

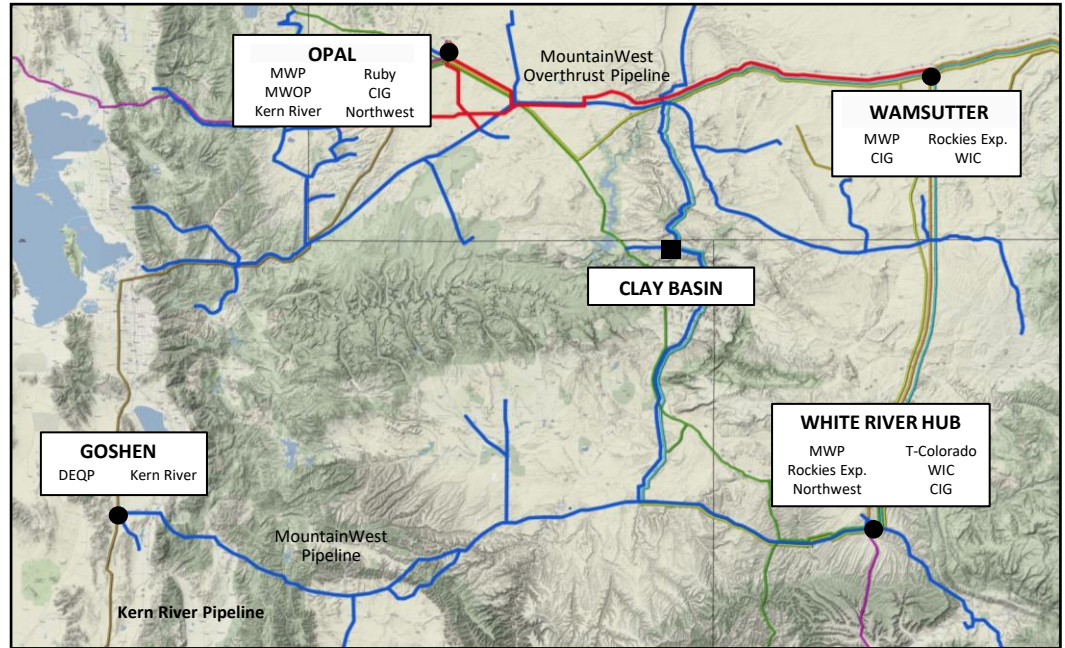
Storage 101

A Summary of MountainWest Pipeline Storage Assets



Clay Basin Storage

Regional Information	Description
Natural Gas Storage (BCF)	<ul style="list-style-type: none"> • 54 Bcf working gas • 66.21 Bcf cushion gas
Interconnect Capacity (Dth/d)	<p>MountainWest Pipeline (MWP)</p> <ul style="list-style-type: none"> • Injection: 217,000 • Withdrawal: 700,000 <p>Northwest Pipeline</p> <ul style="list-style-type: none"> • Injection: 250,000 • Withdrawal: 320,000 <p>* Numbers listed are meter sizing, and actual volumes depend on pipeline conditions</p>
Location	<ul style="list-style-type: none"> • Daggett County, Utah • NE corner of Utah near Wyoming and Colorado borders • 50 miles from Rock Springs, Wyoming



Clay Basin Storage

Facilities:

- 89,000 feet of 6 and 10 inch field lines
- 29 field dehydration units
- 44 injection and withdrawal wells

Compressors:

- Five 2,600 HP reciprocating compressors
- Three 6,500 HP turbine compressors
- One 1,680 HP compressor (Park & Loan)

Services Opportunities:

- Firm Storage
- Interruptible Storage
- Capacity Release
- Release of Injection/Withdrawal Rights
- In-place Transfers
- Park and Loan Service

Clay Basin Storage: Injection

- The injection season starts approximately May 1 and ends October 31
- During the start of the injection season, the average injection volume is 300 MMcf
- Formula for injection allocation:
 - Injection Allocation = $(X/Y) * Z$
 - X= Firm Shipper's annual working gas
 - Y = Sum of the annual working gas of all firm shippers
 - Z = Available injection capacity on any day



Clay Basin Storage: Withdrawal

- The withdrawal season starts approximately November 1 and ends March 31
- During the start of the withdrawal season, the average withdrawal volume is 500 MMcf
- The actual withdrawal rate varies with the working gas volume and the takeaway pipeline pressures

$$\text{Withdrawal Allocation} = [(A/B) * (C-D)] + E$$

- A = Firm Shipper's working gas remaining in storage
- B = Total working gas remaining in storage for all shippers
- C = Maximum possible reservoir deliverability
- D = Sum of firm shipper's minimum required deliverability
- E = Firm shipper's minimum required deliverability

Clay Basin Storage: Firm Storage Rates

- Firm Storage Service (Rate Schedule FSS):
 - Reservation (Maximum)
 - Monthly Deliverability: \$2.85338
 - Monthly Capacity: \$0.02378
 - Usage Charges (Maximum)
 - Injection: \$0.01049
 - Withdrawal: \$0.01781
- Fuel is reimbursed in kind and calculated using Utility and Compressor/Dehydration calculations (refer to MWP FERC Gas Tariff)
- Clay Basin Conditioning Reimbursement Factor (refer to MWP FERC Gas Tariff & Appendix)
- Shippers arrange separately for transportation services to/from Clay Basin

Clay Basin Storage: Cost Estimation Example

<u>Clay Basin Cost Estimation</u>			
Total Dth's:	1,000,000	Deliverability Rate:	\$2.853380
Withdrawal Days:	120	Capacity Rate:	\$0.023780
MRD (see below)	8,333	Injection Rate:	\$0.010490
Equivalent MCF	938,967	Withdrawal Rate:	\$0.017810
Deliverability Charges (MRD * Del Rate * 12 Months)		Effective one-part Rate: \$0.5990	
Capacity Charges (Total Dth's * Cap Rate * 12 months)		Estimated Charges: \$598,998 Total does not include fuel	
Injection Charges (Total Dth's * Inj Rate)			
Withdrawal Charges (Total Dth's * Withdrawal Rate)			
MRD – Minimum Required Deliverability means the minimum withdrawal rate or quantity of gas that the shipper may withdraw on a firm basis each day up to and including the last day of the withdrawal period, subject to the shipper having working gas remaining in storage. It shall be determined by dividing the shipper's annual working gas by the product of 150 days and the decimal equivalent of an 80 percent load factor.			

Clay Basin Storage: Estimator Tool

CLAY BASIN INJECTION/ WITHDRAWAL ESTIMATOR

Injection and Withdrawal allocation estimates for Gas day **09/17/2021**

INPUT quantities in blue boxes and Click **CALCULATE**

313,500 FSS Shipper's annual working gas in (Dth)

800,000 Firm Shipper's working gas remaining in storage (Dth)

MRD

2,613 Dth/day

Injection Allocation

2,010 Dth/day

Withdrawal Allocation

10,933 Dth/day

*All quantities represented in Dekatherm (Dth)

DISCLAIMER: Worksheet and calculations to be used solely for the purpose of estimating firm injection and withdrawal allocation capacities. Please contact QPC marketing and scheduling for help.

Available online NOW

Informational Postings

Other

Clay Basin Est.

**Excel download available to edit offline

Clay Basin Storage: Interruptible Rates

- Interruptible Storage Service (Rate Schedule ISS)
 - Usage Charge: (Maximum)
 - Inventory: \$0.05927

Applied to the average monthly working gas balance

 - Injection: \$0.01049
 - Withdrawal: \$0.01781
- Fuel is reimbursed in kind and calculated using Utility and Compressor/Dehydration calculations (refer to MWP FERC Gas Tariff)
- Clay Basin Conditioning Reimbursement Factor (refer to MWP FERC Gas Tariff & Appendix)
- Shippers arrange separately for transportation services to/from Clay Basin

Stipulation Agreement Information

Background

Liquids Revenue & Conditioning:

For each 12 month period ending April 30th, DEQP retains all revenues from the sale of liquids obtained in the conditioning process up to the cost of service amount listed in the tariff. Revenue received from the sale of liquids is posted monthly on MWP's website.

When Liquid Revenue is forecast to be below the required annual cost of service amount, MWP collects a Conditioning Reimbursement Factor:

MWP calculates and posts the factor by March 31st of each year.

The Conditioning Reimbursement Factor is a percentage of injections and withdrawals that is collected monthly as part of fuel. The gas is valued at the first of the month index and is posted monthly on MWP's website.

Information Cost of Service

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ARA

Annual Reimbursement Adjustment:


For the 12 month period ending April 30th of each year, the revenue selling liquids obtained in the gas conditioning process is added to the value of the gas collected from the Conditioning Reimbursement Factor to determine total revenue collected under the stipulation.

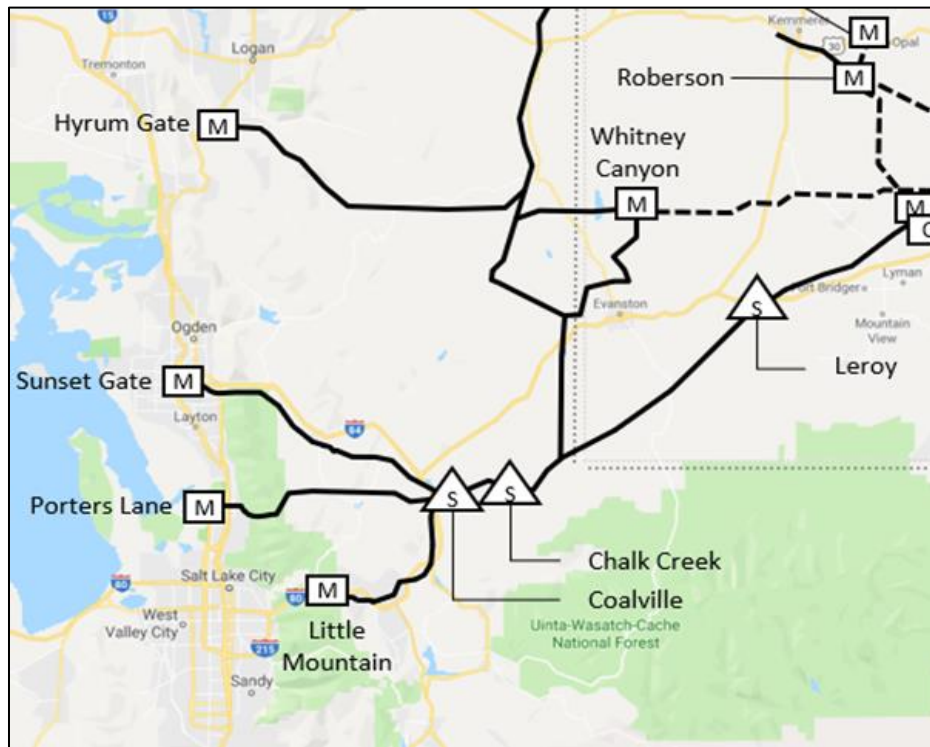
Any excess revenue is returned to customers and any shortage is obtained from customers in July of each year.

The reconciliation is normally done in the form of a gas transferred to or from the customers. The gas is valued at the July 1st index for that year. The customer and MWP can negotiate a settlement payment by one party to the other in lieu of a transfer in kind.

For additional information, refer to Section 16 of MWP Tariff

Aquifer Storage Pools

	Chalk Creek	Coalville	Leroy
Location	Summit County, UT	Summit County, UT	Uinta County, WY
First year of operation	1960	1972	1971
Formation/Reservoir	Kelvin (1800')	Longwall (2300')	Thaynes (2850')
Total Wells	8	11	15
Horsepower	550 HP	1,600 HP	3,830 HP
Storage Capacity	2,119 Mdth	10,410 Mdth	10,610 Mdth
Working Gas Capacity	274 Mdth	720 Mdth	887 Mdth
Operational pressures	Max 1,125 psig Min 450 psig	Max 1,144 psig Min 450 psig	Max 1,540 psig Min 450 psig



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