

***Exhibit 4***

***Boundary Hydroelectric Project (FERC No. 2144)***

***Monitoring Well and Road Decommissioning Plan***

**Seattle City Light**

**March 2010**



# **Monitoring Well and Road Decommissioning Plan Boundary Hydroelectric Project (FERC No. 2144)**

## **1 INTRODUCTION**

Seattle City Light (SCL) installed a series of wells along the lower portion of Boundary Reservoir (from the town of Metaline downstream to the vicinity of Boundary Dam) in the late 1950s as a means to monitor groundwater levels. In order to install the wells, SCL was granted permission to use existing roads or construct new roads (or short access “spurs”) over private and federal land. SCL no longer has a need to monitor groundwater levels and is taking steps to decommission the wells (per Washington Administrative Code 173-160-381) and associated roads. This Monitoring Well and Road Decommissioning Plan (Plan) addresses the treatment of the wells and roads on federal land. A brief description of the well head decommissioning process is included in this document as restoration of the areas around the well heads will be conducted at the same time that the roads are decommissioned. Further, one additional road on National Forest Service land (the spur off of Forest Road 316-5340; also referred to as Road #11 in SCL's Updated Study Report [SCL 2009]) has been used in the past to access a survey monument. This road is no longer needed for Project purposes and will be decommissioned at the same time as the monitoring well roads; as such, this road is addressed in this Plan.

Appendix 1 includes a spreadsheet that details the work that will be conducted at each site.

## **2 DEVELOPMENT OF DECOMMISSIONING PLAN**

SCL developed this Plan in consultation with representatives of the Colville National Forest (CNF). On June 30, 2009, SCL and CNF staff met in Colville, Washington to discuss in detail the appropriate treatment for each road and to conclude a tentative agreement. The Bureau of Land Management (BLM) had not been available for direct consultation with SCL; however, CNF staff conferred with the BLM and reported that if the road decommissioning on BLM land is conducted to U.S. Forest Service (USFS) standards, that will satisfy the BLM's needs. Subsequent to the June 30 meeting, SCL prepared this Plan, which captures the elements agreed to at that meeting; the CNF reviewed the draft plan in August 2009 and their review comments were incorporated into this final document. Pending any additional comments from the CNF during the review period for the License Application, the Plan is considered to be a final draft and upon approval by the Federal Energy Regulatory Commission (FERC), will be implemented by SCL.

### **3 SCHEDULE**

SCL will complete the road decommissioning tasks outlined in this Plan no later than two years after issuance of a new license for the Boundary Project (Project). Subsequent to completion of the work, SCL will monitor, for two years, the status of the revegetation efforts to ensure that adequate revegetation has occurred at each site. After the two-year monitoring period, SCL and CNF staff will review the sites and determine if revegetation efforts have been successful.

### **4 CNF REVIEW AND APPROVAL**

Prior to issuing construction documents for decommissioning the wells and roads, SCL will submit the draft plans and specifications to the CNF for review and approval. The work will be done to the satisfaction of the CNF and will not be considered complete until accepted by the CNF.

### **5 PERMITS AND APPROVALS**

SCL will be responsible for obtaining all necessary permits and/or authorizations to gain access to sites and to conduct work (e.g., Shoreline Substantial Development Permit, Hydraulic Project Approval, etc., as needed). Cultural resource and rare, threatened and endangered plant surveys will be conducted, as necessary, prior to site disturbance. SCL may enter into a cost recovery agreement with the CNF to allow for CNF staff to complete such surveys. As it relates to the National Environmental Policy Act, SCL will cooperate with the CNF to ensure compliance.

### **6 FIRE PROTECTION AND SUPPRESSION**

SCL will ensure that a fire protection and suppression plan is developed prior to the commencement of work and that the plan is acceptable to the CNF.

### **7 PRE-CONSTRUCTION MEETING**

SCL plans to have the work conducted by a contractor. CNF staff will be invited to attend the pre-construction meeting.

### **8 REVEGETATION/WEED CONTROL**

To prevent the spread of weeds, all equipment used to decommission wells and roads will be washed before entering National Forest lands. Further, while disturbance to existing vegetation is expected, the footprint for the disturbed area will be minimized as much as possible; all disturbed soil will be seeded with a CNF-approved seed mix after completion of work.

### **9 DEFINITION OF TERMS**

The following terms, used in this document and the attached table, are defined below.

### **9.1. Access Spur**

These are driveway-like structures that lead from main Forest Service roads to the well heads. Most of the well heads are located at the end of access spurs. The spurs generally conform to Forest Service Road Maintenance Level 1 standards. Most of them are short. A few of the wells are located on the shoulders of the main roads and do not have access spurs.

### **9.2. Access Spur Repair**

Access Spurs will be repaired to Forest Service Road Maintenance Level 1 standards after decommissioning of wells. Level 1 means that the road has been closed to vehicular traffic. Water bars will be installed crosswise to the road bed per USFS standards. All bare soil will be seeded with grass. Where prior traffic or the passage of vehicles used during the decommissioning process has compacted the soil so densely that vegetation cannot grow, the area will be loosened by ripping with a machine, then seeded with grass.

### **9.3. Tank Trap Barrier**

Tank traps are earth structures that block access of motorized vehicles. They are constructed by digging a large trench across the road and piling the excavated soil to form a berm on the side of the trench that is still open to traffic. All bare soil will be seeded with grass after construction.

### **9.4. Well Head Decommissioning**

The remote location of the wells may limit the physical ability to implement some decommissioning activities as required under WAC 173-160-381. The contractor shall work with the Department of Ecology well construction coordinator and water quality program staff on decommissioning plans for each of the wells, including finding other options for proper closure when they deviate from WAC 173-160-381 or this plan. Wells will be decommissioned by filling the wells with cement grout from bottom to top. The concrete pads around the well heads will be demolished, a hole will be dug around the well head, and the well head cut off approximately four feet below the ground surface, if possible. The holes will be backfilled with the excavated material, the ground graded to match the existing topography, and the bare ground surface seeded with grass. All demolition debris and other waste products will be removed from the site and disposed of at a location off of federal land.

## **10 COST ESTIMATE FOR ROAD DECOMMISSIONING**

The estimated cost for decommissioning of all roads covered under this Plan is \$310,000. This includes administrative costs and monitoring to ensure successful revegetation.

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## **11 REFERENCES**

SCL. 2009. Updated Study Report. Boundary Hydroelectric Project (FERC No. 2144). Seattle, Washington. Available:  
[http://www.seattle.gov/light/news/issues/bndryRelic/br\\_document.asp](http://www.seattle.gov/light/news/issues/bndryRelic/br_document.asp). March 2009.

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## **Appendix 1 Plan for Decommissioning Monitoring Wells and Roads on Federal Lands**



**Table A.1-1.** Plan for decommissioning monitoring wells and roads on federal land.

Well Name	Active	Abandoned	Decommission?	Land Owner	Treatment Plan
CS-01	X		Y	USFS	Decommission well head. Repair access spur. No tank trap; the entrance to the access spur is too wide to effectively block vehicle access.
CS-02	X		Y	USFS	Decommission well head. Repair access spur. No tank trap; the entrance to the access spur is too wide to effectively block vehicle access.
CS-03	X		Y	BLM	Decommission well head. After crossing private land, the road to this well enters BLM land in a flat and open area. The area is too wide for a tank trap to effectively block access; no tank trap will be constructed.
CS-04	X		Y	USFS	Decommission well head. Repair access spur. Install tank trap at junction with Forest Road 3100191.
CS-05	X		Y	USFS	Decommission well head. No tank trap needed as there is no access spur. Limited limbing of trees may be required to access area around well.
CS-06	X		Y	BLM	In order to access the site, the spur will need to be graded. Decommission well head. Repair access spur and install tank trap.
CS-07	X		Y	BLM	In order to access the site, the spur will need to be graded. Decommission well head. Repair access spur and install tank trap.
CS-14		X		USFS	The well was submerged when the reservoir was filled. Site cannot be accessed. No action will be taken.
CS-15		X		USFS	The well was submerged when the reservoir was filled. Site cannot be accessed. No action will be taken.
CS-16		X		USFS	The well was submerged when the reservoir was filled. Site cannot be accessed. No action will be taken.
CS-18	X		Y	USFS	Decommission well head. Repair access spur to top of hill, approximately 1/4 mile from the well. Install tank trap near junction with Forest Road 3165328.
CS-19	X		Y	USFS	Decommission well head. Repair access spur up to driveable portion of spur. Install tank trap.
CS-20	X		Y	USFS	Decommission well head. Repair access spur. No tank trap needed.

Table A.1-1, continued...

Well Name	Active	Abandoned	Decommission?	Land Owner	Treatment Plan
CS-21	X		Y	USFS	This artesian well is located at the end of a long access spur just after it crosses Lime Creek. Decommission well head, remove the two culverts that pass the braided stream under the road, remove road fill in stream bed, restore stream, obliterate road from stream to top of short rise immediately to the south of stream, repair the remainder of access spur, install tank trap at junction with Forest Road 3100310.
CS-22	X		Y	BLM	Decommission well head. Repair access spur. Install tank trap, if feasible (may not be feasible to effectively block vehicle access).
CS-24	X		Y	BLM	Decommission well head. Repair access spur. Install tank trap as close as possible to the National Forest boundary.
CS-25	X		Y	BLM	Decommission well head. Repair access spur. Install tank trap on access spur if there is enough room (this well is very close to the main road and there may not be enough room to install a tank trap). A limited number of trees may need to be removed in order to access site.
CS-26	X		Y	USFS	Decommission well head. Repair access spur from where it turns abruptly to the northwest to the well. Install tank trap at junction with Forest Road 3100310.
CS-28		X	Y	USFS	This is an artesian well that was abandoned right after it was drilled. It is believed to be located in the bed of Everett Creek. It may not be advisable to dig up the well head and fill it with grout. Another field visit and consultation with the WA Department of Ecology is needed to determine if the well should be decommissioned. SCL will confer with the USFS on how to treat this site when the contract documents are being prepared.
CS-31	X		Y	USFS	An access spur will have to be constructed to provide a connection from Road 3100172 to the access spur. Once constructed, decommission well head, repair access spur, and reconstruct the road prism on Forest Road 3100172, as needed.
CS-32	X		Y	USFS	Decommission well head. Repair access spur. This well is right next to a turn off alongside State Highway 31. Leave turn off in place; no tank trap.
R-01		X		USFS	This well cannot be located. No action will be taken.
R-04	X		Y	USFS	Decommission well head. Repair access spur. No tank trap; the entrance to the access spur is too wide to effectively block vehicle access.

Table A.1-1, continued...

Well Name	Active	Abandoned	Decommission?	Land Owner	Treatment Plan
TC-02		X		USFS	While this well is shown on maps, there are no records indicating SCL drilled this well or ever monitored it. No action will be taken.
<u>Misc.</u>					
Spur off of FR 3165340	X		Y	USFS	This road crosses wet ground and subsequently there have been small slides onto it. To decommission the road, unstable fill will be pulled back and drainage will be improved by installing water bars so that runoff doesn't saturate the road prism. All existing culverts will be pulled and the natural flow channels they occupy will be restored. A tank trap will be dug at the entrance to the spur.

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