

Norwalk Tank Farm Cleanup

Overview of Risk-Based Corrective Action Workplan (RBCA Plan)

Presented to the Citizens of Norwalk
March 12, 1998

Purpose of Presentation

- Update community on recent cleanup progress
- Present our *RBCA Plan* for groundwater cleanup west of the Tank Farm
- Seek input from Community before we ask for permission to proceed from State RWQCB

Rules for this Meeting

- We know there are a lot of strong opinions about the Tank Farm
- However, please focus on RBCA Plan only
- We will answer questions about the RBCA Plan at the end of meeting
- Questions should be written down on the cards to be read out and answered

Introduction of Parties

- Restoration Advisory Board (RAB)
- State RWQCB
- City of Norwalk
- Defense Energy Office, L.A.
- Kinder-Morgan Energy (formerly SFPP)
- Offsite Chemical Cleanup Subcommittee members

Topics to be Covered

- Quick review of Site background
- Formation of the RAB
- Site Cleanup Progress
- Community/Regulatory issues with western DCA/MTBE groundwater plume
- Overview of RBCA Plan
- Q & A

Site Layout Map



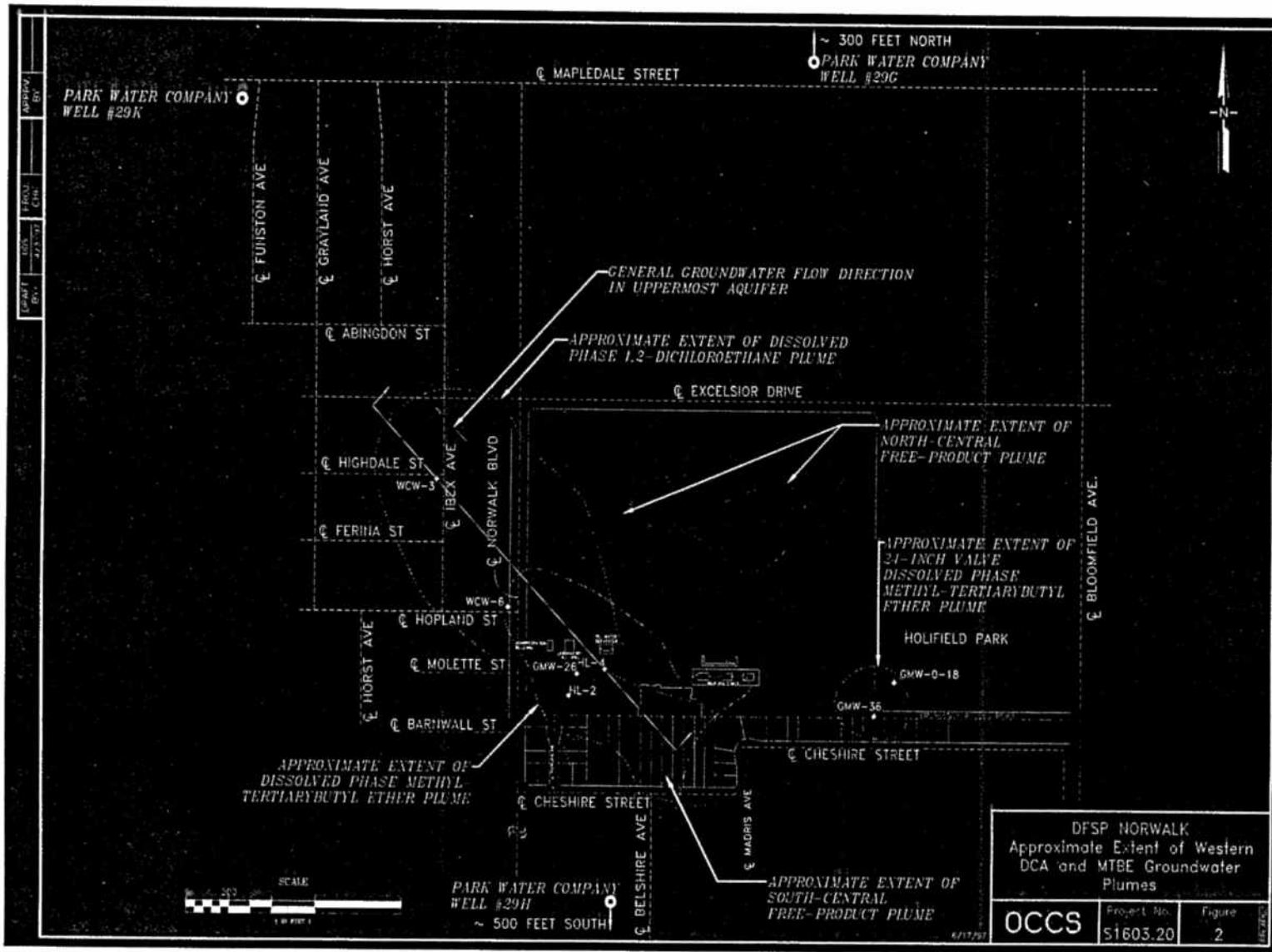
Site Background

- 50 acre fuel Tank Farm built in early 1920's
- Bought by USAF in 1951, converted to aviation fuel service
- Southern Pacific Pipelines built pump station in 1956
- Environmental problems discovered in mid 1980's

Environmental Investigations

- Numerous phases of investigation conducted by DEOLA & KMEP
- Identified significant soil and groundwater contamination
- 4 major groundwater contamination plumes identified
- Portions of groundwater plumes extend offsite

Plume Map



DFSP NORWALK
 Approximate Extent of Western
 DCA and MTBE Groundwater
 Plumes

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| OCCS | Project No. S1603.20 | Figure 2 |
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Formation of the RAB

- RAB formed in 1994
- Consists of 12 Dedicated community volunteers
- Charged with helping oversee cleanup with focus on community issues
- Has clearly been very effective and continues to provide valuable input

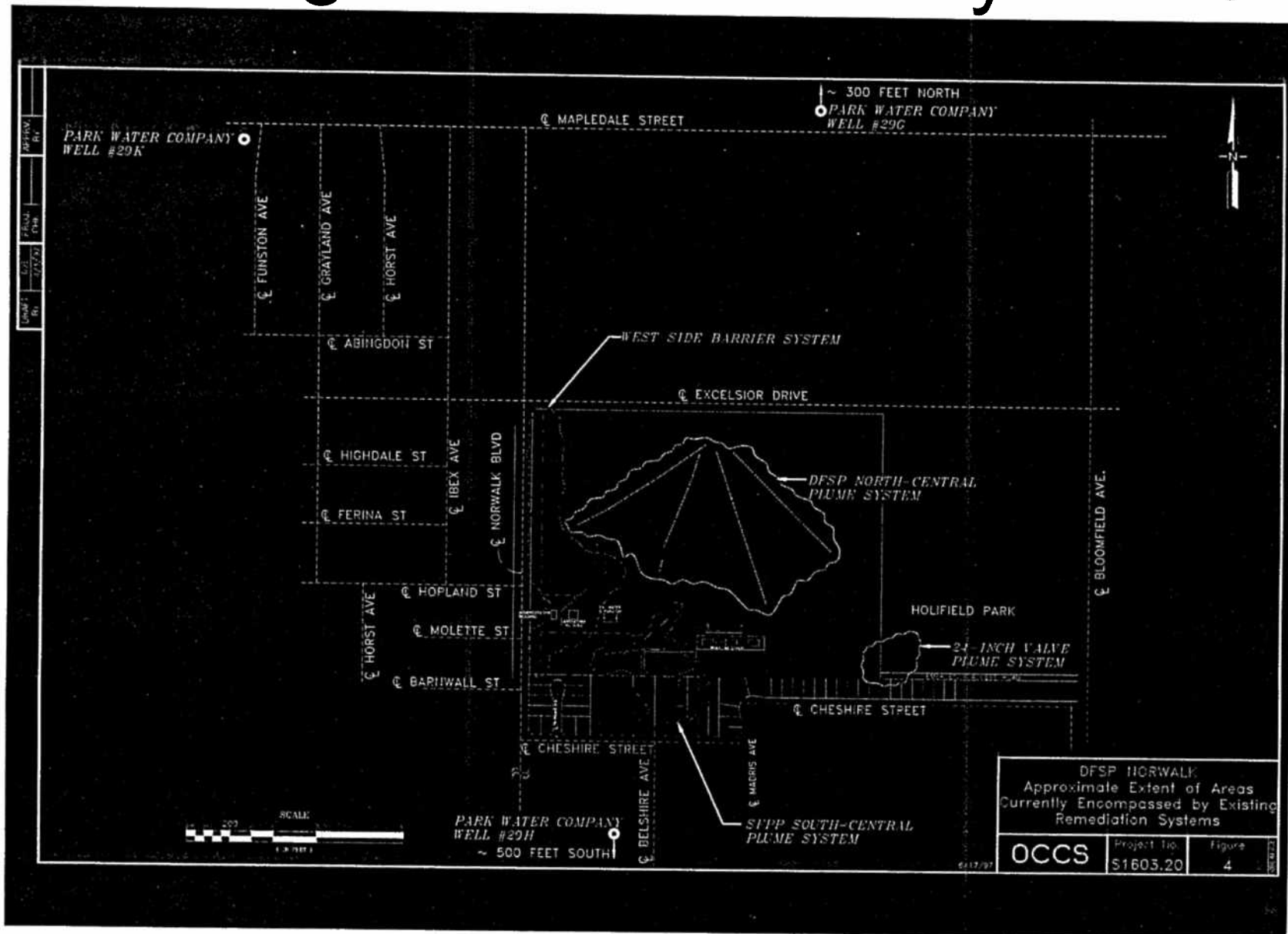
RAB & Regulatory Oversight

- Cities of Norwalk & Cerritos also very active in cleanup oversight
- State of California RWQCB ultimately in charge of cleanup oversight
- RWQCB attends all RAB meetings and approves workplans
- RBCA plan will have to be approved by RWQCB before we proceed

Site Cleanup Progress

- Major cleanup started in 1995 - South Central plume area
- Central tank farm plume cleanup started mid-1996
- “West side barrier” installed late 1996
- 24” valve leak area cleanup system started early 1997

Existing Remediation Systems



Site Cleanup Progress

- DEOLA has removed approximately 80,000 gallons of petroleum hydrocarbons
- KMEP (SFPP) has removed approximately 210,000 gallons of petroleum hydrocarbons
- Both still have a way to go

Site Cleanup Progress

- Difficult to predict how long cleanup will take
- With RAB's input, plan to continually evaluate and improve the efficiency of each remediation system, independently and collectively

Where are We Now

- Contamination is generally being contained within property boundaries with the use of 4 remediation systems
- There is one plume offsite, the 1,2 DCA / MTBE plume, still to be addressed
- This is one of the most sensitive issues to deal with to date

Where are We Now

- Several health risk assessments demonstrate no risks to residents offsite (excavation was not addressed in these assessments, but will be in this effort)
- Source of contamination is contained by west side barrier, no additional migration offsite

What is Risk Based Corrective Action (RBCA)

- Scientific process for quantifying human health risks
- Process employs risk assessment
- Evaluates cleanup requirements for contaminated sites
- Goal is to reduce current and reasonable potential risks to below acceptable levels

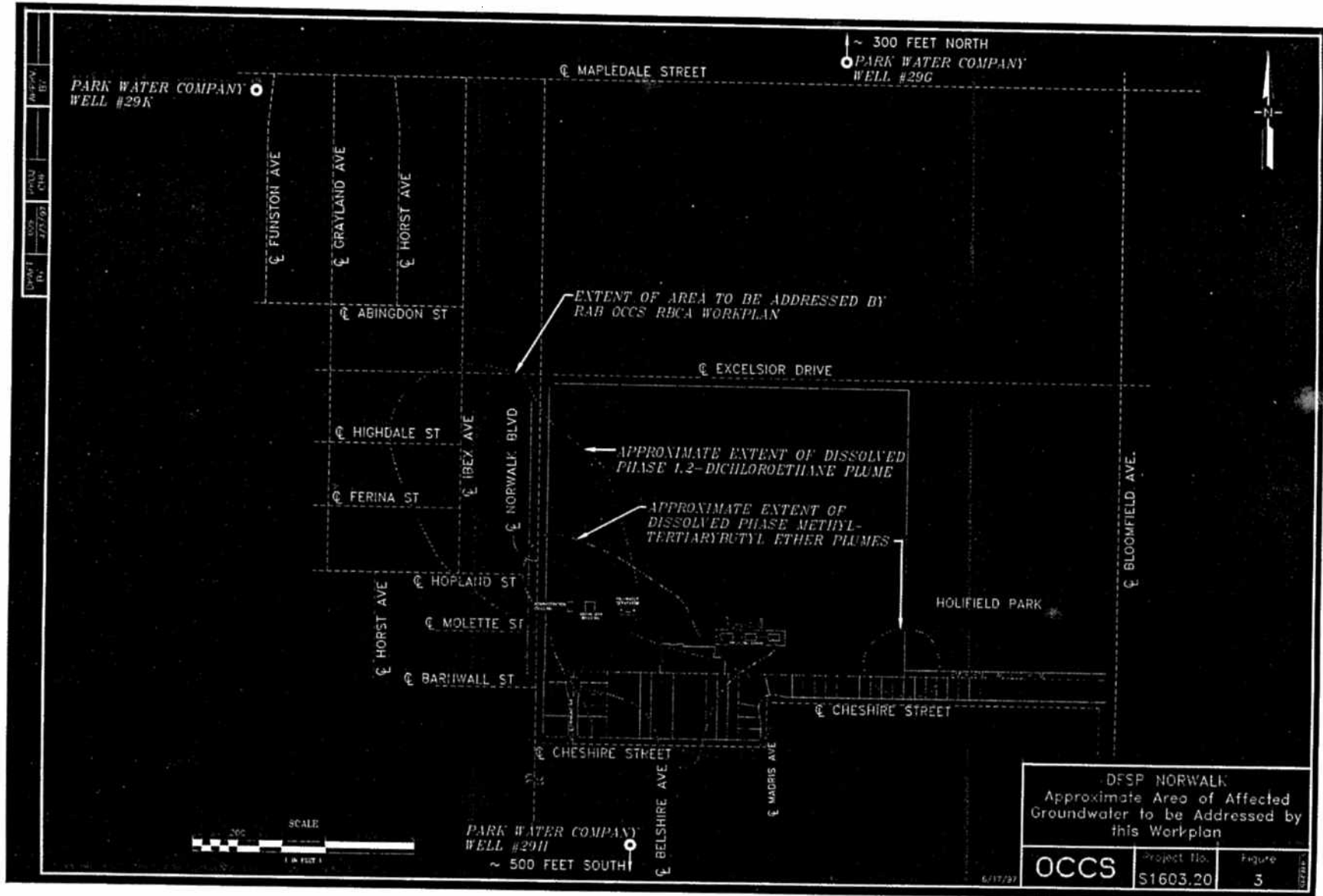
Why was RBCA Chosen for 1,2 DCA / MTBE Plume

- Cleanup of the western 1,2 DCA / MTBE plumes must be addressed
- Cleanup goal must be set, so the site will be cleaned up to an acceptable level
- Must be protective of human health
- Must be attainable with available technologies

Why was RBCA Chosen for 1,2 DCA / MTBE Plume

- Cleanup will be determined using the best science, with the communities input
- When goal is reached all involved will know that the site has been cleaned up to the satisfaction of both RWCQB and the community

Affected Area for RBCA



DFSP NORWALK
 Approximate Area of Affected
 Groundwater to be Addressed by
 this Workplan

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| OCCS | Project No. | Figure |
| | S1603.20 | 3 |

6/17/97

Major Steps in RBCA Process

- Collate historic site data base and perform QA/QC
- Prepare computer model
- Model predicts movement of 1,2 DCA / MTBE plume in groundwater for the next 30 years with and without systems operating

Major Steps in RBCA Process

- continued

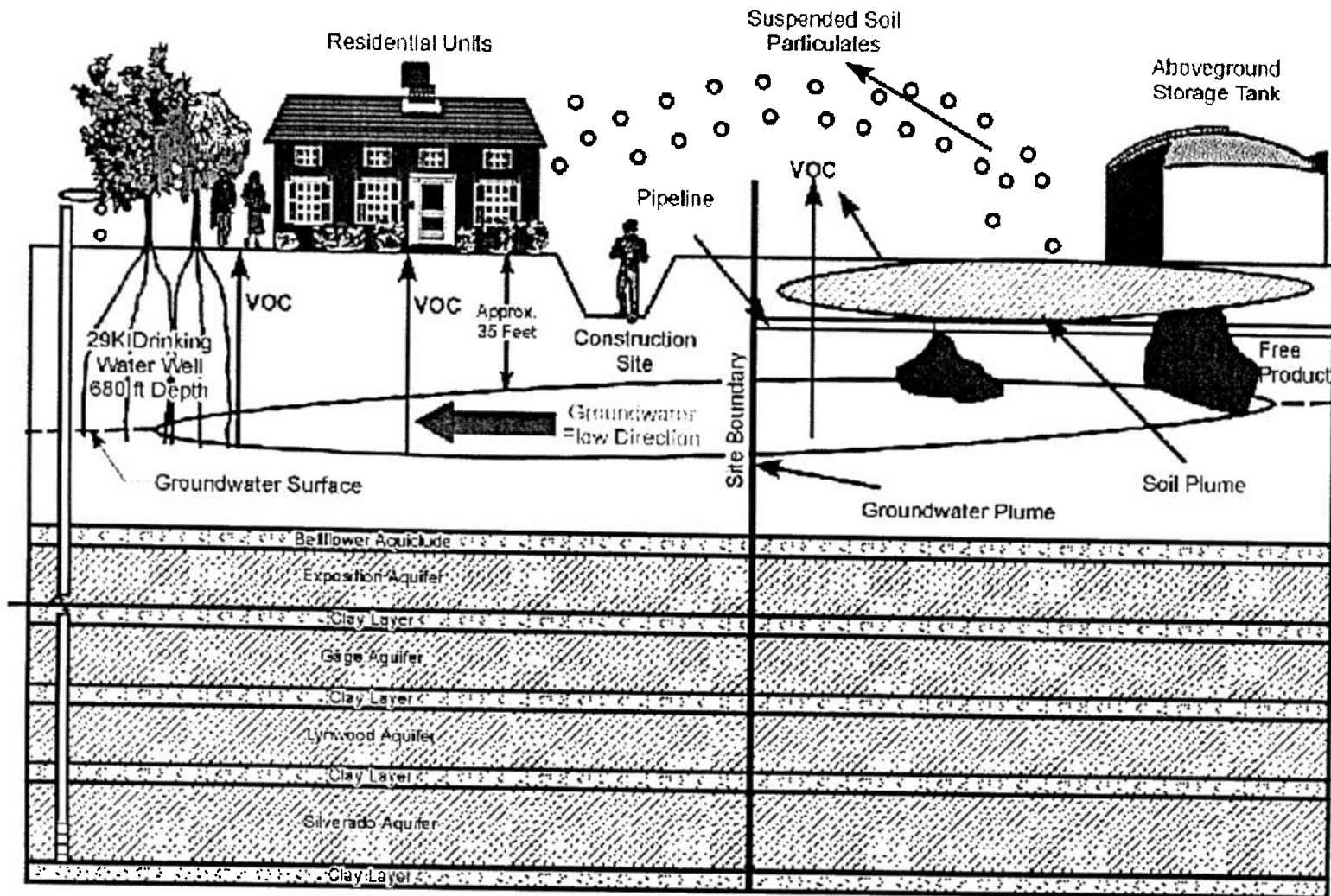
- Predict exposure concentration
- Compare contamination levels in aquifer to the calculated cleanup goal

Major Steps in RBCA Process

- continued

- Identify all possible human exposure pathways
- If a quantifiable exposure is possible via a pathway, calculate degree of exposure (dose)

Exposure Pathways



Major Steps in RBCA Process

- continued

- Perform a back calculation to determine a cleanup goal that is protective of human health
- Identify and implement the most feasible technique(s) that will reach the cleanup goal

Implementation

- Efforts include compilation of data collected at the site
- Generation of a computer model that predicts contaminant exposure point concentrations

Implementation

- Evaluate best available technologies for cleanup implementation
- Possible pilot testing of selected alternatives

Schedule to Proceed

- Receive community comments - April 17
- Submit to the RWQCB - April 27
- Comments received from RWQCB - May 1998
- Proceed with RBCA work - June 1998

Questions and Answers

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