GATHERING, TRANSPORTATION, AND STORAGE

Gathering and Processing Services

The Company acquires a substantial portion of its natural gas supplies each year pursuant to the Wexpro Agreements. In many situations, gathering, and/or processing services are required for these supplies before they can enter the interstate pipeline system to travel to the Company's city gates. Therefore, the Company has several gathering and processing agreements. The majority of the cost-of-service production is gathered under the System-Wide Gathering Agreement (SWGA), between the Company and QEPM Gathering I, LLC (QEPM). Andeavor Logistics LP (formerly Tesoro Logistics LP) acquired these midstream assets from QEP Resources Inc. in December of 2014. On April 30, 2018, Marathon Petroleum Corp (Marathon) and Andeavor Logistics LP announced a merger agreement.

The Company includes cost data for the gathering and processing functions each year in the SENDOUT modeling process. The Company used the rates from the amended SWGA in this year's modeling process.

The SENDOUT model uses a logical gas supply network to define the relationships between modeling variables. Exhibit 10.1 illustrates those logical relationships for the gathering, processing, and transportation functions as utilized by the model.

Transportation Services

The Company evaluates all transportation options using assumptions that ensure the Company provides safe, reliable, diverse and cost-effective service to its customers. As customer demand grows, the Company continues to review options for firm transportation capacity to ensure reliable deliverability of gas supplies. The Company bases contracting decisions on current and forecasted needs, current and projected capacity availability, to ensure supply diversity and cost. The Company holds firm transportation contracts on DEQP, KRGT, Northwest Pipeline, and Colorado Interstate Gas.

Dominion Energy Questar Pipeline

The Company has three transportation contracts with DEQP for 798,902 Dth/D (Contract #241), 12,000/87,000 Dth/D (Contract #2945 – volume changes seasonally) and 30,000 Dth/D (Contract #2361). In March, 2017 the Company extended Contract #241 for 798,902 Dth/D until June 30, 2027. This contract provides capacity from multiple receipt points, including Clay Basin, Vermillion Plant, Blacks Fork Plant, Emigrant Trail Plant, Kanda, and interconnects with Northwest Pipeline, Overthrust Pipeline, and White River Hub. With this extension, the Company also signed a Precedent Agreement to upgrade the Hyrum Gate station and expand the total capacity by 100,000 Dth/D. Simultaneously, the Company and DEQP entered into a Facilities Agreement that obligates DEQP to construct at least $5,000,000 of delivery point upgrades for the Company. These would normally be paid for by DEU.

The expansion of the Hyrum gate station and associated capacity will provide necessary increased supplies to the northern area of the Company's distribution system. DEQP will complete the upgrades in 2019 and the capacity will be available for the 2019-2020 heating season. The Company is replacing FL 23 starting in 2019 which will increase the takeaway capacity from the station and increase pressures in the area as discussed in the System Capabilities and Constraints section of this report.

Contract #2945 entered into year-to-year evergreen on March 31, 2018. This contract provides seasonal capacity with valuable receipt points. It also provides the summertime capacity necessary to transport supplies to the Ryckman Creek storage facility for injections. Contract #2361 expires on November 1, 2021. This contract provides capacity to serve the Company's southern HP system.

No-Notice Transportation Service

DEQP provides No-Notice Transportation (NNT) service pursuant to its FERC Gas Tariff and the NNT Service Agreement, as amended, between DEQP and the Company. DEQP's NNT Service is offered as an enhanced service to supplement its firm transportation service. NNT service utilizes the contracted reserved daily capacity (RDC) of the underlying firm transportation service (T-1) and offers additional flexibility in intraday variation of the supply and demand of that transportation. Specifically, NNT service allows the Company's level of supply to adjust in real time, subject to certain constraints as described herein, to accommodate the increases or decreases in demand throughout the Gas Day.

Under the NNT rate schedule, the Company may nominate transportation capacity the day before the gas flows to reserve sufficient capacity and provide adequate variable sources of supply to match any change in demand. NNT adjustments for increased demand through the Gas Day, which do not cause flow to exceed the associated T-1 RDC are considered firm; however, NNT adjustments which cause the flow to exceed the T-1 RDC on an hourly basis are only offered subject to pipeline operational capacity availability. While no-notice service is "firm up to the RDC," adjustments above the RDC are subject to actual physical constraints on the pipeline and contractual constraints.

The Company relies on the use of NNT service on a daily basis for delivery in response to non-forecasted demand swings, with adjusted Gas Day nominations resulting on 347 days during the 2017-2018 IRP year. Different drivers affect the need for the NNT service between summer and winter seasons. In winter, NNT allows the Company to adjust to cold-weather-driven demand changes, while in summer, NNT service provides the Company the flexibility to adjust to demand changes based on changes in customer usage.

The Company used NNT service 202 days during the 2017-2018 IRP year to reduce nominations to the city gate by reducing withdrawals or increasing injection into storage. The Company used NNT 154 days to provide for additional storage withdrawal or reduce injections. The maximum daily use of NNT to reduce supply to the city gate was 112,928 Dth with an average daily supply reduction to the city gate of 32,428 Dth. The maximum daily supply increase to the city gates was 203,542 Dth with an average

daily increase to the city gate of 47,397 Dth. The NNT usage for the 2017-2018 IRP year is shown in Figure 10.1 below.

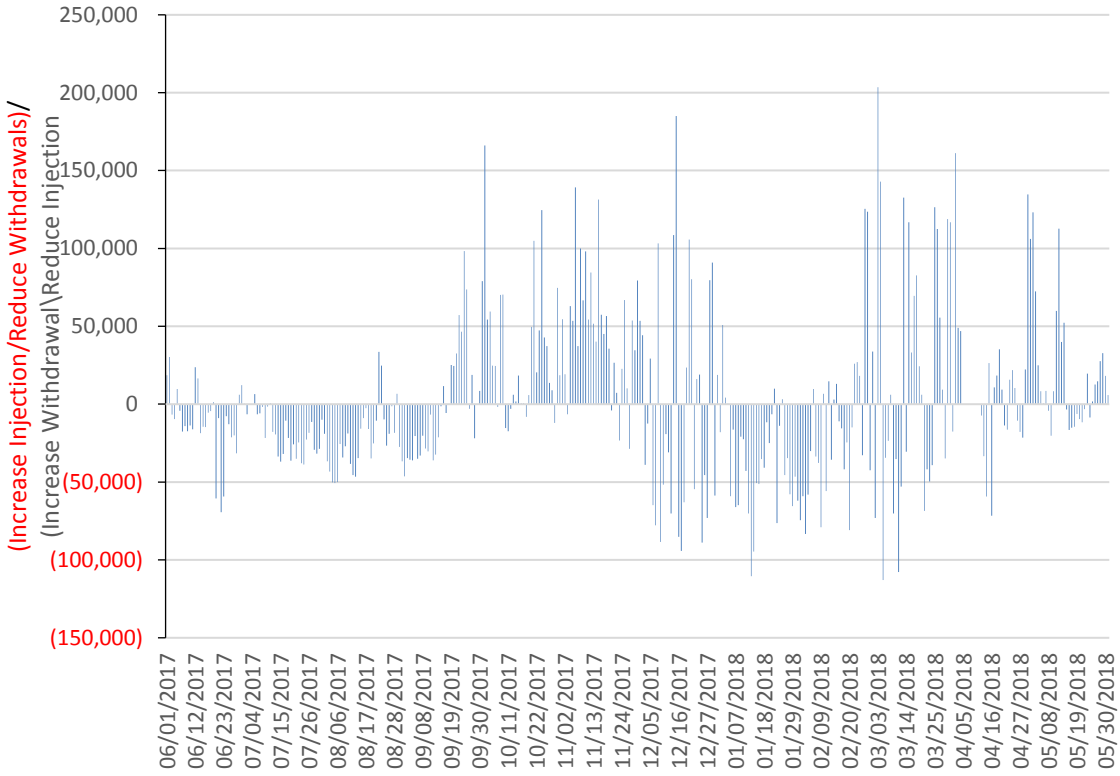

Figure 10.1: NNT Usage – 2017-2018 IRP Year

As part of NNT service, DEQP's tariff allows delivery of volumes that exceed the Company's RDC for short periods of time on an operationally available or interruptible basis. The Company and DEQP regularly model their systems to quantify this ability to deliver gas at rates that exceed the Company's RDC to ensure that the systems can meet peak-hour demand and peak-flow requirements. While this process quantifies the ability to meet Design-Peak Day requirements, this does not guarantee this service will be available during all conditions (the service could be interrupted). This analysis is part of the JOA process described in the System Capabilities and Constraints section of this report.

Kern River Gas Transmission

Prior to 2017, the Company had two existing transportation contracts with KRGT for 53,000 Dth/D (Contract #1715) and 1,885 Dth/D (Contract #1829). In 2017, the Company also contracted for 30,000 Dth/D of capacity on KRGT (Contract #1992) as part of a permanent release. The permanent release was effective April 28, 2017. As part of the prearranged agreement, the Company temporarily released the capacity at the same rate for the timeframe of May 2, 2017 through September 30, 2017. As of May 1, 2018 the #1715 and #1992 contracts were combined into one contract (Contract #20029). Contract #20029 is now a 10-year contract at the Alternative Period Two rate with an expiration of April 30, 2028.

To meet growing customer demand and ensure access to reliable supply sources, the Company also contracted for released capacity on KRGT. This seasonal release contract provides firm transportation capacity that will allow the Company to purchase gas at locations with available supply and transport the gas to the Company's city gate stations.

The contract for seasonal release of capacity on KRGT consists of a release of 27,000 Dth/D for the months of November through the succeeding March with a term of November 1, 2017 through March 31, 2032. It also includes a release of 56,925 Dth/D for the months of December through the succeeding February, and 6,000 Dth/D for November and March with a term of November 1, 2017 through March 31, 2031. This capacity has a path from Opal/Muddy Creek to Goshen with full segmentation rights. This effectively allows the Company to use this as 167,850 Dth/D of firm capacity to serve the Company's system.

Northwest Pipeline

The Company has a contract with Northwest Pipeline for 4,311 Dth/D of transportation capacity with a term expiration of April 30, 2023. This contract has a unilateral cancellation provision under which the Company can terminate the agreement by providing 5-years advanced notice. Unless the contract is terminated, each year the contract is extended for an additional year. Northwest Pipeline cannot terminate the contract. The Company uses this contract to serve the towns of Moab, Monticello, and Dutch John. This contract is segmented in order to provide additional capacity to serve these towns. The Company releases capacity to two contracts that were both renewed on April 4, 2017. These segmentation contracts have no additional reservation costs, but allow for the segmentation of 2,016 Dth/D of this capacity. This allows for a total effective capacity on this contract of 6,327 Dth/D.

Northwest Pipeline Rate Case Settlement

On March 15, 2012, Northwest Pipeline filed a petition with the FERC requesting approval of a rate case settlement (2012 Settlement). This 2012 Settlement met Northwest Pipeline's obligation to file a general rate case by July 1, 2012. The FERC approved the 2012 Settlement on April 26, 2012.

The 2012 Settlement required Northwest Pipeline to file a general rate case with the FERC not later than July 1, 2017, for rates to become effective not later than January 1, 2018. Northwest Pipeline initiated discussions with its shippers in the fall of 2016 in an effort to reach a settlement and avoid the requirement to file a rate case in 2017. After numerous meetings and the exchange of several offers and counteroffers, Northwest Pipeline and its shippers reached a settlement (2017 Settlement). All of the shippers actively participating in the discussions supported the 2017 Settlement including the Company. Ninety-two percent of its total shippers (including those who did not participate in the discussions) supported the 2017 Settlement and 8 percent did not oppose.

Northwest Pipeline filed its Petition for Approval of Settlement and a Stipulation and Settlement Agreement with the FERC on January 23, 2017. Due to the lack of a quorum, the FERC was unable to take action to approve the 2017 Settlement. As recommended by Commission Staff, Northwest Pipeline filed a tariff modification extending its deadline in the 2012 Settlement to file a general rate case from July 1, 2017, until 120 days following a final Commission order on the 2017 Settlement. The FERC Office of Energy Market Regulation issued a letter order on April 12, 2017 accepting the Tariff records to extend the deadline. After a quorum was reinstated, On August 18, 2017, the FERC issued a letter order accepting Northwest Pipeline's Petition for Approval Settlement and Settlement Agreement.

Colorado Interstate Gas

The Company has a contract with Colorado Interstate Gas (CIG) for 400 Dth/D of transportation capacity with a term expiration of October 31, 2025. The Company uses this capacity to serve the town of Wamsutter, Wyoming. The Company also uses the Foothill gate station to serve Rock Springs, WY from CIG with purchases at the city gate. The Company is continuing to review potential alternatives to serve the Foothill station using firm transportation on CIG.

Firm Peaking Services

Most customers do not use natural gas evenly throughout the day. Usage rates are typically higher in the morning hours. The apex of these periodic increases in instantaneous flow is the peak-hour demand. Hourly demand exceeds the average daily demand for a few hours each day (see Figure 10.2). As the Company's customer base and associated demand has grown, the Company has seen a corresponding increase in peak-hour demand. It is important to note that transportation capacity is scheduled on a daily basis, not hourly.

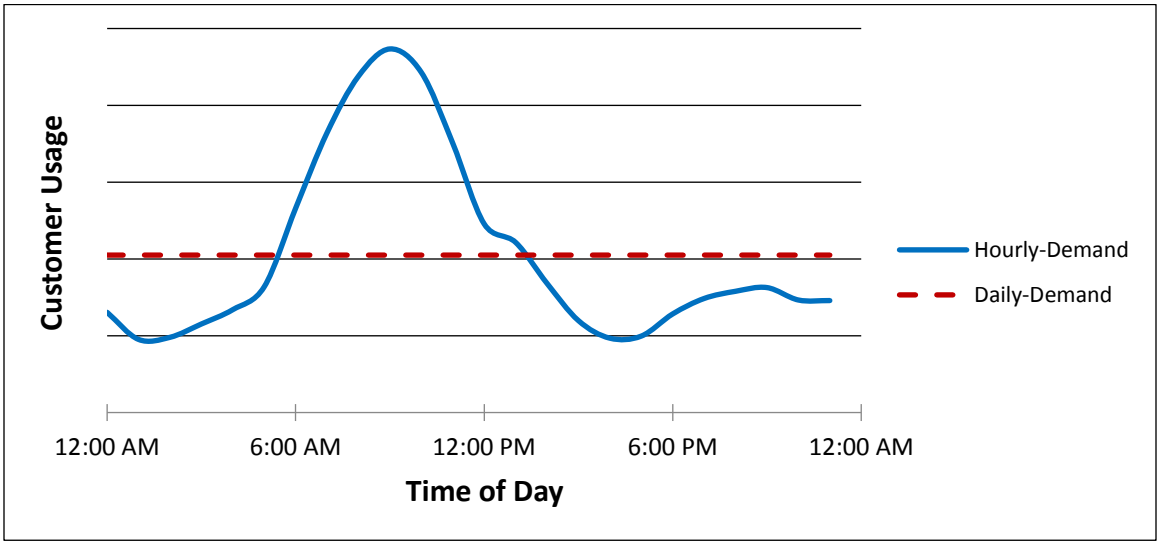

Figure 10.2: Hourly vs. Daily Demand

As shown in Figure 10.3, the Company forecasts that projected peak-hour demand across the system will materially exceed the Company's total firm capacity on a Design-Peak Day for each of the next ten heating seasons. This excess peak-hour demand is forecasted to increase from 308,443 Dth/day during the 2018-2019 heating season to 406,358 Dth/day during the 2027-2028 heating season.

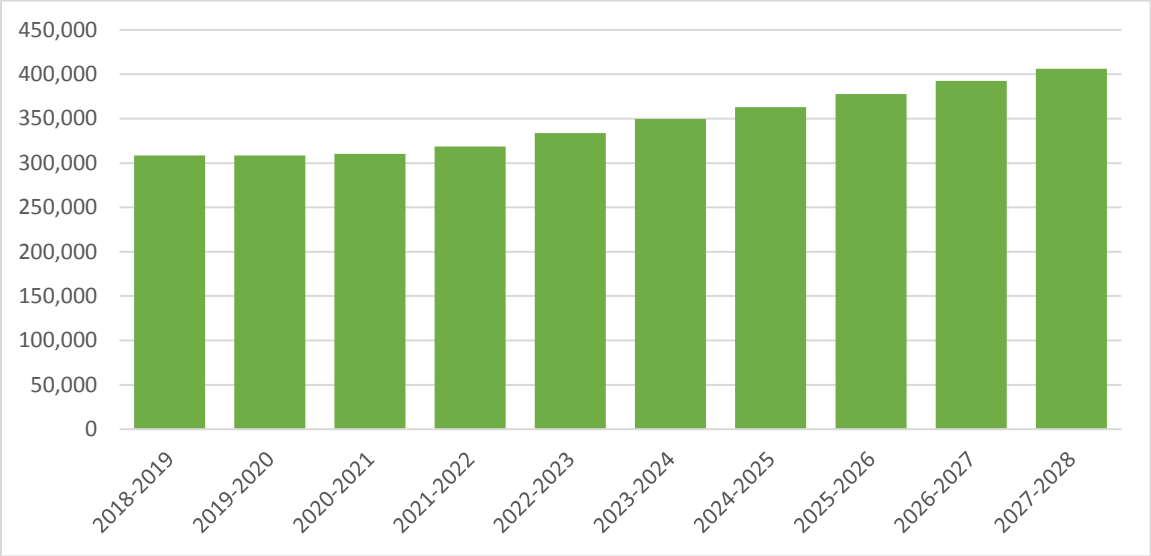

Figure 10.3: Peak-Hour Demand Requirements above Firm Capacity

Beginning at a technical conference on December 17, 2015, and again in the 2016-2017 IRP and the 2017-2018 IRP and associated workshops the Company discussed the need for a solution to the peak hour demand concerns. The Company then provided updates to the Utah Commission on the impact of peak-hourly demand on its system and the resources available to meet this demand in Docket No. 17-057-09 and 17-057-20. The prudency of these services is currently under review in Docket 17-057-20.

The Company evaluated several options for meeting the peak-hour demand requirements. The options evaluated were 1) taking no advanced action, 2) implementing demand response programs, 3) contracting for additional firm upstream transportation capacity and purchasing additional supply, 4) contracting for additional firm upstream transportation capacity and additional off-system storage, 5) contracting for additional interruptible backhaul upstream transportation capacity and purchasing additional supply, 6) contracting for Firm Peaking Services, and 7) constructing on-system storage.

The Company discussed the possibility of constructing an LNG facility to meet the peak-hour demand needs in the 2017-2018 IRP. At that time, the DEQP service had not yet been approved by the FERC. Since that time, the FERC has approved the DEQP service, the Company has had the opportunity to utilize and evaluate the DEQP service, and the Company has determined that the Firm Peaking Services offered by both KRGT and DEQP are the most cost-effective and reliable solution.

The Company is seeking approval for a voluntary resource decision to construct an LNG plant for other reasons. The Company originally planned to build a much larger

facility than what is currently being proposed, but as mentioned earlier; the Firm Peaking Services have proven to be a more cost effective solution. As a result, the Company is proposing to build a smaller LNG facility to meet supply reliability needs. This plan is discussed in greater detail in the "Supply Reliability" section of this IRP.

Kern River Gas Transmission

The Company has a contract with KRGT for 25,002 Dth of Firm Peaking Service for November 15, 2018 to February 14, 2019 and 28,752 Dth of Firm Peaking Service from November 15, 2019 to February 14, 2020. The KRGT Firm Peaking Service for 25,002 Dth allows the Company to flow 4,167 Dth/hr during the 6 peak hours (25,000/6 = 4,167). In order to get the same 4,167 Dth/hr flow on a standard transportation capacity contract, the contract would need to be for 100,008 Dth/day (4,167 x 24 = 100,008). This contract is cost effective because it allows the Company to pay for capacity during the peak hours when it is needed instead of paying for the capacity all day. This Firm Peaking Service for the remaining term of Nov 15, 2018 through Feb 14, 2018 will cost the Company less than the equivalent Firm Transportation Service on KRGT for the same period.

Dominion Energy Questar Pipeline

The Company had contracts in place with DEQP for the 2017-2018 heating season which provided 250,000 Dth/day of maximum flow rate during peak hours. These contracts were addendums to Contract #241 for 190,000 Dth/day of maximum flow rate with delivery to MAP 164 and 60,000 Dth/day of maximum flow rate to other DEU delivery points on the DEQP system. The Company plans to renew this contract for the 2018-2019 heating season.

Storage Services

The Company holds firm contracts for storage services with DEQP at four underground gas storage fields to respond to seasonal winter and Design-Peak Day demands. This includes the Leroy, Coalville, and Chalk Creek aquifer facilities (Aquifers). The Company also holds contracts for the Clay Basin storage facility. The Company commenced service on its negotiated Firm Storage Service (FSS) agreement with Ryckman Creek on April 1, 2017.

DEQP owns the Aquifers and the Company utilizes them primarily for short-term peaking needs. The Company fully subscribes the Aquifer facilities. The Company reviewed these storage resources as part of its planning process and plans to extend the contracts prior to their expiration in 2018.

DEQP also owns Clay Basin, a depleted dry gas reservoir, and its shippers utilize the facility for both baseload and peaking purposes. The Company's contracted inventory for storage facilities is outlined in Table 10.1 below:

Table 10.1: Contracted Storage Inventory

Facility	Maximum Inventory (MDth)
Clay Basin	13,419
Leroy	886
Coalville	720
Chalk Creek	321
Ryckman	2,500

Clay Basin Storage

The Clay Basin storage facility is located in the northeast corner of Utah, roughly 50 miles from Rock Springs, Wyoming. The Clay Basin field has two producing sandstone formations, the Frontier and the Dakota. The Frontier formation is still producing natural gas today and the Dakota formation is used for storing gas. The Dakota formation was largely depleted by 1976 when construction of the storage facilities began. Today, the Clay Basin reservoir has the largest capacity of any underground storage facility in the Rocky Mountain Region.

The Company receives storage service at Clay Basin under rate schedule FSS. Billing under rate schedule FSS consists of two monthly reservation charges and separate per unit usage fees for injection and withdrawal. The first reservation charge is based on each shipper's minimum required deliverability (MRD) as stated in each shipper's storage service agreement. The second monthly reservation fee is an inventory capacity charge based on each shipper's annual working gas quantity.

The tariff provisions governing Clay Basin ensure that customers will receive their MRD, at a minimum. To the extent that shippers have inventory in excess of their MRD, additional deliverability is available for allocation according to predetermined formulas. The Company exceeds its contract MRD regularly throughout the heating season, but, for purposes of Design Peak-Day analysis, the Company assumes that only its MRD will be available during a Design-Peak Day.

Between October 1, 2017 and April 30, 2018, the Company utilized the Clay Basin storage facility to provide more than 12,200 MDth of supply to meet customer demand. This included 52 days with withdrawals that exceeded 100 MDth and 13 days with withdrawals that exceeded 150 MDth. Clay Basin also provided operational flexibility by providing 52 days of injection during this period.

Leroy and Coalville Storage

Since 2000, the operation of the Leroy and Coalville storage facilities have been modified to provide more flexibility and enhance storage efficiency. Following the end of the withdrawal season, the inventories in these facilities have maintained a working gas inventory of approximately 30–50% of maximum capacity through the summer months. Previous practice was to completely deplete the facilities each year at the end of the withdrawal season. The advantages of this revised mode of operation are as follows:

- Wells in the Leroy and Coalville facilities are not "watered out" at the end of the withdrawal cycle, which improves well efficiency when storage injections are initiated in the fall.

- Injection compression fuel gas requirements are reduced (only 50-70% of the working capacity needs to be injected in the fall to fill the reservoir).

- A shorter, more predictable, and easily managed withdrawal/depletion schedule occurs at the end of the heating season.

- A shorter injection season for reservoir refill is required in the fall.

- With the Leroy and Coalville inventories at 50%, the flexibility exists to inject significant volumes due to gas displacing water in the reservoir.

In general, current operating practices at both the Leroy and Coalville facilities are as follows:

- Injections into the reservoirs commence in August or September from an initial inventory of approximately 45-55% of maximum working inventory. Injections continue until an inventory of approximately 75% of maximum is reached by early October. Injections follow a specific schedule determined by well and reservoir characteristics which minimizes the potential for "fingering" (gas being trapped behind water in the aquifer and resulting in gas loss).

- In early October, scheduled injections are halted to facilitate DEQP's testing conducted at the Clay Basin storage facility. The testing requires two days of injection at a controlled rate followed by a 7-day no flow period for pressure stabilization. Depending upon system demand and the gas supply situation during the no flow period, the 75% inventory at Leroy and Coalville affords the flexibility to either inject or withdraw to help meet system balancing requirements.

- Following the Clay Basin test, controlled injections again commence in Coalville and Leroy and they typically reach maximum inventory by early November.

- The Company utilizes both Coalville and Leroy to meet peak-load requirements through the heating season, to manage the morning and evening load swings and to offset the cost of purchased gas during a high-pricing event. During periods of lower winter demand, the Company refills the reservoirs to maximum inventory when possible.

- During March, when the need for peaking withdrawals has passed, the Company partially draws down the reservoirs to inventories of approximately 50% in preparation for Clay Basin testing (conducted during April). The April Clay Basin test consists of a few days of a withdrawal period followed by 2 days of controlled withdrawal. Following the withdrawal period, DEQP shuts Clay Basin in for pressure stabilization. Maintaining Coalville and Leroy at the indicated

inventory range during this period provides the flexibility to either inject or withdraw based upon system balancing needs.

- At the end of the spring Clay Basin test, the Company draws Leroy and Coalville down to inventory levels of approximately 45–55% and then maintains both at that level until refill commences in the fall. Periodically, the Company will completely draw down one aquifer when necessary to conduct an inventory volume verification analysis.

Chalk Creek Storage

Chalk Creek is utilized differently than the Leroy and Coalville facilities. This facility has more restrictive injection requirements but still provides high deliverability. Due to the nature of the Chalk Creek storage formation and in order to minimize losses, DEQP does not currently practice partial inventory maintenance during the summer. Operation at Chalk Creek is as follows:

- Injections commence in early November following a controlled injection profile.
- By mid-December, the reservoir reaches maximum inventory.
- In early March, gas in the reservoir is withdrawn in a controlled manner and it remains empty until refill injections commence in the fall.

2017-2018 Aquifer Usage

During the 2017-2018 heating season, the Company used the Aquifers to provide supply during periods of cold temperatures in October, December, January, and again during a high-sendout period in February 2017. On February 20th, 2017 the Aquifers were used as the primary source of supply to replace supply shortfalls from multiple other sources. This highlighted the benefits of the Aquifers for reliability purposes. The Aquifers are regularly held in reserve on cold days however, all of the Aquifer's deliverability will be required to provide 135 MDth of supply on a Design-Peak Day. The Company cannot hold the Aquifers in reserve for other purposes (to address peak-hour issues, for example) without finding a replacement supply source on a very cold day, or a Design-Peak Day.

In order to continue to provide operational flexibility during the Clay Basin testing period in April 2018, the Company withdrew inventory from the Aquifers in March. The Company adjusted the inventory in the Aquifers in order to provide maximum flexibility during the Clay Basin test in April.

The Company was able to utilize the Aquifers for both injection and withdrawal during this time period as shown in Figure 10.4 below. This flexibility is critical to operations when Clay Basin is not available.

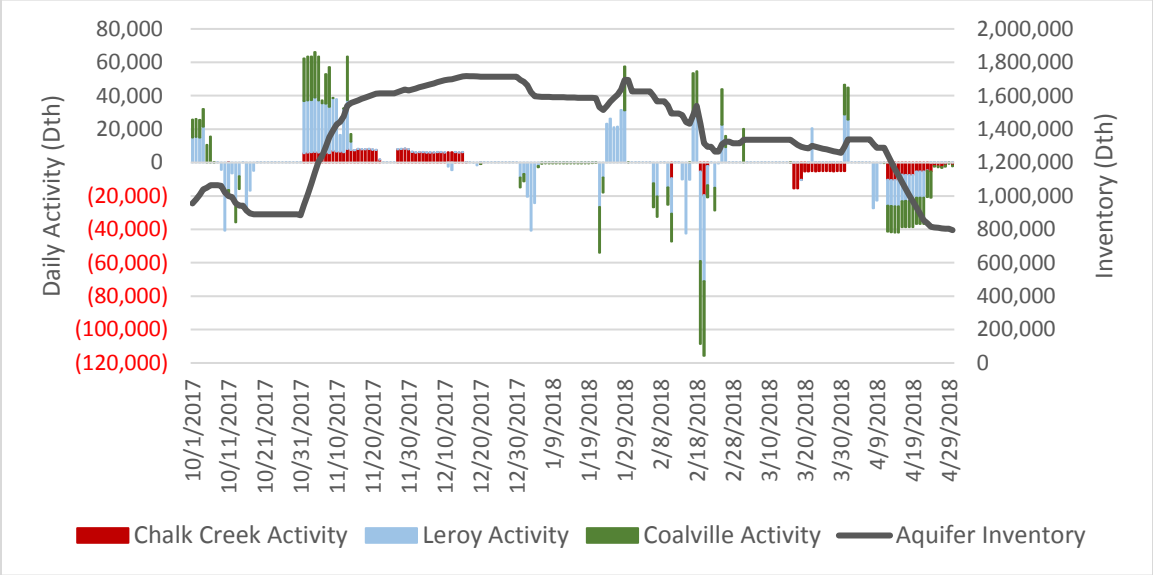

Figure 10.4: Aquifer Usage 2017-2018 Heating Season (Oct 2017 through April 2018).

Ryckman Creek Gas Storage

The Ryckman Creek storage project involves the utilization of a partially depleted oil and gas field located approximately 25 miles southwest of the Opal Hub in southwestern Wyoming. The facility interconnects with KRGT, DEQP, Northwest Pipeline, Overthrust Pipeline, and the Ruby Pipeline. Effective April 18, 2011, the Company entered into a Firm Gas Storage Service Precedent Agreement with Ryckman for 2.5 MMDth of storage capacity. Beginning in 2013, Ryckman Creek began to experience a series of operational problems and force majeure events affecting its operations. In 2016, the Company notified Ryckman Creek that it intended to terminate its storage contract and Ryckman Creek filed for Bankruptcy.

During the Bankruptcy proceedings, Ryckman Creek and the Company renegotiated the storage services agreement with new and additional terms favorable to the Company. In December, 2017, Ryckman Creek Resources successfully emerged from Bankruptcy. Spire Inc., a natural gas distribution company, acquired a controlling interest in the Company. The agreement also provides that in the event Ryckman Creek enters bankruptcy, the parent company will take on the financial obligations contained in the contract. The company plans to fully utilize the Ryckman storage facility going forward.

Between October 1, 2017 and April 30, 2018, the Company utilized the Ryckman Creek storage facility to provide 132,800 MDth of supply to meet customer demand. This included 8 days of withdrawals at the contract maximum withdrawal rate of 16.6 MDth. Ryckman Creek also supplied operational flexibility by providing 36 days of injection during this period. During this period there were no operational issues at the facility that resulted in an inability to perform.

Storage Modeling in SENDOUT

The Company models the costs, contractual terms, and operating parameters for each of its contracts with storage facilities in SENDOUT. The Company also needs a

forecast of the storage inventory available at the beginning of the first gas-supply year for each storage facility for the SENDOUT modeling process. When the Company modeled storage and inventory, it expected that the inventory at Clay Basin on June 1, 2018 would be approximately 1.63 Bcf.

Related Issues

Gas Quality/Interchangeability

Almost all of the gas delivered to the Company's system comes from interstate pipelines (DEQP, KRGT, CIG, and Northwest Pipeline). Each of these interstate pipelines manages gas quality to limits defined in its tariff. These limits have been effective in equitably meeting the delivery needs of shippers and downstream customers.

The most prevalent measure of fuel gas interchangeability in the U.S. is the Wobbe Index.[70] Natural gas appliances are rated to operate safely and efficiently within a specific Wobbe Index range. The Company used a consulting firm to establish the Wobbe operating ranges for its service areas. For example, Exhibit 10.2 shows the upper and lower Wobbe operating limits for the Utah Wasatch Front (North) region for various levels of heating value and specific gravity. DEQP updated this exhibit this year to show the daily averages for 2017 of various sources of natural gas on DEQP's system flowing to customers in this region. This IRP contains charts for other Utah regions (Exhibit 10.3 and Exhibit 10.4). Exhibit 10.5 and Exhibit 10.6 show the same information for the Wyoming eastern and western regions. Should Wobbe values become a concern in the future at any point delivering gas to the Company, there are a number of tools that the Company can use to manage gas interchangeability including injecting inert gases (or air) in the gas stream, injecting propane, and blending supplies from various sources.

It is difficult to predict the interchangeability of future gas streams. The Company may need to arrange for additional processing or blending in the event it is required to ensure that the gas received from the transmission systems of any of its upstream pipelines are compatible with the needs of the Company's customers. The Company will evaluate this on an ongoing basis as it bears the burden of processing pipeline-quality gas to meet its specific requirements.

The Company has been contacted by parties with gas supplies, such as biomethane producers, interested in delivering gas directly into the Company's system. In response to these requests, the Company implemented a tariff change to include gas-quality standards to ensure that the gas stream is interchangeable and safe for its customers. The Company expects to see the first biomethane supplies coming into the system during the 4th quarter of 2018.

[70] The Wobbe Index number consists of the higher heating value of a fuel gas divided by the square root of the specific gravity (relative to air) of the fuel gas. Fuel gases with the same index number generate the same heat output over time from a burner given constant pressure and orifice size.