Kennedy/Jenks Consultants

Engineers & Scientists

Gaining Public Acceptance for a New 20 mgd Aquifer Source of Supply

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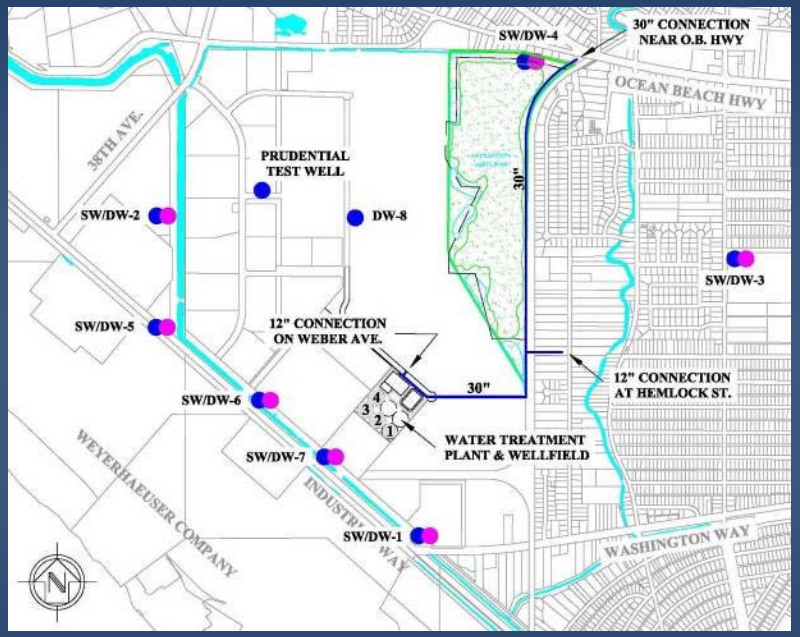
Presentation Overview

- Project overview
- Strategy to gain public acceptance
- Hydrogeologic characterization
- Water quality analysis
- Public outreach
- Conclusions

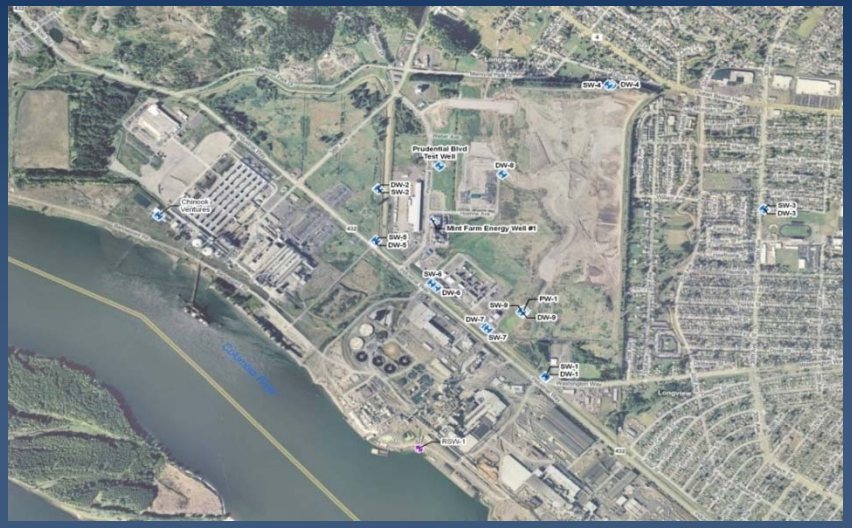


Overview of Project Need

- Existing RWTP has exceeded its useful life
- Unable to meet current and future demands
- Turbid source with increasingly stringent surface water regulations
- Groundwater source more reliable and higher quality
- Higher cost to rebuild existing RWTP versus construct new groundwater facilities

Public Concerns with Project

- Potential contamination of groundwater
  - Long-standing industrial activities and historical agricultural uses
  - Unregulated and emerging contaminants
- Groundwater quality concerns
  - Taste, Odor, Iron / Mn / As
- Sustainability of aquifer source
- Effect on existing low-yield private wells



Public Acceptance Strategy

- Present approach to public
- Characterize hydrogeology
- Analyze water quality
- Evaluate risk to human health
- Communicate findings to the public
- Overriding aspects
  - Transparent
  - Thorough
  - Technically sound
  - Responsive to public concerns

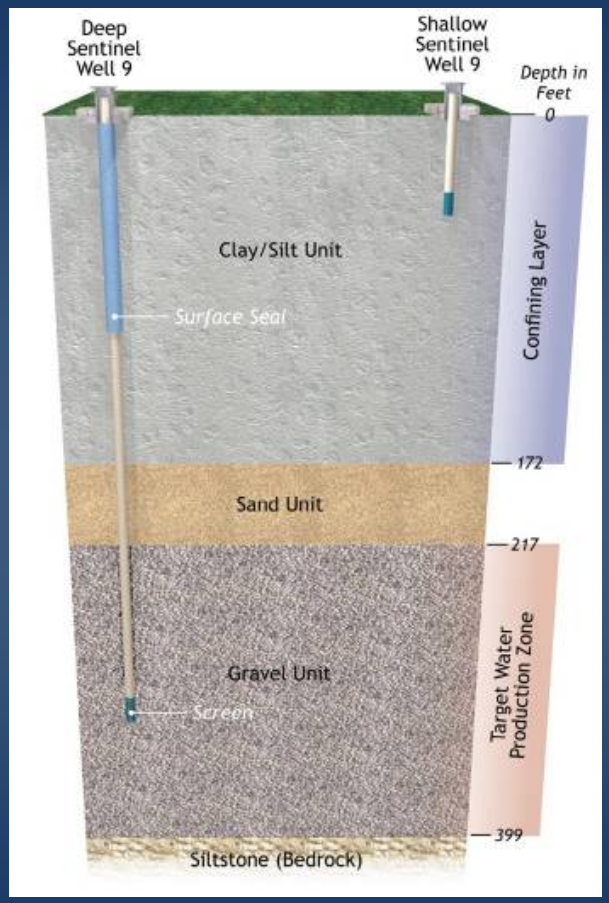
Hydrogeology Characterization

- Main Goal – Confirm the aquifer source can sustain a safe and reliable long-term groundwater supply:
  - Characterize the Mint Farm Aquifer System by installing and sampling 17 monitoring (sentinel) wells, observe water levels, analyze water quality, and confirm aquifer materials
  - Install and test a production well over extended period to determine aquifer properties and behavior
  - Develop a groundwater model to predict future conditions

Drilling Approach for Characterization

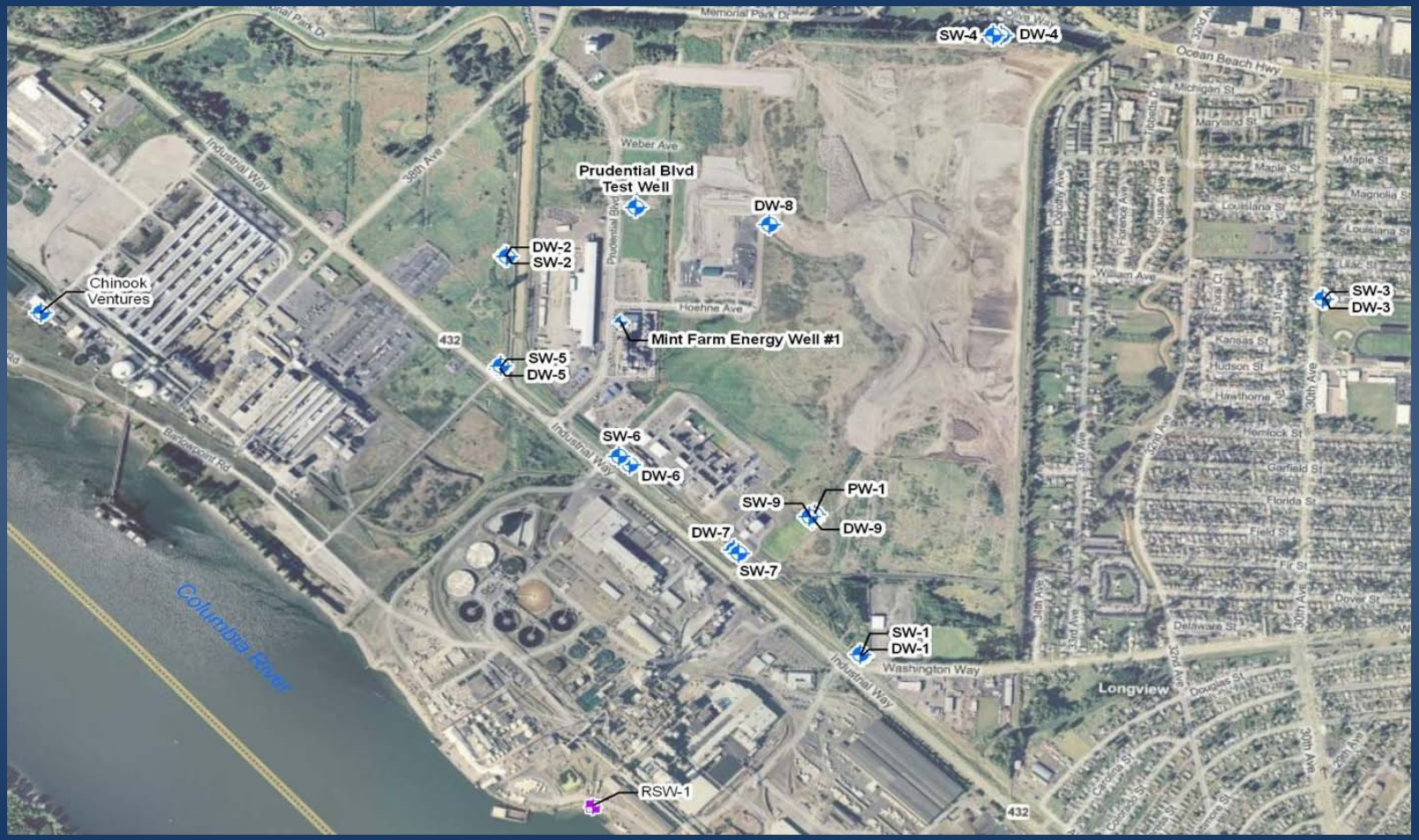
- Sonic drilling technology chosen to provide continuous coring and accurately measure:
  - Thickness of silt/clay unit
  - Hydraulic conductivity values with collection of depth discrete samples
  - Grain size
  - Thickness of target aquifer
  - Depth of bedrock (262-feet to 449-feet)

Characterization Findings

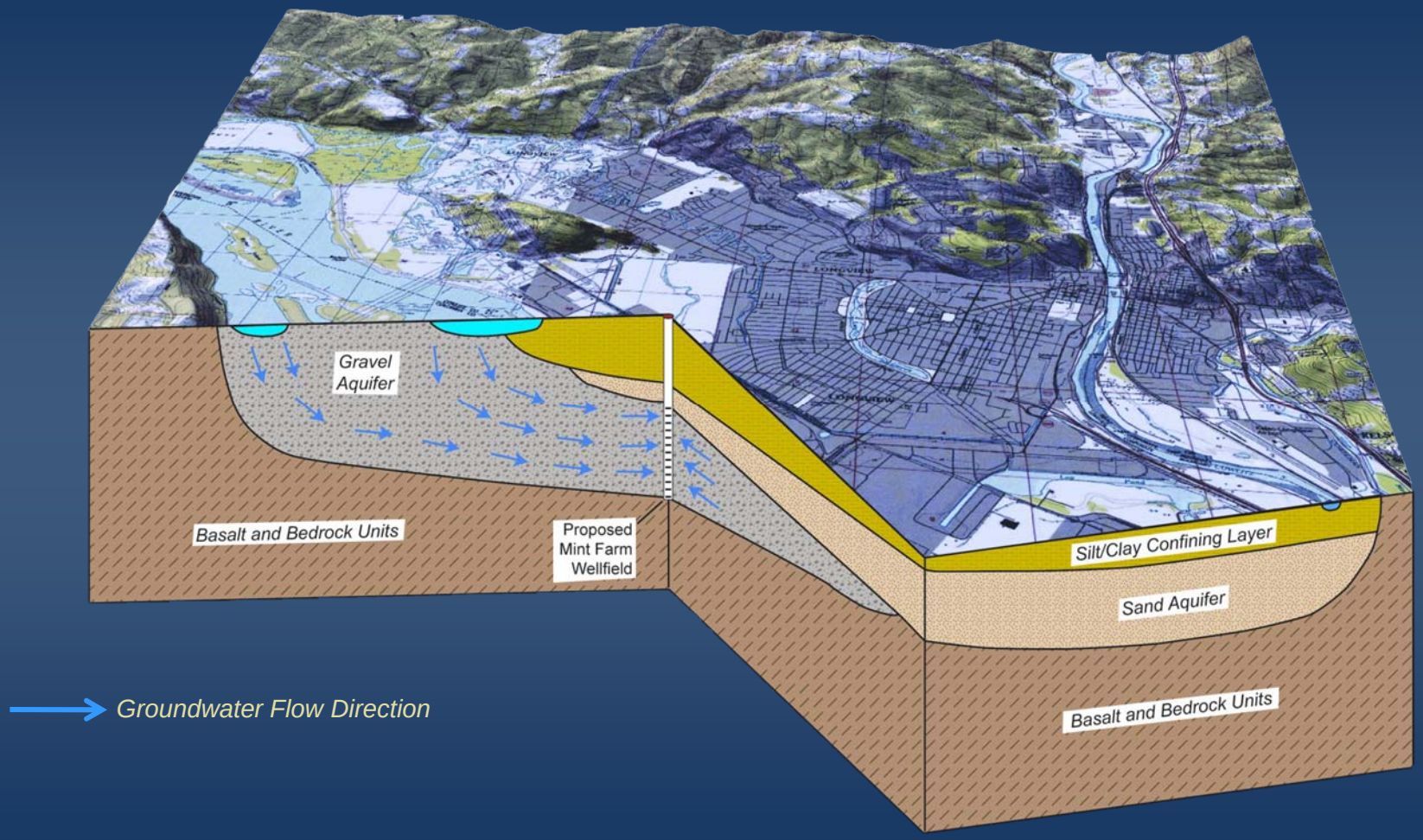


Continuous soil cores revealed a protective confining layer overlying a thick gravel unit ("Target Aquifer")

Monitoring Well Locations



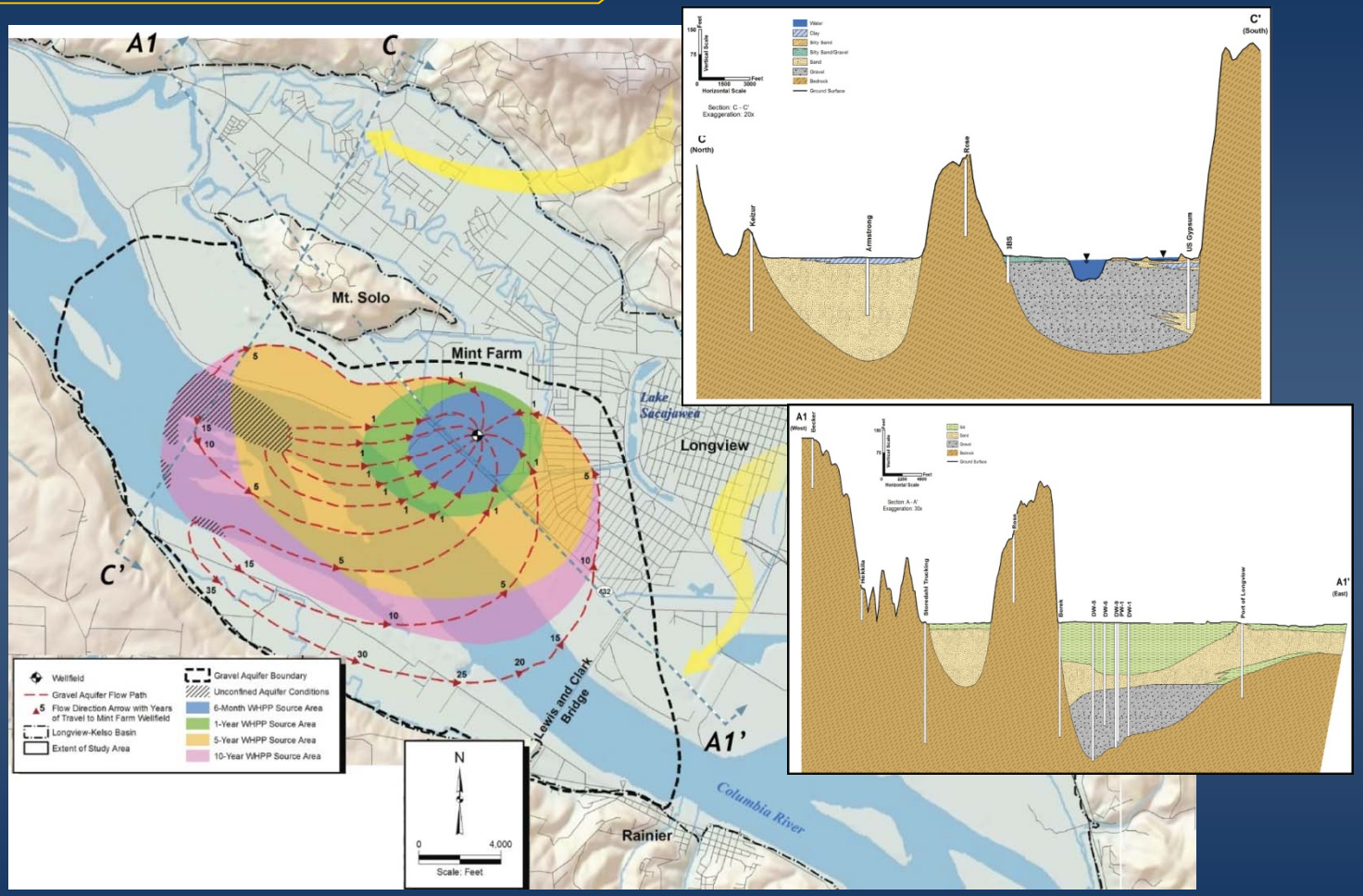
Groundwater Flow Paths



Production Well Installation and Testing

- Proposed wellfield site was relocated based on target aquifer thickness encountered during sonic drilling of monitoring wells
- 24” production test well was installed and pumped continuously at 3,900 gpm for 36 days (transmissivity >1M gpd/ft)

Overview of the Mint Farm Aquifer Source Area



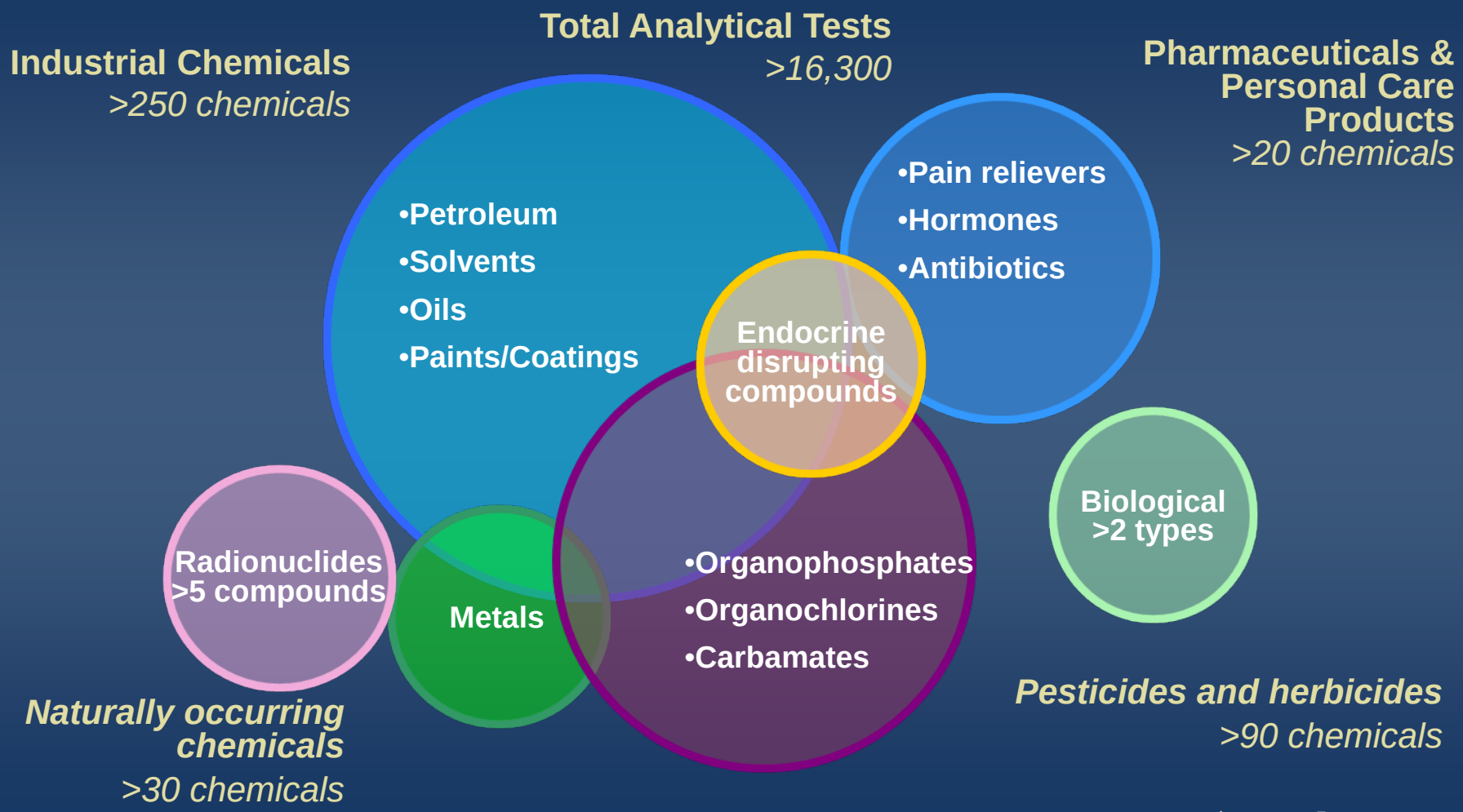
Summary of Hydrogeology Characterization

- The Mint Farm deep aquifer is capable of sustaining a safe and reliable long-term groundwater supply
- The Mint Farm deep aquifer is recharged by the Columbia River and yields large quantities of water
- Production wells will produce 4,000 gallons per minute
- The gravel aquifer beneath the proposed wellfield is protected from contamination at the surface by a thick confining layer of low permeability silts and clays

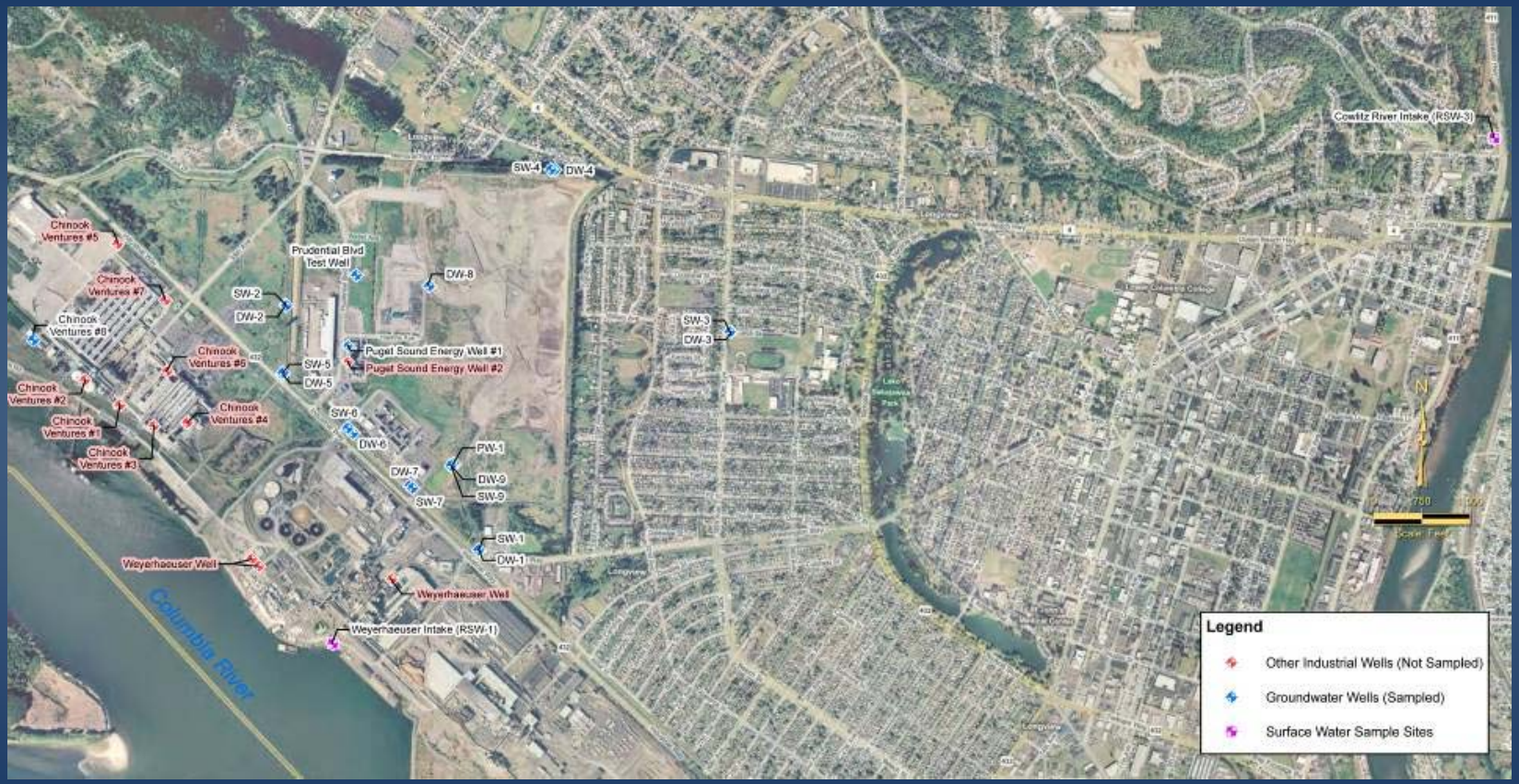
Water Quality Analysis Goals

- Evaluate soil and groundwater impacts within the Mint Farm property
  - Phase I / Phase II Environmental Site Assessment
- Analyze water quality in deep aquifer
  - Regulated and non-regulated constituents
  - Over 300 analytes, including contaminants of emerging concern
- Evaluate potential risks to human health

Categories of Analytes for Sampling and Analysis



Water Quality Sampling Locations



Water Quality Analysis Results

- Over 16,300 analytical tests performed
- No contamination was found in the deep aquifer
- Naturally occurring iron, manganese and arsenic will require treatment
- With treatment, the deep aquifer water will meet all regulatory water quality requirements

Outreach Program to Customers

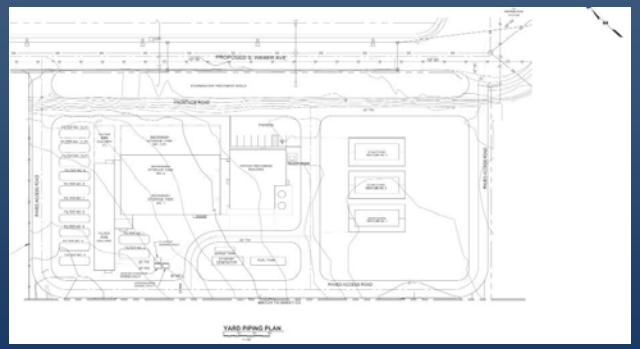
- Outreach to 47,500 customers
  - 8-page insert in local newspaper
  - Regular newsletters in monthly water bills
  - Backpack campaign
  - Presentations to local service groups
  - Live TV and radio interviews
  - Dedicated project website: *www.mylongview.com*
  - Two Open House events
  - Public workshop
  - Public taste test
  - Pilot treatment studies

Key Message

- *The City is confident there is an abundant supply of high-quality groundwater at the Mint Farm Industrial Park that will ensure a safe and sustainable water supply for our community for years to come.*

Success of Outreach Program

- Open house and workshop events were held to present very technical information to a non-technical audience
- Initial negative public perception shifted toward one of acceptance and support
- City Council formally approved the project on January 28, 2010



Conclusions

Longview approves Mint Farm water plant

By Amy M.E. Fischer / The Daily News | Posted: Thursday, January 28, 2010 9:20 pm

- Public acceptance gained by:
  - Acknowledgment of public concerns at beginning of project
  - Comprehensive strategy
  - Technically robust approach
  - Extensive public outreach