

Storage

Training Module

This module provides information regarding a wide range of storage services that are available on Transco's system.



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Table of Contents

Important Information – Please Read	3
Introduction	4
Definitions	4
Physical Storage	4
Base Gas vs. Top Gas	4
On System vs. Off System	4
Bundled vs. Unbundled	4
Injections vs. Withdrawals	5
Nominating Storage	5
Storage Services	5
Storage Service Summary	6
GSS – General Storage Service	7
LSS – Leidy Storage Service	8
S2 – Storage Service	9
SS-2 Storage Service	10
LNG/LGA (Liquefied Natural Gas Storage Service)	10
LG-S	11
WSS/WSS-OA (Washington Storage Service)	12
ESS - Eminence Storage Service	12
Excess Storage Availability	14
Storage Pages – Navigation, Description and View	14
View Storage Balance	14
Storage Transfer Summary	15
Create Storage Transfer	15
Create Storage Transfer - Prearranged	16
Create Self Storage Transfer	17
Create Storage Transfer – Non Prearranged	18
Posting Storage Balances	19
Viewing Posted Storage Balances	20
Available Storage Reports	20
Storage Glossary	21

Important Information – Please Read

The information provided herein is for informational purposes only and does not modify any provision in Transco's FERC Gas Tariff. If a conflict exists between this information and Transco's FERC Gas Tariff, the provisions in Transco's FERC Gas Tariff apply. Transco makes no representation or warranty as to the completeness or accuracy of this information. Transco shall not be liable for any informational errors, incompleteness, or delays, or for any actions taken in reliance on this information.

To review the tariff language specific to any topic, go to <u>Transco's Informational Postings</u> <u>page</u>, and select **Tariff** from the left-hand navigation menu.

Introduction

Storage services allow customers to purchase gas in non-peak periods (usually in the summer), store it, and then utilize the gas by withdrawing it from the storage facilities and having it delivered to the delivery location during the peak period (usually in the winter).

Definitions

Physical Storage

Storage Fields – Gas is stored in underground caverns which are depleted production reservoirs or salt dome caverns. There are also above-ground tanks used for storing gas in a liquid form (liquefied natural gas or LNG).

Base Gas vs. Top Gas

Base gas (cushion gas) – volume of gas intended as permanent inventory in a storage reservoir to maintain adequate pressure and deliverability rates.

Top gas (working gas) – volume of gas in the reservoir above the level of base gas.

On System vs. Off System

On-system – Storage facilities directly connected to Transco's pipeline. Examples are Washington field in Louisiana; Eminence field in Mississippi; and the LNG storage facility in Carlstadt, New Jersey.

Off-system – Storage facilities not directly connected to Transco's system. There are agreements with the interconnecting pipelines to transport storage gas between an interconnect with Transco and the storage facility and with the storage operators. Transco tracks and passes through to its customers the charges of off-system providers of transportation and storage services.

Bundled vs. Unbundled

Bundled Storage – storage that includes transportation service and fees to and from the delivery location; no separate transportation contract is required (GSS, LSS, S-2, SS-2, LGA and LNG).

Unbundled Storage – storage service that does not include transportation service to and from the delivery location; gas must be nominated to and from the storage location on a separate transportation agreement (ESS-OA, and WSS-OA)

Injections vs. Withdrawals

Injections: If the field is empty there is less pressure resistance and, therefore, you can inject more. As the field fills up, there is a higher pressure within the field, so less gas can be physically injected.

Withdrawals: If the field is full, there is more pressure, so you can withdraw more gas. As the field empties, there is less pressure, and less gas can be physically withdrawn.

Nominating Storage

If nominating a bundled storage service, one storage nomination (transaction type 6 or 7) is required.

If nominating an unbundled storage service, one transportation nomination (transaction type 1) is required, assuming the transporter is the same company as the storage contract holder. However, if the transporter and storage contract holder are not the same company, a separate storage nomination (transaction type 6 or 7) is required. The upstream/downstream contract field should reference the storage owner's contract.

Storage Services

The following are examples of some of the storage services available. Additional information on these services can be found in the **Rate Schedules** section of Transco's FERC Gas Tariff.

- GSS
- LSS
- S-2
- SS-2
- LNG
- LG-A
- WSS
- ESS

Storage Service Summary

Rate Schedule	GSS	LSS	ESS	wss	S-2	SS-2	LNG	LG-A
Type of	Bundled	Bundled	Unbundled	Unbundled	Bundled	Bundled	Bundled	Bundled
Service								
Physical	Leidy Project	Leidy				Penn York		
Location	Wharton	Penn York	Mississippi	Louisiana	Oakford	Ellisburg	Carlstadt, NJ	Carlstadt, NJ
	Dominion							
TGPL point of								
receipt/delivery to	Leidy-Dominion	Leidy-Dominion	Eminence	TGPL Sta. 54	TETCO @ Linden	Leidy-National	LNG Plant	LNG Plant
upstream	Wharton	Wharton National			& Shippack	Fuel		
pipeline		Fuel						
Injection	All Year	Apr.1 - Oct. 31	All Year	All Year	Apr. 16 - Nov. 15	Apr. 1 - Oct. 31	Apr. 1 - Oct. 31	Apr. 1 - Oct. 31 Firm
Season								Nov. 1 - Mar. 31 Best Efforts
Withdrawal								Nov. 1 - Mar. 31 Firm
Season	All Year	Nov. 1 - Mar. 31	All Year	All Year	Nov. 16 - Apr. 15	Nov. 1 - Mar. 31	Nov. 1 - Mar. 31	Apr. 1 - Apr. 30 Best Efforts
								None: May 1 - September 30
								Oct. 1 - Oct. 31 Best Efforts
Excess	With Approval	With Approval	With Approval	With Approval	None	None	With Approval	With Approval
Injection								
Excess	With Approval	With Approval	With Approval	With Approval	None	None	With Approval	With Approval
Withdrawal								• •

GSS – General Storage Service

- Year-round service
- Service provided to Transco by Eastern Gas Transmission and Storage, Inc ("EGTS")
- Leidy storage partnership with EGTS and Spectra
- Injection is nominated with fuel
- Withdrawal is nominated net
- Transco shall not be obligated to deliver gas to Customer hereunder, when:
 - From 11/1 2/14 Balance to < 20% Capacity</p>
 - From 2/15 3/1 Balance to < 7% Capacity</p>
- Minimum inventory: Customer must maintain a storage Gas Balance equal to or greater than the following percentages of Customer's Storage Capacity Quantity on each day during the following months:
 - December 35% Capacity
 - January 35% Capacity
 - February 15% Capacity
- If the balance is less than the minimum only a percentage of demand will be allowed (95%)
- Minimum Turnover:
 - During the winter period customers must withdraw a quantity equal to or greater than the difference of the beginning balance 11/1 and 35% capacity
 - Penalty on amount not withdrawn.

Example of Injection (TT 6)



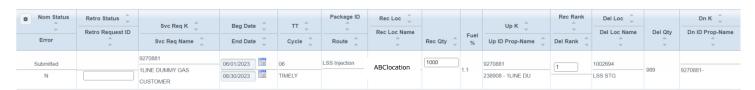
Example of Withdrawal (TT 7)



LSS – Leidy Storage Service

- Seasonal Service
- Service provided to Transco by EGTS and National Fuel.
- Injection is nominated with fuel
- Withdrawal is nominated net
- Minimum Inventory Balance Requirements
 - o For December and January no less than 35% capacity
 - o For February no less than 15%
- If the balance on any given day is less than the minimum required on that day, the customer will be allowed a percentage (93.33%) of its storage demand.
- Minimum turnover requirements: November 1 March 31
- Quantity withdrawn must be equal to or greater than 35% of its capacity
- Penalty could be charged on amount not withdrawn

Example of Injection (TT 6)



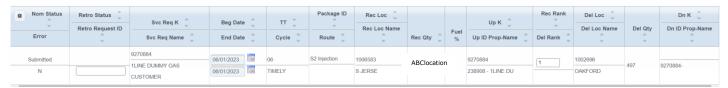
Example of Withdrawal (TT 7)



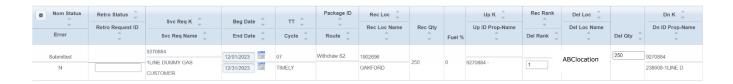
S2 - Storage Service

- Seasonal service
- Service provided to Transco by Spectra
- Gas is received at Linden (Oakford Storage) and delivered at Skippack
- Injection is nominated with fuel
- Withdrawal is nominated net
- Data-based ratchet on the withdrawal service
- Injections and withdrawals are not allowed on same day
- Customers are billed demand charges one month in advance

Example of Injection (TT 6)



Example of Withdrawal (TT 7)



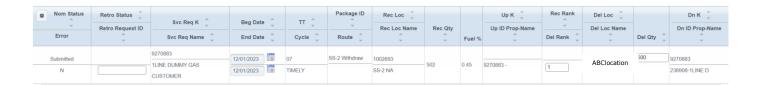
SS-2 Storage Service

- Seasonal service
- Service provided to Transco by National Fuel
- Injections and withdrawals are nominated with fuel
- Injections and withdrawals are not allowed on same day

Example of Injection (TT 6)



Example of Withdrawal (TT 7)



LNG/LGA (Liquefied Natural Gas Storage Service)

- Transco operated service at Station 240
- Transco can store up to 2 BCF of liquefied natural gas (LNG) at the Carlstadt, New Jersey facility.
- LNG/LGA is a seasonal, firm bundled service
- Customers nominate injections and withdrawals at their city gate; no transportation is required
- Injections from: April 1 October 31
- All customers have to be at 100% at the end of the season
- Withdraw from: November 1 March 31
- Excess injections and withdrawals with approval
- Injection is nominated with fuel
- Withdrawal is nominated net
- LNG is releasable through capacity release, LGA is not

Example of Injection (TT 6)



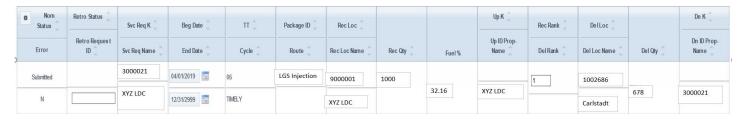
Example of Withdrawal (TT 7)



LG-S

- Truck sales from station 240 (Carlstadt LNG facility)
- Pipeline control and Commercial Services determine quantity of LG-S available annually
- Available mainly in spring, summer, fall months
- Open season is held to offer available quantity
- LG-S shippers take LNG by truck
- Station 240 personnel book the withdrawal quantity on the New Jersey North Power BI site.
- Commercial Services schedules the withdrawal
- LG-S shipper returns the withdrawal quantity (as gas) by scheduling to Station 240.

Example of Injection (TT 6)



WSS/WSS-OA (Washington Storage Service)

- Year-round service
- Operated by Transco
- Can have same day injections and withdrawals
- Injections and withdrawals can be made by shippers other than the owner of the WSS contract
- Injections are considered a Zone 3 Delivery and are nominated with fuel
- Withdrawals are considered a Zone 4 Receipt and there is no fuel
- This storage service is releasable.
- If the storage contract holder transports volumes to/from the storage location, 1line will automatically create the injection/withdrawal nomination.
- If a third-party transports volume to the storage location, the storage contract holder must nominate the injection/withdrawal.
 - Injection nominations must specify the upstream contract number and BA ID of the party bringing gas to the storage location
 - Withdrawal nominations must specify the downstream contract number and BA ID of the party taking gas from the storage location

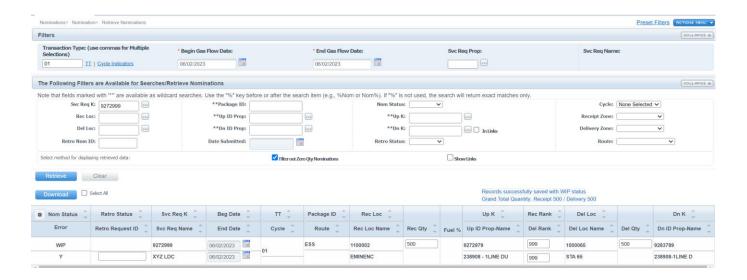
ESS - Eminence Storage Service

- Year-round service
- Operated by Transco
- Releasable service
- Can have same day injections and withdrawals.
- No fuel on injection or withdrawal
- The following services offered at this facility (Eminence Storage) require a separate contract:
 - o Rate schedule EESWS (Emergency Eminence Storage Withdrawal Service)
 - o Rate schedule EESS (Enhanced Eminence Storage Withdrawal Service)
- If the storage contract holder transports volumes to/from the storage location, 1line will automatically create the injection/withdrawal nomination.
- If a third-party transports volumes to the storage location, the storage contract holder must nominate the injection/withdrawal.
 - o Injection nominations must specify the upstream contract number and BA ID of

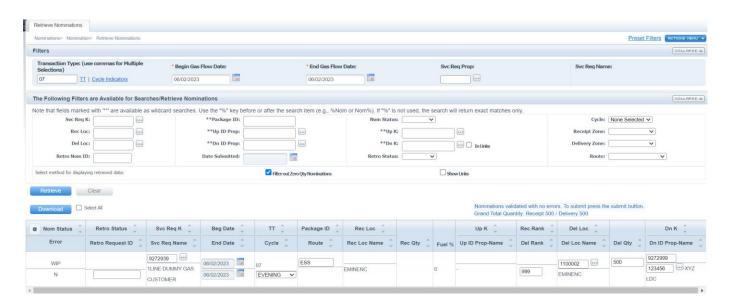
the party bringing gas to the storage location

Withdrawal nominations must specify the downstream contract number and BA ID
of the party taking gas from the storage location

Example of unbundled Withdrawal (TT 1)



Example of unbundled Injection (TT 1)



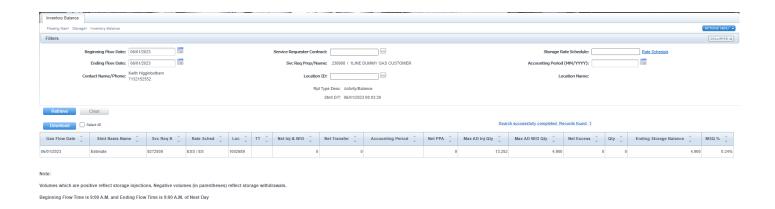
Excess Storage Availability

- 1. Check the Transco Info Postings page under **Pipeline Conditions** for excess storage availability.
- 2. Submit nomination by selecting Navigation > Nominations > Retrieve Nomination.
 - GSS injections are nominated using Transaction Type 12 for injections and Transaction
 Type 13 for withdrawals
- Results may be viewed from the scheduling pages by Selecting Navigation >
 Scheduled Quantity > Review/Select Scheduling Runs.
- 4. Results may also be viewed after each cycle on the Scheduled Quantity report (SQR).

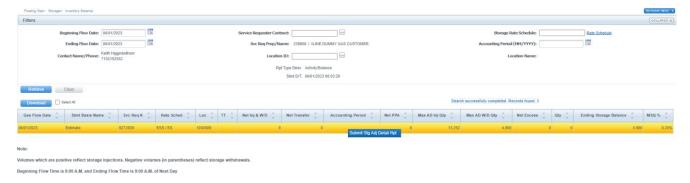
Storage Pages - Navigation, Description and View

View Storage Balance

- 1. Select Navigation > Flowing Gas > Storage > Inventory Balance
- 2. Select flow date (default is current date), and any other desired filters, then retrieve.



- Also, from this page, you can submit a **Storage Adjustment Detail Report**. This report shows details of any PPAs displayed in the Net PPA column.
- 3. Select PPA line on the page and choose Actions > Submit Stg Adj



Storage Transfer Summary

The Storage Transfer Summary page is designed to provide the ability to create transfers between parties within the 1Line system. Storage quantities are transferred the day prior to the transfer effective date to ensure balances are available for nominating for the 1st of the following month. It is important to confirm these storage transfers in order for them to be active.

- Flow date current or future day but not more than 15 days into the future
- **Prearranged transfer** the initiating party must know the confirming party's contract number. Confirming party's contract does not have to be posted.
- **Non-prearranged transfer** the initiating party can choose from a list of storage balances available for transfer, provided that the posted balance is greater than or equal to the amount being transferred.
- 100% option for transferring the balance can only be applied if the initiating party's direction is W/D (From)

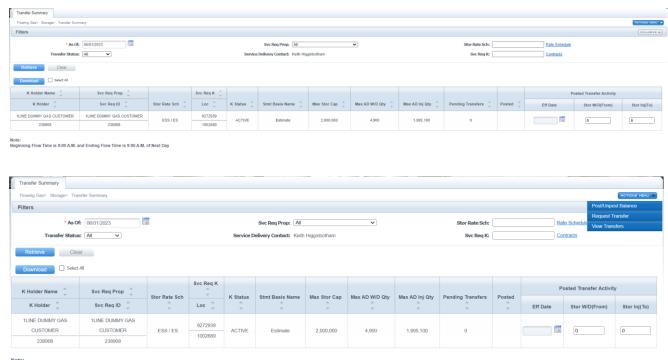
Create Storage Transfer

1. Select Navigation > Flowing Gas > Storage > Transfer Summary



2. Click Retrieve.

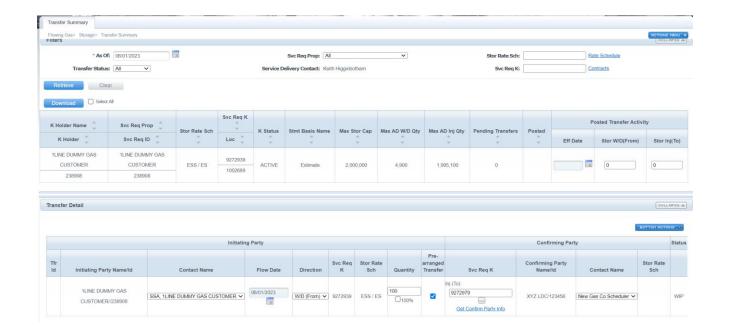
3. Data table will populate with active tradable storage contracts



Beginning Flow Time is 9:00 A.M. and Ending Flow Time is 9:00 A.M. of Next Day

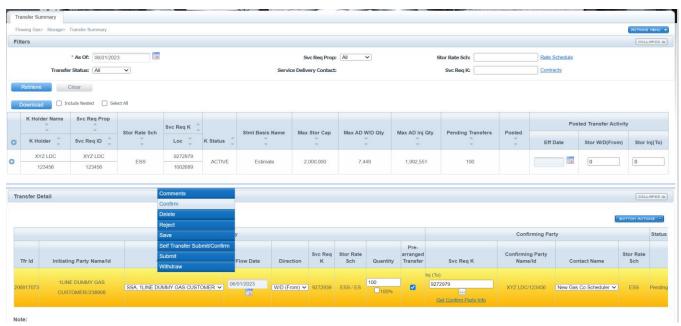
Create Storage Transfer - Prearranged

- 1. Select Navigation > Flowing Gas > Storage > Transfer Summary
- Select Retrieve.
- 3. Select data row (of balance to create a transfer to or from) and it will turn yellow.
- 4. Select Actions> Request Transfer.
 - Page is displayed in split screen format.
- 5. Under Transfer Detail in the Initiating Party section, enter Flow Date, Direction W/D (From) Inj (To) and Quantity (or check 100% option).
- 6. Check the Pre-arranged Transfer box.
- Under Confirming Party section, type in appropriate Service Req K, then click on <u>Get</u> <u>Confirm Party Info</u> link to populate the Confirming Party Name/Id
- 8. The Contact Name will default to the first name in list, but you can change to anyone in the drop down.
- 9. Make sure row is selected and under Bottom Actions, select **Submit.**
- 10. If you are the Confirming Party, select Actions> Confirm.



Confirm Prearranged Storage Transfer

- 1. Select Navigation > Flowing Gas > Storage > Transfer Summary
- 2. Select Retrieve.
- 3. Select data row of desired transfer contract and it will turn yellow.
- 4. Right click > View Transfers
- 5. Select > Confirm



Create Self Storage Transfer

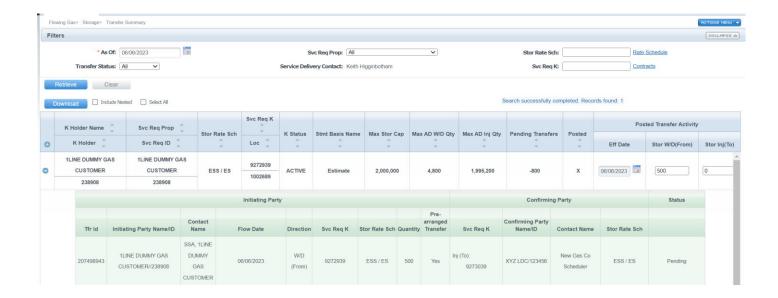
1. Select Navigation > Flowing Gas > Storage > Transfer Summary

- Select Retrieve.
- 3. Select data row (of balance to create a transfer to or from) and it will turn yellow.
- 4. Select **Actions> Request Transfer**.
 - Page is displayed in split screen format.
- 5. Under Transfer Detail in the Initiating Party section, enter Flow Date, Direction W/D (From) Inj (To) and Quantity (or check 100% option).
- 6. Check the Pre-arranged Transfer box.
- 7. Under Confirming Party section, type in your Service Req K, then click on <u>Get Confirm</u>

 Party Info link to populate the Confirming Party Name/Id
- 8. The Contact Name will default to the first name in list, but you can change to anyone in the drop down.
- 9. Make sure row is selected and under **Bottom Actions**, select **Self Transfer Submit/Confirm**.

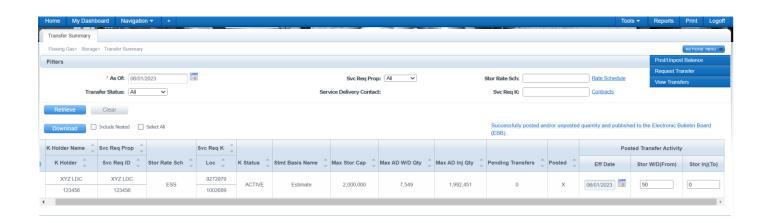
<u>Create Storage Transfer – Non Prearranged</u>

- 1. Select Navigation > Flowing Gas > Storage > Transfer Summary
- 2. Select data row (of balance to create a transfer to or from) and it will turn yellow.
- 3. Select Action Request Transfer.
 - Page displayed with initiating balance in a split screen format.
- 4. Under Transfer Detail Section, enter Flow Date, Direction (W/D (From) or Inj (To)), Quantity and Prearranged Transfer indicator not checked (Prearranged default = checked (yes)).
- 5. Select the <u>Get Confirm Party Info</u> box to populate the Confirming Party contact information.
 - The Posted Storage Balance page is displayed.
- 6. Select the Confirming Party and appropriate contract.
- 7. Select OK.
- 8. Select the row then under Transfer Detail Section, select Save, Submit, add comments, etc.



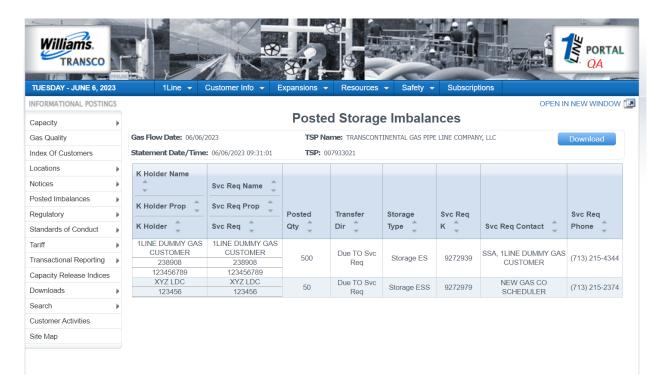
Posting Storage Balances

- 1. Select Navigation > Flowing Gas > Storage > Transfer Summary
- 2. Select row and it will turn yellow.
- 3. Update the Effective Date and the Storage Withdrawal or Injection to be posted.
- 4. Make sure row is selected and select Actions> Post/Unpost Balance.
- 5. You can post or un-post Storage activity from this action.



Viewing Posted Storage Balances

- 1. Select Navigation > Flowing Gas > Storage > Posted Storage Balances
- 2. Select **Retrieve** to view Posted Storage Balances



Available Storage Reports

Detail Inventory Balance - provides a detail view of the storage location balance by contract.

Excess Storage Report - also available in data file.

Inventory – Month to Date - provides a quick look at activity for all storage contracts including the ending balance.

Storage Adjustment Details - displays source of adjustments including linked transactions.

Storage Contract Limits - displays storage contracts that have ratchets; includes ratchet levels and quantities.

Storage Statement - also available as a data file.

Storage Transfer - provides a list of storage transfers by BA for a day or range of days where the BA is either the initiating or confirming party on the transfer(s).

Unbundled Storage Activity Report - summary and detailed view of storage activity at unbundled storage locations by BA/Contract. Also available as a data file.

Storage Glossary

Adjusted MDIQ: MDIQ adjusted for capacity release quantities.

Adjusted MDWQ: MDWQ adjusted for capacity release quantities.

Adjusted MSQ: MSQ adjusted for capacity release quantities.

Adjustment Quantity: The quantity applied to adjust the storage inventory at a storage location.

Deliverability: The amount of gas that can be delivered (withdrawn) from a storage facility on a daily basis.

Injection Capacity (or Rate): The amount of gas that can be injected into storage facility on a daily basis.

MDIQ: Maximum Daily Injection Quantity

MDWQ: Maximum Daily Withdrawal Quantity

MSQ: Maximum Storage Quantity

Net Activity: Net injections minus gross withdrawals.

Net Trade: In-field transfer activity.

Net Adj (Adjustment): Current month and prior month adjustments.

Ratchets: Reduced levels of allowed injections or withdrawals which correspond to the physical capabilities. Ratchets are applied at a customer level based on the time of the year as well as the individual customer storage balance for a particular service. Each storage service has its own set of ratchets.

SMG: Storage Management Gas

Monthly Verification of Storage Balances

Once storage balances are final for a month, 1Line will generate and send an e-mail confirmation to customers with storage contracts. E-mail content will include the storage rate schedule, contract, the beginning and ending balances for the flow month, and a designated response date. E-mail notifications will be sent to customer representatives assigned to the Storage View role.

Storage customers will be asked to reply to <u>Leslie.Milner@williams.com</u> and copy their assigned Commercial Service Representative.

Noted differences on the Storage Balances Confirmation will need to be retroactively resolved with your assigned Commercial Services Representative.