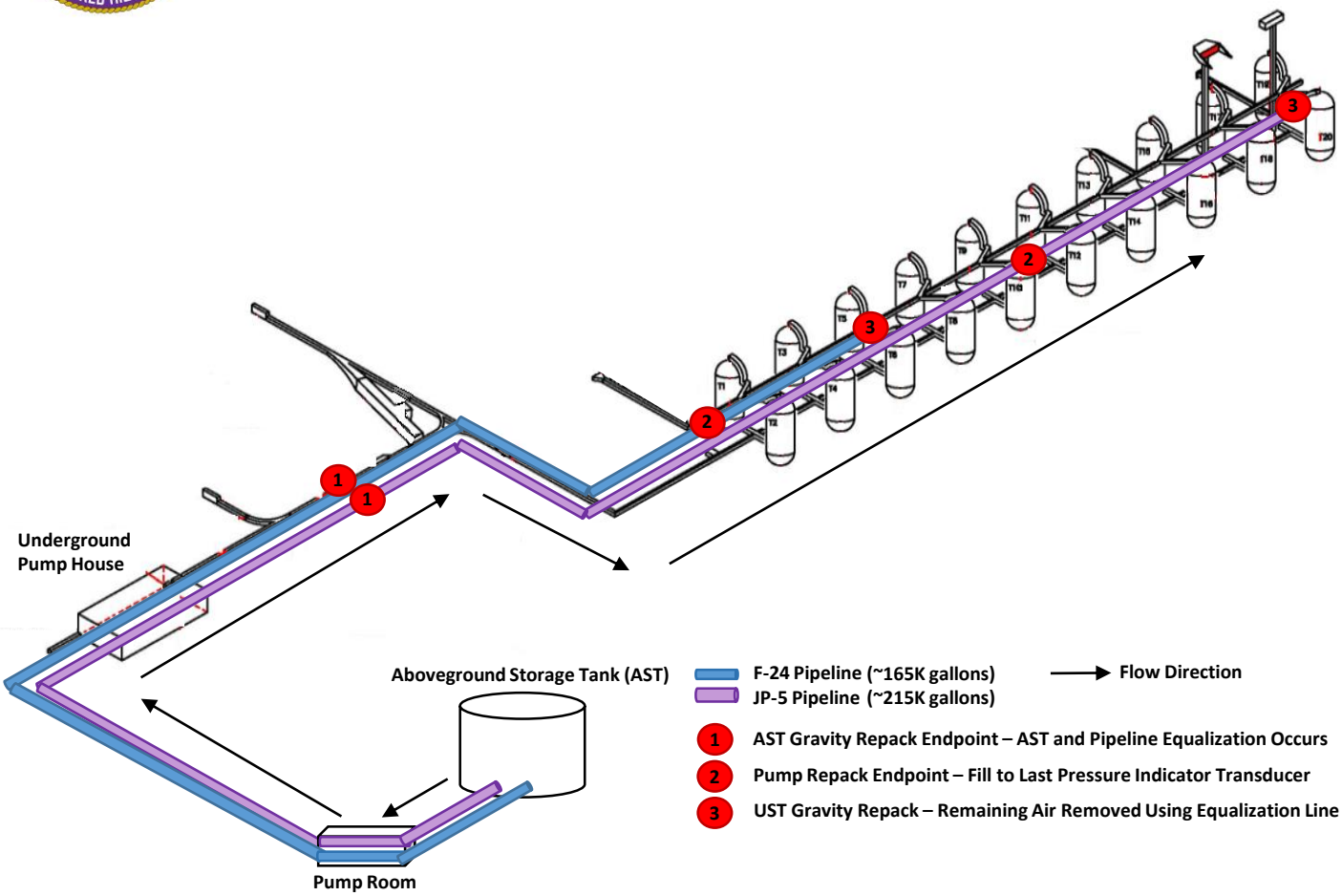
PIPELINE REPACKING



What is Pipeline Repacking?

Pipeline repacking is the first stage of defueling after all repairs are complete. It is the process of filling the pipelines that will be used to defuel Red Hill.

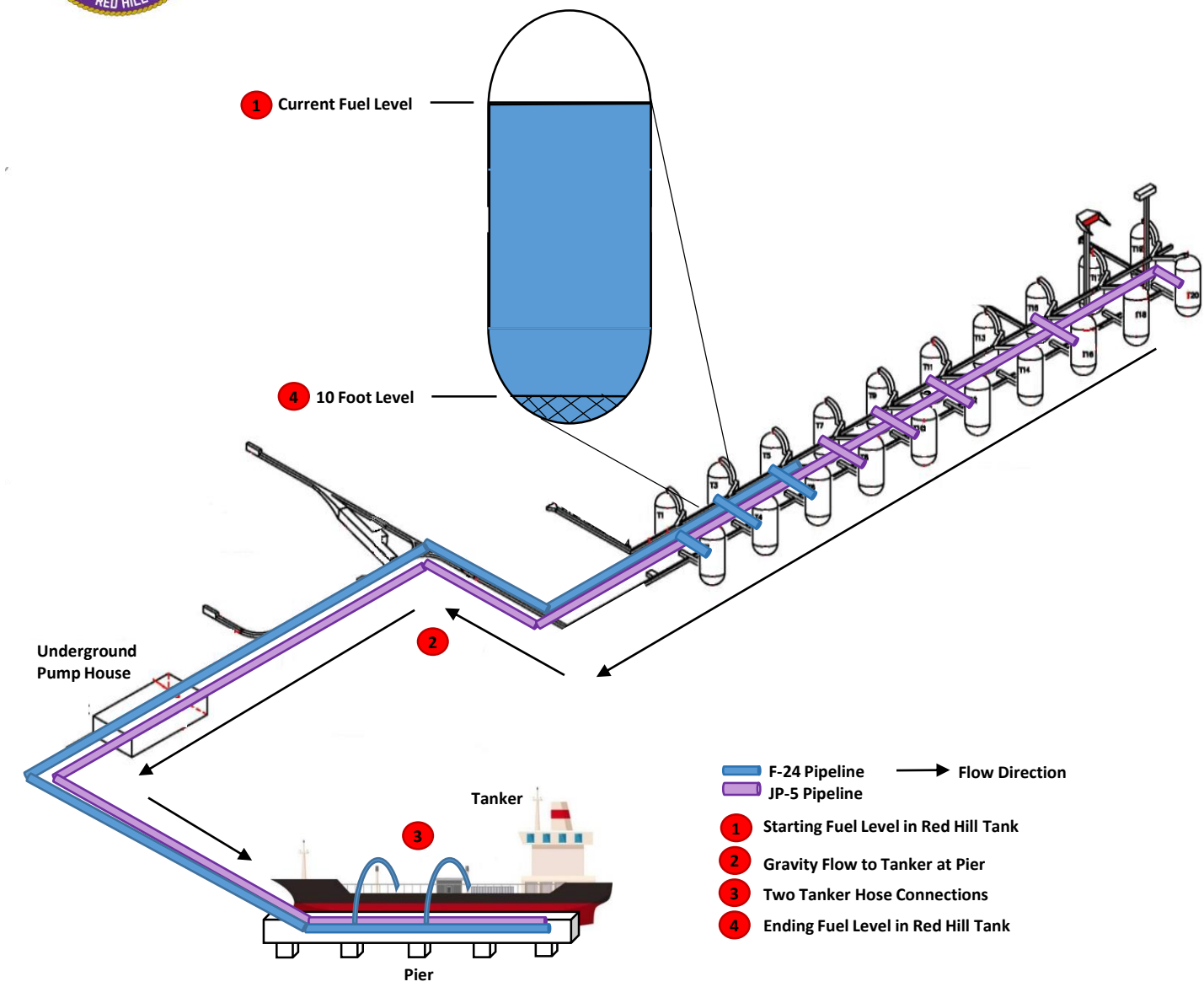
Why is Pipeline Repacking Necessary?

Air in pipelines creates unpredictable flow conditions. Pipeline repacking removes the air which will enable the fuel to flow uniformly during defueling. It also provides an opportunity to verify system functionality prior to defueling.

What Precautionary Measures Have Been/Will Be Applied to Repacking?

A Process Hazard Analysis (PHA) was completed to assess risks. Concept of Operations and Operation Orders incorporated inputs from industry and regulatory experts. Pre-operation checks to ensure system condition. Right-sizing of operating and response personnel to provide sustained support. Training/qualification for everyone involved to ensure requisite knowledge. Response/recovery drills for worst case scenarios to validate effectiveness of the Integrated Contingency Plan. These measures will be incorporated not only for repacking but for all defueling operations.

DEFUELING - TANK MAINS



What is Defueling Tank Mains?

Defueling tank mains is the evolution that transfers the bulk amount of fuel from the 14 active Red Hill tanks to tanker vessels at Pearl Harbor pier. Fuel is transferred by gravity flow through the Red Hill pipelines.

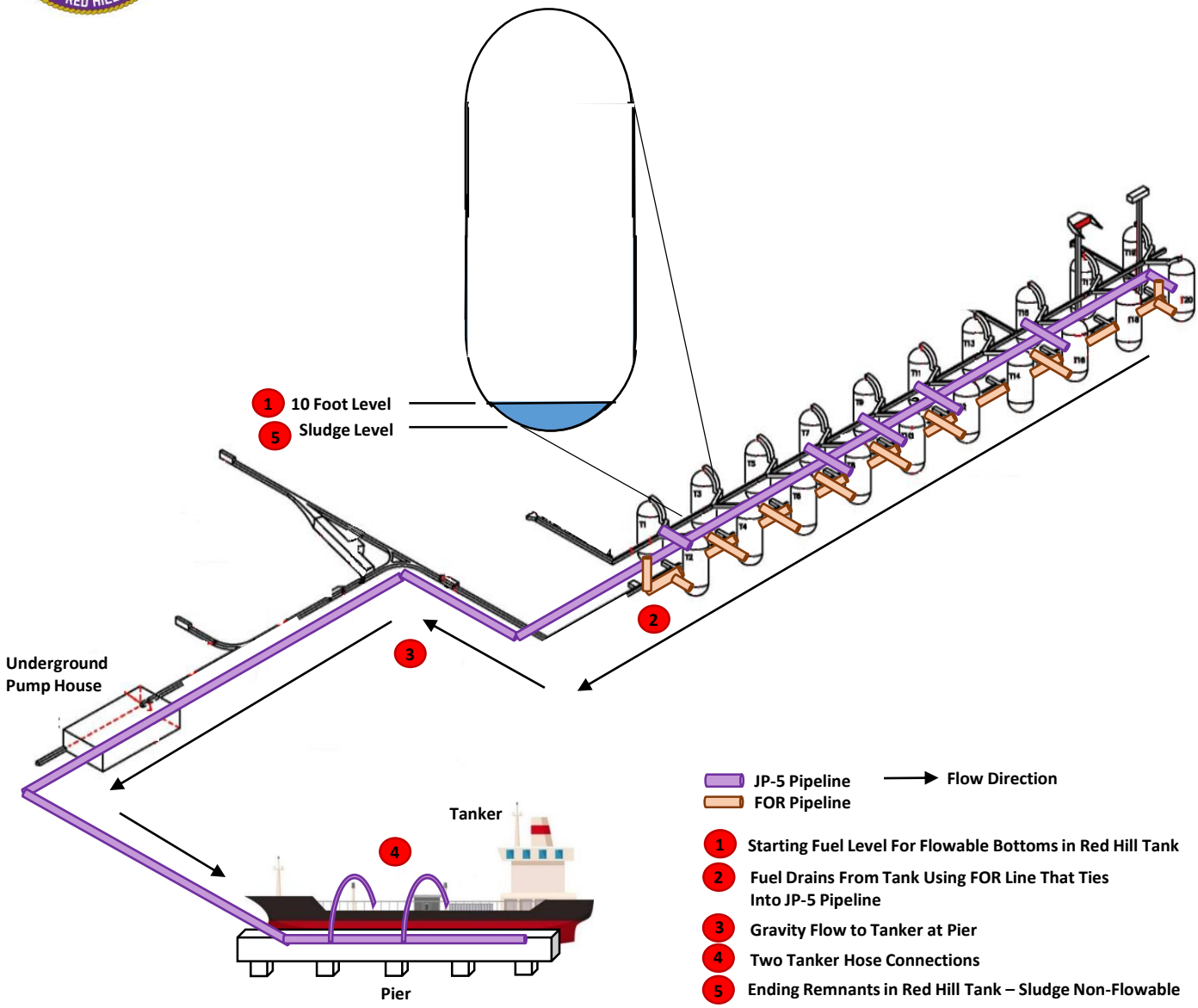
How Much Fuel Will Be Transferred?

Starting tank fuel levels vary from 60-212 ft. or 2.5-11.4M gallons. This evolution is designed to transfer fuel down to the 10 ft. level or ~120K gallons for all 14 tanks. Fuel transferred during this phase will be ~50M gallons of JP-5, ~12M gallons of F-76 and 41M gallons of F-24, totaling ~103M gallons.

Will Only Tanker Vessels Be Used For Defueling Tank Mains?

Red Hill fuel is planned to go to tankers. Up to 15% could be redirected to refill Pearl Harbor or Hickam tanks.

DEFUELING – FLOWABLE TANK BOTTOMS



What is Defueling Flowable Tank Bottoms?

Defueling flowable tank bottoms transfers the remaining "flowable" fuel from the 14 active Red Hill tanks to a tanker vessel at Pearl Harbor pier. This fuel is below the tank's main fuel line low suction level; the point where the primary fuel lines come into each tank. To remove this remaining fuel, a smaller drain line at the bottom of each tank is used.

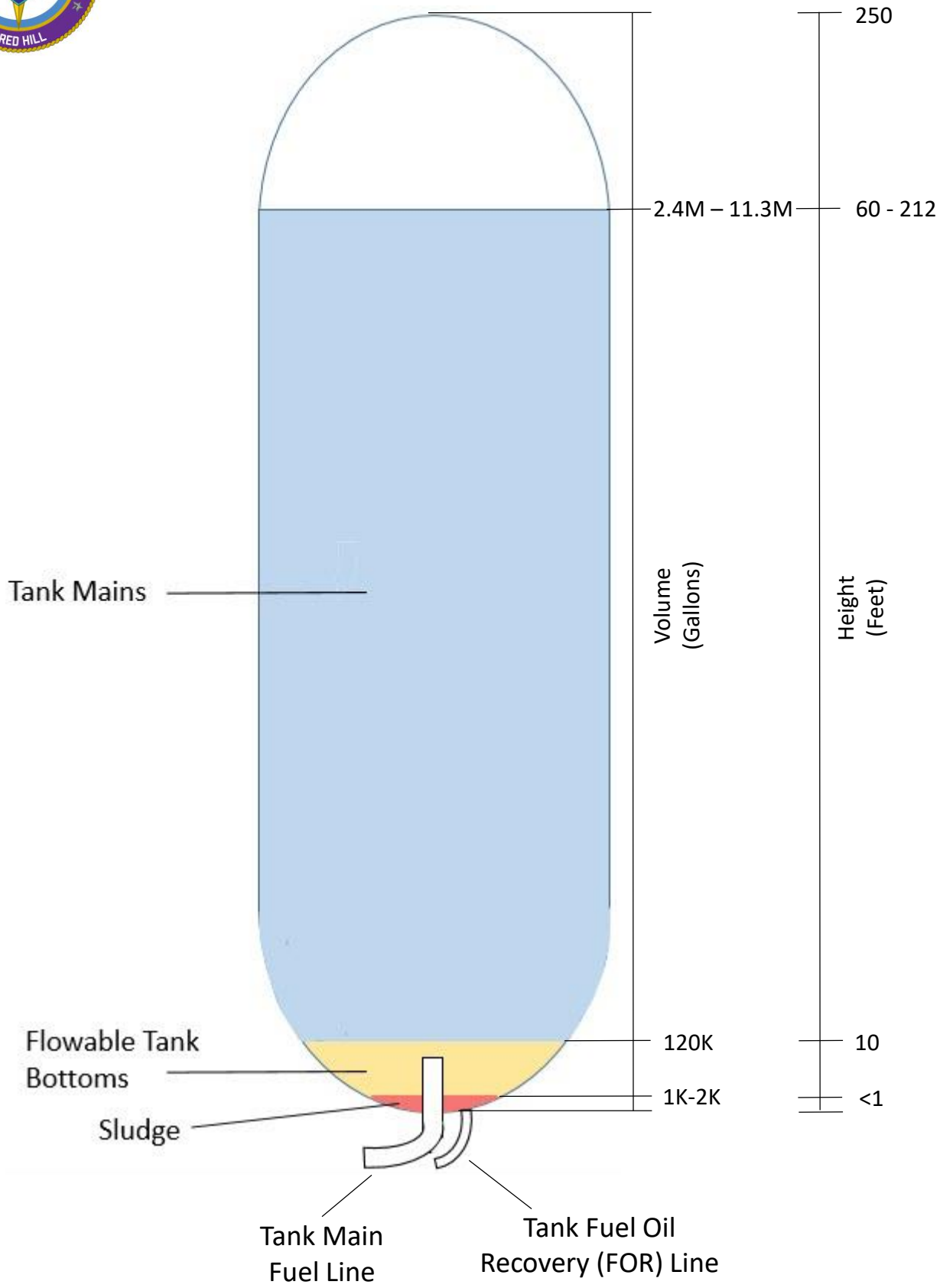
How Much Fuel Will Be Transferred?

This evolution transfers ~120K gallons of fuel from each of the 14 tanks or 1.68M gallons total.

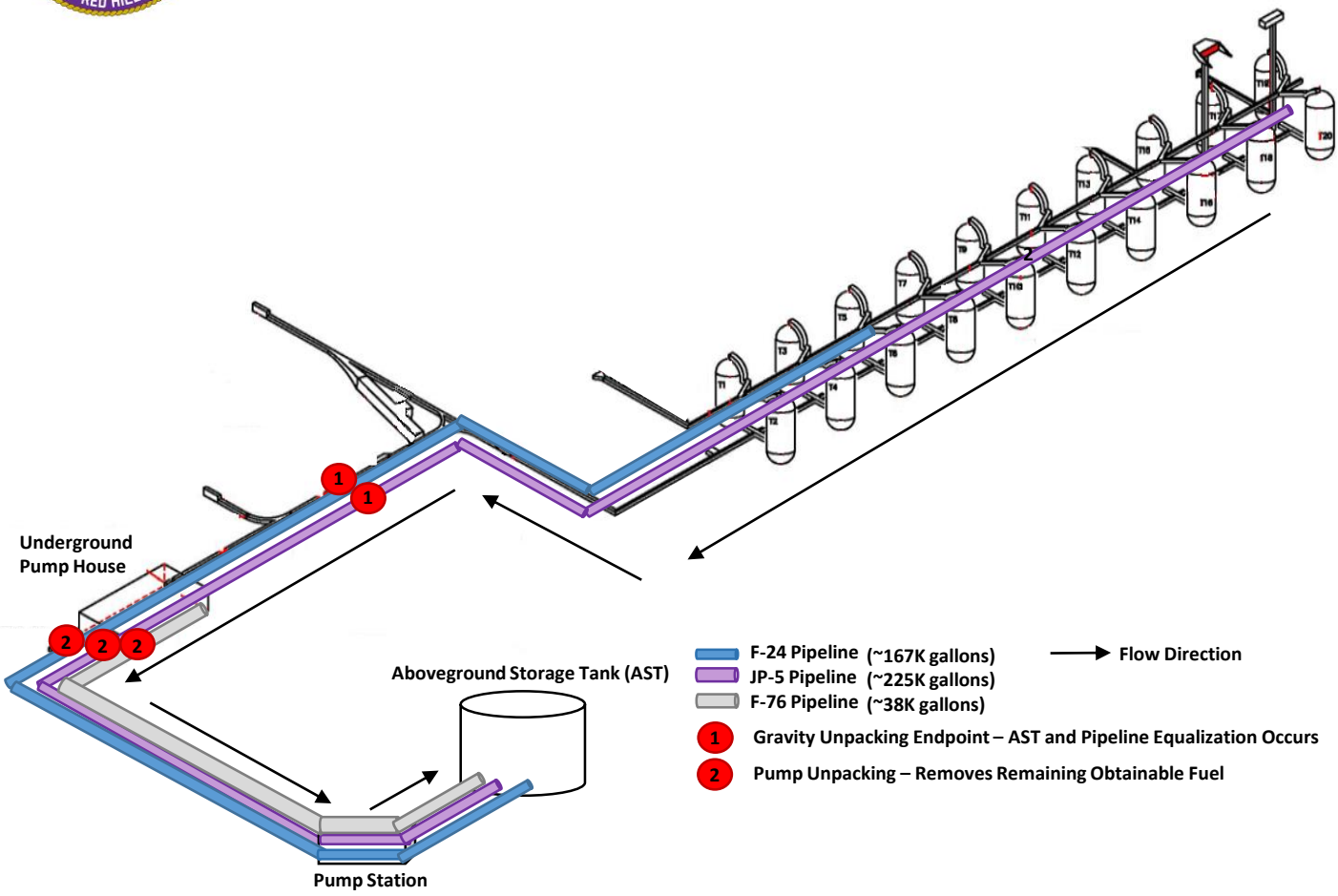
What is meant by Flowable?

Flowable is the liquid fuel that can be drained from the tanks by gravity. What remains is ~1-2K gallons of fuel sludge (non-flowable), that will be removed by entering the tank as part of the cleaning and closure process.

TANK SCHEMATIC - FUEL SECTIONS



PIPELINE UNPACKING



What is Pipeline Unpacking?

Pipeline unpacking is the stage of defueling that removes a majority of the fuel in the Red Hill pipelines. It involves two steps: 1) Use gravity to transfer fuel to an above ground storage tank (AST) until the levels equalize, 2) Use low points outside the underground pumphouse and pumps to pull additional fuel from the pipeline and send to an AST.

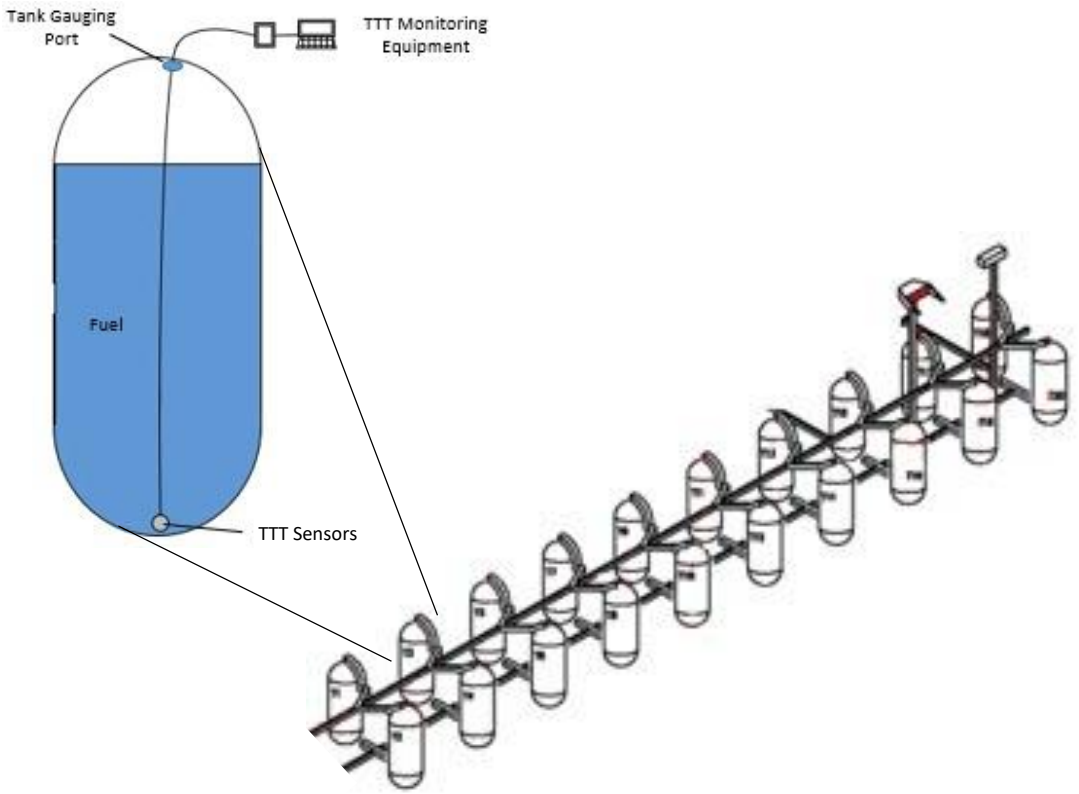
How Much Fuel Will Be Unpacked?

Unpacking will remove ~185K gallons of F-24, ~250K gallons of JP-5, and ~90K gallons of F-76 for a total of ~525K gallons.

After The Lines Are Unpacked Will Any Fuel Remain?

There will be residual fuel that remains throughout the Red Hill pipelines, at bends, low points, and valves, etc. that cannot be removed by gravity or pulled out during the pumping step. This residual fuel will require maintenance actions to access and remove and will be addressed during a subsequent phase.

TANK TIGHTNESS TESTING (TTT)



TTT Overview

- TTT is a tank integrity precision test
- Required annually for Red Hill Tanks and Surge Tanks
  - Field constructed underground tanks
  - Regulated by Department of Health (DOH) Hawaii Administrative Rules (HAR)
- Program managed by Naval Facilities Engineering Command Atlantic Division (NAVFACLANT)
- **Requires no fuel movement or tank pressurization**

Testing Process

- Sensors placed at bottom of tank
- Two day calibration period
- Three consecutive 24 hour tests
- Test to .5 gal/hr leak rate

Additional Monitoring

- Automatic Fuel Handling Equipment (AFHE)
- Automatic Tank Gauging
- Manual
- Gauging
- Trend Analysis
- Soil Vapor Monitoring
- Ground Water Monitoring