EXHIBIT NO. ___(RCR-1CT)
DOCKET NO. UE-09___/UG-09___
2009 PSE GENERAL RATE CASE
WITNESS: R. CLAY RIDING

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY, INC.,** **Respondent.**	**Docket No. UE-09____** **Docket No. UG-09____**

PREFILED DIRECT TESTIMONY (CONFIDENTIAL) OF R. CLAY RIDING ON BEHALF OF PUGET SOUND ENERGY, INC.

REDACTED VERSION

MAY 8, 2009

PUGET SOUND ENERGY, INC.

PREFILED DIRECT TESTIMONY (NONCONFIDENTIAL) OF R. CLAY RIDING

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PUGET SOUND ENERGY, INC.

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Clay Riding, and my business address is 10885 N.E. Fourth Street, Bellevue, Washington 98004. I am employed by Puget Sound Energy, Inc. ("PSE" or "the Company") as Director, Natural Gas Resources.

Q. Have you prepared an exhibit describing your education, relevant employment experience, and other professional qualifications?

A. Yes, I have. It is Exhibit No. ___(RCR-2).

Q. What is the purpose of your testimony?

A. My testimony addresses several issues related to natural gas transportation and storage. First, I discuss PSE's gas supply resources for the recently acquired Mint Farm Generating Station ("Mint Farm"). Second, I address the recent expansion of PSE's Jackson Prairie natural gas storage facility and the agreement that allows PSE's electric portfolio (also known as the "Power Book") to take assignment of

natural gas storage capacity from PSE's natural gas portfolio to serve gas customers (also known as the "Core Gas Book"). I also discuss further efforts by the Company to acquire additional gas storage resources to serve gas-fired generation. Third, I provide an overview of the region's natural gas system and the Company's access to supply basins. I address the recent transaction between PSE and FB Energy Canada Corp. ("FB Energy"), which provides PSE additional natural gas transportation capacity on Spectra Energy's Westcoast Energy pipeline system. Finally, I discuss the current market forces and economics affecting PSE's natural gas resource choices, including a brief discussion of the role liquefied natural gas ("LNG") may play in future resource decisions.

II. GAS TRANSPORTATION FOR MINT FARM

Q. Please describe the gas transportation arrangements for Mint Farm.

A. Mint Farm is exclusively natural gas-fired and does not have alternate fuel back-up. Thus, there is no on-site fuel storage. Under normal baseload operations, the facility requires approximately 43,500 million British thermal units ("MMBtu") of natural gas per day. With duct-firing, Mint Farm requires a total of approximately 52,000 MMBtu per day. Mint Farm is interconnected to the Williams Northwest Pipeline ("NWP") system via Cascade Natural Gas Company's ("Cascade") distribution system, which provides natural gas service

to many of the large industrial companies in the area. Accordingly, the plant requires gas transportation service on both systems.

PSE currently holds 30,000 MMBtu per day of firm natural gas transportation on the Cascade system. The remaining Mint Farm baseload requirements are being adequately met with non-firm Cascade transportation service. Industrial demand on Cascade's system is down significantly and, therefore, non-firm service is expected to be reliable until such industrial demand returns or significant new markets are developed.

Q. Does PSE have a longer-term plan for gas transportation on Cascade's system?

A. Yes. Although PSE has arranged for non-firm transportation capacity sufficient to serve Mint Farm for baseload and duct-firing in the near to medium term, PSE is in the process of arranging for firm service for Mint Farm's full requirements.

PSE has several possible options for long-term gas transportation capacity on Cascade's system. PSE is evaluating these options and expects to decide on a long term course of action by July 2009. The options PSE is actively pursuing with Cascade include:

1. Option 1 – [redacted]

[redacted]

2. Option 2 – [redacted].

3. Option 3 – [redacted].

[redacted]

The acquisition modeling for Mint Farm was based on Option 1, as it was known at the time of agreement execution. The other options have been subsequently vetted and will be chosen only if they prove to be more economic.

Q. Has PSE obtained additional gas transportation on NWP's interstate pipeline to serve Mint Farm?

A. Yes. PSE has added both permanent and temporary gas transportation resources in anticipation of, and since, the Mint Farm acquisition. PSE acquired 11,210 MMBtu per day of long-term NWP transportation capacity from Sumas to Longview and other downstream delivery points, which PSE can use to serve the plant, all of which commenced on or before April 1, 2009. PSE's Energy Management Committee ("EMC") authorized the acquisition of this capacity at an EMC meeting on January 31, 2008. The capacity was acquired through a competitive bidding process through NWP's electronic bulletin board. PSE is paying NWP's maximum tariff rate for this long-term capacity, which is expected to be less than any NWP expansion projects.

PSE has also acquired another 34,000 MMBtu per day of discounted NWP capacity, with terms ranging from 15 months (9,000 MMBtu per day commencing on January 1, 2009) to 3 years (25,000 MMBtu per day commencing on November 1, 2009). PSE's EMC authorized the acquisition of this mid-term capacity at an EMC meeting on January 14, 2009. PSE is paying approximately

40% of NWP's maximum tariff rate for this capacity for the initial terms of the contracts. PSE expects that all of the temporary acquisitions will be available for renewal for at least two years beyond the initial term. The 25,000 MMBtu temporary contract was offered to PSE as of January 1, 2009, but it was determined that PSE's existing combined portfolio could accommodate Mint Farm deliveries until at least November 1, 2009. PSE's Core Gas Book has plenty of excess capacity in the shoulder and summer months, and such capacity can be used to provide service to Power Book resources at market rates. Therefore, until November 1, 2009, Mint Farm will be served with PSE's other pipeline capacity resources, market purchases or interruptible NWP capacity.

The capacity discussed above serves to bridge the gap until a long-term solution is developed and executed. Such a long-term solution is necessary in order to meet the long-term natural gas transportation capacity needs for PSE's existing gas-fired generation facilities and the additional acquisition of gas-fired generation as contemplated in PSE's Integrated Resource Plan. As discussed later in my testimony PSE is currently working with several interstate pipeline companies to develop a project that will provide additional access to Rockies supply basins, including a cross-Cascades project. If subscriptions levels are not sufficient to support a cross-Cascades project, such access to the Rockies will not be possible, and PSE will work with NWP to expand its system from British Columbia, although this is not PSE's preferred strategy.

Exhibit No. ___(RG-7HC) to the testimony of Roger Garratt includes presentations to the EMC regarding gas transportation for Mint Farm.

III. JACKSON PRAIRIE NATURAL GAS STORAGE FACILITY

Q. Please describe the expansion of PSE's Jackson Prairie gas storage facility.

A. In 2007 and 2008, PSE undertook a significant expansion of the Jackson Prairie storage facility. Specifically, ten additional withdrawal wells were drilled and necessary plant piping and compression installed to increase the withdrawal capability from 850 million standard cubic feet ("MMscf") per day to 1,150 MMscf per day (or approximately 1,200,000 MMBtu per day). The joint-owners of the facility, PSE, NWP and Avista, equally shared in the cost of the expansion project.

Q. Is the Core Gas Book currently using all the storage capacity in the expanded facility?

A. No. The Core Gas Book is not using all of its storage capacity in the expanded facility. The Core Gas Book will take several years to grow into all of the expanded storage service of approximately 104,000 MMBtu per day.

Q. Please describe the assignment between PSE's Core Gas Book and PSE's Power Book for Jackson Prairie storage service for the Power Book.

A. PSE has assigned 50,000 MMBtu per day of storage deliverability and 500,000 MMBtu of storage capacity to the Power Book from December 1, 2008 through March 31, 2010. Prior to termination of the initial term, PSE will determine if the arrangement can continue for a subsequent term, based on the planning criteria used by PSE to determine Core Gas Book requirements.

The Power Book purchased the capacity for operational reliability and supply management, and retains all rights associated with the service, with no restrictions beyond those governing PSE's storage operations (fill requirements, withdrawal decline curve, etc.). The Power Book may use the storage service for any purpose, including balancing load, meeting peak-day requirements, or intra-day dispatching.

The Power Book will pay the Core Gas Book $114,375 per month during the initial term of the assignment, which is a market-based value, calculated using the same methodology PSE uses to value storage services (either purchases or sales) in the Pacific Northwest market. If the storage service assignment is extended beyond the current term, it will be done at the then current market value.

Q. Is it important for PSE's power portfolio to have access to natural gas storage?

A: Yes. First and foremost, access to natural gas storage increases electric service reliability. PSE's CT fleet is a critical component of PSE's generation

resources—necessary to meet the Company's electric load requirements and provide day-to-day operational flexibility for unplanned generation outages. PSE's CTs are often called upon to dispatch intra-day and on weekends to support and respond to sudden, unexpected changes in customer demand or power generation, particularly changes in wind generation. During these times, there is no real-time natural gas market, and finding natural gas to operate PSE's CTs is very difficult. If natural gas can be found in the market during these times, it usually comes at a premium to the standard daily product being traded. Conversely, if a CT must reduce output or be taken off-line during these times, PSE must find a market to sell the gas. If PSE does find such a market, the gas is usually sold at a discount to the daily product. Having natural gas storage allows the power portfolio the ability, on a real time basis, to withdraw gas from storage to meet its needs or inject gas into storage when it has an excess of gas.

Q. What plans has the Company made for gas in storage for power generation after the Jackson Prairie assignment ends in March 2010?

A. As mentioned above, the assignment could be extended, in part or in whole, if it is determined then that the Core Gas Book does not require all of the resource to meet core market demand. In addition, PSE recently took assignment of a small Jackson Prairie storage contract through an asset management arrangement that will reside in the Power Book, involving 6,704 MMBtu per day of storage

deliverability and 140,622 MMBtu of storage capacity; the assignment has an initial term of three years, but continues year-to-year thereafter, subject to timely termination notice by either party.

PSE will begin to evaluate in 2010 further expansion potential at Jackson Prairie. PSE's preliminary view is that the primary zone in use has reached its practical potential; however, there are other zones in the formation that may have different operating characteristics that have not been overly appealing for core gas market operations (i.e., injecting gas in the summer and withdrawing gas in the winter), but could be appealing for reliability purposes in managing gas-fired power generation. One such zone under consideration for expansion requires gas to be re-injected more quickly than is required in current operations in the primary zone. Although this storage may not be suitable to take full advantage of winter-summer price differentials, it could be used to respond quickly to intra-day balancing needs, which is the primary benefit storage provides for gas-fired power generation operations. Therefore, it is expected that the next expansion undertaken at Jackson Prairie, once proven physically and economically feasible, will be for the benefit of the Power Book.

In addition to evaluating expansion potential at Jackson Prairie, PSE is in discussions with various parties regarding possible assignment of Jackson Prairie storage service. Furthermore, PSE will consider participation in Northwest Natural's anticipated expansion of the Mist underground storage facility when

that project goes forward. Finally, PSE has had discussions concerning other regional storage resources, including Aitken Creek in British Columbia, AECO in Alberta, and Clay Basin in Utah. AECO and Clay Basin will require a cross-Cascades and/or Rockies pipeline project to go forward if they are to be of benefit to the Power Book.

IV. OVERVIEW OF THE REGION'S NATURAL GAS SYSTEM AND PSE'S NATURAL GAS RESOURCES

Q. Please provide an overview of the region's natural gas system.

A. Pacific Northwest natural gas markets are served by three pipeline companies: NWP, TransCanada GTN ("GTN") and Spectra Energy BC Pipeline ("Westcoast"). Upstream of these pipelines are various other pipelines (e.g., TransCanada's Foothills and Alberta systems), gathering systems and processing plants that facilitate delivery of gas to markets.

Additionally, the Pacific Northwest has two underground storage facilities--Jackson Prairie and Mist--and several LNG peaking facilities. Please see Exhibit No. ___(RCR-3) for a schematic of the region's natural gas infrastructure.

These pipelines provide Pacific Northwest markets with access to supplies produced in the Rocky Mountains and the Western Canadian Sedimentary Basin (in both Alberta and British Columbia), and access to supply-area underground

storage facilities (Clay Basin in Utah, AECO in Alberta and Aitken Creek in British Columbia).

Q. Please describe PSE's natural gas transportation and storage resources.

PSE has entered into various firm transportation and storage service contracts that allow PSE to serve its firm customers under winter, peak-day conditions, and to provide reliable natural gas supply for its gas-fired power generating facilities. PSE has access to all three supply basins (Rockies, Alberta and British Columbia) through resources it has acquired for the Core Gas Book, and access to British Columbia and Rockies supply basins through resources it has acquired for the Power Book. PSE purchases sufficient firm natural gas resources to meet projected peak-day requirements for both the gas and power portfolios, taking into account on-system peaking and alternative fuel resources. Except for two small peak-shaving facilities (the Swarr propane air and Gig Harbor LNG facilities), deliveries to all of PSE's core gas markets require NWP transportation services, as do all but two gas-fired generating facilities (Whitehorn and Sumas). However, three gas-fired generating sites (Whitehorn, Fredonia and Frederickson) can burn fuel oil and have fuel oil on-site, so firm pipeline capacity is not required for those sites; instead, they rely on non-firm transportation arrangements purchased from the Core Gas Book at market sensitive rates or purchased from other parties, including NWP.

Q. What are the projected peak-day demand requirements for the Core Gas Book and Power Book?

A. Projected peak-day demand for the Core Gas Book requires NWP deliveries of approximately 946,000 MMBtu per day for the 2009-2010 heating season. The Power Book requires peak-day, baseload natural gas deliveries of approximately 140,000 MMBtu per day for its current combined-cycle CT fleet that is served through NWP. If all of the combined-cycle generating facilities are generating additional electricity through the use of duct firing, the peak-day requirement grows to approximately 159,000 MMBtu per day. As noted above, PSE's simple-cycle CTs can operate on fuel oil and adequate oil storage is maintained on-site to meet peak-day load requirements; however, if all of PSE generating facilities are operating on natural gas, the generating facilities served through NWP can consume as much as 290,000 MMBtu per day. In addition, PSE generating facilities that have direct access to Westcoast, and do not require NWP service, can consume as much as 71,000 MMBtu per day.

Q. What is PSE's peak-day firm delivery capability for the Core Gas Book and Power Book?

A. The table below illustrates PSE's peak-day firm delivery capability, based on its NWP-based transportation capacity holdings from all three supply basins and market area storage facilities:

NWP Pipeline Capacity From All Sources	Current Capacity (MDth/day)*					
Gas Source and Route	**Core Gas Book**		**Power Book**		**Total**	
British Columbia	260	26%	119	62%	379	32%
Alberta	76	8%	-	0%	76	6%
U.S. Rockies	184	18%	17	8%	201	17%
Jackson Prairie	404	41%	57	30%	461	39%
Plymouth LNG	70	7%	-	0%	70	6%
Total Pipeline Delivery Capability	**994**		**193**		**1,187**	

*MDth is equal to 1,000 MMBtu

In addition to the capacities on NWP detailed above, PSE holds the following pipeline transportation resources on certain upstream pipelines:

Upstream Pipeline	Core Gas Book	Power Book	Totals
	(MDth/day)*	(MDth/day)*	(MDth/day)*
Westcoast Energy	97	47	144
GTN	90		90
Foothills	79		79
Nova	80		80
*MDth is equal to 1,000 MMBtu			

The Core Gas Book resources reflected in the preceding tables are owned or held under long-term contracts that contain rights of first refusal. Some of the Power Book resources are held under temporary assignments (51,000 MMBtu per day of pipeline capacity and all of the storage capacity), primarily with a remaining term of three years. Such mid-term arrangements have been negotiated to provide a bridge to more permanent solutions that will be discussed below.

Q. Please explain the transaction PSE entered into with FB Energy.

A. PSE has supply requirements related to NWP transportation capacity of approximately 260,000 MMBtu per day at Sumas for the Core Gas Book and 119,000 MMBtu per day for the Power Book. In addition, the Power Book has additional demand of 25,000 MMBtu per day at Sumas to supply the Sumas Generating Station. The Power Book also has Sumas-sourced, non-firm, simple-cycle CT demands approaching 180,000 MMBtu per day. PSE's long-term strategy is to supply approximately 50% of those Sumas requirements from Northern British Columbia supply areas via Westcoast pipeline capacity. PSE has been successful in procuring Westcoast capacity at a discount to maximum tariff rates. The most recent example is the transaction under which PSE took permanent assignment of approximately 25,000 MMBtu per day of Westcoast T-South pipeline capacity through October 2018 from FB Energy, and FB Energy made a lump-sum payment to PSE to effect the discount.

PSE procured this capacity for the Power Book to work towards the 50% Northern British Columbia supply strategy. Prior to the acquisition, the Core Gas Book ratio for Northern British Columbia to Sumas was 37%, while the Power Book's ratio was 15%. The transaction raised the Power Book's ratio to 32%.

PSE will continue to look for opportunistic acquisitions of stranded or distressed resources, such as this acquisition from FB Energy.

V. MARKET FORCES AFFECTING GAS SUPPLY

Q. Please describe the market forces affecting natural gas supply.

A. Conventional natural gas supplies in North America have been in decline over the last several years and are projected to continue to decline; the only region with significant growth projections during that period was the U.S. Rockies. Given the state of decline, many experts predicted that LNG imports would be required to replace declining production as well as serve growing demand, including the burgeoning gas-fired power generation market. Several LNG import facilities were built and many more are under development. In 2007 and 2008, natural gas prices increased dramatically on the global market, as LNG prices followed skyrocketing oil prices. Those high prices had a tremendous effect on the North American gas market as well. First, high international prices dramatically cut LNG imports into the U.S. as suppliers chased higher value markets. Second, the high prices tempered demand across all sectors. However, high cash prices and promise of high future prices enticed producers to increase exploration and development expenditures dramatically, and enabled development of unconventional fields and formations that were previously thought to be uneconomic.

Resulting discoveries and developments have radically changed the North American natural gas supply landscape. Technology advances enabled producers

to successfully develop unconventional production such as shale formations and increased recoverable reserve projections dramatically. In recent years, unconventional production made up less than 40% of North American production; by 2020, it is projected that unconventional production will make up 75% of total North American production, with most of that growth in shale formations. Total North American production is expected to grow from current production levels of 50 billion cubic feet ("Bcf") per day to 60 Bcf per day in 2020.

Promising Canadian shale plays are also under development; however, Canadian exploration and development costs are currently much more expensive than costs in the U.S. due to the lack of infrastructure in the fields to be developed and the severe conditions in northern British Columbia and Alberta. Further, Canadian gas available for export is expected to decline over time as demand in Canada grows, especially for use in oil production.

Global LNG supplies are also expected to increase substantially in coming years, with as much as 7 Bcf per day coming on-line in the next two years, which may lead to near-term supply surpluses; however, LNG is generally expected to play only a minor role in the North American supply picture, comprising only 5%-10% of the market. North American markets will be able to take advantage of surplus LNG supplies due to the continent's tremendous storage capacity, which is much greater than any other continent. However, baseload deliveries into North America are less certain.

Q. Do you anticipate the development of LNG import terminals in the Pacific Northwest?

A. No. It will be very difficult to develop import terminals in the Pacific Northwest, partly due to the project development climate, but primarily due to the relatively small Pacific Northwest market. The region cannot readily absorb the 1 Bcf per day capacity levels generally required to economically justify a terminal, so terminals must have access to California markets. Pipeline projects could be developed, but are expensive for the anticipated load factor. It is generally believed that additional import capacity could be more readily and efficiently developed in Mexico, with easier access to much larger Southwest U.S. markets; it would make even more sense that they be developed in California, but California will likely not embrace such a project within its state.

Q. How will the growing demand in the Pacific Northwest be served?

A. Given the difficulty developing an LNG terminal in this region, Pacific Northwest growth will be served by new and/or expanded pipeline projects from the U.S. Rockies and/or British Columbia.

As discussed earlier, there is strong natural gas supply growth throughout North America. Natural gas supplies are readily available, but pipeline capacity must eventually be built to accommodate continued growth, especially in the natural gas-fired power generation sector. The existing infrastructure meets current

regional requirements, but data compiled by the Northwest Gas Association suggests that design-day Pacific Northwest demand is fast approaching system capacity.

Q. Does PSE expect to obtain additional pipeline capacity from Canada or the Rockies?

A. Yes, PSE has several options available that will provide the Company additional pipeline capacity. PSE will be participating in a pipeline expansion project within the next two years in order to position itself to provide reliable service to its customers in the long-term. PSE's preferred strategy is to maintain a balanced U.S.-Canadian supply basin portfolio, which will require the next tranche of capacity to be from the Rockies. In the interim, PSE has acquired sufficient mid-term resources to meet its needs until a pipeline expansion is completed.

Two Rockies projects are still under development, but PSE expects only one westbound pipeline project to be successfully developed. The Ruby pipeline is sufficiently subscribed to move forward, has made its Federal Energy Regulatory Commission application and is projected to be in service in mid 2011. The Ruby project will deliver 1.2 Bcf to 1.5 Bcf per day of Western Wyoming natural gas to Malin, Oregon, located on the California-Oregon border. Pacific Northwest markets have access to such Malin deliveries through GTN, whether they subscribe to Ruby capacity or not; however, new pipeline capacity must be built

from GTN, to redeliver the natural gas to I-5 corridor markets, through an expansion of NWP or through the addition of a new cross-Cascades pipeline.

PSE is currently working with NWP to facilitate delivery of additional gas into its market, with a primary focus on a cross-Cascades project. PSE continues to analyze its options and follow project developments, especially with respect to the Ruby pipeline. PSE is taking a measured approach and is working to develop a sound strategy. PSE can be deliberate in weighing the alternatives because it has positioned its portfolio with mid-term resources to meet current requirements. PSE expects to finalize its strategy during 2009 and make project commitments in the third or fourth quarter of 2009.

At this juncture, the Ruby project appears to be moving forward, so PSE is weighing its options with respect to Ruby. These options are to either purchase capacity on Ruby or purchase gas at Malin or Stanfield, Oregon. However, PSE will continue to monitor developments in the competing Sunstone pipeline project in the event that the project can be successfully developed. The Sunstone project would deliver natural gas from Western Wyoming to Stanfield, Oregon.

Concurrently, PSE will be working with NWP to develop a project that will deliver natural gas across the Cascades to the I-5 corridor to serve PSE requirements.

Q. Is PSE considering a pipeline capacity expansion from British Columbia?

A. PSE has explored expansion from British Columbia. Such an expansion would be less complicated than a Rockies pipeline because it could accommodate a smaller project and would largely be accomplished through additional compression (i.e., it would require very little additional pipe). Given the smaller project size, PSE would not need other subscribers and could arrange for an NWP expansion from British Columbia, if a cross-Cascades project proves unfeasible.

Although expansion from British Columbia will be less expensive when viewed solely through the lens of fixed costs, the region would be increasingly subject to Canadian market conditions. As mentioned previously, northern British Columbia shale development looks promising, but such development is expected to require market prices of approximately $7 per MMBtu, compared to $4.00-$5.50 per MMBtu or less in the U.S. Consequently, current pricing parameters make the prospect of large-scale development uncertain. Furthermore, producers will primarily target oil sands, mid-continent and east coast markets, so most of the production will strive to move east out of British Columbia. Since 2000, these factors have led to much higher prices in Canada than in the Rockies. Daily Sumas prices exceeded Rockies prices by $1.66 per MMBtu in calendar year 2008. If projects are not developed from the U.S. Rockies, including a cross-Cascades line, those significant price differentials are expected to continue.

As indicated previously, PSE's current supply basin is heavily weighted to Western Canada (69%), and additional expansion from Sumas would serve to

magnify dependency on Canadian supply. If all currently projected required additions were to originate from Sumas, dependency would increase to nearly 80%. Therefore, PSE's goal is to participate in the development of pipeline projects that can access Rockies supplies. However, success will be dependent on achieving sufficient subscription levels in the region to support such expansions.

VI. CONCLUSION

Q. Does this conclude your direct testimony?

A. Yes, it does.