

EXHIBIT W
SITE RESTORATION
OAR 345-021-0010(1)(w)

TABLE OF CONTENTS

	Page
W.1 INTRODUCTION.....	W-1
W.2 ESTIMATED USEFUL LIFE OF PROPOSED FACILITY	W-1
W.3 SITE RESTORATION ACTIONS AND TASKS	W-1
W.4 ESTIMATED COSTS OF SITE RESTORATION	W-2
W.5 PROPOSED MONITORING PLAN FOR HAZARDOUS MATERIALS	W-3

ATTACHMENT

W-1 Cost Estimate For Facility Site Restoration	
---	--

W.1 INTRODUCTION

Troutdale Energy Center, LLC (Applicant) proposes to permit the construction and operation of a natural gas-fired power plant at the Port of Portland-owned Troutdale Reynolds Industrial Park (TRIP) located in the City of Troutdale, Oregon.

OAR 345-021-0010(1)(w) *Information about site restoration, providing evidence to support a finding by the Council as required by OAR 345-022-0050(1)*¹. *The applicant shall include:*

Response: This exhibit provides evidence that the requirements of OAR 345-021-0010(1)(w) and OAR 345-022-0050 are satisfied because the proposed Facility can be retired and the site restored to a useful, nonhazardous condition for General Industrial² use. The Applicant will provide adequate security to ensure that Facility retirement and site restoration are funded to the levels necessary.

Site restoration to a useful, nonhazardous condition will require removal of the Facility buildings structures, tanks, and other significant features. Because the site is zoned for General Industrial use, some site features, such as roads and building foundations, might be retained.

W.2 ESTIMATED USEFUL LIFE OF PROPOSED FACILITY

(A) The estimated useful life of the proposed facility.

Response: The Facility will be designed for a continuous operating life of 30 years or more. However, the Facility will operate for as long as there is a market for the production of electrical energy. Facility upgrades may be implemented to prolong the operations of the Facility well beyond 30 years. For the purposed of the Application for a Site Certificate (ASC), the estimated useful life of the Facility is 30 years.

W.3 SITE RESTORATION ACTIONS AND TASKS

(B) Specific actions and tasks to restore the site to a useful, non-hazardous condition.

Response: The following activities are assumed to take place as part of the site restoration:

- Dismantling and removal of the power-generation and associated equipment, including the boiler and associated water and steam piping, pumps, tanks and valves; the steam turbine generator; combustion turbine generators (CTGs); heat steam recovery generator (HSRG); condenser; auxiliary boilers; selective catalytic reduction modules; and electrical equipment, switchgear, transformers, and wiring
- Demolition and removal of the Facility buildings and structures, including the following:
 - Stacks
 - Cooling towers
 - Tanks and support structures
 - Switchyard
 - Administrative/warehouse building
 - Water treatment building
 - Facility control building
 - Fencing
 - Subgrade structures and foundations to the existing ground surface

¹ OAR 345-022-0050(1): The site, taking into account mitigation, can be restored adequately to a useful, nonhazardous condition following permanent cessation of construction or operation of the facility.

² The City of Troutdale zoning designation and historical use for the site.

- Removal of onsite underground piping and wiring
- Removal of the 230-kilovolt (kV) transmission line
- Tilling of areas to remediate soil compaction
- Maintenance or abandonment in place of underground water supply lines to the Facility
- Closing of natural gas source at the Northwest Pipeline gas line
- Abandonment in place of buried gas line and communications circuits

Road surfaces and parking areas would remain.

W.4 ESTIMATED COSTS OF SITE RESTORATION

(C) An estimate, in current dollars, of the total and unit costs of restoring the site to a useful, non-hazardous condition.

Response: Attachment W-1 provides a detailed cost estimate for Facility retirement and restoration, including the components described above. The estimated cost of retiring the Facility, in First Quarter 2012 dollars, is \$6.88 million. This estimate was prepared based on Oregon Department of Energy (ODOE) decommissioning guidelines.

The Applicant is prepared to provide demolition and restoration security to fund prompt site restoration once the Facility is no longer operational. In setting the amount of this security, the Applicant requests the Council to consider the following:

1. The Applicant will own the site outright.
2. The proposed equipment is expected to have a useful life of 30 years or more.
3. The risk of the Facility stopping operations in at least the first 20 years is very low.
4. Unlike most other EFSC-jurisdictional facilities, this site is not in an area zoned for agricultural (EFU) use. Consequently, restoration to agricultural practices is not at issue.

(D) A discussion and justification of the methods and assumptions used to estimate site restoration costs.

Response: The Applicant estimated the site restoration costs on the basis of the following assumptions:

- Demolition debris will be removed to a licensed landfill that will accept construction materials such as drywall, wood, restroom fixtures, ceiling tiles, interior office finishes, and other miscellaneous building materials. Metal will be cut and removed to a recycler.
- Structural steel including, but not limited to, superstructure steel, equipment, piping, valves, motors, electrical conduit and wire, transformers, reinforcing steel protruding from concrete rubble, organic materials, and aluminum and other metals will be removed from the site and, to the extent possible, recycled.
- Underground obstacles (such as foundations, pipelines, and ductbanks) will be left in place.
- Prior to decommissioning the Facility, chemical, oil, and water storage tanks will be emptied and their contents will be disposed of appropriately.
- Bare ground portions of the site will be seeded once demolition is complete (estimated to be approximately 0.2 acre).

The Applicant considered the following in estimating costs:

- All costs are in first quarter 2012 dollars.

- Salvage or scrap value of Facility materials is not included, but should be considered if Council policy or rules change to allow credit for these values.
- The estimated labor cost is based on a demolition contractor working a straight 40-hour work week, paying union wage rates and per diem for personnel. Person-hours used in the estimate were based on the removal of material as mostly scrap.
- The free-standing stack will be removed in sections.
- Any concrete material will be recycled to minimize the amount to be sent to a landfill.
- A performance bond will be required for the demolition and site restoration contractors.
- Road surfaces and parking areas will remain on the finished site.
- Structural concrete will be removed to the existing ground surface.
- Surplus chemicals will be sold (if unused), or disposed at an appropriate disposal or recycling facility.
- The estimate includes a 10 percent contingency³ allowance. Items of uncertainty in the allowance include: estimate errors or omissions; take-off variations, oversight, judgment, allowance errors, labor productivity; crew makeup, and source of labor workloading; unknown site conditions; errors in factoring or rationing assumptions; unforeseen construction. Items not included in the allowance are: new licensing, environmental, or safety requirements or excessive changes in the labor market.
- Although remediation or removal of contaminated spills or plumes is not anticipated since the Facility will operate in accordance with the hazardous materials management procedures described in **Exhibits G** and **V**, a \$500,000 hazardous materials contingency is included within the cost estimate to comply with EFSC facility retirement cost-estimating standards.

The estimate does not include the following considerations:

- Escalation beyond 2012 on material and labor costs
- Cost of groundwater monitoring (if required) Owner's personnel costs and any corporate overhead charges
- Costs related to remediation or maintenance of remediation measures resulting from the existing Superfund site

The estimated cost of Facility restoration is \$6.88 million.

W.5 PROPOSED MONITORING PLAN FOR HAZARDOUS MATERIALS

(E) For facilities that might produce site contamination by hazardous materials, a proposed monitoring plan, such as periodic environmental site assessment and reporting, or an explanation why a monitoring plan is unnecessary.

Response: Facility construction and operation will involve minor amounts of hazardous material and solid waste (as described in **Exhibits B, G, and V**). These compounds will be used and stored in accordance with regulations and guidelines designed to prevent release of hazardous materials to the environment. The Facility will not produce hazardous materials.

³ Contingency is defined as the specific provision or allowance for unforeseeable elements of cost within the defined project scope where previous experience, related estimates, and actual costs have shown that, statistically, unforeseeable events which increase costs are likely to occur. Thus, contingency is an amount added to an estimate that is expected to be spent as an allowance for uncertainty that has a historical precedent.

ATTACHMENT W-1

Cost Estimate for Facility Site Restoration

Troutdale Development Partners
COST ESTIMATE FOR FACILITY SITE RESTORATION
(1st Quarter 2012 Dollars)

Adjustment Factor: 1.036359

Current Quarter: **1Q 2012**

GDP Index 1st Quarter 2012: **110.6743**

<http://www.oregon.gov/DAS/OEA/economic.shtml>

GDP Index Current Quarter: **114.6983**

General Costs			
A. PERMITS			\$2,890
B. MOBILIZATION			\$106,014
C. ENGINEERING			\$13,848
D. PROJECT OVERHEAD			\$981,740
E. HAZARDOUS MATERIALS INSPECTIONS			\$0
F. PROTECTION			\$33,953
G. UTILITY DISCONNECTS			\$3,010
General Costs Subtotal			\$1,141,455
Site Construction			
A. PRELIMINARY WORK			\$71,953
B. SITE GRADING			\$2,903
C. UNDERGROUND UTILITY REMOVAL			\$0
Site Construction Subtotal			\$74,856
Concrete Wrecking			
A. REINFORCED CONCRETE			\$31,057
B. NON-REINFORCED CONCRETE			\$0
Concrete Wrecking Subtotal			\$31,057
Building Wrecking			\$278,688
Steel Wrecking			\$74,818
Timber Wrecking			\$0
Thermal Protection/Liners Wrecking			\$9,230
Equipment Wrecking			\$230,527
Mechanical Wrecking			\$147,360
Electrical Wrecking			\$134,330
Load & Haul			\$1,638,262
Costs Subtotal			\$3,760,585
	Overhead @	10%	\$376,059
	Profit @	10%	\$413,664
	Insurance @	3%	\$136,509
Specialty Contracts (subcontracted work)			\$0
Subtotal			\$4,686,817
Subtotal Adjusted to Current Dollars			\$4,857,225
	Performance Bond @	1%	\$48,572
Gross Cost (Adjusted)			\$4,905,797
	Administration and Project Management @	10%	\$490,580
	Future Developments Contingency @	20%	\$981,159
	Hazardous Materials Management Contingency		\$500,000
Total Site Restoration Cost (current dollars)			\$6,877,536
Total Site Restoration Cost (rounded to nearest \$1,000)			\$6,878,000