ADFG does here in the interior), maybe like sheep surveys (although I have never flown any). Starting high looking for tracks and spending more time in the riparian areas where more brows and cover are available. You mentioned North Grant Lake, tributaries, and Trail River.
- There are 2 survey flights that have been requested by the client. The first would be flown sometime in November – December (snow dependent), the second in February – March. Both in the same winter (2013-2014) to evaluate winter use.
- Survey an area of: 14,180 acres surrounding the entire lake and surrounding areas.
- I have looked into the flight level restrictions, and have only found restrictions for rotary aircraft. Am I to understand that they are the same (500 AGL) for fixed wing also? Do you know where I can get a full list of restrictions / rules and regs to stay in compliance?
- Any sheep or goats seen (in the high country) on this survey will also be recorded.

Your thoughts? I know you are most likely gearing up for hunting season (as we are all), and I would appreciate any assistance. I will try to call you next week (26- 30 August) to discuss your thoughts and try to tighten up a plan. Thanks again.

Amal Ajmi  
Senior Wildlife Scientist

ERM Alaska, Inc.  
748 Gaffney Rd., Suite 102  
Fairbanks, AK 99701

907-458-8273 (Direct)

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**Kenai Hydro, LLC**  
3977 Lake Street  
Homer, AK 99603

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August 22, 2013

Secretary Kimberly D. Bose  
Federal Energy Regulatory Commission  
Attn: DHAC, PJ-12.2  
888 First Street, NE  
Washington, DC 20426

**- FILED ELECTRONICALLY -**


**RE: KHL Responses to Alaska Department of Fish and Game Informal Study Plan Comments  
Email Dated June 11, 2013**

Dear Secretary Bose:

Kenai Hydro, LLC (KHL) hereby submits its responses to Alaska Department of Fish and Game (ADF&G) informal study plan comments. KHL has attached an informal comment response table to the comments submitted by ADF&G. Given the clarifying nature of a majority of the comments, KHL is confident that this will assist ADF&G in further understanding the comprehensive nature of the study scopes. Additionally, KHL is willing to have a call with ADF&G to discuss any additional questions that may exist after receipt of our responses.

As explained in the December 12, 2012 meeting attended by ADF&G, the formal comment period for these study plans occurred in 2010 after considerable Agency and Stakeholder input. However, in the spirit of cooperation and collaboration KHL was willing to entertain informal comments submitted by February 1, 2013. The amount of time and resources required to modify study plans, obtain study permits, procure the required equipment and mobilize is very significant. Given this and the fact that KHL was already over a month and a half into their study season, implementation of any study methodology changes received in the ADF&G comments in June was not possible. At this point, KHL views the time for refinement to the study plans as past and the study plans themselves as inclusive of the quantitative needs and accessory clarification identified by the Stakeholders. If some of the additional detail related to the ADF&G identified methods is deemed as needed to be incorporated by KHL, that detail will be provided in the methods section of the respective 2013 study report.

Sincerely,



/s/ Mike Salzetti

Mike Salzetti  
Project Manager  
Kenai Hydro, LLC

cc:

Service List and Mailing List for Project No. 13212



## Summary of informal comments from ADF&G (6/11/13) on draft study plans for the Grant Lake Project (No. 13212)

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
<b>General/Additional Study Requests</b>					
1	6/11/2013	ADF&G	Aquatics	<b>1 Introduction</b> <b>Proposed Project Description, Page 1</b> No maps are included in this section. The figures/maps provided later (Figures 1 and 2 on pages 5 and 7) do not provide the resolution necessary to be of much use. The extent of anadromous waters needs to be clearly shown on maps.	Figure 2 on pg. 6 of the plan (“Study reaches designated on Grant Creek and proposed telemetry tower location”) accurately displays the extent of anadromous waters on Grant Creek with a green icon and associated text stating “ADFG Anadromous Fish Distribution Limit”.  A comprehensive GIS database is being developed as part of the study program that will document findings related to the pertinent investigations for all resource areas.
2	6/11/2013	ADF&G	Aquatics	<b>2 Overall Goals Identified during Project Scoping, Page 2</b> This section lists seven goals for this study. There is no mention of a goal for the Trail Lakes Narrows component of this study.	Under Section 3.3 (“Need for additional information”), the final bullet identifies “Fish resources and habitat use of the Trail Lake Narrows at the proposed bridge site.” as a specific objective that will be addressed as part of the 2013 study work. Detailed methodology related to this task is described on pgs. 35 and 36. KHL will add the Trail Lakes Narrows work to the goals section of the completed Aquatics Study Report.
3	6/11/2013	ADF&G	Aquatics	<b>3.1 Pre-2009 Studies</b> <b>Grant Creek Fish Resources, Page 3-7</b> This section lists Johnson and Klein, 2009 in multiple places to describe anadromous fish resources present in Grant Creek. This is the ADF&G Anadromous Waters Catalog (AWC) which has been updated several times since the cited version. The description of resources may or may not have changed in the updated version. Please verify information and cite the current version of the AWC.  Current version of the AWC: Johnson, J. and P. Blanche. 2012. Catalog of waters important for spawning, rearing, or migration of anadromous fishes – Southcentral Region, Effective June 1, 2012. Alaska Department of Fish and Game, Special Publication No. 12-06,	KHL acknowledges that an updated (2012) version of the AWC document exists which does list Grant Creek. This will be updated in the appropriate section of the Aquatics Study Report. In addition, the reference to the AWC associated with sculpin and stickleback will be removed from the report. The other two citations listed after the sentence (AEIDC 1983 and USFWS 1961) adequately document resident fish species presence in Grant Lake.  KHL would like to note that although this comment is relevant to the current accuracy of the citation, it does not have any ramifications on the validity of the studies being proposed and conducted within the plan.

<sup>1</sup> The full text of comments is included in this column, unless otherwise noted. Where the full text is not included, a reference for the full comment is included.

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				<p>Anchorage.</p> <p>A citation on page 6 refers to Johnson and Daigneault, 2008 version of the AWC, as not listing Grant Lake or its tributaries in the AWC. The next sentence lists resident species (sculpin and stickleback) in Grant Lake and lists the Johnson and Klein, 2009 version of the AWC as cited. The AWC generally does not list resident fish species, therefore we must question the citation. Additionally Figure 2, on page 7, identifies the ADF&amp;G anadromous fish distribution limit at a point several hundred feet below the lake outlet but again fails to identify any AWC version used to establish that limit. The plan needs to be updated to correctly cite the current AWC version</p>	
4	6/11/2013	ADF&G	Aquatics	<p><b>Figure 1, Page 5</b></p> <p>This map of the fish and aquatics resources study area is inadequate in that it does not clearly identify the study area, is blurry on an 8 ½" X 11" page, is split with two colors which make use difficult, and is not of sufficient resolution to properly view project features or read map labels.</p>	Figure 1 is intended to be a general overview of the study area. This image along with figures 2 (study reach designation) and 3 (instream flow transect locations) document the study area.
5	6/11/2013	ADF&G	Aquatics	<p><b>3.2 2009 and 2010 Aquatic Resources Studies Fish, Page 6-8</b></p> <p>This section describes previous studies and their methods. The first bullet under the 2009 studies was <i>"Determine the relative abundance and distribution of juvenile fish in Grant Creek."</i> The study descriptions provided are not sufficient to develop relative abundance estimates. From page 8: <i>"Relative abundance and distribution of juvenile fish were determined by minnow trapping and calculating the catch-per-unit-effort (CPUE) for each reach."</i> The discussion describes the number of minnow traps used, some catch results, and determinations of distribution and relative abundance. The presence of sockeye salmon was noted but not included in the determinations of</p>	Section 3.2 ("2009 and 2010 Aquatic Resources Studies") is intended to describe what studies have been conducted in the past in relation to Grant Lake and Grant Creek. The methods described in this section represent study intentions developed in advance of formal agency consultation and the associated modifications made to the plans as a result. The more robust and quantitative methods for the 2013 studies are presented in Section 4.

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				<p>distribution and relative abundance. This highlights the flaws in this study in that the methods used in this study fail to recruit sockeye juveniles. This results in sockeye juvenile underestimation or the appearance that few sockeye utilize the area. Neither are acceptable conditions.</p> <p>This study utilized angling to determine relative abundance for adult fish. This is a very selective method for sampling adult fish. Different species require different tackle and different approaches. The determination of spawning timing of resident fish failed in this study. Information of use included: Rainbow trout (RBT) were caught throughout the creek with more caught in reaches 3-5, spawning condition was seen in adult RBT, and adult RBT were observed in the upper portions of the canyon reach. These factors will help inform instream flow release prescriptions.</p>	
6	6/11/2013	ADF&G	Aquatics	<p><b>Instream Flow, Page 9</b> A statement that the Technical Work Group (TWG) and Kenai Hydro, LLC (KHL) decided to select an instream flow methodology based on 2009 Aquatic Resources and Hydrology studies. Was this the selection of the Instream Flow Incremental methodology (IFIM) and Physical Habitat Simulation (PHABSIM) model now being proposed? Provide mapping of the location of the 18 transects utilized in 2010 along with mesohabitat identification of each transect and association with microhabitats.</p>	The collaborative decision of the group in 2009/2010 was to utilize IFIM and PHABSIM for Grant Creek. Figure 3 (“Location of Grant Creek instream flow transects”) documents the location of all 18 transects utilized. Table 1 (“Proposed mesohabitat assessment sites”) documents individual transect characteristics.
7	6/11/2013	ADF&G	Aquatics	<p><b>Macroinvertebrates, Plankton and Periphyton, Page 9</b> The results of the 2009 sampling may have been impacted by a large rain event which required postponement of the sampling. The flushing effect of high streamflow may affect both macroinvertebrate (MI) counts as well as species diversity. Flushing will also reduce the counts of</p>	Comment noted.

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				available plankton important to filter feeders such as sockeye juveniles.	
8	6/11/2013	ADF&G	Aquatics	<b>3.3 Need for additional information, Page 9-10</b> This section should also identify the development of site specific Habitat Suitability Index Curves (HSC) for use in modeling.	The development of HSC's on Grant Creek is explicit per Section 4.7.2 of the Aquatics Study Plan, "Information related to site-specific habitat suitability criteria (HSC) will be developed from these data and used in combination with HSC available in the existing literature and professional judgment to determine final HSC to be used in modeling." KHL will add this specific task to the goals and objectives section of the Aquatics Study Report.
9	6/11/2013	ADF&G	Aquatics	<b>4.1 Study Area, Page 10</b> This section fails to identify the Trail Lake Narrows study area near the proposed bridge crossing. The text identifies Figure 1 as showing the study area. This map of the fish and aquatics resources study area is inadequate in that it does not clearly identify the study area, is blurry on an 8 1/2" X 11" page, is split with two colors which make use difficult, and is not of sufficient resolution to properly view project features or read map labels.	The white line labeled, "Approximate Access Road – Transmission Line Alignment" documents the area across the narrows that is being evaluated. KHL appreciates the comment associated with the study area map presented in the Aquatics Study Plan. Refined and site-specific maps will be presented as part of the Aquatics Study Report.  In addition, a comprehensive GIS database is being developed as part of the study program that will document findings related to the pertinent investigations for all resource areas.
10	6/11/2013	ADF&G	Aquatics	<b>4.3 Grant Creek Fish Weir, Pages 10</b> We have concern that the proposed width between the pickets is not well defined. A maximum of three inches of spacing between pickets is identified. How will the spacing be determined? What will be the response if fish begin to gill themselves in the weir? Is this proposed to be a one size fits all weir? Correct picket spacing will be important or smaller resident fish will be gilled in the weir or trap. Is there an associated trap box? The size of the trap box is important when dealing with small fish as well as large fish, such as chinook salmon. It is stated that the weir will be monitored at least twice per day. Previously in this study plan it was reported that estimated escapement of chinook and sockeye salmon was 231 chinook and 6293 sockeye in 2009. This escapement level will require constant monitoring with sufficient staff during the spawning season to prevent crowding and mortality associated with the weir and trap. Monitoring will be required	Based upon our previous discussions with stakeholders, requests for comments and our Project schedule the weir has been in place since May 25 <sup>th</sup> . All appropriate and requested documentation was provided to the requisite resource agencies for permitting purposes and all permits have been acquired.  There is a crew tending the weir 7 days a week 24 hrs per day through the study period. The crew is living onsite at Grant Creek. The picket spacing is 1 inch and they have the capability to remove pickets for high flow, to allow unobstructed fish passage, and to manage debris.

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				<p>over a full 24 hour period as many fish tend to move more at night or during twilight hours here in Alaska.</p> <p><i>“Captured fish will also be measured if time allows and fish quantity is not too large to allow safe handling.”</i> All captured fish should be measured. This will also identify if unintentional size selectivity occurs during tag placement efforts and will promote utilization of all size fish in the study. Size selectivity may result in age class discrimination or spawning area identification bias due to size related access issues.</p> <p>When a weir is in place there will be increasing demand for removal of accumulated dead fish as the season progresses. All dead fish accumulating on the upper face of the weir should be checked to determine if they spawned and to recover radio tags. Excessive numbers of dead fish, which have not spawned, are an indication of watershed failures, such as low flows or low oxygen, or of improper handling during their capture at the weir. Improper handling may occur through insufficient monitoring of the weir which allows crowding and causes stress and reduced vitality, or physical handling such as fingers in gills or excessive time out of water due to insufficient staffing. These fish are nearing the end of their spawning run and many will be in a condition of diminished energy and vitality. Adequate staffing and 24 hour monitoring will reduce handling times and reduce possible effects of crowding and damage related to handling.</p>	
11	6/11/2013	ADF&G	Aquatics	<p><b>4.4 Grant Creek Spawning Distribution and Abundance, Page 13</b></p> <p>The first primary bullet in this section states <i>“Use of a counting weir to obtain a direct count of all salmon entering Grant Creek during the open water season.”</i></p> <p>This is probably flawed in that there will be high water events during spring breakup or during storm</p>	<p>Based upon our previous discussions with stakeholders, requests for comments and our Project schedule, the weir has been in place since May 25<sup>th</sup>. All appropriate and requested documentation was provided to the requisite resource agencies for permitting purposes and all permits have been acquired.</p> <p>That said, ADF&amp;G is correct that high water periods may periodically create conditions where pickets will need to be pulled</p>

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				<p>events which will either overtop the weir, damage the weir, or otherwise allow fish to pass uncounted. Since fish tend to follow freshets, it is probable that substantial fish movement could occur during these times. Once this happens, there will be no comparison to previous data and no evaluation of relative abundance will be possible.</p> <p>Additionally, lack of instream visibility may hamper foot survey sampling during high flow events. The secondary bullet seeks to estimate observer error by comparison to foot surveys, and will also be problematic. Any comparison to 2009 foot surveys would be suspect due to differences in turbidity and visibility between years, and the use of different observers with different skill sets. Observer error may include incorrect identification of species, miscount of numbers (either too many or too few), or just not seeing fish due to low light conditions, water disturbance or depth of fish in the stream. Bank estimates are prone to problems if fish are spooked by the proximity of the observer, if the observer is too far from the stream on a trail, or if the observer is at an angle that makes viewing difficult due to glare, ripples etc. Any estimation of error would change under differing conditions.</p> <p>The second primary bullet states: <i>“A radio telemetry study to further assess the spawning distribution of Chinook and Sockeye salmon, with emphasis on Reach 5(Canyon Reach). Coho salmon may be included in the study if conditions allow.”</i></p> <p>Spawning distribution of salmon in the study area should not be restricted to chinook and sockeye salmon spawning. Spawning of all salmon species within the project area are a concern and needs to be assessed. The statement that <i>“coho salmon may be included in the study”</i> fails to address complete assessment. The periodicity of coho may be a problem for researchers, but they are also important to the system, and understanding potential impacts of project development on this species is important</p>	<p>due to high flows. This year there was no “spring breakup impact to the weir and flows are currently high enough that had extensive debris come down the channel, it would have been observed by now.</p> <p>We agree that observer error (efficiency) can be influenced by many factors (experience, visibility, etc.) and direct comparisons of 2009 and 2013 results may be erroneous. However, the observer error that will be estimated from Grant Creek via the use of a weir in 2013 was part of the original stakeholder comments and the need to calibrate visual surveys for 2013. Observer error in 2009 was estimated based on information sources outside Grant Creek, which is also likely to have as much if not more error associated with the estimate using area under the curve (AUC). That is, observer error is more likely to be comparable within the same watershed as opposed to estimates outside of the watershed. Escapement estimates are set for 2009 but we can document the estimates of observer error used in 2009 and 2013 for escapement estimates. Your cautionary statements on comparisons are noted.</p> <p>With regard to the coho component of the comment, the intent was more to include coho as opposed to exclude them. Past data indicates that very few coho have been documented in Grant Creek. Survey timing will be consistent with the migration timing of coho and effort will be put toward documenting coho presence and habitat use. KHL has had in-depth conversations with ADF&amp;G related to coho in Grant Creek and aging and genetic analysis associated with any coho observed/captured.</p>

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				in developing instream flow prescriptions.	
12	6/11/2013	ADF&G	Aquatics	<p><b>4.4.1 Salmon Escapement to Grant Creek – Relative Species Abundance</b>  <b>Project-Related Objectives, Page 13</b>  Two of the four bullets under this section include:  <i>“Assessment of numbers and species of salmon in Grant Creek as a whole.”</i> and  <i>“Calibration of escapement estimates from foot surveys conducted in 2009.”</i>  The species of salmon in Grant Creek have been identified. Assessment of numbers of each salmon species may be problematic in that not all salmon present will receive equal treatment under this study (coho), and further that salmon escapement and return to streams varies from year to year based on many factors, including strength of parent run, instream juvenile survival, and fishery impacts on adult salmon. Thus, this objective is not attainable.</p> <p>Issues with calibration of escapement estimates from foot surveys conducted in 2009 are discussed above, under comments on Section 4.4, Grant Creek Salmon Spawning Distribution and Abundance.</p>	<p>As mentioned in KHL response #11, the intent was more to include coho as opposed to exclude them. Past data indicates that very few coho have been documented in Grant Creek. Survey timing will be consistent with the migration timing of coho and effort will be put toward documenting coho presence and habitat use. KHL has had in-depth conversations with ADF&amp;G related to coho in Grant Creek and aging and genetic analysis associated with any coho observed/captured (see statements above).</p> <p>The calibration portion of this comment has been addressed in previous responses. During the comment period, ADFG and other reviewers suggested calibration, by use of a weir, for spawning escapements to Grant Creek. Calibration of visual counts would occur for Chinook, Sockeye, and Coho salmon.</p>
13	6/11/2013	ADF&G	Aquatics	<p><b>Quantitative Objectives, Page 13-14</b></p> <ul style="list-style-type: none"> <li><i>“The primary objective is to obtain a nearly complete count of salmon of each species entering Grant Creek.”</i></li> </ul> <p>The presence of fish within the system will require instream flow protections. If we know the fish are present and the timing of their presence, why are complete counts necessary and how will that information be used? A bullet also identifies calibration of 2009 foot surveys. Issues with calibration of escapement estimates from foot surveys conducted in 2009 are discussed above, under comments on Section 4.4, Grant Creek Salmon Spawning Distribution and Abundance. Need for statistical determination should be reviewed by a biometrician. The statement that no</p>	<p>A portion of our responsibilities related to the licensing process are to document existing conditions. Counts of the various species present will assist in this documentation. Total counts of sockeye, Chinook, coho and other species at the weir document baseline conditions (abundance, migration timing, spawning period, species diversity, etc.) for the aquatic resources that will assist in instream flow considerations. The weir on Grant Creek is expected to be a total count of all fish. As a total count (true population estimate) for a single year statistical analysis is unwarranted unless pickets need to be removed in the event of changes in debris load or stream discharge. If that occurs, in the case of partial counts, all available counts in the 24-hour periods before and/or after the missing data will be used to estimate missing counts. Specifically, we would use the mean of the available counts as the estimate for each missing hour or day, and then sum the missing hourly counts to provide an estimate of the total missing count for a period.</p>

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				<p>statistical analysis is needed is unsupported.</p> <p>The use of Floy spaghetti tags and associated collection of scale samples, are briefly mentioned but there is no mention of methods to be used for tagging and scale collection. Scale sample collection may be problematic in fish close to spawning. Ageing of spawning salmon may be better accomplished by collecting otoliths from spawned out salmon.</p> <p><i>“During the salmon runs, personnel will monitor the weir and empty the catch box at least twice per day, more often if necessary.”</i></p> <p>There are no drawings of the weir or associated catch box provided. The dimensions of a catch box are important, as previously discussed under comments on Section 4.3 Grant Creek Fish Weir.</p> <p>One of the expected species in Grant Creek is the Chinook salmon. Regional issues with decline in Chinook salmon in 2012, triggered regulatory protections and has increased vigilance on interaction with these fish. It is imperative that Chinook salmon be handled as expeditiously as possible with appropriate safeguards and adequate care. Handling mortality of Chinook salmon may force removal of the weir and termination of some portions of this study.</p> <p><i>“Floy tags and radio tags will be recorded at the weir if carcasses are encountered.”</i></p> <p>All recovered tags shall be recorded by date recovered and retained until acceptance of the final study report.</p>	<p>Specifics related to tagging and aging are not explicit due to the fact that approval/permitting from ADF&amp;G was needed prior to defining. Defining those parameters and associated permits typically takes place after the study plans are developed, commented on and finalized. Per that schedule, KHL worked closely with ADF&amp;G between January and March of 2013 to develop appropriate tagging and sampling parameters and acquire all necessary permits to conduct the work. KHL will include specific methods (by species) associated with all tagging and aging efforts in the Aquatic Study Reports. Our team has secured a number of permits from various resource agencies which allow us (KHL) to conduct the natural resource studies on Grant Creek/Lake. The specific permits that apply to aquatic resource studies on Grant Creek are:</p> <ul style="list-style-type: none"> <li>• Fish Resource Permit (ADF&amp;G)</li> <li>• Fish Habitat Permit (ADF&amp;G)</li> <li>• Special Park Use Permit (ADNR)</li> </ul> <p>All stipulations that were incorporated into these permits have been adhered to up to this point. With respect to collection and analysis of fish associated with the Grant Creek weir, the primary allowances associated with weir fish collection are as follows (from Fish Resource Permit):</p> <ul style="list-style-type: none"> <li>• <i>“Unlimited numbers of all species may be passed through the weir, located near the mouth of Grant Creek to spawning areas.”</i></li> <li>• <i>“≤65 King salmon, ≤65 sockeye salmon, and ≤20 coho salmon adults may be marked with esophageal radio tags and spaghetti tags, and released alive.”</i></li> <li>• <i>“≤40 rainbow trout &gt;300 mm may be marked with surgically implanted radio tags, and released alive during the early portion of their spawning migration (March 25-June 30). These fish must also be tagged with an external tag.”</i></li> <li>• <i>“All unintended mortalities must be recorded and</i></li> </ul>



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					<p><i>returned to capture site waters.”</i></p> <p>In addition to this, KHL has worked Mark Willette at ADF&amp;G to collect appropriate aging information on the aforementioned species. Per these discussions, we've received confirmation that scale samples for Chinook, coho and rainbow will still be viable for aging purposes. With sockeye, where scale reabsorption is an issue, otoliths will be collected for aging purposes. ADF&amp;G will be conducting the scale analysis for the study and CIAA will do the otolith work for sockeye.</p>
14	6/11/2013	ADF&G	Aquatics	<p><b>Quantitative Objectives Pages 14-16</b></p> <p>On page 15, discussion of the number of fish to be tagged (we assume radio tags) states that the number of tags to be placed is based on 2009 total escapement estimates. It is unclear how the tag allocation by species was determined. The tag by species numbers cited later in this paragraph and in the ADF&amp;G issued 2013 FRP state that up to 65 King salmon, 65 sockeye salmon and 20 coho salmon are permitted to be marked with esophageal radio tags. It is very unclear how this allocation of tags is based on 2009 escapement estimates. The discussion also states that the timing of the coho run is not known, therefore coho estimates could not have been used to determine allocation of tags. Coho run timing must also be determined in Grant Creek. The coho run begins in August and may have fish actively spawning into December or even January. The periodicity is important in determination of instream flow requirements to develop instream flow prescriptions.</p> <p>Discussion of the installation of a fixed telemetry site occurs on page 16 and uses language “<i>will likely be pursued</i>” and “<i>If deployed...</i>” If such a system is going to be installed, a complete description of the system, its deployment and how it identifies and reports the presence of radio tagged fish must be included in this plan. The statements about this system, its deployment, maintenance and reporting are vague and do not inform an evaluator.</p>	<p>The number cited in the comment (and in KHL response #13) are correct and are based partially upon discussions with ADF&amp;G staff relative to permit stipulations and numbers of fish that ADF&amp;G needed to finalize previously established internal analysis (ADF&amp;G) of run timing and numbers in Grant Creek.</p> <p>The total number of tags to be used by species was not based on a percentage of the escapement to Grant Creek in 2009. If that was the interpretation it was unintended, we were merely documenting that both Chinook and sockeye are known to spawn in Grant Creek and there were estimates of escapement provided for 2009.</p> <p>Number and allocation of tags for Chinook and sockeye was based on several factors. First, Grant Creek is a very small stream, length wise, at about 0.5 miles where spawning aggregates have been noted. One among many considerations for radio telemetry is signal collision. Signal collision occurs when two or more tags are colliding (sending a signal) at about the same time. If there are too many operational tags in a given area the likelihood of signal collision increases. For this study, we assumed a detection rate of 0.80 or that about 52 tags/species would be coding (readable) during a mobile survey. During mobile surveys, hand held antennas are used to triangulate on fish locations. Sixty five tags for sockeye and 65 tags for Chinook were determined to be more than adequate for spawner distribution in Grant Creek. To put this in perspective, that is about 1 tagged fish every 41-51 ft in Grant Creek assuming an even distribution within the study area (2,640 ft/65 tags or 2,640/52 tags). As you know, spawning habitat is often clumped within specific habitats (low gradient riffles) increasing the number of fish within a given area. Too much signal collision and mobile surveys become untenable.</p>

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					<p>In an effort to further manage signal collision, different channel/code combinations and burst rates were selected and will be staggered during the tag and release phase at the weir (capture location). For tag allocation, we wanted equal representation (65 tags each) between sockeye and Chinook with known escapement estimates. For Coho salmon, there was no estimate of escapement in Grant Creek so it was decided that at least 20 tags would be available for use. In a recent site visit in November (2012) CIAA staff saw little evidence of Coho spawning (redds or carcasses).</p> <p>The fixed radiotelemetry systems deployed (SRX/DSP Lotek) use a DSP system that allows us to scan (listen) for all channels and codes and reduces scan time. Underwater bare coax antennas have been placed into Grant Creek at the mouth and reach 4/5 boundary. An array of two antennas (lines of detection) have been used at the upstream location to determine direction of movement. At the lower site only one antenna array was used because directional information was not needed. We did not use aerial antennas because they offer only presence information, have a much larger detection field and they are more prone to signal collision and signal bounce. The fixed telemetry systems are monitored each week of the study period. The information downloaded from the fixed site receivers are placed into a relational database where individual channel/code combination are related to individual tagged fish.</p>
15	6/11/2013	ADF&G	Aquatics	<p><b>4.5 Grant Creek Resident and Rearing Fish Abundance and Distribution, Page 16</b>  This section identifies using minnow traps to assess juvenile fish presence. Sockeye juveniles do not recruit to baited minnow traps, therefore, the sampling will be incomplete. Some sockeye juveniles may be seen during snorkeling surveys but turbid water conditions may make that method unreliable. Dolly Varden are not mentioned in this section, yet have a presence in the system.</p>	<p>As described in Section 4.5.2, Inclined plane traps will also be used for juvenile and outmigrant monitoring.. Any Dolly Varden captured via either minnow traps or the incline plane traps will be documented as well.</p>
16	6/11/2013	ADF&G	Aquatics	<p><b>4.5.1 Adult Rainbow Trout Abundance, Distribution, and Spawning in Grant Creek Quantitative Objectives, Page 16-17</b>  <i>"Obtain a count of adult Rainbow trout entering Grant Creek during the open water season."</i>  Define "adult"...Is this a length consideration? The</p>	<p>Per KHL's request the FRP reduced the allowable size for tagging of rainbow trout from 500mm to 300mm. This request was based primarily on historical data and initial rainbow trout captures in Grant Creek indicating that very few fish in excess of 500mm were likely to be observed (HDR 2010, see Figure 3.5.2-16). Per KHL's earlier response regarding the documentation of existing conditions,</p>

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				<p>ADF&amp;G FRP has been amended to reduce the minimum length for rainbows to be tagged with radio telemetry tags from 500mm to 300mm. Is a less than 12 inch rainbow trout considered an adult? 300mm fish probably would not spawn in the near future so how does the telemetry study inform of rainbow trout spawning habitat utilization identified as a need under 4.5? The FRP identifies March 25 to June 30 as the time period allowed for rainbow trout radio tag surgical implantation. If larger rainbows spawn above the weir in Grant Creek, it will also be imperative that rainbow trout moving back down the stream must be quickly passed over the weir. Reconditioning kelts have limited energy and will not be able to avoid being held against the weir by streamflow and may not survive if delayed at the weir. Weir caused mortality of rainbow trout kelts will not be acceptable.</p> <p>Angling is proposed to help with obtaining more complete information. Angling would be of very limited use because the weir is supposed to trap all large fish accessing Grant Creek. Angling for selective size classes will skew the representativeness of the data collected and may also have collection overlap with fish KHLded for Upper Trail Lakes and tributaries. Again, proposed methods are lacking.</p> <p><i>“Surgical method will generally follow those described by Summerfelt and Smith (1990).”</i> The use of the term “generally” is not acceptable. Methods are vague and subject to unknown change.</p> <p><i>“Fish within the dominant size range of mature Rainbow trout (500 - 700 mm) will likely weigh 1800-6000 grams (Russell 1977).”</i> Fish Resource Permit (FRP) SF2013-105, amendment #1, identified up to 40 Rainbow trout to be radio tagged and reduced their size from greater than 500 mm to greater than 300 mm. From the citation above (Russell 1977), how are 300 mm fish</p>	<p>it is believed (based upon historical data and initial data from 2013) that resident, adfluvial and potentially fluvial life histories exist for rainbow trout utilizing Grant Creek for spawning. Given the possibility of several life histories in Grant Creek, we did not want to ignore the behavior and habitat selection of any life history strategy.</p> <p>The radio tags used for rainbow trout and Dolly Varden in this study can be used on salmonids down to 300 mm. The intent is to tag fish that will spawn based on a visual assessment of the fish. The man camp at Grant Creek has been and will continue to house 2 technicians full-time for the duration of the study season. This will facilitate the expedited response necessary to pass reconditioning kelts downstream.</p> <p>The intent of angling is a supplementary one. During times when pickets may have to be pulled due to high flows and/or large numbers of rainbow are observed very low in the system (below the weir), angling has been and may be used again to capture rainbow.</p> <p>The word “generally” will be removed from the methods section of the Aquatics Study Report.</p>

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				considered to be adults? If sub-adults or non spawning adults are tagged there will be no correlation with spawning areas. These smaller fish may simply be seeking food sources.	
17	6/11/2013	ADF&G	Aquatics	<p><b>4.5.2 Resident and Rearing Fish Use of Study Reach 5</b>  <b>Quantitative Objectives</b>  On-site Sampling, Page 18-19  This section is confusing in that it discusses 2009 efforts and apparently expanded 2010 efforts. It is not clear if efforts will be expanded again for 2013 studies. The use of minnow traps to sample fish juveniles has been previously discussed as being selective and excluding sockeye salmon juveniles. A determination of lack of sockeye salmon spawning in Reach 5 needs to occur before this method can be said to sample all juveniles which may be present. The entire section is not clear on the level of effort to be expended in Reach 5 juvenile sampling during 2013.</p> <p><i>“Weir operation, as described in Section 4.3, may provide information on the timing of upstream movements of adult Dolly Varden. If sufficient numbers of spawning condition Dolly Varden are observed, mobile surveys of radio tagged fish will be utilized to identify their final destination. Given the historical data associated with Dolly Varden numbers in Grant Creek, KHL believes 10 radio tags will be sufficient for this analysis.”</i></p> <p>There is no tagging of Dolly Varden identified in Fish Resource Permit SF2013-105. Either there is an omission in the FRP which needs to be corrected, or the study plan is in error and it needs to be corrected. The weir, as described in this study plan with 3” picket spacing, will probably catch only very large Dolly Varden.</p> <p><i>Outmigrant Monitoring, Page 19</i>  Dolly Varden have not been included as species of primary interest in the study plan. The previous</p>	<p>The expanded effort for Reach 5 includes the winter time sampling (snorkeling and minnow trapping) as well as a downstream migrant trap set up at the boundary of Reach 4/5. In addition, radio tagging adult salmonids to determine if they use Reach 5 will be part of the evaluation. All of these components were added to the Reach 5 evaluation based on comments from the original study plan.</p> <p>Ten radio tags have been devoted to Dolly Varden. The picket spacing on the weir is one inch and has been working effectively at capturing rainbow trout.</p> <p>Fish capture in the incline plane trap will be netted from the holding box and transferred into a bucket of water for sampling or subsampling (length and weight measurement). Some fish will be dye marked and released upstream for trap efficiency trials. Those fish will remain in water amended with oxygen until they are released. Some fish will only be counted depending on numbers of fish captured at the trap. Those fish will be released downstream of the trap to continue their outmigration. The collection permit determines acceptable loss.</p> <p>The statement that YOY fish are juveniles is correct but the prior statement was alluding to the fact that not many 1+ fish were found in their sampling efforts. We already know from our recent winter sampling (snorkeling and minnow trapping) that fish overwinter in Grant Creek.</p> <p>The incline plane traps were helicoptered into Grant Creek.</p> <p>There was no plan to study the delayed effects of marking, handling and transport of fish. The methods used are typical of out migrant fish handling with incline or screw traps. Mortality of any fish in the traps is recorded and if it exceeds the permitted amount the trap is to be shut down and reported to ADFG.</p>

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				<p>section identifies a potential radio tagging effort which would seem to identify Dolly Varden as a species of primary interest.</p> <p>Define acceptable loss for outmigrant trapping. This is especially important for winter use of incline plane traps described under <b>Quantitative Objectives</b>, on page 19. Describe how fish will be handled and transported during winter conditions.</p> <ul style="list-style-type: none"> <li>• Winter Sampling, Page 19-20  <i>“The results of the 2009 snorkel and minnow trapping surveys provided evidence that very few juvenile salmon observed were older than young-of-year fish (YOY; i.e., hatched in spring). Based on these results, there is some question as to whether Grant Creek provided favorable overwintering habitat for juvenile salmon and other species.”</i>  This is a contradictory statement and is unclear. YOY fish are also juveniles. If YOY fish were found, then there is wintering habitat in Grant Creek being used by juvenile fish. Again baited minnow traps are proposed and again we point to lack of sockeye salmon recruitment to that method of sampling.</li> </ul> <p>Spring Outmigrant Monitoring, Page 20  Since Grant Creek is not boatable, how will incline plane or screw traps be transported and deployed?</p> <p>A fine mesh live box is identified but again there is no information provided. The mesh size and size of the live box needs to be provided. Acceptable loss needs to be identified. Will there be an evaluation of effects attributed to marking, handling, and transport of these fish?</p>	
18	6/11/2013	ADF&G	Aquatics	<p><b>4.5.3 Resident and Rearing Fish Use of Open Water Habitats in Lower Grant Creek Quantitative Objectives</b>, Page 21</p> <ul style="list-style-type: none"> <li>• <i>“Obtain a count of adult Rainbow trout and Dolly Varden, and other resident</i></li> </ul>	<p>KHL is unclear as to why ADF&amp;G is under the impression that the consultant has limited understanding of Dolly Varden life history. KHL and its consultants are intimately familiar with the life history of Dolly Varden in the area. A periodicity chart associated with the combined findings from 2009/2010 and 2013 study work will be</p>

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				<p><i>species entering Grant Creek during the open water season.”</i></p> <p>There appears to be little understanding of Dolly Varden life history, including size at maturity, by the study plan authors. Life stage information for Dolly Varden is presented in the Alaska Wildlife Notebook Series<sup>2</sup>, and includes the following information:</p> <p><i>“Dolly Varden belong to a group of trout-like fish called char (Salvelinus sp). The primary visual distinction between char and trout and salmon are that char have light spots on their dark body sides while trout and salmon usually have black spots on their light colored sides. Dolly Varden are fall spawners and usually spawn between September and November in small KHLdwater streams. The female, depending on her size, may deposit from 600 to 6,000 eggs (2,500 to 10,000 in the northern form) in depressions, or redds, which she constructs in the streambed gravel by digging with her tail fin. The male usually takes no part in nest building and spends most of his time defending the redd by chasing, biting or threatening intruders. When the female is ready to deposit her eggs, the male moves to her side and spawning begins. Sperm and eggs are released simultaneously into the redd where fertilization occurs. After spawning the female then forces the exposed eggs into the crevices by undulating her body and tail before covering the eggs with gravel.</i></p>	<p>incorporated in the Aquatics Study Report.</p> <p>See Comment Response #11 for additional detail on the weir infrastructure.</p> <p>The statement, “All resident fish passing the weir will be recorded.”, will be modified in the Aquatics Study Report to read, “When the weir is fishing, all resident fish observed and/or captured will be recorded.” KHL wishes to note that the only times during the study period when the weir will not be fishing will be during flows high enough to disable the weir, when pickets will be pulled and briefly and intermittently to clear debris. As mentioned in Comment Response #16, two personnel are on-site 24 hours per day, 7 days a week monitoring the weir. KHL feels that this comprehensive approach ensures adequate monitoring practices.</p> <p>As with any licensing/relicensing process, the study period is a segment in time when studies are conducted and data is collected to define existing conditions and provide the proponent and the Stakeholders with an understanding of the natural resource assets present in the area and the potential for impact (positive and negative) associated with the development of the proposed project. If studies were to go on into perpetuity, no projects would ever be relicensed or licensed. The direct value to the project by collecting this data is informing both the stakeholders and KHL of the aforementioned conditions. Like other relicensings/licensings, this information combined with the infrastructural, design and operational parameters will assist Stakeholders in the development of any 10 (j) recommendations.</p> <p>Two incline plane traps are currently in place on Grant Creek and were lifted in via helicopter. All of this was done in full compliance with necessary permits.</p>

<sup>2</sup> Alaska Wildlife Notebook Series, Dolly Varden, Alaska Department of Fish and Game, [www.adfg.alaska.gov/static/education/wns/dolly\\_varden.pdf](http://www.adfg.alaska.gov/static/education/wns/dolly_varden.pdf).

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				<p><i>The eggs develop slowly in the cold water temperatures and hatch in March approximately four to five months after fertilization. After hatching, the young Dolly Varden absorb the food from their yolk sac and usually do not emerge from the gravel until this food source is used. Emergence from the gravel usually occurs in April or May for the southern form and in June for the northern form.</i></p> <p><i>The young Dolly Varden rear in streams for 2 to 4 years before beginning their first migration to sea, but some may rear as long as six years. During this rearing period, their growth is slow, a fact which may be attributed to their somewhat inactive habits. Young Dolly Varden often remain on the bottom, hidden from view under stones and logs, or in undercut areas along the stream bank, and appear to select most of their food from the stream bottom.</i></p> <p><i>Prior to their seaward migration Dolly Varden go through a series of physical changes called smoltification which allows them to survive in saltwater and during this process the fish lose their parr marks and become silvery in color. The fish are now about 5 inches long and are called smolt. This seaward migration usually occurs in May or June, although significant but smaller numbers have been recorded migrating to sea in September and October. After their first seaward migration, Dolly Varden usually spend the rest of their lives migrating to and from fresh water in an interesting and often complicated pattern of migration.</i></p> <p><i>The southern form migrate into lakes</i></p>	

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				<p>during the fall where they spend the winter while most northern Dolly Varden migrate into rivers to spend the winter. Dolly Varden hatched and reared in a lake system typically carry on annual spring migrations to saltwater seeking food before returning to a lake or river each fall to spend the winter. However, southern Dolly Varden originating from nonlake systems must seek a lake in which to winter and research suggests that they may find lakes by random searching, migrating from one stream system to another until they find one with a lake. Once a lake is found, these fish typically conduct annual seaward migrations in the spring, sometimes entering other freshwater systems in their search for food. Dolly Varden are known to follow salmon during upstream spawning migrations where there are lots of nutritious salmon eggs for the Dolly Varden to feed on.</p> <p>Dolly Varden return to spawn in their stream of origin or “natal stream” upon reaching sexual maturity. Most southern forms of Dolly Varden reach maturity at age 5 or 6. At this age they may be 12-16 inches long and may weigh from 1/2 to 1 pound. Northern Dolly Varden reach maturity at age 5 to 9 after having spent three or four summers at sea, and may be 16 to 24 inches long. Dolly Varden possess the ability to find their natal stream without randomly searching, as was the case in their original search for a wintering area. Those of the southern form that survive the rigors of spawning return to a lake to spend the winter, while northern form Dolly Varden usually overwinter in the river system in which</p>	



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				<p><i>they have spawned.</i></p> <p><i>Mortality after spawning varies depending on the sex and age of the fish. Males suffer a much higher mortality rate after spawning, partly due to fighting and the subsequent damage inflicted on each other. It is doubtful that much more than 50 percent of the Dolly Varden live to spawn a second time but a small number may live to spawn more than twice. Few southern Dolly Varden appear to live longer than 8 years while northern Dolly Varden may live as long as 16 years, but individuals over age 10 are uncommon. Maximum size for southern Dolly Varden is between 15 and 22 inches and up to 4 pounds but an occasional 9-to 12-pound fish have been reported, especially in northern populations."</i></p> <p>This study plan should also provide a periodicity table for all fish species utilizing Grant Creek.</p> <p>Weir Data, Page 21-22 Define the weir in the study plan. Please note that spawning Dolly Varden may be as small as 12 inches in length and may be difficult to capture in a weir.</p> <p><i>"All resident fish passing the weir will be recorded."</i> This is not possible due to size of fish and potential storms which will breach the weir. Small resident fish will not be collected.</p> <p><i>"When the weir is in capture mode, the lengths of all fish will be measured if possible without harming the fish or requiring extra effort."</i> This statement implies that if someone decides that it is too much work, length measuring could be abandoned. Define "extra effort" and in what</p>	

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				<p>scenarios length measurements could be abandoned. Provide adequate staffing to do the job correctly and completely.</p> <p><i>“...the presence of an obvious pulse of Dolly Varden will trigger a need for foot surveys to identify spawning locations.”</i></p> <p>Spawning Dolly Varden may use Reach 5 which has limited access and poor observation areas. See previous comments under 4.5.2 regarding radio tagging of Dolly Varden. Also these fish may spawn in October and November, after the weir has been removed and personnel have left the area.</p> <p>Outmigrant Monitoring, Page 22  <i>“Combining the results of spring and fall outmigration monitoring will provide an indication of the total annual production of the creek.”</i></p> <p>If there are no problems encountered with outmigration, such as floods or equipment failure you may be able to develop an estimate for the current year only. The estimate is not transferrable from year to year. It would only be valid for the year sampled. What is the value to the project? How will this inform the agencies and aid in development of agency recommended 10 (j) terms and conditions, to be filed with FERC, on this project.</p> <p>Since Grant Creek is not accessible by boat, how will incline plane or screw traps be transported and deployed?</p>	
19	6/11/2013	ADF&G	Aquatics	<p><b>4.6 Grant Creek Aquatic Habitat Mapping Quantitative Objectives</b>, Page 23</p> <ul style="list-style-type: none"> <li><i>Prepare an office-based aquatic habitat map (i.e., based on habitat observations assembled throughout the 2009 and 2010 field seasons.”</i></li> </ul> <p>On this map/s, locate and identify transects used on this project. Provide maps at a scale that allows readability and clearly shows habitat areas and</p>	<p>KHL will prepare these maps for the Aquatics Study Report as specified in ADF&amp;G Comment #19. Figure 3 of the Aquatics Study Plan documents the 18 instream flow transects on Grant Creek and Table 1 documents the mesohabitat characteristics of each transect.</p> <p>Ground truthing of the aquatic habitat mapping in the Grant Creek main channel was performed during May at a flow of approximately 100 cfs.. Side channel habitat at that time was, for the most part, either dry (Transects 100 and 110) or still covered with snow and</p>

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				<p>transects. Identify the proposed mesohabitat classifications. This is key information necessary for the agencies to assure that the sampling design is adequate.</p> <p><i>“The team will conduct surveys to ground-truth the preliminary aquatic habitat delineation.....”</i></p> <p>Is this a single exercise? At what flows will the habitat be identified during this exercise? Habitat use by fish will change with changing flows and water velocities.</p>	<p>ice. Habitat mapping in these secondary channels will be ground truthed on the descending limb of the Grant Lake hydrograph later this summer.</p> <p>Habitat use surveys are being conducted by KHL throughout the field season, and will be noting these shifts in utilization along with changing flows and velocities. Minnow trapping and snorkeling have been used to document fish presence and habitat use. During high flows the only areas that will be sampled are lateral habitats to determine fish use.</p>
20	6/11/2013	ADF&G	Aquatics	<p><b>4.7 Grant Creek Instream Flow Study</b>, Page 24-25</p> <p>Identify and provide maps of the 18 transects. Identify how data will be collected when the creek is unwadeable.</p>	<p>Figure 3 of the Aquatics Study Plan provides a map of the 18 transects on Grant Creek. High flow measurements were just conducted on Grant Creek (June 12<sup>th</sup> and 13<sup>th</sup> at approximately 700 cfs). An Acoustic Doppler Current Profiler (ADCP) was used in unwadable sections of stream to measure discharge. Water Surface Elevations (WSEs) were taken along both stream margins as far as they could be safely waded. WSEs were taken all along the transects in the side channels, which could be waded.</p>
21	6/11/2013	ADF&G	Aquatics	<p><b>4.7.1 Habitat Availability</b>, Page 25</p> <p>The use of the PHABSIM method requires transects which represent all habitat types. The biological component is added into the modeling through the development and use of habitat suitability index curves. Additional transects may be added where fish are observed, but the model remains habitat oriented. What is presented will not correctly assess habitat because it will only address known fish use at the time the study is being conducted. The proposed study plan falls short in that it will be incomplete.</p>	<p>KHL disagrees that the study plan is incomplete in this regard; these 18 transects in the lower 0.5 miles of Grant Creek were selected because of their utilization by the target species. These transects were agreed to by the natural resource agencies after extensive consultation in 2009 and 2010. If fish are observed spawning or rearing in areas not on transects, habitat availability data will be collected in these areas. These availability data will be combined with utilization data and normalized to develop HSC curves of the target species and life history stages. Please also refer to response to Comment 18.</p>
22	6/11/2013	ADF&G	Aquatics	<p><b>4.7.2 Habitat Utilization</b>, Page 26-28</p> <p>Described is the development of site-specific habitat suitability criteria (HSC). Then described is the use of that data combined with literature searches and professional judgment. Blending this information together will reduce the specificity of site-developed HSC's. How will depths and velocities be measured without disturbing spawning fish? The</p>	<p>KHL will collect site-specific HSC data; if there are a sufficient number of measurements taken, it may not be necessary to supplement the data set with literature-based curves. If, however, there are very few direct observations of fish, the use of literature-based curves may be necessary in order to fill out the curves. If literature-based curves are used to supplement site-specific measurements, KHL will consult with the natural resource agencies.</p>

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				<p>text mentions that 16 sampling sites were established in 2009. Provide habitat associated mapping of those sites for evaluation of study applicability.</p> <p>Table 2, Page 27 Resident rearing and spawning parameters should be collected onsite. It may not be appropriate to use salmon rearing as a surrogate.</p> <p>On page 28 snorkeling and electrofishing are presented as sampling methods. Snorkeling avoidance is not discussed and electrofishing methods are not presented. If electrofishing is used, will block nets be employed? Further discussion is needed on data collection during unwadeable flow events which may occur during at lower flows than expected.</p> <p>Collection of water temperature data is identified to be recorded where fish are observed, at mid water column. Why this much detail? Are water temperatures expected to vary? If there is interest in redd locations then intergravel flow and temperatures may be important to show upwelling, but other than location of redds, how will this information inform the agencies and aid in development of agency recommended 10 (j) terms and conditions, to be filed with FERC, on this project.</p>	<p>KHL will use markers and will place them at the site of the redds when fish are observed actively spawning. Depths and velocities will be measured when the fish move off redds.</p> <p>KHL is in the process of obtaining data on resident rearing and spawning fish. If the data are too sparse to make sound biological decisions, KHL will discuss the use of surrogates with the natural resource agencies.</p> <p>Temperature data are sometimes collected in association with HSC curve development. ADF&amp;G, however, is correct in that we have not observed anything to indicate that there is significant variance in water temperatures either laterally or depth-wise. Given these parameters, KHL will not collect temperatures associated with our HSC curve development.</p>
23	6/11/2013	ADF&G	Aquatics	<p><b>4.7.4 Analysis Methods</b>, Page 30 Use of RHABSIM is identified. The RHABSIM package was developed by Thomas R. Payne and Associates, who have developed a newer, improved, and more complex program called System for Environmental Flow Analysis (SEFA).</p>	<p>SEFA contains the same one-dimensional modeling component as RHABSIM, with some enhancements in HSC development, time series analysis and other parameters. KHL will use portions of SEFA if pertinent to the analysis necessary to represent Grant Creek.</p>
24	6/11/2013	ADF&G	Aquatics	<p><b>4.7.5 Reach 5 (Canyon Reach) Analysis</b>, Page 30 “It is expected that available post-Project habitats</p>	<p>KHL’s intent in this statement was not to infer that connectivity would not be maintained. To the contrary, KHL has every interest</p>

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				<p><i>will be limited to pools which contain sufficient water to support fish."</i></p> <p>This premise is unacceptable. Connectivity will have to be maintained to provide minimum environmental protections to this reach. Expect the requirement of an instream flow release.</p> <p><i>"A simplified modeling effort will be employed to obtain insight into effects that small changes in flow might have on pool depth, pool connectivity, and fish passage availability."</i></p> <p>The use of the Oregon method follows this statement after a large break in the text. It is not clear if this is the simplified modeling proposed. The Oregon Method has been acknowledged by Oregon as a crude tool which is used in cases where other methods are not available and for use until other more complex methods can be utilized. Few verification studies have been conducted, which is also problematic.</p> <p>Identify:</p> <ul style="list-style-type: none"> <li>• how many flow calculation sets will be used,</li> <li>• velocity calculation sets will be used,</li> <li>• upstream &amp; downstream transect/mesohabitat weighing methods,</li> <li>• what WSL model(s) will be used, and</li> <li>• development of composite habitat suitability indexes.</li> </ul> <p>Provide mapping of transects and mesohabitat units at an appropriate scale to clearly identify details. Reach 5 should have 1 to 2 transects included in the habitat model analysis. Also needed is a Habitat Time Series.</p>	<p>in ensuring a viable stream system and maintaining connectivity throughout. The statement was meant to convey that the only usable habitat in Reach 5 would likely be limited to pools that contain sufficient water to support fish; similar to the existing and natural condition in Grant Creek now. KHL views the use of the instream flow study as a mechanism for developing appropriate levels of flow for the aquatic species present and has every expectation of working with ADF&amp;G and other Stakeholders to develop appropriate instream flows for the Project.</p> <p>KHL proposes to use the Oregon Method in the Canyon Reach. Two transects have been selected, and the bed profiles for both transects, as well as WSEs at discharges of approximately 17 cfs, 60 cfs, 130 cfs, and 700 cfs; in RHABSIM, a power function is used to calculate a rating curve and a stage/discharge relationship.. Measurements of velocity have not been taken at these transects, since their purpose is to evaluate connectivity.</p> <p>The Oregon method is still widely used. Avista Corp. used it to evaluate connectivity in the Spokane Falls Reach of the Spokane River in 2010; the results were approved by WDFW and IDFG. This same methodology was used and approved on a proposed four-system hydropower project in 2012 in British Columbia, Canada.</p> <p>Transect locations and mesohabitat units will be mapped and provided as part of the license applications. If appropriate, a habitat time series will also be conducted.</p>
25	6/11/2013	ADF&G	Aquatics	<p><b>4.8 Baseline Studies of Benthic Macroinvertebrates in Grant Creek Quantitative Objectives</b>, Page 31</p> <p>Will sampling only in August provide accurate and</p>	<p>KHL feels that a sampling event in August will be sufficient.</p>

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				complete information? Prior studies (2009) suffered when floods and washouts occurred and sample richness was affected (Aquatic Resources Study Plan page 9).	
26	6/11/2013	ADF&G	Aquatics	<p><b>5 Agency Resource Management Goals, Page 33</b>  The first bullet under this topic identifies incorrect and obsolete Alaska Statutes. We use the following language in FERC Motions to Intervene (MOI):</p> <p>“ADF&amp;G is mandated under state law to “manage, protect, maintain, improve, and extend the fish, game, and aquatic plant resources of the state in the interest of the economy and general well-being of the state . . .” (AS 16.05.020). Among the ADF&amp;G’s various powers and duties are “to assist the United States Fish and Wildlife Service in the enforcement of federal laws and regulations pertaining to fish and game . . .” (AS 16.05.050), and protect fish habitat (AS 16.05.841 and AS 16.05.871).”</p>	Comment noted. The Aquatic Study Report will be modified accordingly.
27	6/11/2013	ADF&G	Aquatics	<p><b>8 Schedule for Conducting the Study, Page 35</b>  This schedule does not identify timing for deployment incline planes, telemetry station installation, installation of the counting weir, or inclusion of the genetic analysis in reports.</p>	<p>Timing associated with the aforementioned tasks would have been speculative at the time of plan finalization (March 2103) given the variability associated with flow, ice, etc. that dictate specific installation time. For ADF&amp;G’s information and in advance of the Aquatics Study Report:</p> <ul style="list-style-type: none"> <li>• Incline plane traps installed in early April</li> <li>• Radio telemetry infrastructure has been in place since April and data is currently being collected.</li> <li>• Weir installed in May.</li> <li>• Genetic data collection of fish species will be collected at the weir during passage and per the study plan, if a cooperative agreement can be reached, the analysis will take place.</li> </ul>
28	6/11/13	ADF&G	Water Resources	<p><b>4.2 Field Study Design</b>  <b>Quantitative Objectives, Page 6</b>  This section states that water quality standards were selected and criteria were established. What standards and what criteria? The next three sections</p>	The only use of the word standards in this section (and the entire study plan) is used in reference to EPA standards for laboratory quality. KHL is unsure what reference is being used to develop this comment. Table 1 is intended to inform the reader of the water quality parameters that are being sampled during the 2013 field

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				list Table 1 but this table only states what will be sampled for and not what the standard or criteria is for each parameter. If you are using Alaska DEC standards, state that is the standard being used, and what range is considered	effort.  From pg. 6 of study plan: “Water quality parameters were chosen for analysis based on several factors: parameters sampled in previous studies, parameters that may be affected by land use practices in the Project area, parameters either necessary for aquatic life or that act as nutrients, and the drinking water and aquatic life criteria that have been developed for fresh water in Alaska.” Given this and our initial, current and continued practices, Table 1 will be updated to include Alaska DEC criteria in the Water Resources Study Report.
29	6/11/13	ADF&G	Water Resources	<b>Baseline water quality studies in Grant Lake, Page 7</b> The last line of the last bullet contains bidding information and is not relevant to the study plan. <i>“The prospective bidders should provide individual costs for the installation of a new thermistor string and the cost associated with restoring the potentially functional existing string.”</i> This belongs in a bidding document	Any reference to a “bidder” was removed prior to the study plan that was finalized and filed with FERC in March 2013.
30	6/11/13	ADF&G	Water Resources	<b>Baseline water quality studies in Trail Lake Narrows, Page 7</b> This information will not inform environmental aspects of this project except for immediate construction of the bridge. Even that would be of limited use since water at this point is mixed from Grant Creek and Upper Trail Lakes. Since no evaluation of the area above the narrows and the intersection of Grant Creek with the Trail Lakes system is proposed, it will be impossible to determine if differences in water chemistry are project related.	Water quality sampling of Trail Lakes Narrows below Grant Creek is intended to be a baseline study. At this time little to no water quality information is known about the Grant Lake watershed. By evaluating the water chemistry of Trail Lakes Narrows, Grant Lake, and Grant Creek, a decision can be made as to whether a more comprehensive assessment of the Trail Lakes Narrows is warranted. As a proactive measure, KHL has installed HOBO Pro v2 (U22-001) temperature loggers above and below the mouth of Grant Creek in the Trail Lakes Narrows. These data should allow for the assessment of how Grant Creek may influence water temperatures in the Trail Lakes Narrows.
31	6/11/13	ADF&G	Water Resources	<b>Page 8</b> Following Table 1, there appears to be a methods section which is not labeled. If this is a methods section, label correctly. In this section, DH-81 bottles will collect subsamples which will be combined in a bucket or a single sample if width and depths allow. The method states that width and	ADF&G is correct that the paragraph beginning after Table 1 is a bit confusing without a header. Depending on need and application, a header will be added to these methods in the Water Resources Study Report.  The sampling methodology, specifically width and depth criteria for Grant Creek sub-sampling, will be adequately described in the

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				<p>depth of the stream will determine the method of sampling but fails to identify what those width and depth criteria are.</p> <p>This section identifies the HOBO Pro V2 temperature loggers and the HOBO U20 Water Level Loggers as the instruments to be used. There are four different models of the HOBO U20 with different specifications for depths and resolution. Different models will be required for lake or stream work. If they are mixed up, data will potentially be lost due to equipment failure. Identify the loggers to be used at each location.</p>	<p>Water Resources Study Report. The field crews will operate on the following guidelines: width-integrated (only) grab samples to occur when cross sectional widths are greater than 10 feet and depth are less than 1.0 feet. In general, width and depth-integrated subsampling with the use of a DH-81 or similar sampling device is to only occur when wading conditions are safe (wading factor: depth x velocity <math>\leq</math> 10.0 or less). Also, if the flow conditions in Grant Creek reveal a well mixed sampling site, then a single grab sample will be collected from an appropriate mid-channel location within the cross section.</p> <p>The description of instrumentation used to measure water temperatures in Grant Lake and Grant Creek is clarified below. All continuous temperature monitoring will utilize the HOBO Pro v2 (U22-001) temperature loggers. The operational range of these loggers is from -40C to 50C. These loggers can be deployed to a depth of 400 feet and maintain their waterproof integrity. For the study applications proposed, these Pro v2 loggers are adequate with minimal risk of data loss due to exceeding operational specifics. At site GC 200 only, an <i>additional</i> pair of Onset U20 -001-01 water level loggers (0m to 9m water level range; -20C to 50C temperature range) are being deployed to serve as a backup water temperature and water level/barometric pressure recorders in the event that primary data loggers fail. Again, the Onset U20 -001-01 water level loggers utilized at site GC 200 are being deployed within their defined operational criteria, and thus should not have data loss due to deployment error.</p>
32	6/11/13	ADF&G	Water Resources	<p><b>Page 8, Paragraph 3, second sentence</b>  <i>“Water temperature in Grant Lake will be measured both instantaneously and continuously using recording data loggers.”</i>            Data loggers do not provide instantaneous measurements. It is believed that you intend to use a YSI or Hydrolab meter to provide instantaneous readings. Correct this statement.</p> <p>Further in the same paragraph, the abandoned data loggers are discussed and stated to be inactive. These loggers were maintained into 2010 so we assume data was field downloaded at that time. These loggers were placed back into the water and would have recorded data until the memory was full</p>	<p>In the Water Resources Study Report, the water temperature sampling protocol will be corrected as you recommend. KHL is using the term, “data logger” as a general description of a tool utilized to collect data. The subsequent statements in the same paragraph outline the specific instruments that are being utilized for both instantaneous and continuous data collection, <i>“At both GLOut and GLTS, temperatures will be measured in a vertical transect during water quality sampling events with aYSI or Hydrolab multi-parameter meter using a 20-meter cable calibrated at one meter intervals. The instantaneous water temperature measurements will be used to supplement the continually recorded temperature data. HOBO Pro V2 temperature data loggers will also be used at the proposed intake site on Grant Lake. A thermistor string was installed in 2009 along a vertical transect in this location to a depth of 20 meters. Data loggers were attached to the string at depths of</i></p>



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				or the internal batteries were depleted. The batteries usually last five years on these units so it is possible that there is recorded data which may be accessed. Every attempt to recover this data should be used, including sending units back to the manufacturer to recover data from “dead” units. This section should include those data recovery efforts but only identifies testing, reinstallation or replacement.	<i>0.2, 0.5, 1.5, 3, 6, 9, 12, 15, 18 and 19.5 meters. The data loggers recorded temperature at 4-hour intervals.”</i>
33	6/11/13	ADF&G	Water Resources	<p><b>4.2.2 Hydrology</b>  This section discusses stream gage installation and identifies some USGS approved equipment but fails to identify the standards used for installation or who installs and maintains the gage and downloads data. Apparently there will be no winter record. This may be problematic in that project operation appears to be year round. The existing stream flow data is very dated (1947-1958) with limited recent data (2009) and will need to be appropriately updated.  <i>“All installed equipment will be removed by late October or prior to freeze-up.”</i> Is this a single effort for the summer and fall of 2013 only? The installation of a stream gage and associated measurements for only six months will not be adequate to provide a correlation to the historic record.</p>	<p>KHL believes that maintenance and data collection parameters related to the stream gage are explicit throughout Section 4.2.2.1 and 4.2.2.2 of the final Water Resources Study Plan. To summarize, KHL has and will continue to take full responsibility for maintenance, monitoring, offloading and review of data.</p> <p>As with all natural resource information, KHL will collaboratively discuss results with the Stakeholders in an effort assist in determining proposed Project impacts (if any) and develop the appropriate Project plan. KHL recognizes the need for an up to date hydrologic record and is committed to discussing the need for a multi-year gauging effort that includes a winter record in association with licensing process and subsequent to license acquisition.</p>
34	6/11/13	ADF&G	Water Resources	<p><b>4.2.2.2 Instantaneous Discharge Measurements, Page 12</b>  Stream gage sites are identified but the plan also states: <i>“Measurements at other sites within the Grant Creek drainage will be conducted as those sites are determined, and when stream conditions permit.”</i>  Will discharge measurements be taken at the 18 transects identified in other the Aquatic Resources study plan? There has been no mapping provided to identify those transects. What other discharge measurement sites may be determined and how will they be determined?</p>	<p>The primary discharge section will be proximal to the gage site (GC200) to insure an accurate stage-q relationship is developed at this historic stream gaging location. Additional discharge measurements will be collected in Reach 4 and Reach 1 as part of the instream flow study. Results from the Reach 4 and Reach 1 discharge data will aid in understanding how much water is lost or gained upstream and downstream of the gaging location. There should be no expectation that each gage servicing and calibration will include discharge measurements at the 18 instream flow transects.</p> <p>Figure 3 of the Aquatics Study Plan provides a map of the 18 transects on Grant Creek.</p>

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35	6/11/13	ADF&G	Water Resources	<p><b>Page 13, Boat or ADCP Method</b></p> <p>Safety of personnel is always a primary concern for field work. This section calls for a River Cat trimaran to be used to work the ADCP unit across the stream during periods of high water levels or high flows. This will require a rope or cable to be stretched across the stream at cross section locations. How will the personnel be able to establish these ropes or cables during periods of high water or high velocity. Most likely, these ropes or cables would not be allowed to remain in place over this stream for several months. This would be a safety concern as an attractive nuisance to hikers or people using the trails along Grant Creek.</p>	<p>KHL's natural resource team has an extensive amount of experience utilizing ADCP's in high water environments. High flow measurements commensurate with KHL's internal safety plan have already taken place. All cable and rope used to facilitate this effort were installed and immediately removed after the measurement was completed.</p>
36	6/11/13	ADF&G	Water Resources	<p><b>Page 14, paragraph 2</b></p> <p>The salt dilution method to measure stream discharge is described in general terms in this paragraph. The method is vaguely described and lacks the procedure details similar to those provided in the Wading Method on page 12. For example, is raw salt just dumped into the stream or is a brine solution mixed and used? Where will the measurements be taken and is distance from input point important? The plan states common table salt may be used....Is there a difference between iodized salt and un-iodized salt? This method, while recognized by USGS, is one of the least conclusive methods recognized and should only be used as a last resort. The plan states that the salt is preferred because it is non-toxic to aquatic organisms at the concentrations and exposure times used, but fails to identify concentrations and exposure times. Salinity can cause chemical burning of gill structures in salmon alevin which may result in reduced vitality and/or delayed mortality. The time of year proposed would impact alevin in the stream gravels. A complete study plan using this method must identify concentrations, duration and potential impacts. This</p>	<p>During low flow conditions (April of 2013), appropriate cross sections were identified within the canyon to directly measure discharge via the USGS wading method. Therefore, the salt dilution method is not being used during the 2013 Water Resources Study effort.</p>

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				plan falls well short of providing adequate information.	
37	6/11/13	ADF&G	Water Resources	<p><b>4.2.3.2 Grant Creek spawning substrate recruitment study, Page 15</b></p> <p><i>“Qualitative geomorphic assessment will be based on detailed observations of the Cooper Lake watershed, known geological conditions, and professional interpretation of observed geomorphic processes.”</i></p> <p>The Cooper Lake watershed is an impacted system which has changed the way the watershed functions. There is no outflow from Cooper Lake to Cooper Creek, therefore caution must be exercised in transferring geomorphic condition evaluation from that watershed to another which is currently not impacted.</p>	Comment noted.
38	6/11/13	ADF&G	Water Resources	<p><b>6 Project Nexus</b></p> <p><b>6.1 Water Quality and Temperature, Page 16</b></p> <p>Discussion of the HOBO U20 water level logger again fails to identify the specific units to be used. See comment for discussion of these units (from page 8 of study plan).</p>	See response to Comment 31 above
39	6/11/13	ADF&G	Water Resources	<p><b>7 Consistency with Generally Accepted Practices</b></p> <p><b>7.1 Water Quality and Temperature, Page 17</b></p> <p>Discussion of the HOBO U20 water level logger again fails to identify the specific units to be used. See comment for discussion of these units (from page 8 of study plan).</p>	See response to Comment 31 above
40	6/11/13	ADF&G	Terrestrial Resources	<p>On July 6, 2010, our department provided the following comment on the Draft Terrestrial Study Plan.</p> <p><i>“We support the delineation of the zone of inundation potential along the entire shore of Grant Lake and recommend quantifying the distribution of each riparian/terrestrial habitat type and the relative abundance of aquatic and riparian species utilizing each habitat. We are primarily concerned</i></p>	KHL anticipates little to no inundation associated with the Project in excess of what currently occurs naturally. This will be confirmed or refuted by the engineering feasibility work that will be taking place the remainder of 2013 and in 2014. Once operational scenarios and Project infrastructure are refined and decided upon and if it is determined that inundation at the lake will deviate from the existing natural condition, KHL will work with Stakeholders to assess the extent of impact to the inundation zone.

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				<p><i>with habitats selected by waterbirds (waterfowl, shorebirds, loons, gulls, and terns) for breeding and those selected by moose for browse, cover and thermoregulation. To evaluate the proposal of increasing the lake levels, a quantitative summary of the relative abundance of these species by specific habitat types is needed along with the extent to which these habitats will be inundated. Waterbird surveys should also be conducted for Grant Creek by noting habitat associations with the meso habitats identified in the Aquatic Resources Study and with particular riparian habitat types being mapped in the Terrestrial Resources Study."</i></p> <p>The Kenai Hydro, LLC (KHL) response is taken from the Summary of Comments matrix provided to the agencies in December 2012:  <i>"The Terrestrial Resources Study Plan is designed to collect vegetation and wildlife data in potentially affected areas along the Grant Lake shoreline. If inundation will occur based on the final Project design proposal, potential effects of this inundation will be discussed in the Terrestrial Resources Study Report and presented in the draft and final license applications."</i></p> <p>The area of inundation does need to be determined and provided to supply reviewers with information to determine the extent of potential resource impacts which may be caused by this project. Other projects have developed an inundation study to determine impacts. The attempt to delay identification and study of the area of inundation until the Draft License Application is filed with FERC is not acceptable. The response of KHL is not accepted by this agency. Define your project so that there is little or no speculation about what will occur, how the project will be operated and provide correct studies for timely evaluation.</p>	

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**From:** Cory Warnock  
**Sent:** Monday, August 26, 2013 10:05 AM  
**To:** Monte Miller  
**Cc:** Emily Andersen  
**Subject:** Responses to ADF&G Natural Resource Comments (Grant Lake)  
**Attachments:** KHL Responses to ADF&G 2013 Natural Resource Study Plan Comments.pdf

Hi Monte,

You may have already seen the attached via your FERC e-library subscription but I obviously wanted to directly send you a copy as well. If you did see this on the FERC site, you probably noticed that the filing type was initially listed as "Answer/Response to a Pleading/Motion –Filing". This appears to have been a glitch in the filing process and I have been in contact with FERC requesting that they change the filing type to "Report". I received a response about 15 minutes ago saying that the change had been made.

HEA appreciates your input and if you have any follow-up questions, I'd be more than happy to hop on the phone and discuss.

Hope all is well and I look forward to seeing you at the site visit next week,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

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**Kenai Hydro, LLC**

3977 Lake Street  
Homer, AK 99603

August 20, 2013

Monte Miller  
Alaska Department of Fish and Game  
Division of Sport Fish/RTS  
333 Raspberry Rd.  
Anchorage, Alaska 99518-1565  
(907) 267-2312

Mr. Miller:

Thank you for the comments received on June 11, 2013 related to the aquatics, water resources and terrestrial study plans for the proposed Grant Lake Hydroelectric Project. KHL appreciates these comments. Attached is an informal comment response table to the comments that the Alaska Department of Fish and Game (ADF&G) provided. Given the clarifying nature of a majority of the comments, KHL is confident that this will assist ADF&G in further understanding the comprehensive nature of the study scopes. Additionally, KHL is willing to have a call with ADF&G to discuss any additional questions that may exist after receipt of our responses.

As explained in the December 12, 2012 meeting that you attended, the formal comment period for these study plans occurred in 2010 after considerable Agency and Stakeholder input but in the spirit of cooperation and collaboration KHL was willing to entertain informal comments submitted by February 1, 2013. As I'm sure you can appreciate, the amount of time and resources required to modify study plans, obtain study permits, procure the required equipment and mobilize is very significant. Given this and the fact that KHL was already over a month and a half into their study season, implementation of any study methodology changes received in the ADF&G comments in June was not possible. At this point, KHL views the time for refinement to the study plans as past and the study plans themselves as inclusive of the quantitative needs and accessory clarification identified by the stakeholders. If some of the additional detail related to the ADF&G identified methods is deemed as needed to be incorporated by KHL, that detail will be provided in the methods section of the respective 2013 study report.

Thank you for your comments and as always, if you have any questions or concerns, don't hesitate to give me call or send an email.

Sincerely,



Mike Salzetti

## Summary of informal comments from ADF&G (6/11/13) on draft study plans for the Grant Lake Project (No. 13212)

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
<b>General/Additional Study Requests</b>					
1	6/11/2013	ADF&G	Aquatics	<b>1 Introduction</b> <b>Proposed Project Description, Page 1</b> No maps are included in this section. The figures/maps provided later (Figures 1 and 2 on pages 5 and 7) do not provide the resolution necessary to be of much use. The extent of anadromous waters needs to be clearly shown on maps.	Figure 2 on pg. 6 of the plan (“Study reaches designated on Grant Creek and proposed telemetry tower location”) accurately displays the extent of anadromous waters on Grant Creek with a green icon and associated text stating “ADFG Anadromous Fish Distribution Limit”.  A comprehensive GIS database is being developed as part of the study program that will document findings related to the pertinent investigations for all resource areas.
2	6/11/2013	ADF&G	Aquatics	<b>2 Overall Goals Identified during Project Scoping, Page 2</b> This section lists seven goals for this study. There is no mention of a goal for the Trail Lakes Narrows component of this study.	Under Section 3.3 (“Need for additional information”), the final bullet identifies “Fish resources and habitat use of the Trail Lake Narrows at the proposed bridge site.” as a specific objective that will be addressed as part of the 2013 study work. Detailed methodology related to this task is described on pgs. 35 and 36. KHL will add the Trail Lakes Narrows work to the goals section of the completed Aquatics Study Report.
3	6/11/2013	ADF&G	Aquatics	<b>3.1 Pre-2009 Studies</b> <b>Grant Creek Fish Resources, Page 3-7</b> This section lists Johnson and Klein, 2009 in multiple places to describe anadromous fish resources present in Grant Creek. This is the ADF&G Anadromous Waters Catalog (AWC) which has been updated several times since the cited version. The description of resources may or may not have changed in the updated version. Please verify information and cite the current version of the AWC.  Current version of the AWC: Johnson, J. and P. Blanche. 2012. Catalog of waters important for spawning, rearing, or migration of anadromous fishes – Southcentral Region, Effective June 1, 2012. Alaska Department of Fish and Game, Special Publication No. 12-06,	KHL acknowledges that an updated (2012) version of the AWC document exists which does list Grant Creek. This will be updated in the appropriate section of the Aquatics Study Report. In addition, the reference to the AWC associated with sculpin and stickleback will be removed from the report. The other two citations listed after the sentence (AEIDC 1983 and USFWS 1961) adequately document resident fish species presence in Grant Lake.  KHL would like to note that although this comment is relevant to the current accuracy of the citation, it does not have any ramifications on the validity of the studies being proposed and conducted within the plan.

<sup>1</sup> The full text of comments is included in this column, unless otherwise noted. Where the full text is not included, a reference for the full comment is included.

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				<p>Anchorage.</p> <p>A citation on page 6 refers to Johnson and Daigneault, 2008 version of the AWC, as not listing Grant Lake or its tributaries in the AWC. The next sentence lists resident species (sculpin and stickleback) in Grant Lake and lists the Johnson and Klein, 2009 version of the AWC as cited. The AWC generally does not list resident fish species, therefore we must question the citation. Additionally Figure 2, on page 7, identifies the ADF&amp;G anadromous fish distribution limit at a point several hundred feet below the lake outlet but again fails to identify any AWC version used to establish that limit. The plan needs to be updated to correctly cite the current AWC version</p>	
4	6/11/2013	ADF&G	Aquatics	<p><b>Figure 1, Page 5</b></p> <p>This map of the fish and aquatics resources study area is inadequate in that it does not clearly identify the study area, is blurry on an 8 ½" X 11" page, is split with two colors which make use difficult, and is not of sufficient resolution to properly view project features or read map labels.</p>	Figure 1 is intended to be a general overview of the study area. This image along with figures 2 (study reach designation) and 3 (instream flow transect locations) document the study area.
5	6/11/2013	ADF&G	Aquatics	<p><b>3.2 2009 and 2010 Aquatic Resources Studies Fish, Page 6-8</b></p> <p>This section describes previous studies and their methods. The first bullet under the 2009 studies was <i>"Determine the relative abundance and distribution of juvenile fish in Grant Creek."</i> The study descriptions provided are not sufficient to develop relative abundance estimates. From page 8: <i>"Relative abundance and distribution of juvenile fish were determined by minnow trapping and calculating the catch-per-unit-effort (CPUE) for each reach."</i> The discussion describes the number of minnow traps used, some catch results, and determinations of distribution and relative abundance. The presence of sockeye salmon was noted but not included in the determinations of</p>	Section 3.2 ("2009 and 2010 Aquatic Resources Studies") is intended to describe what studies have been conducted in the past in relation to Grant Lake and Grant Creek. The methods described in this section represent study intentions developed in advance of formal agency consultation and the associated modifications made to the plans as a result. The more robust and quantitative methods for the 2013 studies are presented in Section 4.



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				<p>distribution and relative abundance. This highlights the flaws in this study in that the methods used in this study fail to recruit sockeye juveniles. This results in sockeye juvenile underestimation or the appearance that few sockeye utilize the area. Neither are acceptable conditions.</p> <p>This study utilized angling to determine relative abundance for adult fish. This is a very selective method for sampling adult fish. Different species require different tackle and different approaches. The determination of spawning timing of resident fish failed in this study. Information of use included: Rainbow trout (RBT) were caught throughout the creek with more caught in reaches 3-5, spawning condition was seen in adult RBT, and adult RBT were observed in the upper portions of the canyon reach. These factors will help inform instream flow release prescriptions.</p>	
6	6/11/2013	ADF&G	Aquatics	<p><b>Instream Flow, Page 9</b> A statement that the Technical Work Group (TWG) and Kenai Hydro, LLC (KHL) decided to select an instream flow methodology based on 2009 Aquatic Resources and Hydrology studies. Was this the selection of the Instream Flow Incremental methodology (IFIM) and Physical Habitat Simulation (PHABSIM) model now being proposed? Provide mapping of the location of the 18 transects utilized in 2010 along with mesohabitat identification of each transect and association with microhabitats.</p>	The collaborative decision of the group in 2009/2010 was to utilize IFIM and PHABSIM for Grant Creek. Figure 3 (“Location of Grant Creek instream flow transects”) documents the location of all 18 transects utilized. Table 1 (“Proposed mesohabitat assessment sites”) documents individual transect characteristics.
7	6/11/2013	ADF&G	Aquatics	<p><b>Macroinvertebrates, Plankton and Periphyton, Page 9</b> The results of the 2009 sampling may have been impacted by a large rain event which required postponement of the sampling. The flushing effect of high streamflow may affect both macroinvertebrate (MI) counts as well as species diversity. Flushing will also reduce the counts of</p>	Comment noted.

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				available plankton important to filter feeders such as sockeye juveniles.	
8	6/11/2013	ADF&G	Aquatics	<b>3.3 Need for additional information, Page 9-10</b> This section should also identify the development of site specific Habitat Suitability Index Curves (HSC) for use in modeling.	The development of HSC's on Grant Creek is explicit per Section 4.7.2 of the Aquatics Study Plan, "Information related to site-specific habitat suitability criteria (HSC) will be developed from these data and used in combination with HSC available in the existing literature and professional judgment to determine final HSC to be used in modeling." KHL will add this specific task to the goals and objectives section of the Aquatics Study Report.
9	6/11/2013	ADF&G	Aquatics	<b>4.1 Study Area, Page 10</b> This section fails to identify the Trail Lake Narrows study area near the proposed bridge crossing. The text identifies Figure 1 as showing the study area. This map of the fish and aquatics resources study area is inadequate in that it does not clearly identify the study area, is blurry on an 8 1/2" X 11" page, is split with two colors which make use difficult, and is not of sufficient resolution to properly view project features or read map labels.	The white line labeled, "Approximate Access Road – Transmission Line Alignment" documents the area across the narrows that is being evaluated. KHL appreciates the comment associated with the study area map presented in the Aquatics Study Plan. Refined and site-specific maps will be presented as part of the Aquatics Study Report.  In addition, a comprehensive GIS database is being developed as part of the study program that will document findings related to the pertinent investigations for all resource areas.
10	6/11/2013	ADF&G	Aquatics	<b>4.3 Grant Creek Fish Weir, Pages 10</b> We have concern that the proposed width between the pickets is not well defined. A maximum of three inches of spacing between pickets is identified. How will the spacing be determined? What will be the response if fish begin to gill themselves in the weir? Is this proposed to be a one size fits all weir? Correct picket spacing will be important or smaller resident fish will be gilled in the weir or trap. Is there an associated trap box? The size of the trap box is important when dealing with small fish as well as large fish, such as chinook salmon. It is stated that the weir will be monitored at least twice per day. Previously in this study plan it was reported that estimated escapement of chinook and sockeye salmon was 231 chinook and 6293 sockeye in 2009. This escapement level will require constant monitoring with sufficient staff during the spawning season to prevent crowding and mortality associated with the weir and trap. Monitoring will be required	Based upon our previous discussions with stakeholders, requests for comments and our Project schedule the weir has been in place since May 25 <sup>th</sup> . All appropriate and requested documentation was provided to the requisite resource agencies for permitting purposes and all permits have been acquired.  There is a crew tending the weir 7 days a week 24 hrs per day through the study period. The crew is living onsite at Grant Creek. The picket spacing is 1 inch and they have the capability to remove pickets for high flow, to allow unobstructed fish passage, and to manage debris.

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				<p>over a full 24 hour period as many fish tend to move more at night or during twilight hours here in Alaska.</p> <p><i>“Captured fish will also be measured if time allows and fish quantity is not too large to allow safe handling.”</i> All captured fish should be measured. This will also identify if unintentional size selectivity occurs during tag placement efforts and will promote utilization of all size fish in the study. Size selectivity may result in age class discrimination or spawning area identification bias due to size related access issues.</p> <p>When a weir is in place there will be increasing demand for removal of accumulated dead fish as the season progresses. All dead fish accumulating on the upper face of the weir should be checked to determine if they spawned and to recover radio tags. Excessive numbers of dead fish, which have not spawned, are an indication of watershed failures, such as low flows or low oxygen, or of improper handling during their capture at the weir. Improper handling may occur through insufficient monitoring of the weir which allows crowding and causes stress and reduced vitality, or physical handling such as fingers in gills or excessive time out of water due to insufficient staffing. These fish are nearing the end of their spawning run and many will be in a condition of diminished energy and vitality. Adequate staffing and 24 hour monitoring will reduce handling times and reduce possible effects of crowding and damage related to handling.</p>	
11	6/11/2013	ADF&G	Aquatics	<p><b>4.4 Grant Creek Spawning Distribution and Abundance, Page 13</b></p> <p>The first primary bullet in this section states <i>“Use of a counting weir to obtain a direct count of all salmon entering Grant Creek during the open water season.”</i></p> <p>This is probably flawed in that there will be high water events during spring breakup or during storm</p>	<p>Based upon our previous discussions with stakeholders, requests for comments and our Project schedule, the weir has been in place since May 25<sup>th</sup>. All appropriate and requested documentation was provided to the requisite resource agencies for permitting purposes and all permits have been acquired.</p> <p>That said, ADF&amp;G is correct that high water periods may periodically create conditions where pickets will need to be pulled</p>

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				<p>events which will either overtop the weir, damage the weir, or otherwise allow fish to pass uncounted. Since fish tend to follow freshets, it is probable that substantial fish movement could occur during these times. Once this happens, there will be no comparison to previous data and no evaluation of relative abundance will be possible.</p> <p>Additionally, lack of instream visibility may hamper foot survey sampling during high flow events. The secondary bullet seeks to estimate observer error by comparison to foot surveys, and will also be problematic. Any comparison to 2009 foot surveys would be suspect due to differences in turbidity and visibility between years, and the use of different observers with different skill sets. Observer error may include incorrect identification of species, miscount of numbers (either too many or too few), or just not seeing fish due to low light conditions, water disturbance or depth of fish in the stream. Bank estimates are prone to problems if fish are spooked by the proximity of the observer, if the observer is too far from the stream on a trail, or if the observer is at an angle that makes viewing difficult due to glare, ripples etc. Any estimation of error would change under differing conditions.</p> <p>The second primary bullet states: <i>“A radio telemetry study to further assess the spawning distribution of Chinook and Sockeye salmon, with emphasis on Reach 5(Canyon Reach). Coho salmon may be included in the study if conditions allow.”</i></p> <p>Spawning distribution of salmon in the study area should not be restricted to chinook and sockeye salmon spawning. Spawning of all salmon species within the project area are a concern and needs to be assessed. The statement that <i>“coho salmon may be included in the study”</i> fails to address complete assessment. The periodicity of coho may be a problem for researchers, but they are also important to the system, and understanding potential impacts of project development on this species is important</p>	<p>due to high flows. This year there was no “spring breakup impact to the weir and flows are currently high enough that had extensive debris come down the channel, it would have been observed by now.</p> <p>We agree that observer error (efficiency) can be influenced by many factors (experience, visibility, etc.) and direct comparisons of 2009 and 2013 results may be erroneous. However, the observer error that will be estimated from Grant Creek via the use of a weir in 2013 was part of the original stakeholder comments and the need to calibrate visual surveys for 2013. Observer error in 2009 was estimated based on information sources outside Grant Creek, which is also likely to have as much if not more error associated with the estimate using area under the curve (AUC). That is, observer error is more likely to be comparable within the same watershed as opposed to estimates outside of the watershed. Escapement estimates are set for 2009 but we can document the estimates of observer error used in 2009 and 2013 for escapement estimates. Your cautionary statements on comparisons are noted.</p> <p>With regard to the coho component of the comment, the intent was more to include coho as opposed to exclude them. Past data indicates that very few coho have been documented in Grant Creek. Survey timing will be consistent with the migration timing of coho and effort will be put toward documenting coho presence and habitat use. KHL has had in-depth conversations with ADF&amp;G related to coho in Grant Creek and aging and genetic analysis associated with any coho observed/captured.</p>

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				in developing instream flow prescriptions.	
12	6/11/2013	ADF&G	Aquatics	<p><b>4.4.1 Salmon Escapement to Grant Creek – Relative Species Abundance Project-Related Objectives, Page 13</b></p> <p>Two of the four bullets under this section include: “Assessment of numbers and species of salmon in Grant Creek as a whole.” and “Calibration of escapement estimates from foot surveys conducted in 2009.”</p> <p>The species of salmon in Grant Creek have been identified. Assessment of numbers of each salmon species may be problematic in that not all salmon present will receive equal treatment under this study (coho), and further that salmon escapement and return to streams varies from year to year based on many factors, including strength of parent run, instream juvenile survival, and fishery impacts on adult salmon. Thus, this objective is not attainable.</p> <p>Issues with calibration of escapement estimates from foot surveys conducted in 2009 are discussed above, under comments on Section 4.4, Grant Creek Salmon Spawning Distribution and Abundance.</p>	<p>As mentioned in KHL response #11, the intent was more to include coho as opposed to exclude them. Past data indicates that very few coho have been documented in Grant Creek. Survey timing will be consistent with the migration timing of coho and effort will be put toward documenting coho presence and habitat use. KHL has had in-depth conversations with ADF&amp;G related to coho in Grant Creek and aging and genetic analysis associated with any coho observed/captured (see statements above).</p> <p>The calibration portion of this comment has been addressed in previous responses. During the comment period, ADFG and other reviewers suggested calibration, by use of a weir, for spawning escapements to Grant Creek. Calibration of visual counts would occur for Chinook, Sockeye, and Coho salmon.</p>
13	6/11/2013	ADF&G	Aquatics	<p><b>Quantitative Objectives, Page 13-14</b></p> <ul style="list-style-type: none"> <li>“The primary objective is to obtain a nearly complete count of salmon of each species entering Grant Creek.”</li> </ul> <p>The presence of fish within the system will require instream flow protections. If we know the fish are present and the timing of their presence, why are complete counts necessary and how will that information be used? A bullet also identifies calibration of 2009 foot surveys. Issues with calibration of escapement estimates from foot surveys conducted in 2009 are discussed above, under comments on Section 4.4, Grant Creek Salmon Spawning Distribution and Abundance. Need for statistical determination should be reviewed by a biometrician. The statement that no</p>	<p>A portion of our responsibilities related to the licensing process are to document existing conditions. Counts of the various species present will assist in this documentation. Total counts of sockeye, Chinook, coho and other species at the weir document baseline conditions (abundance, migration timing, spawning period, species diversity, etc.) for the aquatic resources that will assist in instream flow considerations. The weir on Grant Creek is expected to be a total count of all fish. As a total count (true population estimate) for a single year statistical analysis is unwarranted unless pickets need to be removed in the event of changes in debris load or stream discharge. If that occurs, in the case of partial counts, all available counts in the 24-hour periods before and/or after the missing data will be used to estimate missing counts. Specifically, we would use the mean of the available counts as the estimate for each missing hour or day, and then sum the missing hourly counts to provide an estimate of the total missing count for a period.</p>

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				<p>statistical analysis is needed is unsupported.</p> <p>The use of Floy spaghetti tags and associated collection of scale samples, are briefly mentioned but there is no mention of methods to be used for tagging and scale collection. Scale sample collection may be problematic in fish close to spawning. Ageing of spawning salmon may be better accomplished by collecting otoliths from spawned out salmon.</p> <p><i>“During the salmon runs, personnel will monitor the weir and empty the catch box at least twice per day, more often if necessary.”</i></p> <p>There are no drawings of the weir or associated catch box provided. The dimensions of a catch box are important, as previously discussed under comments on Section 4.3 Grant Creek Fish Weir.</p> <p>One of the expected species in Grant Creek is the Chinook salmon. Regional issues with decline in Chinook salmon in 2012, triggered regulatory protections and has increased vigilance on interaction with these fish. It is imperative that Chinook salmon be handled as expeditiously as possible with appropriate safeguards and adequate care. Handling mortality of Chinook salmon may force removal of the weir and termination of some portions of this study.</p> <p><i>“Floy tags and radio tags will be recorded at the weir if carcasses are encountered.”</i></p> <p>All recovered tags shall be recorded by date recovered and retained until acceptance of the final study report.</p>	<p>Specifics related to tagging and aging are not explicit due to the fact that approval/permitting from ADF&amp;G was needed prior to defining. Defining those parameters and associated permits typically takes place after the study plans are developed, commented on and finalized. Per that schedule, KHL worked closely with ADF&amp;G between January and March of 2013 to develop appropriate tagging and sampling parameters and acquire all necessary permits to conduct the work. KHL will include specific methods (by species) associated with all tagging and aging efforts in the Aquatic Study Reports. Our team has secured a number of permits from various resource agencies which allow us (KHL) to conduct the natural resource studies on Grant Creek/Lake. The specific permits that apply to aquatic resource studies on Grant Creek are:</p> <ul style="list-style-type: none"> <li>• Fish Resource Permit (ADF&amp;G)</li> <li>• Fish Habitat Permit (ADF&amp;G)</li> <li>• Special Park Use Permit (ADNR)</li> </ul> <p>All stipulations that were incorporated into these permits have been adhered to up to this point. With respect to collection and analysis of fish associated with the Grant Creek weir, the primary allowances associated with weir fish collection are as follows (from Fish Resource Permit):</p> <ul style="list-style-type: none"> <li>• <i>“Unlimited numbers of all species may be passed through the weir, located near the mouth of Grant Creek to spawning areas.”</i></li> <li>• <i>“≤65 King salmon, ≤65 sockeye salmon, and ≤20 coho salmon adults may be marked with esophageal radio tags and spaghetti tags, and released alive.”</i></li> <li>• <i>“≤40 rainbow trout &gt;300 mm may be marked with surgically implanted radio tags, and released alive during the early portion of their spawning migration (March 25-June 30). These fish must also be tagged with an external tag.”</i></li> <li>• <i>“All unintended mortalities must be recorded and</i></li> </ul>

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					<p><i>returned to capture site waters.”</i></p> <p>In addition to this, KHL has worked Mark Willette at ADF&amp;G to collect appropriate aging information on the aforementioned species. Per these discussions, we've received confirmation that scale samples for Chinook, coho and rainbow will still be viable for aging purposes. With sockeye, where scale reabsorption is an issue, otoliths will be collected for aging purposes. ADF&amp;G will be conducting the scale analysis for the study and CIAA will do the otolith work for sockeye.</p>
14	6/11/2013	ADF&G	Aquatics	<p><b>Quantitative Objectives Pages 14-16</b></p> <p>On page 15, discussion of the number of fish to be tagged (we assume radio tags) states that the number of tags to be placed is based on 2009 total escapement estimates. It is unclear how the tag allocation by species was determined. The tag by species numbers cited later in this paragraph and in the ADF&amp;G issued 2013 FRP state that up to 65 King salmon, 65 sockeye salmon and 20 coho salmon are permitted to be marked with esophageal radio tags. It is very unclear how this allocation of tags is based on 2009 escapement estimates. The discussion also states that the timing of the coho run is not known, therefore coho estimates could not have been used to determine allocation of tags. Coho run timing must also be determined in Grant Creek. The coho run begins in August and may have fish actively spawning into December or even January. The periodicity is important in determination of instream flow requirements to develop instream flow prescriptions.</p> <p>Discussion of the installation of a fixed telemetry site occurs on page 16 and uses language “<i>will likely be pursued</i>” and “<i>If deployed...</i>” If such a system is going to be installed, a complete description of the system, its deployment and how it identifies and reports the presence of radio tagged fish must be included in this plan. The statements about this system, its deployment, maintenance and reporting are vague and do not inform an evaluator.</p>	<p>The number cited in the comment (and in KHL response #13) are correct and are based partially upon discussions with ADF&amp;G staff relative to permit stipulations and numbers of fish that ADF&amp;G needed to finalize previously established internal analysis (ADF&amp;G) of run timing and numbers in Grant Creek.</p> <p>The total number of tags to be used by species was not based on a percentage of the escapement to Grant Creek in 2009. If that was the interpretation it was unintended, we were merely documenting that both Chinook and sockeye are known to spawn in Grant Creek and there were estimates of escapement provided for 2009.</p> <p>Number and allocation of tags for Chinook and sockeye was based on several factors. First, Grant Creek is a very small stream, length wise, at about 0.5 miles where spawning aggregates have been noted. One among many considerations for radio telemetry is signal collision. Signal collision occurs when two or more tags are colliding (sending a signal) at about the same time. If there are too many operational tags in a given area the likelihood of signal collision increases. For this study, we assumed a detection rate of 0.80 or that about 52 tags/species would be coding (readable) during a mobile survey. During mobile surveys, hand held antennas are used to triangulate on fish locations. Sixty five tags for sockeye and 65 tags for Chinook were determined to be more than adequate for spawner distribution in Grant Creek. To put this in perspective, that is about 1 tagged fish every 41-51 ft in Grant Creek assuming an even distribution within the study area (2,640 ft/65 tags or 2,640/52 tags). As you know, spawning habitat is often clumped within specific habitats (low gradient riffles) increasing the number of fish within a given area. Too much signal collision and mobile surveys become untenable.</p>

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					<p>In an effort to further manage signal collision, different channel/code combinations and burst rates were selected and will be staggered during the tag and release phase at the weir (capture location). For tag allocation, we wanted equal representation (65 tags each) between sockeye and Chinook with known escapement estimates. For Coho salmon, there was no estimate of escapement in Grant Creek so it was decided that at least 20 tags would be available for use. In a recent site visit in November (2012) CIAA staff saw little evidence of Coho spawning (redds or carcasses).</p> <p>The fixed radiotelemetry systems deployed (SRX/DSP Lotek) use a DSP system that allows us to scan (listen) for all channels and codes and reduces scan time. Underwater bare coax antennas have been placed into Grant Creek at the mouth and reach 4/5 boundary. An array of two antennas (lines of detection) have been used at the upstream location to determine direction of movement. At the lower site only one antenna array was used because directional information was not needed. We did not use aerial antennas because they offer only presence information, have a much larger detection field and they are more prone to signal collision and signal bounce. The fixed telemetry systems are monitored each week of the study period. The information downloaded from the fixed site receivers are placed into a relational database where individual channel/code combination are related to individual tagged fish.</p>
15	6/11/2013	ADF&G	Aquatics	<p><b>4.5 Grant Creek Resident and Rearing Fish Abundance and Distribution, Page 16</b>  This section identifies using minnow traps to assess juvenile fish presence. Sockeye juveniles do not recruit to baited minnow traps, therefore, the sampling will be incomplete. Some sockeye juveniles may be seen during snorkeling surveys but turbid water conditions may make that method unreliable. Dolly Varden are not mentioned in this section, yet have a presence in the system.</p>	<p>As described in Section 4.5.2, Inclined plane traps will also be used for juvenile and outmigrant monitoring.. Any Dolly Varden captured via either minnow traps or the incline plane traps will be documented as well.</p>
16	6/11/2013	ADF&G	Aquatics	<p><b>4.5.1 Adult Rainbow Trout Abundance, Distribution, and Spawning in Grant Creek Quantitative Objectives, Page 16-17</b>  <i>"Obtain a count of adult Rainbow trout entering Grant Creek during the open water season."</i>  Define "adult"...Is this a length consideration? The</p>	<p>Per KHL's request the FRP reduced the allowable size for tagging of rainbow trout from 500mm to 300mm. This request was based primarily on historical data and initial rainbow trout captures in Grant Creek indicating that very few fish in excess of 500mm were likely to be observed (HDR 2010, see Figure 3.5.2-16). Per KHL's earlier response regarding the documentation of existing conditions,</p>



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				<p>ADF&amp;G FRP has been amended to reduce the minimum length for rainbows to be tagged with radio telemetry tags from 500mm to 300mm. Is a less than 12 inch rainbow trout considered an adult? 300mm fish probably would not spawn in the near future so how does the telemetry study inform of rainbow trout spawning habitat utilization identified as a need under 4.5? The FRP identifies March 25 to June 30 as the time period allowed for rainbow trout radio tag surgical implantation. If larger rainbows spawn above the weir in Grant Creek, it will also be imperative that rainbow trout moving back down the stream must be quickly passed over the weir. Reconditioning kelts have limited energy and will not be able to avoid being held against the weir by streamflow and may not survive if delayed at the weir. Weir caused mortality of rainbow trout kelts will not be acceptable.</p> <p>Angling is proposed to help with obtaining more complete information. Angling would be of very limited use because the weir is supposed to trap all large fish accessing Grant Creek. Angling for selective size classes will skew the representativeness of the data collected and may also have collection overlap with fish KHLded for Upper Trail Lakes and tributaries. Again, proposed methods are lacking.</p> <p><i>“Surgical method will generally follow those described by Summerfelt and Smith (1990).”</i> The use of the term “generally” is not acceptable. Methods are vague and subject to unknown change.</p> <p><i>“Fish within the dominant size range of mature Rainbow trout (500 - 700 mm) will likely weigh 1800-6000 grams (Russell 1977).”</i> Fish Resource Permit (FRP) SF2013-105, amendment #1, identified up to 40 Rainbow trout to be radio tagged and reduced their size from greater than 500 mm to greater than 300 mm. From the citation above (Russell 1977), how are 300 mm fish</p>	<p>it is believed (based upon historical data and initial data from 2013) that resident, adfluvial and potentially fluvial life histories exist for rainbow trout utilizing Grant Creek for spawning. Given the possibility of several life histories in Grant Creek, we did not want to ignore the behavior and habitat selection of any life history strategy.</p> <p>The radio tags used for rainbow trout and Dolly Varden in this study can be used on salmonids down to 300 mm. The intent is to tag fish that will spawn based on a visual assessment of the fish. The man camp at Grant Creek has been and will continue to house 2 technicians full-time for the duration of the study season. This will facilitate the expedited response necessary to pass reconditioning kelts downstream.</p> <p>The intent of angling is a supplementary one. During times when pickets may have to be pulled due to high flows and/or large numbers of rainbow are observed very low in the system (below the weir), angling has been and may be used again to capture rainbow.</p> <p>The word “generally” will be removed from the methods section of the Aquatics Study Report.</p>

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				considered to be adults? If sub-adults or non spawning adults are tagged there will be no correlation with spawning areas. These smaller fish may simply be seeking food sources.	
17	6/11/2013	ADF&G	Aquatics	<p><b>4.5.2 Resident and Rearing Fish Use of Study Reach 5</b>  <b>Quantitative Objectives</b>  On-site Sampling, Page 18-19  This section is confusing in that it discusses 2009 efforts and apparently expanded 2010 efforts. It is not clear if efforts will be expanded again for 2013 studies. The use of minnow traps to sample fish juveniles has been previously discussed as being selective and excluding sockeye salmon juveniles. A determination of lack of sockeye salmon spawning in Reach 5 needs to occur before this method can be said to sample all juveniles which may be present. The entire section is not clear on the level of effort to be expended in Reach 5 juvenile sampling during 2013.</p> <p><i>“Weir operation, as described in Section 4.3, may provide information on the timing of upstream movements of adult Dolly Varden. If sufficient numbers of spawning condition Dolly Varden are observed, mobile surveys of radio tagged fish will be utilized to identify their final destination. Given the historical data associated with Dolly Varden numbers in Grant Creek, KHL believes 10 radio tags will be sufficient for this analysis.”</i></p> <p>There is no tagging of Dolly Varden identified in Fish Resource Permit SF2013-105. Either there is an omission in the FRP which needs to be corrected, or the study plan is in error and it needs to be corrected. The weir, as described in this study plan with 3” picket spacing, will probably catch only very large Dolly Varden.</p> <p><i>Outmigrant Monitoring, Page 19</i>  Dolly Varden have not been included as species of primary interest in the study plan. The previous</p>	<p>The expanded effort for Reach 5 includes the winter time sampling (snorkeling and minnow trapping) as well as a downstream migrant trap set up at the boundary of Reach 4/5. In addition, radio tagging adult salmonids to determine if they use Reach 5 will be part of the evaluation. All of these components were added to the Reach 5 evaluation based on comments from the original study plan.</p> <p>Ten radio tags have been devoted to Dolly Varden. The picket spacing on the weir is one inch and has been working effectively at capturing rainbow trout.</p> <p>Fish capture in the incline plane trap will be netted from the holding box and transferred into a bucket of water for sampling or subsampling (length and weight measurement). Some fish will be dye marked and released upstream for trap efficiency trials. Those fish will remain in water amended with oxygen until they are released. Some fish will only be counted depending on numbers of fish captured at the trap. Those fish will be released downstream of the trap to continue their outmigration. The collection permit determines acceptable loss.</p> <p>The statement that YOY fish are juveniles is correct but the prior statement was alluding to the fact that not many 1+ fish were found in their sampling efforts. We already know from our recent winter sampling (snorkeling and minnow trapping) that fish overwinter in Grant Creek.</p> <p>The incline plane traps were helicoptered into Grant Creek.</p> <p>There was no plan to study the delayed effects of marking, handling and transport of fish. The methods used are typical of out migrant fish handling with incline or screw traps. Mortality of any fish in the traps is recorded and if it exceeds the permitted amount the trap is to be shut down and reported to ADFG.</p>

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				<p>section identifies a potential radio tagging effort which would seem to identify Dolly Varden as a species of primary interest.</p> <p>Define acceptable loss for outmigrant trapping. This is especially important for winter use of incline plane traps described under <b>Quantitative Objectives</b>, on page 19. Describe how fish will be handled and transported during winter conditions.</p> <ul style="list-style-type: none"> <li>• Winter Sampling, Page 19-20  <i>“The results of the 2009 snorkel and minnow trapping surveys provided evidence that very few juvenile salmon observed were older than young-of-year fish (YOY; i.e., hatched in spring). Based on these results, there is some question as to whether Grant Creek provided favorable overwintering habitat for juvenile salmon and other species.”</i>  This is a contradictory statement and is unclear. YOY fish are also juveniles. If YOY fish were found, then there is wintering habitat in Grant Creek being used by juvenile fish. Again baited minnow traps are proposed and again we point to lack of sockeye salmon recruitment to that method of sampling.</li> </ul> <p>Spring Outmigrant Monitoring, Page 20  Since Grant Creek is not boatable, how will incline plane or screw traps be transported and deployed?</p> <p>A fine mesh live box is identified but again there is no information provided. The mesh size and size of the live box needs to be provided. Acceptable loss needs to be identified. Will there be an evaluation of effects attributed to marking, handling, and transport of these fish?</p>	
18	6/11/2013	ADF&G	Aquatics	<p><b>4.5.3 Resident and Rearing Fish Use of Open Water Habitats in Lower Grant Creek Quantitative Objectives</b>, Page 21</p> <ul style="list-style-type: none"> <li>• <i>“Obtain a count of adult Rainbow trout and Dolly Varden, and other resident</i></li> </ul>	<p>KHL is unclear as to why ADF&amp;G is under the impression that the consultant has limited understanding of Dolly Varden life history. KHL and its consultants are intimately familiar with the life history of Dolly Varden in the area. A periodicity chart associated with the combined findings from 2009/2010 and 2013 study work will be</p>

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				<p><i>species entering Grant Creek during the open water season.”</i></p> <p>There appears to be little understanding of Dolly Varden life history, including size at maturity, by the study plan authors. Life stage information for Dolly Varden is presented in the Alaska Wildlife Notebook Series<sup>2</sup>, and includes the following information:</p> <p><i>“Dolly Varden belong to a group of trout-like fish called char (Salvelinus sp). The primary visual distinction between char and trout and salmon are that char have light spots on their dark body sides while trout and salmon usually have black spots on their light colored sides. Dolly Varden are fall spawners and usually spawn between September and November in small KHLdwater streams. The female, depending on her size, may deposit from 600 to 6,000 eggs (2,500 to 10,000 in the northern form) in depressions, or redds, which she constructs in the streambed gravel by digging with her tail fin. The male usually takes no part in nest building and spends most of his time defending the redd by chasing, biting or threatening intruders. When the female is ready to deposit her eggs, the male moves to her side and spawning begins. Sperm and eggs are released simultaneously into the redd where fertilization occurs. After spawning the female then forces the exposed eggs into the crevices by undulating her body and tail before covering the eggs with gravel.</i></p>	<p>incorporated in the Aquatics Study Report.</p> <p>See Comment Response #11 for additional detail on the weir infrastructure.</p> <p>The statement, “All resident fish passing the weir will be recorded.”, will be modified in the Aquatics Study Report to read, “When the weir is fishing, all resident fish observed and/or captured will be recorded.” KHL wishes to note that the only times during the study period when the weir will not be fishing will be during flows high enough to disable the weir, when pickets will be pulled and briefly and intermittently to clear debris. As mentioned in Comment Response #16, two personnel are on-site 24 hours per day, 7 days a week monitoring the weir. KHL feels that this comprehensive approach ensures adequate monitoring practices.</p> <p>As with any licensing/relicensing process, the study period is a segment in time when studies are conducted and data is collected to define existing conditions and provide the proponent and the Stakeholders with an understanding of the natural resource assets present in the area and the potential for impact (positive and negative) associated with the development of the proposed project. If studies were to go on into perpetuity, no projects would ever be relicensed or licensed. The direct value to the project by collecting this data is informing both the stakeholders and KHL of the aforementioned conditions. Like other relicensings/licensings, this information combined with the infrastructural, design and operational parameters will assist Stakeholders in the development of any 10 (j) recommendations.</p> <p>Two incline plane traps are currently in place on Grant Creek and were lifted in via helicopter. All of this was done in full compliance with necessary permits.</p>

<sup>2</sup> Alaska Wildlife Notebook Series, Dolly Varden, Alaska Department of Fish and Game, [www.adfg.alaska.gov/static/education/wns/dolly\\_varden.pdf](http://www.adfg.alaska.gov/static/education/wns/dolly_varden.pdf).

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				<p><i>The eggs develop slowly in the cold water temperatures and hatch in March approximately four to five months after fertilization. After hatching, the young Dolly Varden absorb the food from their yolk sac and usually do not emerge from the gravel until this food source is used. Emergence from the gravel usually occurs in April or May for the southern form and in June for the northern form.</i></p> <p><i>The young Dolly Varden rear in streams for 2 to 4 years before beginning their first migration to sea, but some may rear as long as six years. During this rearing period, their growth is slow, a fact which may be attributed to their somewhat inactive habits. Young Dolly Varden often remain on the bottom, hidden from view under stones and logs, or in undercut areas along the stream bank, and appear to select most of their food from the stream bottom.</i></p> <p><i>Prior to their seaward migration Dolly Varden go through a series of physical changes called smoltification which allows them to survive in saltwater and during this process the fish lose their parr marks and become silvery in color. The fish are now about 5 inches long and are called smolt. This seaward migration usually occurs in May or June, although significant but smaller numbers have been recorded migrating to sea in September and October. After their first seaward migration, Dolly Varden usually spend the rest of their lives migrating to and from fresh water in an interesting and often complicated pattern of migration.</i></p> <p><i>The southern form migrate into lakes</i></p>	

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				<p>during the fall where they spend the winter while most northern Dolly Varden migrate into rivers to spend the winter. Dolly Varden hatched and reared in a lake system typically carry on annual spring migrations to saltwater seeking food before returning to a lake or river each fall to spend the winter. However, southern Dolly Varden originating from nonlake systems must seek a lake in which to winter and research suggests that they may find lakes by random searching, migrating from one stream system to another until they find one with a lake. Once a lake is found, these fish typically conduct annual seaward migrations in the spring, sometimes entering other freshwater systems in their search for food. Dolly Varden are known to follow salmon during upstream spawning migrations where there are lots of nutritious salmon eggs for the Dolly Varden to feed on.</p> <p>Dolly Varden return to spawn in their stream of origin or “natal stream” upon reaching sexual maturity. Most southern forms of Dolly Varden reach maturity at age 5 or 6. At this age they may be 12-16 inches long and may weigh from 1/2 to 1 pound. Northern Dolly Varden reach maturity at age 5 to 9 after having spent three or four summers at sea, and may be 16 to 24 inches long. Dolly Varden possess the ability to find their natal stream without randomly searching, as was the case in their original search for a wintering area. Those of the southern form that survive the rigors of spawning return to a lake to spend the winter, while northern form Dolly Varden usually overwinter in the river system in which</p>	

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				<p><i>they have spawned.</i></p> <p><i>Mortality after spawning varies depending on the sex and age of the fish. Males suffer a much higher mortality rate after spawning, partly due to fighting and the subsequent damage inflicted on each other. It is doubtful that much more than 50 percent of the Dolly Varden live to spawn a second time but a small number may live to spawn more than twice. Few southern Dolly Varden appear to live longer than 8 years while northern Dolly Varden may live as long as 16 years, but individuals over age 10 are uncommon. Maximum size for southern Dolly Varden is between 15 and 22 inches and up to 4 pounds but an occasional 9-to 12-pound fish have been reported, especially in northern populations."</i></p> <p>This study plan should also provide a periodicity table for all fish species utilizing Grant Creek.</p> <p>Weir Data, Page 21-22 Define the weir in the study plan. Please note that spawning Dolly Varden may be as small as 12 inches in length and may be difficult to capture in a weir.</p> <p><i>"All resident fish passing the weir will be recorded."</i> This is not possible due to size of fish and potential storms which will breach the weir. Small resident fish will not be collected.</p> <p><i>"When the weir is in capture mode, the lengths of all fish will be measured if possible without harming the fish or requiring extra effort."</i> This statement implies that if someone decides that it is too much work, length measuring could be abandoned. Define "extra effort" and in what</p>	

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				<p>scenarios length measurements could be abandoned. Provide adequate staffing to do the job correctly and completely.</p> <p><i>“...the presence of an obvious pulse of Dolly Varden will trigger a need for foot surveys to identify spawning locations.”</i></p> <p>Spawning Dolly Varden may use Reach 5 which has limited access and poor observation areas. See previous comments under 4.5.2 regarding radio tagging of Dolly Varden. Also these fish may spawn in October and November, after the weir has been removed and personnel have left the area.</p> <p>Outmigrant Monitoring, Page 22  <i>“Combining the results of spring and fall outmigration monitoring will provide an indication of the total annual production of the creek.”</i></p> <p>If there are no problems encountered with outmigration, such as floods or equipment failure you may be able to develop an estimate for the current year only. The estimate is not transferrable from year to year. It would only be valid for the year sampled. What is the value to the project? How will this inform the agencies and aid in development of agency recommended 10 (j) terms and conditions, to be filed with FERC, on this project.</p> <p>Since Grant Creek is not accessible by boat, how will incline plane or screw traps be transported and deployed?</p>	
19	6/11/2013	ADF&G	Aquatics	<p><b>4.6 Grant Creek Aquatic Habitat Mapping Quantitative Objectives</b>, Page 23</p> <ul style="list-style-type: none"> <li><i>Prepare an office-based aquatic habitat map (i.e., based on habitat observations assembled throughout the 2009 and 2010 field seasons.”</i></li> </ul> <p>On this map/s, locate and identify transects used on this project. Provide maps at a scale that allows readability and clearly shows habitat areas and</p>	<p>KHL will prepare these maps for the Aquatics Study Report as specified in ADF&amp;G Comment #19. Figure 3 of the Aquatics Study Plan documents the 18 instream flow transects on Grant Creek and Table 1 documents the mesohabitat characteristics of each transect.</p> <p>Ground truthing of the aquatic habitat mapping in the Grant Creek main channel was performed during May at a flow of approximately 100 cfs.. Side channel habitat at that time was, for the most part, either dry (Transects 100 and 110) or still covered with snow and</p>



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				<p>transects. Identify the proposed mesohabitat classifications. This is key information necessary for the agencies to assure that the sampling design is adequate.</p> <p><i>“The team will conduct surveys to ground-truth the preliminary aquatic habitat delineation.....”</i></p> <p>Is this a single exercise? At what flows will the habitat be identified during this exercise? Habitat use by fish will change with changing flows and water velocities.</p>	<p>ice. Habitat mapping in these secondary channels will be ground truthed on the descending limb of the Grant Lake hydrograph later this summer.</p> <p>Habitat use surveys are being conducted by KHL throughout the field season, and will be noting these shifts in utilization along with changing flows and velocities. Minnow trapping and snorkeling have been used to document fish presence and habitat use. During high flows the only areas that will be sampled are lateral habitats to determine fish use.</p>
20	6/11/2013	ADF&G	Aquatics	<p><b>4.7 Grant Creek Instream Flow Study</b>, Page 24-25</p> <p>Identify and provide maps of the 18 transects. Identify how data will be collected when the creek is unwadeable.</p>	<p>Figure 3 of the Aquatics Study Plan provides a map of the 18 transects on Grant Creek. High flow measurements were just conducted on Grant Creek (June 12<sup>th</sup> and 13<sup>th</sup> at approximately 700 cfs). An Acoustic Doppler Current Profiler (ADCP) was used in unwadable sections of stream to measure discharge. Water Surface Elevations (WSEs) were taken along both stream margins as far as they could be safely waded. WSEs were taken all along the transects in the side channels, which could be waded.</p>
21	6/11/2013	ADF&G	Aquatics	<p><b>4.7.1 Habitat Availability</b>, Page 25</p> <p>The use of the PHABSIM method requires transects which represent all habitat types. The biological component is added into the modeling through the development and use of habitat suitability index curves. Additional transects may be added where fish are observed, but the model remains habitat oriented. What is presented will not correctly assess habitat because it will only address known fish use at the time the study is being conducted. The proposed study plan falls short in that it will be incomplete.</p>	<p>KHL disagrees that the study plan is incomplete in this regard; these 18 transects in the lower 0.5 miles of Grant Creek were selected because of their utilization by the target species. These transects were agreed to by the natural resource agencies after extensive consultation in 2009 and 2010. If fish are observed spawning or rearing in areas not on transects, habitat availability data will be collected in these areas. These availability data will be combined with utilization data and normalized to develop HSC curves of the target species and life history stages. Please also refer to response to Comment 18.</p>
22	6/11/2013	ADF&G	Aquatics	<p><b>4.7.2 Habitat Utilization</b>, Page 26-28</p> <p>Described is the development of site-specific habitat suitability criteria (HSC). Then described is the use of that data combined with literature searches and professional judgment. Blending this information together will reduce the specificity of site-developed HSC's. How will depths and velocities be measured without disturbing spawning fish? The</p>	<p>KHL will collect site-specific HSC data; if there are a sufficient number of measurements taken, it may not be necessary to supplement the data set with literature-based curves. If, however, there are very few direct observations of fish, the use of literature-based curves may be necessary in order to fill out the curves. If literature-based curves are used to supplement site-specific measurements, KHL will consult with the natural resource agencies.</p>

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				<p>text mentions that 16 sampling sites were established in 2009. Provide habitat associated mapping of those sites for evaluation of study applicability.</p> <p>Table 2, Page 27 Resident rearing and spawning parameters should be collected onsite. It may not be appropriate to use salmon rearing as a surrogate.</p> <p>On page 28 snorkeling and electrofishing are presented as sampling methods. Snorkeling avoidance is not discussed and electrofishing methods are not presented. If electrofishing is used, will block nets be employed? Further discussion is needed on data collection during unwadeable flow events which may occur during at lower flows than expected.</p> <p>Collection of water temperature data is identified to be recorded where fish are observed, at mid water column. Why this much detail? Are water temperatures expected to vary? If there is interest in redd locations then intergravel flow and temperatures may be important to show upwelling, but other than location of redds, how will this information inform the agencies and aid in development of agency recommended 10 (j) terms and conditions, to be filed with FERC, on this project.</p>	<p>KHL will use markers and will place them at the site of the redds when fish are observed actively spawning. Depths and velocities will be measured when the fish move off redds.</p> <p>KHL is in the process of obtaining data on resident rearing and spawning fish. If the data are too sparse to make sound biological decisions, KHL will discuss the use of surrogates with the natural resource agencies.</p> <p>Temperature data are sometimes collected in association with HSC curve development. ADF&amp;G, however, is correct in that we have not observed anything to indicate that there is significant variance in water temperatures either laterally or depth-wise. Given these parameters, KHL will not collect temperatures associated with our HSC curve development.</p>
23	6/11/2013	ADF&G	Aquatics	<p><b>4.7.4 Analysis Methods</b>, Page 30 Use of RHABSIM is identified. The RHABSIM package was developed by Thomas R. Payne and Associates, who have developed a newer, improved, and more complex program called System for Environmental Flow Analysis (SEFA).</p>	SEFA contains the same one-dimensional modeling component as RHABSIM, with some enhancements in HSC development, time series analysis and other parameters. KHL will use portions of SEFA if pertinent to the analysis necessary to represent Grant Creek.
24	6/11/2013	ADF&G	Aquatics	<p><b>4.7.5 Reach 5 (Canyon Reach) Analysis</b>, Page 30 “It is expected that available post-Project habitats</p>	KHL’s intent in this statement was not to infer that connectivity would not be maintained. To the contrary, KHL has every interest

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				<p><i>will be limited to pools which contain sufficient water to support fish."</i></p> <p>This premise is unacceptable. Connectivity will have to be maintained to provide minimum environmental protections to this reach. Expect the requirement of an instream flow release.</p> <p><i>"A simplified modeling effort will be employed to obtain insight into effects that small changes in flow might have on pool depth, pool connectivity, and fish passage availability."</i></p> <p>The use of the Oregon method follows this statement after a large break in the text. It is not clear if this is the simplified modeling proposed. The Oregon Method has been acknowledged by Oregon as a crude tool which is used in cases where other methods are not available and for use until other more complex methods can be utilized. Few verification studies have been conducted, which is also problematic.</p> <p>Identify:</p> <ul style="list-style-type: none"> <li>• how many flow calculation sets will be used,</li> <li>• velocity calculation sets will be used,</li> <li>• upstream &amp; downstream transect/mesohabitat weighing methods,</li> <li>• what WSL model(s) will be used, and</li> <li>• development of composite habitat suitability indexes.</li> </ul> <p>Provide mapping of transects and mesohabitat units at an appropriate scale to clearly identify details. Reach 5 should have 1 to 2 transects included in the habitat model analysis. Also needed is a Habitat Time Series.</p>	<p>in ensuring a viable stream system and maintaining connectivity throughout. The statement was meant to convey that the only usable habitat in Reach 5 would likely be limited to pools that contain sufficient water to support fish; similar to the existing and natural condition in Grant Creek now. KHL views the use of the instream flow study as a mechanism for developing appropriate levels of flow for the aquatic species present and has every expectation of working with ADF&amp;G and other Stakeholders to develop appropriate instream flows for the Project.</p> <p>KHL proposes to use the Oregon Method in the Canyon Reach. Two transects have been selected, and the bed profiles for both transects, as well as WSEs at discharges of approximately 17 cfs, 60 cfs, 130 cfs, and 700 cfs; in RHABSIM, a power function is used to calculate a rating curve and a stage/discharge relationship.. Measurements of velocity have not been taken at these transects, since their purpose is to evaluate connectivity.</p> <p>The Oregon method is still widely used. Avista Corp. used it to evaluate connectivity in the Spokane Falls Reach of the Spokane River in 2010; the results were approved by WDFW and IDFG. This same methodology was used and approved on a proposed four-system hydropower project in 2012 in British Columbia, Canada.</p> <p>Transect locations and mesohabitat units will be mapped and provided as part of the license applications. If appropriate, a habitat time series will also be conducted.</p>
25	6/11/2013	ADF&G	Aquatics	<p><b>4.8 Baseline Studies of Benthic Macroinvertebrates in Grant Creek Quantitative Objectives</b>, Page 31</p> <p>Will sampling only in August provide accurate and</p>	<p>KHL feels that a sampling event in August will be sufficient.</p>

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				complete information? Prior studies (2009) suffered when floods and washouts occurred and sample richness was affected (Aquatic Resources Study Plan page 9).	
26	6/11/2013	ADF&G	Aquatics	<p><b>5 Agency Resource Management Goals, Page 33</b>  The first bullet under this topic identifies incorrect and obsolete Alaska Statutes. We use the following language in FERC Motions to Intervene (MOI):</p> <p>“ADF&amp;G is mandated under state law to “manage, protect, maintain, improve, and extend the fish, game, and aquatic plant resources of the state in the interest of the economy and general well-being of the state . . .” (AS 16.05.020). Among the ADF&amp;G’s various powers and duties are “to assist the United States Fish and Wildlife Service in the enforcement of federal laws and regulations pertaining to fish and game . . .” (AS 16.05.050), and protect fish habitat (AS 16.05.841 and AS 16.05.871).”</p>	Comment noted. The Aquatic Study Report will be modified accordingly.
27	6/11/2013	ADF&G	Aquatics	<p><b>8 Schedule for Conducting the Study, Page 35</b>  This schedule does not identify timing for deployment incline planes, telemetry station installation, installation of the counting weir, or inclusion of the genetic analysis in reports.</p>	<p>Timing associated with the aforementioned tasks would have been speculative at the time of plan finalization (March 2103) given the variability associated with flow, ice, etc. that dictate specific installation time. For ADF&amp;G’s information and in advance of the Aquatics Study Report:</p> <ul style="list-style-type: none"> <li>• Incline plane traps installed in early April</li> <li>• Radio telemetry infrastructure has been in place since April and data is currently being collected.</li> <li>• Weir installed in May.</li> <li>• Genetic data collection of fish species will be collected at the weir during passage and per the study plan, if a cooperative agreement can be reached, the analysis will take place.</li> </ul>
28	6/11/13	ADF&G	Water Resources	<p><b>4.2 Field Study Design</b>  <b>Quantitative Objectives, Page 6</b>  This section states that water quality standards were selected and criteria were established. What standards and what criteria? The next three sections</p>	The only use of the word standards in this section (and the entire study plan) is used in reference to EPA standards for laboratory quality. KHL is unsure what reference is being used to develop this comment. Table 1 is intended to inform the reader of the water quality parameters that are being sampled during the 2013 field

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				list Table 1 but this table only states what will be sampled for and not what the standard or criteria is for each parameter. If you are using Alaska DEC standards, state that is the standard being used, and what range is considered	effort.  From pg. 6 of study plan: “Water quality parameters were chosen for analysis based on several factors: parameters sampled in previous studies, parameters that may be affected by land use practices in the Project area, parameters either necessary for aquatic life or that act as nutrients, and the drinking water and aquatic life criteria that have been developed for fresh water in Alaska.” Given this and our initial, current and continued practices, Table 1 will be updated to include Alaska DEC criteria in the Water Resources Study Report.
29	6/11/13	ADF&G	Water Resources	<b>Baseline water quality studies in Grant Lake, Page 7</b> The last line of the last bullet contains bidding information and is not relevant to the study plan. <i>“The prospective bidders should provide individual costs for the installation of a new thermistor string and the cost associated with restoring the potentially functional existing string.”</i> This belongs in a bidding document	Any reference to a “bidder” was removed prior to the study plan that was finalized and filed with FERC in March 2013.
30	6/11/13	ADF&G	Water Resources	<b>Baseline water quality studies in Trail Lake Narrows, Page 7</b> This information will not inform environmental aspects of this project except for immediate construction of the bridge. Even that would be of limited use since water at this point is mixed from Grant Creek and Upper Trail Lakes. Since no evaluation of the area above the narrows and the intersection of Grant Creek with the Trail Lakes system is proposed, it will be impossible to determine if differences in water chemistry are project related.	Water quality sampling of Trail Lakes Narrows below Grant Creek is intended to be a baseline study. At this time little to no water quality information is known about the Grant Lake watershed. By evaluating the water chemistry of Trail Lakes Narrows, Grant Lake, and Grant Creek, a decision can be made as to whether a more comprehensive assessment of the Trail Lakes Narrows is warranted. As a proactive measure, KHL has installed HOB0 Pro v2 (U22-001) temperature loggers above and below the mouth of Grant Creek in the Trail Lakes Narrows. These data should allow for the assessment of how Grant Creek may influence water temperatures in the Trail Lakes Narrows.
31	6/11/13	ADF&G	Water Resources	<b>Page 8</b> Following Table 1, there appears to be a methods section which is not labeled. If this is a methods section, label correctly. In this section, DH-81 bottles will collect subsamples which will be combined in a bucket or a single sample if width and depths allow. The method states that width and	ADF&G is correct that the paragraph beginning after Table 1 is a bit confusing without a header. Depending on need and application, a header will be added to these methods in the Water Resources Study Report.  The sampling methodology, specifically width and depth criteria for Grant Creek sub-sampling, will be adequately described in the

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				<p>depth of the stream will determine the method of sampling but fails to identify what those width and depth criteria are.</p> <p>This section identifies the HOBO Pro V2 temperature loggers and the HOBO U20 Water Level Loggers as the instruments to be used. There are four different models of the HOBO U20 with different specifications for depths and resolution. Different models will be required for lake or stream work. If they are mixed up, data will potentially be lost due to equipment failure. Identify the loggers to be used at each location.</p>	<p>Water Resources Study Report. The field crews will operate on the following guidelines: width-integrated (only) grab samples to occur when cross sectional widths are greater than 10 feet and depth are less than 1.0 feet. In general, width and depth-integrated subsampling with the use of a DH-81 or similar sampling device is to only occur when wading conditions are safe (wading factor: depth x velocity <math>\leq</math> 10.0 or less). Also, if the flow conditions in Grant Creek reveal a well mixed sampling site, then a single grab sample will be collected from an appropriate mid-channel location within the cross section.</p> <p>The description of instrumentation used to measure water temperatures in Grant Lake and Grant Creek is clarified below. All continuous temperature monitoring will utilize the HOBO Pro v2 (U22-001) temperature loggers. The operational range of these loggers is from -40C to 50C. These loggers can be deployed to a depth of 400 feet and maintain their waterproof integrity. For the study applications proposed, these Pro v2 loggers are adequate with minimal risk of data loss due to exceeding operational specifics. At site GC 200 only, an <i>additional</i> pair of Onset U20 -001-01 water level loggers (0m to 9m water level range; -20C to 50C temperature range) are being deployed to serve as a backup water temperature and water level/barometric pressure recorders in the event that primary data loggers fail. Again, the Onset U20 -001-01 water level loggers utilized at site GC 200 are being deployed within their defined operational criteria, and thus should not have data loss due to deployment error.</p>
32	6/11/13	ADF&G	Water Resources	<p><b>Page 8, Paragraph 3, second sentence</b>  <i>“Water temperature in Grant Lake will be measured both instantaneously and continuously using recording data loggers.”</i>  Data loggers do not provide instantaneous measurements. It is believed that you intend to use a YSI or Hydrolab meter to provide instantaneous readings. Correct this statement.</p> <p>Further in the same paragraph, the abandoned data loggers are discussed and stated to be inactive. These loggers were maintained into 2010 so we assume data was field downloaded at that time. These loggers were placed back into the water and would have recorded data until the memory was full</p>	<p>In the Water Resources Study Report, the water temperature sampling protocol will be corrected as you recommend. KHL is using the term, “data logger” as a general description of a tool utilized to collect data. The subsequent statements in the same paragraph outline the specific instruments that are being utilized for both instantaneous and continuous data collection, <i>“At both GLOut and GLTS, temperatures will be measured in a vertical transect during water quality sampling events with aYSI or Hydrolab multi-parameter meter using a 20-meter cable calibrated at one meter intervals. The instantaneous water temperature measurements will be used to supplement the continually recorded temperature data. HOBO Pro V2 temperature data loggers will also be used at the proposed intake site on Grant Lake. A thermistor string was installed in 2009 along a vertical transect in this location to a depth of 20 meters. Data loggers were attached to the string at depths of</i></p>

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				or the internal batteries were depleted. The batteries usually last five years on these units so it is possible that there is recorded data which may be accessed. Every attempt to recover this data should be used, including sending units back to the manufacturer to recover data from “dead” units. This section should include those data recovery efforts but only identifies testing, reinstallation or replacement.	<i>0.2, 0.5, 1.5, 3, 6, 9, 12, 15, 18 and 19.5 meters. The data loggers recorded temperature at 4-hour intervals.”</i>
33	6/11/13	ADF&G	Water Resources	<p><b>4.2.2 Hydrology</b>  This section discusses stream gage installation and identifies some USGS approved equipment but fails to identify the standards used for installation or who installs and maintains the gage and downloads data. Apparently there will be no winter record. This may be problematic in that project operation appears to be year round. The existing stream flow data is very dated (1947-1958) with limited recent data (2009) and will need to be appropriately updated.  <i>“All installed equipment will be removed by late October or prior to freeze-up.”</i> Is this a single effort for the summer and fall of 2013 only? The installation of a stream gage and associated measurements for only six months will not be adequate to provide a correlation to the historic record.</p>	<p>KHL believes that maintenance and data collection parameters related to the stream gage are explicit throughout Section 4.2.2.1 and 4.2.2.2 of the final Water Resources Study Plan. To summarize, KHL has and will continue to take full responsibility for maintenance, monitoring, offloading and review of data.</p> <p>As with all natural resource information, KHL will collaboratively discuss results with the Stakeholders in an effort assist in determining proposed Project impacts (if any) and develop the appropriate Project plan. KHL recognizes the need for an up to date hydrologic record and is committed to discussing the need for a multi-year gauging effort that includes a winter record in association with licensing process and subsequent to license acquisition.</p>
34	6/11/13	ADF&G	Water Resources	<p><b>4.2.2.2 Instantaneous Discharge Measurements, Page 12</b>  Stream gage sites are identified but the plan also states: <i>“Measurements at other sites within the Grant Creek drainage will be conducted as those sites are determined, and when stream conditions permit.”</i>  Will discharge measurements be taken at the 18 transects identified in other the Aquatic Resources study plan? There has been no mapping provided to identify those transects. What other discharge measurement sites may be determined and how will they be determined?</p>	<p>The primary discharge section will be proximal to the gage site (GC200) to insure an accurate stage-q relationship is developed at this historic stream gaging location. Additional discharge measurements will be collected in Reach 4 and Reach 1 as part of the instream flow study. Results from the Reach 4 and Reach 1 discharge data will aid in understanding how much water is lost or gained upstream and downstream of the gaging location. There should be no expectation that each gage servicing and calibration will include discharge measurements at the 18 instream flow transects.</p> <p>Figure 3 of the Aquatics Study Plan provides a map of the 18 transects on Grant Creek.</p>

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
35	6/11/13	ADF&G	Water Resources	<p><b>Page 13, Boat or ADCP Method</b></p> <p>Safety of personnel is always a primary concern for field work. This section calls for a River Cat trimaran to be used to work the ADCP unit across the stream during periods of high water levels or high flows. This will require a rope or cable to be stretched across the stream at cross section locations. How will the personnel be able to establish these ropes or cables during periods of high water or high velocity. Most likely, these ropes or cables would not be allowed to remain in place over this stream for several months. This would be a safety concern as an attractive nuisance to hikers or people using the trails along Grant Creek.</p>	<p>KHL's natural resource team has an extensive amount of experience utilizing ADCP's in high water environments. High flow measurements commensurate with KHL's internal safety plan have already taken place. All cable and rope used to facilitate this effort were installed and immediately removed after the measurement was completed.</p>
36	6/11/13	ADF&G	Water Resources	<p><b>Page 14, paragraph 2</b></p> <p>The salt dilution method to measure stream discharge is described in general terms in this paragraph. The method is vaguely described and lacks the procedure details similar to those provided in the Wading Method on page 12. For example, is raw salt just dumped into the stream or is a brine solution mixed and used? Where will the measurements be taken and is distance from input point important? The plan states common table salt may be used....Is there a difference between iodized salt and un-iodized salt? This method, while recognized by USGS, is one of the least conclusive methods recognized and should only be used as a last resort. The plan states that the salt is preferred because it is non-toxic to aquatic organisms at the concentrations and exposure times used, but fails to identify concentrations and exposure times. Salinity can cause chemical burning of gill structures in salmon alevin which may result in reduced vitality and/or delayed mortality. The time of year proposed would impact alevin in the stream gravels. A complete study plan using this method must identify concentrations, duration and potential impacts. This</p>	<p>During low flow conditions (April of 2013), appropriate cross sections were identified within the canyon to directly measure discharge via the USGS wading method. Therefore, the salt dilution method is not being used during the 2013 Water Resources Study effort.</p>



Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				plan falls well short of providing adequate information.	
37	6/11/13	ADF&G	Water Resources	<p><b>4.2.3.2 Grant Creek spawning substrate recruitment study, Page 15</b></p> <p><i>“Qualitative geomorphic assessment will be based on detailed observations of the Cooper Lake watershed, known geological conditions, and professional interpretation of observed geomorphic processes.”</i></p> <p>The Cooper Lake watershed is an impacted system which has changed the way the watershed functions. There is no outflow from Cooper Lake to Cooper Creek, therefore caution must be exercised in transferring geomorphic condition evaluation from that watershed to another which is currently not impacted.</p>	Comment noted.
38	6/11/13	ADF&G	Water Resources	<p><b>6 Project Nexus</b></p> <p><b>6.1 Water Quality and Temperature, Page 16</b></p> <p>Discussion of the HOBO U20 water level logger again fails to identify the specific units to be used. See comment for discussion of these units (from page 8 of study plan).</p>	See response to Comment 31 above
39	6/11/13	ADF&G	Water Resources	<p><b>7 Consistency with Generally Accepted Practices</b></p> <p><b>7.1 Water Quality and Temperature, Page 17</b></p> <p>Discussion of the HOBO U20 water level logger again fails to identify the specific units to be used. See comment for discussion of these units (from page 8 of study plan).</p>	See response to Comment 31 above
40	6/11/13	ADF&G	Terrestrial Resources	<p>On July 6, 2010, our department provided the following comment on the Draft Terrestrial Study Plan.</p> <p><i>“We support the delineation of the zone of inundation potential along the entire shore of Grant Lake and recommend quantifying the distribution of each riparian/terrestrial habitat type and the relative abundance of aquatic and riparian species utilizing each habitat. We are primarily concerned</i></p>	KHL anticipates little to no inundation associated with the Project in excess of what currently occurs naturally. This will be confirmed or refuted by the engineering feasibility work that will be taking place the remainder of 2013 and in 2014. Once operational scenarios and Project infrastructure are refined and decided upon and if it is determined that inundation at the lake will deviate from the existing natural condition, KHL will work with Stakeholders to assess the extent of impact to the inundation zone.

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				<p><i>with habitats selected by waterbirds (waterfowl, shorebirds, loons, gulls, and terns) for breeding and those selected by moose for browse, cover and thermoregulation. To evaluate the proposal of increasing the lake levels, a quantitative summary of the relative abundance of these species by specific habitat types is needed along with the extent to which these habitats will be inundated. Waterbird surveys should also be conducted for Grant Creek by noting habitat associations with the meso habitats identified in the Aquatic Resources Study and with particular riparian habitat types being mapped in the Terrestrial Resources Study."</i></p> <p>The Kenai Hydro, LLC (KHL) response is taken from the Summary of Comments matrix provided to the agencies in December 2012:  <i>"The Terrestrial Resources Study Plan is designed to collect vegetation and wildlife data in potentially affected areas along the Grant Lake shoreline. If inundation will occur based on the final Project design proposal, potential effects of this inundation will be discussed in the Terrestrial Resources Study Report and presented in the draft and final license applications."</i></p> <p>The area of inundation does need to be determined and provided to supply reviewers with information to determine the extent of potential resource impacts which may be caused by this project. Other projects have developed an inundation study to determine impacts. The attempt to delay identification and study of the area of inundation until the Draft License Application is filed with FERC is not acceptable. The response of KHL is not accepted by this agency. Define your project so that there is little or no speculation about what will occur, how the project will be operated and provide correct studies for timely evaluation.</p>	

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**From:** Cory Warnock  
**Sent:** Tuesday, August 27, 2013 12:34 PM  
**To:** Audrey Alstrom (aalstrom@aidea.org); Barbara Stanley (bstanley@fs.fed.us); Brenda Trefon (btrefon@kenaitze.org); Brent Goodrum (brent.goodrum@alaska.gov); Cassie Thomas (cassie\_thomas@nps.gov); David Griffin (david.griffin@alaska.gov); David Schade (david.w.schade@alaska.gov); Denise Koopman (denise.koopman@usace.army.mil); Doug Mutter (douglas\_mutter@ios.doi.gov); Doug Ott (dott@aidea.org); Eric Rothwell (eric.rothwell@noaa.gov); Ginny Litchfield (ginny.litchfield@alaska.gov); Jan Konigsberg (jan@hydroreform.org); Jason Mouw (jason.mouw@alaska.gov); Jeffry Anderson (Jeffry\_Anderson@fws.gov); Joe Klein (joe.klein@alaska.gov); Judith Bittner (judy.bittner@alaska.gov); K.J. Muschovic (kjmushovic@blm.gov); Katherine McCafferty (katherine.a.mccafferty2@usace.army.mil); Ken Hogan (kenneth.hogan@ferc.gov); Kevin Laves (klaves@fs.fed.us); Kim Sager (kimberly.sager@alaska.gov); Lesli Schick (lesli.schick@alaska.gov); Lynnda Kahn (Lynnda\_Kahn@fws.gov); Michael Walton (michael.walton@alaska.gov); Mike Cooney (mcooney@arctic.net); Monte Miller (monte.miller@alaska.gov); Pamela Russell (pamela.russell@alaska.gov); Patricia Berkhahn (patricia.berkhahn@alaska.gov); Paul Torgerson (paul@grantlakemining.com); Phil Brna (phil\_brna@fws.gov); Ricky Gease (ricky@kenairiversportfishing.com); Robert Stovall (rstovall@fs.fed.us); Robin Swinford (robin.swinford@alaska.gov); Shina Duvall (shina.duvall@alaska.gov); Sue Walker (susan.walker@noaa.gov); tomharkreader@gmail.com; Travis Moseley (tmoseley@fs.fed.us)  
**Cc:** Mike Salzetti; Emily Andersen  
**Subject:** 3rd Progress Report (Grant Lake, P-13212)  
**Attachments:** 3rd KHL Progress Report (Project No. 13212).pdf

**Grant Lake Hydroelectric Project (FERC No. 13212) Natural Resources Study Stakeholder Group:**

Hi all,

Here is a personal copy of the Progress Report just submitted to FERC for the Grant Lake Project.

Regards,

Cory

***Cory Warnock***  
*Senior Licensing and Regulatory Consultant*

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**Kenai Hydro, LLC**

3977 Lake Street  
Homer, AK 99603

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August 27, 2013

Secretary Kimberly D. Bose  
Federal Energy Regulatory Commission  
Attn: DHAC, PJ-12.2  
888 First Street, NE  
Washington, DC 20426

**- FILED ELECTRONICALLY -**

**RE: Third Six-Month Preliminary Permit Progress Report for the Grant Lake (Project No. 13212), March 1, 2013 – August 31, 2013**

Dear Secretary Bose:

Kenai Hydro, LLC (KHL) hereby submits its third six-month progress report, for the period of March 1, 2013 through August 31, 2013 for the proposed Grant Lake Project.

A second Preliminary Permit Application was submitted to the Federal Energy Regulatory Commission (FERC) and subsequently granted on March 23, 2012. KHL devoted the remainder of 2012 to hiring a natural resource consultant, refining study plans and working with stakeholders to comprehensively update them on developments related to more quantitative study plans and Project infrastructure. As a result, KHL adjusted the study schedule to allow resource studies to begin with the winter studies in 2012/2013 and the spring/summer/fall work to occur in 2013.

From January to May of this year, KHL acquired all necessary permits for the field season and worked with their natural resource consultant to develop a sound logistical approach for completing all field work outlined in its 2013 study plans. Field work commenced in late March and the consultants are currently in the field and completing their tasks consistent with the schedules put forth in the respective final study plans that have been filed with FERC (March 21, 2013).

Later this fall, as field work is completed and data analysis is conducted, KHL will schedule meetings with the stakeholders to discuss the results of the studies, engineering feasibility work conducted to date and the remainder of the licensing schedule, which ultimately, will lead to the development, review and submittal of a FERC License Application.

## **Kenai Hydro, LLC**

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### **ACTIVITIES DURING THE REPORTING PERIOD (March 2013 – August 2013)**

#### Stakeholder Outreach and Consultation

- KHL consulted with all requisite stakeholders to acquire all necessary permits for the 2013 natural resource studies. Once all coordination had occurred, the permits acquired include:
  - Alaska Department of Natural Resources (ADNR) Special Park Use Permits – fisheries investigations and Grant Creek stream gauge
  - ADNR Land Use Permit – thermistor string in Grant Lake
  - ADNR Field Archeology Permit – archaeology surveys of Project area
  - Alaska Department of Fish and Game (ADF&G) Fish Habitat Permit – fisheries research, stream gauge on Grant Creek, and sediment analysis
  - ADF&G Resource Permit – fisheries resource investigations
  - USDA Forest Service Amendments to Existing Special Use Permit – general investigations, wetlands and cultural assessments
- KHL consulted with ADF&G related to scale and genetic samples and potential alternatives for analyzing the associated data.
- KHL consulted with ADF&G representatives associated with the final placement of the weir and man camp on Grant Creek.
- KHL consulted with the State Historic Preservation Office (SHPO) related to the appropriate Area of Potential Effect (APE) for Cultural Resource Studies.
- KHL reviewed and responded to informal comments from ADF&G received on June 11, 2013 based upon 2013 study plans presented to the Stakeholders during the December 12, 2012 meeting.
- KHL's licensing consultant had a call with Ken Hogan (FERC) in June 2012 to discuss the appropriate approach for reviewing, responding to, and filing the aforementioned comments from ADF&G based upon their informal nature and the overall Traditional Licensing Process.
- KHL secured a recreation/visual resource consultant to continue efforts associated with the development of the Iditarod National Historic Trail (INHT) as it relates to the Grant Lake Project. KHL's licensing consultant and the recreation/visual consultant will be working in concert over the next period to conduct a site visit with stakeholders and hopefully reach consensus on the appropriate location for the proposed trail within the Project Boundary.

## **Kenai Hydro, LLC**

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- KHL scheduled a stakeholder site visit on Grant Creek for September 5, 2013 with the intent of giving stakeholders a tour of the current study area, proposed Project infrastructure and preliminarily discuss some of the data collected thus far in 2013.
- KHL developed and presented a Grant Lake Project exhibit for the Renewable Energy Alaska Project's (REAP) Business of Clean Energy Conference held in Anchorage.
- KHL maintained the Kenai Hydro website ([www.kenaihydro.com](http://www.kenaihydro.com)) by posting the latest announcements and documents for public access. This site continues to serve as a conduit for information, including a library of existing information, a calendar of events, and a repository for contact information for interested parties.

### Environmental Studies

- KHL worked intensively with the licensing and natural resource consultants to logistically prepare and mobilize equipment and manpower for the upcoming 2013 study season. Primary components included:
  - Applying for all necessary permits
  - Lodging for the natural resource team
  - Transportation
  - Initial site set-up dates and methods
  - All necessary equipment purchases
  - Logistics related to equipment and boat storage
  - Coordinating resource specific schedules
  - Secure data collection and offload practices
  - QA/QC methods for data collected
  - Procurement of fish tags and stream gauging equipment
- Aquatic Resources
  - Aquatic Resource field studies began in late March and to date, have included:
    - Installation of fish weir on Grant Creek
    - Installation of man camp for weir monitoring and maintenance
    - Installation of two incline plane traps
    - Winter fish sampling
    - Adult rainbow trout migration monitoring
    - Anadromous and resident juvenile outmigration monitoring and habitat utilization
    - Grant Creek aquatic habitat mapping
    - Grant Creek instream flow study
    - Benthic macroinvertebrate assessment
    - Assessment of periphyton in Grant Creek
    - Trail Lake Narrows fish and aquatic habitat assessments
    - Reach 5 (canyon reach) analysis
    - Begin salmon escapement and distribution of spawning salmon analysis

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- *Water Resources*
  - Water Resource field studies began in late March and to date, have included:
    - Installation of a stream gauge on Grant Creek
    - Installation of multiple thermologgers in Grant Creek and Trail Lake Narrows
    - Installation of a thermistor string in Grant Lake
    - Collection of water quality samples in multiple locations on Grant Creek
    - Collection of water quality samples on Grant Lake
    - Collection of water quality samples in the Trail Lake Narrows area
    - Monitoring of and maintenance (as needed) to the Grant Creek stream gauge including regular downloads and discharge measurements at a variety of flows
    - Grant Lake shoreline erosion inventory
    - Grant Creek spawning substrate recruitment assessment
- *Terrestrial Resources*
  - Terrestrial Resource field studies began in May and to date, have included:
    - Vegetation mapping survey
    - Sensitive plant survey
    - Invasive plant survey
    - Wetland mapping surveys
    - Wetland secondary impact surveys
    - Raptor nesting surveys
    - Breeding landbird and shorebird surveys
- *Cultural Resources*
  - Cultural Resource field studies began in June and were completed in late July (per the 2013 study plans). This work included:
    - Subsistence and cultural use study
    - Historical and archeological study
    - Cultural resources evaluation
- *Recreation and Visual Resources*
  - Recreation and Visual Resource field studies began in March and to date, have included:
    - Winter use field surveys
    - Recreation use studies
    - Visual resource studies

## Engineering

- KHL has selected an engineering contractor to conduct the feasibility analysis associated with the Grant Lake Project and is in the final phase of contracting with the consultant. KHL anticipates feasibility work beginning in September 2013 with the intention of completing this work in parallel with the natural resource investigations. Consultation

## **Kenai Hydro, LLC**

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and collaboration with stakeholders in an engineering capacity will begin once preliminary engineering analysis has begun and infrastructural variables and operational scenarios are refined.

### **CONTINUING ACTIVITIES IN SUPPORT OF LICENSE APPLICATION DEVELOPMENT**

Over the course of the next six-month period, KHL anticipates completion of a majority of the field work outlined in the 2013 study plans, increased consultation and collaboration with stakeholders related to field study results/analysis and the commencement of engineering feasibility efforts. As plans associated with the aforementioned efforts are refined, KHL will continue to be committed to keeping FERC apprised of all developments and scheduled activities.

#### Environmental Studies

- KHL's natural resource consultant will continue with all aspects of the fieldwork outlined in the 2013 study plans.
- KHL, their licensing and natural resource project manager and the aquatics lead will lead the aforementioned Stakeholder site visit on September 5th on Grant Creek.
- KHL's natural resource consultant will collaborate with the licensing consultant to develop the set of natural resource study plans consistent with those outlined in the 2013 study plans.
- Certain aspects of the Terrestrial Resource Studies (as outlined in the 2013 study plan), will take place in 2014. A supplement to the Terrestrial Study Report will be developed once the aforementioned tasks are completed and analysis has occurred.
- Once the study plan reports are developed, KHL will consult with the Stakeholders related to their content and ultimately have meeting to discuss results, analysis and schedule for 2014 and beyond.
- KHL will continue efforts to engage the appropriate agencies in discussions related to the re-route of a small portion of the INHT.

#### Engineering

- As mentioned above, KHL has selected an engineering contractor to conduct the feasibility analysis associated with the Grant Lake Project and is in the final phase of contracting with the consultant. KHL anticipates feasibility work beginning in September 2013 with the intention of completing this work in parallel with the natural resource investigations. Consultation and collaboration with stakeholders in an



**Kenai Hydro, LLC**

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engineering capacity will begin once preliminary engineering analysis has begun and infrastructural variables and operational scenarios are refined.

Stakeholder Outreach and Consultation

- KHL plans to continue consultation with the public, resource agencies and other stakeholders on Project plans and resource studies.
- KHL plans to continue to work on the proposed rerouting of the INHT.
- KHL will remain committed to keeping FERC apprised of all developments and scheduled events associated with the licensing effort.

Please feel free to contact me (907.283.2375 or [msalzetti@homerelectric.com](mailto:msalzetti@homerelectric.com)) with any questions regarding this filing.

Sincerely,



/s/ Mike Salzetti

Mike Salzetti  
Project Manager  
Kenai Hydro,  
LLC

cc: Service List and Mailing List for Project No. 13212

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**From:** Cory Warnock  
**Sent:** Tuesday, August 27, 2013 9:10 AM  
**To:** David Griffin (david.griffin@alaska.gov); Cassie Thomas; Patricia Berkahn (patricia.berkahn@alaska.gov); Eric Rothwell; rstovall@fs.fed.us; Lesli Schick (lesli.schick@alaska.gov); pamela.russell@alaska.gov; 'Katherine McCafferty (katherine.a.mccafferty2@usace.army.mil)'; Audrey Alstrom (aalstrom@aidea.org); Monte Miller; Jason Mouw  
**Cc:** Mike Salzetti; John Stevenson; Emily Andersen  
**Subject:** Grant Creek Site Visit (September 5th)

Hi all,

If you're receiving this email, it means you've identified yourself as being able to attend the upcoming Grant Creek site visit on September 5<sup>th</sup> (Thursday). We will be focusing our tour on the Grant Creek study effort given that is where a majority of our field effort and study infrastructure will be located during this time. As such, waders should be brought as we will be accessing the site via boat from Moose Pass and spending a majority of our time on the creek. There are multiple occasions when crossing the creek is necessary to access certain areas. While not an overly rugged hike, portions of it can be somewhat strenuous; especially given the brush and understory in certain areas. Rain gear and/or bug spray would also be advisable depending on the weather! Mike Salzetti (HEA), John Stevenson (lead aquatics) and myself will be on site during the tour to lend a hand and answer any questions that come up during the day. We'd like to have everyone meet at the boat dock in Moose Pass at 9am. Directions from both Anchorage and Seward to Moose Pass are linked below and a specific parking instructions map is attached. We have the intention of having everyone back to their vehicles by 3pm. HEA will be providing sack lunches for everyone and we will have two boats responsible for ferrying folks across Trail Lakes to the mouth of Grant Creek. The run (one way) takes about 10 minutes and multiple trips may be required to transport everyone who is attending.

HEA looks forward to a free-flowing discussion and providing you a first-hand view of the environment and study infrastructure, updating you on the status of the field season and continuing the process which will ultimately lead to the development of the 2013 study reports and our associated study results meeting. As you all know, we are still in the middle of our data collection and some primary areas (adult anadromous studies) are just kicking into high gear. As such, we don't anticipate having any in-depth conversations related to analysis and/or findings yet. Our plan for comprehensive study results/report meetings would be to have those in January of 2014 once all 2013 studies are complete.

**Anchorage to Moose Pass -**

<https://maps.google.com/maps?saddr=anchorage,+ak&daddr=moose+pass,+ak&hl=en&sll=48.753312,-122.46131&sspn=0.153468,0.349846&geocode=FQgdpgMdCrQQ9yIBP7MEdpHIVjHjalSnWrp9JQ%3BFUz3mgMdx88Y9ymfMujZPsHHVjGGkQzkXT9UfA&mra=ls&t=m&z=9>

**Seward to Moose Pass -**

[https://maps.google.com/maps?saddr=seward,+ak&daddr=moose+pass,+ak&hl=en&sll=48.753312,-122.46131&sspn=0.153468,0.349846&geocode=FecdlQMdUrEX9ynF\\_yrybpvHVjG\\_Edl2wmDhWw%3BFUz3mgMdx88Y9ymfMujZPsHHVjGGkQzkXT9UfA&mra=ls&t=m&z=10](https://maps.google.com/maps?saddr=seward,+ak&daddr=moose+pass,+ak&hl=en&sll=48.753312,-122.46131&sspn=0.153468,0.349846&geocode=FecdlQMdUrEX9ynF_yrybpvHVjG_Edl2wmDhWw%3BFUz3mgMdx88Y9ymfMujZPsHHVjGGkQzkXT9UfA&mra=ls&t=m&z=10)

**Cory Warnock**

*Senior Licensing and Regulatory Consultant*

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**From:** Cory Warnock  
**Sent:** Tuesday, August 27, 2013 9:19 AM  
**To:** Audrey Alstrom (aalstrom@aidea.org); Barbara Stanley (bstanley@fs.fed.us); Brenda Trefon (btrefon@kenaitze.org); Brent Goodrum (brent.goodrum@alaska.gov); Cassie Thomas (cassie\_thomas@nps.gov); David Griffin (david.griffin@alaska.gov); David Schade (david.w.schade@alaska.gov); Denise Koopman (denise.koopman@usace.army.mil); Doug Mutter (douglas\_mutter@ios.doi.gov); Doug Ott (dott@aidea.org); Eric Rothwell (eric.rothwell@noaa.gov); Ginny Litchfield (ginny.litchfield@alaska.gov); Jan Konigsberg (jan@hydroreform.org); Jason Mouw (jason.mouw@alaska.gov); Jeffry Anderson (Jeffry\_Anderson@fws.gov); Joe Klein (joe.klein@alaska.gov); Judith Bittner (judy.bittner@alaska.gov); K.J. Muschovic (kjmushovic@blm.gov); Katherine McCafferty (katherine.a.mccafferty2@usace.army.mil); Ken Hogan (kenneth.hogan@ferc.gov); Kevin Laves (klaves@fs.fed.us); Kim Sager (kimberly.sager@alaska.gov); Krissy Plett (krissy.plett@alaska.gov); Lesli Schick (lesli.schick@alaska.gov); Lynnda Kahn (Lynnda\_Kahn@fws.gov); Michael Walton (michael.walton@alaska.gov); Mike Cooney (mcooney@arctic.net); Monte Miller (monte.miller@alaska.gov); Pamela Russell (pamela.russell@alaska.gov); Patricia Berkahn (patricia.berkahn@alaska.gov); Paul Torgerson (paul@grantlakemining.com); Phil Brna (phil\_brna@fws.gov); Phil North (north.phil@epa.gov); Ricky Gease (ricky@kenairiversportfishing.com); Robert Stovall (rstovall@fs.fed.us); Robin Swinford (robin.swinford@alaska.gov); Shina Duvall (shina.duvall@alaska.gov); Sue Walker (susan.walker@noaa.gov); Ted Deats (ted.deats@alaska.gov); tomharkreader@gmail.com; Travis Moseley (tmoseley@fs.fed.us); Valerie Conner (valerie@akcenter.org)  
**Cc:** Mike Salzetti; Emily Andersen  
**Subject:** ADF&G Study Plan Comment Responses  
**Attachments:** Grant Lake Project (P-13212) Responses to Informal ADF&G Natural Resource Comments.pdf

**Grant Lake Hydroelectric Project (FERC No. 13212) Natural Resources Study Stakeholder Group:**

All,

You may have already seen the attached via your FERC e-subscriptions but I wanted to get each of you a personal copy. Please find attached, KHL's responses to the Alaska Department of Fish and Game's comments to the 2013 Natural Resource Study Plans for the proposed Grant Lake Project.

Don't hesitate to let me know if you have any questions,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

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August 22, 2013

Secretary Kimberly D. Bose  
Federal Energy Regulatory Commission  
Attn: DHAC, PJ-12.2  
888 First Street, NE  
Washington, DC 20426

**- FILED ELECTRONICALLY -**


**RE: KHL Responses to Alaska Department of Fish and Game Informal Study Plan Comments  
Email Dated June 11, 2013**

Dear Secretary Bose:

Kenai Hydro, LLC (KHL) hereby submits its responses to Alaska Department of Fish and Game (ADF&G) informal study plan comments. KHL has attached an informal comment response table to the comments submitted by ADF&G. Given the clarifying nature of a majority of the comments, KHL is confident that this will assist ADF&G in further understanding the comprehensive nature of the study scopes. Additionally, KHL is willing to have a call with ADF&G to discuss any additional questions that may exist after receipt of our responses.

As explained in the December 12, 2012 meeting attended by ADF&G, the formal comment period for these study plans occurred in 2010 after considerable Agency and Stakeholder input. However, in the spirit of cooperation and collaboration KHL was willing to entertain informal comments submitted by February 1, 2013. The amount of time and resources required to modify study plans, obtain study permits, procure the required equipment and mobilize is very significant. Given this and the fact that KHL was already over a month and a half into their study season, implementation of any study methodology changes received in the ADF&G comments in June was not possible. At this point, KHL views the time for refinement to the study plans as past and the study plans themselves as inclusive of the quantitative needs and accessory clarification identified by the Stakeholders. If some of the additional detail related to the ADF&G identified methods is deemed as needed to be incorporated by KHL, that detail will be provided in the methods section of the respective 2013 study report.

Sincerely,



/s/ Mike Salzetti

Mike Salzetti  
Project Manager  
Kenai Hydro, LLC

cc:

Service List and Mailing List for Project No. 13212

## Summary of informal comments from ADF&G (6/11/13) on draft study plans for the Grant Lake Project (No. 13212)

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
<b>General/Additional Study Requests</b>					
1	6/11/2013	ADF&G	Aquatics	<b>1 Introduction</b> <b>Proposed Project Description, Page 1</b> No maps are included in this section. The figures/maps provided later (Figures 1 and 2 on pages 5 and 7) do not provide the resolution necessary to be of much use. The extent of anadromous waters needs to be clearly shown on maps.	Figure 2 on pg. 6 of the plan (“Study reaches designated on Grant Creek and proposed telemetry tower location”) accurately displays the extent of anadromous waters on Grant Creek with a green icon and associated text stating “ADFG Anadromous Fish Distribution Limit”.  A comprehensive GIS database is being developed as part of the study program that will document findings related to the pertinent investigations for all resource areas.
2	6/11/2013	ADF&G	Aquatics	<b>2 Overall Goals Identified during Project Scoping, Page 2</b> This section lists seven goals for this study. There is no mention of a goal for the Trail Lakes Narrows component of this study.	Under Section 3.3 (“Need for additional information”), the final bullet identifies “Fish resources and habitat use of the Trail Lake Narrows at the proposed bridge site.” as a specific objective that will be addressed as part of the 2013 study work. Detailed methodology related to this task is described on pgs. 35 and 36. KHL will add the Trail Lakes Narrows work to the goals section of the completed Aquatics Study Report.
3	6/11/2013	ADF&G	Aquatics	<b>3.1 Pre-2009 Studies</b> <b>Grant Creek Fish Resources, Page 3-7</b> This section lists Johnson and Klein, 2009 in multiple places to describe anadromous fish resources present in Grant Creek. This is the ADF&G Anadromous Waters Catalog (AWC) which has been updated several times since the cited version. The description of resources may or may not have changed in the updated version. Please verify information and cite the current version of the AWC.  Current version of the AWC: Johnson, J. and P. Blanche. 2012. Catalog of waters important for spawning, rearing, or migration of anadromous fishes – Southcentral Region, Effective June 1, 2012. Alaska Department of Fish and Game, Special Publication No. 12-06,	KHL acknowledges that an updated (2012) version of the AWC document exists which does list Grant Creek. This will be updated in the appropriate section of the Aquatics Study Report. In addition, the reference to the AWC associated with sculpin and stickleback will be removed from the report. The other two citations listed after the sentence (AEIDC 1983 and USFWS 1961) adequately document resident fish species presence in Grant Lake.  KHL would like to note that although this comment is relevant to the current accuracy of the citation, it does not have any ramifications on the validity of the studies being proposed and conducted within the plan.

<sup>1</sup> The full text of comments is included in this column, unless otherwise noted. Where the full text is not included, a reference for the full comment is included.

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				<p>Anchorage.</p> <p>A citation on page 6 refers to Johnson and Daigneault, 2008 version of the AWC, as not listing Grant Lake or its tributaries in the AWC. The next sentence lists resident species (sculpin and stickleback) in Grant Lake and lists the Johnson and Klein, 2009 version of the AWC as cited. The AWC generally does not list resident fish species, therefore we must question the citation. Additionally Figure 2, on page 7, identifies the ADF&amp;G anadromous fish distribution limit at a point several hundred feet below the lake outlet but again fails to identify any AWC version used to establish that limit. The plan needs to be updated to correctly cite the current AWC version</p>	
4	6/11/2013	ADF&G	Aquatics	<p><b>Figure 1, Page 5</b></p> <p>This map of the fish and aquatics resources study area is inadequate in that it does not clearly identify the study area, is blurry on an 8 ½" X 11" page, is split with two colors which make use difficult, and is not of sufficient resolution to properly view project features or read map labels.</p>	Figure 1 is intended to be a general overview of the study area. This image along with figures 2 (study reach designation) and 3 (instream flow transect locations) document the study area.
5	6/11/2013	ADF&G	Aquatics	<p><b>3.2 2009 and 2010 Aquatic Resources Studies Fish, Page 6-8</b></p> <p>This section describes previous studies and their methods. The first bullet under the 2009 studies was <i>"Determine the relative abundance and distribution of juvenile fish in Grant Creek."</i> The study descriptions provided are not sufficient to develop relative abundance estimates. From page 8: <i>"Relative abundance and distribution of juvenile fish were determined by minnow trapping and calculating the catch-per-unit-effort (CPUE) for each reach."</i> The discussion describes the number of minnow traps used, some catch results, and determinations of distribution and relative abundance. The presence of sockeye salmon was noted but not included in the determinations of</p>	Section 3.2 ("2009 and 2010 Aquatic Resources Studies") is intended to describe what studies have been conducted in the past in relation to Grant Lake and Grant Creek. The methods described in this section represent study intentions developed in advance of formal agency consultation and the associated modifications made to the plans as a result. The more robust and quantitative methods for the 2013 studies are presented in Section 4.

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				<p>distribution and relative abundance. This highlights the flaws in this study in that the methods used in this study fail to recruit sockeye juveniles. This results in sockeye juvenile underestimation or the appearance that few sockeye utilize the area. Neither are acceptable conditions.</p> <p>This study utilized angling to determine relative abundance for adult fish. This is a very selective method for sampling adult fish. Different species require different tackle and different approaches. The determination of spawning timing of resident fish failed in this study. Information of use included: Rainbow trout (RBT) were caught throughout the creek with more caught in reaches 3-5, spawning condition was seen in adult RBT, and adult RBT were observed in the upper portions of the canyon reach. These factors will help inform instream flow release prescriptions.</p>	
6	6/11/2013	ADF&G	Aquatics	<p><b>Instream Flow, Page 9</b> A statement that the Technical Work Group (TWG) and Kenai Hydro, LLC (KHL) decided to select an instream flow methodology based on 2009 Aquatic Resources and Hydrology studies. Was this the selection of the Instream Flow Incremental methodology (IFIM) and Physical Habitat Simulation (PHABSIM) model now being proposed? Provide mapping of the location of the 18 transects utilized in 2010 along with mesohabitat identification of each transect and association with microhabitats.</p>	The collaborative decision of the group in 2009/2010 was to utilize IFIM and PHABSIM for Grant Creek. Figure 3 (“Location of Grant Creek instream flow transects”) documents the location of all 18 transects utilized. Table 1 (“Proposed mesohabitat assessment sites”) documents individual transect characteristics.
7	6/11/2013	ADF&G	Aquatics	<p><b>Macroinvertebrates, Plankton and Periphyton, Page 9</b> The results of the 2009 sampling may have been impacted by a large rain event which required postponement of the sampling. The flushing effect of high streamflow may affect both macroinvertebrate (MI) counts as well as species diversity. Flushing will also reduce the counts of</p>	Comment noted.



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				available plankton important to filter feeders such as sockeye juveniles.	
8	6/11/2013	ADF&G	Aquatics	<b>3.3 Need for additional information, Page 9-10</b> This section should also identify the development of site specific Habitat Suitability Index Curves (HSC) for use in modeling.	The development of HSC's on Grant Creek is explicit per Section 4.7.2 of the Aquatics Study Plan, "Information related to site-specific habitat suitability criteria (HSC) will be developed from these data and used in combination with HSC available in the existing literature and professional judgment to determine final HSC to be used in modeling." KHL will add this specific task to the goals and objectives section of the Aquatics Study Report.
9	6/11/2013	ADF&G	Aquatics	<b>4.1 Study Area, Page 10</b> This section fails to identify the Trail Lake Narrows study area near the proposed bridge crossing. The text identifies Figure 1 as showing the study area. This map of the fish and aquatics resources study area is inadequate in that it does not clearly identify the study area, is blurry on an 8 1/2" X 11" page, is split with two colors which make use difficult, and is not of sufficient resolution to properly view project features or read map labels.	The white line labeled, "Approximate Access Road – Transmission Line Alignment" documents the area across the narrows that is being evaluated. KHL appreciates the comment associated with the study area map presented in the Aquatics Study Plan. Refined and site-specific maps will be presented as part of the Aquatics Study Report.  In addition, a comprehensive GIS database is being developed as part of the study program that will document findings related to the pertinent investigations for all resource areas.
10	6/11/2013	ADF&G	Aquatics	<b>4.3 Grant Creek Fish Weir, Pages 10</b> We have concern that the proposed width between the pickets is not well defined. A maximum of three inches of spacing between pickets is identified. How will the spacing be determined? What will be the response if fish begin to gill themselves in the weir? Is this proposed to be a one size fits all weir? Correct picket spacing will be important or smaller resident fish will be gilled in the weir or trap. Is there an associated trap box? The size of the trap box is important when dealing with small fish as well as large fish, such as chinook salmon. It is stated that the weir will be monitored at least twice per day. Previously in this study plan it was reported that estimated escapement of chinook and sockeye salmon was 231 chinook and 6293 sockeye in 2009. This escapement level will require constant monitoring with sufficient staff during the spawning season to prevent crowding and mortality associated with the weir and trap. Monitoring will be required	Based upon our previous discussions with stakeholders, requests for comments and our Project schedule the weir has been in place since May 25 <sup>th</sup> . All appropriate and requested documentation was provided to the requisite resource agencies for permitting purposes and all permits have been acquired.  There is a crew tending the weir 7 days a week 24 hrs per day through the study period. The crew is living onsite at Grant Creek. The picket spacing is 1 inch and they have the capability to remove pickets for high flow, to allow unobstructed fish passage, and to manage debris.

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				<p>over a full 24 hour period as many fish tend to move more at night or during twilight hours here in Alaska.</p> <p><i>“Captured fish will also be measured if time allows and fish quantity is not too large to allow safe handling.”</i> All captured fish should be measured. This will also identify if unintentional size selectivity occurs during tag placement efforts and will promote utilization of all size fish in the study. Size selectivity may result in age class discrimination or spawning area identification bias due to size related access issues.</p> <p>When a weir is in place there will be increasing demand for removal of accumulated dead fish as the season progresses. All dead fish accumulating on the upper face of the weir should be checked to determine if they spawned and to recover radio tags. Excessive numbers of dead fish, which have not spawned, are an indication of watershed failures, such as low flows or low oxygen, or of improper handling during their capture at the weir. Improper handling may occur through insufficient monitoring of the weir which allows crowding and causes stress and reduced vitality, or physical handling such as fingers in gills or excessive time out of water due to insufficient staffing. These fish are nearing the end of their spawning run and many will be in a condition of diminished energy and vitality. Adequate staffing and 24 hour monitoring will reduce handling times and reduce possible effects of crowding and damage related to handling.</p>	
11	6/11/2013	ADF&G	Aquatics	<p><b>4.4 Grant Creek Spawning Distribution and Abundance, Page 13</b></p> <p>The first primary bullet in this section states <i>“Use of a counting weir to obtain a direct count of all salmon entering Grant Creek during the open water season.”</i></p> <p>This is probably flawed in that there will be high water events during spring breakup or during storm</p>	<p>Based upon our previous discussions with stakeholders, requests for comments and our Project schedule, the weir has been in place since May 25<sup>th</sup>. All appropriate and requested documentation was provided to the requisite resource agencies for permitting purposes and all permits have been acquired.</p> <p>That said, ADF&amp;G is correct that high water periods may periodically create conditions where pickets will need to be pulled</p>

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				<p>events which will either overtop the weir, damage the weir, or otherwise allow fish to pass uncounted. Since fish tend to follow freshets, it is probable that substantial fish movement could occur during these times. Once this happens, there will be no comparison to previous data and no evaluation of relative abundance will be possible.</p> <p>Additionally, lack of instream visibility may hamper foot survey sampling during high flow events. The secondary bullet seeks to estimate observer error by comparison to foot surveys, and will also be problematic. Any comparison to 2009 foot surveys would be suspect due to differences in turbidity and visibility between years, and the use of different observers with different skill sets. Observer error may include incorrect identification of species, miscount of numbers (either too many or too few), or just not seeing fish due to low light conditions, water disturbance or depth of fish in the stream. Bank estimates are prone to problems if fish are spooked by the proximity of the observer, if the observer is too far from the stream on a trail, or if the observer is at an angle that makes viewing difficult due to glare, ripples etc. Any estimation of error would change under differing conditions.</p> <p>The second primary bullet states: <i>“A radio telemetry study to further assess the spawning distribution of Chinook and Sockeye salmon, with emphasis on Reach 5(Canyon Reach). Coho salmon may be included in the study if conditions allow.”</i></p> <p>Spawning distribution of salmon in the study area should not be restricted to chinook and sockeye salmon spawning. Spawning of all salmon species within the project area are a concern and needs to be assessed. The statement that <i>“coho salmon may be included in the study”</i> fails to address complete assessment. The periodicity of coho may be a problem for researchers, but they are also important to the system, and understanding potential impacts of project development on this species is important</p>	<p>due to high flows. This year there was no “spring breakup impact to the weir and flows are currently high enough that had extensive debris come down the channel, it would have been observed by now.</p> <p>We agree that observer error (efficiency) can be influenced by many factors (experience, visibility, etc.) and direct comparisons of 2009 and 2013 results may be erroneous. However, the observer error that will be estimated from Grant Creek via the use of a weir in 2013 was part of the original stakeholder comments and the need to calibrate visual surveys for 2013. Observer error in 2009 was estimated based on information sources outside Grant Creek, which is also likely to have as much if not more error associated with the estimate using area under the curve (AUC). That is, observer error is more likely to be comparable within the same watershed as opposed to estimates outside of the watershed. Escapement estimates are set for 2009 but we can document the estimates of observer error used in 2009 and 2013 for escapement estimates. Your cautionary statements on comparisons are noted.</p> <p>With regard to the coho component of the comment, the intent was more to include coho as opposed to exclude them. Past data indicates that very few coho have been documented in Grant Creek. Survey timing will be consistent with the migration timing of coho and effort will be put toward documenting coho presence and habitat use. KHL has had in-depth conversations with ADF&amp;G related to coho in Grant Creek and aging and genetic analysis associated with any coho observed/captured.</p>

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				in developing instream flow prescriptions.	
12	6/11/2013	ADF&G	Aquatics	<p><b>4.4.1 Salmon Escapement to Grant Creek – Relative Species Abundance Project-Related Objectives, Page 13</b></p> <p>Two of the four bullets under this section include: “Assessment of numbers and species of salmon in Grant Creek as a whole.” and “Calibration of escapement estimates from foot surveys conducted in 2009.”</p> <p>The species of salmon in Grant Creek have been identified. Assessment of numbers of each salmon species may be problematic in that not all salmon present will receive equal treatment under this study (coho), and further that salmon escapement and return to streams varies from year to year based on many factors, including strength of parent run, instream juvenile survival, and fishery impacts on adult salmon. Thus, this objective is not attainable.</p> <p>Issues with calibration of escapement estimates from foot surveys conducted in 2009 are discussed above, under comments on Section 4.4, Grant Creek Salmon Spawning Distribution and Abundance.</p>	<p>As mentioned in KHL response #11, the intent was more to include coho as opposed to exclude them. Past data indicates that very few coho have been documented in Grant Creek. Survey timing will be consistent with the migration timing of coho and effort will be put toward documenting coho presence and habitat use. KHL has had in-depth conversations with ADF&amp;G related to coho in Grant Creek and aging and genetic analysis associated with any coho observed/captured (see statements above).</p> <p>The calibration portion of this comment has been addressed in previous responses. During the comment period, ADFG and other reviewers suggested calibration, by use of a weir, for spawning escapements to Grant Creek. Calibration of visual counts would occur for Chinook, Sockeye, and Coho salmon.</p>
13	6/11/2013	ADF&G	Aquatics	<p><b>Quantitative Objectives, Page 13-14</b></p> <ul style="list-style-type: none"> <li>“The primary objective is to obtain a nearly complete count of salmon of each species entering Grant Creek.”</li> </ul> <p>The presence of fish within the system will require instream flow protections. If we know the fish are present and the timing of their presence, why are complete counts necessary and how will that information be used? A bullet also identifies calibration of 2009 foot surveys. Issues with calibration of escapement estimates from foot surveys conducted in 2009 are discussed above, under comments on Section 4.4, Grant Creek Salmon Spawning Distribution and Abundance. Need for statistical determination should be reviewed by a biometrician. The statement that no</p>	<p>A portion of our responsibilities related to the licensing process are to document existing conditions. Counts of the various species present will assist in this documentation. Total counts of sockeye, Chinook, coho and other species at the weir document baseline conditions (abundance, migration timing, spawning period, species diversity, etc.) for the aquatic resources that will assist in instream flow considerations. The weir on Grant Creek is expected to be a total count of all fish. As a total count (true population estimate) for a single year statistical analysis is unwarranted unless pickets need to be removed in the event of changes in debris load or stream discharge. If that occurs, in the case of partial counts, all available counts in the 24-hour periods before and/or after the missing data will be used to estimate missing counts. Specifically, we would use the mean of the available counts as the estimate for each missing hour or day, and then sum the missing hourly counts to provide an estimate of the total missing count for a period.</p>

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				<p>statistical analysis is needed is unsupported.</p> <p>The use of Floy spaghetti tags and associated collection of scale samples, are briefly mentioned but there is no mention of methods to be used for tagging and scale collection. Scale sample collection may be problematic in fish close to spawning. Ageing of spawning salmon may be better accomplished by collecting otoliths from spawned out salmon.</p> <p><i>“During the salmon runs, personnel will monitor the weir and empty the catch box at least twice per day, more often if necessary.”</i></p> <p>There are no drawings of the weir or associated catch box provided. The dimensions of a catch box are important, as previously discussed under comments on Section 4.3 Grant Creek Fish Weir.</p> <p>One of the expected species in Grant Creek is the Chinook salmon. Regional issues with decline in Chinook salmon in 2012, triggered regulatory protections and has increased vigilance on interaction with these fish. It is imperative that Chinook salmon be handled as expeditiously as possible with appropriate safeguards and adequate care. Handling mortality of Chinook salmon may force removal of the weir and termination of some portions of this study.</p> <p><i>“Floy tags and radio tags will be recorded at the weir if carcasses are encountered.”</i></p> <p>All recovered tags shall be recorded by date recovered and retained until acceptance of the final study report.</p>	<p>Specifics related to tagging and aging are not explicit due to the fact that approval/permitting from ADF&amp;G was needed prior to defining. Defining those parameters and associated permits typically takes place after the study plans are developed, commented on and finalized. Per that schedule, KHL worked closely with ADF&amp;G between January and March of 2013 to develop appropriate tagging and sampling parameters and acquire all necessary permits to conduct the work. KHL will include specific methods (by species) associated with all tagging and aging efforts in the Aquatic Study Reports. Our team has secured a number of permits from various resource agencies which allow us (KHL) to conduct the natural resource studies on Grant Creek/Lake. The specific permits that apply to aquatic resource studies on Grant Creek are:</p> <ul style="list-style-type: none"> <li>• Fish Resource Permit (ADF&amp;G)</li> <li>• Fish Habitat Permit (ADF&amp;G)</li> <li>• Special Park Use Permit (ADNR)</li> </ul> <p>All stipulations that were incorporated into these permits have been adhered to up to this point. With respect to collection and analysis of fish associated with the Grant Creek weir, the primary allowances associated with weir fish collection are as follows (from Fish Resource Permit):</p> <ul style="list-style-type: none"> <li>• <i>“Unlimited numbers of all species may be passed through the weir, located near the mouth of Grant Creek to spawning areas.”</i></li> <li>• <i>“≤65 King salmon, ≤65 sockeye salmon, and ≤20 coho salmon adults may be marked with esophageal radio tags and spaghetti tags, and released alive.”</i></li> <li>• <i>“≤40 rainbow trout &gt;300 mm may be marked with surgically implanted radio tags, and released alive during the early portion of their spawning migration (March 25-June 30). These fish must also be tagged with an external tag.”</i></li> <li>• <i>“All unintended mortalities must be recorded and</i></li> </ul>

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
					<p><i>returned to capture site waters.”</i></p> <p>In addition to this, KHL has worked Mark Willette at ADF&amp;G to collect appropriate aging information on the aforementioned species. Per these discussions, we’ve received confirmation that scale samples for Chinook, coho and rainbow will still be viable for aging purposes. With sockeye, where scale reabsorption is an issue, otoliths will be collected for aging purposes. ADF&amp;G will be conducting the scale analysis for the study and CIAA will do the otolith work for sockeye.</p>
14	6/11/2013	ADF&G	Aquatics	<p><b>Quantitative Objectives Pages 14-16</b></p> <p>On page 15, discussion of the number of fish to be tagged (we assume radio tags) states that the number of tags to be placed is based on 2009 total escapement estimates. It is unclear how the tag allocation by species was determined. The tag by species numbers cited later in this paragraph and in the ADF&amp;G issued 2013 FRP state that up to 65 King salmon, 65 sockeye salmon and 20 coho salmon are permitted to be marked with esophageal radio tags. It is very unclear how this allocation of tags is based on 2009 escapement estimates. The discussion also states that the timing of the coho run is not known, therefore coho estimates could not have been used to determine allocation of tags. Coho run timing must also be determined in Grant Creek. The coho run begins in August and may have fish actively spawning into December or even January. The periodicity is important in determination of instream flow requirements to develop instream flow prescriptions.</p> <p>Discussion of the installation of a fixed telemetry site occurs on page 16 and uses language “<i>will likely be pursued</i>” and “<i>If deployed...</i>” If such a system is going to be installed, a complete description of the system, its deployment and how it identifies and reports the presence of radio tagged fish must be included in this plan. The statements about this system, its deployment, maintenance and reporting are vague and do not inform an evaluator.</p>	<p>The number cited in the comment (and in KHL response #13) are correct and are based partially upon discussions with ADF&amp;G staff relative to permit stipulations and numbers of fish that ADF&amp;G needed to finalize previously established internal analysis (ADF&amp;G) of run timing and numbers in Grant Creek.</p> <p>The total number of tags to be used by species was not based on a percentage of the escapement to Grant Creek in 2009. If that was the interpretation it was unintended, we were merely documenting that both Chinook and sockeye are known to spawn in Grant Creek and there were estimates of escapement provided for 2009.</p> <p>Number and allocation of tags for Chinook and sockeye was based on several factors. First, Grant Creek is a very small stream, length wise, at about 0.5 miles where spawning aggregates have been noted. One among many considerations for radio telemetry is signal collision. Signal collision occurs when two or more tags are colliding (sending a signal) at about the same time. If there are too many operational tags in a given area the likelihood of signal collision increases. For this study, we assumed a detection rate of 0.80 or that about 52 tags/species would be coding (readable) during a mobile survey. During mobile surveys, hand held antennas are used to triangulate on fish locations. Sixty five tags for sockeye and 65 tags for Chinook were determined to be more than adequate for spawner distribution in Grant Creek. To put this in perspective, that is about 1 tagged fish every 41-51 ft in Grant Creek assuming an even distribution within the study area (2,640 ft/65 tags or 2,640/52 tags). As you know, spawning habitat is often clumped within specific habitats (low gradient riffles) increasing the number of fish within a given area. Too much signal collision and mobile surveys become untenable.</p>

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					<p>In an effort to further manage signal collision, different channel/code combinations and burst rates were selected and will be staggered during the tag and release phase at the weir (capture location). For tag allocation, we wanted equal representation (65 tags each) between sockeye and Chinook with known escapement estimates. For Coho salmon, there was no estimate of escapement in Grant Creek so it was decided that at least 20 tags would be available for use. In a recent site visit in November (2012) CIAA staff saw little evidence of Coho spawning (redds or carcasses).</p> <p>The fixed radiotelemetry systems deployed (SRX/DSP Lotek) use a DSP system that allows us to scan (listen) for all channels and codes and reduces scan time. Underwater bare coax antennas have been placed into Grant Creek at the mouth and reach 4/5 boundary. An array of two antennas (lines of detection) have been used at the upstream location to determine direction of movement. At the lower site only one antenna array was used because directional information was not needed. We did not use aerial antennas because they offer only presence information, have a much larger detection field and they are more prone to signal collision and signal bounce. The fixed telemetry systems are monitored each week of the study period. The information downloaded from the fixed site receivers are placed into a relational database where individual channel/code combination are related to individual tagged fish.</p>
15	6/11/2013	ADF&G	Aquatics	<p><b>4.5 Grant Creek Resident and Rearing Fish Abundance and Distribution, Page 16</b>  This section identifies using minnow traps to assess juvenile fish presence. Sockeye juveniles do not recruit to baited minnow traps, therefore, the sampling will be incomplete. Some sockeye juveniles may be seen during snorkeling surveys but turbid water conditions may make that method unreliable. Dolly Varden are not mentioned in this section, yet have a presence in the system.</p>	<p>As described in Section 4.5.2, Inclined plane traps will also be used for juvenile and outmigrant monitoring.. Any Dolly Varden captured via either minnow traps or the incline plane traps will be documented as well.</p>
16	6/11/2013	ADF&G	Aquatics	<p><b>4.5.1 Adult Rainbow Trout Abundance, Distribution, and Spawning in Grant Creek Quantitative Objectives, Page 16-17</b>  <i>"Obtain a count of adult Rainbow trout entering Grant Creek during the open water season."</i>  Define "adult"...Is this a length consideration? The</p>	<p>Per KHL's request the FRP reduced the allowable size for tagging of rainbow trout from 500mm to 300mm. This request was based primarily on historical data and initial rainbow trout captures in Grant Creek indicating that very few fish in excess of 500mm were likely to be observed (HDR 2010, see Figure 3.5.2-16). Per KHL's earlier response regarding the documentation of existing conditions,</p>

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				<p>ADF&amp;G FRP has been amended to reduce the minimum length for rainbows to be tagged with radio telemetry tags from 500mm to 300mm. Is a less than 12 inch rainbow trout considered an adult? 300mm fish probably would not spawn in the near future so how does the telemetry study inform of rainbow trout spawning habitat utilization identified as a need under 4.5? The FRP identifies March 25 to June 30 as the time period allowed for rainbow trout radio tag surgical implantation. If larger rainbows spawn above the weir in Grant Creek, it will also be imperative that rainbow trout moving back down the stream must be quickly passed over the weir. Reconditioning kelts have limited energy and will not be able to avoid being held against the weir by streamflow and may not survive if delayed at the weir. Weir caused mortality of rainbow trout kelts will not be acceptable.</p> <p>Angling is proposed to help with obtaining more complete information. Angling would be of very limited use because the weir is supposed to trap all large fish accessing Grant Creek. Angling for selective size classes will skew the representativeness of the data collected and may also have collection overlap with fish KHLded for Upper Trail Lakes and tributaries. Again, proposed methods are lacking.</p> <p><i>“Surgical method will generally follow those described by Summerfelt and Smith (1990).”</i> The use of the term “generally” is not acceptable. Methods are vague and subject to unknown change.</p> <p><i>“Fish within the dominant size range of mature Rainbow trout (500 - 700 mm) will likely weigh 1800-6000 grams (Russell 1977).”</i> Fish Resource Permit (FRP) SF2013-105, amendment #1, identified up to 40 Rainbow trout to be radio tagged and reduced their size from greater than 500 mm to greater than 300 mm. From the citation above (Russell 1977), how are 300 mm fish</p>	<p>it is believed (based upon historical data and initial data from 2013) that resident, adfluvial and potentially fluvial life histories exist for rainbow trout utilizing Grant Creek for spawning. Given the possibility of several life histories in Grant Creek, we did not want to ignore the behavior and habitat selection of any life history strategy.</p> <p>The radio tags used for rainbow trout and Dolly Varden in this study can be used on salmonids down to 300 mm. The intent is to tag fish that will spawn based on a visual assessment of the fish. The man camp at Grant Creek has been and will continue to house 2 technicians full-time for the duration of the study season. This will facilitate the expedited response necessary to pass reconditioning kelts downstream.</p> <p>The intent of angling is a supplementary one. During times when pickets may have to be pulled due to high flows and/or large numbers of rainbow are observed very low in the system (below the weir), angling has been and may be used again to capture rainbow.</p> <p>The word “generally” will be removed from the methods section of the Aquatics Study Report.</p>



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				considered to be adults? If sub-adults or non spawning adults are tagged there will be no correlation with spawning areas. These smaller fish may simply be seeking food sources.	
17	6/11/2013	ADF&G	Aquatics	<p><b>4.5.2 Resident and Rearing Fish Use of Study Reach 5</b>  <b>Quantitative Objectives</b>  On-site Sampling, Page 18-19  This section is confusing in that it discusses 2009 efforts and apparently expanded 2010 efforts. It is not clear if efforts will be expanded again for 2013 studies. The use of minnow traps to sample fish juveniles has been previously discussed as being selective and excluding sockeye salmon juveniles. A determination of lack of sockeye salmon spawning in Reach 5 needs to occur before this method can be said to sample all juveniles which may be present. The entire section is not clear on the level of effort to be expended in Reach 5 juvenile sampling during 2013.</p> <p><i>“Weir operation, as described in Section 4.3, may provide information on the timing of upstream movements of adult Dolly Varden. If sufficient numbers of spawning condition Dolly Varden are observed, mobile surveys of radio tagged fish will be utilized to identify their final destination. Given the historical data associated with Dolly Varden numbers in Grant Creek, KHL believes 10 radio tags will be sufficient for this analysis.”</i></p> <p>There is no tagging of Dolly Varden identified in Fish Resource Permit SF2013-105. Either there is an omission in the FRP which needs to be corrected, or the study plan is in error and it needs to be corrected. The weir, as described in this study plan with 3” picket spacing, will probably catch only very large Dolly Varden.</p> <p><i>Outmigrant Monitoring, Page 19</i>  Dolly Varden have not been included as species of primary interest in the study plan. The previous</p>	<p>The expanded effort for Reach 5 includes the winter time sampling (snorkeling and minnow trapping) as well as a downstream migrant trap set up at the boundary of Reach 4/5. In addition, radio tagging adult salmonids to determine if they use Reach 5 will be part of the evaluation. All of these components were added to the Reach 5 evaluation based on comments from the original study plan.</p> <p>Ten radio tags have been devoted to Dolly Varden. The picket spacing on the weir is one inch and has been working effectively at capturing rainbow trout.</p> <p>Fish capture in the incline plane trap will be netted from the holding box and transferred into a bucket of water for sampling or subsampling (length and weight measurement). Some fish will be dye marked and released upstream for trap efficiency trials. Those fish will remain in water amended with oxygen until they are released. Some fish will only be counted depending on numbers of fish captured at the trap. Those fish will be released downstream of the trap to continue their outmigration. The collection permit determines acceptable loss.</p> <p>The statement that YOY fish are juveniles is correct but the prior statement was alluding to the fact that not many 1+ fish were found in their sampling efforts. We already know from our recent winter sampling (snorkeling and minnow trapping) that fish overwinter in Grant Creek.</p> <p>The incline plane traps were helicoptered into Grant Creek.</p> <p>There was no plan to study the delayed effects of marking, handling and transport of fish. The methods used are typical of out migrant fish handling with incline or screw traps. Mortality of any fish in the traps is recorded and if it exceeds the permitted amount the trap is to be shut down and reported to ADFG.</p>

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				<p>section identifies a potential radio tagging effort which would seem to identify Dolly Varden as a species of primary interest.</p> <p>Define acceptable loss for outmigrant trapping. This is especially important for winter use of incline plane traps described under <b>Quantitative Objectives</b>, on page 19. Describe how fish will be handled and transported during winter conditions.</p> <ul style="list-style-type: none"> <li>Winter Sampling, Page 19-20  <i>“The results of the 2009 snorkel and minnow trapping surveys provided evidence that very few juvenile salmon observed were older than young-of-year fish (YOY; i.e., hatched in spring). Based on these results, there is some question as to whether Grant Creek provided favorable overwintering habitat for juvenile salmon and other species.”</i>  This is a contradictory statement and is unclear. YOY fish are also juveniles. If YOY fish were found, then there is wintering habitat in Grant Creek being used by juvenile fish. Again baited minnow traps are proposed and again we point to lack of sockeye salmon recruitment to that method of sampling.</li> </ul> <p>Spring Outmigrant Monitoring, Page 20  Since Grant Creek is not boatable, how will incline plane or screw traps be transported and deployed?</p> <p>A fine mesh live box is identified but again there is no information provided. The mesh size and size of the live box needs to be provided. Acceptable loss needs to be identified. Will there be an evaluation of effects attributed to marking, handling, and transport of these fish?</p>	
18	6/11/2013	ADF&G	Aquatics	<p><b>4.5.3 Resident and Rearing Fish Use of Open Water Habitats in Lower Grant Creek Quantitative Objectives</b>, Page 21</p> <ul style="list-style-type: none"> <li><i>“Obtain a count of adult Rainbow trout and Dolly Varden, and other resident</i></li> </ul>	<p>KHL is unclear as to why ADF&amp;G is under the impression that the consultant has limited understanding of Dolly Varden life history. KHL and its consultants are intimately familiar with the life history of Dolly Varden in the area. A periodicity chart associated with the combined findings from 2009/2010 and 2013 study work will be</p>

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				<p><i>species entering Grant Creek during the open water season.”</i></p> <p>There appears to be little understanding of Dolly Varden life history, including size at maturity, by the study plan authors. Life stage information for Dolly Varden is presented in the Alaska Wildlife Notebook Series<sup>2</sup>, and includes the following information:</p> <p><i>“Dolly Varden belong to a group of trout-like fish called char (Salvelinus sp). The primary visual distinction between char and trout and salmon are that char have light spots on their dark body sides while trout and salmon usually have black spots on their light colored sides. Dolly Varden are fall spawners and usually spawn between September and November in small KHLdwater streams. The female, depending on her size, may deposit from 600 to 6,000 eggs (2,500 to 10,000 in the northern form) in depressions, or redds, which she constructs in the streambed gravel by digging with her tail fin. The male usually takes no part in nest building and spends most of his time defending the redd by chasing, biting or threatening intruders. When the female is ready to deposit her eggs, the male moves to her side and spawning begins. Sperm and eggs are released simultaneously into the redd where fertilization occurs. After spawning the female then forces the exposed eggs into the crevices by undulating her body and tail before covering the eggs with gravel.</i></p>	<p>incorporated in the Aquatics Study Report.</p> <p>See Comment Response #11 for additional detail on the weir infrastructure.</p> <p>The statement, “All resident fish passing the weir will be recorded.”, will be modified in the Aquatics Study Report to read, “When the weir is fishing, all resident fish observed and/or captured will be recorded.” KHL wishes to note that the only times during the study period when the weir will not be fishing will be during flows high enough to disable the weir, when pickets will be pulled and briefly and intermittently to clear debris. As mentioned in Comment Response #16, two personnel are on-site 24 hours per day, 7 days a week monitoring the weir. KHL feels that this comprehensive approach ensures adequate monitoring practices.</p> <p>As with any licensing/relicensing process, the study period is a segment in time when studies are conducted and data is collected to define existing conditions and provide the proponent and the Stakeholders with an understanding of the natural resource assets present in the area and the potential for impact (positive and negative) associated with the development of the proposed project. If studies were to go on into perpetuity, no projects would ever be relicensed or licensed. The direct value to the project by collecting this data is informing both the stakeholders and KHL of the aforementioned conditions. Like other relicensings/licensings, this information combined with the infrastructural, design and operational parameters will assist Stakeholders in the development of any 10 (j) recommendations.</p> <p>Two incline plane traps are currently in place on Grant Creek and were lifted in via helicopter. All of this was done in full compliance with necessary permits.</p>

<sup>2</sup> Alaska Wildlife Notebook Series, Dolly Varden, Alaska Department of Fish and Game, [www.adfg.alaska.gov/static/education/wns/dolly\\_varden.pdf](http://www.adfg.alaska.gov/static/education/wns/dolly_varden.pdf).

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				<p><i>The eggs develop slowly in the cold water temperatures and hatch in March approximately four to five months after fertilization. After hatching, the young Dolly Varden absorb the food from their yolk sac and usually do not emerge from the gravel until this food source is used. Emergence from the gravel usually occurs in April or May for the southern form and in June for the northern form.</i></p> <p><i>The young Dolly Varden rear in streams for 2 to 4 years before beginning their first migration to sea, but some may rear as long as six years. During this rearing period, their growth is slow, a fact which may be attributed to their somewhat inactive habits. Young Dolly Varden often remain on the bottom, hidden from view under stones and logs, or in undercut areas along the stream bank, and appear to select most of their food from the stream bottom.</i></p> <p><i>Prior to their seaward migration Dolly Varden go through a series of physical changes called smoltification which allows them to survive in saltwater and during this process the fish lose their parr marks and become silvery in color. The fish are now about 5 inches long and are called smolt. This seaward migration usually occurs in May or June, although significant but smaller numbers have been recorded migrating to sea in September and October. After their first seaward migration, Dolly Varden usually spend the rest of their lives migrating to and from fresh water in an interesting and often complicated pattern of migration.</i></p> <p><i>The southern form migrate into lakes</i></p>	

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				<p>during the fall where they spend the winter while most northern Dolly Varden migrate into rivers to spend the winter. Dolly Varden hatched and reared in a lake system typically carry on annual spring migrations to saltwater seeking food before returning to a lake or river each fall to spend the winter. However, southern Dolly Varden originating from nonlake systems must seek a lake in which to winter and research suggests that they may find lakes by random searching, migrating from one stream system to another until they find one with a lake. Once a lake is found, these fish typically conduct annual seaward migrations in the spring, sometimes entering other freshwater systems in their search for food. Dolly Varden are known to follow salmon during upstream spawning migrations where there are lots of nutritious salmon eggs for the Dolly Varden to feed on.</p> <p>Dolly Varden return to spawn in their stream of origin or “natal stream” upon reaching sexual maturity. Most southern forms of Dolly Varden reach maturity at age 5 or 6. At this age they may be 12-16 inches long and may weigh from 1/2 to 1 pound. Northern Dolly Varden reach maturity at age 5 to 9 after having spent three or four summers at sea, and may be 16 to 24 inches long. Dolly Varden possess the ability to find their natal stream without randomly searching, as was the case in their original search for a wintering area. Those of the southern form that survive the rigors of spawning return to a lake to spend the winter, while northern form Dolly Varden usually overwinter in the river system in which</p>	

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				<p><i>they have spawned.</i></p> <p><i>Mortality after spawning varies depending on the sex and age of the fish. Males suffer a much higher mortality rate after spawning, partly due to fighting and the subsequent damage inflicted on each other. It is doubtful that much more than 50 percent of the Dolly Varden live to spawn a second time but a small number may live to spawn more than twice. Few southern Dolly Varden appear to live longer than 8 years while northern Dolly Varden may live as long as 16 years, but individuals over age 10 are uncommon. Maximum size for southern Dolly Varden is between 15 and 22 inches and up to 4 pounds but an occasional 9-to 12-pound fish have been reported, especially in northern populations."</i></p> <p>This study plan should also provide a periodicity table for all fish species utilizing Grant Creek.</p> <p>Weir Data, Page 21-22 Define the weir in the study plan. Please note that spawning Dolly Varden may be as small as 12 inches in length and may be difficult to capture in a weir.</p> <p><i>"All resident fish passing the weir will be recorded."</i> This is not possible due to size of fish and potential storms which will breach the weir. Small resident fish will not be collected.</p> <p><i>"When the weir is in capture mode, the lengths of all fish will be measured if possible without harming the fish or requiring extra effort."</i> This statement implies that if someone decides that it is too much work, length measuring could be abandoned. Define "extra effort" and in what</p>	

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				<p>scenarios length measurements could be abandoned. Provide adequate staffing to do the job correctly and completely.</p> <p><i>“...the presence of an obvious pulse of Dolly Varden will trigger a need for foot surveys to identify spawning locations.”</i></p> <p>Spawning Dolly Varden may use Reach 5 which has limited access and poor observation areas. See previous comments under 4.5.2 regarding radio tagging of Dolly Varden. Also these fish may spawn in October and November, after the weir has been removed and personnel have left the area.</p> <p>Outmigrant Monitoring, Page 22  <i>“Combining the results of spring and fall outmigration monitoring will provide an indication of the total annual production of the creek.”</i></p> <p>If there are no problems encountered with outmigration, such as floods or equipment failure you may be able to develop an estimate for the current year only. The estimate is not transferrable from year to year. It would only be valid for the year sampled. What is the value to the project? How will this inform the agencies and aid in development of agency recommended 10 (j) terms and conditions, to be filed with FERC, on this project.</p> <p>Since Grant Creek is not accessible by boat, how will incline plane or screw traps be transported and deployed?</p>	
19	6/11/2013	ADF&G	Aquatics	<p><b>4.6 Grant Creek Aquatic Habitat Mapping Quantitative Objectives</b>, Page 23</p> <ul style="list-style-type: none"> <li><i>Prepare an office-based aquatic habitat map (i.e., based on habitat observations assembled throughout the 2009 and 2010 field seasons.”</i></li> </ul> <p>On this map/s, locate and identify transects used on this project. Provide maps at a scale that allows readability and clearly shows habitat areas and</p>	<p>KHL will prepare these maps for the Aquatics Study Report as specified in ADF&amp;G Comment #19. Figure 3 of the Aquatics Study Plan documents the 18 instream flow transects on Grant Creek and Table 1 documents the mesohabitat characteristics of each transect.</p> <p>Ground truthing of the aquatic habitat mapping in the Grant Creek main channel was performed during May at a flow of approximately 100 cfs.. Side channel habitat at that time was, for the most part, either dry (Transects 100 and 110) or still covered with snow and</p>

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				<p>transects. Identify the proposed mesohabitat classifications. This is key information necessary for the agencies to assure that the sampling design is adequate.</p> <p><i>“The team will conduct surveys to ground-truth the preliminary aquatic habitat delineation.....”</i></p> <p>Is this a single exercise? At what flows will the habitat be identified during this exercise? Habitat use by fish will change with changing flows and water velocities.</p>	<p>ice. Habitat mapping in these secondary channels will be ground truthed on the descending limb of the Grant Lake hydrograph later this summer.</p> <p>Habitat use surveys are being conducted by KHL throughout the field season, and will be noting these shifts in utilization along with changing flows and velocities. Minnow trapping and snorkeling have been used to document fish presence and habitat use. During high flows the only areas that will be sampled are lateral habitats to determine fish use.</p>
20	6/11/2013	ADF&G	Aquatics	<p><b>4.7 Grant Creek Instream Flow Study</b>, Page 24-25</p> <p>Identify and provide maps of the 18 transects. Identify how data will be collected when the creek is unwadeable.</p>	<p>Figure 3 of the Aquatics Study Plan provides a map of the 18 transects on Grant Creek. High flow measurements were just conducted on Grant Creek (June 12<sup>th</sup> and 13<sup>th</sup> at approximately 700 cfs). An Acoustic Doppler Current Profiler (ADCP) was used in unwadable sections of stream to measure discharge. Water Surface Elevations (WSEs) were taken along both stream margins as far as they could be safely waded. WSEs were taken all along the transects in the side channels, which could be waded.</p>
21	6/11/2013	ADF&G	Aquatics	<p><b>4.7.1 Habitat Availability</b>, Page 25</p> <p>The use of the PHABSIM method requires transects which represent all habitat types. The biological component is added into the modeling through the development and use of habitat suitability index curves. Additional transects may be added where fish are observed, but the model remains habitat oriented. What is presented will not correctly assess habitat because it will only address known fish use at the time the study is being conducted. The proposed study plan falls short in that it will be incomplete.</p>	<p>KHL disagrees that the study plan is incomplete in this regard; these 18 transects in the lower 0.5 miles of Grant Creek were selected because of their utilization by the target species. These transects were agreed to by the natural resource agencies after extensive consultation in 2009 and 2010. If fish are observed spawning or rearing in areas not on transects, habitat availability data will be collected in these areas. These availability data will be combined with utilization data and normalized to develop HSC curves of the target species and life history stages. Please also refer to response to Comment 18.</p>
22	6/11/2013	ADF&G	Aquatics	<p><b>4.7.2 Habitat Utilization</b>, Page 26-28</p> <p>Described is the development of site-specific habitat suitability criteria (HSC). Then described is the use of that data combined with literature searches and professional judgment. Blending this information together will reduce the specificity of site-developed HSC's. How will depths and velocities be measured without disturbing spawning fish? The</p>	<p>KHL will collect site-specific HSC data; if there are a sufficient number of measurements taken, it may not be necessary to supplement the data set with literature-based curves. If, however, there are very few direct observations of fish, the use of literature-based curves may be necessary in order to fill out the curves. If literature-based curves are used to supplement site-specific measurements, KHL will consult with the natural resource agencies.</p>



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				<p>text mentions that 16 sampling sites were established in 2009. Provide habitat associated mapping of those sites for evaluation of study applicability.</p> <p>Table 2, Page 27 Resident rearing and spawning parameters should be collected onsite. It may not be appropriate to use salmon rearing as a surrogate.</p> <p>On page 28 snorkeling and electrofishing are presented as sampling methods. Snorkeling avoidance is not discussed and electrofishing methods are not presented. If electrofishing is used, will block nets be employed? Further discussion is needed on data collection during unwadeable flow events which may occur during at lower flows than expected.</p> <p>Collection of water temperature data is identified to be recorded where fish are observed, at mid water column. Why this much detail? Are water temperatures expected to vary? If there is interest in redd locations then intergravel flow and temperatures may be important to show upwelling, but other than location of redds, how will this information inform the agencies and aid in development of agency recommended 10 (j) terms and conditions, to be filed with FERC, on this project.</p>	<p>KHL will use markers and will place them at the site of the redds when fish are observed actively spawning. Depths and velocities will be measured when the fish move off redds.</p> <p>KHL is in the process of obtaining data on resident rearing and spawning fish. If the data are too sparse to make sound biological decisions, KHL will discuss the use of surrogates with the natural resource agencies.</p> <p>Temperature data are sometimes collected in association with HSC curve development. ADF&amp;G, however, is correct in that we have not observed anything to indicate that there is significant variance in water temperatures either laterally or depth-wise. Given these parameters, KHL will not collect temperatures associated with our HSC curve development.</p>
23	6/11/2013	ADF&G	Aquatics	<p><b>4.7.4 Analysis Methods</b>, Page 30 Use of RHABSIM is identified. The RHABSIM package was developed by Thomas R. Payne and Associates, who have developed a newer, improved, and more complex program called System for Environmental Flow Analysis (SEFA).</p>	SEFA contains the same one-dimensional modeling component as RHABSIM, with some enhancements in HSC development, time series analysis and other parameters. KHL will use portions of SEFA if pertinent to the analysis necessary to represent Grant Creek.
24	6/11/2013	ADF&G	Aquatics	<p><b>4.7.5 Reach 5 (Canyon Reach) Analysis</b>, Page 30 “It is expected that available post-Project habitats</p>	KHL’s intent in this statement was not to infer that connectivity would not be maintained. To the contrary, KHL has every interest

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				<p><i>will be limited to pools which contain sufficient water to support fish."</i></p> <p>This premise is unacceptable. Connectivity will have to be maintained to provide minimum environmental protections to this reach. Expect the requirement of an instream flow release.</p> <p><i>"A simplified modeling effort will be employed to obtain insight into effects that small changes in flow might have on pool depth, pool connectivity, and fish passage availability."</i></p> <p>The use of the Oregon method follows this statement after a large break in the text. It is not clear if this is the simplified modeling proposed. The Oregon Method has been acknowledged by Oregon as a crude tool which is used in cases where other methods are not available and for use until other more complex methods can be utilized. Few verification studies have been conducted, which is also problematic.</p> <p>Identify:</p> <ul style="list-style-type: none"> <li>• how many flow calculation sets will be used,</li> <li>• velocity calculation sets will be used,</li> <li>• upstream &amp; downstream transect/mesohabitat weighing methods,</li> <li>• what WSL model(s) will be used, and</li> <li>• development of composite habitat suitability indexes.</li> </ul> <p>Provide mapping of transects and mesohabitat units at an appropriate scale to clearly identify details. Reach 5 should have 1 to 2 transects included in the habitat model analysis. Also needed is a Habitat Time Series.</p>	<p>in ensuring a viable stream system and maintaining connectivity throughout. The statement was meant to convey that the only usable habitat in Reach 5 would likely be limited to pools that contain sufficient water to support fish; similar to the existing and natural condition in Grant Creek now. KHL views the use of the instream flow study as a mechanism for developing appropriate levels of flow for the aquatic species present and has every expectation of working with ADF&amp;G and other Stakeholders to develop appropriate instream flows for the Project.</p> <p>KHL proposes to use the Oregon Method in the Canyon Reach. Two transects have been selected, and the bed profiles for both transects, as well as WSEs at discharges of approximately 17 cfs, 60 cfs, 130 cfs, and 700 cfs; in RHABSIM, a power function is used to calculate a rating curve and a stage/discharge relationship.. Measurements of velocity have not been taken at these transects, since their purpose is to evaluate connectivity.</p> <p>The Oregon method is still widely used. Avista Corp. used it to evaluate connectivity in the Spokane Falls Reach of the Spokane River in 2010; the results were approved by WDFW and IDFG. This same methodology was used and approved on a proposed four-system hydropower project in 2012 in British Columbia, Canada.</p> <p>Transect locations and mesohabitat units will be mapped and provided as part of the license applications. If appropriate, a habitat time series will also be conducted.</p>
25	6/11/2013	ADF&G	Aquatics	<p><b>4.8 Baseline Studies of Benthic Macroinvertebrates in Grant Creek Quantitative Objectives</b>, Page 31</p> <p>Will sampling only in August provide accurate and</p>	<p>KHL feels that a sampling event in August will be sufficient.</p>

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				complete information? Prior studies (2009) suffered when floods and washouts occurred and sample richness was affected (Aquatic Resources Study Plan page 9).	
26	6/11/2013	ADF&G	Aquatics	<p><b>5 Agency Resource Management Goals, Page 33</b>  The first bullet under this topic identifies incorrect and obsolete Alaska Statutes. We use the following language in FERC Motions to Intervene (MOI):</p> <p>“ADF&amp;G is mandated under state law to “manage, protect, maintain, improve, and extend the fish, game, and aquatic plant resources of the state in the interest of the economy and general well-being of the state . . .” (AS 16.05.020). Among the ADF&amp;G’s various powers and duties are “to assist the United States Fish and Wildlife Service in the enforcement of federal laws and regulations pertaining to fish and game . . .” (AS 16.05.050), and protect fish habitat (AS 16.05.841 and AS 16.05.871).”</p>	Comment noted. The Aquatic Study Report will be modified accordingly.
27	6/11/2013	ADF&G	Aquatics	<p><b>8 Schedule for Conducting the Study, Page 35</b>  This schedule does not identify timing for deployment incline planes, telemetry station installation, installation of the counting weir, or inclusion of the genetic analysis in reports.</p>	<p>Timing associated with the aforementioned tasks would have been speculative at the time of plan finalization (March 2103) given the variability associated with flow, ice, etc. that dictate specific installation time. For ADF&amp;G’s information and in advance of the Aquatics Study Report:</p> <ul style="list-style-type: none"> <li>• Incline plane traps installed in early April</li> <li>• Radio telemetry infrastructure has been in place since April and data is currently being collected.</li> <li>• Weir installed in May.</li> <li>• Genetic data collection of fish species will be collected at the weir during passage and per the study plan, if a cooperative agreement can be reached, the analysis will take place.</li> </ul>
28	6/11/13	ADF&G	Water Resources	<p><b>4.2 Field Study Design</b>  <b>Quantitative Objectives, Page 6</b>  This section states that water quality standards were selected and criteria were established. What standards and what criteria? The next three sections</p>	The only use of the word standards in this section (and the entire study plan) is used in reference to EPA standards for laboratory quality. KHL is unsure what reference is being used to develop this comment. Table 1 is intended to inform the reader of the water quality parameters that are being sampled during the 2013 field

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				list Table 1 but this table only states what will be sampled for and not what the standard or criteria is for each parameter. If you are using Alaska DEC standards, state that is the standard being used, and what range is considered	effort.  From pg. 6 of study plan: “Water quality parameters were chosen for analysis based on several factors: parameters sampled in previous studies, parameters that may be affected by land use practices in the Project area, parameters either necessary for aquatic life or that act as nutrients, and the drinking water and aquatic life criteria that have been developed for fresh water in Alaska.” Given this and our initial, current and continued practices, Table 1 will be updated to include Alaska DEC criteria in the Water Resources Study Report.
29	6/11/13	ADF&G	Water Resources	<b>Baseline water quality studies in Grant Lake, Page 7</b> The last line of the last bullet contains bidding information and is not relevant to the study plan. <i>“The prospective bidders should provide individual costs for the installation of a new thermistor string and the cost associated with restoring the potentially functional existing string.”</i> This belongs in a bidding document	Any reference to a “bidder” was removed prior to the study plan that was finalized and filed with FERC in March 2013.
30	6/11/13	ADF&G	Water Resources	<b>Baseline water quality studies in Trail Lake Narrows, Page 7</b> This information will not inform environmental aspects of this project except for immediate construction of the bridge. Even that would be of limited use since water at this point is mixed from Grant Creek and Upper Trail Lakes. Since no evaluation of the area above the narrows and the intersection of Grant Creek with the Trail Lakes system is proposed, it will be impossible to determine if differences in water chemistry are project related.	Water quality sampling of Trail Lakes Narrows below Grant Creek is intended to be a baseline study. At this time little to no water quality information is known about the Grant Lake watershed. By evaluating the water chemistry of Trail Lakes Narrows, Grant Lake, and Grant Creek, a decision can be made as to whether a more comprehensive assessment of the Trail Lakes Narrows is warranted. As a proactive measure, KHL has installed HOB0 Pro v2 (U22-001) temperature loggers above and below the mouth of Grant Creek in the Trail Lakes Narrows. These data should allow for the assessment of how Grant Creek may influence water temperatures in the Trail Lakes Narrows.
31	6/11/13	ADF&G	Water Resources	<b>Page 8</b> Following Table 1, there appears to be a methods section which is not labeled. If this is a methods section, label correctly. In this section, DH-81 bottles will collect subsamples which will be combined in a bucket or a single sample if width and depths allow. The method states that width and	ADF&G is correct that the paragraph beginning after Table 1 is a bit confusing without a header. Depending on need and application, a header will be added to these methods in the Water Resources Study Report.  The sampling methodology, specifically width and depth criteria for Grant Creek sub-sampling, will be adequately described in the

Comment Number	Date	Affiliation (Individual)	Report Reference	Comment <sup>1</sup>	Kenai Hydro, LLC (KHL) Response
				<p>depth of the stream will determine the method of sampling but fails to identify what those width and depth criteria are.</p> <p>This section identifies the HOBO Pro V2 temperature loggers and the HOBO U20 Water Level Loggers as the instruments to be used. There are four different models of the HOBO U20 with different specifications for depths and resolution. Different models will be required for lake or stream work. If they are mixed up, data will potentially be lost due to equipment failure. Identify the loggers to be used at each location.</p>	<p>Water Resources Study Report. The field crews will operate on the following guidelines: width-integrated (only) grab samples to occur when cross sectional widths are greater than 10 feet and depth are less than 1.0 feet. In general, width and depth-integrated subsampling with the use of a DH-81 or similar sampling device is to only occur when wading conditions are safe (wading factor: depth x velocity <math>\leq</math> 10.0 or less). Also, if the flow conditions in Grant Creek reveal a well mixed sampling site, then a single grab sample will be collected from an appropriate mid-channel location within the cross section.</p> <p>The description of instrumentation used to measure water temperatures in Grant Lake and Grant Creek is clarified below. All continuous temperature monitoring will utilize the HOBO Pro v2 (U22-001) temperature loggers. The operational range of these loggers is from -40C to 50C. These loggers can be deployed to a depth of 400 feet and maintain their waterproof integrity. For the study applications proposed, these Pro v2 loggers are adequate with minimal risk of data loss due to exceeding operational specifics. At site GC 200 only, an <i>additional</i> pair of Onset U20 -001-01 water level loggers (0m to 9m water level range; -20C to 50C temperature range) are being deployed to serve as a backup water temperature and water level/barometric pressure recorders in the event that primary data loggers fail. Again, the Onset U20 -001-01 water level loggers utilized at site GC 200 are being deployed within their defined operational criteria, and thus should not have data loss due to deployment error.</p>
32	6/11/13	ADF&G	Water Resources	<p><b>Page 8, Paragraph 3, second sentence</b>  <i>“Water temperature in Grant Lake will be measured both instantaneously and continuously using recording data loggers.”</i>  Data loggers do not provide instantaneous measurements. It is believed that you intend to use a YSI or Hydrolab meter to provide instantaneous readings. Correct this statement.</p> <p>Further in the same paragraph, the abandoned data loggers are discussed and stated to be inactive. These loggers were maintained into 2010 so we assume data was field downloaded at that time. These loggers were placed back into the water and would have recorded data until the memory was full</p>	<p>In the Water Resources Study Report, the water temperature sampling protocol will be corrected as you recommend. KHL is using the term, “data logger” as a general description of a tool utilized to collect data. The subsequent statements in the same paragraph outline the specific instruments that are being utilized for both instantaneous and continuous data collection, <i>“At both GLOut and GLTS, temperatures will be measured in a vertical transect during water quality sampling events with aYSI or Hydrolab multi-parameter meter using a 20-meter cable calibrated at one meter intervals. The instantaneous water temperature measurements will be used to supplement the continually recorded temperature data. HOBO Pro V2 temperature data loggers will also be used at the proposed intake site on Grant Lake. A thermistor string was installed in 2009 along a vertical transect in this location to a depth of 20 meters. Data loggers were attached to the string at depths of</i></p>

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				or the internal batteries were depleted. The batteries usually last five years on these units so it is possible that there is recorded data which may be accessed. Every attempt to recover this data should be used, including sending units back to the manufacturer to recover data from “dead” units. This section should include those data recovery efforts but only identifies testing, reinstallation or replacement.	<i>0.2, 0.5, 1.5, 3, 6, 9, 12, 15, 18 and 19.5 meters. The data loggers recorded temperature at 4-hour intervals.”</i>
33	6/11/13	ADF&G	Water Resources	<p><b>4.2.2 Hydrology</b>  This section discusses stream gage installation and identifies some USGS approved equipment but fails to identify the standards used for installation or who installs and maintains the gage and downloads data. Apparently there will be no winter record. This may be problematic in that project operation appears to be year round. The existing stream flow data is very dated (1947-1958) with limited recent data (2009) and will need to be appropriately updated.  <i>“All installed equipment will be removed by late October or prior to freeze-up.”</i> Is this a single effort for the summer and fall of 2013 only? The installation of a stream gage and associated measurements for only six months will not be adequate to provide a correlation to the historic record.</p>	<p>KHL believes that maintenance and data collection parameters related to the stream gage are explicit throughout Section 4.2.2.1 and 4.2.2.2 of the final Water Resources Study Plan. To summarize, KHL has and will continue to take full responsibility for maintenance, monitoring, offloading and review of data.</p> <p>As with all natural resource information, KHL will collaboratively discuss results with the Stakeholders in an effort assist in determining proposed Project impacts (if any) and develop the appropriate Project plan. KHL recognizes the need for an up to date hydrologic record and is committed to discussing the need for a multi-year gauging effort that includes a winter record in association with licensing process and subsequent to license acquisition.</p>
34	6/11/13	ADF&G	Water Resources	<p><b>4.2.2.2 Instantaneous Discharge Measurements, Page 12</b>  Stream gage sites are identified but the plan also states: <i>“Measurements at other sites within the Grant Creek drainage will be conducted as those sites are determined, and when stream conditions permit.”</i>  Will discharge measurements be taken at the 18 transects identified in other the Aquatic Resources study plan? There has been no mapping provided to identify those transects. What other discharge measurement sites may be determined and how will they be determined?</p>	<p>The primary discharge section will be proximal to the gage site (GC200) to insure an accurate stage-q relationship is developed at this historic stream gaging location. Additional discharge measurements will be collected in Reach 4 and Reach 1 as part of the instream flow study. Results from the Reach 4 and Reach 1 discharge data will aid in understanding how much water is lost or gained upstream and downstream of the gaging location. There should be no expectation that each gage servicing and calibration will include discharge measurements at the 18 instream flow transects.</p> <p>Figure 3 of the Aquatics Study Plan provides a map of the 18 transects on Grant Creek.</p>

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35	6/11/13	ADF&G	Water Resources	<p><b>Page 13, Boat or ADCP Method</b></p> <p>Safety of personnel is always a primary concern for field work. This section calls for a River Cat trimaran to be used to work the ADCP unit across the stream during periods of high water levels or high flows. This will require a rope or cable to be stretched across the stream at cross section locations. How will the personnel be able to establish these ropes or cables during periods of high water or high velocity. Most likely, these ropes or cables would not be allowed to remain in place over this stream for several months. This would be a safety concern as an attractive nuisance to hikers or people using the trails along Grant Creek.</p>	<p>KHL's natural resource team has an extensive amount of experience utilizing ADCP's in high water environments. High flow measurements commensurate with KHL's internal safety plan have already taken place. All cable and rope used to facilitate this effort were installed and immediately removed after the measurement was completed.</p>
36	6/11/13	ADF&G	Water Resources	<p><b>Page 14, paragraph 2</b></p> <p>The salt dilution method to measure stream discharge is described in general terms in this paragraph. The method is vaguely described and lacks the procedure details similar to those provided in the Wading Method on page 12. For example, is raw salt just dumped into the stream or is a brine solution mixed and used? Where will the measurements be taken and is distance from input point important? The plan states common table salt may be used....Is there a difference between iodized salt and un-iodized salt? This method, while recognized by USGS, is one of the least conclusive methods recognized and should only be used as a last resort. The plan states that the salt is preferred because it is non-toxic to aquatic organisms at the concentrations and exposure times used, but fails to identify concentrations and exposure times. Salinity can cause chemical burning of gill structures in salmon alevin which may result in reduced vitality and/or delayed mortality. The time of year proposed would impact alevin in the stream gravels. A complete study plan using this method must identify concentrations, duration and potential impacts. This</p>	<p>During low flow conditions (April of 2013), appropriate cross sections were identified within the canyon to directly measure discharge via the USGS wading method. Therefore, the salt dilution method is not being used during the 2013 Water Resources Study effort.</p>

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				plan falls well short of providing adequate information.	
37	6/11/13	ADF&G	Water Resources	<p><b>4.2.3.2 Grant Creek spawning substrate recruitment study, Page 15</b></p> <p><i>“Qualitative geomorphic assessment will be based on detailed observations of the Cooper Lake watershed, known geological conditions, and professional interpretation of observed geomorphic processes.”</i></p> <p>The Cooper Lake watershed is an impacted system which has changed the way the watershed functions. There is no outflow from Cooper Lake to Cooper Creek, therefore caution must be exercised in transferring geomorphic condition evaluation from that watershed to another which is currently not impacted.</p>	Comment noted.
38	6/11/13	ADF&G	Water Resources	<p><b>6 Project Nexus</b></p> <p><b>6.1 Water Quality and Temperature, Page 16</b></p> <p>Discussion of the HOBO U20 water level logger again fails to identify the specific units to be used. See comment for discussion of these units (from page 8 of study plan).</p>	See response to Comment 31 above
39	6/11/13	ADF&G	Water Resources	<p><b>7 Consistency with Generally Accepted Practices</b></p> <p><b>7.1 Water Quality and Temperature, Page 17</b></p> <p>Discussion of the HOBO U20 water level logger again fails to identify the specific units to be used. See comment for discussion of these units (from page 8 of study plan).</p>	See response to Comment 31 above
40	6/11/13	ADF&G	Terrestrial Resources	<p>On July 6, 2010, our department provided the following comment on the Draft Terrestrial Study Plan.</p> <p><i>“We support the delineation of the zone of inundation potential along the entire shore of Grant Lake and recommend quantifying the distribution of each riparian/terrestrial habitat type and the relative abundance of aquatic and riparian species utilizing each habitat. We are primarily concerned</i></p>	KHL anticipates little to no inundation associated with the Project in excess of what currently occurs naturally. This will be confirmed or refuted by the engineering feasibility work that will be taking place the remainder of 2013 and in 2014. Once operational scenarios and Project infrastructure are refined and decided upon and if it is determined that inundation at the lake will deviate from the existing natural condition, KHL will work with Stakeholders to assess the extent of impact to the inundation zone.



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				<p><i>with habitats selected by waterbirds (waterfowl, shorebirds, loons, gulls, and terns) for breeding and those selected by moose for browse, cover and thermoregulation. To evaluate the proposal of increasing the lake levels, a quantitative summary of the relative abundance of these species by specific habitat types is needed along with the extent to which these habitats will be inundated. Waterbird surveys should also be conducted for Grant Creek by noting habitat associations with the meso habitats identified in the Aquatic Resources Study and with particular riparian habitat types being mapped in the Terrestrial Resources Study."</i></p> <p>The Kenai Hydro, LLC (KHL) response is taken from the Summary of Comments matrix provided to the agencies in December 2012:  <i>"The Terrestrial Resources Study Plan is designed to collect vegetation and wildlife data in potentially affected areas along the Grant Lake shoreline. If inundation will occur based on the final Project design proposal, potential effects of this inundation will be discussed in the Terrestrial Resources Study Report and presented in the draft and final license applications."</i></p> <p>The area of inundation does need to be determined and provided to supply reviewers with information to determine the extent of potential resource impacts which may be caused by this project. Other projects have developed an inundation study to determine impacts. The attempt to delay identification and study of the area of inundation until the Draft License Application is filed with FERC is not acceptable. The response of KHL is not accepted by this agency. Define your project so that there is little or no speculation about what will occur, how the project will be operated and provide correct studies for timely evaluation.</p>	

# Grant Lake Hydroelectric Project (FERC No. 13212) Licensing

## Consultation Record

### Phone/E-mail/One-on-One Meeting Log

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*Contact Name:* Jeff Selinger

*Agency/Organization:* Alaska Department of Fish and Game

*Phone No./E-mail Address:* (907) 262-9368

*Date:* 28 August 2013

*Time:* ~9am

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*Grant Lake Licensing Team Contact:* Amal Ajmi

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#### *Summary of Conversation and/or E-mail Exchange:*

Jeff said that most of the moose composition survey and census work has been in the GMU 15A and 15C areas for intensive management purposes. There is not a lot of info on the Grant lake area. There is no good info on the forage use by moose in summer or fall in the area. They do like willow bars in the winter.

I asked about the latest management reports and he said that many were more recent than the last go around. So I will utilize the following: 2010 Moose Management Report

He said that we should be aware that our winter use surveys will not give us summer and fall use information of the area. He suspects that many moose depart the area in the late fall and winter in the Trail river drainage as well as the NE portion of Grant lake through the low pass into Moose Creek. We should note this discrepancy in the final report, that our surveys will not be representative of Overall use of the area. Jeff thought that flying surveys this time of year (September) late in the day to not conflict with hunting season; would give a much better idea of moose summer and fall use of the area, which is a very biologically important time for fat build up. These along with the winter flights would give a better all-round picture of use. However, this was not a request to change the study plan, it was just a thought.

Jeff said that there is concern regarding the inundation of the lake edges due to the proposed raise in the lake level and what that will do to the forage. However, he did say that the resulting edge effect might be a benefit, but he couldn't stipulate.

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**From:** Cory Warnock  
**Sent:** Friday, August 30, 2013 1:15 PM  
**To:** David Griffin (david.griffin@alaska.gov); Cassie Thomas; Patricia Berkahn (patricia.berkhahn@alaska.gov); Eric Rothwell; rstovall@fs.fed.us; Lesli Schick (lesli.schick@alaska.gov); pamela.russell@alaska.gov; 'Katherine McCafferty (katherine.a.mccafferty2@usace.army.mil)'; Audrey Alstrom (aalstrom@aidea.org); Monte Miller; Jason Mouw  
**Cc:** Mike Salzetti; John Stevenson; Emily Andersen  
**Subject:** RE: Grant Creek Site Visit (September 5th)

Hi all,

Just one final reminder regarding our site visit next Thursday (September 5<sup>th</sup>). We'd like to have everyone at the parking lot and ready to go by 9am. We'll have you back to your vehicles by no later than 3pm (likely a bit earlier). The current forecast is calling for showers so in addition to your waders, it would be a good idea to bring some rain gear. I know I'm likely stating the obvious to most of you but in an effort to be thorough, I'll risk it! HEA will be providing lunch for everyone. For those who plan on hiking all the way upstream to the beginning of the canyon reach and seeing some of the upper study infrastructure, a backpack would probably be a good idea. We'll be ferrying everyone across Trail Lakes to the site and we will be without access to vehicles until early afternoon when the tour is over. As such, bring everything along that you'll need for the day.

Let me know if you have any final questions leading up to the 5<sup>th</sup> and we are looking forward to having all of you on site,

Cory

**Cory Warnock**  
*Senior Licensing and Regulatory Consultant*

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**From:** Cory Warnock  
**Sent:** Tuesday, August 27, 2013 9:10 AM  
**To:** David Griffin (david.griffin@alaska.gov); Cassie Thomas; Patricia Berkahn (patricia.berkhahn@alaska.gov); Eric Rothwell; rstovall@fs.fed.us; Lesli Schick (lesli.schick@alaska.gov); pamela.russell@alaska.gov; 'Katherine McCafferty (katherine.a.mccafferty2@usace.army.mil)'; Audrey Alstrom (aalstrom@aidea.org); Monte Miller; Jason Mouw  
**Cc:** Mike Salzetti; John Stevenson; Emily Andersen  
**Subject:** Grant Creek Site Visit (September 5th)

Hi all,

If you're receiving this email, it means you've identified yourself as being able to attend the upcoming Grant Creek site visit on September 5<sup>th</sup> (Thursday). We will be focusing our tour on the Grant Creek study effort given that is where a majority of our field effort and study infrastructure will be located during this time. As such, waders should be brought as we will be accessing the site via boat from Moose Pass and spending a majority of our time on the creek. There are multiple occasions when crossing the creek is necessary to access certain areas. While not an overly rugged hike, portions of it can be somewhat strenuous; especially given the brush and understory in certain areas. Rain gear and/or bug spray would also be advisable depending on the weather! Mike Salzetti (HEA), John Stevenson (lead aquatics) and myself will be on site during the tour to lend a hand and answer any questions that come up during the day. We'd like to have everyone meet at the boat dock in Moose Pass at 9am. Directions from both Anchorage and Seward to Moose Pass are linked below and a specific parking instructions map is attached. We have the intention of having everyone back to their vehicles by 3pm. HEA will be providing sack lunches for everyone and we will have two boats responsible for ferrying folks across Trail Lakes to the mouth of Grant Creek. The run (one way) takes about 10 minutes and multiple trips may be required to transport everyone who is attending.

HEA looks forward to a free-flowing discussion and providing you a first-hand view of the environment and study infrastructure, updating you on the status of the field season and continuing the process which will ultimately lead to the development of the 2013 study reports and our associated study results meeting. As you all know, we are still in the middle of our data collection and some primary areas (adult anadromous studies) are just kicking into high gear. As such, we don't anticipate having any in-depth conversations related to analysis and/or findings yet. Our plan for comprehensive study results/report meetings would be to have those in January of 2014 once all 2013 studies are complete.

**Anchorage to Moose Pass -**

<https://maps.google.com/maps?saddr=anchorage,+ak&daddr=moose+pass,+ak&hl=en&sll=48.753312,-122.46131&sspn=0.153468,0.349846&geocode=FQgdpgMdCrQQ9yIBP7MEdpHIVjHjalSnWrp9JQ%3BFUz3mgMdx88Y9ymfMujZPsHHVjGGkQzkXT9UfA&mra=ls&t=m&z=9>

**Seward to Moose Pass -**

[https://maps.google.com/maps?saddr=seward,+ak&daddr=moose+pass,+ak&hl=en&sll=48.753312,-122.46131&sspn=0.153468,0.349846&geocode=FecdlQMdUrEX9ynF\\_yrybpvHVjG\\_Edl2wmDhWw%3BFUz3mgMdx88Y9ymfMujZPsHHVjGGkQzkXT9UfA&mra=ls&t=m&z=10](https://maps.google.com/maps?saddr=seward,+ak&daddr=moose+pass,+ak&hl=en&sll=48.753312,-122.46131&sspn=0.153468,0.349846&geocode=FecdlQMdUrEX9ynF_yrybpvHVjG_Edl2wmDhWw%3BFUz3mgMdx88Y9ymfMujZPsHHVjGGkQzkXT9UfA&mra=ls&t=m&z=10)

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