• *Overview of SFPP, L.P. Remediation Programs*

Norwalk Tank Farm Site

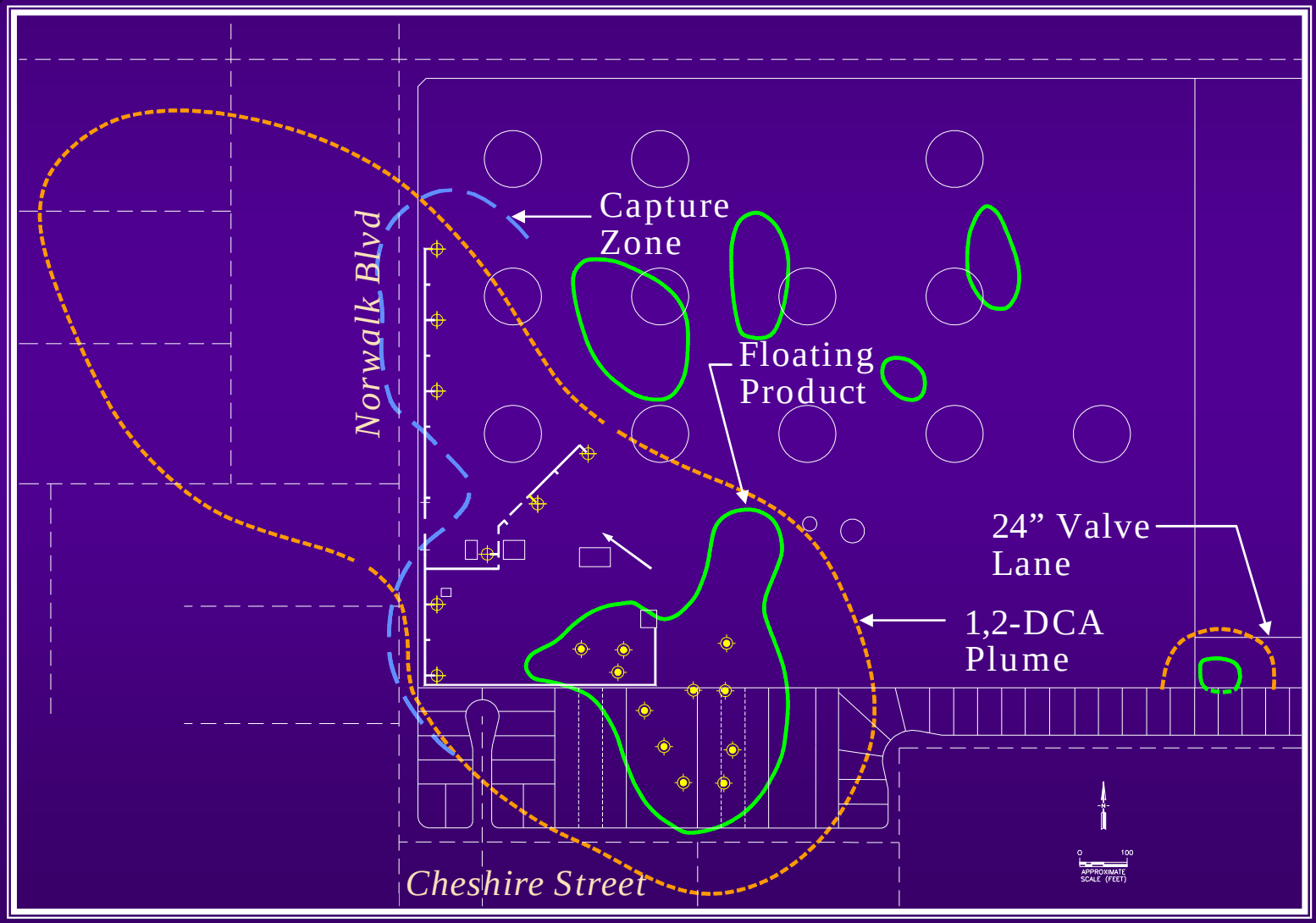
Presented to Norwalk Restoration Advisory Board

April 25, 1996

Topics to be discussed

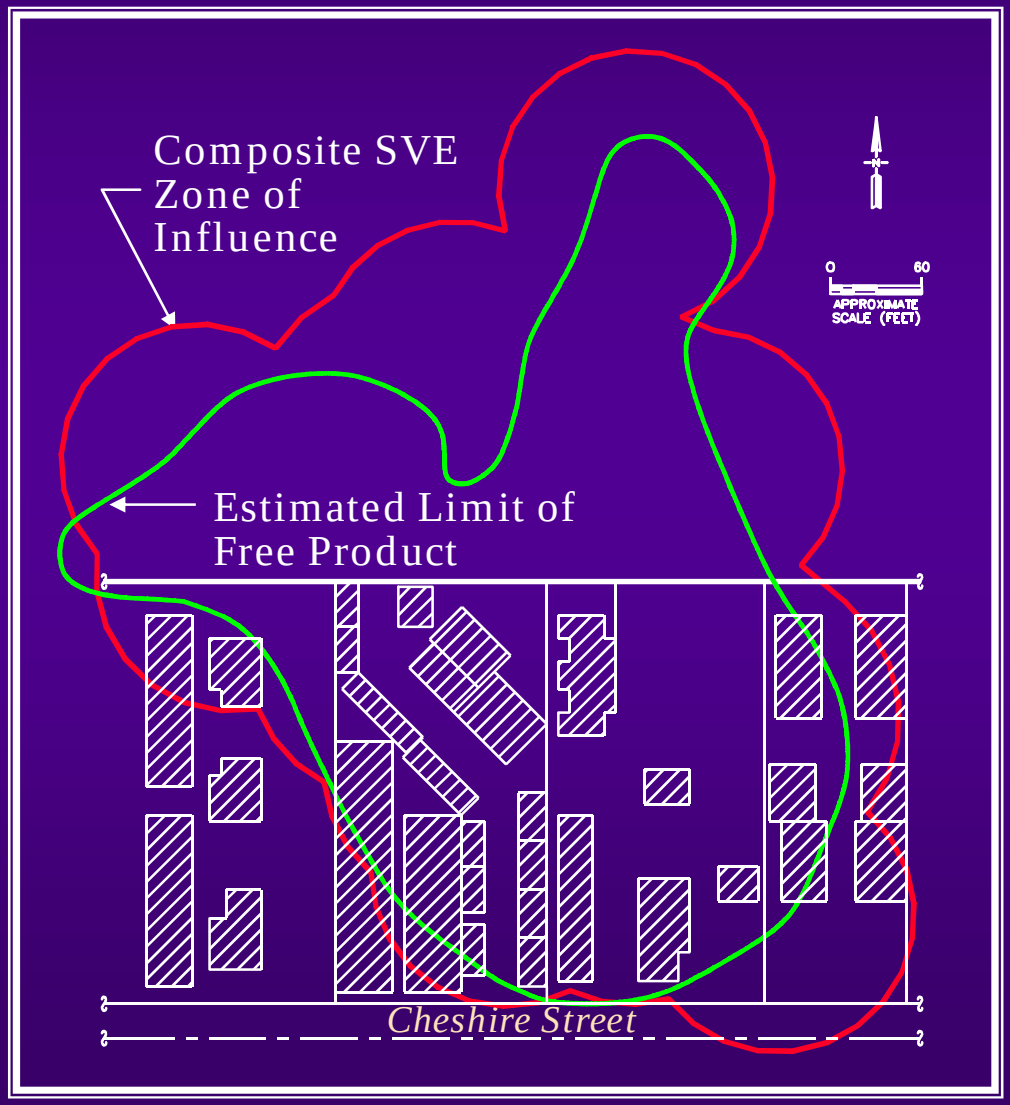
- *Planned Topics*
- *Re-cap of south-central plume cleanup*
- *West side barrier plan/cleanup*
- *24” valve leak cleanup*
- *Special Topics*
- *MTBE*
- *SFPP leak detection program*

Map of Major Plumes
DFSC/SFPP Norwalk Facility



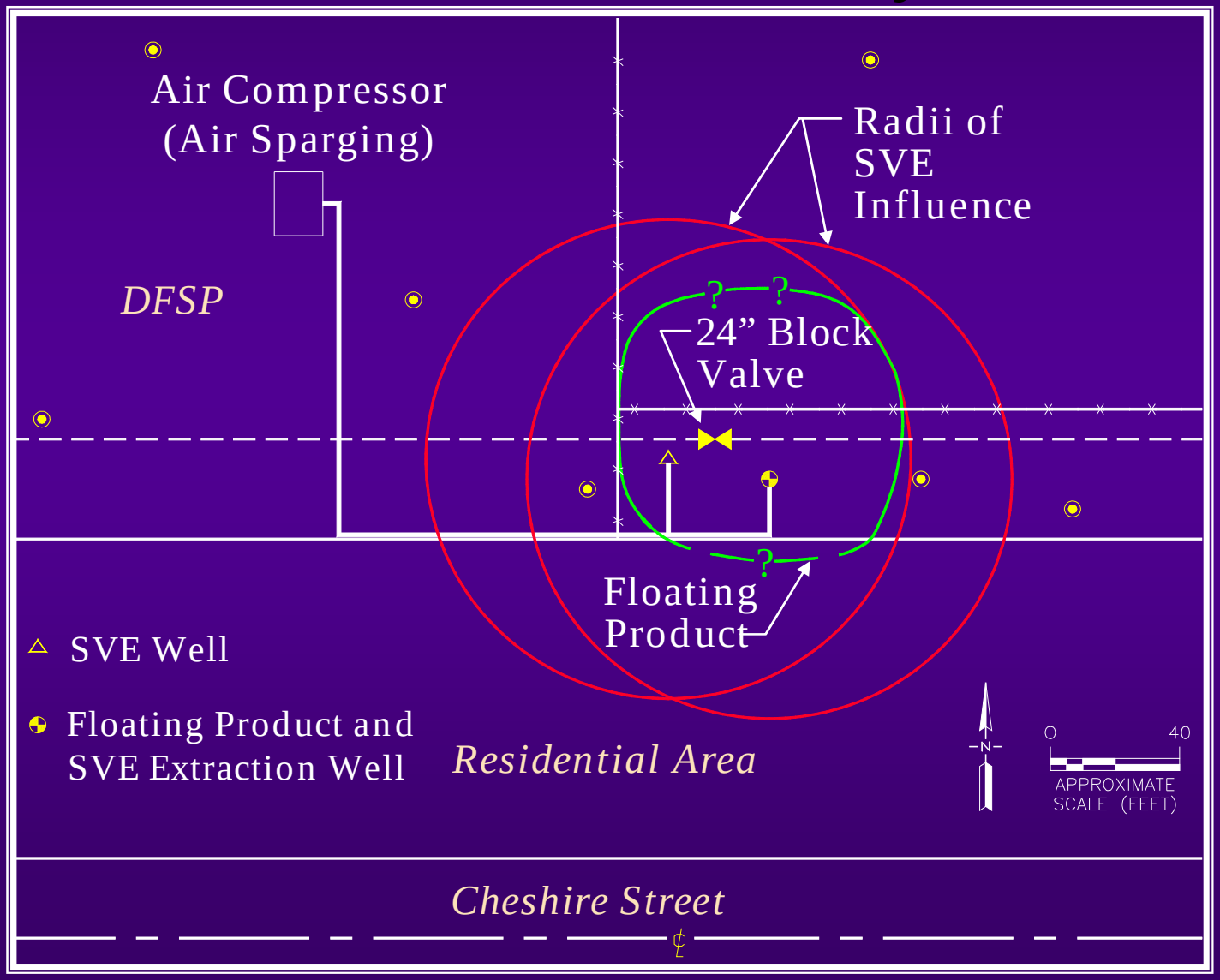
South Central Plume Cleanup Area

DFSC/SFPP Norwalk Facility



24-Inch Block Valve Cleanup Area

DFSC/SFPP Norwalk Facility

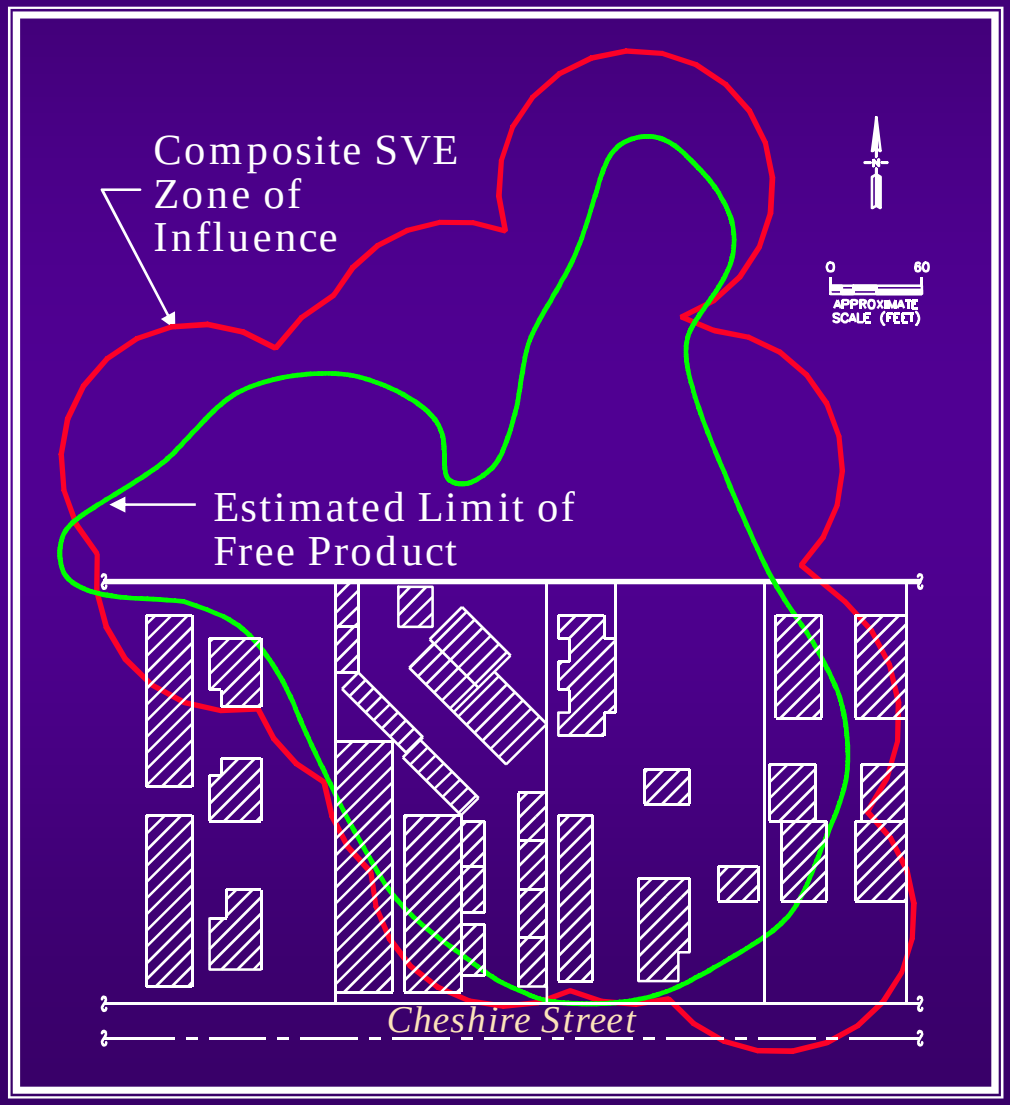


South Central Plume-Recap

- Total of 25 vapor extraction wells
- Still dont have access to 5 offsite vapor wells
- Total of 9 liquid pumping wells
- Still dont have access to 3 offsite liquid pumping wells

South Central Plume Cleanup Area

DFSC/SFPP Norwalk Facility



South Central Plume-Cleanup to Date

- *Vapor extraction has removed 62,500 gal of fuel*
- *Liquids pumping system has removed 115,00 gal. groundwater*
- *Liquids pumping system has removed 2,700 gal. raw fuel (product)*
- *Total fuel removed to date is approx..... 65,200 gal.*

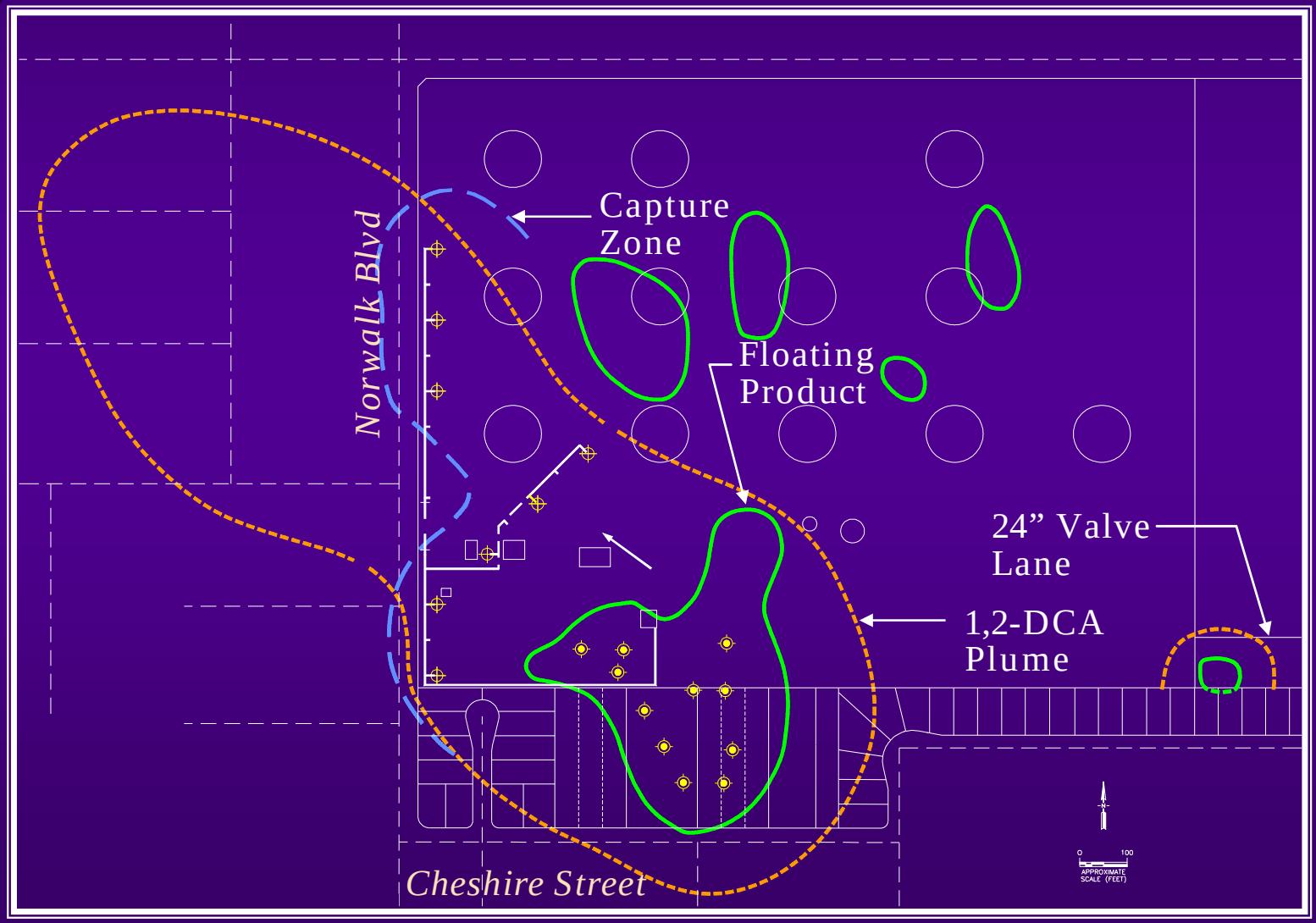
Ways to Improve This Part of the Cleanup

- *Get offsite wells installed*
- *Compare design performance vs. actual*
- *Replace "Low Flow" wells with new ones (5)*
- *Regular updates to RAB & Regulators*

West Side Barrier Plan & Cleanup

- *Purpose-Stop flow of contamination offsite*
- *How- Create a hydogeologic barrier by pumping from 11 wells (8-SFPP, 3 DFSC)*
- *A computer model used to predict "radius of capture" for system*
- *Extracted groundwater/product passed through existing treatment system*

Map of Major Plumes
DFSC/SFPP Norwalk Facility



West Side Barrier Plan & Cleanup (cont'd)

- *Work outlined in Geomatrix report dated March, 1995*
- *Final approval from DTSC in April, 1996*
- *Plan modified to be more effective-Geoprobe investigation*
- *Will allow for more effective placement of wells*

West Side Barrier Plan & Cleanup (cont'd)

- *How will we ensure system is an effective barrier ?*
- *Regular measuring of adjacent monitor wells*
- *Monitor water levels-should decrease along Norwalk Boulevard*
- *Chemical concentration should drop in wells west of Norwalk Boulevard*

West Side Barrier Plan & Cleanup (cont'd)

- *What this plan will not do:*
- *Barrier system will not "pull back" all offsite DCA plume*
- *No vapor extraction in original plan, may want to add spare vapor piping during construction process*
- *If needed will allow for future vapor extraction*

West Side Barrier Plan & Cleanup (cont'd)

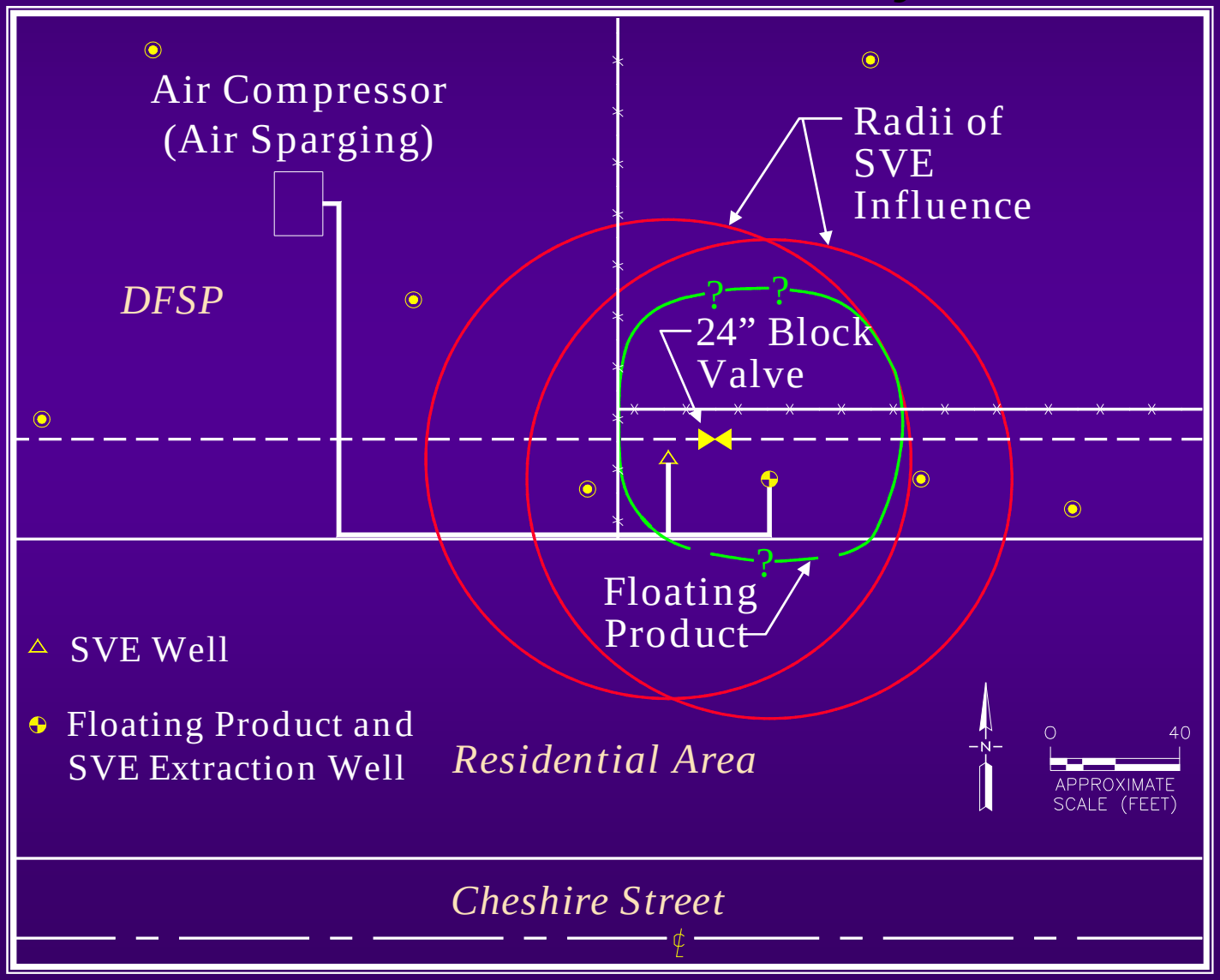
- *Does this mean the offsite DCA will not be addressed ?*
- *NO.*
- *Upon implementing this plan, most of on-site contamination will be undergoing cleanup*
- *Next step is addressing the offsite DCA. We are in the process of this now. More on this later in the meeting.*

24” Valve Leak Cleanup

- *Work outlined in Geomatrix report dated March, 1995*
- *Final approval from DTSC in April, 1996*
- *Original plan called for product skimming and vapor extraction only*
- *Plan modified to add for dissolved contamination cleanup in groundwater*

24-Inch Block Valve Cleanup Area

DFSC/SFPP Norwalk Facility



24" Valve Leak Cleanup (Cont'd)

- *Field work to start after west side barrier installed*
- *Will likely begin in June/July 1996*
- *Extracted vapors & liquids will also be passed back to existing treatment system*

Culmination of All Three Plans

- *Upon completion, most of onsite contamination will be undergoing cleanup*
- *Approximately 30 gpm to 60 gpm groundwater extraction rates expected*
- *Approximately 2,000 to 2,500 scfm vapor being removed*
- *Regular monitoring of wells will allow us to asses effectiveness*
- *Monitoring information is, and will continue to be shared with regulators & RAB*

Review of RAB Progress

- *Think back to the RAB 1 year ago.....*
- *There was no significant cleanup underway*
- *Noise issue not addressed*
- *Now there is cleanup occurring in the south central plume area*
- *A barrier system will be starting in 3-weeks and the 24" valve leak will be started shortly thereafter*

Review of RAB Progress(cont'd)

- *The last impediment to future work has been removed with DTSC's approval of the H& SP. this will allow future work to proceed more quickly*
- *West side barrier system will be started in 3-weeks*
- *24" valve leak cleanup will be started shortly thereafter*
- *Noise control measures are being installed on SFPP equipment with input from RAB & residents*

Review of RAB Progress(cont'd)

- *Regular meetings with City & Congressional staff*
- *RAB continues to be effective tool to push cleanup, your input acted upon*
- *Community & City involvement will ensure that non-regulatory issues are addressed in the process*
- *I look forward to another year of significant progress where we tackle the toughest issue-The offsite DCA plume.*

Special Topics-MTBE

- *In the paper a lot lately -RAB requested info.*
- *What is Methyl Tertiary Butyl Ether (MTBE) ?*
- *A chemical cooked up in the 1960's by Eugene Garcia's chemistry students ?*
- *No. Its a fuel additive used to reduce smog*
- *Referred to as an "Oxygenate" it promotes cleaner combustion*

Chemical Properties of MTBE

- *Formula- $C_5H_{12}O$*
- *Colorless Alkyl Ether, Ether family of chemicals*
- *Density similar to gasoline*
- *More soluble in water than most fuel components*
- *43,000 mg/l @ 20°C Vs. 1,750 mg/l for Benzene*

Fate in the Environment

- *24x more soluble than benzene-can spread in groundwater faster*
- *Ethers are stable, doesn't degrade as easily as benzene*
- *Newer chemical-health effects not as well understood as benzene*
- *Has been detected in some municipal supply wells in Orange County & Santa Monica*

Occurrence at Norwalk Site

- *Found in two places:*
- *24” valve leak area*
- *Parts of south central plume*
- *Concentration ranges from 4.2 ppb to 17 ppm*
- *No MCL set yet, DTSC advisory level is 35 ppb*

What are we Going to do About it ?

- *Current & planned cleanup systems will be able to handle it*
- *Continue to monitor it regularly, act quickly if it spreads*
- *Expand extraction system to contain it if required.*
- *Call Park Water Company, see if they test their wells for MTBE*

Special Topic-Leak Detection

- *No sense cleaning up plumes if continue to contaminate*
- *Occurrence of MTBE a concern-only added in last 5-9 years*
- *We now see it in groundwater-2 areas*
- *Need to set up system to prevent & detect future leaks*

Leak Detection-(Cont'd)

- *Prevention is first step-Stop it entering soil*
- *Use vaults & secondary containment methods*
- *One large vault completed to date*
- *Extremely expensive*
- *Not feasible everywhere*
- *Install in a phased planned manner*

Leak Detection-(Cont'd)

- *Where not feasible to vault, use leak detection systems*
- *Detect leaks that may have gone unnoticed before*
- *SFPP currently considering one design*
- *Used on buried valves & fittings*
- *See demonstration device & handout*

Questions ??????