

Lewis River Hydroelectric Projects

FERC Nos. 935, 2071, 2111, 2213

Annual Summary of Settlement Agreement Implementation:
Aquatic and Terrestrial Resources



Final 2007 ACC/TCC
Annual Report



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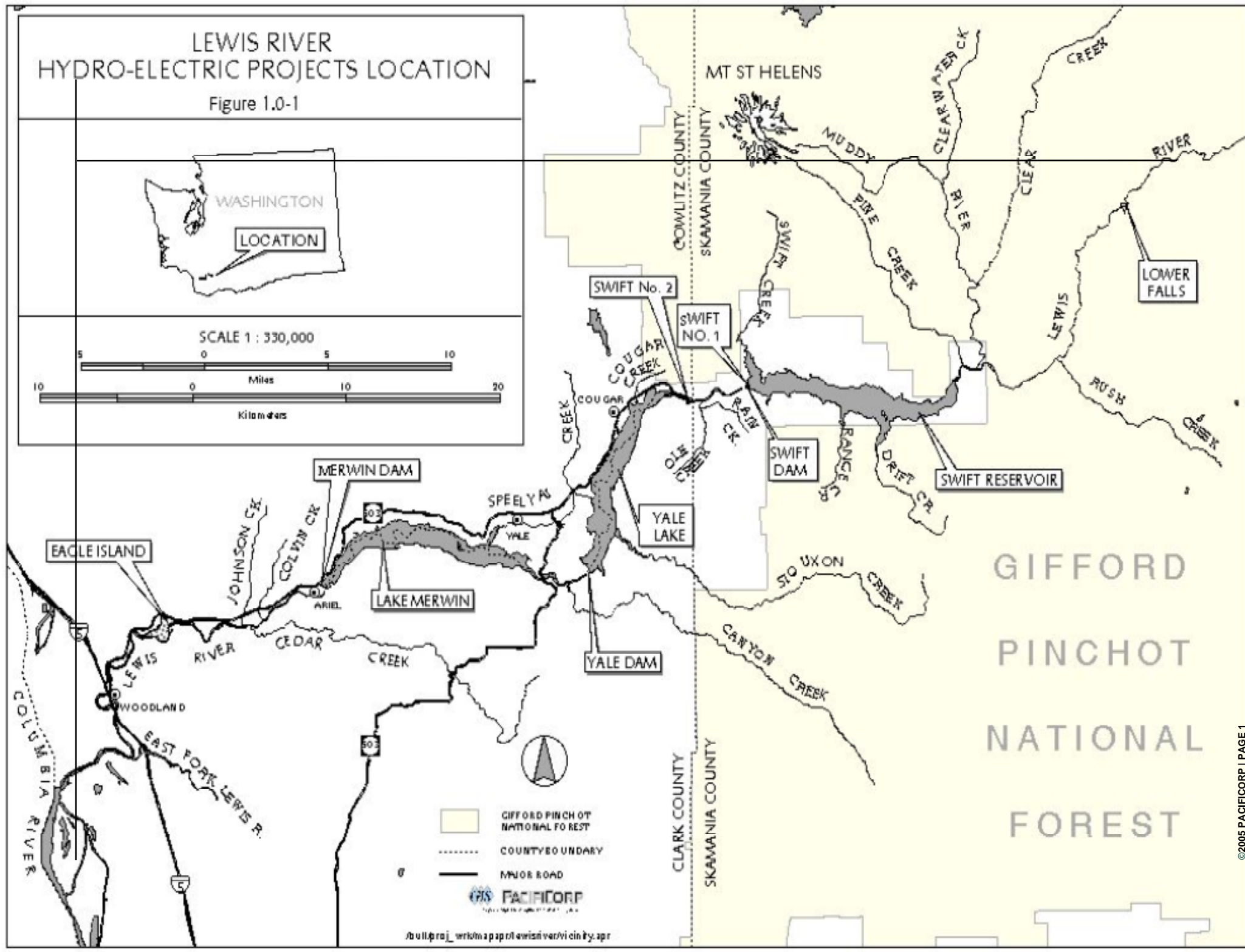


LEWIS RIVER HYDRO-ELECTRIC PROJECTS LOCATION

Figure 1.0-1



SCALE 1 : 330,000



GIFFORD
PINCHOT
NATIONAL
FOREST

- GIFFORD PINCHOT NATIONAL FOREST
- COUNTY BOUNDARY
- MAJOR ROAD

PACIFICORP
AN AMERICAN ENERGY COMPANY

As of 10/1/01, with a map of Lewis River by apr

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SECTION 1 – INTRODUCTION

1.0 INTRODUCTION

This 2007 annual report prepared by PacifiCorp Energy and the Public Utility District No. 1 of Cowlitz County, Washington (“Cowlitz PUD”) is provided to the Federal Energy Regulatory Commission (FERC) and the Lewis River Settlement Parties to fulfill the reporting requirements in Article 14.2.6 of the Lewis River Settlement Agreement (SA). It has been prepared in consultation with Terrestrial Coordination Committee (TCC) and Aquatic Coordination Committee (ACC) members. Period of record for this report is from January 1, 2007 to December 31, 2007.

To reflect the settlement Parties’ interest in continuing coordination and communication of the implementation of SA and new FERC licenses, Article 14.2.6 of the SA requires PacifiCorp Energy and Cowlitz PUD to prepare annual reports describing the activities of the TCC and the ACC. This SA Article stipulates that the Committee Coordinators for the TCC and ACC shall prepare and file with the FERC detailed annual reports on the fish and wildlife Protection, Mitigation, and Enhancement (PM&E) measures occurring during the prior year as well as plans for the coming year. The reports are to be prepared in consultation with committee members.

Per the Article language, any comments that were not incorporated into this final report are presented in Appendix C of this report.

This 2007 report is available to the Public on PacifiCorp Energy’s website at <http://www.pacificorp.com/Article/Article63712.html>. Copies of this report are available from PacifiCorp Energy.

1.1 BACKGROUND

Located on the North Fork of the Lewis River in southwestern Washington, the Lewis River Hydroelectric System consists of four coordinated projects. PacifiCorp Energy owns Swift No. 1 (FERC No. 2111), Yale (FERC No. 2071), and Merwin (FERC No. 935) projects which together generate 510 MW of electricity at full capacity. Cowlitz PUD owns the 70 MW Swift No. 2 Project (FERC No. 2213) which lies between Swift No. 1 and Yale. Currently, PacifiCorp Energy operates Swift No. 2 for Cowlitz PUD under contract.

The Lewis Hydroelectric System was developed over a period of approximately 30 years. The first development, the Merwin project, was completed in 1931. The Yale project was completed next in 1953. The Swift No. 1 and Swift No. 2 projects were both completed in 1958.

1.1.1 Yale FERC License Application

PacifiCorp initiated the federal licensing process for Yale in 1995 and filed the Application for New License to the FERC in 1999 (PacifiCorp 1999a). Since May of 2001 when the license expired, Yale has operated under annual FERC licenses.

1.1.2 Merwin, Swift No.1 and Swift No. 2 FERC License Applications

In January 1999, PacifiCorp and Cowlitz PUD asked the FERC to approve the Alternative Licensing Procedures (ALP) for the simultaneous and coordinated processing of the license applications for Merwin, Yale, Swift No. 1 and Swift No. 2 (PacifiCorp and Cowlitz PUD 1999). In that request, PacifiCorp asked the FERC to accelerate the license expiration date for Merwin from 2009 to 2006 to coincide with the expiration dates for the Swift No. 2 and Swift No. 1 licenses. On April 1, 1999, the FERC approved the ALP for the Lewis River projects and issued an order accelerating the expiration of the Merwin license to May 1, 2006 (FERC 1999). PacifiCorp and Cowlitz PUD initiated the collaborative ALP in April 1999 and held many public meetings to develop and reach consensus on relicensing studies and the Protection, Mitigation and Enhancement measures in the new licenses. Cowlitz PUD filed an Application for New License to the FERC for Swift No. 2 Project in April 2004 (Cowlitz PUD 2004). In the same month, PacifiCorp filed Applications for New License for Swift No. 1 and Merwin (PacifiCorp 2004a, PacifiCorp 2004b).

1.1.3 Settlement Agreement

As a result of the collaborative process, on November 30, 2004, (Effective Date) 26 Parties (including two Licensees, five federal agencies, two state agencies, eight local/county agencies, two tribes, two citizens-at-large, and five non-governmental organizations) signed the Lewis River Settlement Agreement (PacifiCorp et al. 2004). In December 2004, the Licensees filed with the FERC the SA along with a Joint Explanatory Statement and Supplemental Preliminary Draft Environmental Assessment (PacifiCorp and Cowlitz PUD 2004). The SA reflects the interests of all Parties; provides significant investments in fish and aquatic resources, wildlife and recreation; includes monitoring and evaluation and adaptive management; and includes ongoing coordination with the Parties through the Aquatics and Terrestrial Coordination Committees. The SA includes support for 50-year licenses to allow the projects to continue to provide benefits to the Utilities customers. The Lewis River system allows PacifiCorp Energy to maximize the value of its generation assets and power purchases to provide customer benefits. Cowlitz PUD uses its Swift No. 2 power to serve primarily its residential load.

1.1.4 Environmental Impact Statement

In September 2005 the FERC released the Draft Environmental Impact Statement for the Lewis River Hydroelectric Projects (DEIS) (FERC 2005) for public comment. The DEIS was generally consistent with the SA in that it included most of the SA terms. In November 2005, the Parties filed comments on the DEIS. The FERC released the Final Environmental Impact Statement for the Lewis River Hydroelectric Projects on March 24, 2006.

1.1.5 Draft License Articles

The Licensees, with the support of the Parties to the SA, filed consensus Draft License Articles in November and December 2005 (Cowlitz PUD 2005a, PacifiCorp 2005, and Cowlitz PUD 2005b).

1.1.6 Agency Terms and Conditions

The USDA-Forest Service (USFS) submitted modified Terms and Conditions in November 2005 (USDA-FS 2005). The US Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) filed fishway prescriptions on February 22, 2006 and February 14, 2006, respectively.

1.1.7 Endangered Species Act Consultations

In January 2005, Cowlitz PUD and PacifiCorp filed with the FERC Biological Evaluations (BEs) covering federally listed fish and wildlife in the Lewis River basin (PacifiCorp and Cowlitz PUD 2005a, PacifiCorp and Cowlitz PUD 2005b). The FERC then modified the BEs into and included them in the Final EIS and submitted the documents to the Services. The Proposed Action in the BEs is the SA. On September 15, 2006 the USFWS issued a Biological Opinion covering bull trout, northern spotted owls and bald eagles. The National Marine Fisheries Service issued its Biological Opinion covering their respective listed species on August 27, 2007.

1.1.8 Water Quality Certifications

Both Licensees applied to the Washington State Department of Ecology (Ecology) for Clean Water Act Section 401 Water Quality Certifications for their respective projects in February 2005. At Ecology's request, both Licensees withdrew and resubmitted those applications in December 2005. Ecology issued a Draft Certification Order for each of the Lewis River projects on February 10, 2006. Section 401 Water Quality Certifications were issued to the Licensees and filed with FERC on October 9, 2006.

Subsequently, Ecology issued an Order Amendment for the Swift No. 2 project on November 3, 2006 followed by a second Order Amendment (No. 4998) on December 21, 2007 addressing Conditions 4.6.3.e, 4.6.4.a, and 4.6.5.a. in Administrative Order 3676. Final order amendments are expected from WDOE in January 2008 which replaces Condition 3 of Amended Order 4998 (Condition 4.6.5.a of Order 3676).

PacifiCorp Energy filed with the FERC an Objection to Inconsistent 401 Certificates Pursuant to Section 15.2 of the Lewis River Settlement Agreement on November 16, 2006 and conducted two Alternative Dispute Resolution meetings with SA parties on December 11, 2006 and December 15, 2006. Parties reached a resolution at the December 15, 2006 meeting.

On December 21, 2007 the Washington Department of Ecology issued Amended Orders 5000, 4999 and 5001 for the Merwin (Order No. 3678), Yale (Order No. 3677) and Swift No. 1 (Order No. 367) Certifications respectively. These amendments replaced conditions

4.6.3e, 4.6.4a and 4.6.5a of the Merwin, Yale and Swift No. 1 Certifications, as well as condition 4.6.4e of the Swift No. 1 Certification. Subsequently final order amendments are expected from WDOE in January 2008 which replaces condition 4.6.5a as provided in Amended Order 5000 for the Merwin Certification, Amended Order 5328 replacing condition 4.6.5a as provided in Amended Order 4999 for the Yale Certification and Amended Order 5330 replacing condition 4.6.5a as provided in Amended Order 5001 for the Swift No. 1 Certification.

The Water Quality Certifications and associated amendments are available for viewing on PacifiCorp Energy's website at <http://www.pacificorp.com/Article/Article1143.html>.

1.1.9 New FERC Licenses

The Merwin, Yale, Swift No. 1, and Swift No. 2 projects are all currently operating on annual licenses. It is not known when the FERC will issue new licenses for the projects; however the Utilities estimate an issuance date sometime in mid 2008. Nevertheless, the Licensees are implementing the terms of the Settlement Agreement as they relate to the Effective Date to the extent possible, and are conducting some design studies and planning efforts, and obtaining permits in anticipation of license issuance.

1.1.10 2007 Annual Report and Consultation

PacifiCorp Energy and Cowlitz PUD prepared this 2007 Lewis River Hydroelectric Projects Annual Report (Annual Report) in consultation with the ACC and TCC. A draft report was provided to the ACC and TCC on March 11, 2008 for review and comment. Following a 30-day comment period ending on April 14, 2008 the Licensees reviewed the ACC and TCC comments and prepared this final Annual Report. On April 11, 2008 the USDA Forest Service provided comments on the Draft Annual Report (see Appendix C). Responses to the agency's comments are also provided in Appendix C. This report was provided to the FERC and the Settlement Agreement Parties on May 6, 2008 to fulfill the requirements of Section 14.2.6 of the Settlement Agreement.

The period of record for the 2007 Annual Report is January 1, 2007 through December 31, 2007.

The following Plans and Reports were completed in 2007:

- Merwin Tailrace Fish Behavior Study, February 2007
- Draft 2006 ACC/TCC Annual Report, March 2007
- 2007 Final Annual Report – Lewis River Aquatic Fund Projects, April 2007
- Lewis River Fish Passage Swift Downstream Collection – Preliminary Engineering 30% Design Report, April 2007
- Lake Merwin and Swift Creek Reservoir Tributary Streams Bull Trout Limiting Factors Analysis, Final Report, May 2007
- 2006 ACC/TCC Annual Report, May 2007
- 2007 Habitat Preparation Plan - North Fork Lewis River, June 2007

- Lewis River Draft Large Woody Debris (LWD) Study Plan Assessment, April 2007
- Draft Large Woody Debris Assessment, October 2007
- Lewis River Swift Constructed Channel Concept Design, June 2007
- Draft Lewis River Fish Passage Monitoring and Evaluation Plan, October 2007
- Yale Hydroelectric Project Entrainment Final Report – November 2007
- Yale Bull Trout Entrainment Reduction Plan – USFWS Review – December 2007

A water quality monitoring section of this Annual Report has been prepared in cooperation with, and will be provided to Ecology.

1.2 ANNUAL REPORT ORGANIZATION

The 2007 Lewis River Annual Report provides the following information as required under Section 14.2.6 of the SA and the 401 Water Quality Certifications:

Section 2.0 Aquatics and Terrestrial Coordination Committees (ACC, TCC)

Section 2.1 ACC and TCC Membership

Section 3.0 Aquatic Resources

Section 3.1 ACC Meetings
Section 3.2 Engineering Subgroup Meetings
Section 3.3 Aquatic Measures Implemented in 2007
Section 3.4 Aquatics 2008 Annual Plan

Section 4.0 Water Quality

Section 4.1 PacifiCorp Energy Water Quality Measures Implemented in 2007
Section 4.2 PacifiCorp Energy Water Quality 2008 Annual Plan
Section 4.3 Cowlitz PUD Water Quality Measures Implemented in 2007
Section 4.4 Cowlitz PUD Water Quality 2008 Annual Plan

Section 5.0 Terrestrial Resources

Section 5.1 TCC Meetings
Section 5.2 Joint Terrestrial Measures
Section 5.3 PacifiCorp Energy Terrestrial Measures Implemented in 2007
Section 5.4 PacifiCorp Energy Terrestrial 2008 Annual Plan
Section 5.5 Cowlitz PUD Terrestrial Measures Implemented in 2007
Section 5.6 Cowlitz PUD Terrestrial 2008 Annual Plan

Section 6.0 Law Enforcement

Section 6.1 Motorized Vehicle Issues, Vandalism and Malicious Mischief,
Security and Public Safety Support

Section 7.0 Funding Tables

Section 8.0 Literature Cited

SECTION 2 – ACC & TCC COORDINATION

2.0 AQUATICS AND TERRESTRIAL COORDINATION COMMITTEES

Section 14 of the Settlement Agreement includes several measures that define the Parties' roles and obligations. The full text of Section 14 of the Settlement Agreement is provided in Appendix D. The structure and process of the ACC and TCC is intended to provide a forum to address time-sensitive matters, early warning of problems, and coordination of member organization actions, schedule, and decisions to save time and expense. The ACC and TCC make decisions based on consensus, while implementing the Settlement Agreement.

More specifically, Section 14:

- Establishes the Aquatics Coordination Committee (ACC) and Terrestrial Coordination Committee (TCC).
- Establishes the Licensees' ACC and TCC Coordinators (Coordinators).
- Describes the coordination and decision making roles of the ACC and TCC.
- Requires the ACC and TCC to coordinate and Consult on development of plans by the Licensees.
- Requires the ACC and TCC to review information and oversee, guide, and make comments and recommendations on implementation and monitoring of the terrestrial and aquatic Protection, Mitigation and Enhancement (PM&E) Measures, including plans.
- Requires the ACC and TCC to establish, among other things, (i) procedures and protocols for conducting committee meetings and deliberations to ensure efficient participation and decision making; (ii) rules for quorum and decision making in the absence of any member; (iii) alternative meeting formats as desired, including phone or teleconference; and (iv) the methods and procedures for updating committee members on interim progress of development and implementation of the terrestrial and aquatic PM&E Measures.
- Requires the ACC and TCC to establish subcommittees to carry out specified committee functions and responsibilities and establish the size of, membership of, and procedures for, any such subcommittees.

- Requires the Licensees' Coordinators to prepare and file with the FERC detailed annual reports on the TCC and ACC activities; monitoring and evaluations under the Monitoring and Evaluation Plan (M&E Plan) described in SA Section 9; implementation of the terrestrial and aquatic PM&E Measures occurring during the prior year; and plans for the coming year, and water quality monitoring information.
- Requires the Licensees to consult with the ACC and TCC when preparing the Annual Report.

2.1 ACC and TCC MEMBERSHIP

In December 2004 the Licensees appointed their respective ACC and TCC Coordinators. At the same time, the Licensees established the ACC and TCC, and invited the Parties to designate representatives (and alternates) for membership on these committees. Current Party representation for each committee is shown in the Tables 2.1-1 and 2.1-2. Sixteen Parties have designated representatives to the ACC and 11 Parties designated representatives to the TCC.

Committee meetings were conducted in nearly every month in 2007 (Table 2.1-3). During the year, the ACC (including its subcommittees) met (including conference calls) a total of 24 times and the TCC met 12 times.

The purposes of the Coordination Committee meetings were to:

- Develop study and monitoring plans.
- Discuss implementation strategies for PM&E measures.
- Oversee implementation of the PM&E measures.

Sections 3.1, 3.2, and 5.1 summarize the ACC, ACC Engineering Subgroup, and TCC meetings and actions.

**Table 2.1-1
 ACC Members and Alternates**

| ACC Member | Organization | Alternate |
|--------------------------------|--------------------------------------|--------------------------------|
| Kathryn Miller | American Rivers | Brett Swift |
| Public Works Director | City of Woodland | To be named |
| No representative at this time | Clark County | To be named |
| No representative at this time | Cowlitz County | To be named |
| Shannon Wills | Cowlitz Indian Tribe | To be named |
| No representative at this time | Cowlitz-Skamania Fire District No. 7 | To be named |
| Jim Malinowski | Fish First | To be named |
| John Clapp | Lewis River Citizens at-large | To be named |
| Mariah Stoll-Smith Reese | Lewis River Community Council | To be named |
| Jeff Breckel | Lower Columbia River Fish Recovery | Steve Manlow |
| Michelle Day | National Marine Fisheries Service | To be named |
| No representative at this time | National Park Service | To be named |
| No representative at this time | North County Emergency Medical | To be named |
| Frank Shrier | PacifiCorp Energy | Erik Lesko |
| Diana M. Gritten-MacDonald | PUD of Cowlitz County | To be named |
| No representative at this time | Rocky Mountain Elk Foundation | To be named |
| Paul Pearce | Skamania County | To be named |
| Brett Swift | The Native Fish Society | To be named |
| Kathryn Miller | Trout Unlimited | Brett Swift |
| No representative at this time | US Bureau of Land Mgmt | To be named |
| LouEllyn Jones | US Fish & Wildlife | Joe Hiss |
| Diana Perez | USDA Forest Service | Adam Haspiel |
| Curt Leigh | Washington Dept of Fish & Wildlife | Steve Vigg and John Weinheimer |
| No representative at this time | Washington Interagency Committee | To be named |
| No representative at this time | Woodland Chamber of Commerce | To be named |
| George Lee | Yakama Nation | To be named |

**Table 2.1-2
 TCC Members and Alternates**

| TCC Member | Organization | Alternate |
|--------------------------------|--------------------------------------|------------------|
| No representative at this time | American Rivers | To be named |
| Public Works Director | City of Woodland | To be named |
| No representative at this time | Clark County | To be named |
| No representative at this time | Cowlitz County | To be named |
| Mike Iyall | Cowlitz Indian Tribe | Shannon Wills |
| No representative at this time | Cowlitz-Skamania Fire District No. 7 | To be named |
| No representative at this time | Fish First | To be named |
| John Clapp | Lewis River Citizens at-large | To be named |
| Mariah Stoll-Smith Reese | Lewis River Community Council | To be named |
| No representative at this time | Lower Columbia River Fish Recovery | To be named |
| Michelle Day | National Marine Fisheries Service | To be named |
| No representative at this time | National Park Service | To be named |
| No representative at this time | North County Emergency Medical | To be named |
| Kirk Naylor | PacifiCorp Energy | To be named |
| Diana M. Gritten-MacDonald | PUD of Cowlitz County | To be named |
| Bob Nelson | Rocky Mountain Elk Foundation | Ray Crosswell |
| Paul Pearce | Skamania County | To be named |
| No representative at this time | The Native Fish Society | To be named |
| No representative at this time | Trout Unlimited | To be named |
| No representative at this time | US Bureau of Land Mgmt | To be named |
| LouEllyn Jones | US Fish & Wildlife | Joe Hiss |
| Mitch Wainwright | USDA Forest Service | To be named |
| Curt Leigh | Washington Dept of Fish & Wildlife | Brock Applegate |
| No representative at this time | Washington Interagency Committee | To be named |
| No representative at this time | Woodland Chamber of Commerce | To be named |
| Clifford Casseseka | Yakama Nation | Joanna Meninick |

Table 2.1-3

Coordination Activity Status during the 2007 Reporting Period

| SA Article | Coordination Activity | Status |
|---------------|--|---|
| 14.2 | Coordination Committees <ul style="list-style-type: none">• Convene ACC and TCC• Identify Committee Representatives• Conduct meetings as necessary; minimum of at least 1 annual meeting• Prepare and file Annual Report | Convened a total of 36 meetings with ACC, TCC, or related subgroups in 2007. Meeting notes from each meeting are available. The 2007 Annual Report to be finalized by the Committees in 2008. |

SECTION 3 – AQUATIC RESOURCES

3.0 AQUATICS RESOURCES

3.1 ACC MEETINGS

The purpose and role of the ACC, as defined in Section 14.1 of the SA is to facilitate coordination and implementation of the aquatic PM&E measures.

The structure and process of the ACC is intended to provide a forum to address time-sensitive matters, early warning of problems, and coordination of member organization actions, schedule, and decisions to save time and expense. The ACC makes decisions based on consensus, while implementing the Settlement Agreement.

3.1.1 ACC Meetings and Conference Calls: Overview

This section summarizes the topics discussed and actions taken during ACC meetings and conference call(s) over the 12-month period.

ACC Meeting No. 1 (Habitat Prioritization Synthesis Subgroup -Workshop) January 5, 2007

- Informed the subgroup of the purpose of this workshop and subsequent workshops to research all available habitat data to use as a tool to determine if certain aquatic funding is meaningful.
- Reviewed and discussed potential resources such as *SalmonScape*, *Ecosystem Diagnosis and Treatment (EDT) Online*, *Gifford Pinchot NF Restoration Plan*, *Synthesis Projects*, *Draft Bull Trout Surveys and Stream Temperature Monitoring Conducted with Selected Watersheds on the Gifford Pinchot National Forest* and agreed to look for additional pertinent data.

ACC Meeting No. 2 January 11, 2007

- Reviewed and discussed Forest Road 90 closure near the preferred acclimation pond site called Crab Creek relating to terrestrial concerns such as protecting deer and elk winter range areas, signage to inform the public and installation of a gate that protects certain areas from public use.
- Discussed creating a plan for designing and developing the Acclimation Pond sites, presenting to the ACC for review and approval, then present to the Forest Service as the NEPA kick-off process for a temporary pond site with a goal of

completing the plan in Summer 2007.

- Reported on the activities of the Habitat Prioritization Synthesis Workshop and informed the ACC of the next scheduled meeting.
- Discussed Fish First concerns relating to nutrient enhancement and allocation of returning bio-mass on the Lewis River system.
- Provided updates and schedule for the *Yale Entrainment Evaluation, Bull Trout Limiting Factors Analysis, Habitat Preparation Plan, Merwin Tailrace Fish Behavior Study, Merwin Sorting Facility Design, Constructed Channel, the Swift Surface Collector Design*, the NMFS Biological Opinion schedule and the expected date of the Lewis River license issuance.
- Provided updates on the Hatchery and Supplementation Plan (H&S Plan) to include the needed time line for implementation of the winter steelhead program.
- Reported on the status of the *Lewis River Upper Flow Release – Jan 2007* and distributed 60% design drawings for a 30-day review and comment period. Informed ACC that the design drawings are based on comments received from the Washington Department of Ecology. Requested that ACC comments be provided on or before February 12, 2007.

**ACC Meeting No. 3
February 8, 2007**

- Reported on the status of the Lewis River Hatchery Pond 15 - 30% Design relating to the activities of the Engineering Subgroup over the past 12 months such as key design points, outline of the 50% plans and the construction schedule.
- Requested the ACC provide comment on the Pond 15 - 30% Design on or before Monday, March 12, 2007.
- Provided updates on the *Lewis River Hatchery Upgrade Schedule* and informed the ACC that the delay of License issuance has pushed out the Pond 15 schedule and related ponds 13, 14 & 16 by one year.
- Reviewed and discussed the Habitat Preparation Plan for nutrient enhancement and allocation of returning biomass in the Lewis River basin.
- Reviewed and discussed unresolved items relating to the *Lewis River Late-winter Steelhead HGMP*, the HGMP milestone schedule, and the status of the Hatchery & Supplementation Plan. Requested all comments be provided on or before February 16, 2007.

- Consultant provided a presentation and update of the *Bull Trout Limiting Factors Analysis – 70% Draft* for ACC review and discussion.
- Reviewed and discussed the *2007 Lewis River Aquatic Fund Final Proposals Matrix* to include comments and recommendations for funding. Requested all comments be provided on or before March 6, 2007.
- Reported on the status of the *Yale Entrainment Study, Merwin Tailrace Behavior Study, Merwin Sorting Facility Design, Acclimation Pond Plan* and the *Habitat Prioritization Synthesis Tool*.

ACC Meeting No. 4
March 8, 2007

- Reported on the status and provided a PowerPoint presentation overview relating to the Swift Surface Collector Design to include the Lewis River anadromous fish re-introduction program, the release site, collection and sorting, and the Swift reservoir release point.
- Consultant provided a presentation and update of the Lower Constructed Channel Habitat Options from a geomorphic overview for ACC review and discussion.
- Reviewed nine (9) selected 2006/2007 *Lewis River Aquatics Fund – Resource Projects* and the ACC approved three from the USFS: 1) Dispersed Camping and Day Use Road Restoration, 2) Nutrient Enhancement on the Pine Creek – 2007, 3) Rush Creek Gravel Restoration and three from the Cowlitz Indian Tribe: 1) Martin Access Riparian Forest and Off-channel Habitat Enhancement, 2) Plas Newydd Riparian Forest Enhancement and 3) Two Forks Access Riparian Forest Enhancement.
- Reported update on the ACC/TCC Annual Report and informed the ACC that the report will be available for a 30-day review the week of March 12, 2007.
- Reported to the ACC that the River Late Winter Steelhead - Hatchery Genetics Management Plan (HGMP) is ready for ACC review and comment on or before March 23, 2007.
- Reported update and a PowerPoint presentation on the Lewis River Bull Trout Monitoring Program Results to assist the ACC in reviewing both the bull trout plan and report.
- Provided update on the FERC relicensing process.
- Reported an update on the *Yale Entrainment Study, Large Woody Debris Study Plan, Merwin Sorting Facility Design, Acclimation Pond Plan, Hatchery*

*Upgrades, Speelyai Hatchery Addition, and on the activities of the Habitat
Prioritization Synthesis Subgroup.*

ACC Meeting No. 5

April 12, 2007

- Provided update on the FERC relicensing process.
- Reported to the ACC that PacifiCorp will respond to WDFW comments relating to the addition of bathymetry mapping data of each reservoir into the Draft 2006 ACC/TCC Annual Report by way of inclusion of the comments as an Appendix to the report.
- Reported to the ACC that WDFW submitted the *Final Draft North Fork Lewis Late Winter Steelhead HGMP* to NOAA Fisheries on April 10, 2007.
- Consultant provided a PowerPoint presentation and update of the Winter Steelhead and Upper River Rainbow Trout Findings for ACC review and discussion.
- Reported updates on the *Yale Entrainment Study, Large Woody Debris Study Plan, Merwin Sorting Facility Design, Acclimation Pond Plan, Hatchery Upgrades, Swift Constructed Channel, the Lewis River Upper Flow Release and the Habitat Preparation Plan.*
- Reviewed and discussed the habitat synthesis table regarding updating the matrix to include maps and photos.

ACC Meeting No. 6

May 10, 2007

- Provided update on the FERC relicensing process.
- Reported to ACC that comments on the Habitat Preparation Plan (HPP) are due on or before June 1, 2007.
- Consultant provided a *Lewis River LWD Study Technical Memorandum* for ACC review and discussion and requested the ACC provide comments on or before June 1, 2007.
- Reported update and reviewed a PowerPoint presentation relating to the Yale Entrainment Study. Comments are due on or before June 15, 2007 but have been extended to June 22, 2007 to allow for additional review and discussion.

- Reported updates on the *Merwin Sorting Facility Design, Lewis River Fish Passage Swift Downstream Collection (The 30 percent design report was submitted on April 30, 2007 to parties for review and comment), Swift Constructed Channel Concept Design, Hatchery Upgrades, Bull Trout Limiting Factors Analysis QHA Model, Hatchery and Supplementation Plan, and the Habitat Synthesis Subgroup activities.*

ACC Meeting No. 7

June 14, 2007

- Provided update on the FERC relicensing process.
- Reviewed and discussed correspondence with WDFW regarding state-wide allocation of hatchery origin salmon and steelhead carcasses (nutrient enhancement).
- Consultant provided a PowerPoint presentation of the Yale Entrainment Report for ACC review to include visual of a typical echogram, illustration of target strength, fish trace and a series of individual echoes.
- Reported to the ACC that PacifiCorp is proceeding with the Merwin Fish Trap 30% design and provided a PowerPoint presentation which illustrated the existing Merwin Trap features and provided a handout titled, "*Merwin Upstream Collection and Transport Facility Phased Implementation Proposal Summary, dated May 31, 2007*" that provided further detail to the phased approach to construction.
- Provided a PowerPoint presentation and reported an update relating to the Swift Surface Fish Collector Design, which illustrated a number of options explored by the engineering design team.
- Reviewed and discussed WDFW comments relating to the Habitat Preparation Plan (HPP), which PacifiCorp will incorporate into the HPP.
- Informed ACC that the *2006 ACC/TCC Annual Report* was submitted to the FERC on May 4, 2007.
- Reported updates on the *Swift Constructed Channel Concept Design, Swift Upper Release Design, Large Woody Debris Study, Hatchery Upgrades (Pond 15), Hatchery and Supplementation Plan, Acclimation Pond Plan* and the Habitat Synthesis Subgroup activities.
- Informed to the ACC that Cowlitz PUD lost use of one of the Swift No. 2 units last March 2007, which restricts PacifiCorp's ability to make full use of the Swift No. 1 plant without sending water over the canal wasteway. PacifiCorp discussed

with the PUD about using the surge arresting structure (SAS) for both emergency and operational purposes.

- The ACC agreed to cancel the July 12, 2007 meeting and resume regularly scheduled meetings on August 9, 2007.
- Reviewed and discussed the habitat synthesis table regarding updating the matrix to include grouping by Hydrologic Unit Code (HUC) and color coded accordingly, to include a ranking system to aid those using the tool and to include the addition of those projects previously funded by PacifiCorp.

ACC Meeting No. 8
August 9, 2007

- Provided update on the FERC relicensing process.
- Consultant provided a PowerPoint presentation titled, Lewis River Projects – Shoreline Management Plan (SMP) to include management goals and objectives, land-use classifications, allowable uses, permitting policies & standards, SMP update policies, consultation procedures and project schedule.
- Reviewed and discussed the logistics of adding a criteria screen in front of the Merwin Fish Collection Trap pump intakes and the outage period during construction of the trap.
- Reported on status of the *Swift Constructed Channel Concept Design*, the *Swift Upper Release Design*, the *Large Woody Debris Study*, Hatchery Upgrades (Pond 15 and Speelyai Burrows Pond), *Hatchery and Supplementation Plan*, *Acclimation Pond Plan*, and the *Yale Entrainment Report*.
- Review and discussion on the habitat synthesis table regarding updating the matrix to include entering additional EDT data to assist with creating a ranking system.

ACC Meeting No. 9
September 13, 2007

- Informed the ACC that the NMFS Biological Opinion was submitted to the FERC on August 27, 2007.
- Reported on the August 22, 2007 Shoreline Management Plan Public Meeting which included discussion topics such as existing docks, building new docks, and erosion concerns.

- Review and discussion on the Merwin fish trap closure and six month outage period needed for construction of the trap.
- Review and discussion on the Merwin fish trap intake screen criteria, phased construction approach and the 30% design schedule.
- Reported on status of the *Swift Constructed Channel Concept Design*, the *Swift Upper Release Design*, the *Large Woody Debris Study*, the *Habitat Synthesis Tool*, *Hatchery Upgrades (Pond 15 and Speelyai Burrows Pond)*, *Hatchery and Supplementation Plan*, and the *Acclimation Pond Plan*.
- Review and discussion on design modifications relating to the Swift Fish Collector and the Merwin Adult Fish Trap and Sorting Facility.

ACC Meeting No. 10
October 11, 2007

- Provided update on the FERC relicensing process.
- Review and discussion of the Rush Creek Gravel Enhancement Project to include lessons learned and recommendations for the upcoming 2007/2008 aquatic fund pre-proposals.
- Identified the eleven project pre-proposals PacifiCorp received for the 2008 Aquatic Funding period.
- Consultant provided a cursory review of the Lewis River Draft Large Woody Debris (LWD) Assessment, to include the primary tasks, potential benefits and provided the document to the ACC for a 30-day review and comment period. PacifiCorp requested comments on or before November 12, 2007.
- Skamania County representatives presented a comprehensive update and provided a discussion period in regards to the Swift Area Plan to include copies of Swift Subarea Zoning Map.
- Reported on status of the *Swift Constructed Channel Concept Design*, the *Swift Upper Release Design*, the *Habitat Synthesis Tool*, *Hatchery Upgrades (Pond 15, 13, 14 and 16)*, *Hatchery and Supplementation Plan*, *Acclimation Pond Plan*, *Yale Entrainment Final Report and Entrainment Reduction Plan*, *Monitoring & Evaluation Plan* and the *Habitat Preparation Plan*.
- PacifiCorp provided copies of the *Merwin Upstream Trap Draft Study Plan – September 2007* for a 30-day review and comment period. Comments are due on or before November 2, 2007.

- Review and discussion on the habitat synthesis table regarding updating the matrix to include sorting criteria, numeric or qualitative scoring, quality of habitat and need for improvement of habitat.

ACC Meeting No. 11
November 8, 2007

- Provided update on the FERC relicensing process.
- Reviewed and discussed the Utilities recommendations regarding the 2007/2008 Aquatic Fund Pre-proposals as included in an evaluation matrix and the logic for recommendations. Comments on the recommendations were requested from the ACC on or before November 30, 2007.
- The ACC agreed to schedule a conference call on December 4, 2007 to further discuss the final project selections for full proposals.
- Reported on the aquatic funding financial spreadsheet in each account through October 31, 2007.
- Reviewed and discussed the *Bull Trout Action Plan* as presented by USFWS. Plan to be used to identify actions that will earmark high priority tasks for bull trout as a next step toward establishing a 5-year Bull Trout Action Plan.
- Informed the ACC attendees that the *Lewis River Fish Passage Monitoring & Evaluation Plan - ACC Review Draft, October 2007* is now available for a 90-day review and comment period and comments are due on or before January 18, 2008.
- PacifiCorp presented an overview of the *Draft Yale Bull Trout Entrainment Reduction Plan* – November 2007 to include the four methodologies relating to the use of a barrier net, electrical barrier, smaller trash rack spacing, and strobe lights. The Yale Entrainment Final Report and draft Yale Bull Trout Entrainment Reduction Plan were distributed to the ACC on November 7, 2007 for a 30-day review and comment period on the Bull Trout Entrainment Reduction Plan *only*. Requested all comments be provided on or before December 10, 2007.
- Reported on status of the *Swift Constructed Channel Concept Design*, the *Swift Upper Release Design*, *Hatchery Upgrades (Burrows Pond)*, *Hatchery and Supplementation Plan*, *Acclimation Pond Plan* and the *Habitat Synthesis Tool*.
- The ACC agreed to schedule the 2008 ACC meetings on the second Thursday of every month to be conducted at the Merwin Hydro Facility unless agreed otherwise.

- Provided an update of the Lewis River Public Meeting - Implementation of Settlement Agreement which took place in Ariel, Washington on October 17, 2007. PacifiCorp made a presentation to the public which summarized in considerable detail the implementation efforts thus far.

ACC Meeting No. 12
December 4, 2007

- Reviewed the ACC 2007/2008 Aquatic Funding Pre-proposals. Agreed to proceed with request for full-proposal for the following projects:
 - Muddy River Riparian/Floodplain Improvement
 - Clear Creek Road Decommission (2575200)
 - Muddy River Riparian Brushing and Thinning
 - East Fork Lewis River Instream Structures for Steelhead
 - Mud Creek Enhancement
 - Two Forks Off-Channel Habitat Reconnection
 - Panamaker Creek Road Closure and Culvert Removal
- Informed the ACC that a 7-day comment period on the project selection will be provided for all ACC participants not in attendance.

ACC Meeting No. 13
December 13, 2007

- Provided update on the FERC relicensing process.
- Informed the ACC that the final Habitat Synthesis Tool was mailed to each ACC participant on December 7, 2007. The purpose of creating the tool was to research all available habitat data such as information on the key tributaries as identified by EDT, and create a tool, which will summarize the available information in such a way to allow for ACC participants to determine if certain aquatic funding proposals are meaningful.
- Consultant provided a cursory review and PowerPoint presentation of the *Lewis River Fish Passage Monitoring & Evaluation Plan (M&E) - ACC Review Draft, October 2007* which is currently in a 90-day review and comment period. Consultant discussed twenty objectives which are based on the Lewis River Settlement Agreement and are consistent with the Draft Hatchery and Supplementation Plan. All comments on the Plan are due on or before January 18, 2008.
- Informed the ACC that the Lewis River Type S Coho HGMP is available for review and comment. Comments are requested by WDFW on or before December 28, 2007.

- Presented a PowerPoint overview of the Shoreline Management Plan titled, “*Lewis River Projects Shoreline Management Plan (SMP) – Draft Shoreline Classifications and Allowable Uses*” to include management goals and objectives, land use classifications, allowable uses, permitting policies and standards, SMP update policies and consultation procedures. The ACC was also informed that the SMP will serve as a tool to assist in effectively analyzing appropriate shoreline uses within the Project boundaries, as well as provide a supportable and defensible means for shoreline management and permitting decisions. Comments on the draft shoreline classifications and allowable uses were requested on or before December 28, 2007.
- USDA Forest Service presented a short yet insightful DVD for the ACC attendee’s, which was an overview of the quagga mussel invasion of Lake Mead. The narrator communicated that the quagga mussel is an extremely prolific breeder, and they have found their way into the intakes and generators of the Hoover Dam. The narrator also strongly encouraged subject matter experts to incorporate a proactive approach to protecting their rivers from exotic species.
- Provided update of the December 4, 2007 conference call aquatic funding meeting notes and informed the ACC attendees which projects were selected for full proposal. The ACC was informed that PacifiCorp will notify the parties this month that they have been selected for full proposal and an opportunity will be provided at the January 2008 ACC meeting to present additional information relating to their projects.
- PacifiCorp presented a memorandum titled, *Lewis River – Resource Project Approval; Intent of the Settlement Agreement*, dated December 7, 2007 for ACC review. The purpose of the memorandum is to provide some guidance and clarification relating to aquatic resource project approval and aquatics fund expenditures, particularly concerning the Lewis River North Fork vs. Lewis River East Fork and inform the ACC the intent of the Lewis River Settlement Agreement Concerning the Relicensing Agreement Concerning the Relicensing of the Hydroelectric Project.
- Reported on status of the *Yale Entrainment Study, Swift Constructed Channel Concept Design, the Swift Upper Release Design, Hatchery Upgrades (Ponds 13, 14, 15 & 16), Hatchery and Supplementation Plan and the Acclimation Pond Plan*.

3.1.2 ACC Meeting Notes

The Licensees prepared draft notes for ACC meetings and conference calls. These notes were distributed to ACC members for review and comment approximately one week after the subject meeting. After review, revision and approval by the ACC, the final notes were entered in the public record maintained by both Licensees and posted on the

PacifiCorp Energy web site (<http://www.pacificorp.com/Article/Article70987.html>).

3.2 ENGINEERING SUBGROUP MEETINGS

3.2.1 Engineering Subgroup Meetings: Overview

This section summarizes the topics discussed and actions taken during the ACC Engineering Subgroup meetings over the 12-month period.

Subgroup Meeting No. 1 January 30, 2007

- Reviewed and discussed action items from last meeting to include Upper Release Channel review of gravel size calculations, streambed stability and design ideas.
- Reported that the draft upper release channel design is in review with WDFW and was presented to the ACC on January 11, 2007 which opened the 30-day review and comment period.
- Reviewed and discussed the *Swift Floating Surface Collector and Downstream Passage FSC Design Criteria and Evaluation*, the *Swift Dam Floating Surface Collector – CFD Modeling Update*, the *CFD Model Test Plan Management Table*, the *FSC Alternative 3 Plan and Profile Drawings* and the *Fish Holding Volume Calculations Table*.
- Reviewed and discussed the CFD modeling activity to include scenarios of discharging all FSC flow from the north side and or discharging FSC flow from the back of the FSC, a wind sensitivity analysis on the CFD model results, and the effects of moving the upstream boundary condition one mile upstream.
- Reviewed and discussed the modification of the FSC secondary screen design and sorting and transfer alternatives (external smolt holding and on-board smolt holding).

Subgroup Meeting No. 2 March 13, 2007

- Reported on the status of the NMFS Biological Opinion and FERC license issuance.
- Reported that the ACC provided comments on the Upper Release Channel design and the comments are currently being incorporated into the design for permitting.

- Presented a PowerPoint presentation summarizing the recent Merwin Fish Collection Trap design developments to include three main trap options (Pump Room 1, Corner Entrance 1 and Pump Bay 1), project limitations of the existing facility to include station service capacity, physical space for pipes and diffusers and physical space for pumps.
- Reviewed and discussed pending Merwin Fish Collection Trap action items relating to fish sorting facility design concepts, adjustable vertical slot weir entrance alternative and other entrance alternatives and additional detail on elevator basket/fish loading.
- PacifiCorp Energy identified the Pump Room 1 trap option as their preferred option to best meet the trap performance goals in consideration of trap performance and infrastructure limitations.
- Reviewed and discussed NMFS concerns relating to initial flow and if it will be adequate to attract the fish, the correct timing to implement the phased approach to development at Merwin, the consideration of a physical hydraulic model to help put the recommended flows into perspective and the ability to improve the trap performance for spring Chinook.
- Discussed alternatives relating to a stepped approach (as needed); Build corner entrance with 600 cfs capacity, adding a second fishway entrance and splitting 600 cfs between the two entrances, and adding flow in excess of 600 cfs to either of the two entrances.
- Reviewed and discussed alternatives to the power supply limitations to include the use of turbine pumps, or hydraulically driven pumps, the use of water from the forebay with a cone valve or other means to dissipate the energy to provide the flow.
- Reviewed and discussed expectations for flow redundancy for any of the water supply alternatives.
- Provided a summary of the acclimation fish program so the Engineering Subgroup better understood the ACC's goal with this program.
- Reviewed and discussed NMFS floor and wall diffuser criteria to enhance fish navigation to the bypass route, the orientation of the attraction jet and it's interaction with the turbine discharge and the study of similar fish traps in the region to provide insight on the effectiveness of attraction flow.
- Presented an overview of the fish lift and crowder system to include the goals of the system, available buffers to accommodate peak loading, details of a crowder

that would load the fish into the hopper and the desirability of a dual-basket lift versus a wider entrance channel with a single hopper basket.

- Informed the Subgroup that the design on the sorting facility is temporarily on hold until the Lewis River Hatchery Pond 15 sorting facility design is further advanced.
- Reviewed and discussed the *Swift Downstream Passage Project* to include a PowerPoint presentation showing recent CFD model runs and findings, Floating Surface Collector access and location options (marine railway and trestle and dock), sorting and transfer design, the fish handling process diagram and possible future studies needed, i.e. acoustic tag studies, biological assessment and hydraulic evaluation.
- Informed the Subgroup that the *Swift Downstream Passage Project* 30% submittal is currently targeted for April 2007 and that the 90% design submittal will be due one year after FERC license issuance.

Subgroup Meeting No. 3
April 26, 2007

- Reported on the status of the NMFS Biological Opinion and FERC license issuance.
- Reported on the status of the development work on the Merwin Trap Corner Entrance 1 Option and the Pump Bay 1 Option.
- Reported on the status of the Fish Crowder and Hopper Concept design developments.
- Presented a 3-D rendering of the Lewis River Fish Hatchery Pond 15 sorting facility for discussion, as some of the features are similar for the Merwin facility.
- Reviewed and discussed the *Lewis River Fish Passage Swift Downstream Collection Preliminary Engineering 30% Design Report* which included a 15-page report outlining the design process to date, copies of the CFD model results run to date, drawings of the FSC, drawings of the trestle and the Facility Design Criteria document.
- Informed the Subgroup that the 30% design submittal is required as part of the settlement agreement and that there is a 45-day review and comment period.
- Provided a status summary of the fish sorting to include the current layout for the sorting flumes the approach to separating fry and smolt for subsampling, the

recommended size of the fry and smolt holding tanks, holding density criteria and transport method.

- Informed the Subgroup that a site visit to the Cowlitz Falls Fish Collection Facility was conducted on April 23, 2007 to view the fry and smolt separator in operation and gain information from working sorting systems.

Subgroup Meeting No. 4
May 31, 2007

- Reported on the status of the NMFS Biological Opinion and FERC license issuance.
- Reviewed and discussed further development of the Merwin Fish Trap layout, hydraulics water supply and conveyance of the Corner Entrance 1 Option, the Pump Bay 1 Option and the Pump Room Option to include the number of pools, minimum depth in the loading pool, design modifications to the entrance pool, weir/slot/baffle layout needed to address the goals of hydraulic flow stability, sufficient pool volume to accommodate fish passage rates and pool flow rotation.
- Reported to the Subgroup that, based on continuing design development of the trap entrances and water supply options, the 2005 tailrace behavior study, and the hydrologic/monthly flow analysis, a Phased Trap Implementation Proposal was presented for the Subgroup's consideration titled, *Merwin Upstream Collection and Transport Facility, Phased Implementation Proposal Summary*.
- Review and discussion of the Phase I and Phase II actions including consideration of a phased construction approach to additional flow and/or second entrance construction, limiting total attraction flow to 600 cfs, a fish behavior study to assure that meaningful metrics are identified and are measurable to evaluate trap performance and additional antennas and equipment improvements to help improve the study results.
- Discussed future actions to include sharing the phased approach concept with the ACC, additional development of Pump Room Option, Pump Bay Option and fish sorting facility, consideration of a hydraulic model to assist with the trap design, and an updated schedule showing design milestones now that a general concept is nearing agreement.
- Reported on the status of the Swift Downstream Fish Passage project to include updated cost estimates of the facility and planning for the next phase of the design.

Subgroup Meeting No. 5
July 10, 2007

- Reported on the status of the NMFS Biological Opinion and FERC license issuance.
- Reported on the design status of fish behavior studies which are under consideration such as installing more elaborate sensor array in the Merwin Tailrace and an acoustic fish tracking study.
- Reviewed and discussed the design challenge of routing attraction water to the Merwin Trap fish entrances, the concern about casting a shadow over the fish trap entrances, ways to move the water supply piping to the interior of the dam and creating a gradual and natural lighting transition into the fish conveyance.
- Reviewed and discussed Merwin Trap constructability issues to include the need for more dewatering bulkheads; additional trap outages will likely be necessary which requires review by the ACC; a temporary trap may likely be required to reduce the total trap outage window and a fish pump may be a consideration as part of a temporary trap system.
- Reviewed and discussed Crowder/Lift/Hopper working design drawings to include adjustment of the flume leaving the hopper, modification of discharge gate location, the lift cycle time, the consideration of adding a Riverwatcher® fish counter, flexibility of water supply/depth in the fish flume, the consideration for flume/pipe dryers, and the consideration of electro-shocking baskets.
- Reported on the status of the Swift Downstream Fish Collector net/curtain layout design concepts to solicit input from the Subgroup. The design concepts include a guide net with an impermeable barrier along the top edge, an exclusionary net which covers the full depth of the reservoir and lead nets projecting into the reservoir from the FSC.
- Discussed clarifications to comments made on the Swift Downstream 30% designs.

Subgroup Meeting No. 6
August 17, 2007

- Reported on the status of the NMFS Biological Opinion and FERC license issuance.
- Reported on the status of the Merwin Trap hydraulic model study concepts to include discussion about the trap design and the phased trap implementation proposal.

- Presented an overview of the Fish Behavior Model Study with a PowerPoint presentation titled, *Merwin Trap Evaluation Talking Points* which included a more comprehensive trap biological evaluation to support the phased trap proposal.
- Agency representatives of the subgroup indicated that given 1) the implementation of a hydraulic model study and 2) incorporating the model results into the trap entrance design, and 3) agency approval of a biological study plan, that they support PacifiCorp's phased trap proposal.
- Reviewed and discussed the preliminary water supply schematic, design needs for the preliminary attraction flow pump station and velocities at the various flows and design conditions in the tailrace upstream of the pump intakes and at the pump intake grating.
- Summarized and discussed key points regarding the need to choose an initial entrance flow for the FSC to facilitate the design process.

Subgroup Meeting No. 7
September 27, 2007

- Reviewed and discussed the Merwin Trap tailrace physical hydraulic model study plan to include the structuring of the model runs into two phases and the model activity schedule.
- Presented a Merwin Trap draft water flow diagram that will define supply and drain water for the fish sorting facility.
- Discussed the inspection schedule for 2007 and repair of hatchery water supply line in 2008, as required.
- Provided a status update on the ACC meeting relating to the Merwin Trap outage window and construction schedule estimate. The ACC approved an outage window for the purposes of construction of July 1 to December 31st, which will avoid any collection impacts to spring Chinook.
- Reviewed and discussed the Merwin Trap fish release pipe to river versus transport. PacifiCorp reported that together with the consultant they reviewed the fish numbers expected to use the return-to-river tube and that there was adequate large tank capacity to collect these fish and transport them downstream with the recycle fish. The ACC too agreed that no fish return tube is necessary at the facility.

- Presented a sketch of the Merwin Trap attraction pump station intake rack velocity and design details showing an analysis of pump intake rack velocities at the planned Unit 4 pump station intake. The Subgroup discussed options and agreed to a design criteria.
- Provided a document titled, “*Merwin Upstream Trap Draft Study Plan - September 2007*”, for review and comment on or before November 2, 2007.
- Reviewed and discussed the revisions to the Swift downstream floating surface collection sorting area layout.
- Reported to the Subgroup that members of the design team took part in a tour of the Upper Baker Floating Surface Collector construction occurring at Upper Baker Dam. Agency representatives were also present on the tour, including Jim Stow of USFWS. The Subgroup viewed a number of photographs from the visit and discussed some of the information gathered and lessons learned.

**Subgroup Meeting No. 8
November 2, 2007**

- Reported on status of Merwin Trap physical hydraulic model to include recommended additional survey work, review of draft design drawings for the model and an updated modeling program schedule.
- Reviewed and discussed the Merwin Upstream Trap – Draft Study Plan to include the radio telemetry plan, fish stocks to be involved in the study, electro-anesthesia effects and the Adult Trap Efficiency (ATE) goal.
- Reviewed and discussed the current Merwin Trap sorting facility preliminary design drawings, discussed highlights and identified design issues.
- Review and discussed the updated water demand analysis spreadsheet to include elimination of the recovery tank water demand, the flow-through capacity for the EA, the elimination of the fish return pipe and the elimination of 400 gallon fish trailer.

**Subgroup Meeting No. 11
December 19, 2007**

- Reviewed and discussed the Merwin Trap ATE standard. The ACC indicated that for current design purposes the Engineering Subgroup should use a 95% ATE, provided the subgroup indicated that they could design to that goal. An official design target ATE has not yet been identified.

- Reported on status of findings relating to the Merwin Trap tailrace study plan to include an additional analysis of the hydrology fish collection numbers.
- Reviewed and discussed the Merwin Trap entrance tailrace physical hydraulic model to include submerged weir calculations, entrance pool velocities, energy dissipation and general ladder configuration.
- Informed the Subgroup that the physical hydraulic model construction is progressing on schedule and the viewing is tentatively scheduled for January 25, 2008.
- Reviewed and discussed two types of trap closures which had been identified: (a) planned maintenance shutdown, and (b) emergency shut-down due to either hopper or fish elevator malfunction. Provided a handout titled “Merwin Trap – Trap Closure Procedures” which illustrated the closure procedures.
- Reported on status of the Merwin Trap sorting facility design to include location of sorting tubes and the sorting table design.
- Reviewed and discussed the Swift Downstream guidance system, fish behavior, reservoir flow patterns, possible tools for evaluating performance factors, debris management practices, exclusionary nets, sorting area layout and recommended equipment.

3.2.2 Engineering Subgroup Meetings Notes

The Licensees prepared draft notes for Engineering Subgroup meetings and distributed the notes to Engineering Subgroup members for review and comment approximately one week after the subject meeting. After review, revision and approval by the Engineering Subgroup, the final notes were entered in the public record maintained by both Licensees and posted on the PacifiCorp Energy web site (<http://www.pacificorp.com/Article/Article70987.html>).

3.3 Aquatic Measures Implemented in 2007

This section presents the actions taken during January 2007 through December 2007 toward Aquatic requirements in the Lewis River Settlement Agreement. In some instances previous actions are noted to provide a more comprehensive record.

A discussion of the activities associated with each of the PM&E measures is presented below by SA Article for the report period (Table 3.3-1). A description of funding amounts deposited and disbursed during 2007 is provided in Section 7.0 – Funding.

Table 3.3-1

Aquatics Activity Status during the 2007 Reporting Period

| SA Article | Aquatics Activity | Status |
|------------|--|--|
| 4.1.1 | Fish Passage Measures <ul style="list-style-type: none"> • Studies to Inform Design Decisions | Task complete. Final Merwin Tailrace Fish Behavior Study to inform design of the Merwin upstream trap was issued in January 2007. A draft study to monitor the new trap designed was reviewed by the ACC and shelved pending completion of the 60% design. |
| 4.1.4.c | Fish Passage Measures - Adult Trap Efficiency for Salmonids <ul style="list-style-type: none"> • Develop an ATE performance standard | NMFS, USFWS and WDFW have proposed 98% with a not less than 24 hour delay. Still in discussions. |
| 4.2.b | Merwin Trap - Flow Restrictions <ul style="list-style-type: none"> • Limit river discharge at Merwin to 5,250 or less while personnel are in the fish trap | PacifiCorp coordinated with WDFW to revise the flow criteria to 5,400 cfs and to establish new protocols for interim operation of the Merwin Trap. |
| 4.2.c | Merwin Trap - Merwin Trap Upgrades <ul style="list-style-type: none"> • Identify information needed to improve operating conditions • Coordinate design upgrades with Services and WDFW, final designs with ACC | Task complete. Upgrade designs approved by ACC in January 2007. Final designs were submitted to the FERC and accepted in February 2007. |
| 4.2.d. | Merwin Trap <ul style="list-style-type: none"> • Interim trap data available | Collection and reporting of interim data is ongoing during the preliminary design phase of the Merwin upstream trap. |
| 4.3 | Merwin Upstream Collection and Transport Facility <ul style="list-style-type: none"> • Design Merwin Upstream Transport Facility | PacifiCorp continues working with the ACC Engineering subgroup on design. A 30% design draft of the trap and sorting facility will be issued to the ACC in early 2008. |
| 4.4.3 | Release Ponds <ul style="list-style-type: none"> • Consult with ACC to site the precise location of the release ponds | PacifiCorp consulted with the ACC on to select release site on the lower Lewis River. Currently WDFW owns the land for proposed site. PacifiCorp and WDFW are finalizing arrangements for transfer of ownership to PacifiCorp. |
| 4.9.1 | Interim Bull Trout Collection and Transport - Collect and Haul Program <ul style="list-style-type: none"> • Collect bull trout from the Yale tailrace and below Swift No. 2 and transport upstream of project | PacifiCorp and Cowlitz PUD will submit a draft Collection and Transport plan to USFW and WDFW as part of their annual bull trout plan in 2008. This plan will be reviewed and discussed at the March 2008 ACC meeting. The plan will be finalized by March 31, 2008. |
| 4.9.2 | Interim Bull Trout Collection and Transport - Investigation of Alternative Collection Methods <ul style="list-style-type: none"> • Identify and attempt agency approved collection methods for bull trout | PacifiCorp is in the process of investigating the feasibility of using a floating trap in the Yale tailrace to capture bull trout. Until then, the company continues to deploy tangle nets to capture bull trout as the most effective and safest means to capture bull trout. |
| 4.9.3 | Yale and Merwin Bull Trout Entrainment Reduction <ul style="list-style-type: none"> • Design study to evaluate bull trout entrainment reduction methods | The study is complete and a final report issued November 2007. PacifiCorp is working on an experimental design to test the electrical barrier. |

Table 3.3-1

Aquatics Activity Status during the 2007 Reporting Period

| SA Article | Aquatics Activity | Status |
|------------|---|---|
| 5.2 | Bull Trout Habitat Enhancement Measures <ul style="list-style-type: none"> • Manage Cougar Creek Conservation Covenant and the Devil's Backbone Conservation Covenant to benefit of bull trout | PacifiCorp managed the Cougar Creek CC for bull trout and Cowlitz PUD managed the Devil's Backbone CC for bull trout. Management of these areas is ongoing. |
| 5.5 | Bull Trout Limiting Factors Analysis <ul style="list-style-type: none"> • Initiate scoping of Analysis work | Task Complete. PacifiCorp issued a final report in for January 2007. |
| 6.1.2 | Construction of Upper Release Point <ul style="list-style-type: none"> • Provide the ACC the location of the Upper Release Point | PacifiCorp has completed design of the upper release point. Permit applications will be completed and submitted by in 2008. Construction activities are anticipated to begin in early 2009 depending on license issuance. |
| 6.1.3b | Constructed Channel - Channel Design and Cost Estimate <ul style="list-style-type: none"> • Complete a design for construction and maintenance of the Channel | PacifiCorp has completed design of the Constructed Channel. Permit applications will be completed and submitted in 2008. Construction activities are anticipated to begin after completion of the upper release point in the summer of 2009. Construction activities are dependent on license issuance. |
| 7.2 | Spawning Gravel Study and Gravel Monitoring and Augmentation Plan <ul style="list-style-type: none"> • Contract Consultant • Direct the consultant to submit a draft study plan to the ACC | The spawning gravel study was provided to the ACC in December 2007. Stillwater Sciences will monitor the gravel plots and make further observations on spawning use over the next two years so as to provide more information to develop the gravel augmentation plan. |
| 7.4 | Habitat Preparation Plan <ul style="list-style-type: none"> • Prepare HPP in consultation with ACC • Complete HPP actions | A draft HPP will be made available in May 2008 to the ACC members. Components of the plan will be similar to previous years. Based on return of spring chinook and concurrence with tribal entities the HPP may include provisions for transport of some spring chinook into the Lewis River upstream of Swift dam. |
| 7.5 | Aquatics Fund <ul style="list-style-type: none"> • Make \$300,000 available to the Fund • Develop strategy and administrative procedures • Initiate strategy and procedures | Resource projects were funded and the process was repeated in 2006 and 2007. Final project selection for 2008 funding will be made by the ACC in early 2008. |
| 8.2.1 | Hatchery and Supplementation Plan <ul style="list-style-type: none"> • Produce and distribute a draft Hatchery and Supplementation Plan to the ACC | A final draft H&S plan was submitted to the Services in 2006. Acceptance of the plan by the Services is delayed until completion of the Hatchery Genetic Management Plans (by WDFW) which must be consistent with the H&S Plan. Acceptance of the H&S plan is anticipated in 2008. |

3.3.1 SA Section 4.1 Common Provisions Regarding Fish Collection and Transport Facilities

Studies to Inform Design Decisions (SA 4.1.1)

PacifiCorp Energy initiated the Merwin Tailrace Fish Behavior study to provide information that could assist the planning and design of the Merwin Upstream Collection and Transport Facility. The study plan was developed in coordination with the ACC and was finalized as a revised document on June 30, 2005 and posted on the Lewis River website at <http://www.pacificorp.com/File/File61936.pdf>. Originally the study was to include a hydroacoustic component, however, after four months of collecting data, it became apparent that the equipment was not collecting accurate information. This inaccuracy was due to a large number of fish that either passed back and forth through the acoustic field, or were fish that held in the field for long periods. This resulted in false passage counts and population estimates that indicated a negative number of fish entering the tailrace area. Compared to the actual number of fish caught in the trap, this could not be possible so this part of the study was eliminated. In 2005, 100 adult coho were tagged and tracked, as well as 100 summer and 100 winter steelhead. Spring Chinook were tagged and tracked in Spring 2006. Study was completed and a final issued in February 2007.

Adult Trap Efficiency for Salmonids (SA 4.1.4c)

Per discussions with stakeholders, ATE discussions will continue once results from the Merwin Tailrace Fish Behavior study are available and the Engineering Subgroup has provided some assurance of the ability to design for 95% ATE.

3.3.2 SA Section 4.2 Merwin Trap

Merwin Trap Flow Restrictions (SA 4.2b)

To provide a margin of safety for personnel, PacifiCorp Energy limited the river discharge at Merwin dam/powerhouse to 5,400 cfs or less as river flow conditions warranted when personnel were in the trap. Flow limitations were coordinated with WDFW hatchery staff.

Merwin Trap Upgrades (SA 4.2c)

On November 29, 2005 PacifiCorp Energy provided the Services (USFWS and NOAA Fisheries) and WDFW a letter requesting a meeting to discuss potential upgrades and operational procedures to improve operating conditions for personnel working in the Merwin Trap by providing a greater margin of safety. Attached to the letter was a memo that identified company proposed measures and a supporting Engineering Study (Report No. RES 3000028924). The report was posted on the Lewis River website and can be viewed at: <http://www.pacificorp.com/File/File61937.pdf>

In summary, the memo noted that providing workers with emergency alarms and assistance in vacating the trap, in tandem with restricting inflows into the fishway, will

mitigate the key operational safety problem and improve conditions for workers in the trap. The following safety and operational improvements were proposed:

- Installation of improved lighting in the fishway and near the bottom of the fish lift;
- Installation of audible and visible alarms such as sirens and strobe lights to alert workers to vacate the fish trap in the event of a pump failure;
- Installation of hand rails above the anticipated high water level to assist workers when vacating the fish trap;
- Bypassing Merwin Hatchery water at the bridge bypass valve when workers are in the trap; and
- Limiting plant discharge flows to maintain tailrace at a level providing minimum headspace in the fish trap after pump failure.
 - Current maximum discharge is 5,500 cfs
 - Future max discharge may be 5,500+ to 9,000 cfs pending upcoming flow tests

On February 21, 2006, PacifiCorp Energy provided the Services and WDFW with 30% design level drawings for their review. On April 12, 2006, the Services and WDFW were provided the 60% design. Following review and modification from WDFW, 90% designs were provided to ACC (including Services and WDFW) on June 7, 2006. A correction was submitted on December 1, 2006. On November 27, 2006, PacifiCorp Energy requested confirmation of design approval from the Services, of which all Services responded in January 2007. Final designs were submitted to the FERC on February 2, 2007 and acceptance received from the FERC on February 12, 2007.

Interim Merwin Trap Operations (SA 4.2d) - For 2007 the Merwin Trap was operated in coordination with WDFW to collect hatchery fish returning from the ocean and to transport any bull trout collected to Yale reservoir. Fish other than hatchery fish and bull trout were returned to the river downstream of Merwin Dam. PacifiCorp Energy coordinated with WDFW and made reasonable efforts to operate the Merwin powerhouse to allow fish trapping operations at the trap.

3.3.3 SA Section 4.3 Merwin Upstream Collection and Transport Facility

PacifiCorp Energy completed initial activities related to developing preliminary alternatives and facility design. In the Spring of 2005 PacifiCorp Energy worked with the Fish Passage Engineering Subgroup to prepare a Facility Design Criteria document, which was posted on the PacifiCorp Energy website at <http://www.pacificorp.com/Article/Article61496.html>. Using the Criteria document for guidance, the PacifiCorp Energy team worked on identifying and scoping conceptual designs for the facility. Key considerations for design include a completely new facility, and incorporation of the current Merwin Trap as upgraded. Designs should meet applicable performance standards regardless of the operational state of the Merwin powerhouse and dam. Still at hand is the need to design a facility that will meet or nearly meet 95 percent adult trap efficiency (current proposed ATE). The Subgroup will

continue working on design concepts that were initiated in 2007 in consideration of the targeted trapping efficiency. Actions to target meeting the 95% ATE include a phased design which begins with 400 cfs attraction flow and a corner trap entrance. A draft study plan was reviewed that would study fish behavior during this initial design to determine trap effectiveness. Depending on fish behavior, a second trap entrance can be added to the powerhouse to allow additional opportunity for fish to find the Merwin trap. If fish are having difficulty discovering the trap entrances, attraction flow can be increased to 600 cfs.

3.3.4 SA Section 4.4 Downstream Transport at Swift No. 1 Dam

Release Ponds (SA 4.4.3)

In 2006 PacifiCorp Energy notified the ACC representatives that the company was working to identify potential sites for the Release Ponds. PacifiCorp Energy has continued to work with WDFW to secure acquisition of a site just downstream of Woodland, Washington. The site meets the criteria established in the SA and the land is available for trade with WDFW. PacifiCorp Energy and WDFW are expected to complete the transaction in 2008.

3.3.5 SA Section 4.5 Downstream Passage at Yale Dam

Implementation scheduled prior to 13th anniversary of Yale Project License.

3.3.6 SA Section 4.6 Downstream Passage at Merwin Dam

Implementation scheduled prior to 17th anniversary of Merwin Project License.

3.3.7 SA Section 4.7 Upstream Passage at Yale Dam

Implementation scheduled prior to 17th anniversary of Yale Project License.

3.3.8 SA Section 4.8 Upstream Passage at Swift Projects

Implementation scheduled prior to 17th anniversary of Swift No.1 Project License.

3.3.9 SA Section 4.9 Interim Bull Trout Collection and Transport Programs (SA 4.9.1)

PacifiCorp, in cooperation with the WDFW and USFWS, annually nets and transports bull trout from the Yale powerhouse tailrace to the mouth of Cougar Creek, a Yale reservoir tributary. A total of 114 bull trout have been captured from the Yale tailrace since the program began in 1995.

To capture bull trout, monofilament or multi-filament mesh gill nets are used (typically 2.5 to 3 inch stretch). Netting occurs on a weekly basis beginning in July and ending in early September. Netting usually occurs between the hours of 0900 and 1200. During this time, the powerhouse generators are taken off-line to facilitate deployment and handling of the nets. Larger nets, in both area and mesh size, have been deployed in the past; however, they were less effective at capturing bull trout. Nets are tied to the powerhouse wall and then stretched across the tailrace area using powerboats. The nets are then allowed to sink to the bottom. Depending on conditions or capture rate, the nets

are held by hand on one end or allowed to fish unattended. The maximum time nets are allowed to fish before being pulled is less than 10 minutes. Upon capture of a bull trout, fish are immediately freed of the net (usually by cutting) and placed in a live well. Once biological information is gathered and a floy and PIT tag is inserted, the bull trout is placed in a 6-inch diameter PVC or rubber tube that is partially filled with water. A rope is tied to the PVC or rubber tube, which allows hatchery crews on the “catwalk” to hoist the bull trout out of the tailrace area and into hatchery trucks. The entire process, from capture to hatchery truck, takes only a few minutes and no direct mortality has ever been observed. At the Yale tailrace, attempts to net bull trout were completed eight times from June 7, 2007 through August 23, 2007. A total of 13 bull trout were captured in the tailrace, transported, and then released at Cougar Park where Cougar Creek, a bull trout spawning tributary, enters Yale reservoir. Other species captured in order of frequency included: kokanee (*Oncorhynchus nerka*), largescale suckers (*Catostomus macrocheilus*), northern pikeminnow (*Ptychocheilus oregonensis*), coastal cutthroat (*Oncorhynchus clarkii*), and rainbow trout (*Oncorhynchus mykiss*) all of which were returned into the tailrace. No bull trout mortalities were observed as a result of netting and transportation activities.

Investigation of Alternative Collection Methods (SA 4.9.2)

In coordination with the interim USFWS Biological Opinion and current FERC licenses for the Lewis River projects, PacifiCorp Energy continues to seek more effective and less intrusive methods to collect bull trout from the Yale tailrace. In 2005, a large (225' X 28') beach seine was used in an attempt to actively collect bull trout from the tailrace. Mesh size ranged from 2 to 4 inch square. The methodology used included feeding the net from shore and using a jet sled to feed the net in a circular pattern from the shore. The net was then dragged back to the shore.

The net was extremely effective in capturing all types of larger fish present in the tailrace, however it would become ‘snagged’ on large boulders close to shore. This resulted in most and in some instances all fish escaping from the net. Because this snagging of the net occurred in all sets it was decided to discontinue its use for the remainder of the season.

In 2006, based on the initial effectiveness of the seine, it was modified to allow pursing the seine in the middle of the tailrace thus eliminating the need to bring the seine to shore and potentially snag on the large boulders present there. This technique was expected to capture large numbers of fish and allow a less intrusive method to be used, but the purse seine proved to be too heavy for retrieval by hand and too cumbersome with only one boat.

In 2007 gill nets were the only method used and to date remain the most effective. PacifiCorp is still seeking less intrusive alternatives to gill nets, though at this time no method has presented itself to be feasible or as effective.

3.3.10 SA Section 4.10 Bull Trout Passage in the Absence of Anadromous Fish Facilities

If Yale Downstream Facility is not built, implement prior to 13th anniversary of Yale Project License.

3.3.11 SA Section 5.1 Yale Spillway Modifications

Implementation scheduled prior to six months after the 4th anniversary of Yale Project License.

3.3.12 SA Section 5.2 Bull Trout Habitat Enhancement Measures

PacifiCorp Energy continued to manage the Cougar Creek Conservation Covenant to the benefit of bull trout. Noxious weeds (scotch broom and Himalayan blackberry) were identified and treated along the transmission Right Of Way (ROW) and in previously tree harvested lands along Panamaker Creek. A proposed habitat improvement project on Panamaker Creek was submitted by PacifiCorp through the 2007/2008 Aquatic Habitat Fund process.

Per the SA, Cowlitz PUD managed the Devil's Backbone Conservation Covenant to benefit bull trout.

3.3.13 SA Section 5.3 Reserved

3.3.14 SA Section 5.4 Reserved

3.3.15 SA Section 5.5 Bull Trout Limiting Factors Analysis

Contract was awarded and the Consultant (Meridian Environmental, Inc.) has completed the field work and provided a final report in July 2007. The report describes three potential streams that could support bull trout if improvements were made to the habitat. The improvements include shading to lower stream temperatures, and riparian habitat stabilization. An overriding limiting in two of the three streams was lack of water in the critical spawning period. The report is posted on PacifiCorp's website at: <http://www.pacificorp.com/Article/Article71316.html>

3.3.16 SA Section 5.6 Public Information Program to Protect Listed Anadromous Species

PacifiCorp Energy hired an Interpretation and Education consultant (Sea Reach Ltd) to develop signs and fliers to satisfy this requirement. Cowlitz PUD installed a bull trout identification sign at the fishing pier on the Swift No. 2 canal.

3.3.17 SA Section 5.7 Public Information Program to Protect Bull Trout

PacifiCorp Energy contracted an Interpretation and Education consultant to develop signage and fliers to satisfy this requirement. Although new designs were under consideration in 2007, bull trout fliers were made available to the public at formal recreation sites.

3.3.18 SA Section 6.1 Flow Releases in the Bypass Reach: Constructed Channel

Construction of Upper Release Point (SA 6.1.2)

PacifiCorp Energy provided 60 percent design drawings to Ecology and the ACC for the upper release point in January 2007. Ninety percent design drawings were completed in the summer of 2007 and PacifiCorp will submit permit application (JARPA) in early 2008. Construction is planned for 2009.

Constructed Channel (SA 6.1.3b)

PacifiCorp Energy hired Northwest Hydraulic Consultants to prepare a design and recommendation report for the Constructed Channel. A final design including cost estimates was provided in February 2007. PacifiCorp will submit a joint permit application (JARPA) in 2008 that includes both the constructed channel and upper release point projects. Completion of the constructed channel is expected in late summer of 2009.

3.3.19 SA Section 6.2 Flow Fluctuations below Merwin Dam

Implementation scheduled upon issuance of Merwin Project License.

3.3.20 SA Section 7.1 Large Woody Debris Program

PacifiCorp Energy continued the Large Woody Debris (LWD) program per its current Hydraulic Project Approval (HPA) from the state of Washington. This included coordinating with Washington Department Fish and Wildlife and the Lower Columbia Fish Enhancement Group regarding distributing LWD to aquatic projects. Swift Reservoir was cleared of floating woody debris during May and June of 2007. Logs were removed from the reservoir along with over 100 tons of smaller debris.

For the Large Woody Debris study (SA 7.1.2) PacifiCorp Energy hired Interfluve, Inc. at the recommendation of the ACC. Work was completed and a final report is due in January 2008.

3.3.21 SA Section 7.2 Spawning Gravel Study and Gravel Monitoring and Augmentation Plan

Stillwater Sciences completed a Spawning Gravel Report for downstream of Merwin dam and proposed to monitor gravel movement for two years before making recommendations and developing a final gravel augmentation plan. A summary report was provided to the ACC on December 20, 2007 regarding completion of two tasks for the Lewis River Spawning Gravel Evaluation. The tasks remaining for 2008 include year-3 mapping of spawning gravel areas, analysis of accumulated data and submittal of final report and recommendations.

Some of the key findings were that spawning habitat is likely limiting to the local Chinook salmon population. Available spawning gravel does not appear to be diminished in the upper reach and the gravel appears to be stable. Adding more

spawning gravel would not necessarily increase the spawning area due to the effect of the confined canyon geomorphology. Stillwater provided an annual report to the ACC and will monitor the gravel sites for one more season in order to provide an applicable trigger for gravel augmentation.

3.3.22 SA Section 7.3 Predator Study

Implementation scheduled prior to 13th anniversary of Merwin Project License.

3.3.23 SA Section 7.4 Habitat Preparation Plan

On May 10, 2007 PacifiCorp Energy provided the ACC with a draft 2007 Habitat Preparation Plan (HPP). On May 31, 2007, PacifiCorp received comments from WDFW on the draft plan. PacifiCorp incorporated these comments and provided a final plan on June 25, 2007 to the ACC. WDFW began transporting adult coho salmon collected below Merwin dam to upstream of Swift dam on September 26, 2007 (see table below). A total of 2,000 adult coho were transported between September 26 and October 23, 2007.

Number of coho transported from the Merwin and Lewis River traps to Swift Reservoir in 2007:

| Coho | | | |
|--------------|--------------|----------------|--|
| Date | Males | Females | |
| 9/26/2007 | 190 | 190 | |
| 10/1/2007 | 95 | 95 | |
| 10/3/2007 | 190 | 190 | |
| 10/09/2007 | 300 | 300 | |
| 10/16/2007 | 190 | 190 | |
| 10/23/2007 | 35 | 35 | |
| Total | 1000 | 1000 | |

In 2006, a total of 155 adult Spring Chinook were transported upstream of Swift dam. During the coho return, a total of 1848 adult coho salmon were released upstream of Swift dam.

In 2005, a total of 2,006 adult coho salmon were transported from the Merwin Trap and Lewis River Hatchery Ladder to the Swift reservoir boat ramp. Of these, 882 were males and 1,124 were females.



SA Section 7.5 Aquatics Fund

PacifiCorp Energy made \$300,000 available for Aquatic resource projects in 2006 and \$664,383.43 in 2007 (see Section 7) in accordance with the *Aquatics Fund – Strategic Plan and Administrative Procedures*.

Funding was distributed to previously approved Aquatic projects (see 3.3.27 below for details).

In September, 2007, a new funding cycle was initiated. Eleven proposals were submitted. After an initial evaluation, seven proposals were selected for further consideration. These proposals will be evaluated and a decision for new project funding made in March 2008.

Funding not spent in 2007 (along with interest accrued) will remain in the account for use in 2008 or future years. The total amount available as of December 31, 2007 is \$664,383.43 (see Section 7.0 for details). The Licensees will continue to provide additional money to the Aquatic Fund on an annual basis as stipulated in the SA.

3.3.25 SA Section 7.6 In Lieu Fund

Implementation to be determined by NOAA Fisheries and USFWS.

3.3.26 SA Section 7.7 Management of Aquatics Fund and In Lieu Fund

PacifiCorp Energy dispersed \$322,150 for Aquatic habitat projects in 2007 and carried the remaining funds over into the 2008 funding cycle. Fund account information is provided in Section 7.0.

3.3.27 SA Section 7.8 Execution of Projects and Mitigation Measures

In September, 2006, \$46,000.00 was provided to the U.S. Forest Service for the project Muddy River Tributary Road Decommission. The NEPA was completed for the road decommissioning project in October 2006. A contract was awarded but not in time to implement in 2007 due to the restricted work windows. The U.S. Forest Service intends to complete this project during July 2008 following the guidelines for instream work periods for fish (July 1st – July 31st).

In addition, the following projects were also funded in 2007:

- April 2007 – Fish Passage Culvert Replacement (USDA FS) \$80,000
- April 2007 – Pine Creek Instream & Floodplain Structures (USDA FS) \$25,000
- July 2007 – Rush Creek Gravel Restoration (USDA FS) \$20,000
- August 2007 - Dispersed Camping & Day use Road Restoration (USDA FS) \$79,000
- August 2007 – Pine Creek Nutrient Enhancement (USDA FS) \$43,150
- September 2007 - Aquatic Funding Enhancement Projects (Cowlitz Tribe) \$75,000

In November, 2007, the U.S. Forest Service withdrew its plan to implement the Pine Creek Nutrient Enhancement due to lack of excess adult fish carcasses, therefore the approved project will be postponed one year. The NEPA was completed by the U.S. Forest Service for this project in October 2006. Macroinvertebrate samples were collected at 11 locations for monitoring purposes prior to carcass deployment. The U.S. Forest Service intends to take post project macroinvertebrate samples and write a report at a future date.

3.3.28 SA Section 8.1 Hatchery and Supplementation Program

See activities related to development of Draft Hatchery and Supplementation Plan.

3.3.29 SA Section 8.2 Hatchery and Supplementation Plan

PacifiCorp Energy and Cowlitz PUD provided a *Draft Hatchery and Supplementation Plan* to the ACC on November 28, 2005. On December 8, 2005, Mobrand and Meridian Environmental (consultants to the Licensees) presented and discussed the draft plan with the ACC. Consistent with the SA, the ACC and the public were provided a 60-day review period. Licensees collected ACC and public comments on the Draft Hatchery and Supplementation Plan between through February 10, 2006. The Licensees considered and addressed in writing the written comments provided, and included the rationale if the Licensees' decided to not address a comment in the final Plan. A revised Plan was submitted to the Services on April 11, 2006 for final approval (SA 8.2.1). Additional revisions to the Plan are still being considered by the Services and the ACC pending completion of the HGMPs for spring Chinook, early coho, and winter steelhead.

3.3.30 SA Section 8.3 Anadromous Fish Hatchery Adult Ocean Recruit Target by Species

The draft Hatchery and Supplementation Plan has been submitted for approval to the USFWS and NMFS. Within this plan, specific methodologies are described for determining ocean recruits for each target species. Once finalized, the Hatchery and Supplementation Plan will provide the methodology for determining ocean recruits for each species.

3.3.31 SA Section 8.4 Anadromous Fish Hatchery Juvenile Production

PacifiCorp Energy and Cowlitz PUD funded the operation of the Lewis River Hatchery Complex to meet current FERC license obligations for anadromous fish production.

3.3.32 SA Section 8.5 Supplementation Program

The Hatchery and Supplementation Plan is to be implemented as soon as practicable after issuance of new licenses for Merwin or Swift Projects.

3.3.33 SA Section 8.6 Resident Fish Production

PacifiCorp Energy and Cowlitz PUD funded the operation of the Lewis River Hatchery Complex to meet current FERC license obligations for resident fish production.

3.3.34 SA Section 8.7 Hatchery and Supplementation Facilities, Upgrades, and Maintenance

PacifiCorp Energy continued work towards completing conceptual and final designs of upgrades defined in Schedule 8.7. PacifiCorp Energy staff and R2 Resources (Consultant) continue to meet regularly with an ACC Hatchery Sub-group to refine and agree on designs of the upgrades. Permitting activities were initiated for Lewis River Hatchery Pond 15 upgrade and submitted to Cowlitz County on July 7, 2006, additional information was requested on October 27, 2006 and the application was re-submitted on January 11, 2007. PacifiCorp received a SEPA Determination of Non-Significance from Cowlitz County on February 1, 2007, a Permit for Shoreline Management Substantial Development from Cowlitz County on April 3, 2007 and an exemption for a Hydraulic Project Approval from WDFW on April 27, 2007. Ninety percent design drawings for Pond 15 modifications were submitted to Cowlitz County for Building Permit review on August 16, 2007. PacifiCorp is currently awaiting review of these designs by the WDFW. Pond 15 construction activities are expected to begin in January 2009. Modifications to the first bank of Burrow's ponds at Speelyai Hatchery have been delayed until summer of 2009 as a result of the delay in license issuance. PacifiCorp will re-apply for the shoreline permit in 2008 and acquire the building permit in 2009.

3.3.35 SA Section 8.8 Juvenile Acclimation Sites

On October 6, 2006, several ACC members toured potential acclimation sites including: the Lewis River crossing with Forest Road 90 – near Lower Falls on the Lewis River, Muddy River crossing with Forest Road 25, Clear Creek crossing with Forest Road 93, and Lewis River crossing with Forest Road 90 – Eagle Cliff. A decision was made to pursue siting of acclimation ponds near the mouth of the Muddy River and just above the confluence of Clear Creek and the Muddy River and the Upper Forest Road 90 site (now referred to as the Crab Creek site). The Eagle Cliff site will be retained as an alternative if one of the other three sites proves to be unsuitable. PacifiCorp is working to hire a contracted engineer to assist with the layout and conceptual design of these facilities prior to finalizing the Acclimation Pond Site Plan.

3.3.36 SA Section 9.1 Monitoring and Evaluation Plan

Implementation scheduled prior to 2nd anniversary of Project Licenses.

3.3.37 SA Section 9.2 Monitoring and Evaluation Related to Fish Passage

Implementation scheduled prior to 2nd anniversary of Project Licenses. A contract will be awarded to complete this plan in 2008.

3.3.38 SA Section 9.3 Wild Fall Chinook and Chum

Implementation scheduled prior to 2nd anniversary of Project Licenses.

3.3.39 SA Section 9.4 Water Quality Monitoring

See section 4.1.2 under Water Quality

3.3.40 SA Section 9.5 Monitoring of Hatchery and Supplementation Program
Implementation scheduled prior to 2nd anniversary of Project Licenses.

3.3.41 SA Section 9.6 Bull Trout Monitoring

PacifiCorp Energy, on behalf of the Utilities, completed actions according to the Threatened and Endangered Species Annual Plan. An Annual report and plan were submitted to the FERC on March 29, 2007. See SA Section 4.9 for activity details.

3.3.42 SA Section 9.7 Resident Fish Assessment

Implementation scheduled prior to 2nd anniversary of Project Licenses.

3.3.43 SA Section 9.8 Monitoring of Flows

Implementation scheduled prior to 2nd anniversary of Project Licenses.

3.4 Aquatic 2008 Annual Plan

3.4.1 SA Section 4.1 Common Provisions Regarding Fish Collection and Transport Facilities

PacifiCorp Energy completed the Merwin Tailrace Fish Behavior study and provided a final report to the ACC. Early in the year, the ACC discussed the Adult Trap Efficiency for the new Merwin fish trap and decided to target 95% efficiency if the Engineering Subgroup could demonstrate the ability to design to that standard. Discussions continue but no resolution has been achieved. The Utilities hope to resolve this issue in early 2008 in order to incorporate features in the 30% design report for Merwin.

3.4.2 SA Section 4.2 Merwin Trap

PacifiCorp Energy will continue to collaborate with WDFW and to the extent feasible, limit the discharge from the Merwin Powerhouse for safety purposes to a maximum of 5,400 cfs when personnel are working in the Merwin Trap (SA 4.2b).

PacifiCorp Energy will continue to coordinate with WDFW and make reasonable efforts to operate the Merwin powerhouse to allow fish trap operations (SA 4.2d).

3.4.3 SA Section 4.3 Merwin Upstream Collection and Transport Facility

A Merwin Upstream Collection and Transport Facility alternative has been selected and PacifiCorp Energy notified the ACC. In 2008 PacifiCorp Energy will provide 30% and 60% design drawings for review and comment (SA 4.3 and 4.1.2).

3.4.4 SA Section 4.4 Downstream Transport at Swift No. 1 Dam

PacifiCorp Energy continues to consult with the ACC and the Engineering Subgroup concerning the precise design and location of the Swift Downstream fish passage facility. The company provided the 30% design documents to the Engineering Fish Passage

Subgroup and will continue to coordinate with the ACC and the Engineering Subgroup in the preparation of facility 60% design drawings for review and comment (SA 4.4.1)

PacifiCorp Energy will continue activities related to the acquisition of land on which to site the downstream release pond. Upon acquisition, the company will initiate preliminary facility design (SA 4.4.3).

3.4.5 SA Section 4.9 Interim Bull Trout Collection and Transport

PacifiCorp Energy and Cowlitz PUD are to investigate alternative Bull Trout collection methods in consultation with ACC (SA 4.9.2)

Complete PacifiCorp Energy's *Yale Project Entrainment Evaluation* and in Consultation with the ACC, and provide an entrainment reduction plan to FERC (SA 4.9.3)

3.4.6 SA Section 5.2 Bull Trout Habitat Enhancement Measures

PacifiCorp Energy will manage the Cougar Creek Conservation Covenant and Cowlitz PUD will manage the Devil's Backbone Conservation Covenant to benefit bull trout.

3.4.7 SA Section 5.5 Bull Trout Limiting Factors Analysis

This project is complete. A final report was provided to the ACC on May 31, 2007, the report is available on PacifiCorp Energy's website
<http://www.pacificorp.com/Article/Article71316.html>.

3.4.8 SA Section 5.7 Public Information Program to Protect Bull Trout

PacifiCorp Energy currently has established signing at all recreation areas within the project boundary that have the potential for anglers to capture bull trout. After issuance of new licenses, PacifiCorp Energy is required to maintain informational signs at established angler access areas describing bull trout and the need to protect the species; Cowlitz PUD will maintain the bull trout information sign installed at the Swift No. 2 power canal bank fishing facility. PacifiCorp Energy is to provide flyers with same information at recreation park entrance booths. The Utilities are also to provide such flyers to enforcement personnel for distribution.

3.4.9 SA Section 6.1 Flow Releases in the Bypass Reach; Constructed Channel

Licensees shall acquire necessary permits and initiate construction of the Upper Release Point within six months of license issuance (SA 6.1.2). PacifiCorp Energy will keep parties apprised of final schedule; however, construction is now expected in 2009 pending issuance of the new FERC licenses.

Licensees provided the Swift Constructed Channel Concept Design - Final Draft Report, February 2007 to the ACC on February 26, 2007 for a 90-day review and comment period. A design for the construction and maintenance of the Constructed Channel was completed in June 2007 and a final report was provided to the ACC on July 3, 2007.

Licensees will provide \$1 million into a Tracking Account to be used in construction of Constructed Channel (SA 6.1.3).

The Swift bypass reach and constructed channel flow release schedule will follow the 401 Water Quality certifications for the first year, and then will be re-evaluated at the end of 2009 pending issuance of the new FERC licenses.

3.4.10 SA Section 6.2 Flow Fluctuations below Merwin Dam

Upon issuance of a new license for the Merwin Project, PacifiCorp Energy is to implement the operational regimes as identified in the SA.

3.4.11 SA Section 7.1 Large Woody Debris Project

Pending issuance of the new FERC licenses, PacifiCorp Energy will make available funds in a Tracking Account per the SA to help defray the costs of LWD transport. PacifiCorp Energy will issue a final LWD study report which identifies and assesses the potential benefits of LWD projects below Merwin dam (SA 7.1.2).

3.4.12 SA Section 7.2 Spawning Gravel Study and Gravel Monitoring and Augmentation Plan

PacifiCorp Energy submitted a Spawning Gravel Evaluation Plan - Final Year Two Report to ACC on April 24, 2006. Gravel movement will continue to be monitored in 2008.

3.4.13 SA Section 7.4 Habitat Preparation Plan

PacifiCorp Energy will prepare and submit for ACC approval a 2008 Habitat Preparation Plan by May 1, 2008. Species and number of each species selected for transportation to the upper Lewis River will be made collaboratively with the ACC.

3.4.14 SA Section 7.5 Aquatics Fund

PacifiCorp Energy and Cowlitz PUD shall make funds available to the Aquatics Fund per the SA. The Utilities will also implement actions per the *Aquatic Fund Strategic Plan and Administrative Procedures*.

3.4.15 SA Section 8.2 Hatchery and Supplementation Plan

Licensees collected ACC and public comments on the Draft Hatchery and Supplementation Plan between November 28, 2005 and February 10, 2006. The Licensees considered and addressed in writing the written comments provided, and included the rationale if the Licensees' decided to not address a comment in the final Plan. A revised Plan was submitted to the Services on April 11, 2006 for final approval (SA 8.2.1). The Utilities and the ACC will continue to work together on the Plan in 2008 pending completion of the HGMPs and per the request of the Services.

3.4.16 SA Section 8.3 Anadromous Fish Hatchery Adult Ocean Recruit Target by Species

Upon completion of the Hatchery and Supplementation Plan, issuance of the new licenses, and approval from the Services, the Licensees will implement the Hatchery and Supplementation Plan to achieve hatchery adult Chinook, steelhead, and coho ocean recruit targets (“Hatchery Targets”) as described in the SA.

3.4.17 SA Section 8.4 Anadromous Fish Hatchery Juvenile Production

Per the SA, the Licensees shall provide for the production of spring Chinook salmon smolts, steelhead smolts, and coho salmon smolts at levels specified (“Juvenile Production”) upon completion of the Hatchery and Supplementation Plan issuance of the new licenses, and approval from the Services.

3.4.18 SA Section 8.6 Resident Fish Production

Subject to Section 8.6.3, the Licensees shall continue to provide for the production of 20,000 pounds of resident rainbow trout (to Swift reservoir) and 12,500 pounds of kokanee (to Merwin reservoir) each year following FERC license issuance.

3.4.19 SA 8.7 Hatchery and Supplementation Facilities, Upgrades, and Maintenance

The Licensees shall, in collaboration with the hatchery managers and hatchery engineers and in Consultation with the ACC, undertake or fund facility additions, upgrades, and maintenance actions as provided in Schedule 8.7 of the SA, consistent with best methodologies and practices. The Licensees, in collaboration with the hatchery managers and hatchery engineers, and in Consultation with the ACC, shall design these facilities, upgrades, and maintenance actions to include elements that ensure usefulness of the facilities for supplementation and production fish culturing practices and to accommodate the facility additions, upgrades, and maintenance actions identified in Schedule 8.7. The Licensees shall complete the upgrades or actions by the deadlines identified in Schedule 8.7, provided that the Licensees shall schedule the updates or actions consistent with (i) the required hatchery production or (ii) the reintroduction program. The current schedule for completing SA 8.7 upgrades is provided in Appendix G, although the schedule is subject to change pending license issuance date.

3.4.20 SA 8.8 Juvenile Acclimation Sites

Development of the Acclimation site plan will continue in 2008. PacifiCorp Energy will continue developing a draft plan that considers the three locations currently identified as potential sites, including how such sites could be developed for juvenile fish acclimation.

3.4.21 SA 9.6 Bull Trout Monitoring

Until the M&E Plan is implemented, the Licensees will continue to monitor and evaluate bull trout populations in the Lewis River basin following approval of the Threatened and Endangered Species Plan submitted in February to the ACC.

SECTION 4 – WATER QUALITY

4.0 WATER QUALITY

4.1 PACIFICORP ENERGY WATER QUALITY MEASURES IMPLEMENTED IN 2007

4.1.1 PacifiCorp Energy Application for 401 Water Quality Certificate for Swift No. 1, Yale, and Merwin Hydroelectric Projects

On October 9, 2006, Ecology provided 401 Water Quality certificates for the Merwin, Yale, and Swift No. 1 hydroelectric projects. These 401 Certifications are undergoing an amendment process by WDOE, which is expected in January 2008. PacifiCorp Energy will implement those measures contained in the 401 Certifications that are not FERC license-specific and will implement the entire 401 requirements upon issuance of the new FERC licenses.

4.1.2 SA Section 9.4 Water Quality Monitoring

The following section covers water quality monitoring activities performed in accordance with the Washington Department of Ecology's 401 water quality certification. Some monitoring parameters are ongoing from previous years, such as Total Dissolved Gas (TDG) monitoring in Swift No. 1 and Yale tailraces, while other activities for example Merwin, Yale, and Swift forebay temperature profiles, were implemented for the first time in 2007.

With issuance of the 401 water quality certificates, monitoring of spillway TDG continued in 2007. Tailrace TDG monitoring has been ongoing since 1995 and will continue per the direction of the 401 requirement as well as Swift forebay TDG monitoring. Until it is shown that a TDG issue does not exist PacifiCorp Energy will also continue to monitor water temperature in the forebays and tailraces of each project and, in cooperation with Cowlitz PUD, monitor water temperature in the Swift Bypass Reach. Once a water quality management plan is completed (90 days following license issuance) additional monitoring of water quality parameters are scheduled to occur.

Upon issuance of the 401 water quality certificates, PacifiCorp began monitoring of spillway TDG in the fall of 2006. Previous TDG monitoring sites near the Swift No. 1, Yale and Merwin spillways were reactivated at the beginning of the 2007 high run-off period and equipment was deployed at Swift and Yale. Merwin monitoring equipment was made ready but not deployed pending certainty of spill due to concerns about equipment vandalism. In 2007, spill occurred on one occasion on December 3rd and 4th at the Merwin Project. While monitoring equipment was placed prior to this spill event, the meter failed to record data. However, natural flow for Merwin exceeded the 7Q10 flow

of 32,884 cfs so Merwin would have been exempted for this period. Spill did not occur at the Swift or Yale projects in 2007.

Yale Tailrace TDG: TDG data (Appendix E) was gathered hourly in 2007 using a HydroLab Series 4a miniSonde (MS4a). A stainless steel tube is permanently attached to the Yale powerhouse wall and is submerged to a depth of 15 feet. The Hydrolab is deployed within this tube to protect the probe and maintain consistent depth. In 2007 8,197 data points were recorded in the Yale tailrace. Of those data points 12 percent were greater than the state standard maximum of 110 percent. Total dissolved gas levels greater than 110 percent are produced during times of motoring operation (Appendix E). During times of normal generation, elevated levels of tailrace TDG are not typically observed (Appendix E). Along with a line depicting TDG, graphs in Appendix E also contain data on project operations so as to better evaluate the correlation of motoring and elevated tailrace TDG.

In 2007, PacifiCorp initiated measures at the Yale tailrace to control TDG during motoring operations. These measures include "flushing" the tailrace periodically. Flushing is defined as ramping one unit at 5 Megawatts for 10 minutes. The frequency of this event depends on real-time dissolved gas measured in the tailrace with the MS4a and is fully automated through the Programmable Logic Control (PLC). This measure was implemented on October 20, 2007 and is currently being tested. We anticipate this procedure to be effective at reducing TDG in the Yale tailrace. If successful, this same procedure will be implemented at the Swift No. 1 tailrace.

Swift No. 1 Tailrace TDG: TDG data (Appendix F) was gathered hourly using two HydroLab Series 4a miniSondes (MS4a). The second meter was placed to provide some QA/QC for the data. Similar to the Yale tailrace, meters are deployed within steel tubes permanently attached to the powerhouse wall. Meter 1 is located between the draft tubes of Units 11 and 12 while Meter 2 is located between the draft tubes of Units 12 and 13. Meters gather data hourly from a water depth of fifteen feet. An average to the two meters is provided in graphic form (Appendix F). Of the 6,878 data points collected, six percent were greater than the state standard maximum of 110 percent. For 2008, since the two meters recorded data that was within the standard error of each meter, only one TDG meter will be deployed in the Swift tailrace. Similar to Yale, data points greater than 110 percent are produced during times of project motoring operation. During times of normal generation, elevated levels of TDG are not typically observed.

To reduce TDG within Swift No. 1 tailrace during periods of normal generation and load following operations, air intake modifications and automation were made in 2005 that limit the volume of air entering the units over their generation range. This measure, while effective at normal generation levels, is not effective during periods of motoring. If the flushing procedure currently being tested at Yale is found to be effective, then this methodology will also be implemented at Swift No. 1 in early 2008 to correct the remaining TDG issues.

While assembling this report, PacifiCorp staff realized that the requirement to monitor TDG in the Swift No. 1 forebay for 3 months beginning in October 2007 was omitted. After discussion with Deborah Cornett at WDOE, PacifiCorp is required to monitor for 3 months beginning in February 2008 and may need to repeat monitoring in October 2008 (pers. comm. Frank Shrier, February 2008).

2007 Temperature Profiles for Merwin, Yale, and Swift No. 1 Forebays and Corresponding Temperature Comparison between Forebay Intake Depth and Tailrace for each project.

The following graphs represent forebay temperature profiles from the surface to reservoir bottom and comparison of forebay intake depth temperature to the tailrace temperature for Merwin, Yale, and Swift No. 1 in 2007. Data points for forebay temperature profiles are two-week averages of hourly temperature readings taken at each specified depth. Data points for intake depth/tailrace comparison were taken hourly from a depth of fifteen feet in Merwin and Yale tailraces and a depth of one foot from the Swift No. 1 tailrace. Temperature data was gathered using Onset Tidbit v2 Temp Loggers®.

Merwin

Temperature stratification was observed in Merwin Reservoir from May thru September 2007 with the reservoir getting progressively warmer until turn-over in October, whereas the forebay became isothermal for the remainder of data gathering activities (Figure 4.1-3). The coldest temperatures (7° C) were recorded in May at intake depth of 178.5 feet. The warmest temperatures were observed at the reservoir surface in July and were just over 21°C. Since PacifiCorp considers the reservoir conditions as baseline, there were no observed exceedances for Merwin Reservoir in 2007.



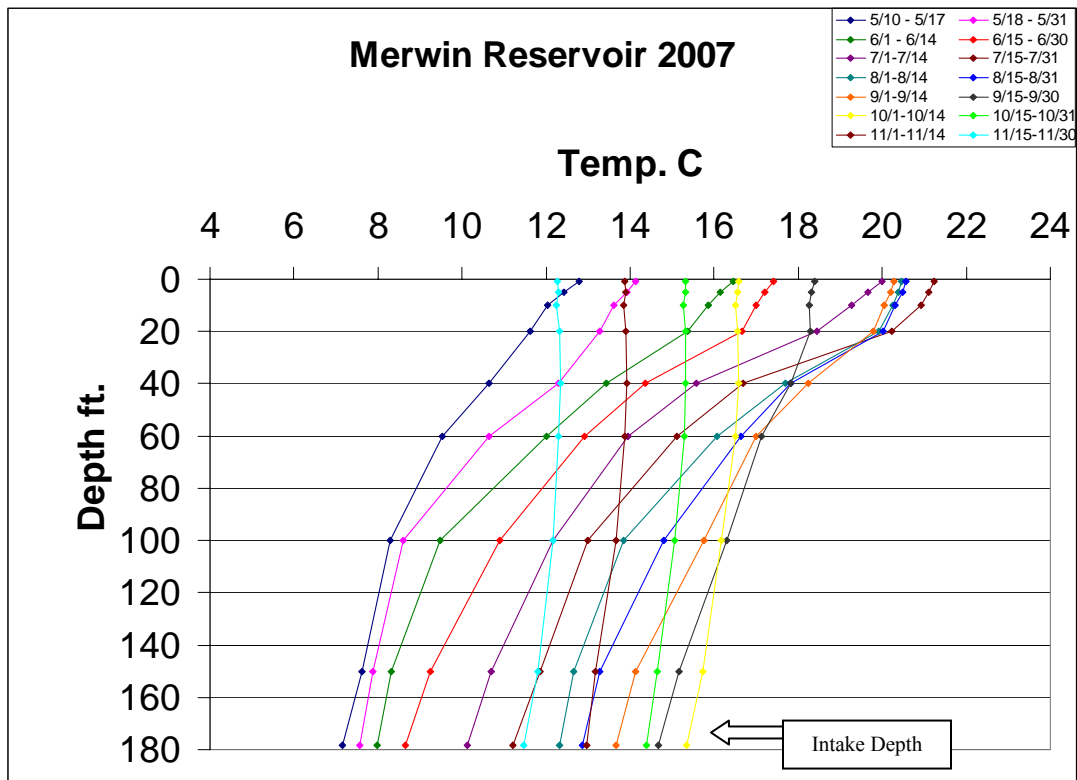


Figure 4.1-3. Profile of Merwin Reservoir forebay temperature.

For Merwin, a temperature recorder was positioned within the tailrace; however it was lost in November 2007 so the record is only of the September and October period. Care will be taken to install a more secure cable to hold the temperature monitor in place for future monitoring. The tailrace and forebay temperatures followed each other closely (within about 0.5 °C) in September for the data that was collected. Note that the temperature increased towards the end of the month. In fact temperature is higher than the new tailrace temperature standard of 13°C before September began. In figure 4.1-4 water temperatures at the bottom level of the turbine intake were already 14 °C by September 1 and, by the time turnover began on October 1 temperature at 180' below surface was nearly 16 °C (figure 4.1-5). PacifiCorp will continue to monitor this condition through the soon to be prepared Water Quality Temperature Attainment Plan (WQTAP).

Merwin intake depth temperature remained comparable to the tailrace temperature during the period of analysis. The comparison is made easier due to the deepwater withdrawal and the fact that Merwin forebay water temperature remains isothermal below 100 feet during the entire data gathering time period (hypolimnion).

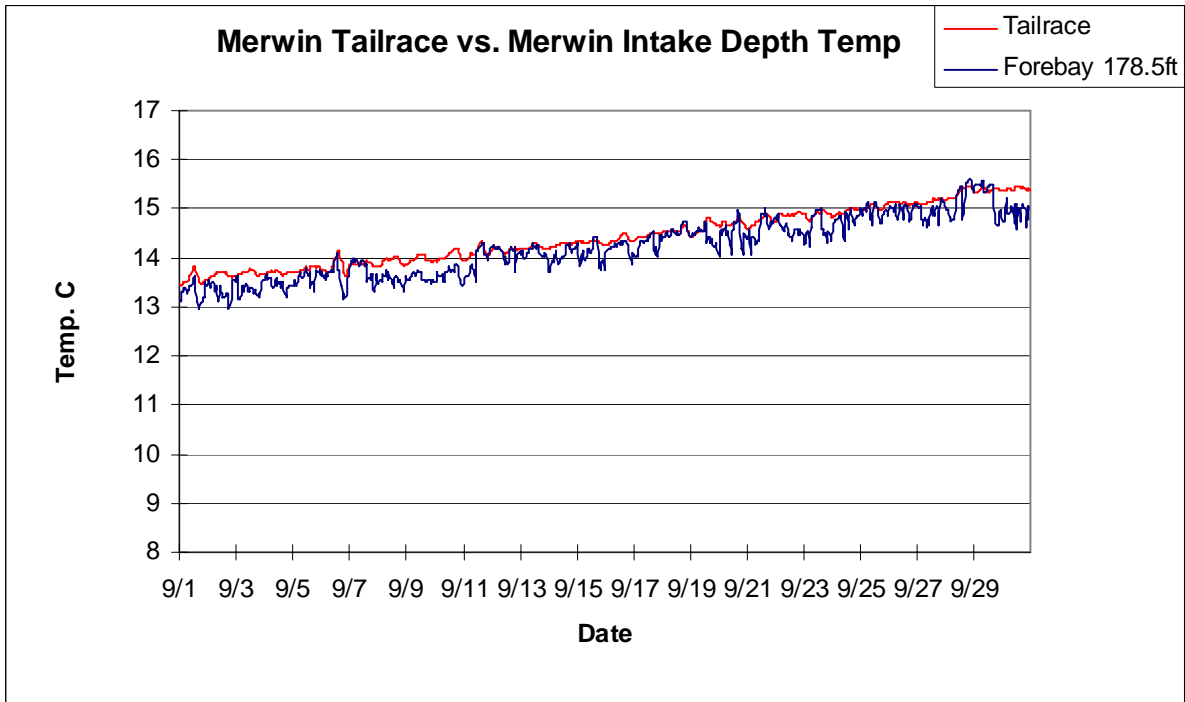


Figure 4.1-4. Merwin tailrace temperature compared to Merwin forebay temperature at the depth of the Merwin intakes in September 2007.

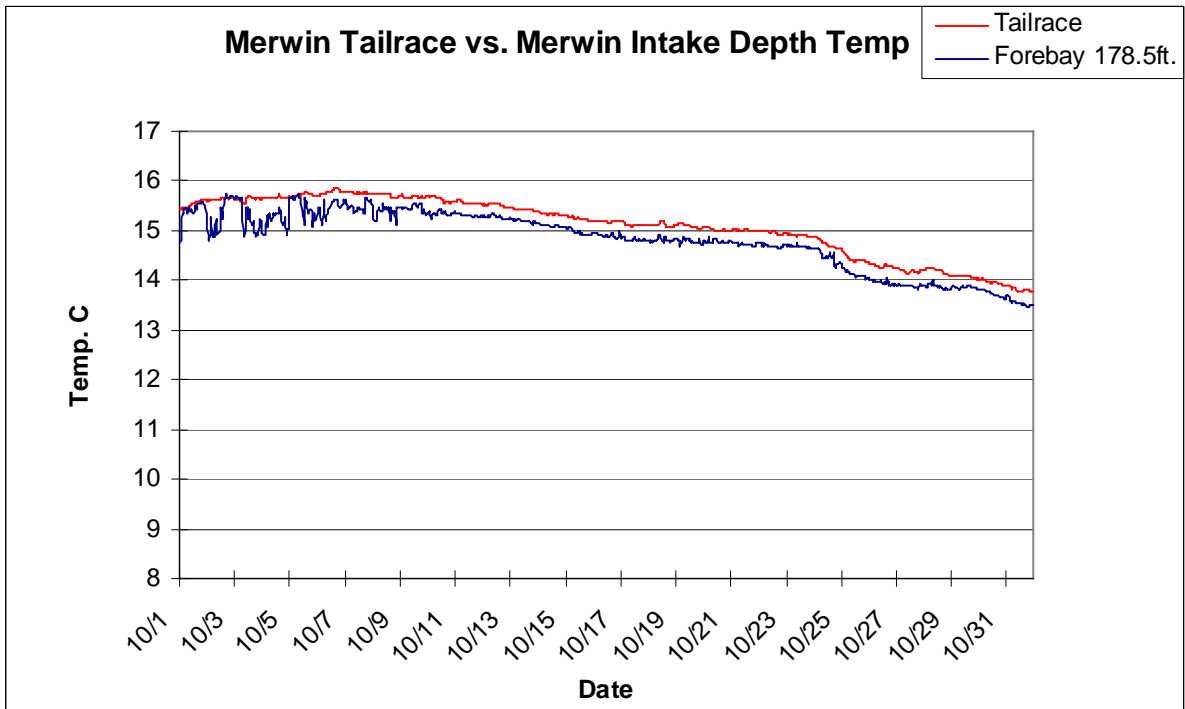


Figure 4.1-5. Merwin tailrace temperature compared to Merwin forebay temperature at the depth of the Merwin intakes in October 2007.

Yale

Temperature stratification was observed in the Yale Reservoir forebay for the entire data gathering time-frame, March 10 – November 30 (figure 4.1-6). The forebay from the surface to 60 ft. was isothermal for October and November and nearly isothermal from the surface to reservoir bottom during the final data gathering time period before activities halted on November 30. The coldest temperature recorded during the analysis was 6°C at 100 ft. and was observed in May. The warmest temperature was just over 21°C at the surface during August.

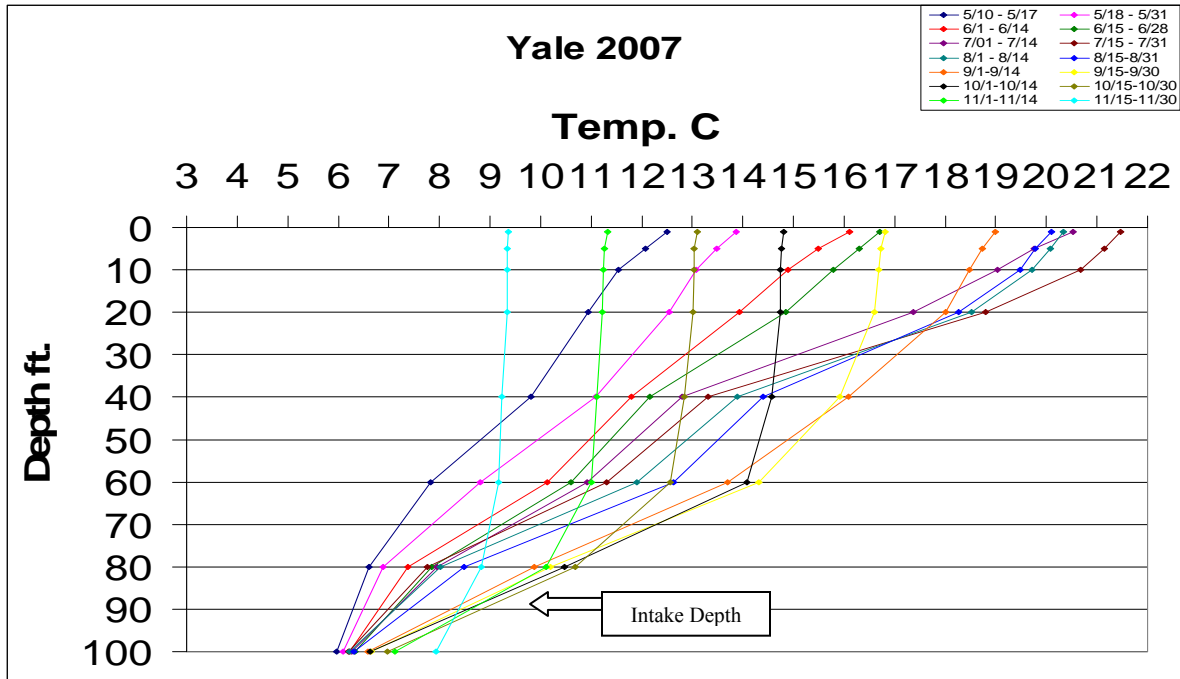


Figure 4.1-6. Profile of Yale forebay temperature.

The Yale tailrace temperature graphs (figures 4.1-7 & 8) are unique in that data depicting total turbine discharge are included. The tailrace water temperature is comparable to the forebay intake depth temperature when operations are stable. During times when the units are offline the tailrace temperature deviates from the intake depth temperature due to cold water seeps within the Yale tailrace. This results in the temperature of the tailrace decreasing during times of non-operation.

During the period of analysis Yale Reservoir averaged six feet below the full pool of 490 feet. This caused the corresponding temperature meters to drop six feet from the original positions from the fact that they are deployed from a floating array. Along with the relatively shallow intake depth of 90 feet and the dual 14 foot diameter intake tubes drawing water from above and below, this caused comparable forebay/tailrace temperatures to be from the 60 foot meter and not the 90 foot meter.

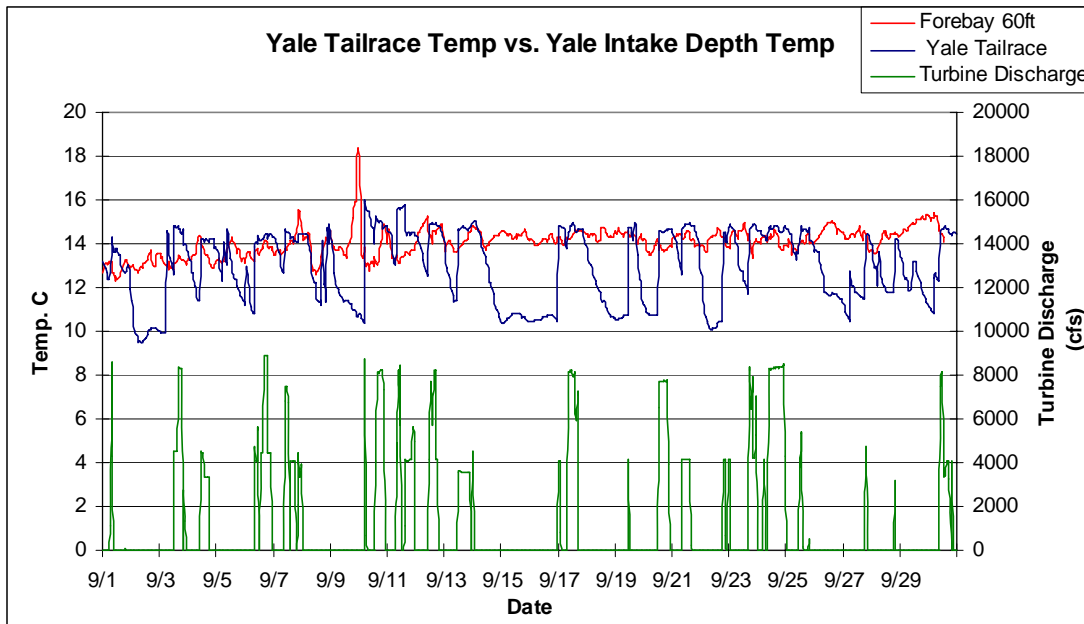


Figure 4.1-7. Yale tailrace temperature compared to Yale forebay temperature at the depth of the Yale intakes in September 2007.

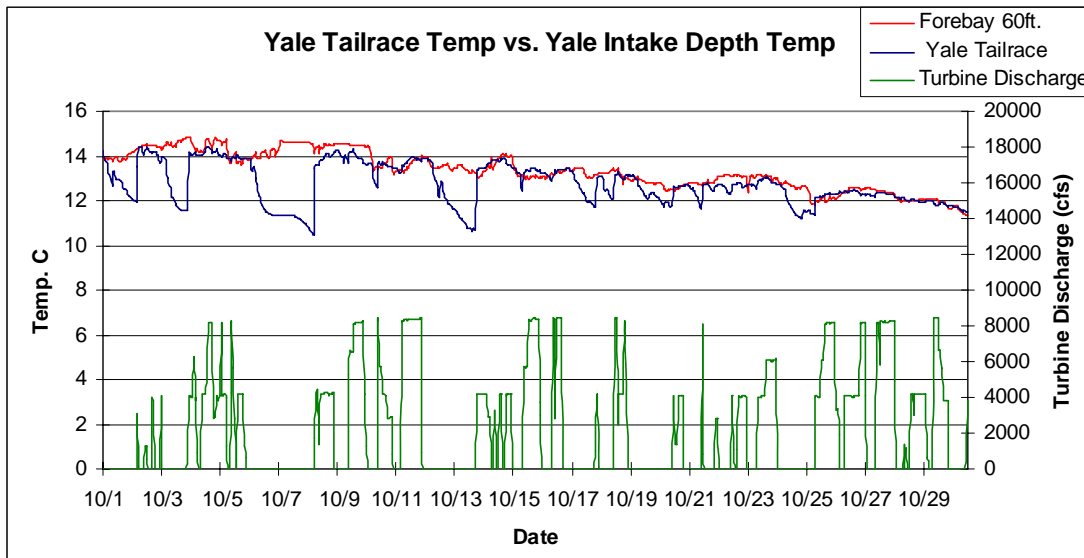


Figure 4.1-8. Yale tailrace temperature compared to Yale forebay temperature at the depth of the Yale intakes in October 2007.

Swift No. 1

Temperature stratification was observed in Swift No. 1 forebay for the entire period of analysis (figure 4.1-9). The top 60 feet of the forebay was nearly isothermal from September 15 – November 30, when data gathering activities stopped for the season. The warmest temperature, 21°C, was observed in August. The coldest observed temperature during the period of analysis was 5.5°C and was recorded in May.

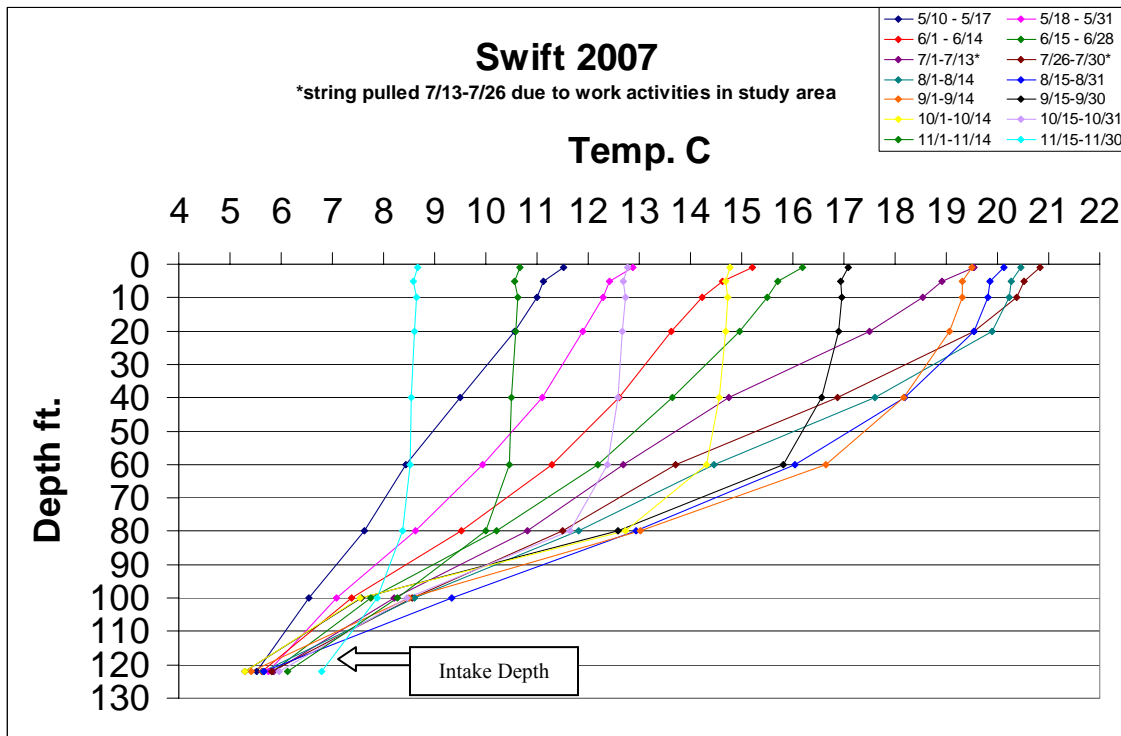


Figure 4.1-9. Profile of Swift forebay temperature.

Hourly temperature readings were taken from the Swift No. 1 tailrace from a depth of one foot using an Onset Tidbit® v2 Temp Logger. Gaps in data represent either 1) the meter being taken out due to maintenance in the tailraces, or 2) the meter being permanently lost due to unforeseen environmental factors within the tailrace area. Due to turbulent hydraulics within the Swift 1 tailrace, the first deployed Onset tidbit® v2 Temp Logger was lost. A new temp logger was installed upon the discovery of the missing meter. This resulted in missing data for one download period. PacifiCorp is working to resolve these equipment issues in order to assure consistent data collection.

The bottom of the Swift dam intake lies at 122 feet when Swift Reservoir is at full pool. The intake is 25 feet in diameter, putting the top of the intake pipe at 97 feet when the reservoir is at full pool. During the time of analysis the reservoir averaged 97.5 feet, 25 feet below full pool. All temperature meters are deployed from a floating array causing them to fluctuate in depth as the reservoir level fluctuates. Averaging 25 feet down

during the period of analysis caused the 80 foot temperature meter to come directly in line with the top of the intake pipes water withdrawal zone of influence, the area from which the bulk of water is drawn from. The colder the water, the more dense it becomes correlating to more water being entrained from above the intake pipe than from below. All of this resulted in more comparable temperatures between the 80 foot meter and tailrace temperature than the designated 122 foot meter. Total turbine discharge as well as latent air temperature is also included within the graph (figure 4.1-10).

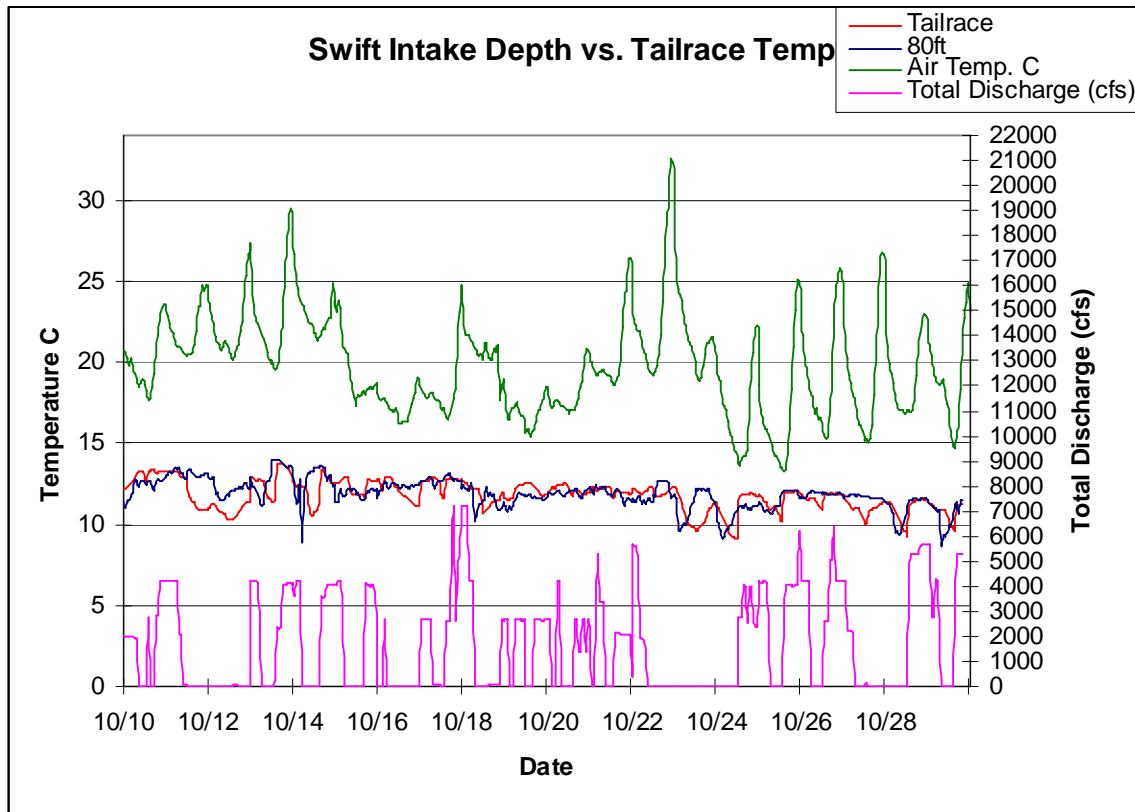


Figure 4.1-10. Swift No. 1 tailrace temperature compared to Swift forebay temperature at the depth of the Swift No. 1 intakes in October 2007.

2007 Temperature Graph from Upstream and Downstream of Ole Creek

The following graph represents hourly temperature readings taken from 50 feet upstream and 50 feet downstream of Ole Creek confluence with the Swift Bypass Reach using Onset Tidbit v2 Temp Loggers®. Minimum and maximum temperatures showed little or no deviation from the upstream to the downstream from May thru September. Beginning in October downstream of Ole Creek became significantly colder than upstream, sometimes by as much as 3°C. It is interesting to note that flows from Ole Creek appear to be significant enough in the fall to lower the bypass reach temperature.

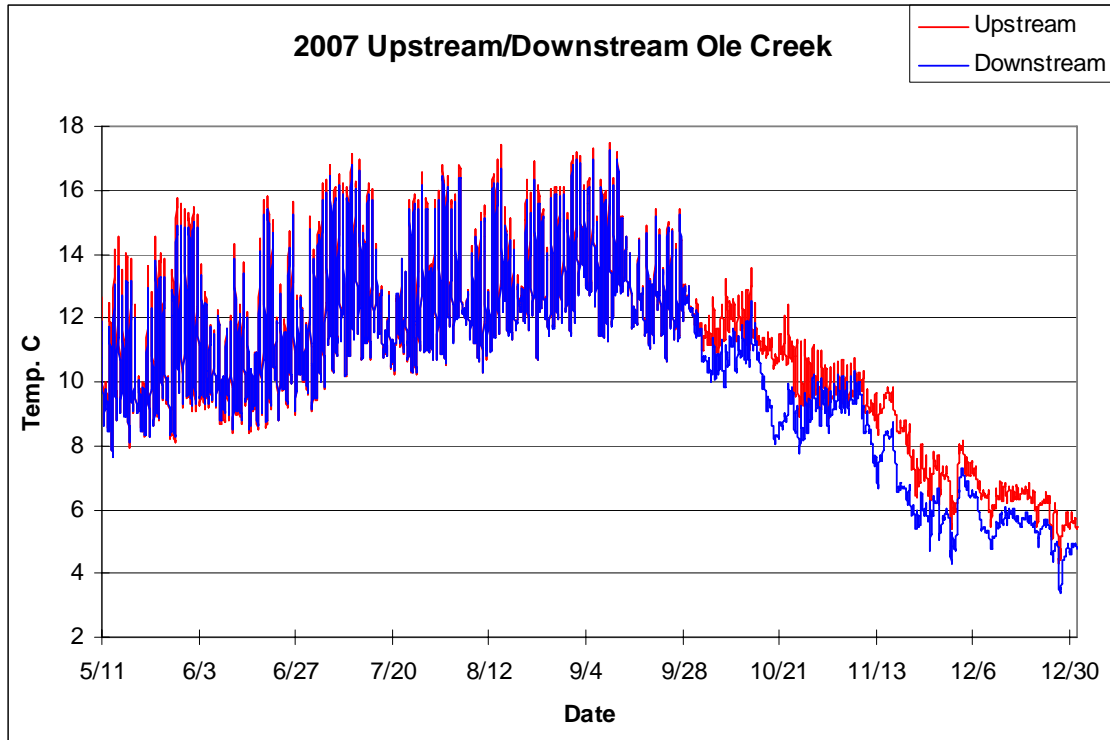


Figure 4.1-11. Graph of water temperature 50 feet upstream and 50 feet downstream of Ole Creek.

4.2 PACIFICORP ENERGY WATER QUALITY 2008 ANNUAL PLAN

PacifiCorp Energy will implement the following water quality measures in 2008 after the new FERC Licenses are issued.

4.2.1. Water Quality Management Plan

Prepare a Water Quality Management Plan describing how PacifiCorp Energy will implement the terms of the 401 Water Quality Certificate.

4.2.2. Water Quality Equipment Installation

Install water quality equipment at the Swift No. 1, Yale and Merwin powerhouses to measure tailrace temperature, total dissolved gas, pH and dissolved oxygen.

4.2.3 Flow Monitoring

Monitor flows in the bypass reach and downstream of Merwin dam.

4.2.4 Bypass Reach Surveying

Together with Cowlitz PUD, survey the bypass reach to determine the appropriate locations to place spawning-sized gravel and then place approximately 160 tons of washed spawning-size gravel in the bypass reach (unless Ecology gives approval to use existing gravels in the bypass reach). Conduct surveys in these reaches to determine fish rearing and spawning use.

4.3 COWLITZ PUD WATER QUALITY MEASURES IMPLEMENTED IN 2007

4.3.1 401 Water Quality Certificate for Swift No. 2 Hydroelectric Project

On October 9, 2006 Ecology issued to Cowlitz PUD a 401 Certificate of Water Quality for Swift No. 2. On November 3, 2006, Ecology issued First Amendment Order No. 3927. Ecology issued Second Amendment Order No. 4998 on December 21, 2007. Cowlitz PUD expects Ecology to issue a Third Amendment Order in early 2008 amending Order No. 4998.

4.3.2 SA Section 9.4 Water Quality Monitoring

4.3.2.1 Swift No. 2 Tailrace Total Dissolved Gas (TDG) Monitoring (401 Certification Section 4.8.3)

Between August 25 and October 4, 2006, Cowlitz PUD monitored TDG hourly in the Swift No. 2 forebay and tailrace during normal operations, at tailrace elevation at or below 485 ft msl and with the air injection system turned off. Forebay TDG ranged from 98.1% to 106.3 % saturation. In the tailrace, TDG ranged from 98.7% to 109.1%. At no time did TDG exceed the 110 percent State standard. The tailrace study was to be repeated in the Spring 2007, but was postponed until Spring 2008 because Unit 21 was off line for an extended period. The fall 2006 and Spring 2008 tailrace TDG monitoring will be described in more detail in the 2008 Annual Report.

4.3.2.2 Swift No. 2 Surge Arresting Structure Total Dissolved Gas (TDG) Monitoring (401 Certification Section 4.3.5 as amended)

Introduction

Following issuance of the Section 401 Certification for the Swift No. 2 Hydroelectric Project on October 9, 2006 (Ecology 2006), Ecology expressed concern regarding the possibility of the Project's Surge Arresting Structure (SAS) to produce TDG in excess of the State standard (110 percent saturation). To address this concern, Ecology issued First

Amendment Order 3927 amending Condition 4.3.5 of their original Section 401 Certification (Ecology 2006a), replacing it with the following language:¹

4.3.5 The licensee shall manage water releases through the surge arresting structure to limit TDG production to 110 percent or less saturation.

- a) Within six (6) months of this Certification-Order Amendment the Licensee shall submit a total dissolved gas (TDG) sampling plan for Ecology's review and approval. The purpose of this plan is to determine TDG production in the release water of the Surge Arresting Structure (SAS).*
- b) During the testing of the operation of the SAS and by no later than one year after issuance of this Certification-Order Amendment, the Licensee shall sample water releases from the SAS to verify that the water released complies with the 110 percent TDG criterion. The Licensee shall submit sampling results to Ecology in the Annual Water Quality Monitoring Report as required by Condition 4.8.6 of the Certification.*
- c) Sampling results shall be submitted to Ecology in the annual water quality monitoring report.*
- d) Within six (6) months after the discovery of an exceedance of the 110 percent TDG criterion caused by water releases from the SAS, the Licensee shall submit a TDG Water Quality Attainment Plan (TDG WQAP) to Ecology for review and approval. The TDG WQAP shall include:
 - i. A description of operations with regard to minimizing TDG production resulting from water releases from the SAS;*
 - ii. A description of how the operations will reduce TDG production from the Project to comply with the water quality criterion within 10 years;*
 - iii. An evaluation of all reasonably available and preferred structural and operational improvements to reduce TDG production from the SAS to comply with the water quality criterion;*
 - iv. A timeline showing when operational adjustments will occur;*
 - v. A schedule for construction; and*
 - vi. Sampling plans to further evaluate TDG production from the SAS and to test effectiveness of the structural and operational adjustments implemented pursuant to the TDG WQAP.**
- e) The Project shall operate according to the approved TDG WQAP with the objective of eliminating exceedances of the 110 percent TDG criterion.*

¹ Article 4.3.5 originally required Cowlitz PUD to "limit spills to emergencies and necessary maintenance where spill is otherwise unavoidable."

- f) *Upon approval of the TDG WQAP, the Licensee shall immediately begin the necessary steps identified in the TDG WQAP to eliminate TDG criterion exceedances.*
- g) *Sampling required in condition 4.3.5 (d) (vi) may reveal that TDG water quality criterion is not achieved within 10 years of discovery of a TDG water quality exceedances. If so, Ecology will require further activities to meet water quality criterion. Significant structural or operational revisions that may impose potentially unreasonable costs or create potentially unreasonable societal effects may be evaluated as part of a formal Use Attainability Analysis consistent with the federal and state water quality regulations after the 10 year compliance period has ended.*

In response to this amended condition, on January 29, 2007, Cowlitz PUD submitted a Surge Arresting Structure TDG Monitoring Plan (Cowlitz PUD 2007) to Ecology describing the SAS and its operations, the SAS TDG monitoring objectives, and the methods that would be used to fully meet the requirements outlined in Ecology's order amending Condition 4.3.5. Ecology approved the plan on February 16, 2007 (Ecology 2007).

Methods

As specified in the Surge Arresting Structure TDG Monitoring Plan, Cowlitz PUD monitored TDG at two fixed stations in the Project area during a scheduled 1 hour-long SAS test on March 11, 2007. One station was located in the Swift No. 2 Project forebay at the SAS intake in an area approximately 8 feet from the intakes' trash rack and the other was located approximately 100 feet downstream of the existing tailrace buoy line (just outside of the turbulent SAS release path bubble curtain) (Photo 1).

TDG monitoring occurred for approximately 6 hours in an attempt to fully bracket the 1 hour-long SAS test. The SAS test was also scheduled to occur during a period when the Swift No. 1 project was offline to ensure TDG levels entering the Project SAS intake were not influenced by Swift No. 1 Project operation. Two new Hydrolab MiniSonde 5[®] water quality instruments were used to collect and record date, time, TDG pressure, and water temperature at both the SAS intake and SAS release path sites. Measurements at the SAS intake site were recorded at a depth of 15 feet (suspended from a boom), while measurements at the SAS release path (suspended from an anchored boat) were recorded at a depth of 13.5 feet (the maximum depth available at the site).



Photo 1. Photograph of the SAS during operation.

Approximately 30 pounds of weight was attached to each logger to maintain the instruments position in the water column. Barometric pressure data was recorded at the Project powerhouse on an hourly basis during the entire monitoring period and subsequently downloaded from the Project's SCADA system. Both TDG sensors were factory calibrated and were subject to paired meter tests both before and after the SAS test to ensure they were meeting measurement quality objectives. Prior to the test, the loggers were set to the same time and programmed to log water temperature and TDG data at two minute intervals.

After the SAS test, TDG pressure was calculated as follows:

$$\text{TDGsat} = (\text{TDGi} / \text{BPi}) \times 100$$

Where:

TDGsat = TDG pressure expressed as percentage of surface saturation

TDGi = TDG pressure at station i, mm Hg

BPi = Atmospheric pressure at station i, mm Hg

Results

The Hydrolab at the SAS release path was deployed at 09:34 and the Hydrolab at the SAS intake was deployed at 09:40. Unit 22, the only unit operating at the Swift No. 2 Project prior to the SAS test went off-line at approximately 11:52. SAS valves 1 and 2 were opened to 100 percent (4,472 cfs) at 12:34 (the start of the test) with the initial surge of water arriving at the release path monitoring site at approximately 12:38 (Figure 1) (Photo 2). Valves 1 and 2 remained fully open (100 percent) until 12:50 pm when both valves were closed to 75 percent (3,610 cfs). At 12:56, both SAS valves were closed to 50 percent (2,545 cfs), at 13:00 both valves were closed to 25 percent (1,311 cfs), and at 13:04 both SAS valves were fully closed. Unit 22 went back online at 14:12; however, monitoring continued until approximately 15:00. It should be noted that PacifiCorp's Swift No. 1 Project was not operating during the SAS test, and as a result, it had no influence on TDG levels at the SAS intake or release path.



Photo 2. Photograph of the Swift No. 2 Project SAS test on March 11, 2007.

Results of TDG and water temperature monitoring during the March 11, 2007 SAS test are shown in Figure 1. Prior to opening the SAS valves, TDG levels in the release path were fairly constant ranging from 100.2 to 100.8 percent. During the SAS test TDG levels increased as the visible surge of water moved past the release path monitoring site, reaching a peak at 105.0 percent saturation, after which, TDG levels gradually decreased to pre-test levels (as the SAS valves were closed). TDG levels at the SAS intake were

fairly constant throughout the entire SAS test ranging from 97.8 to 98.3 percent. Water temperatures at the release path site ranged from 4.2 to 5.9 °C and water temperatures at the intake ranged from 4.1 to 4.2 °C (Figure 1). During the entire test, TDG levels remained well below the state standard of 110% saturation.

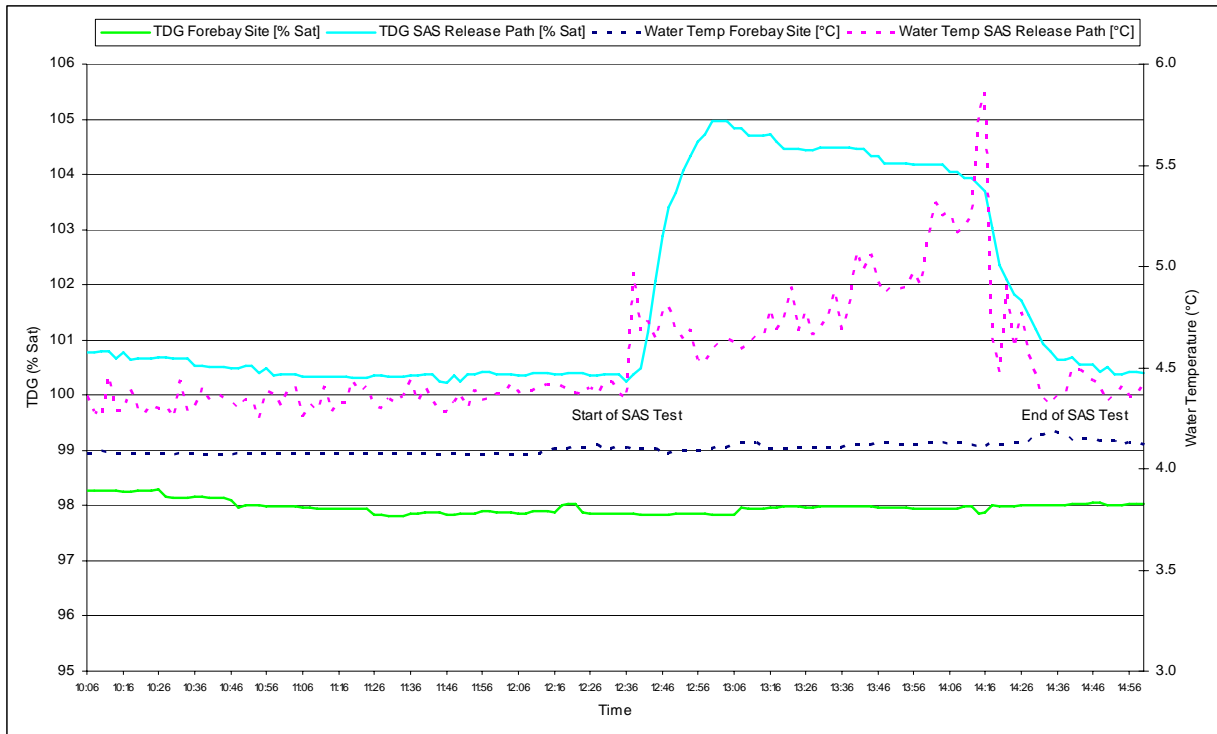


Figure 1. TDG and water temperatures recorded at the Swift No. 2 Project SAS intake site and SAS release path site on March 11, 2007.

4.3.2.3 Swift No. 2 Forebay Temperature Monitoring (401 Certification Section 4.4.1.b)

Consistent with the Swift No. 2 Forebay Temperature Monitoring Plan approved by Ecology, Cowlitz PUD deployed water temperature probes at 1 ft, 3 ft, 6 ft, 15 ft, 20 ft, and 25 ft depths in the Swift No. 2 forebay and at the canal transition structure between June 27 and September 13, 2007. These probes monitored water temperature hourly and, at all times during the summer, water temperatures remained below the state's 18 °C standard. This monitoring will be repeated during the summer of 2008 and the results of the 2007 and 2008 sampling will be reported in the 2008 Annual Report.

4.3.2.4 Total Petroleum Hydrocarbon (TPH) Sampling at Start-up following Maintenance

Section 2.1 of the Swift No. 2 Water Quality Assessment and Management Plan calls for collecting TPH samples in the tailrace during start up following significant turbine maintenance activities. Unit 21 was off line for repairs from late February through late August 2007. On August 22, Cowlitz PUD collected one "before start up" water sample from the surface of the tailrace. On August 23, "during start up" of Unit 21, Cowlitz PUD collected a second surface water sample. Both samples were kept on ice and delivered to Columbia Analytical Services (CAS) in Kelso, Washington for TPH analysis. CAS, using the NWTPH-Dx method with Method Reporting Limits of 250 – 500 µg/l, reported that Diesel Range Organics and Residual Range Organics were not detectable in either sample.

4.4 COWLITZ PUD WATER QUALITY 2008 ANNUAL PLAN

Cowlitz PUD will implement the following water quality measures in 2008 after the FERC License is issued.

4.4.1. Water Quality Management Plan

Prepare a Water Quality Management Plan describing how Cowlitz PUD will implement the terms of the 401 Water Quality Certificate and Order Amendments.

4.4.2. Water Quality Equipment Installation

Install water quality equipment at the Swift No. 2 Powerhouse to measure tailrace temperature, pH and dissolved oxygen.

4.4.3 TDG Measurements

Measure TDG in the Swift No. 2 tailrace and forebay during normal operations at tailwater elevations above 485 feet msl with and without the air injection system activated to confirm that the new turbines do not produce TDG in excess of the state 110% standard. Prepare a final report describing the results of the fall 2006 and Spring 2008 monitoring for inclusion in the 2008 Annual Report.

Measure TDG in the Swift No. 2 tailrace and forebay for 30 days during normal operations following operational or structural adjustments, if they occur, that could change the amount of air entrained or injected in the turbines.

4.4.4 Forebay Water Temperature Monitoring

Monitor water temperature hourly at 6 depths in the Swift No. 2 forebay and at the transition structure during hottest part of the summer determine if the water temperature increases during periods when Swift No. 2 and Swift No. 1 are offline. Prepare a final report describing the 2007 and 2008 monitoring for inclusion in the 2008 Annual Report.

4.4.5. Bypass Reach Water Temperature Monitoring

Together with PacifiCorp, continuously monitor water temperatures in two locations in the bypass reach to confirm that bypass reach minimum flows meet state water quality standards.

4.4.6 Bypass Reach Surveying

Together with PacifiCorp, survey the bypass reach to determine the appropriate locations to place spawning-sized gravel and then place approximately 160 tons of washed spawning-size gravel in the bypass reach.

4.4.7. Work Boat

Ensure that an operational work boat and trained operator are available to be deployed on short notice in the event of an oil spill.



SECTION 5 – TERRESTRIAL RESOURCES

5.0 TERRESTRIAL RESOURCES

5.1 TCC MEETINGS

The purpose and role of the TCC, as defined in Section 14.1 is to facilitate coordination and implementation of the Terrestrial PM&E measures.

The structure and process of the TCC is intended to provide a forum to address time-sensitive matters, early warning of problems, and coordination of member organization actions, schedule, and decisions to save time and expense. The TCC makes decisions based on consensus, while implementing the Settlement Agreement.

5.1.1 Meetings and Conference Calls: Overview

This section summarizes the issues covered and areas of consensus reached during TCC meetings and conference call(s) over the 12-month report period.

TCC Meeting #1 January 10, 2007

- Review and discussion regarding the terrestrial concerns of the ACC surrounding the use of the Crab Creek site for a juvenile fish acclimation pond.
- Reported on land acquisition proposal for protection of Bull Trout.
- Review and discussion of Wildlife Habitat Management Plan (WHMP) draft chapters to include Orchards, Rights-of-ways and Shrublands.

TCC Meeting #2 February 14, 2007

- Provided update on the FERC licensing process.
- Reported on land acquisition opportunities, availability of TCC funds and discussed the highest priority areas of interest.

TCC Meeting #3 March 14, 2007

- Provided update on the FERC licensing process.

- Reported on WHMP draft chapter schedule to include the Description of Management Units, Invasive Plant Species, and Raptors as the next chapters to be provided for review.
- Reported update on the ACC/TCC Annual Report and informed the TCC that the report will be made available for a 30-day review the week of March 12, 2007.
- Review and discussion of land acquisition opportunities to include conservation easements (CE), mutually identifiable benefits of a CE and elements to be recommended for a CE.
- Reported on land acquisition and conservation easement opportunities.

TCC Meeting #4
April 19, 2007

- Skamania County distributed the *Swift Subarea Plan – Board of County Commissioners Initialed Draft* and the *Skamania County 2007 Comprehensive Plan – Board of County Commissioners Initiated Draft* and provided a brief overview of the Subarea Planning process and Plan.
- Reported on land acquisition and conservation easement opportunities.
- Reported on PacifiCorp's response at the Swift Community Action Team (SCAT) meeting to include how PacifiCorp would be developing the Shoreline Management Plan through a public process, how the lands would be managed for wildlife and a special note given to ATVs not being allowed.
- Reported on field planning activities to include three proposed timber harvest areas north of Swift reservoir. The TCC supported continuing with road location options and harvest area planning.

TCC Meeting #5
May 9, 2007

- Reported on Swift Community Action Team issues that include shoreline development around Swift reservoir, water rights, new docks and ATV (All Terrain Vehicles)/motorized vehicle access.
- Reported on the meeting with the Cougar Area Trail Seekers (CATS) to include their interests in ATV trail establishment on PacifiCorp lands.
- Review and discussion of the proposed 2007 forestry work, habitat attributes on the harvest area, consideration of a goshawk dawn acoustical survey and survey protocol.

- Informed TCC that the 2006 ACC/TCC Annual Report was submitted to the FERC on May 4, 2007.

TCC Meeting #6
June 13, 2007

- Review and discussion of the CATS proposal relating to the use of the Cougar area transmission line road. The CATS was proposing this transmission line corridor and another site along IP road as a trail for multi-use that can accommodate hiking, mountain biking and motorized vehicle (ATV) use.
- Review and discussion of inconsistencies in the Habitat Suitability Index (HSI) values, the Habitat Evaluation Procedure (HEP) Study specifically regarding Mink HSI values for Swift and Yale reservoirs.
- Review the proposed timber harvest and discussed the potential impacts to Northern Spotted Owl (NSO) habitat relating to Management Unit 26 and the potential for permanent big game forage within the management unit.
- Reported on land acquisition and conservation easement opportunities.
- Reported on the goshawk survey experts scheduled in late June to conduct the survey and discuss goshawk habitat impacts from timber harvests on Wildlife Habitat Management Plan (WHMP) lands.

TCC Meeting #7
July 11, 2007

- Reported on CATS activities relating to obtaining permissions for ATV use on adjacent private lands and discussed PacifiCorp's lands which are committed to wildlife protection, enhancement and mitigation.
- Reported on land acquisition and conservation easement opportunities.
- Reported on the status of the NMFS Biological Opinion and FERC license issuance.
- Reported on outcome of the goshawk survey training and broadcast calling and discussed the potential for nesting in mature conifer and deciduous forests.
- Continued discussion relating to possible concerns on Northern Spotted Owl (NSO) habitat on the proposed management in Unit 26.
- Conducted a site tour in Unit 5 relating to certain interest in a land trade.

TCC Meeting #8
August 8, 2007

- Reported on land acquisition and conservation easement opportunities.
- Review and discussion of a memorandum specifically addressing non-motorized vehicle use on PacifiCorp lands, the purpose of the TCC to implement terrestrial protection, mitigation and enhancement and that motorized vehicle use on PacifiCorp's wildlife lands is in conflict with the Lewis River Settlement Agreement.
- Review and discussion of a document titled, "*Northern Goshawk Survey Training and Proposed Timber Harvest Areas Habitat Assessment*" relating to the survey training conducted on June 25 and 26, 2007. The TCC agreed that those members who attended the training are adequately qualified to conduct the Broadcast Acoustical Survey method.
- Consultant presented a PowerPoint presentation titled, "*Lewis River Projects – Shoreline Management Plan*" (SMP), which outlined topics relating to management goals and objectives, land use classifications, allowable uses, permitting policies and standards, SMP update policies and consultation procedures.

TCC Meeting #9
September 12, 2007

- Review and discussion of a memorandum titled, "*Classification of Vegetation Cover Types as Suitable Northern Spotted Owl Habitat - Lewis River Wildlife Habitat Management Area*" to include identifying the vegetation cover types that are suitable NSO habitat and further classifies cover types into nesting, roosting, foraging, and dispersal habitat.
- Review and discussion of a memorandum titled, "*Proposed Revisions to the Lewis River Wildlife Habitat Management Plan Standards and Guidelines Wetland Habitat Objective B*" in order to document the rationale and revisions to the Lewis River WHMP Standards and Guidelines Wetland Habitat Objective B.
- Reported on the Shoreline Management Plan Public Meeting held on August 22, 2007 which included discussion topics such as existing docks, building new docks, and erosion concerns.
- Reported on the status of the NMFS Biological Opinion and the FERC license issuance.

- Informed TCC that the log markets crashed (mills not accepting logs) which affects the planned harvesting. PacifiCorp anticipates beginning the project again next year after August 15, 2008.

TCC Meeting #10
October 10, 2007

- Reported on land acquisition and conservation easement opportunities.
- Review and discussion of a memorandum titled, “*Corrected Mink Habitat Suitability Index (HSI) and Suitability Index Data and Mink Riparian Habitat Evaluation Procedures*”, dated September 25, 2007. The purpose of the memorandum was to provide corrections to the Mink HSI and SI values report in the Habitat Evaluation Procedure (HEP) study table and to provide methods for assessing the Mink HSI values for riparian vegetation cover types on Lewis River Wildlife Habitat Management Plan lands.
- Review and discussion of a memorandum titled, “*Classification of Vegetation Cover Types as Suitable Northern Spotted Owl (NSO) Habitat - Lewis River Wildlife Habitat Management Area*”, dated September 25, 2007. The purpose of the memorandum was to identify the vegetation cover types that are considered to be suitable NSO habitat and further classifies cover types into nesting, roosting, foraging, and dispersal habitat.

TCC Meeting #11
November 14, 2007

- Reported on land acquisition and conservation easement opportunities.
- Provided update of the Lewis River Public Meeting - Implementation of Settlement Agreement which took place on October 17, 2007. Informed the TCC that approximately 45 attendees were at the meeting and a PowerPoint was presented to provide details regarding the Lewis River relicensing efforts thus far.
- Reported on the Shoreline Management Plan activity, public comments received and the development of draft shoreline categories such as sensitive/critical areas, wildlife resource areas, hydro lands and integrated lands [private ownership with no resource value].
- Review and discussion of the Wildlife Habitat Management Plan Draft Raptor Site Management and Wetland Habitat Management. Review and comments were requested on or before December 5, 2007 and were to focus on whether or not the chapters meet the needs of the *Lewis River Wildlife Habitat Management Plan Standards & Guidelines Document – July 2006*.

- Agreed to schedule the 2008 TCC Meetings on the second Wednesday of each month, which is subject to adjustments from time to time as agreed upon by the TCC.
- Provided update on the FERC relicensing process.

TCC Meeting #12
December 12, 2007

- Reported on land acquisition, conservation easement opportunities and provided a financial report as of November 30, 2007 on the Yale Fund (10.2) and Swift 1 & 2 Fund (10.2) d tracking accounts.
- Presented a PowerPoint overview of the Shoreline Management Plan titled, “*Lewis River Projects Shoreline Management Plan (SMP) – Draft Shoreline Classifications and Allowable Uses*” to include management goals and objectives, land use classifications, allowable uses, permitting policies and standards, SMP update policies and consultation procedures. The TCC was also informed that the SMP will serve as a tool to assist in effectively analyzing appropriate shoreline uses within the Project boundaries, as well as provide a supportable and defensible means for shoreline management and permitting decisions. Comments on the draft shoreline classifications and allowable uses were requested on or before December 28, 2007.
- Conducted a review of the draft Wildlife Habitat Management Plan Wetlands and Raptor chapters.

5.1.2 Meeting Notes

Meeting notes are drafted for TCC meetings and conference calls. These drafts are distributed to TCC members for review and comment approximately one week after the subject meeting. After any needed corrections are made, the notes are approved by consensus of the TCC. The notes are then made part of the public record and posted on the PacifiCorp Energy web site (<http://www.pacificorp.com/Article/Article70988.html>).

5.2 Joint Terrestrial Measures

Under Section 10.8 of the SA, PacifiCorp Energy and Cowlitz PUD agreed to develop individual Wildlife Habitat Management Plans (WHMPs) for their respective lands in Consultation with the TCC. The purpose of the WHMPs is to benefit a broad range of fish, wildlife, and native plant species, including, but not limited to, large and small game, amphibians, bats, forest raptors, neo-tropical birds, and culturally significant native plants. Although the SA allows PacifiCorp Energy and Cowlitz PUD to collaborate to produce a single WHMP, the Licensees have agreed to develop separate plans.

As the first step towards preparation of WHMPs, Section 10.8.1 of the SA directed the PacifiCorp Energy and Cowlitz PUD to Consult with the TCC and develop specific standards and guidelines based upon on the broad objectives identified in Schedule 10.8 of the SA. PacifiCorp Energy, Cowlitz PUD, and the TCC met to discuss the standards and guidelines for the WHMPs for the first time on March 9, 2005. The final *Lewis River Wildlife Habitat Management Plan Standards & Guidelines* was completed in July 2006, (which can be located at: <http://www.pacificorp.com/Article/Article64476.html>).

5.3 PacifiCorp Energy Terrestrial Measures Implemented in 2007

This section presents the actions taken during January 2007 through December 2007 toward PacifiCorp Energy terrestrial requirements in the Lewis River Settlement Agreement.

A discussion of the activities associated with each of the measures is presented below by SA Article for the report period (Table 5.3-1). A description of funding amounts deposited and disbursed during 2007 is provided in Section 7.0 – Funding.



Table 5.3-1

Terrestrial Activity Status during the 2007 Reporting Period

| SA Article | Terrestrial Activity | Status |
|------------|--|--|
| 10.1 | Yale Land Acquisition and Habitat Protection Fund <ul style="list-style-type: none"> Seek and acquire Interests in Land to benefit wildlife | Specific lands where prioritized by the TCC and consideration of these properties is ongoing. |
| 10.1.1 | Funding Amount, Timing, and Schedule of Funding <ul style="list-style-type: none"> Make \$1,500,000 available for purchasing Interests in Land one year following the effective date of the SA and an additional \$1M after the second year of the effective date of the SA. | PacifiCorp made an additional \$1,000,000.00 available for Yale wildlife lands or easement purchases per the SA. To date, no land has been purchased although offers have been made. |
| 10.1.2 | Matching Funds <ul style="list-style-type: none"> TCC may elect to direct Funds to match other contributions for acquisition of Interests in Land | Creative opportunities are encouraged for developing matching funds. |
| 10.1.3 | Use of Funds Beyond the Vicinity of Yale <ul style="list-style-type: none"> If suitable parcels are not available in Yale area after 10 years, may use Yale Fund in other Lewis areas | Discussed and reached agreement with TCC for using Yale funds as necessary for opportunities in the Swift area. Currently, there are several opportunities still available in the Yale vicinity. |
| 10.2 | Swift No. 1 and Swift No. 2 Land Acquisition and Habitat Protection Fund <ul style="list-style-type: none"> Seek and acquire Interests in Land to benefit wildlife | Continued discussion of land acquisition and Conservation easement opportunities in the Swift area. Opportunities are ongoing. |
| 10.2.2 | Swift No. 1 and Swift No. 2 Land Acquisition and Habitat Protection Fund - Matching Funds <ul style="list-style-type: none"> TCC may elect to direct Funds to match other contributions for acquisition of Interests in Land | Creative opportunities are being researched for developing matching funds or leveraging the dollars available. |
| 10.5 | Management of Funds <ul style="list-style-type: none"> Funds provided are to be held in a tracking account and shall accrue interests until use | Tracking account has been established (see Section 7 of this report). |
| 10.8 | Wildlife Habitat Management Plans <ul style="list-style-type: none"> Licensees, in consultation with TCC, shall develop WHMPs for Project lands | <ul style="list-style-type: none"> TCC completed the WHMP Standards & Guidelines document in July 2006. Began development of specific procedures for implementing the goals and objectives. Five (5) chapters were completed with TCC review in 2007. Continued implementation of Merwin WHMP per Article 48. |
| 10.8.5 | WHMP Lands <ul style="list-style-type: none"> Update Exhibits to reflect lands owned and controlled by PacifiCorp and Cowlitz PUD | WHMP Standard and Guidelines Exhibit B was prepared to identify primary, secondary and other lands under WHMP. |

5.3.1 SA Section 10.1 Yale Land Acquisition and Habitat Protection Fund

Acquisition of Interests in Land is one of the primary purposes of the TCC and the ability to reach consensus is critical in making decisions to acquire lands. Criteria identified in the SA provide the primary drivers in selecting parcels for acquisition. In April of 2006, the TCC developed a list of lands in the Yale vicinity and identified their respective priorities. Additional discussion regarding conservation easements is ongoing.

In 2007, an offer was made on the highest priority land parcel but the offer was rejected by the owner. Because of confidentiality in acquiring lands, specific discussion is not included in this annual report other than to indicate that several additional opportunities were identified in 2007 and continue to be discussed.

5.3.2 SA Section 10.2 Swift No. 1 and Swift No. 2 Land Acquisition and Habitat Protection Fund

Discussion was conducted on general and specific areas of land in the vicinity of Swift Reservoir. Recent land development in the area has increased land values in the area and generated significant concern such that Skamania County instituted a moratorium on further development until a new land use plan can be developed. The TCC continues to look for opportunities in the area. Because of confidentiality in acquiring lands, specific discussion is not included in this annual report other than to indicate that several opportunities were identified in 2007 and continue to be discussed.

Implementation is scheduled for License Year 1.

5.3.3 SA Section 10.3 Lewis River Land Acquisition and Habitat Protection Fund

Implementation is scheduled for License Year 4

5.3.4 SA Section 10.4 Transaction Costs

No transaction costs were incurred in 2007 as no Interests in Lands were acquired using the Yale Fund.

5.3.5 SA Section 10.5 Management of Funds

PacifiCorp Energy made additional Yale Land funds (\$1,000,000) available in 2007 per the SA. A Tracking Account has been established and is inclusive of accrued interest pending any transactions (see Section 7.0).

5.3.6 SA Section 10.6 Completed Implementation Advanced Purchases

As identified in the Settlement Agreement article 10.6.2, PacifiCorp Energy acquired 770 acres (in 2000) of wildlife habitat near Cougar and Panamaker Creeks and established a 213 acre conservation covenant on those lands for the protection of bull trout. Routine maintenance of culverts, existing road closures and noxious weeds continued in 2007. There was an additional gate installed on a northern access road (# 2050) in the Fall of 2007. No

further trespass by ATV's was identified on trails that had previously been closed in the conservation area. PacifiCorp coordinated with the adjacent landowner on the west side of Panamaker Creek to address a blocked culvert that threatened to wash out the road (# 2040).

5.3.7 SA Section 10.7 Conservation Easements

See section 5.3.1 above.

5.3.8 SA Section 10.8 Wildlife Habitat Management Plan

The goals and objectives developed in the Lewis River WHMP Standards and Guidelines Document (EDAW, Inc. 2006) are being incorporated into the WHMPs for both utilities, as applicable. The WHMPs will include the strategies that will be used to meet each of the objectives, as well as a detailed schedule. PacifiCorp Energy submitted the first three draft chapters (Shrublands, Orchards and Transmission Right Of Way) for TCC review in December 2006 and discussion in January 2007. Two additional chapters of the Draft WHMP were distributed for TCC review (Raptor Site Management and Wetland Habitat Management) in October 2007. PacifiCorp Energy's WHMP will be completed and implemented within six months of the issuance of the licenses.

Per the SA, PacifiCorp Energy continues to implement the Merwin Wildlife Habitat Management Plan (MWHMP) which includes approximately 5,600 acres of lands that will be contained in the Lewis River WHMP. Separate annual reports are prepared for the MWHMP each year and are distributed to WDFW and USFWS. Additionally, the Washington State Department of Natural Resources (DNR) oversees Road Maintenance and Abandonment Plans (RMAP) for all of PacifiCorp Lewis River properties. Specific projects that were completed under RMAP are contained in Appendix B.

Maintenance of lands associated with the Yale and Swift No. 1 hydroelectric projects included noxious weed or invasive plant control along roads, in timber harvest areas and at project facilities. All maintenance practices are the same as those conducted for the Merwin WHMP properties. A total of 38.60 acres at Yale and 11.61 acres at Swift were treated for invasive plant species where they were significantly or potentially interfering with forest or wildlife resource objectives. All herbicide treatment was conducted with backpack sprayers. Actual acres treated were less than indicated but is reported based on the Timber Harvest Area (THA) polygon size. Annual surveys of previously managed forest lands identify the THA's where treatment is necessary, but usually only includes scattered patches of invasive species that need control.

PacifiCorp Energy developed and posted new Wildlife Habitat Management Area signs identifying PacifiCorp Energy lands and discouraging open fires, motorized vehicles and firewood cutting. These signs were developed in coordination with WDFW law enforcement input and TCC review.

The Lewis River WHMP Standards and Guidelines (4.3.4 (a)) include an objective to identify roads for closure to motorized use by the public. PacifiCorp Energy developed new gate designs in association with improvements to gates on the Merwin WHMP and installed

five new gates in 2007 near the Yale and Swift projects. While these roads were always closed to unauthorized motor vehicles by policy, they did not have gates. These gates provided improved access control for approximately 2.7 miles of transmission line roads. Gate installation was coordinated with transmission-line maintenance activities and included the opportunity to grass-seed these roads with a forage mix for big game. Additionally 0.2 miles of transmission access road was identified as unnecessary and potentially an erosion concern to a seasonal fish bearing stream. This road was therefore abandoned (closed with water-bars, erosion control fabric, logs and reseeded).

Per agreement with the TCC in 2006 and 2007, PacifiCorp Energy began an early implementation project to identify an area for forest management in the vicinity of the Swift hydroelectric project for the purpose of developing big game forage and improving forest habitat. Following goshawk surveys conducted jointly with the TCC, the project roads were built and an old meadow was partially rehabilitated (scarified and grass seeded). The project will be resumed in 2008.

5.4 PacifiCorp Energy Terrestrial 2008 Annual Plan

This section presents PacifiCorp Energy's Terrestrial Resources Annual plan which identifies planned 2008 activities as organized by the Settlement Agreement measures.

5.4.1 SA Section 10.1 Yale Land Acquisition and Habitat Protection Fund

PacifiCorp Energy will continue to coordinate with the TCC regarding the acquisition of Interests in Land in the vicinity of Yale. Two transactions are currently being pursued with TCC support.

5.4.2 SA Section 10.2 Swift No. 1 and Swift No. 2 Land Acquisition and Habitat Protection Fund

The new Swift FERC licenses are expected in the second quarter of 2008. The first installment of payment to the Fund is to be completed within nine months of license issuance. PacifiCorp Energy will continue work initiated in 2007 in coordination with the TCC regarding the acquisition of interests in land in the vicinity of Swift Reservoir.

5.4.3 SA Section 10.3 Lewis River Land Acquisition and Habitat Protection Fund

Initial contributions to the Fund shall be completed by six months after the fourth year of the new FERC license for the Yale and Swift No. 1 Projects.

5.4.4 SA Section 10.4 Transaction Costs

No transaction costs were incurred in 2007.

5.4.5 SA Section 10.5 Management of Funds

Funds provided by PacifiCorp Energy in 2007 are managed in a tracking account and in accordance with SA language. Contribution amounts and interest gained is identified in Section 7.0 – Funding.

5.4.6 SA Section 10.6 Completed Implementation Advanced Purchases

PacifiCorp Energy will continue to manage the Cougar Creek Conservation Covenant lands and the company lands on the Swift Creek Arm for the long-term benefit of fish, wildlife, and native plants. These lands will be managed under the new license WHMP as described in SA 10.8.

5.4.7 SA Section 10.7 Conservation Easements

Guidelines for the selection and acquisition of conservation easements will be considered in the acquisition of Interests in Lands to be purchased with Funds described in SA 10.1 through 10.3.

5.4.8 SA Section 10.8 Wildlife Habitat Management Plans

- PacifiCorp Energy will continue implementation of the Merwin Wildlife Habitat Management Plan until final acceptance of the Lewis River WHMP.
- PacifiCorp Energy will continue to develop Draft Wildlife Habitat Management Plans for review with the TCC and finalize within six months of the issuance of the Swift No. 1, Yale, and Merwin FERC licenses. At this time it is assumed the licenses will be issued in the second quarter of 2008, triggering implementation of the WHMP by early 2009.
- PacifiCorp Energy will make available \$27 per acre of WHMP lands and \$13.50 per acre for other Interests in Land within six months of the issuance of the Licenses for implementation of the WHMP.
- PacifiCorp Energy will identify infestations of weeds and other undesirable or invasive plant species and prioritize for treatment (part of WHMP).
- PacifiCorp Energy will conduct aerial bald eagle and osprey nesting surveys (part of WHMP).
- As part of wildlife habitat management planning in the Panamaker Creek watershed, PacifiCorp Energy is proposing to the ACC via the Aquatic Fund the abandonment of over one mile of old logging road along the east side of the drainage. This would remove nine culverts and a full bench road on steep topography directly above the Cougar/Panamaker Creek Conservation Area. This proposal is anticipated to prevent potential sediment delivery into Panamaker Creek and indirectly benefit Cougar Creek's bull trout habitat.
- In 2008 forest management will be completed north of Swift reservoir to manage approximately 30 acres of decadent red alder to provide short term big game forage and long term benefits to late successional forest species in the future. Additional permanent big game forage will also be established. All aspects of the Standards and Guidelines are being incorporated in the forest management.

5.5 Cowlitz PUD Terrestrial Measures Implemented in 2007

5.5.1 SA Section 10.6 Completed Implementation: Advance Purchases [Devil's Backbone Conservation Covenant]

Cowlitz PUD managed the Devil's Backbone Conservation Covenant to benefit bull trout.

5.5.2 SA Section 10.8.1 Development of the Wildlife Habitat Management Plan (WHMP) 2006

Cowlitz PUD's WHMP consultant (Meridian) prepared preliminary sections of the draft WHMP after the TCC completed the Standards and Guidelines Document. Cowlitz PUD and the consultant conducted a TCC site visit of the Devil's Backbone and Swift No. 2 Project Works on June 14, 2006 to gather the TCC's preliminary ideas on managing the Swift No. 2 wildlife lands.

2007

During 2007, Meridian continued work on Cowlitz PUD's WHMP.

5.5.3 SA Section 10.8.2 WHMP Fund

Cowlitz PUD did not establish the Tracking Account in 2007 because the FERC did not issue the Swift No. 2 license in 2007.

5.5.4 SA Section 10.8.3 Management of the Plan [Annual Plan]

This measure covers the Annual Plan described above in Section 5.5.3 and below in Section 5.6.4.

5.5.5 SA Section 10.8.4 Habitat Evaluation Procedures

Implementation scheduled for Year 17 of the Swift No. 2 license.

5.5.6 SA Section 10.8.4.2 Review of Effectiveness of WHMP

Implementation scheduled after Year 17 of the Swift No. 2 license.

5.5.7 SA Section 10.8.3 Cowlitz PUD 2006 Annual Plan

This section presents Cowlitz PUD's Terrestrial Resources Annual plan, organized by the SA measures described above in Section 5.5.1 through 5.5.7. Cowlitz PUD did not prepare a 2007 Annual Plan because the license was not issued in 2007.

5.6 Cowlitz PUD Terrestrial 2008 Annual Plan

5.6.1 SA Section 10.6 Cowlitz PUD Completed Implementation: Advance Purchases [Devil's Backbone Conservation Covenant]

These lands will be managed under the WHMP.

5.6.2 SA Section 10.8.1 Cowlitz PUD Development of the Wildlife Habitat Management Plan (WHMP)

The WHMP will be completed and implemented within 6 months of the issuance of the Swift No. 2 license. At this time, Cowlitz PUD assumes the license will be issued in mid 2008, triggering implementation of the WHMP by early 2009.

5.6.3 SA Section 10.8.2 Cowlitz PUD WHMP Fund

Cowlitz PUD will make available \$27 per acre of WHMP lands within 6 months of the issuance of the Swift No. 2 license. At this time, Cowlitz PUD assumes the license will be issued in mid 2008, triggering the first entry in the Tracking Account by January 2009. Once the Cowlitz PUD WHMP Tracking Account has been established, it will be included as a separate table in this Annual Report under Section 7.0.

5.6.4 SA Section 10.8.3 Management of the Plan [Annual Plan]

The First Year Annual Plan will be completed and implemented within 6 months of the issuance of the Swift No. 2 license. At this time, Cowlitz PUD assumes the license will be issued in mid 2008, triggering implementation of the First Year Annual Plan by early 2009.



SECTION 6 – LAW ENFORCEMENT

6.0 Law Enforcement

This section presents the actions taken during January 2007 through December 2007 toward Law Enforcement requirements in the Lewis River Settlement Agreement.

PacifiCorp, in consultation with local and state law enforcement provide additional law enforcement coverage related to land and water-based recreation activities reasonably related to PacifiCorp Projects to protect public health, safety, welfare, and natural resources.

6.1 SA Section 13.2.1 Law Enforcement

In response to All Terrain Vehicle issues on the Lewis River:

- Signage identifying WHMP lands as closed to motorized vehicles has been posted and efforts made to maintain postings.
- Surveillance cameras have been strategically located in wildlife areas. The cameras are fixed, external use-type with night-vision and camouflage application. Over two dozen pictures have been taken from changing positions with this effort, but no identifying marks from the vehicles or features of the drivers have been detailed on the pictures. Cameras are recovered, maintained, and cleaned following large storm events.
- Increased patrol surveillance from both Cowlitz and Clark County Sheriff's Departments was solicited. Two ATV riders near Buncombe Hollow Road and the Merwin substation were caught and cited for trespassing. Both plead guilty and paid a \$ 299.00 fine.

In response to vandalism and malicious mischief on the Lewis River:

- Signage for the area was standardized and put in place prior to the law enforcement efforts.
- Seven law enforcement stings were conducted in 2007.
- Three stings were concentrated in Skamania County area over three weekends with the plunge pool and DNR layout area. Over sixty field interviews (trespassers) were conducted with 29 trespass warnings issued and six trespass citations issued at \$ 199.00 each.
- Two stings were conducted over a three week period in the Clark County area along the IP road in the area from Yale Dam to the Highway 503 Bridge. Over forty field interviews (dispersed campers/trespassers) were conducted with 20 trespass warnings, eight trespass citations at \$ 299.00 each, and two arrests for felony, aggravated vandalism. Both arrests pled guilty and full restitution has been recovered.
- Two stings were conducted in the Cowlitz County area with focus on gate and security breaches in the area of the gravel pit with no hits.

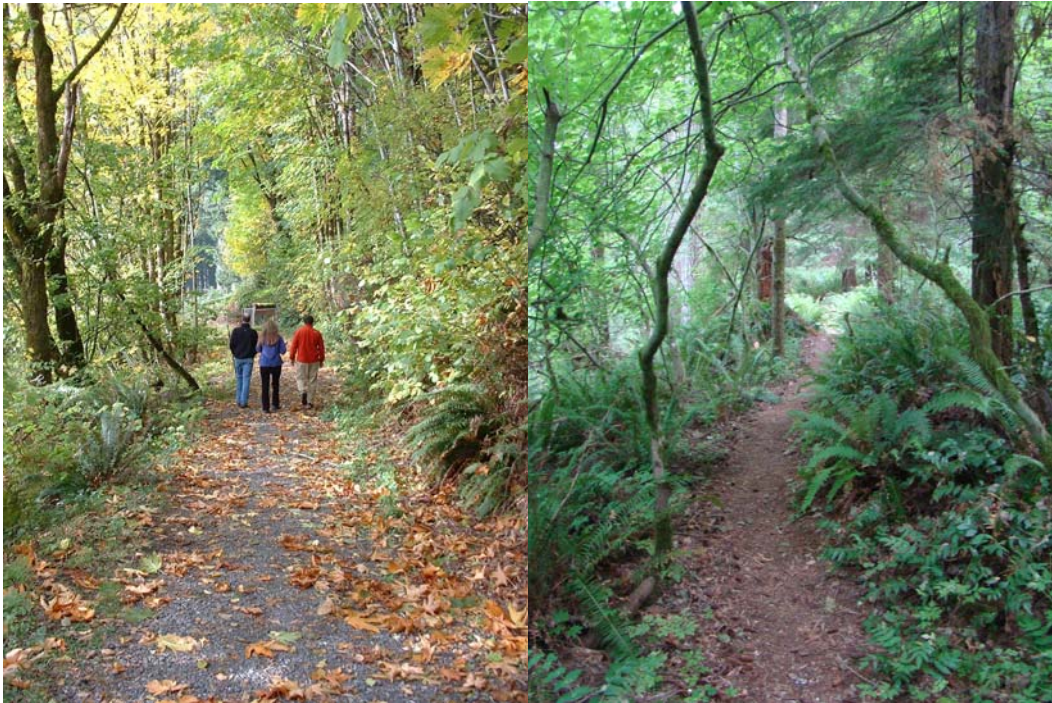
In response to security and public safety support on the Lewis River:

- Signage for the areas was standardized and put in place prior to the law enforcement efforts.
- No parking signs were posted on the highway at the Yale Day Park and the Cresap Bay facility.
- Twenty-eight parking citations were issued and sixteen cars towed.

SECTION 7 – FUNDING

7.0 FUNDING

This section presents an accounting to date of the funding obligations for the Lewis River Settlement Agreement.



Lewis River License Implementation

Lewis River Aquatics Fund - Bull Trout

Sections 7.5, 7.5.1, 7.5.3, 7.5.3.1 & 7.7

Funding Start Date: 4/30/05

| Release Date | Funds Received | Expense | Interest | Balance | Notes |
|-----------------------------|----------------|--------------|----------------------|---------------|--|
| 12/31/05 | | | | \$ 161,327.11 | Contributions in 2004 dollars, adjusted for inflation. |
| 4/30/06 | \$ 106,086.01 | | | | |
| 11/30/06 | | \$ 37,889.08 | | | Pine Creek Nutrient Enhancement - USDA FS |
| 12/31/06 | | | \$ 19,176.61 | | |
| 4/30/07 | \$ 163,897.54 | \$ 25,000.00 | | | Pine Creek Instream & Floodplain Structures for Bull Trout and Steelhead - USDA FS |
| 7/31/07 | | \$ 20,000.00 | | | Rush Creek Gravel Restoration - USDA FS |
| 8/21/07 | | \$ 43,150.00 | | | 2007 Pine Creek Nutrient Enhancement - USDA FS |
| 12/31/07 | | | \$ 27,400.40 | | |
| Total Spent to Date: | | | \$ 126,039.08 | | |
| Running Total: | | | \$ 351,848.59 | | |

Lewis River License Implementation
Lewis River Aquatics Fund - Resource Projects
Sections 7.5, 7.5.1, 7.5.3, 7.5.3.1 & 7.7

Funding Start Date: 4/30/05

| Release Date | Funds Received | Expense | Interest | Balance | Notes |
|-----------------------------|----------------|--------------|----------------------|---------------|--|
| 12/31/05 | | | | \$ 161,327.11 | Contributions in 2004 dollars, adjusted for inflation. |
| 4/30/06 | \$ 212,172.03 | | | | |
| 9/30/06 | | \$ 46,000.00 | | | Muddy River Tributary Road Decommission - USDA FS |
| 12/31/06 | | | \$ 24,305.00 | | |
| 4/30/07 | \$ 163,897.54 | \$ 80,000.00 | | | Fish Passage Culvert Replacement - USDA FS |
| 8/23/07 | | \$ 79,000.00 | | | 2007 Dispersed Camping & Day Use Road Restoration - USDA FS |
| 9/6/07 | | \$ 75,000.00 | | | 2007 Aquatic Funding Enhancement Projects - Cowlitz Indian Tribe |
| 12/31/07 | | | \$ 30,833.16 | | |
| Total Spent to Date: | | | \$ 280,000.00 | | |
| Running Total: | | | \$ 312,534.84 | | |

Lewis River License Implementation
Lewis River Yale Land Fund
Section 10.1 - 10.1.1

Funding Start Date: 4/1/05

| Release Date | Funds Received | Expense | Interest | Balance | Notes |
|-----------------------------|-----------------|---------|------------------------|-----------------|--|
| 12/31/05 | | | | \$ 1,573,922.62 | Contributions in 2003 dollars, adjusted for inflation Fixed prime rate nearest April 1 of each year |
| 4/30/06 | \$ 1,081,853.45 | | | | |
| 12/31/06 | | | \$ 90,500.56 | \$ 2,746,276.63 | |
| 12/31/07 | | | \$ 212,836.46 | \$ 2,959,113.09 | |
| Total Spent to Date: | | | \$ - | | |
| Running Total: | | | \$ 2,959,113.09 | | |

SECTION 8 – LITERATURE CITED

8.0 LITERATURE CITED

- Cowlitz PUD. 2004. License Application for new license for Swift No. 2 Hydroelectric Project, FERC Project No. 2213.
- Cowlitz PUD. 2005a. Cowlitz PUD comments. Federal Energy Regulatory Commission Draft Environmental Impact Statement Lewis River Hydroelectric Projects, Washington Swift No. 1 (Project No. 2111), Swift No. 2 (Project No. 2213), Yale (Project 2071), Merwin (Project 935). November 22, 2005.
- Cowlitz PUD. 2005b. Revised Draft License Articles for Swift No. 2 (Project No. 2213). Submitted as Supplemental Comments on the Federal Energy Regulatory Commission Draft Environmental Impact Statement. Lewis River Hydroelectric Projects, Washington Swift No. 1 (Project No. 2111), Swift No. 2 (Project No. 2213), Yale (Project 2071), Merwin (Project 935). December 19, 2005.
- FERC. 1999. Letter to PacifiCorp and Cowlitz PUD approving use of Alternative Licensing Procedures in accordance with the Commission's Regulations for Licensing Hydroelectric Projects. April 1, 1999.
- FERC. 2005. Draft Environmental Impact Statement – Lewis River Hydroelectric Projects Washington, Swift No. 1 (Project No. 2111), Swift No. 2 (Project No. 2213), Yale (Project No. 2071), and Merwin (Project No. 935). September 2005.
- PacifiCorp. 1999a. License Application for new license for Yale Hydroelectric Project, FERC Project No. 2071.
- PacifiCorp. 2004a. License Application for new license for Swift No. 1 Hydroelectric Project, FERC Project No. 2111.
- PacifiCorp. 2004b. License Application for new license for Merwin Hydroelectric Project, FERC Project No. 935.
- PacifiCorp. 2005. Letter to the FERC re: comments on Draft Environmental Impact Statement for PacifiCorp's Merwin Project (FERC No. 935), Yale Project (FERC No. 2071), and Swift No. 1 Project (FERC No. 2111), and Cowlitz PUD's Swift No. 2 Project (FERC No. 2213). November 23, 2005.
- PacifiCorp and Cowlitz PUD. 1999. Letter to FERC requesting approval to use the Alternative Licensing Process (ALP) for simultaneous and coordinated processing of Lewis River Hydroelectric projects. January 21, 1999.

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PacifiCorp and Cowlitz PUD. 2005b. Biological Evaluation of Listed, Proposed, and Candidate Salmon and Steelhead Species as Related to PacifiCorp and Cowlitz PUD's Lewis River Hydroelectric Projects. January 15, 2005.

PacifiCorp and Cowlitz PUD, et al. 2004. Lewis River Hydroelectric Projects Settlement Agreement. November 30, 2004.

Cowlitz PUD. 2007. Draft Surge Arresting Structure TDG Monitoring Plan for the Swift No. 2 Hydroelectric Project, FERC No. 2213. January 29, 2007. Prepared by Meridian Environmental, Inc.

Ecology. 2006. Swift No. 2 Hydroelectric Project (FERC No. 2213) 401 Certification / Order No. 3676. October 9, 2006. Washington Department of Ecology.

Ecology. 2006a. Swift No. 2 Hydroelectric Project (FERC No. 2213) 401 Certification First Amendment Order No. 3927, of Order No. 3676. November 3, 2006. Washington Department of Ecology.

Ecology. 2007. Letter from Deborah Cornett (Ecology) to Diana MacDonald (Cowlitz PUD). February 16, 2007.

APPENDICES

Appendix A
ACC and TCC Members and Alternates

Table A-1
ACC Members and Alternates

| TCC Member | Organization | Alternate |
|--------------------------------|--------------------------------------|--------------------------------|
| Kathryn Miller | American Rivers | Brett Swift |
| Public Works Director | City of Woodland | To be named |
| No representative at this time | Clark County | To be named |
| No representative at this time | Cowlitz County | To be named |
| Shannon Wills | Cowlitz Indian Tribe | To be named |
| No representative at this time | Cowlitz-Skamania Fire District No. 7 | To be named |
| Jim Malinowski | Fish First | To be named |
| John Clapp | Lewis River Citizens at-large | To be named |
| Mariah Stoll-Smith Reese | Lewis River Community Council | To be named |
| Jeff Breckel | Lower Columbia River Fish Recovery | Steve Manlow |
| Michelle Day | National Marine Fisheries Service | To be named |
| No representative at this time | National Park Service | To be named |
| No representative at this time | North County Emergency Medical | To be named |
| Frank Shrier | PacifiCorp Energy | Erik Lesko |
| Diana M. Gritten-MacDonald | PUD of Cowlitz County | To be named |
| No representative at this time | Rocky Mountain Elk Foundation | To be named |
| Paul Pearce | Skamania County | To be named |
| Brett Swift | The Native Fish Society | To be named |
| Kathryn Miller | Trout Unlimited | Brett Swift |
| No representative at this time | US Bureau of Land Mgmt | To be named |
| LouEllyn Jones | US Fish & Wildlife | Joe Hiss |
| Diana Perez | USDA Forest Service | Adam Haspiel |
| Curt Leigh | Washington Dept of Fish & Wildlife | Steve Vigg and John Weinheimer |
| No representative at this time | Washington Interagency Committee | To be named |
| No representative at this time | Woodland Chamber of Commerce | To be named |
| George Lee | Yakama Nation | To be named |

**Table A-2
 TCC Members and Alternates**

| TCC Member | Organization | Alternate |
|--------------------------------|--------------------------------------|------------------|
| No representative at this time | American Rivers | To be named |
| Public Works Director | City of Woodland | To be named |
| No representative at this time | Clark County | To be named |
| No representative at this time | Cowlitz County | To be named |
| Taylor Aalvik | Cowlitz Indian Tribe | Shannon Wills |
| No representative at this time | Cowlitz-Skamania Fire District No. 7 | To be named |
| No representative at this time | Fish First | To be named |
| John Clapp | Lewis River Citizens at-large | To be named |
| Mariah Stoll-Smith Reese | Lewis River Community Council | To be named |
| No representative at this time | Lower Columbia River Fish Recovery | To be named |
| Michelle Day | National Marine Fisheries Service | To be named |
| No representative at this time | National Park Service | To be named |
| No representative at this time | North County Emergency Medical | To be named |
| Kirk Naylor | PacifiCorp Energy | To be named |
| Diana M. Gritten-MacDonald | PUD of Cowlitz County | To be named |
| Bob Nelson | Rocky Mountain Elk Foundation | Tom Macy |
| Paul Pearce | Skamania County | To be named |
| No representative at this time | The Native Fish Society | To be named |
| No representative at this time | Trout Unlimited | To be named |
| No representative at this time | US Bureau of Land Mgmt | To be named |
| LouEllyn Jones | US Fish & Wildlife | Joe Hiss |
| Mitch Wainwright | USDA Forest Service | To be named |
| Curt Leigh | Washington Dept of Fish & Wildlife | Brock Applegate |
| No representative at this time | Washington Interagency Committee | To be named |
| No representative at this time | Woodland Chamber of Commerce | To be named |
| Clifford Casseseka | Yakama Nation | Joanna Meninick |

Appendix B **2007 Road Maintenance Activities**

PacifiCorp Energy
2007
Road Maintenance & Abandonment
Work Completed for Yale & Swift

Background

The Washington State Legislature directed the state Forest Practices Board through the Salmon Recovery Act, 1999 Laws Sp. Sess. Ch. 4, to change forest practices rules relating to roads consistent with the April 29, 1999 Forests and Fish Report. This act was passed to provide substantial and sufficient contributions to salmon recovery and water quality enhancement, as well as, satisfy requirements of the federal Endangered Species Act and the federal Clean Water Act in forested areas.

Effective March 20, 2000, the Forest Practices (FP) Board adopted significant emergency changes and additions to the forest road construction and maintenance rules (Chapter 222-24 WAC, or current FP rules, or the rules). These emergency changes are designed to ensure that forest roads in Washington State meet standards recommended in the April 29, 1999 Forests and Fish Report, and requirements in the federal Endangered Species and Clean Water Acts.

Based on current FP rules, forest roads must be used and managed in a manner not to threaten public safety, and prevent potential or actual damage to public resources.

2007 Work Accomplished

PacifiCorp completed four culvert maintenance improvement projects on its ownership at Yale and Swift. Road access gates were installed on four sites in the Yale ownership and one site at Swift. Standard maintenance practices and storm strategies are used for the management of all PacifiCorp road systems. These practices include routine maintenance as well as pre-storm planning, emergency maintenance and post-storm recovery action.

During 2007, improvements were made on the following roads and are identified on the attached maps.

- Road 1800 (a transmission line access road off SR 503) had two new galvanized steel gates installed on the north and south ends to control unauthorized access. The area was signed and additional boulders and stumps used in the area to prevent access. The northern gate was installed on DNR land that was a natural location to also protect a portion of both landowners' resources. Extensive unauthorized access had been occurring in this location.

- Road #1822 (a transmission line access road off SR 503) had a new galvanized gate installed to control unauthorized access.
- Culverts 1800C2 and 1800C3 (ROW access road) were determined to be undersized to handle larger storm events and were replaced with 30” culverts; both culverts are located on seasonal non-fish bearing (Ns) water types.
- Road #1850 (ROW access road) had a new galvanized gate installed to control unauthorized access. The road was also graded, shaped and ditched to reduce surface erosion.
- A small portion of road #1800 was closed off to prevent unnecessary and unauthorized access from occurring across a seasonal fish bearing stream. Logs, erosion control matting and grass seeding were used to close the road off.
- Road #2050 (formerly a Weyerhaeuser forest access road) was closed with a new galvanized gate installed to control unauthorized access.
- Culvert # 2510C1 (10” ditch culvert) was determined to be undersized and replaced with an 18” culvert.
- Road #2600 received a new 18” culvert to improve drainage in an area where water previously ponded.

2008 Road Maintenance Activities

Only standard maintenance is anticipated for 2008 for PacifiCorp roads associated with the lands surrounding the Yale and Swift Hydroelectric projects. Additional road and culvert maintenance activities are identified in the Merwin Wildlife Habitat Management Plan for roads in that vicinity.

All of PacifiCorp’s roads are inspected annually to identify maintenance issues. Additionally, monitoring of previously managed sites will be conducted to ensure vegetation is establishing where necessary.

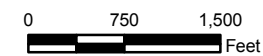
Lewis River Hydroelectric Projects

2007 Road/Culvert Improvements

Sheet 1 of 3

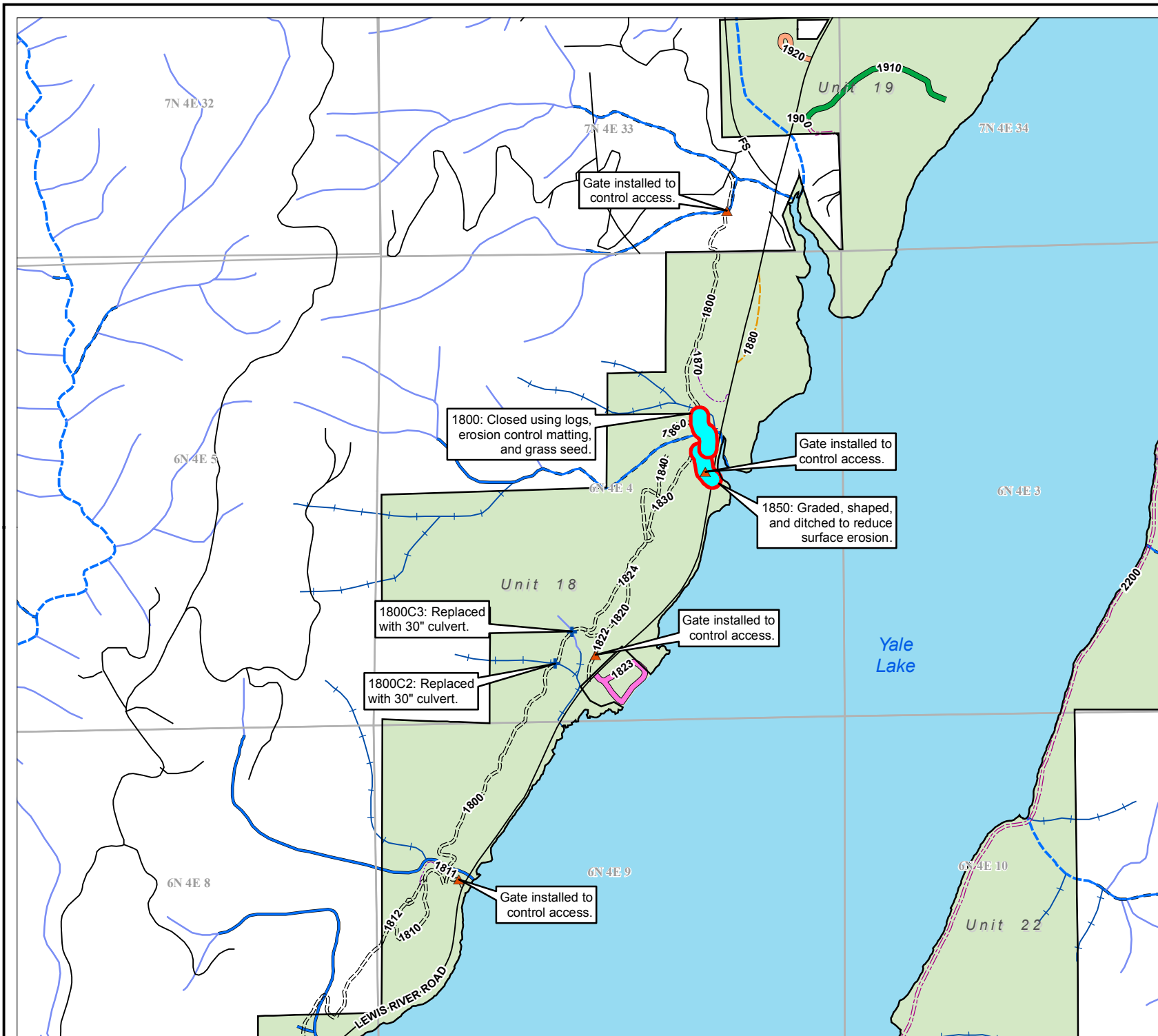
Legend

- ▲ Gate
 - Ditch Culvert
 - + Stream Culvert
 - Road Maintenance Area
 - Management Unit
 - PacifiCorp Ownership
 - Section
 - Water Body
- Road Use
- Forestry
 - Utility
 - Utility ROW
 - Recreation
 - Forestry, Utility
 - Forestry, Recreation
 - Forestry, Recreation, Utility
 - Abandoned
 - Orphaned
 - Other
- Stream Type
- Fish
 - - - Anadromous Fish
 - Non-fish Perennial
 - + + + Non-fish Seasonal
 - - - Other



Data Management/
Geographic Information Systems
gisdept@pacifiCorp.com

Data are projected in UTM Zone 10, NAD83, meters.
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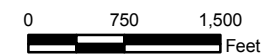
Lewis River Hydroelectric Projects

2007 Road/Culvert Improvements

Sheet 2 of 3

Legend

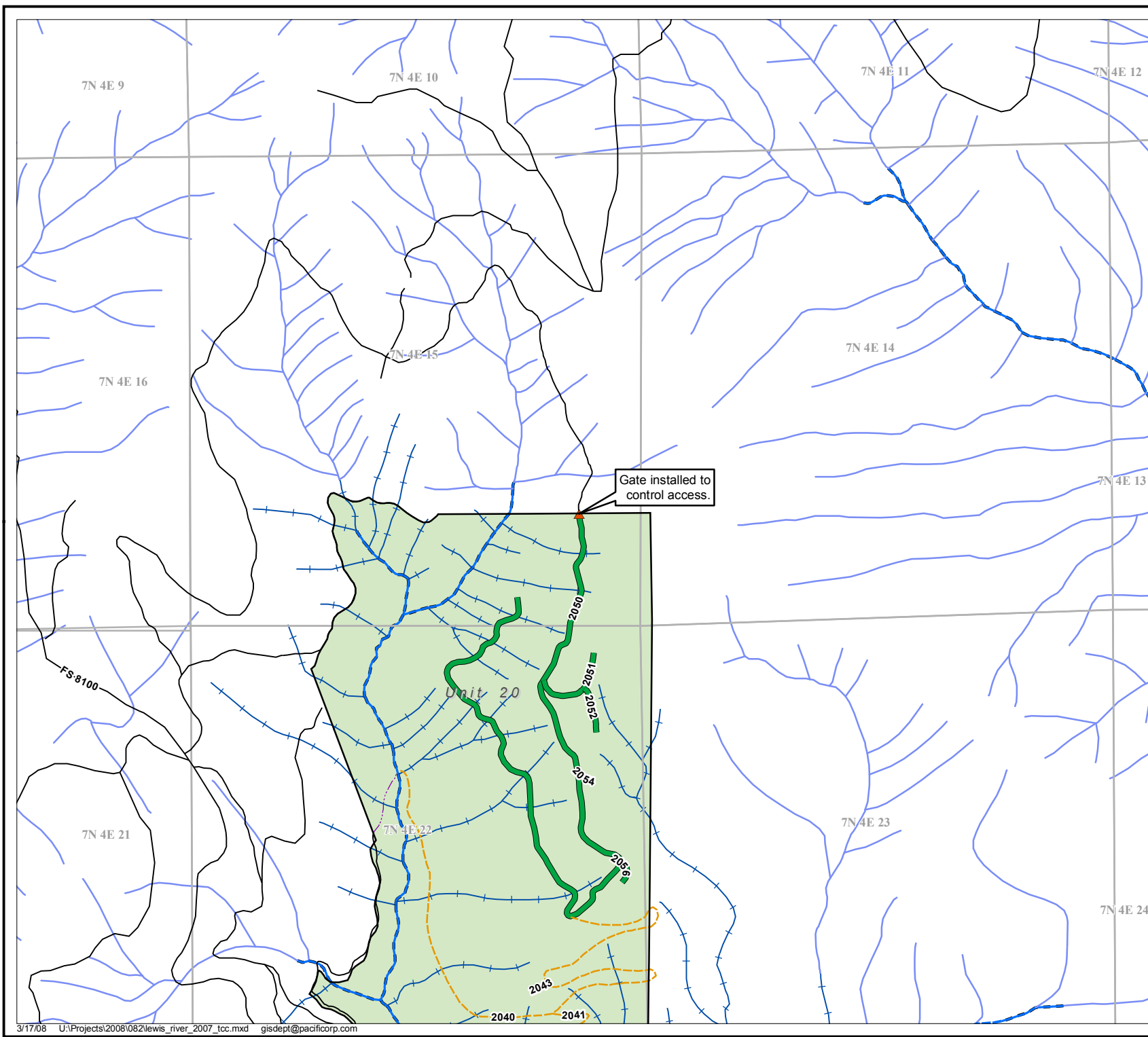
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 - + Stream Culvert
 - Road Maintenance Area
 - Management Unit
 - PacifiCorp Ownership
 - Section
 - Water Body
- Road Use
- Forestry
 - Utility
 - Utility ROW
 - Recreation
 - Forestry, Utility
 - Forestry, Recreation
 - Forestry, Recreation, Utility
 - Abandoned
 - Orphaned
 - Other
- Stream Type
- Fish
 - - - Anadromous Fish
 - Non-fish Perennial
 - - - Non-fish Seasonal
 - Other



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Geographic Information Systems
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



















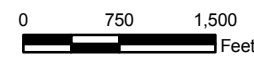
Lewis River Hydroelectric Projects

2007 Road/Culvert Improvements

Sheet 3 of 3

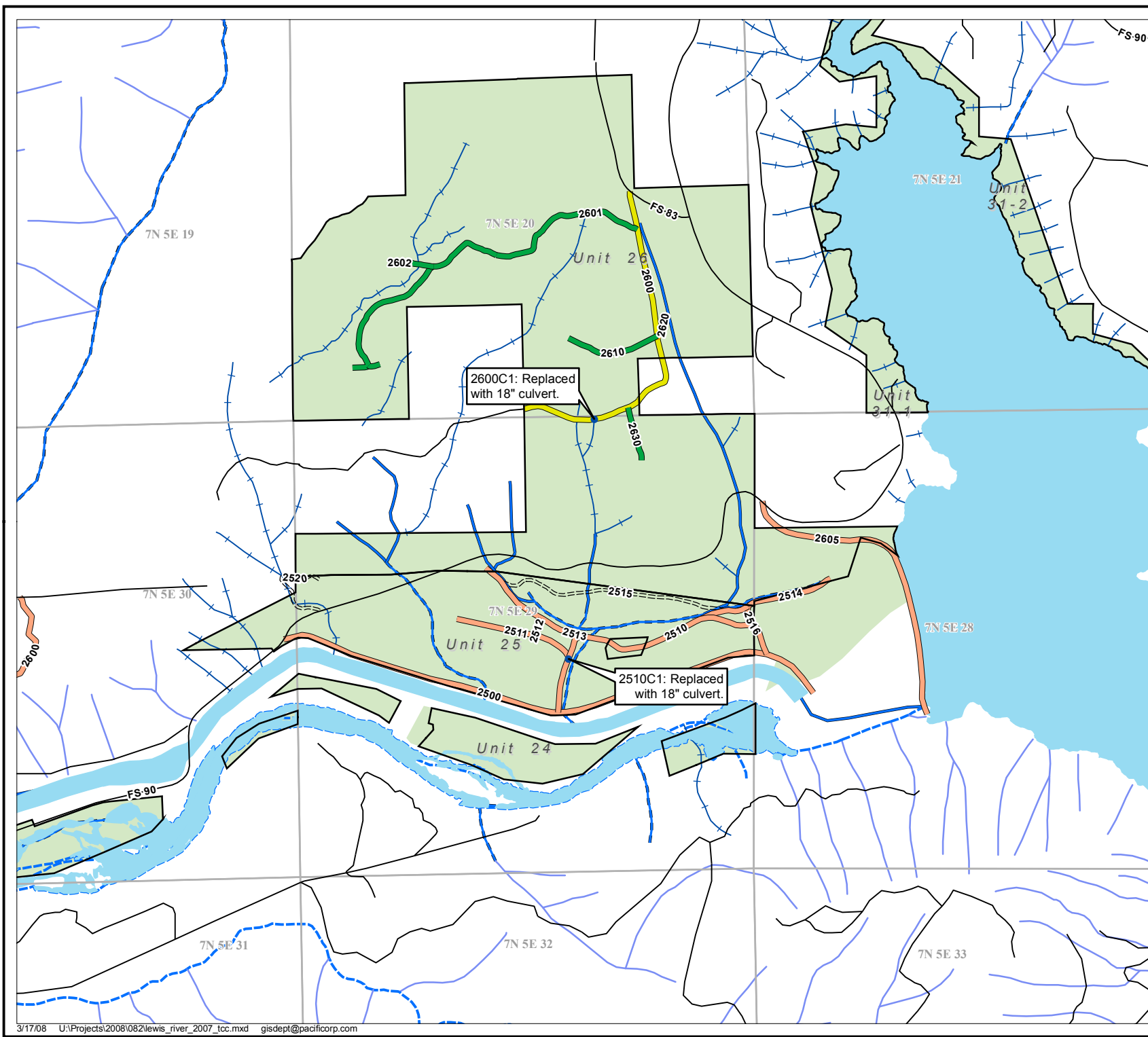
Legend

-  Gate
-  Ditch Culvert
-  Stream Culvert
-  Road Maintenance Area
-  Management Unit
-  PacifiCorp Ownership
-  Section
-  Water Body
- Road Use**
-  Forestry
-  Utility
-  Utility ROW
-  Recreation
-  Forestry, Utility
-  Forestry, Recreation
-  Forestry, Recreation, Utility
-  Abandoned
-  Orphaned
-  Other
- Stream Type**
-  Fish
-  Anadromous Fish
-  Non-fish Perennial
-  Non-fish Seasonal
-  Other



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Appendix C
ACC/TCC Comments

Comments Received from the USDA Forest Service and the Response from PacifiCorp Energy

Comments from USDA Forest Service:

From: Diana H Perez [<mailto:dperez@fs.fed.us>]

Sent: Friday, April 11, 2008 12:47 PM

To: McCune, Kimberly

Cc: Lynn Burditt; Adam I Haspiel; Mitch Wainwright; Michael Gerdes; Diana H Perez

Subject: Informal Forest Service comments on 2007 Draft ACC/TCC Annual Report, 30-day Review

Hi Kimberly, the Forest Service has a couple of minor comments on the 2007 draft ACC/TCC Annual Report:

3.3.20 SA Section 7.1 Large Woody Debris Program (page 38): My understanding is that the Forest Service was not offered the logs from Swift Reservoir during 2007. In the future, it would be helpful to have a clear process in place for distribution of Swift Reservoir logs. A first-come first-serve approach may lead to some confusion.

3.3.27 SA Section 7.8 Execution of Projects and Mitigation Measures (page 41): The Pine Creek Nutrient Enhancement was not withdrawn from implementation because of pending funding issues. The withdrawal was only due to lack of excess adult fish carcasses.

This concludes the Forest Service comments on the draft ACC/TCC annual report. Thanks for the opportunity to review and comment. cheers

Diana Perez Rose, Acting Deputy Monument Manager
Mount St. Helens National Volcanic Monument
42218 NE Yale Bridge Road
Amboy, WA 98601
360-449-7843

PacifiCorp Energy's response:

The final draft of the 2007 ACC/TCC Annual Report has been modified (*in italics*) to be as follows:

3.3.20 SA Section 7.1 Large Woody Debris Program

PacifiCorp Energy continued the Large Woody Debris (LWD) program per its current Hydraulic Project Approval (HPA) from the state of Washington. This included coordinating with Washington Department Fish and Wildlife and the Lower Columbia Fish Enhancement Group regarding distributing LWD to aquatic projects. Swift Reservoir was cleared of floating woody debris during May and June of 2007. Logs were removed from the reservoir along with over 100 tons of smaller debris.

For the Large Woody Debris study (SA 7.1.2) PacifiCorp Energy hired Interfluve, Inc. at the recommendation of the ACC. Work was completed and a final report is due in January 2008.

3.3.27 SA Section 7.8 Execution of Projects and Mitigation Measures

In November, 2007, the U.S. Forest Service withdrew its plan to implement the Pine Creek Nutrient Enhancement *due to* lack of excess adult fish carcasses, therefore the approved project will be postponed one year. The NEPA was completed by the U.S. Forest Service for this project in October 2006. Macroinvertebrate samples were collected at 11 locations for monitoring purposes prior to carcass deployment. The U.S. Forest Service intends to take post project macroinvertebrate samples and write a report at a future date.

Appendix D
Section 14 of the Settlement Agreement

SECTION 14: COORDINATION AND DECISION MAKING

14.1 Coordination and Decision Making. The provisions of this Section 14 describe the processes for coordination and decision making among the Parties for the implementation of the terrestrial and aquatic PM&E Measures provided for in this Agreement. As provided for in Section 14.2 below, the Licensees shall convene a Terrestrial Coordination Committee (“TCC”) to coordinate implementation of the terrestrial PM&E Measures described in Section 10 (including any exhibits, schedules, and appendices related to Section 10), and shall accomplish the purposes set forth in Section 14.1.1 below. The Licensees shall convene an Aquatics Coordination Committee (“ACC”) to coordinate implementation of the aquatics PM&E Measures described in Sections 3 through 9 (including any exhibits, schedules, and appendices related to those Sections), referred to below as terrestrial and aquatic PM&E Measures.

14.1.1 Purposes of the TCC. The TCC is intended to accomplish the purposes set forth below:

- a. Provide a forum for coordination between the Licensees and the other Parties on terrestrial resources PM&E Measure implementation.
- b. Oversee the development by the Licensees of an objective-oriented WHMP prior to the Issuance of the New Licenses.
- c. Monitor implementation of that WHMP.
- d. Oversee the HEP study in the 17th year after Issuance of the New Licenses, and modify the WHMP if necessary based on the HEP’s results.
- e. Oversee and make decisions regarding the: (1) Yale Fund; (2) the Swift Fund; and (3) the Lewis River Fund.
- f. Oversee the annual budget for the WHMP.

14.2 Coordination Committees. Within 60 days after the Effective Date, PacifiCorp and Cowlitz PUD shall convene the TCC and the ACC.

14.2.1 Committee Coordinators. Within 30 days after the Effective Date, PacifiCorp and Cowlitz PUD each shall designate one Committee Coordinator for the TCC and one Committee Coordinator for the ACC. PacifiCorp and Cowlitz PUD shall make their designations by notice to the Parties in accordance with the notice provisions in Section 16.6. The PacifiCorp Committee Coordinator(s) shall be employed or retained by PacifiCorp and may represent PacifiCorp on the TCC and the ACC. The Cowlitz Committee Coordinator(s) shall be employed or retained by Cowlitz PUD and may represent Cowlitz PUD on the TCC

and the ACC. The PacifiCorp Committee Coordinator(s) shall, as their primary responsibilities, oversee the coordination and implementation of the terrestrial and aquatic PM&E Measures that are the responsibility of PacifiCorp as provided in this Agreement. The Cowlitz PUD Committee Coordinator(s) shall oversee the coordination and implementation of the terrestrial and aquatic PM&E Measures that are the responsibility of Cowlitz PUD as provided in this Agreement. PacifiCorp and Cowlitz PUD Committee Coordinators together shall oversee the coordination and implementation of terrestrial and aquatic PM&E Measures for which PacifiCorp and Cowlitz PUD have joint responsibility as provided in this Agreement.

14.2.2 TCC and ACC Membership. Within 30 days after the Effective Date, or at any time thereafter with 30 days' notice to the Licensees, each Party, at its own discretion and cost, may designate one representative for membership on the TCC and may designate one representative for membership on the ACC and may designate one or more alternates. The Party shall make its designation(s) by notice to the Parties in accordance with Section 16.6. A Party not participating on the TCC, the ACC, or both may request, by notice to the Parties in accordance with Section 16.6, to be placed on a contact list to receive notices of committee meetings and releases of information, including annual reports and other interim reports that the TCC or the ACC may issue.

14.2.3 TCC and ACC Functions. The TCC and the ACC will:

- a. Coordinate and Consult on development of plans by the Licensees as provided in this Agreement;
- b. Review information and oversee, guide, and make comments and recommendations on implementation and monitoring of the terrestrial and aquatic PM&E Measures, including plans;
- c. Consult with the Licensees on their respective reports prepared under this Agreement regarding implementation of the terrestrial and aquatic PM&E Measures as referred to in Section 14.2.6 below;
- d. Make decisions, grant approvals, and undertake any additional duties and responsibilities expressly given to the TCC or the ACC with respect to the terrestrial and aquatic PM&E Measures;
- e. Establish, among other things, (i) procedures and protocols for conducting committee meetings and deliberations to ensure efficient participation and decision making; (ii) rules for quorum and decision making in the absence of any member; (iii) alternative meeting formats as desired, including phone or teleconference; and (iv) the methods and procedures for updating committee members on interim progress of development and implementation of the terrestrial and aquatic PM&E Measures;

f. As deemed necessary and appropriate by the TCC or the ACC, establish subcommittees to carry out specified committee functions and responsibilities described in this Section 14.2.3, and establish the size of, membership of, and procedures for any such subcommittees; and

g. Discuss the protocols and the content of public information releases; provided that each Party retains the right to release information to the public at any time without such discussion.

14.2.4 TCC and ACC Decision-Making Process and Limitations. The TCC and the ACC shall make comments, recommendations, and decisions in a timely manner as provided below:

a. Each Party represented on the TCC and the ACC will have the authority to participate in all committee discussions relating to, and to provide input and advice on, decisions regarding implementation of the terrestrial or aquatic PM&E Measures;

b. The TCC and the ACC shall strive to operate by Consensus. Whether or not the TCC or the ACC has final authority over decisions on terrestrial and aquatic PM&E Measures, the Licensees and other Parties may proceed with actions necessary to implement the New Licenses or this Agreement, even though Consensus is not achieved; provided that in such cases the responsible Licensee or Licensees shall notify the Commission of the comments of the ACC or TCC members and the areas of disagreement. If the TCC or ACC does not reach Consensus, then any member of the TCC or ACC, respectively, may initiate the ADR Procedures as provided in Section 15 below.

c. Where one or more Parties have approval authority under this Agreement, Licensees shall notify the Commission of any approvals that were not obtained, include the relevant comments of the Parties with approval authority, describe the impact of the lack of approval on the schedule for implementation of PM&E Measures, and describe proposed steps to be taken to gain the approval, including dispute resolution.

d. In no event shall the TCC or the ACC increase or decrease the monetary, resource, or other commitments made by PacifiCorp and Cowlitz PUD in this Agreement; override any other limitations set forth in this Agreement; or otherwise require PacifiCorp to modify its three Projects' facilities without PacifiCorp's prior written consent or require Cowlitz PUD to modify its Project's facilities without Cowlitz PUD's prior written consent, which consent may be withheld in the applicable Licensee's discretion.

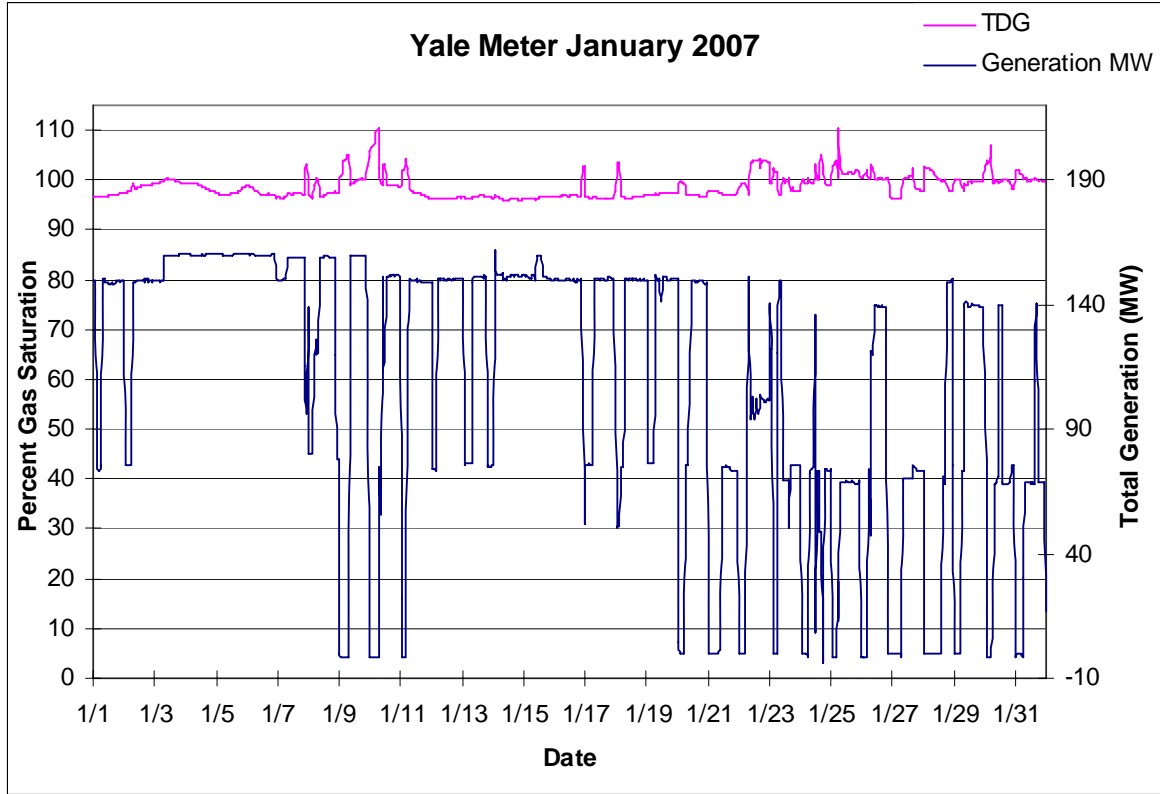
e. At any juncture where discussion or other contact with the ACC or TCC is required by this Agreement, when requested by the Services or as

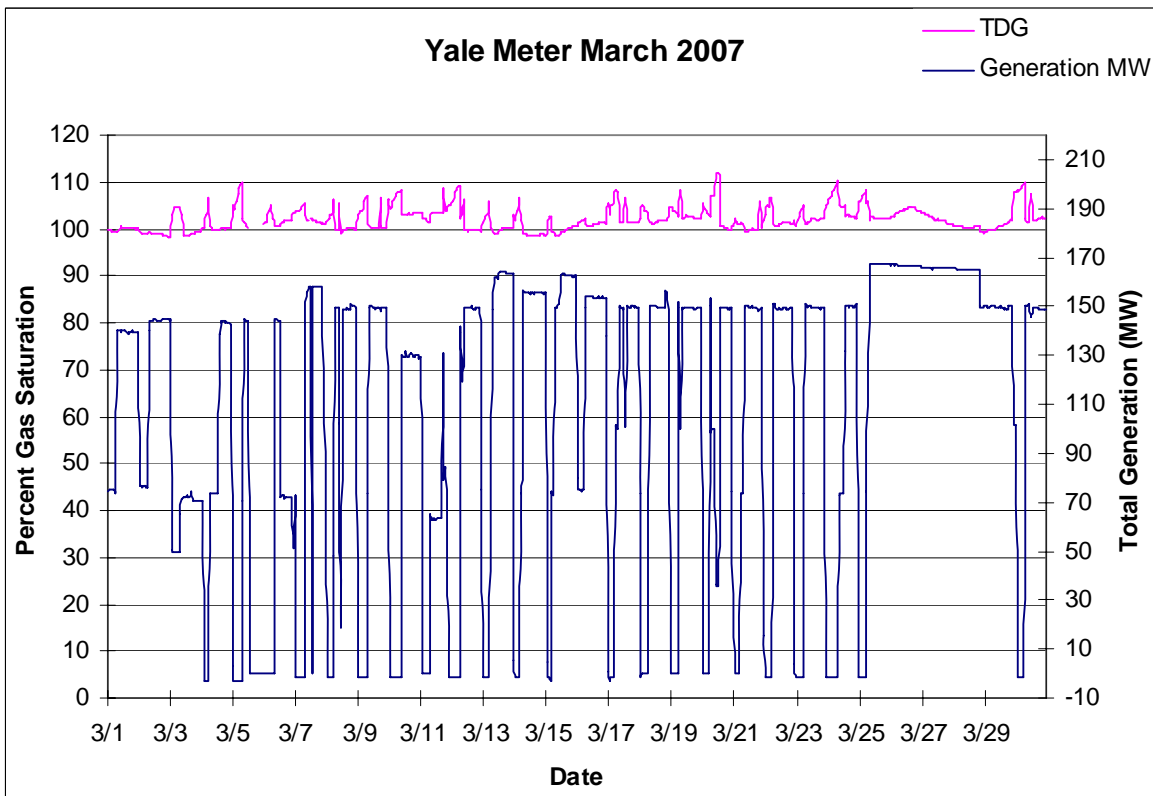
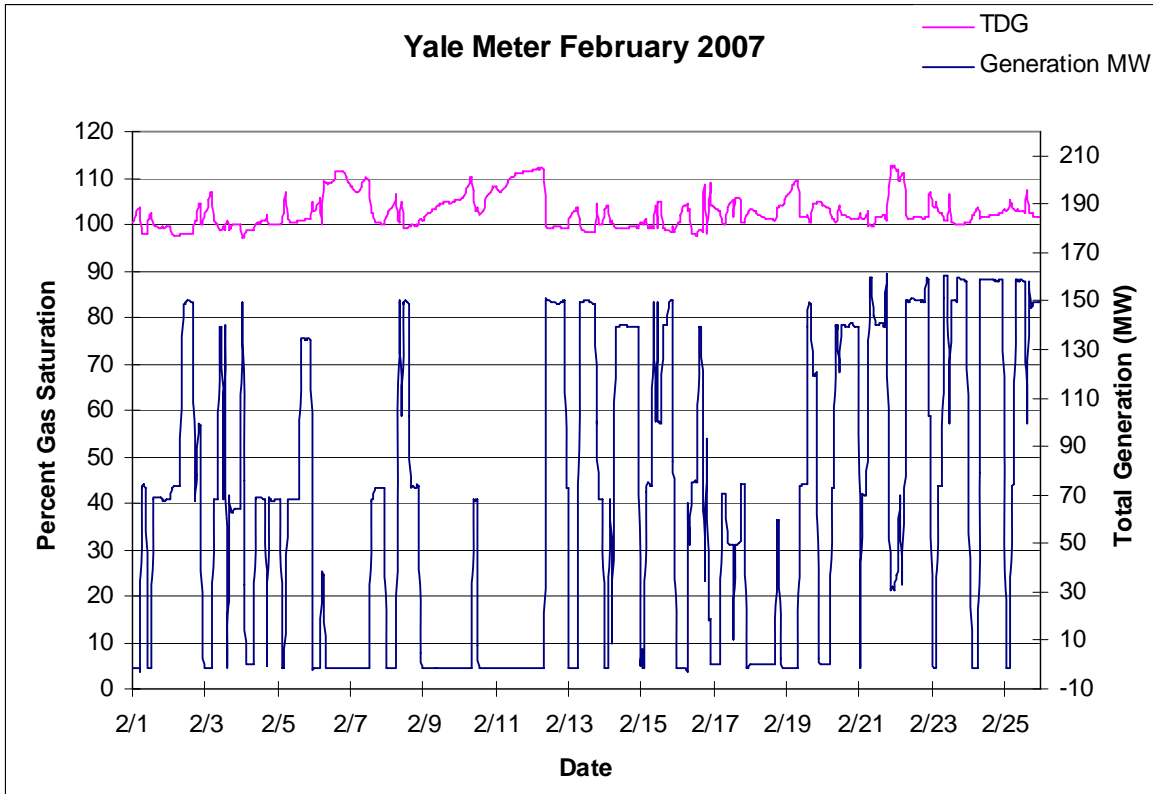
required by the Agreement, the ACC or TCC Committee Coordinator, respectively, shall schedule an opportunity to discuss the relevant issue with the ACC or TCC. This event shall consist of either a conference call, in-person meeting, or other appropriate forum to enable full consideration of the issue.

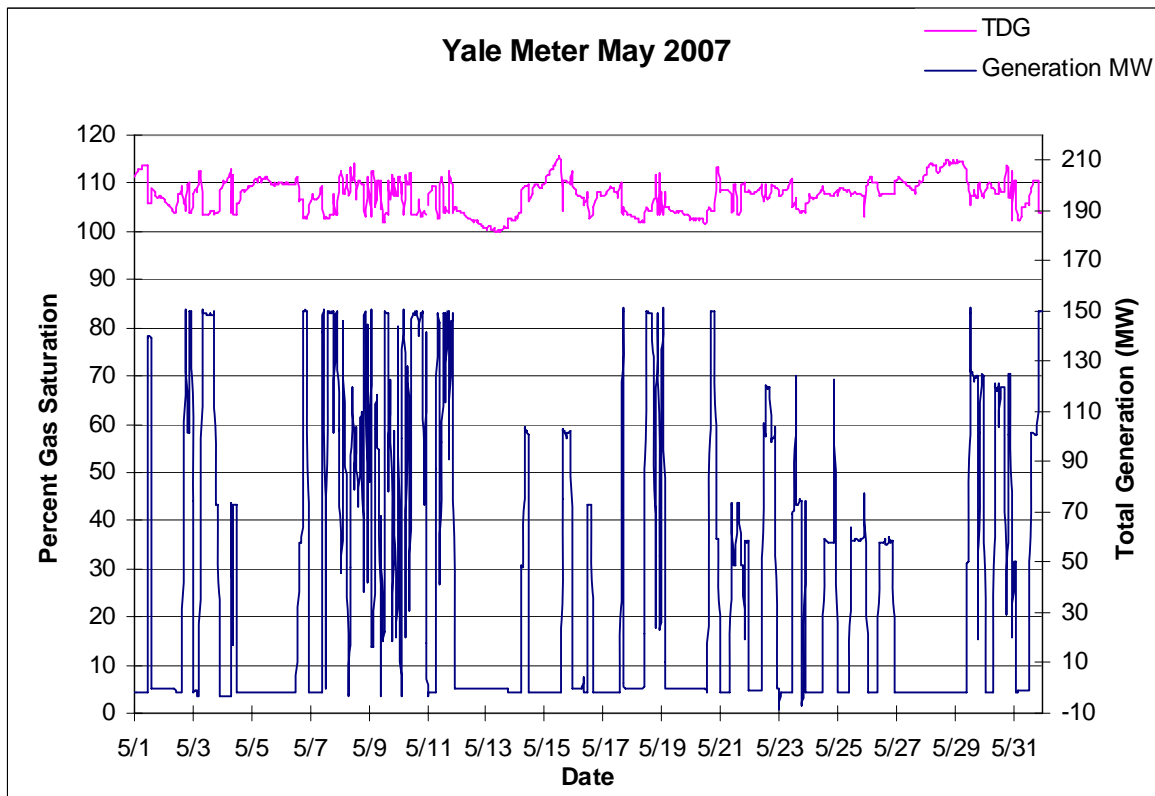
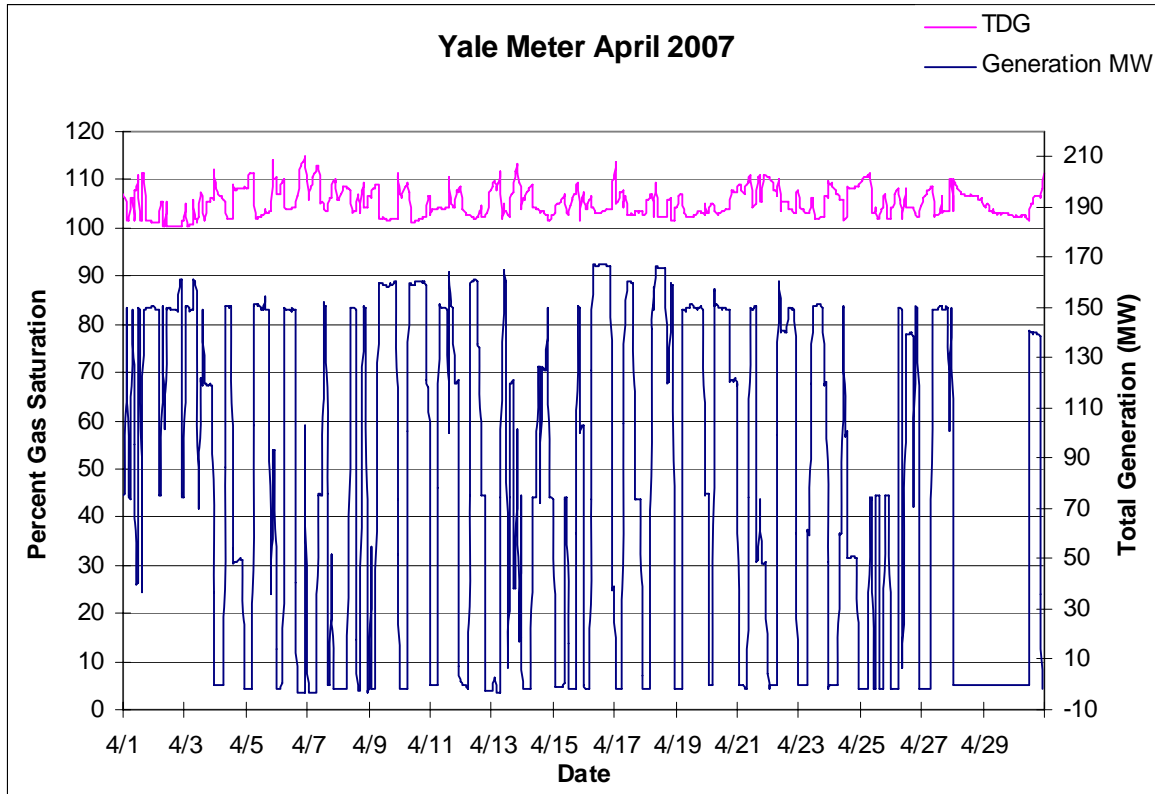
14.2.5 TCC and ACC Meetings. Commencing in the first year after the Effective Date and each year thereafter for the terms of the New Licenses, the TCC and ACC Committee Coordinators shall arrange and provide an agenda for an annual meeting of their respective committees. The TCC and ACC Committee Coordinators also shall arrange and provide an agenda for any additional meetings deemed necessary by either coordinator for a committee or at the request of any two Parties on that committee, which request shall be sent simultaneously to all members of that committee. Members of the TCC and the ACC shall be given a minimum of 30 days' notice prior to any meeting, unless otherwise agreed to by the members of the applicable committee.

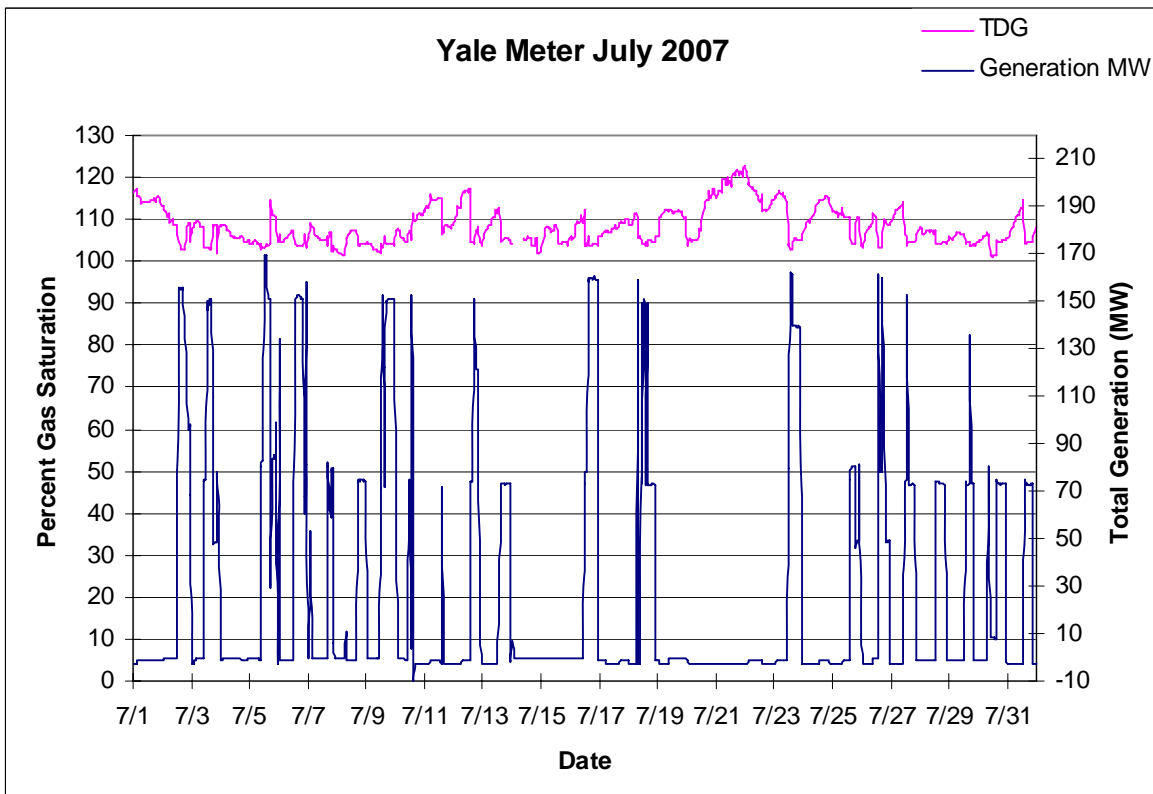
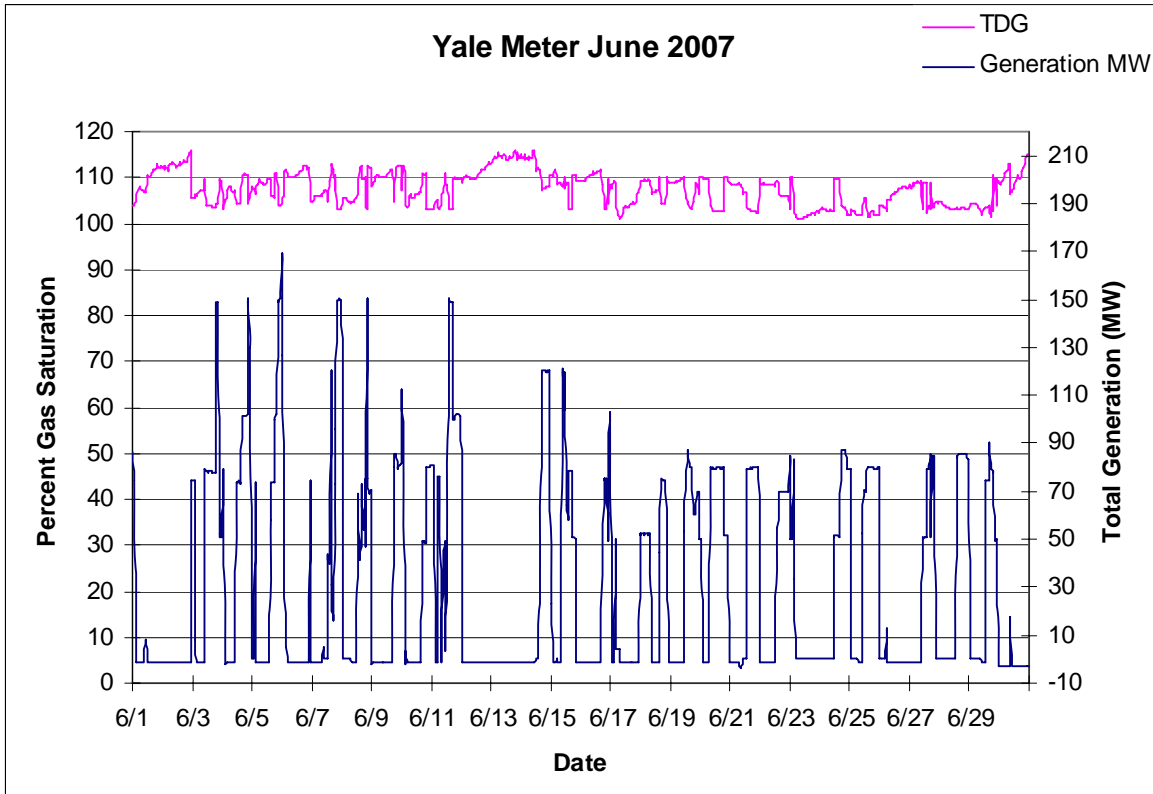
14.2.6 TCC and ACC Reports. The Committee Coordinators for the TCC and the Committee Coordinators for the ACC shall prepare and file with the Commission detailed annual reports on the TCC and ACC activities, monitoring and evaluations under the M&E Plan, and implementation of the terrestrial and aquatic PM&E Measures occurring during the prior year, as well as plans for the coming year as required in this Agreement. The annual reports may also include plans and reports required pursuant to Sections 4.9.1, 7.7.1, 8.2.3, 8.2.4, 10.5, and 10.8.3. Copies of such reports will be made available to each Party. The annual reports shall be prepared in Consultation with the TCC and ACC committee members and shall be submitted to the committees for review each year, commencing after the Effective Date. Committee members shall have a minimum of 30 days to review and provide comment on a draft report before a final report is prepared and filed with the Commission. The Licensees shall submit the final report to the Commission not later than 30 days after the close of the ACC and TCC comment periods. To the extent that comments are not incorporated into the final report, an explanation will be provided in writing, and such explanation shall be included in the report.

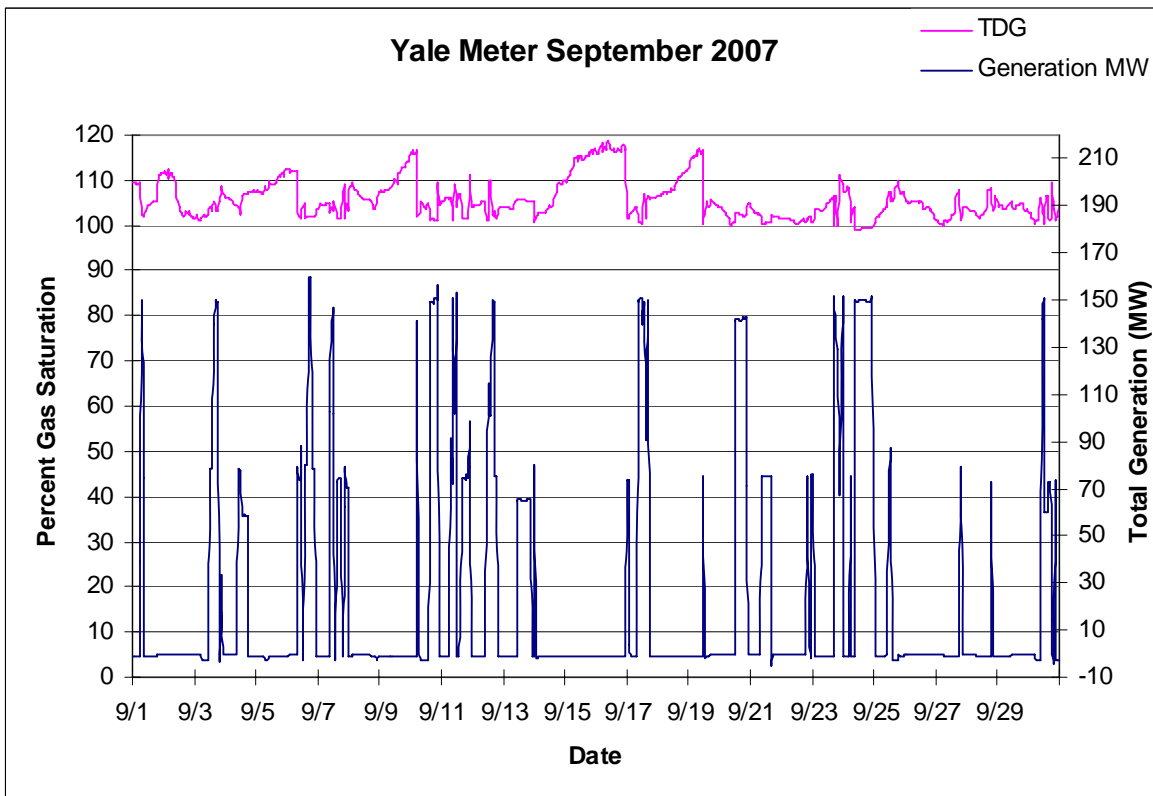
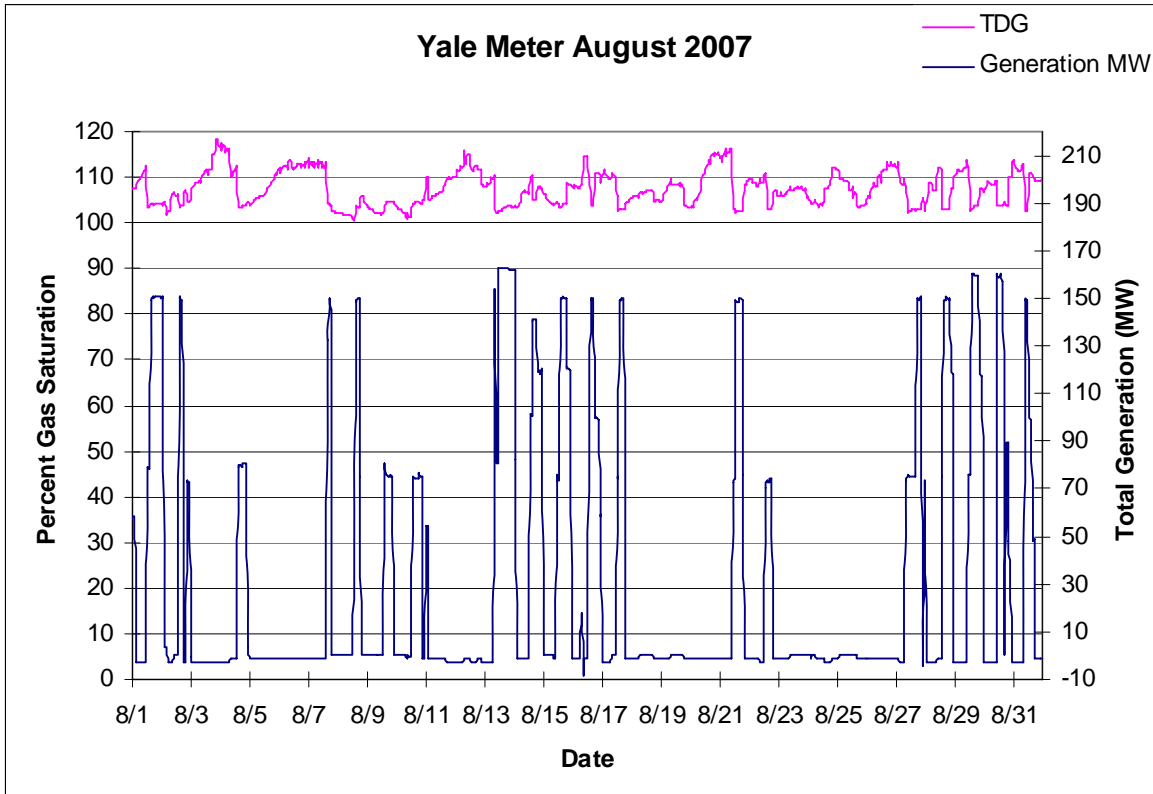
Appendix E
Monthly TDG Graphs of Yale Tailrace

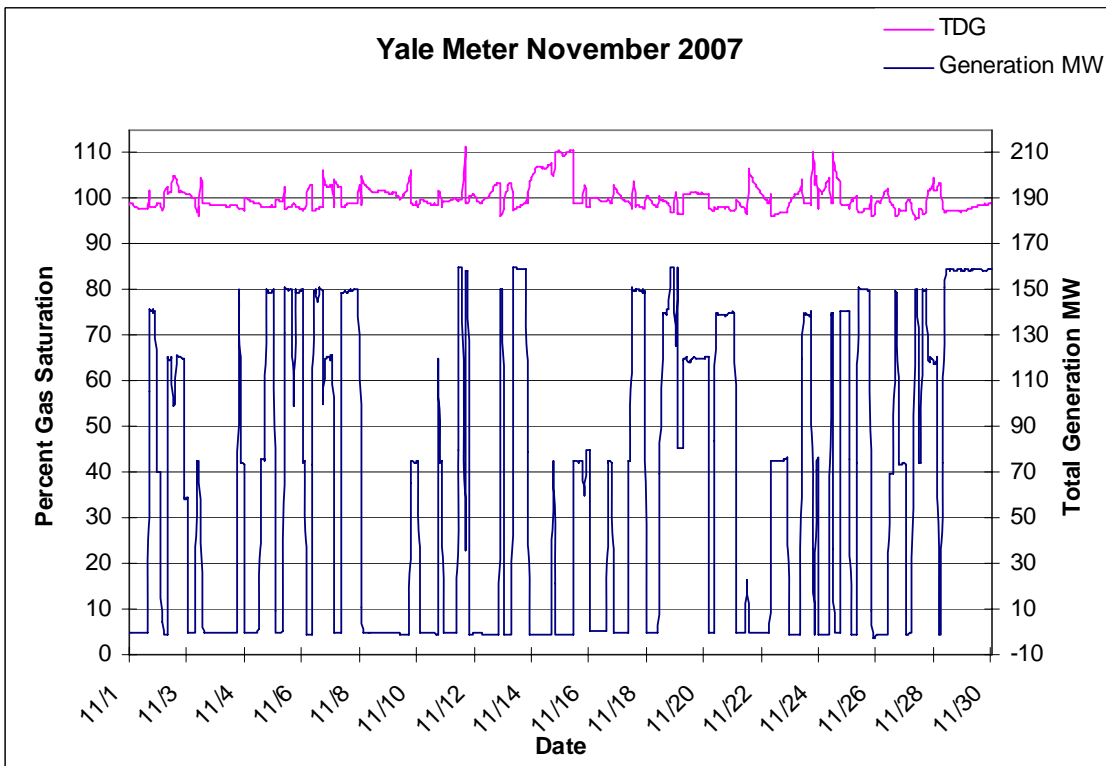
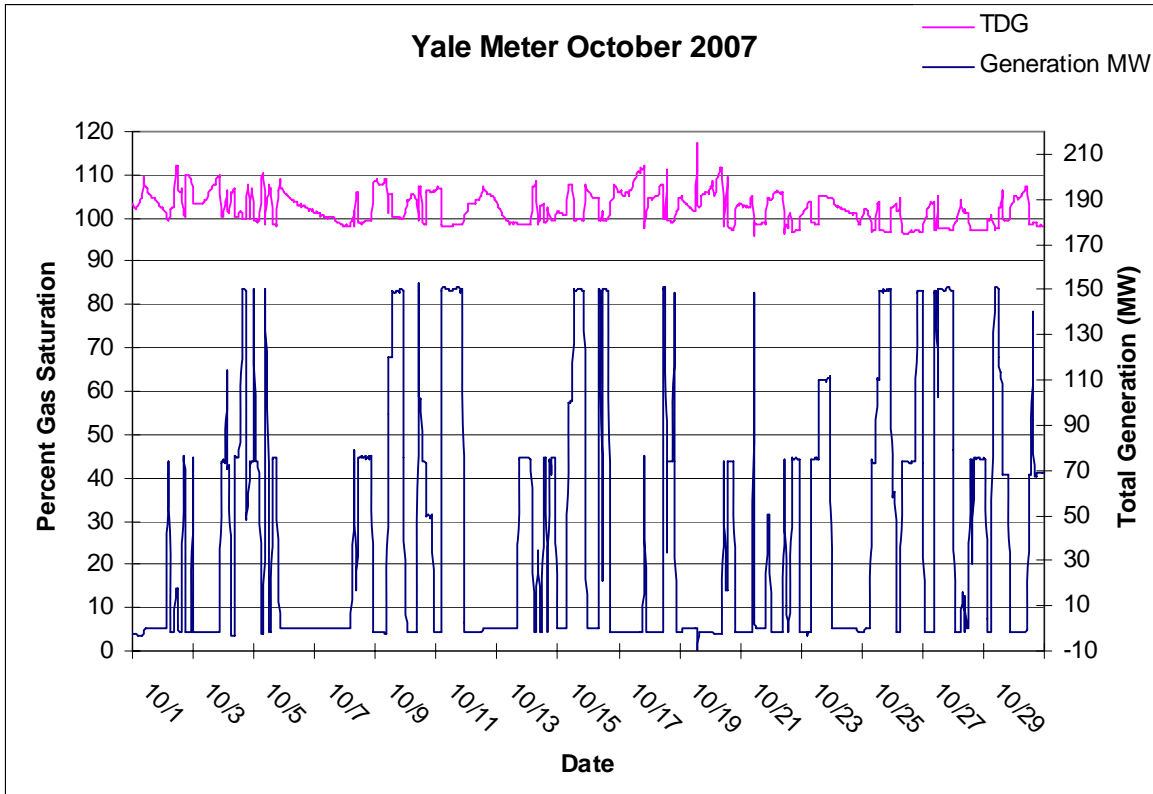


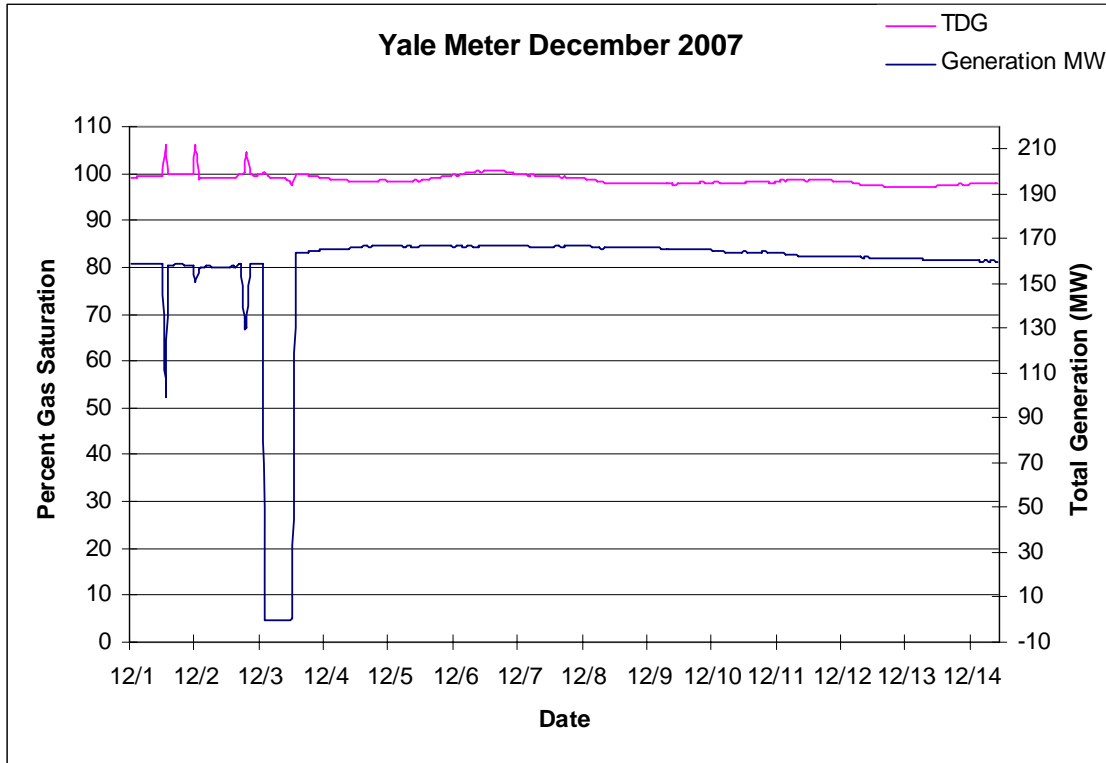






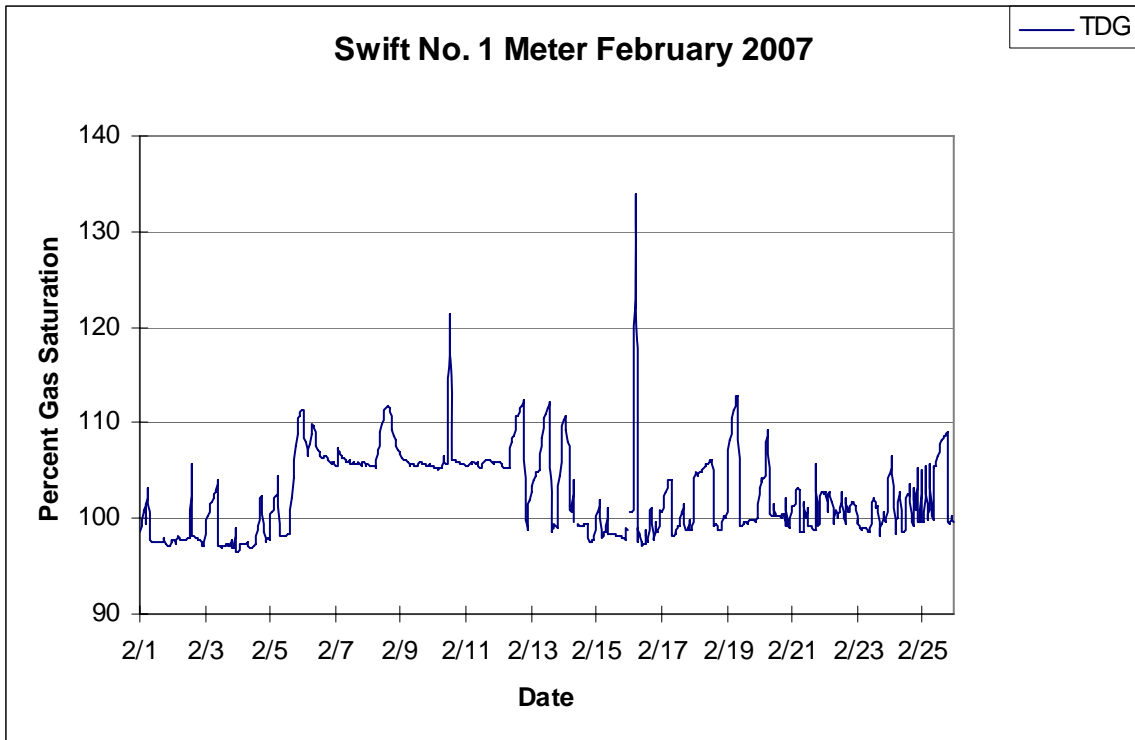
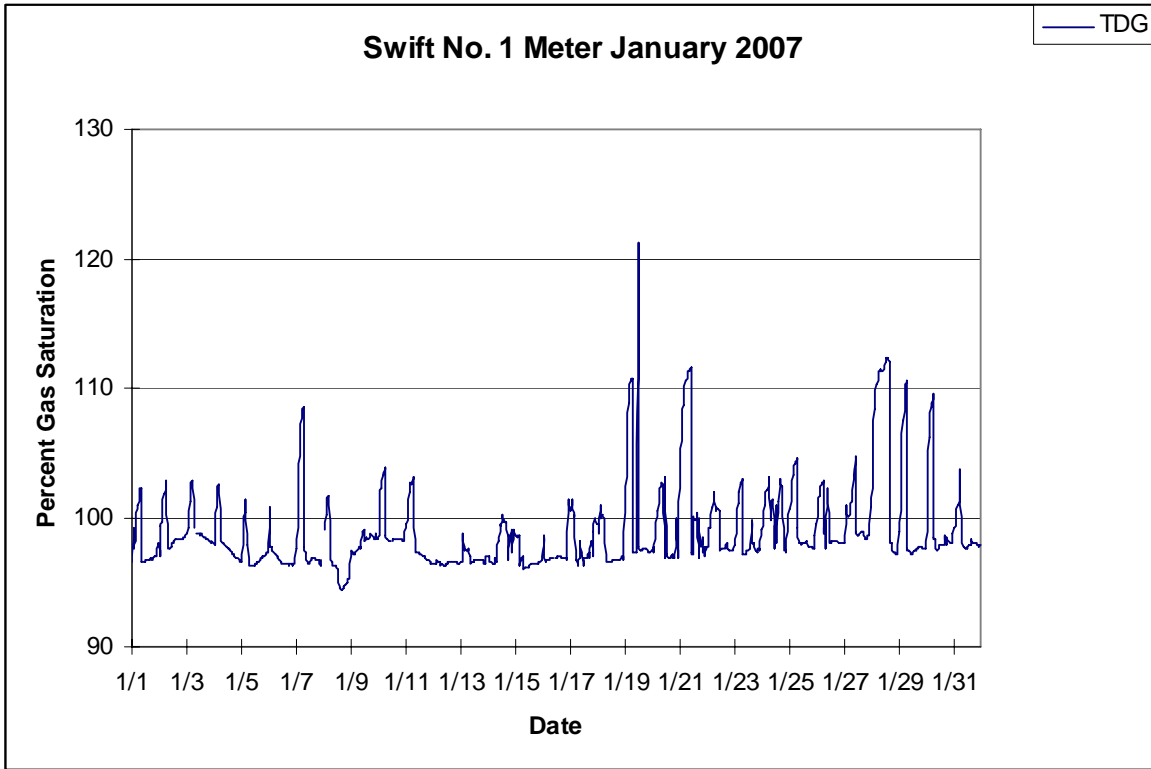


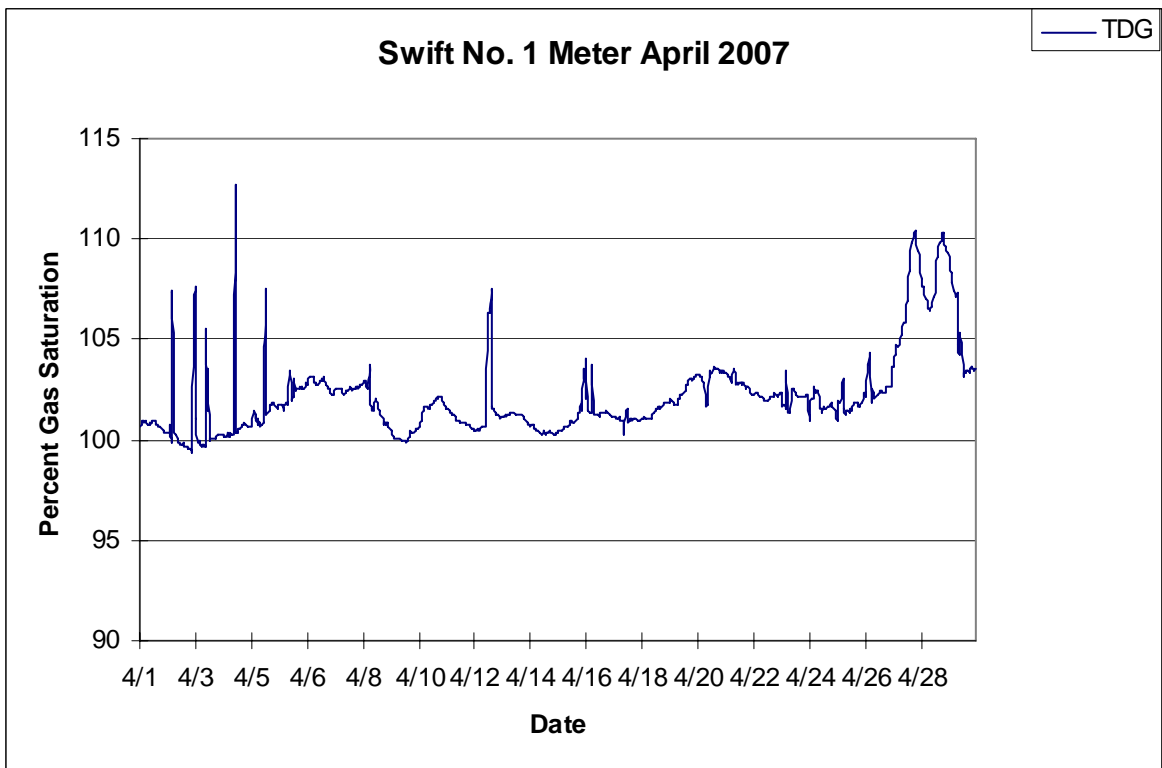
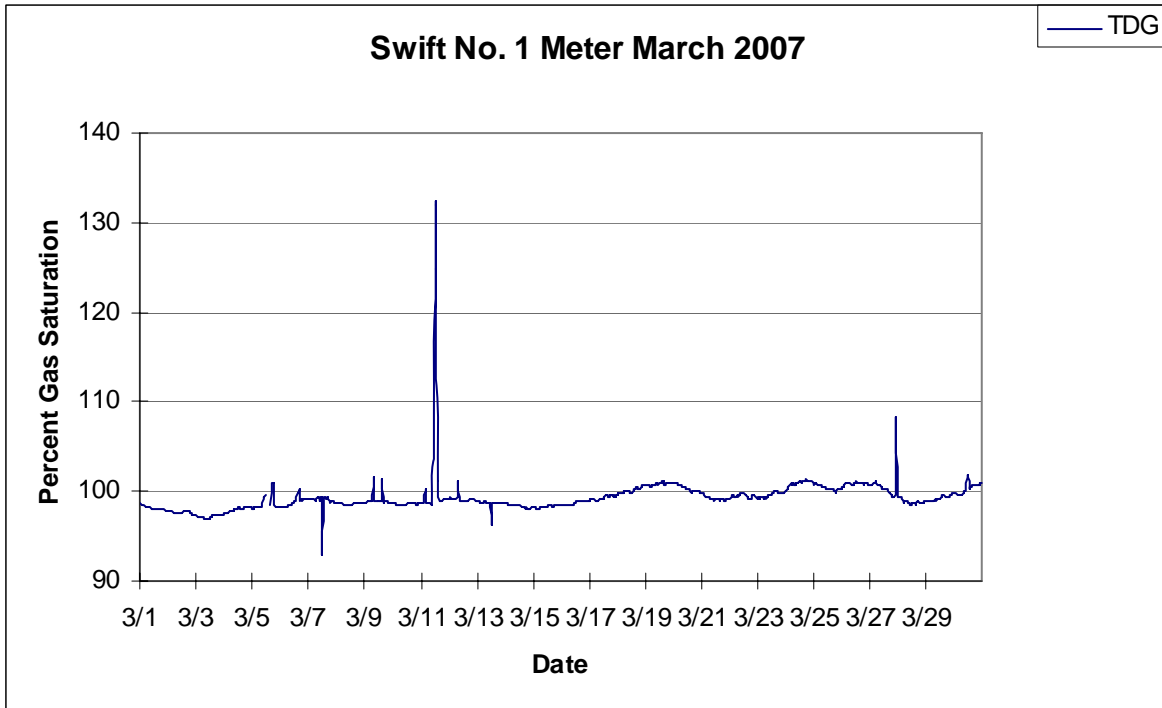


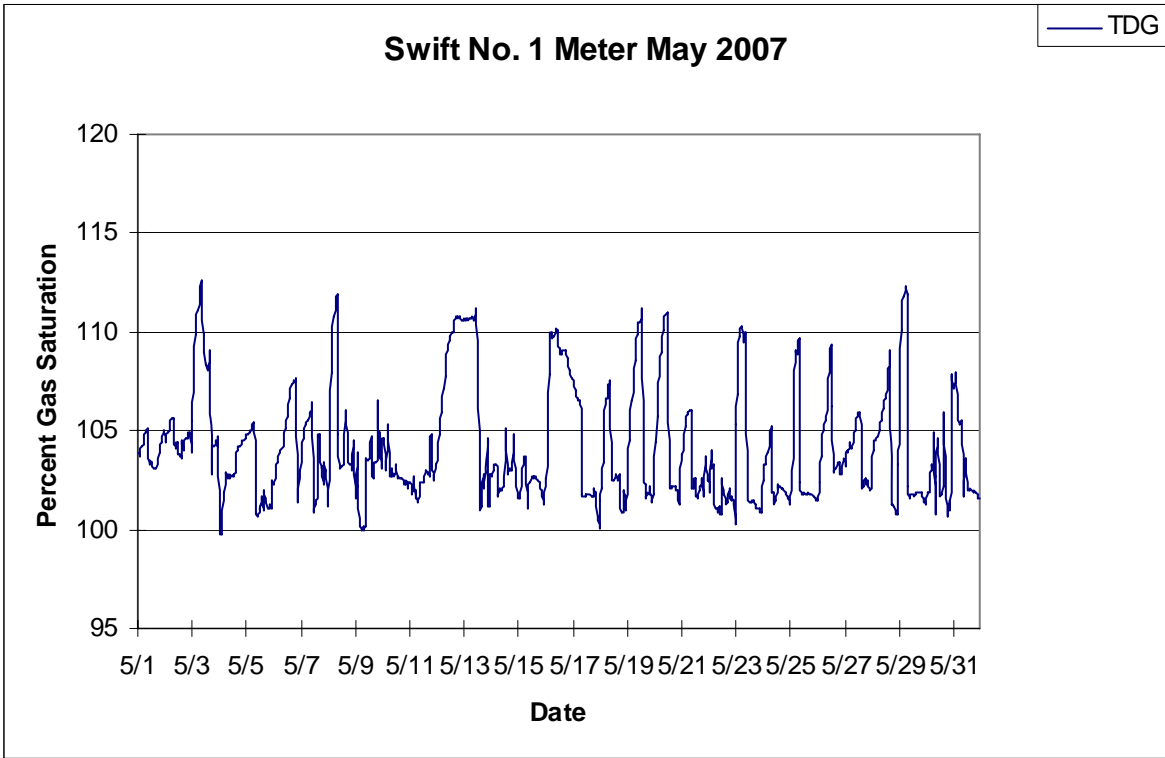


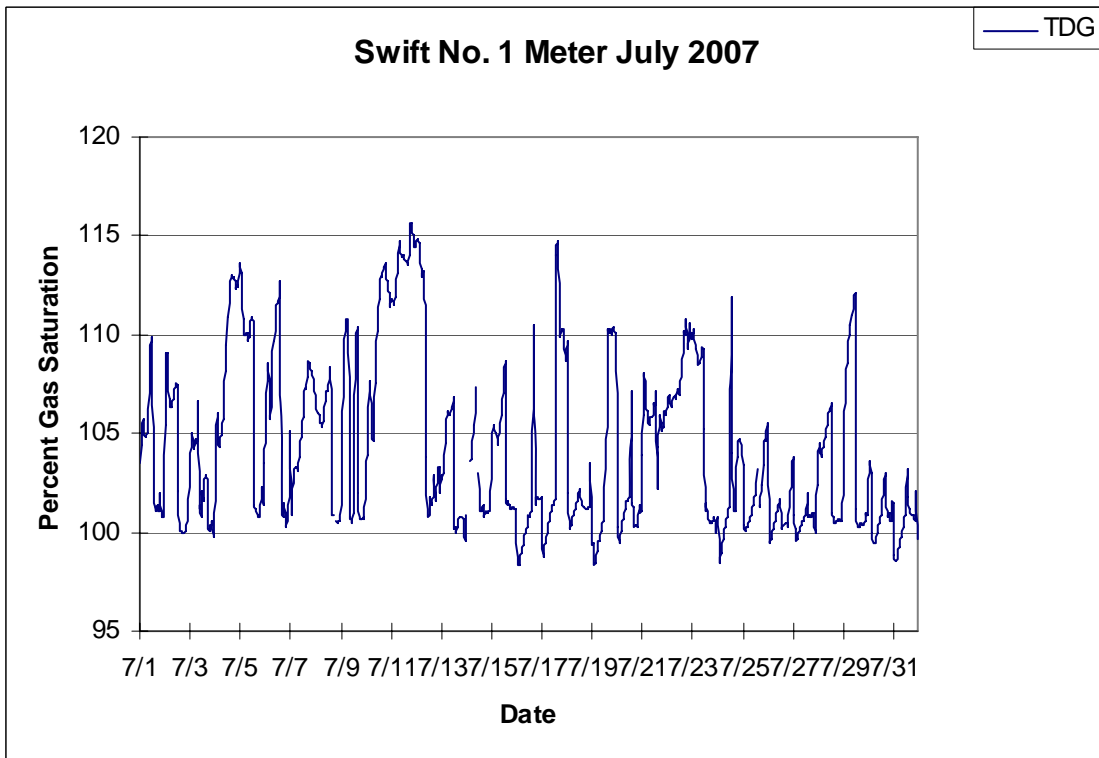
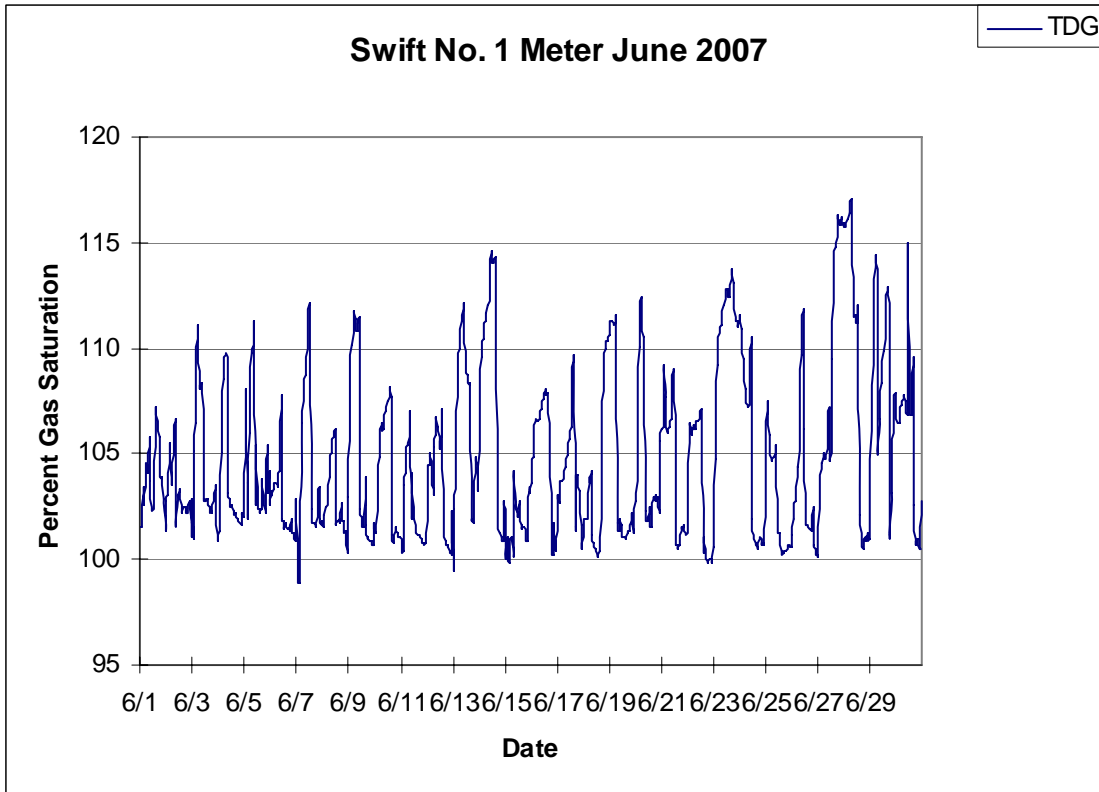
***No data from 12/15-12/31 due to data incompatibility with newly installed meters.**

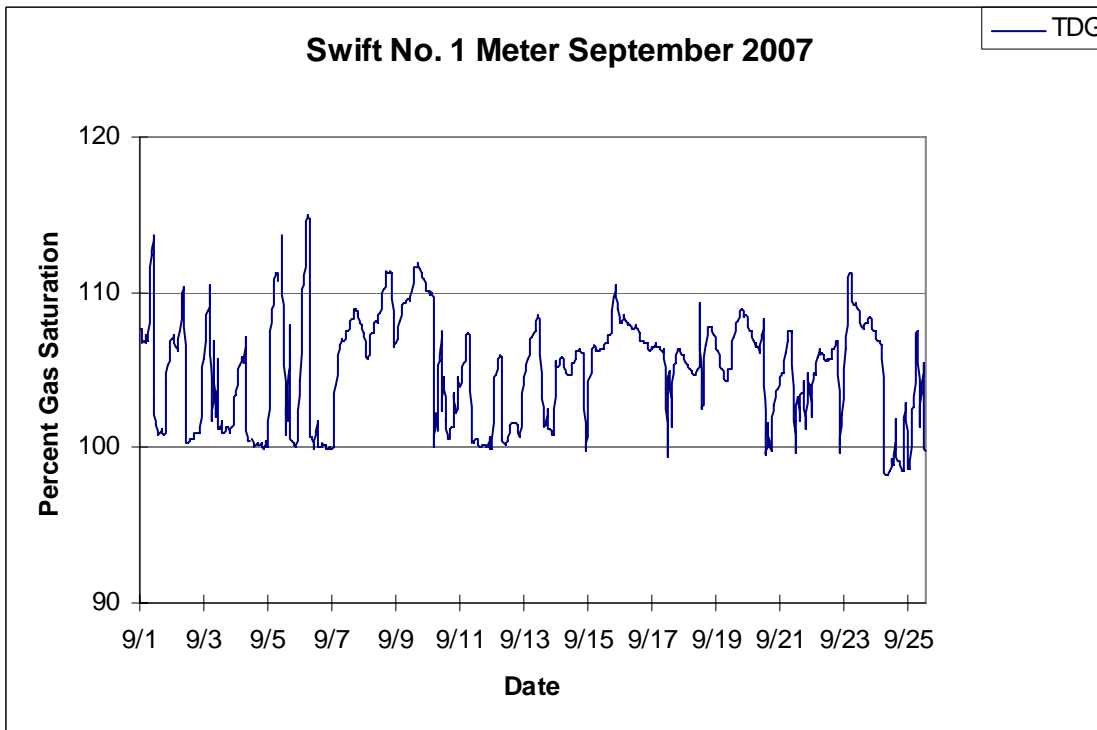
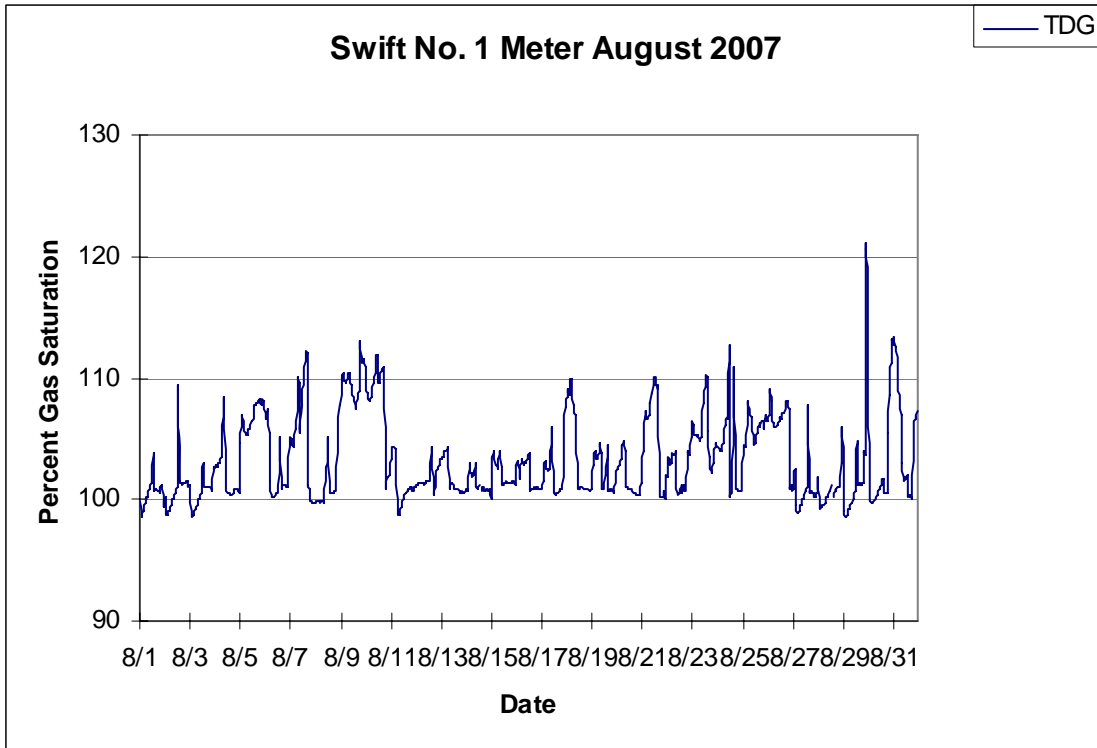
Appendix F
Monthly TDG Graphs of Swift No. 1 Tailrace



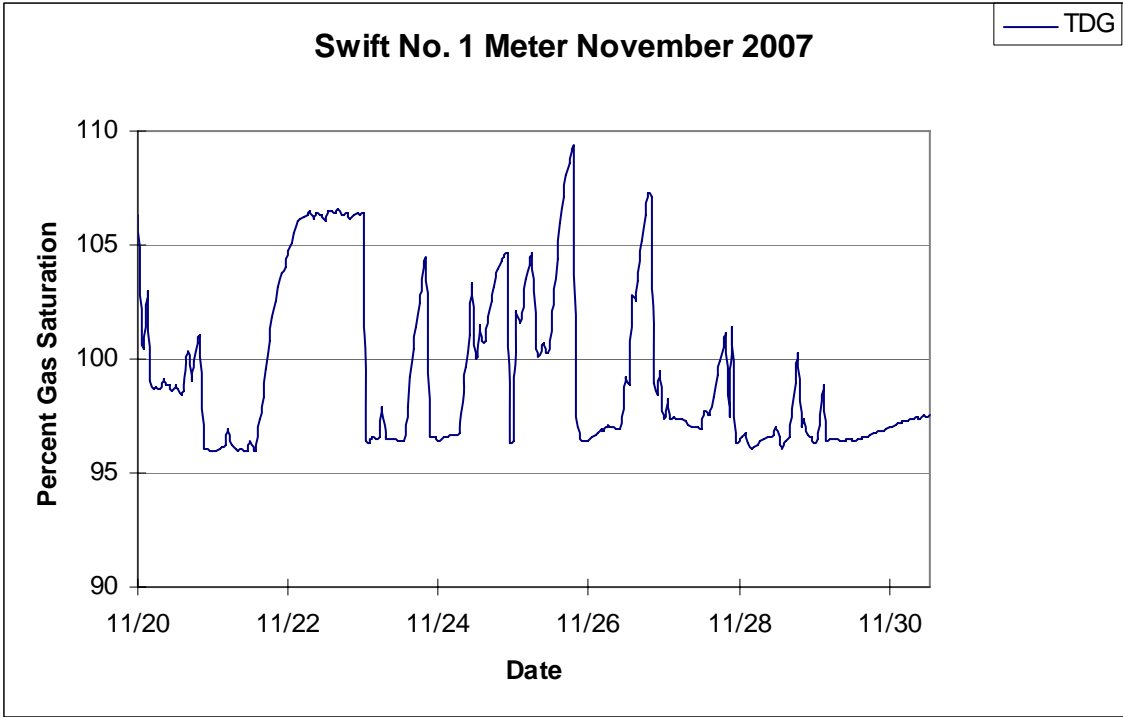




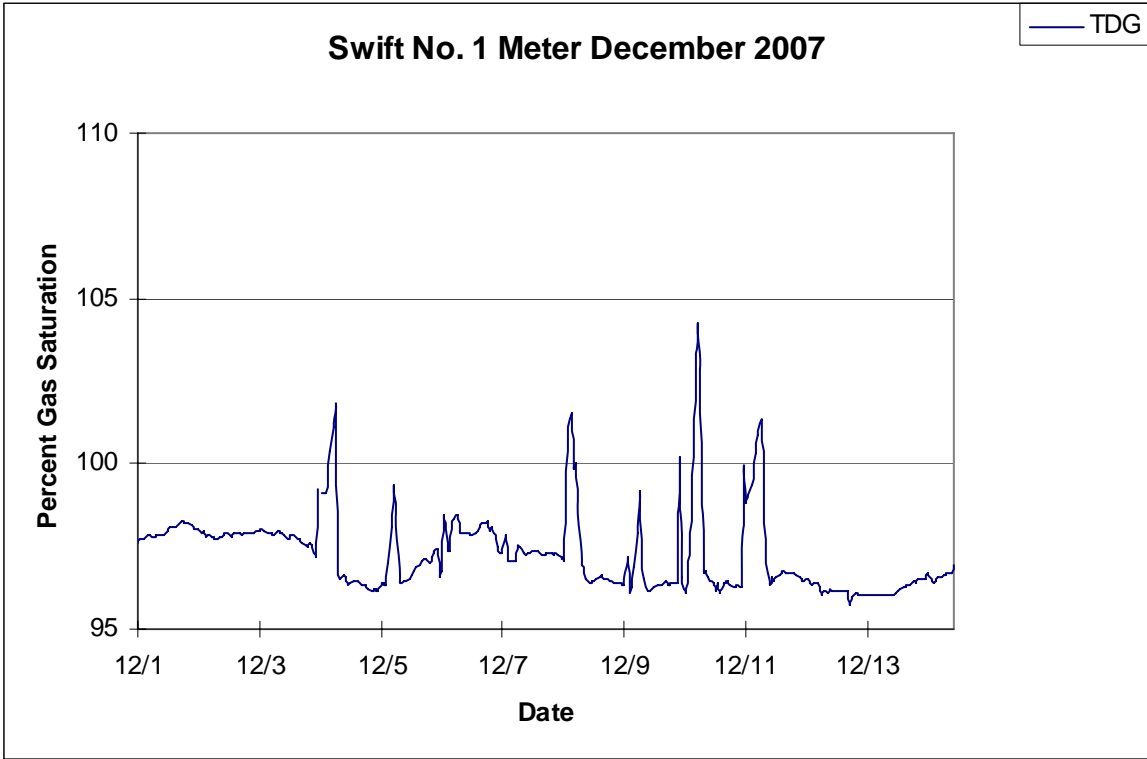




***Swift 1 meters were not deployed for the month of October 2007 due to the installation of new protective deployment tubes that were affixed to the powerhouse wall**



***Swift 1 meters were not deployed from 11/1-11/19 due to the installation of new protective deployment tubes that were affixed to the powerhouse wall**



No data from 12/15-12/31 due to data incompatibility with newly installed meters.

Appendix G

Hatchery Upgrade Schedule

REVISED HATCHERY UPGRADE SCHEDULE (Activities from Schedule 8.7 of the Settlement Agreement)

Updated: March 10, 2008

| Activity | LY | Construction Dates | Construction Period (Days) | Year | | | | | | | Status | Permitting | NOTES | |
|---|------|-----------------------|----------------------------|------|------|------|------|------|------|------|--------|----------------------|--------------------------------|--|
| | | | | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | | | | |
| Lewis River Hatchery | | | | | | | | | | | | | | |
| Pond 13 (conversion to raceways) | 2 | May 1 - July 31 | 90 | | | | | | | | | On Schedule | Not Started | Coho held at LR in raceways longer |
| Pond 14 (conversion to raceways) | 2 | March 15 - July 31 | 135 | | | | | | | | | On Schedule | Not Started | SCH held at Speelyai, Pond 16 & LR Pond 15 |
| Pond 15 (conversion to raceway/sorting facility) | 1 | Jan 1 - August 30 | 240 | | | | | | | | | 90 % Design Complete | JARPA Submitted (Jan 11, 2007) | Movement of P15 causes other projects to move |
| Pond 16 (conversion to raceways) | 1 | April 1 - July 31 | 120 | | | | | | | | | On Schedule | Not Started | Moved out to allow for rebuild of P15, P13, P14 |
| Downstream water intake repair (screening modification) | 2008 | April 1 - July 31 | 120 | | | | | | | | | On Schedule | Not Started | Needs to be done at same time of P16 |
| Upstream intake and conveyance pipe testing & repair | 2006 | May 1 - May31 | 30 | | | | | | | | | On Schedule | n/a | Testing in '09, Repairs in '10 |
| Merwin Hatchery | | | | | | | | | | | | | | |
| Upgrade ozone Treatment facility | 2 | July 1 - September 30 | 90 | | | | | | | | | Upgrades ongoing | Complete | Upgrades completed in 2005 |
| Improve flow and exchange rates in rearing ponds | 2 | June 1 - July 30 | 60 | | | | | | | | | On Schedule | Not Started | |
| Modify release ponds to accommodate adults | 2 | June 1 - July 30 | 60 | | | | | | | | | On Schedule | Not Started | |
| Purchase two fish hauling trucks | 1,3 | TBD | n/a | | | | | | | | | On Schedule | n/a | |
| Speelyai Hatchery | | | | | | | | | | | | | | |
| Pond 14 (conversion to raceways) | 4 | February 1 - May 30 | 120 | | | | | | | | | On Schedule | Not Started | |
| Burrows Pond Bank No. 1 (conversion to raceways) | 1 | July 1 - October 31 | 120 | | | | | | | | | Design Complete | JARPA permit submitted | SCH to Pond 14, kokanee to stay in one bank |
| Burrows Pond Bank No. 2 (conversion to raceways) | 2 | July 1 - October 31 | 120 | | | | | | | | | On Schedule | Not Started | SCH to Pond 14, kokanee to stay in one bank |
| Repair water intake structure | 3 | June 1 - September 30 | 120 | | | | | | | | | On Schedule | Not Started | |
| Expand adult fertilization area | 2 | January 1 - March 30 | 90 | | | | | | | | | On Schedule | Not Started | |
| Construct kokanee trap weir/trap | 3 | May 1 - August 30 | 120 | | | | | | | | | On Schedule | Not Started | |
| Expand incubation building | 4 | July 1 - August 30 | 60 | | | | | | | | | Complete | Complete | |
| Net Pens | | | | | | | | | | | | | | |
| Site, permit and Install Net Pens | 2 | July 1 - August 30 | 60 | | | | | | | | | On Schedule | Not Started, may not be needed | 10 - 20x20x16 pens for production of 20,000 lbs. |

 Proposed Schedule
 Complete