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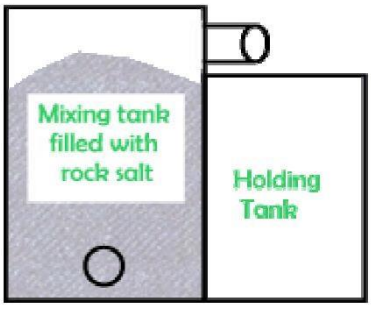
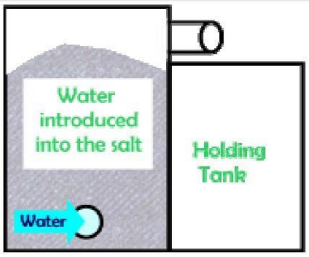
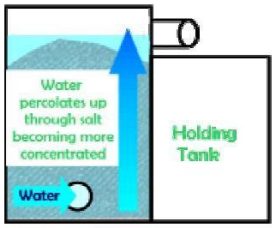
Salt Brine Basics



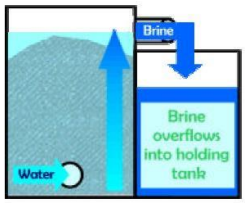
Step 1 – Add rock salt



Step 2 – Add water to the salt. A manifold or other type of mechanism controls the flow of water



Step 3 – As the controlled flow of water percolates up through the rock salt, the solution becomes more and more concentrated.



Step 4 - The liquid at the overflow level is at or near the 23% salt solution. The brine solution flows into the holding tank and is tested for the correct concentration using a hydrometer or salimeter.

If too dilute, the solution is recirculated back through the mixing tank.

Or, if too concentrated, additional water is added.

Once the concentration is correct at 23.3%, the brine can be used to refill anti-icing and prewetting tanks, or offloaded to storage tanks, ready to use when needed.

Source: Iowa DOT

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Considerations:

- Water Supply
  - ¾” vs 1 ½” or 2” supply line
  - Separate water meter to avoid sewer charges
  - Load requirements on wells
- Salt
  - Standard gradation with few impurities
  - Fine salt prohibits circulations and promotes lumping
  - Impurities negatively impact production
- Facilities
  - Consider corrosive nature of salt on electrical components and overhead doors
- Storage
  - Secondary containment?
  - UV inhibitor for outdoor tanks
  - Additional weight of brine (2 lbs/gal more than water)
- Transport
  - Surge Protectors
  - CDL Requirement – Tanker Endorsement

Source: Iowa DOT