



Northrop Grumman

NYSDEC Meeting

March 29, 2011

Kent Smith

Carol Henry, Mike Wolfert



Topics

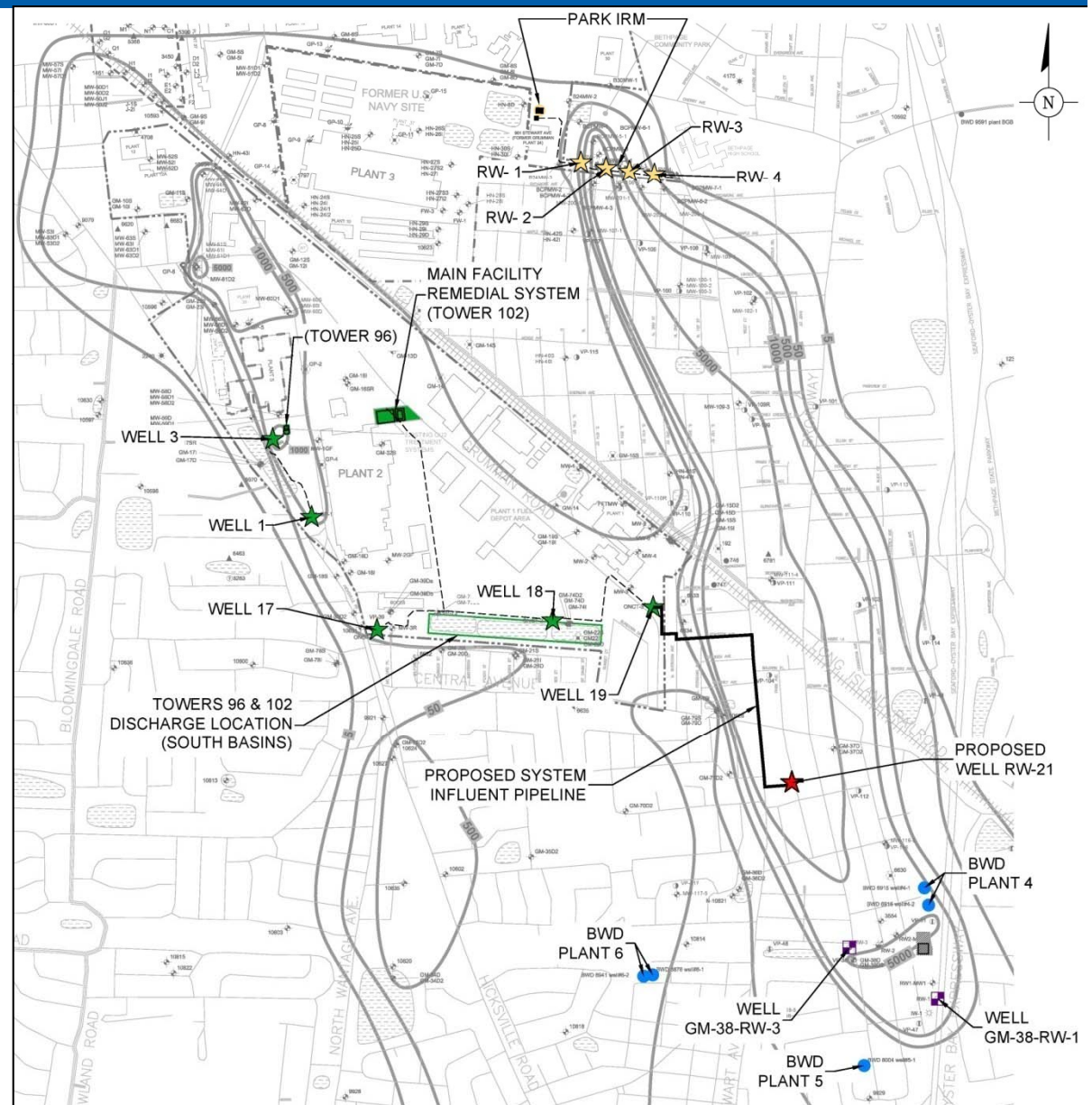


-
- Groundwater Remedy
 - Soil Gas & Source Area Remedies
 - Soil Remedy

Groundwater Remedy

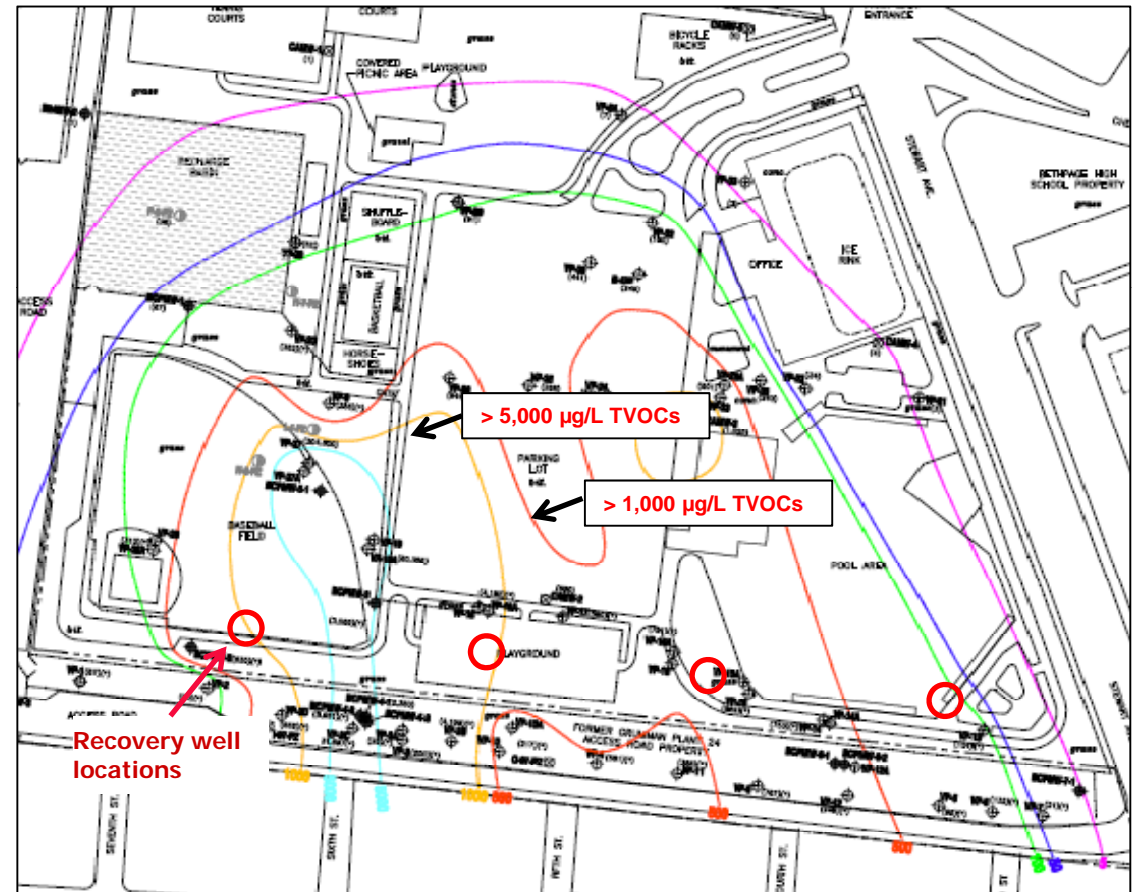


- Operate:
 - Park IRM
 - ONCT
 - GM-38
- Operate BWD treatment systems
- Install / operate RW-21
- Conduct MNA following active remediation



Performance Objectives and Metrics: Park Groundwater IRM

- Capture > 5 ppb TVOCs in upper 20 feet; > 50 ppb below 20 feet
- Evaluate metrics
 - Inward hydraulic gradient
 - Mass removed (1,000 lb to date)
 - Air emissions & water quality effluent
- Document effectiveness
 - OM&M reports



Alternative GW-2 (recommended) Compared to GW-3



- GW-3: Four additional recovery wells to remove TVOCs > 5 ppb below 20 feet in the aquifer
- Estimated performance:
 - 10% additional VOC mass removed
 - Nearly doubles the cost (adds >\$4M)

Recovery Well ID	Mass Removed (lbs) by Existing IRM	Mass Removed (lbs) by Existing IRM + 4 Wells
RW-1	2	2
RW-2	7,357	7,856
RW-3	401	482
RW-4	10	10
RW-5	-	72
RW-6	-	22
RW-7	-	14
RW-8	-	36
Totals	7,700	8,606

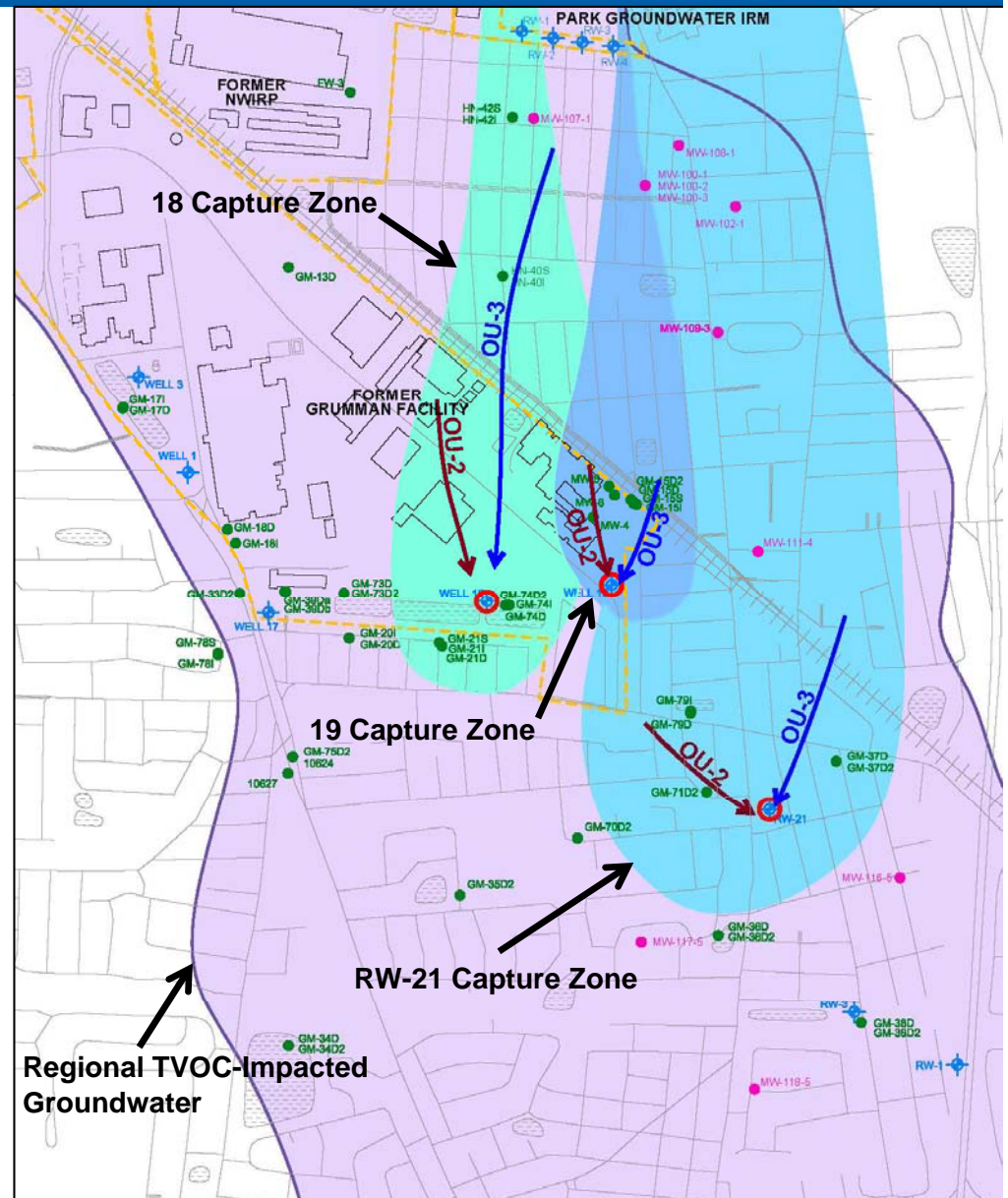
Performance Objectives: Off-site Groundwater



- Remove TVOC mass from plume
 - Capture highest TVOC concentrations
- Prevent exposure to Site Area TVOCs
 - Reduce TVOC concentrations in the plume consistent with long-term wellhead protection goals

Capture Zones of RW-21, Well 19, and Well 18

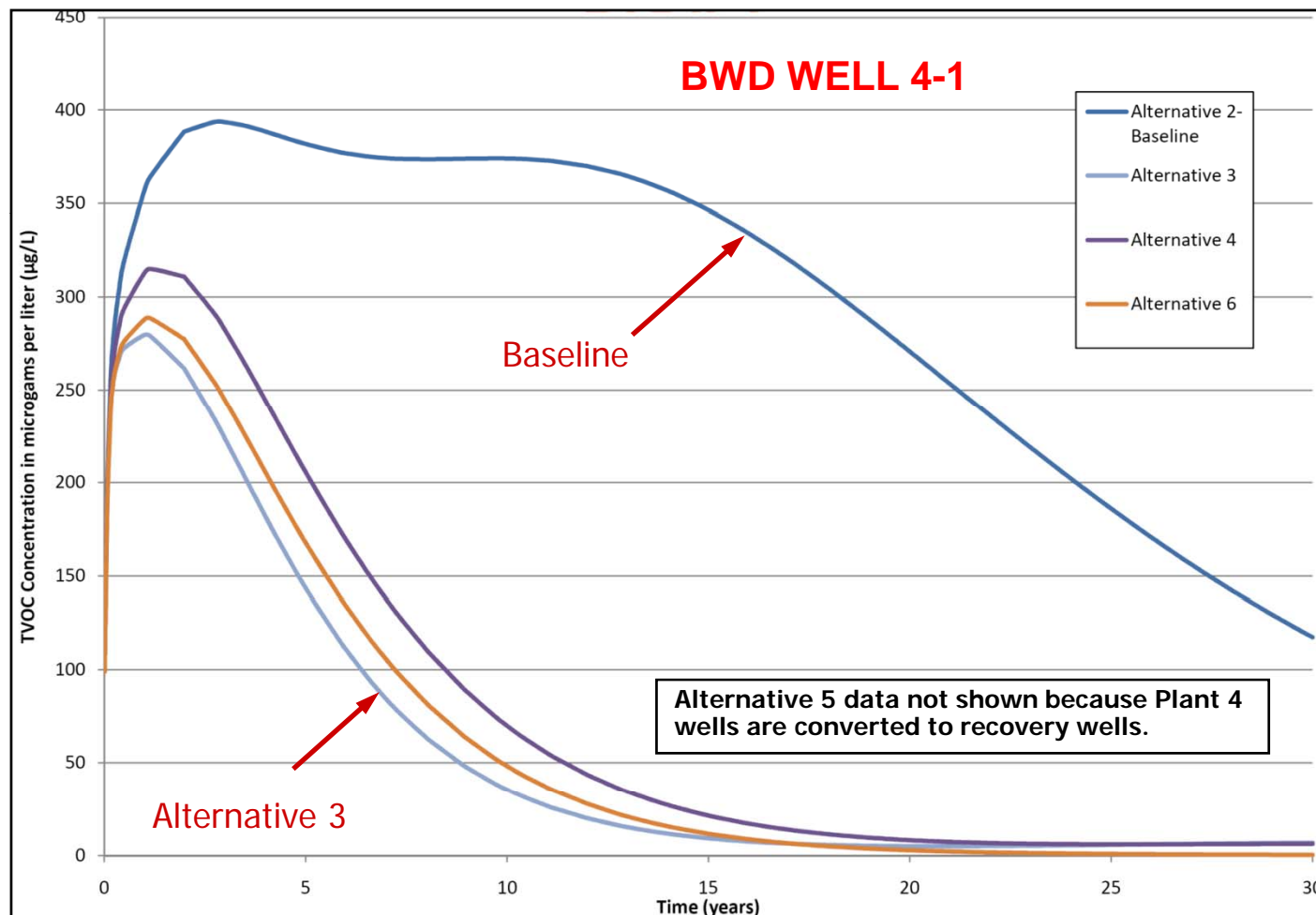
- Groundwater recovery in most contaminated part of OU3 plume
- Will also capture groundwater from OU2



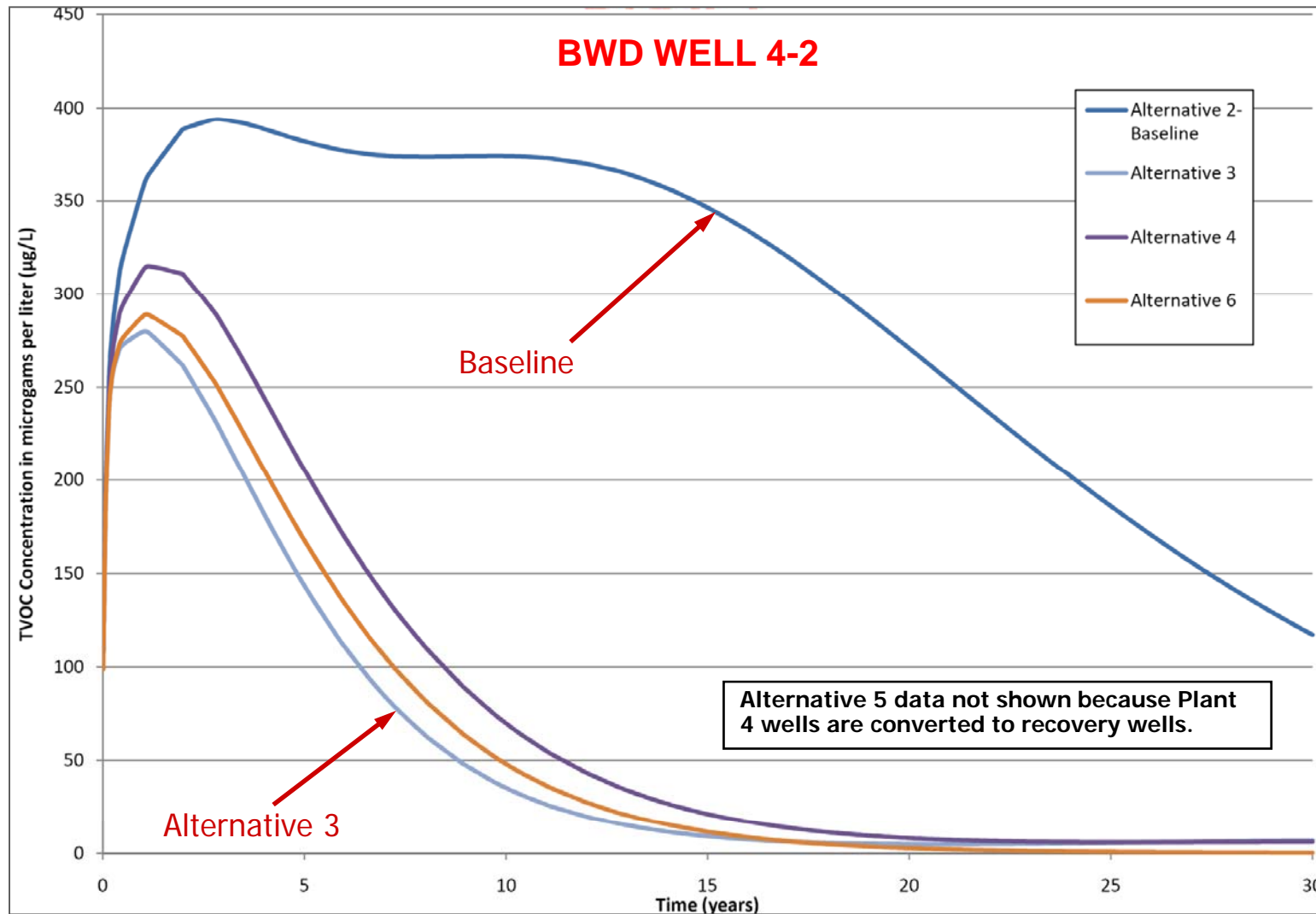
Alternative 3 (Recommended) Compared to Other Alternatives



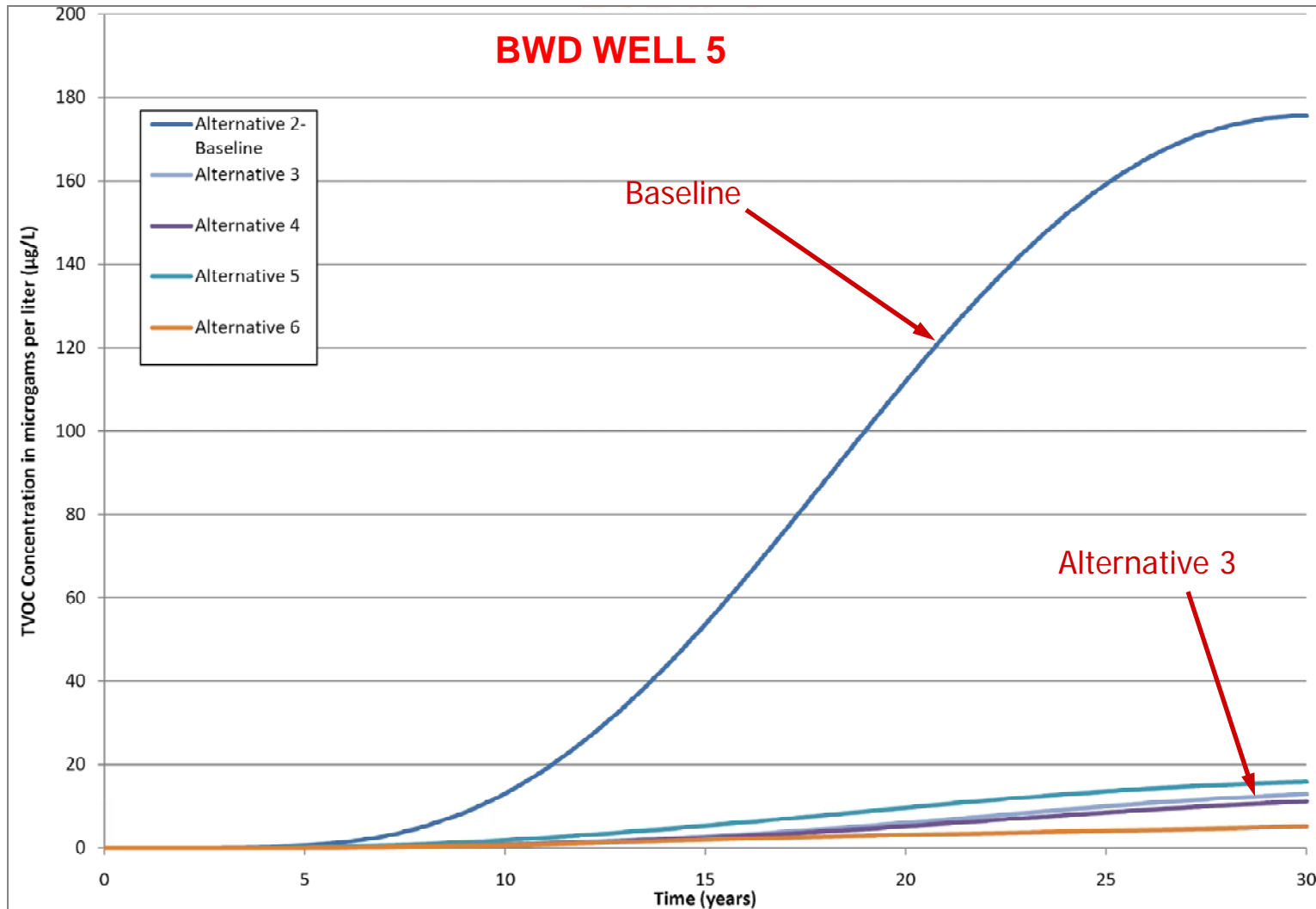
Alternative 3 provides for lowest peak TVOC concentration and greatest rate of decrease in TVOC concentrations in BWD wells



Predicted TVOCs in BWD Wells



Predicted TVOCs in BWD Wells



Performance Objectives: Soil Gas and Source Area Remedies

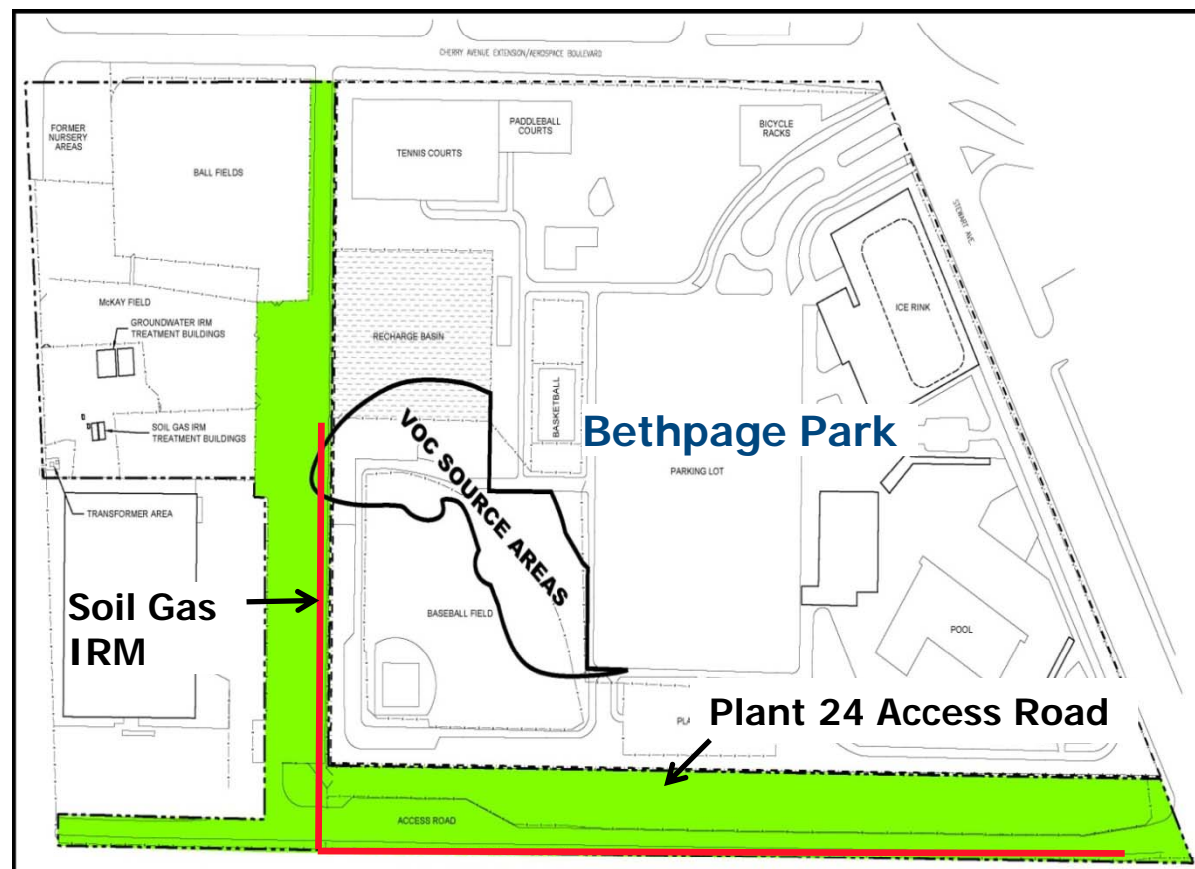


Park Soil Gas

- Prevent off-site migration of soil gas.

Park Source Areas

- Remediate VOC source areas (>10 ppm in soil and groundwater) using ISTD to reduce TVOCs <1 ppm.



Soil Remedy Objective



Prevent exposure to Site Area-related COPCs that exceed restricted residential SCO or implement other approved approaches to eliminate or mitigate all significant threats to public health and the environment

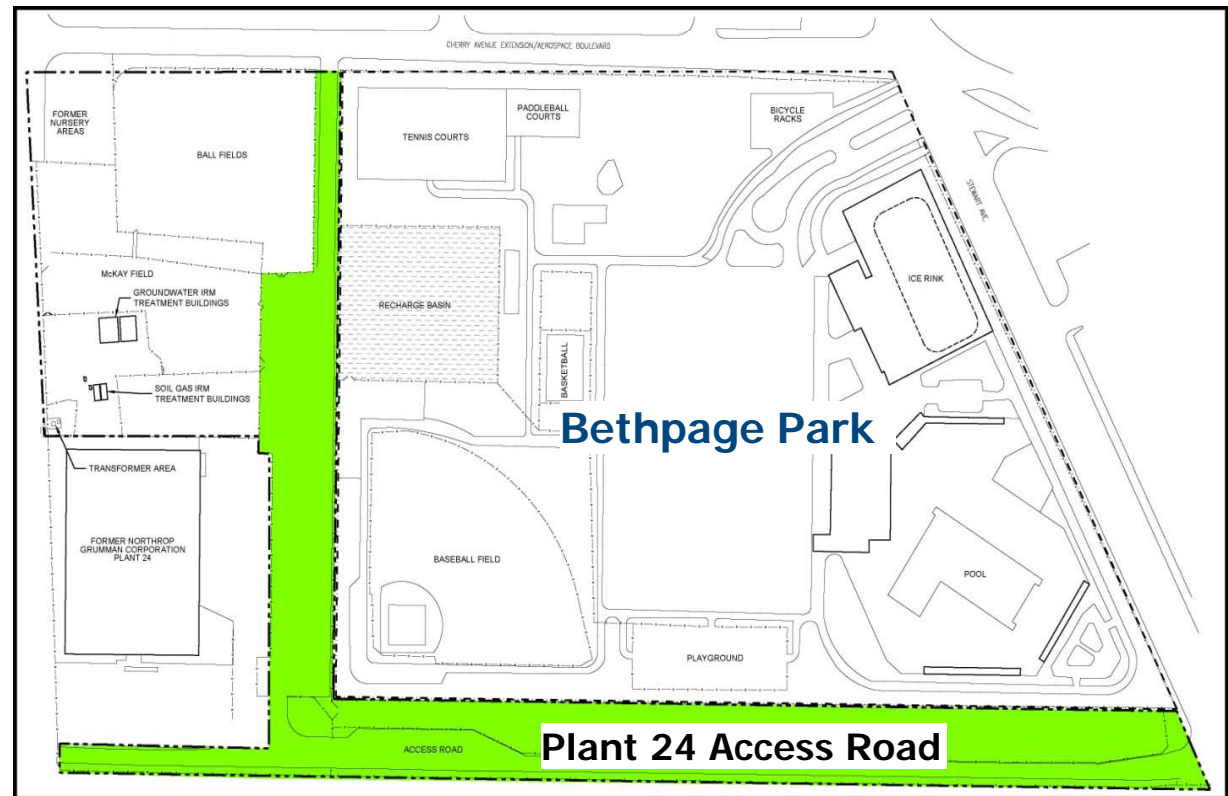
Soil Remedy

Park Soils

- Excavate upper 2 ft of soil exceeding restricted-residential SCOs, replace with clean fill.
- Demarcation layer.
- Environmental easement.

Access Road Soils

- Install gravel cap where COPCs exceed restricted-residential SCOs.
- Fencing and signs
- Environmental easement.



NORTHROP GRUMMAN

