Gude Landfill Concerned Citizens
GLCC@hollybrooke.org

Citizen's Forum

Gude Landfill Remediation

September 24, 2009

Gude Landfill Concerned Citizens
GLCC@hollybrooke.org

Keith Ligon, GLCC

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Who is Here Tonight

Homeowner's Associations

Dave Peterson, President HOA#1

Laszlo Harsanyi, President HOA #2

Nick Radonic, President HOA #3

Montgomery County

Peter Karasik, Chief of Operations, DEP

Steve Lezinski, Operations Manager Gude Landfill, DEP

David Lake, Manager, Water & Wastewater Policy Group, DEP

Gude Landfill Concerned Citizens (GLCC)

Keith Ligon

Julia Tillery

Bob Day

Dean Dozier

Engineering, Science & Technology

John Kumm, P.E.,

Mark Gutberlet, P.E.

Barbara Roeper, P.E.

Ask questions at any time

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Agenda

Introductions and GLCC/DEP Relationship	Keith Ligon, GLCC
County Responsibilities and Landfill History	Peter Karasik, DEP
Landfill Operations and Remediation Approach	Steve Lezinski, DEP
DEP Groundwater & Surface Water Monitoring	David Lake, DEP
Community Concerns and State of Maryland	Dean Dozier, GLCC
Site Characterization, Risks and Remediation Action	John Kumm, EA
Reuse Possibilities	Bob Day, GLCC
Closing	Bob Day, GLCC

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GLCC Objectives

- **County data indicates that contaminated groundwater may be moving off site**
- **Our concern is the health and safety of Derwood residents**
- **Gude Landfill (GLF) is a large tract of centrally located land that will continue to attract ideas about its reuse**
- **We oppose any use of the landfill prior to the**

Our objective is a County funded program that will position the Gude Landfill as a good Derwood neighbor for the foreseeable future

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GLCC/DEP Meetings

- **Joint monthly meetings between GLCC and DEP started June 2009, held second Thursday at 7:30 pm**
  - **We are aligning our interests and objectives**
  - **We are seeking a win-win in our efforts**
  - **The meetings are open, candid, and business like**
  - **Minutes are posted on the County Remediation website**
- **DEP has been open and transparent with data sharing**
  - **Posting all Gude Landfill Remediation data on County Website**
  - **Access to engineering firm for questions/discussions**
  - **Responsive and accessible to our requests**

Science will tell us if there are risks to worry about

Peter Karasik, DEP

Gude Landfill

Aerial View

DEP Responsibilities

- Maintenance of Closed Landfill Infrastructure
- Water Quality and Gas Monitoring
- Evaluate and Assess Existing Conditions at the Landfill with respect to Contamination and Health Risks
- Maintain compliance with Maryland Dept. of the Environmental Regulations
- Maintain Open and Transparent Relationship with GLCC and Community

Gude Landfill

Site Overview

- Located at 600 East Gude Drive, Rockville, Maryland
- Landfill operated from 1964 –1982
- Approximately 4.8 million tons of waste
- Sized at 90 – 100 acres
- Predated all modern landfill design regulations Resource Conservation and Recovery Act (RCRA)
  - No clay or synthetic base liner or final capping system

Gude Landfill

Final Cover System – Well Vegetated

Gude Landfill

Maintenance - Stormwater Ponding

Gude Landfill

Maintenance - Leachate Seeps

Gude Landfill

Maintenance - Leachate Seep Repairs

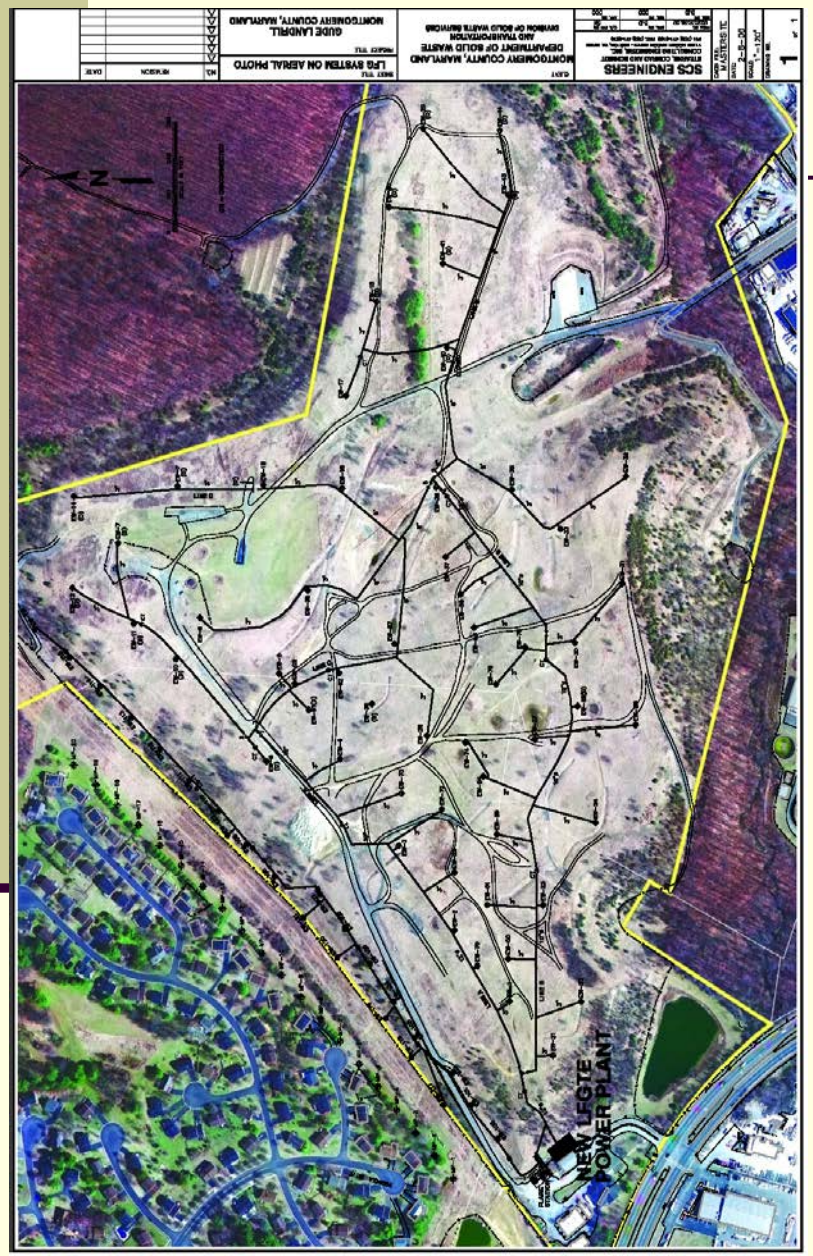
Gude Landfill

Summary - Landfill Gas Management

- Landfill gas is produced as part of waste decomposition
  - Consists primarily of methane (CH_4) and carbon dioxide (CO_2)
  - Controlled via an active collection system (installed 1985) and burned at the Enclosed Flare Station (installed 2005)
  - 40 to 50 vertical extraction wells with horizontal above ground piping scattered around the site
  - 33 vertical gas extraction wells on the northwestern slope property boundary to control migration
  - Former landfill gas to energy power plant beneficially used landfill gas to generate electricity 1985 – 2006 (1.5 – 2.7 MW)
  - New Landfill Gas-to-Energy Facility Operational June 2009 (0.8 MW)

Gude Landfill

Landfill Gas Collection System



Steve Lezinski, DEP

Gude Landfill

Gude Landfill

Current Operations and Activities

- What's Been Happing at the Gude Landfill
  - Post- Closure Care
    - Cover System, Stormwater, Leachate Seep Mngt.
    - Gas and Groundwater and Surface Water Monitoring
  - Landfill Gas-to-Energy Facility Operational

- Maryland Department of the Environment (MDE) and Remediation
  - Site Inspections and Corrective Actions
  - Approved Site Monitoring and Remediation Plans

Gude Landfill
MDE and Remediation

- **Maryland Dept. of the Environment Inspections & Approvals**
  - Site Inspections for Leachate Seeps, Stormwater Ponding, etc.
  - Landfill Gas Monitoring Plan (4/22/09)
  - Groundwater and Surface Water Monitoring Plan (5/11/09)
  - Remediation Approach (5/27/09)
- **Elements of the Remediation**
  - Northeast Maryland Waste Disposal Authority: IGA
  - EA Engineering, Science and Technology: Consultant via IGA
  - Phase 0: Aerial/Field Survey and Waste Delineation, initiated (5/15/09)
  - Phase 1: Nature and Extent Study scope of work is finalized (9/10/09)
- **Continued Working Relationship with Community**
  - Gude Landfill Concerned Citizens Meetings Held Monthly

Gude Landfill
MDE and Remediation

- **Phase 0: Aerial/Field Survey and Waste Delineation**
  - Aerial Mapping – Flyover complete and County provided comments on Draft Aerial Survey
  - Field Survey – Existing Site Features (monitoring wells, structures, pipes, etc.) continue to be captured to create a real-time Site Plan
  - Waste Delineation – test pitting and hard auguring along property boundary nearly complete to located the limit of waste.
  - M-NCPPC preliminary approval granted to test pit on park land to locate limit of waste beyond the Landfill property.

- **Phase 1: Nature and Extent Study**
  - Scope of Work Finalized
  - Assess contamination and human exposure pathways
  - Review of DEP Groundwater and Surface Water Data
  - Review of Stormwater Management Facilities

- **Future Phases of Work**
  - Remediation Alternatives and Reuse Investigation, Design, Construction, Site Reuse

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David Lake, DEP

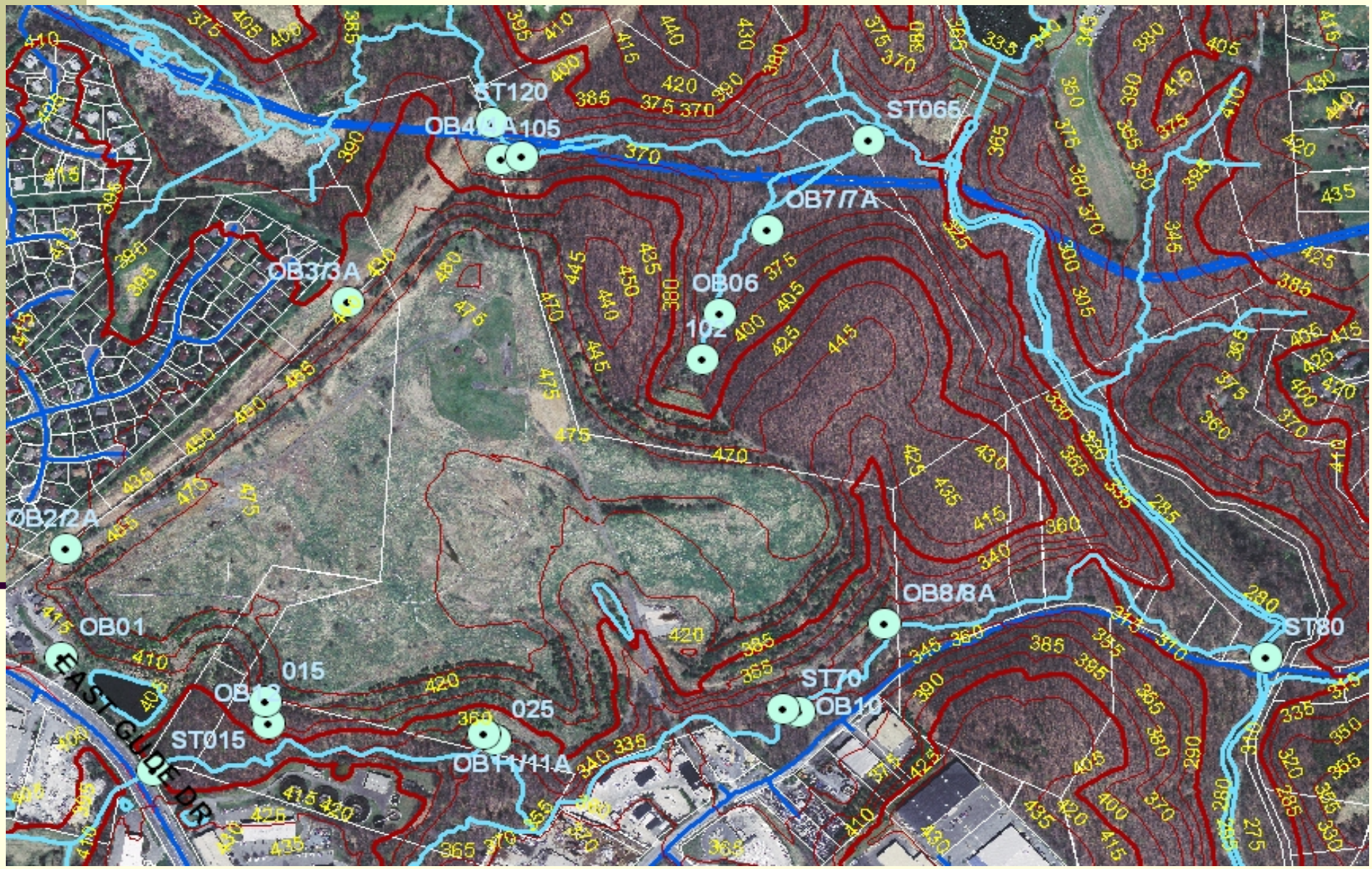
Gude Landfill Water Quality Monitoring Program

- Montgomery County DEP has operated a water quality monitoring program since 1984
- Automated records exist from 2001 to present

Groundwater Monitoring Specifics

- DEP now monitors 20 groundwater wells
  - Located on landfill perimeter
  - Permitted by State
- Samples taken spring and fall
- Parameters
  - Volatile organic compounds (VOCs)
  - Semi-volatile compounds (SVOCs)
  - Pesticides
  - Heavy metals
  - Miscellaneous (including pH, turbidity, conductivity.)

Gude Landfill and Monitoring Sites

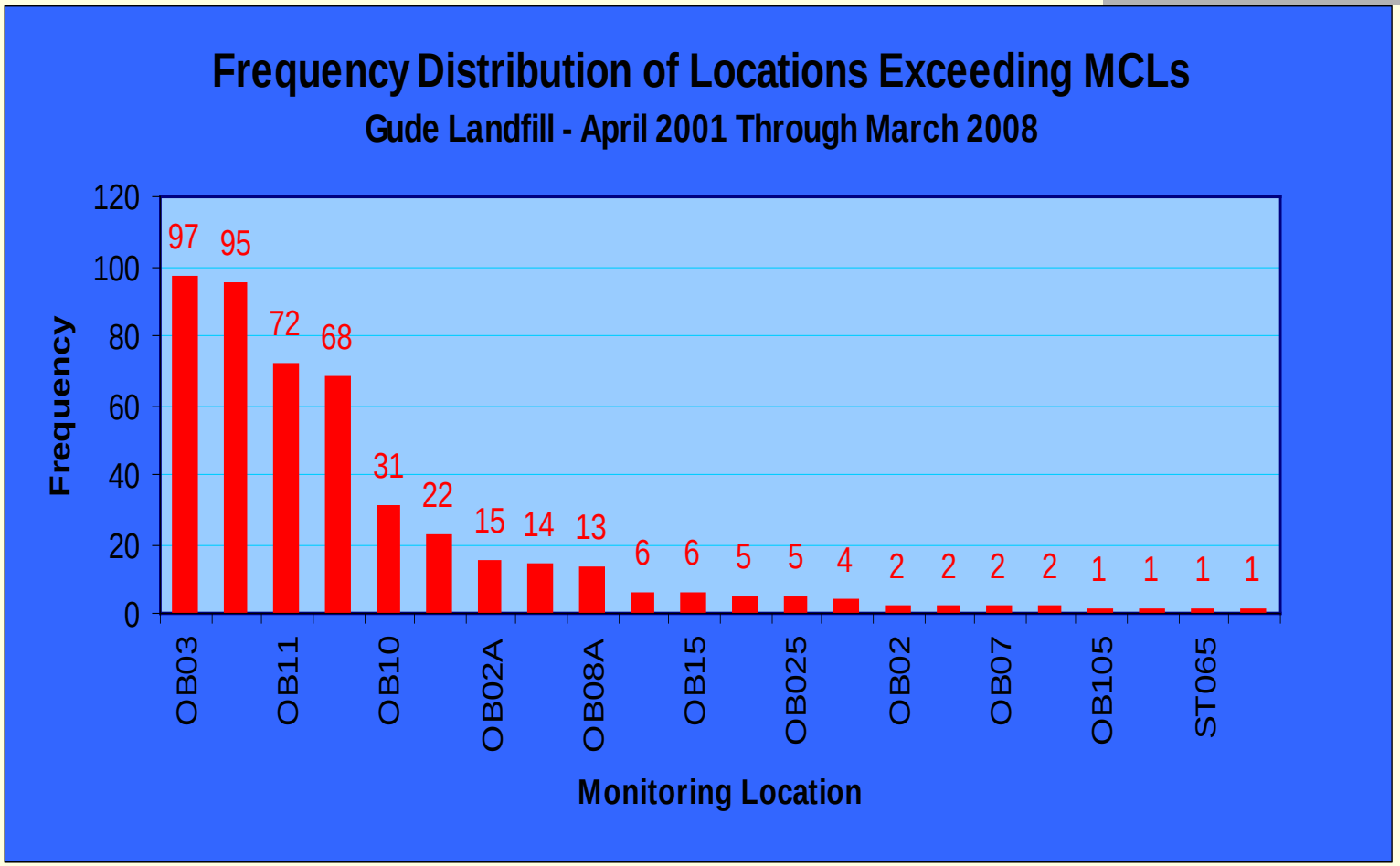


Groundwater Monitoring Results

- Maximum Contaminant Level (MCL) – EPA **Regulatory Standard for Drinking Water Quality**
- No Drinking Water Wells Adjacent to Gude Landfill

- 52,000 data points since 2001
- < 1% (500±) exceed MCL established for drinking water
- 70% of samples exceeding MCLs were from wells OB03 and OB11 (see map)

Sites Exceeding MCLs



Surface Water (stream) Monitoring

- 5 Surface water locations sampled (most outside landfill - see map)
- Sampling is on Crabbs Branch and Southlawn Branch of Rock Creek
- 6800 data points since 2001
- Total of 7 data points (0.1%) have exceeded the MCL for all parameters; of these 5 were for organic compounds

Water Quality Monitoring Conclusions

- All residential houses, businesses and other occupied structures are on the public water system (no potable water wells)
- Human exposure to any detected pollutants has been negligible based on information to date
- No toxic concentrations
- Stream sampling shows no indication of aquatic impacts

Industrial Area Around Gude Landfill

- Many industrial and commercial activities
  - Ready-mix concrete plants, asphalt plant, salvage yard, automotive repair shops, and impervious surfaces
- DEP and MDE have received complaints and actively pursued enforcement cases for many years in this area
- Sediment and pH (recorded at pH 12) are constant problems
- Stream water quality and habitat are “poor” in Southlawn Branch and its tributaries

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Dean Dozier, GLCC

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State Of Maryland

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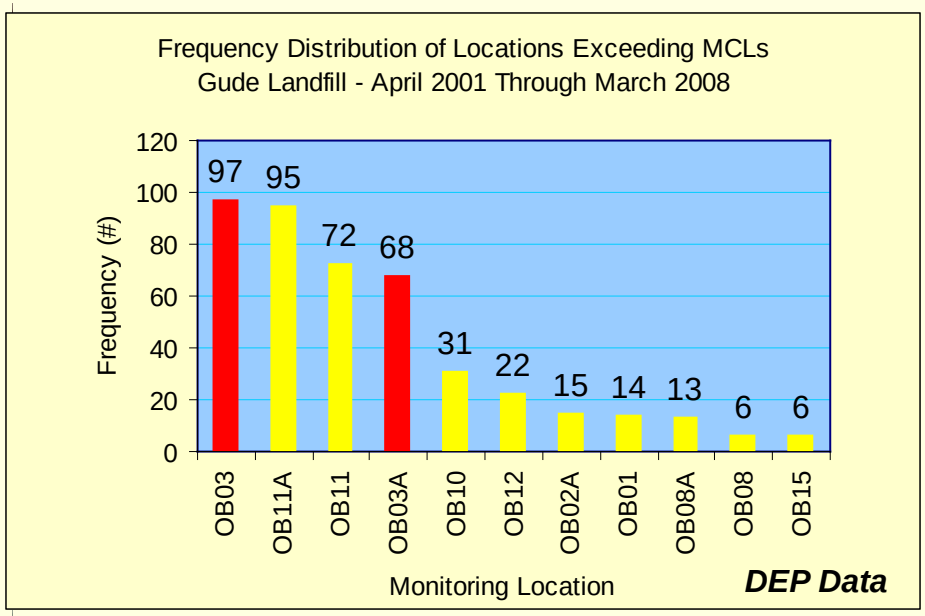
Groundwater Contamination



- **Well OB-3/3A closest to Derwood houses**
- **OB-3 had 97 above EPA Drinking Water limits**
- **OB-3A had 68 above EPA Drinking Water Limits**
- **Observed chemicals are contaminants in EPA's Clean Water Act and on Hazardous Waste List**

Chemicals Found in Samples

Trichloroethane	Dichloropropane
Dichloroethane	Cyanide
Vinyl Chloride	Mercury
Benzene	Lead
Tetrachloroethene	Chromium
Chlorobenzene	Arsenic
Toluene	

DEP Data

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Remediation Approach

Phase 0.
- **Aerial Survey**
- **Field Survey**
- **Waste Delineation**

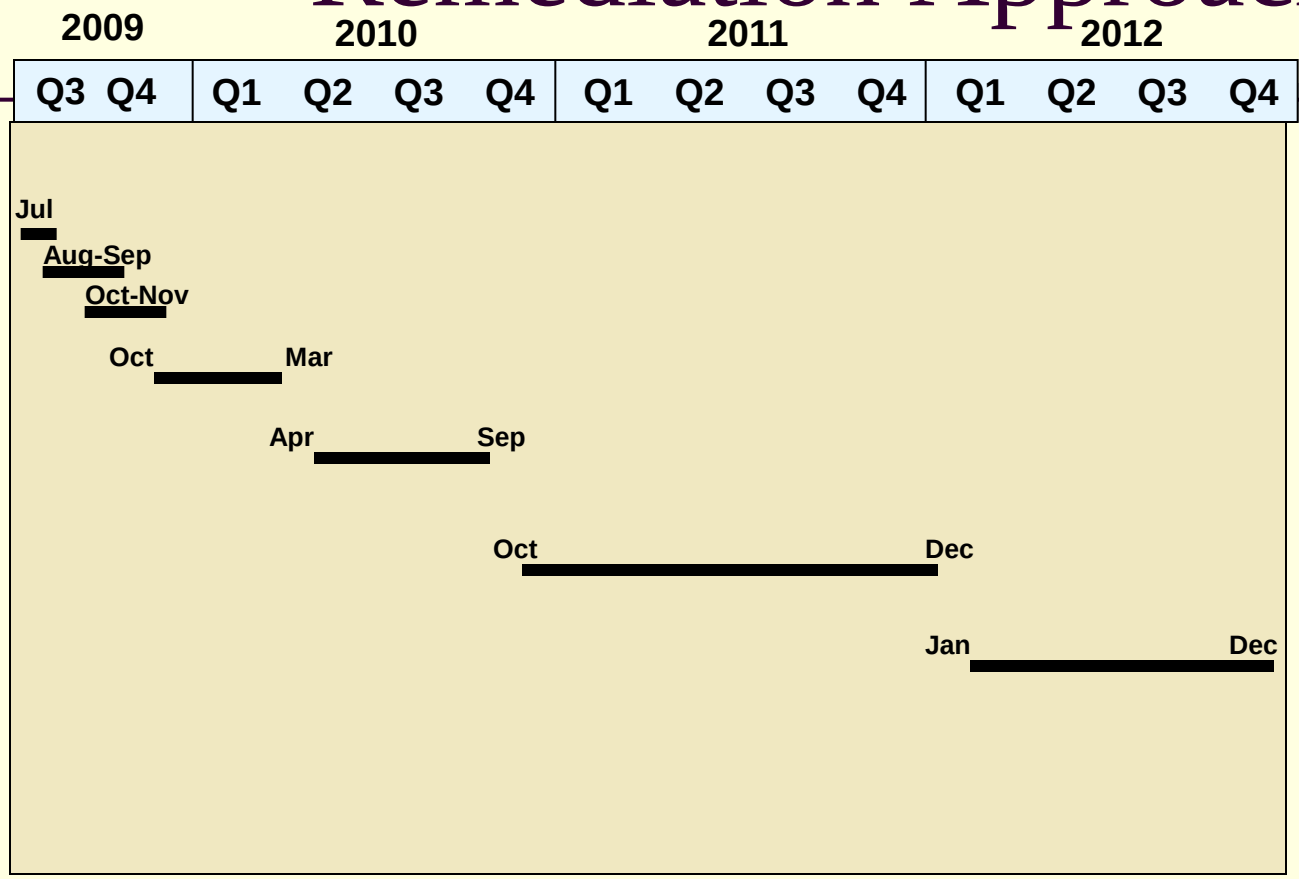
I. Nature and Extent

II Remediation Alternatives

III Prepare Bid Docs for Alternatives

IV Remediation Phase I

V Remediation Phase II (future)



John Kumm, EA

Maximum Contaminant Level (MCL) – EPA **Regulatory Standard for Drinking Water Quality**

ization, Risk

ediation

Presented by:
Barb Roeper, P.E., PMP
EA Engineering, Science, and Technology, Inc.

Site Characterization

Historical Search

- Review deed history
- Review historical records
- Review old aerial photographs
- Review old tax and fire insurance maps
- Interview current and former employees
- Compile historical sampling data, if available

Site Walk

- Locate surface hazards
- Look for evidence of impacted areas
- Understand site conditions

Site Investigation Planning

- Data gap identification
- Sample type, location, and depth
- Data types and objectives
- Health and safety requirements

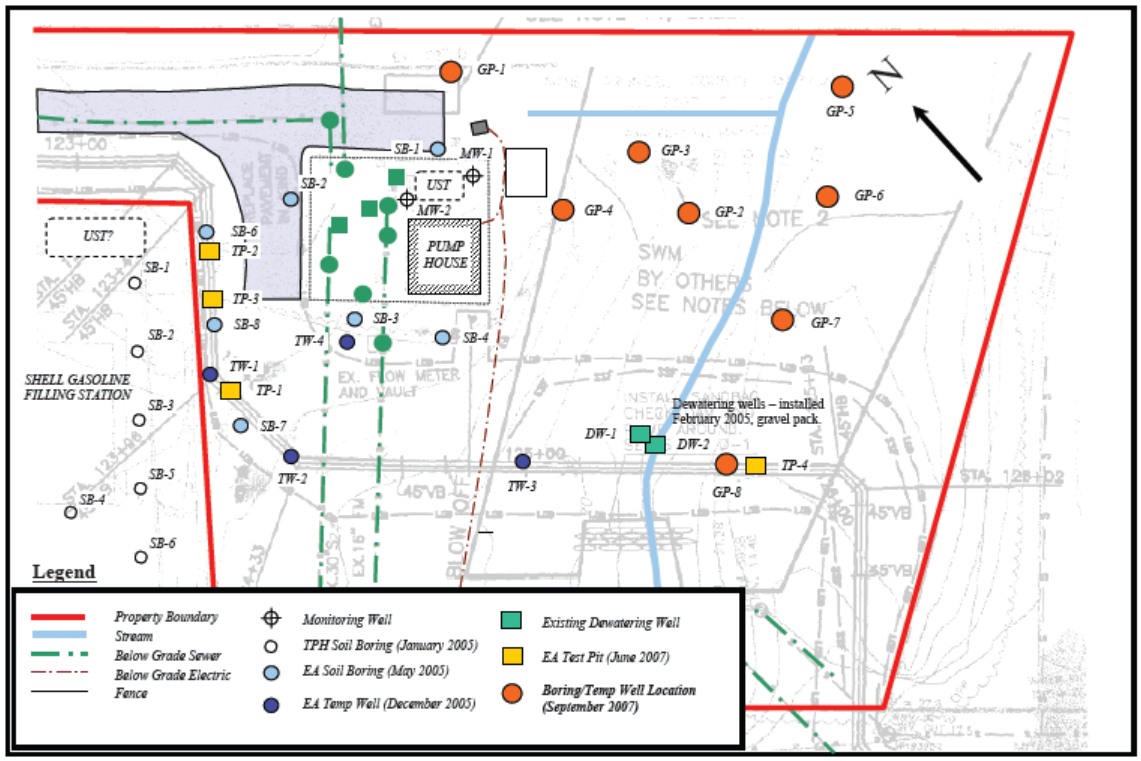


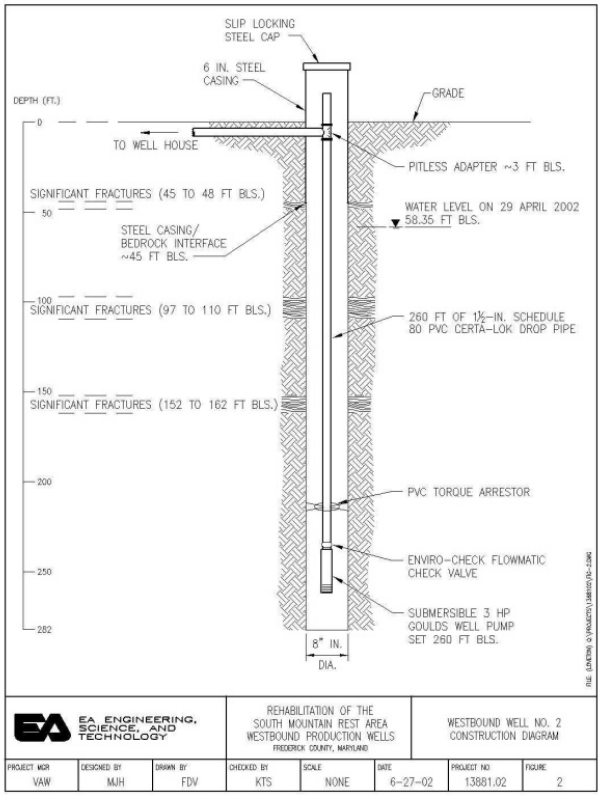
Figure 1
Site Plan and Sampling Locations
Anne Arundel County Pump Station – 7 E. McKinsey Road, Severna Park, MD

Soil Sampling

- Test pits
  - Soil borings
    - Surface Soil
      - Sediment

Install Monitoring Wells

- Determine stratigraphy
- Determine direction and velocity of groundwater flow
- Collect soil samples



Groundwater Sampling

- Collect general groundwater parameters
- Collect samples for chemical analyses
- Determine groundwater levels and the presence of other non-aqueous fluids

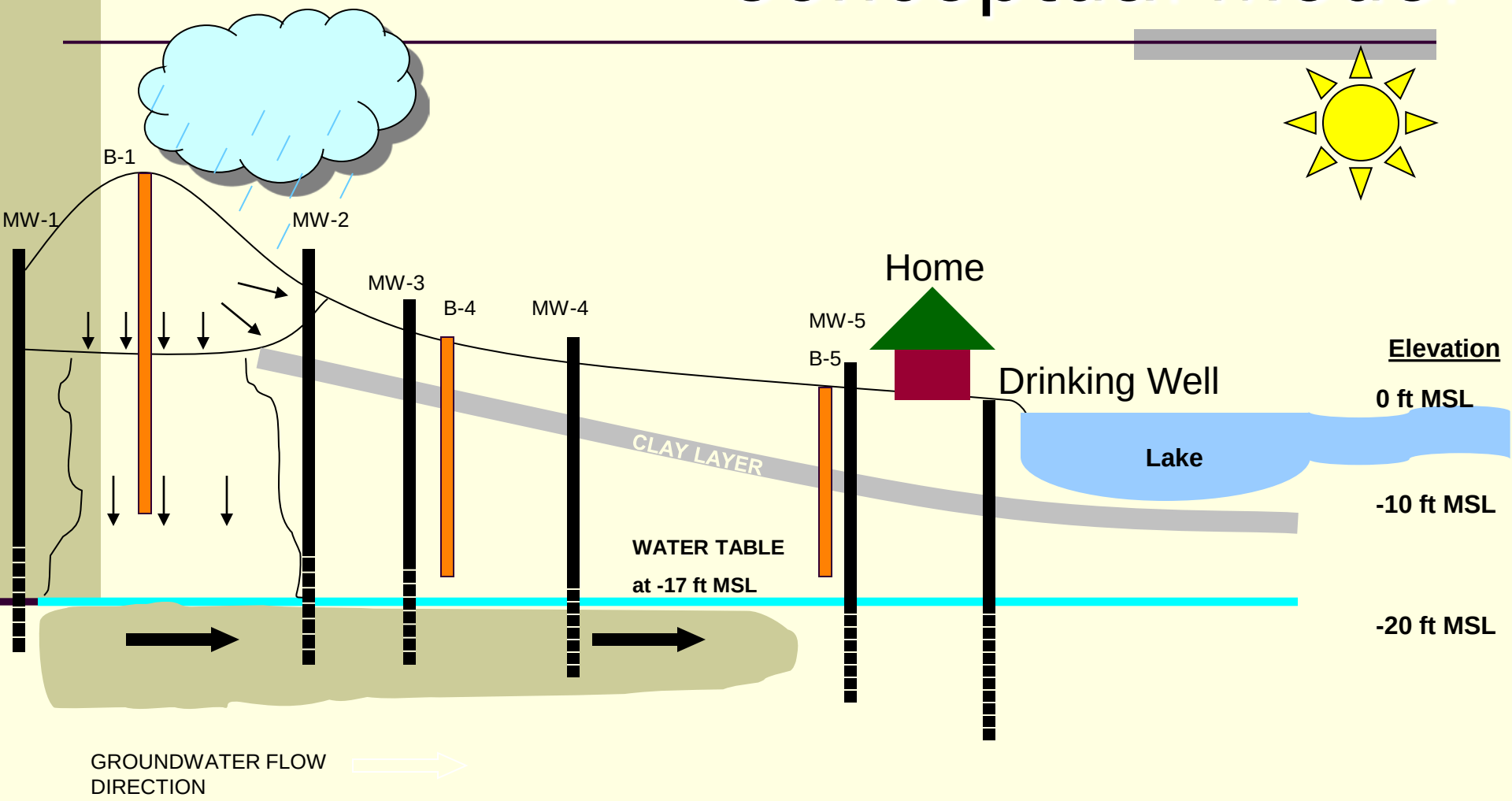
Surface Water Sampling

- Collect water quality parameters
- Collect samples for chemical analyses

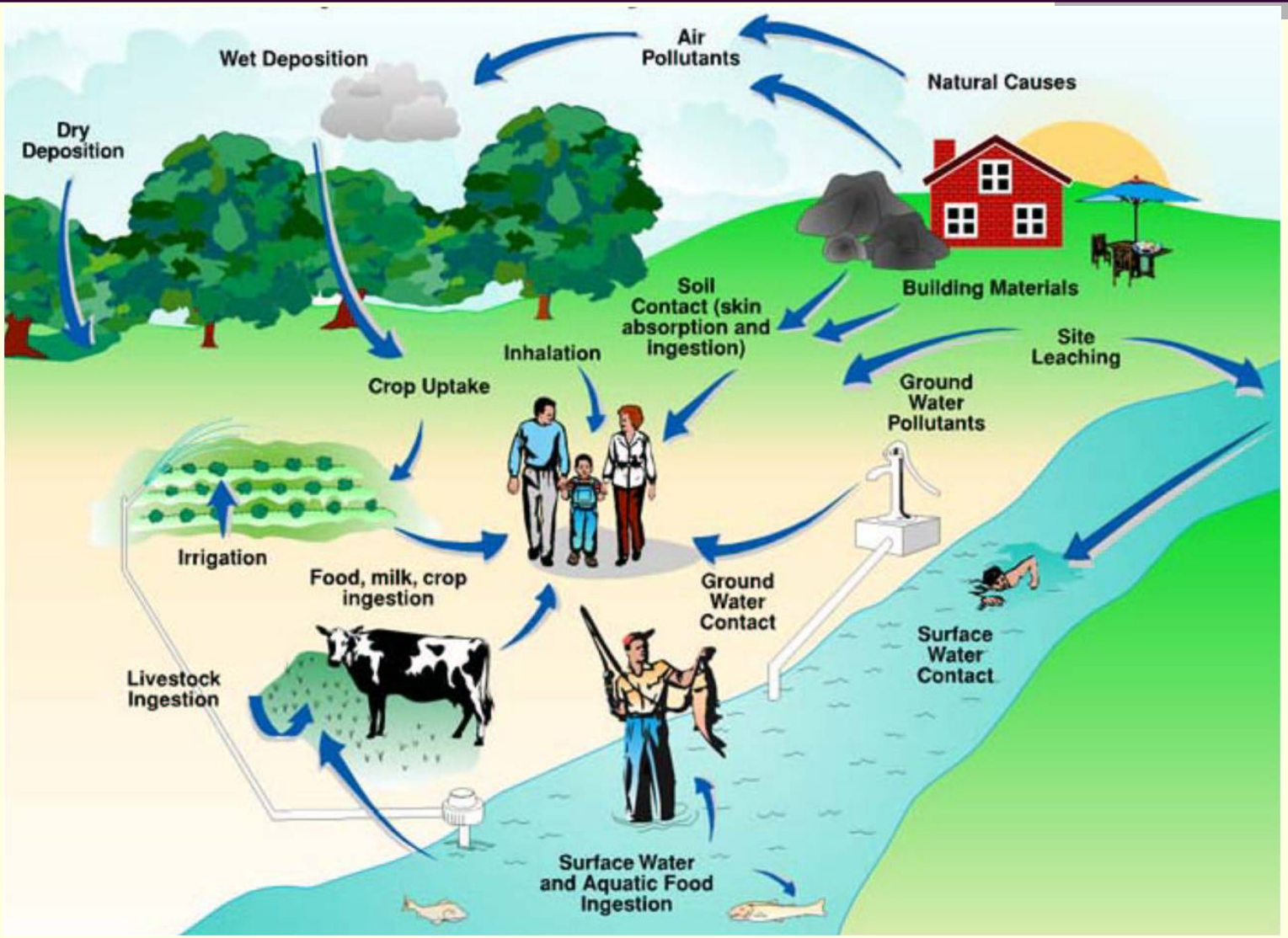
Surveying

- Locations
- Elevations
- Reference to established datum

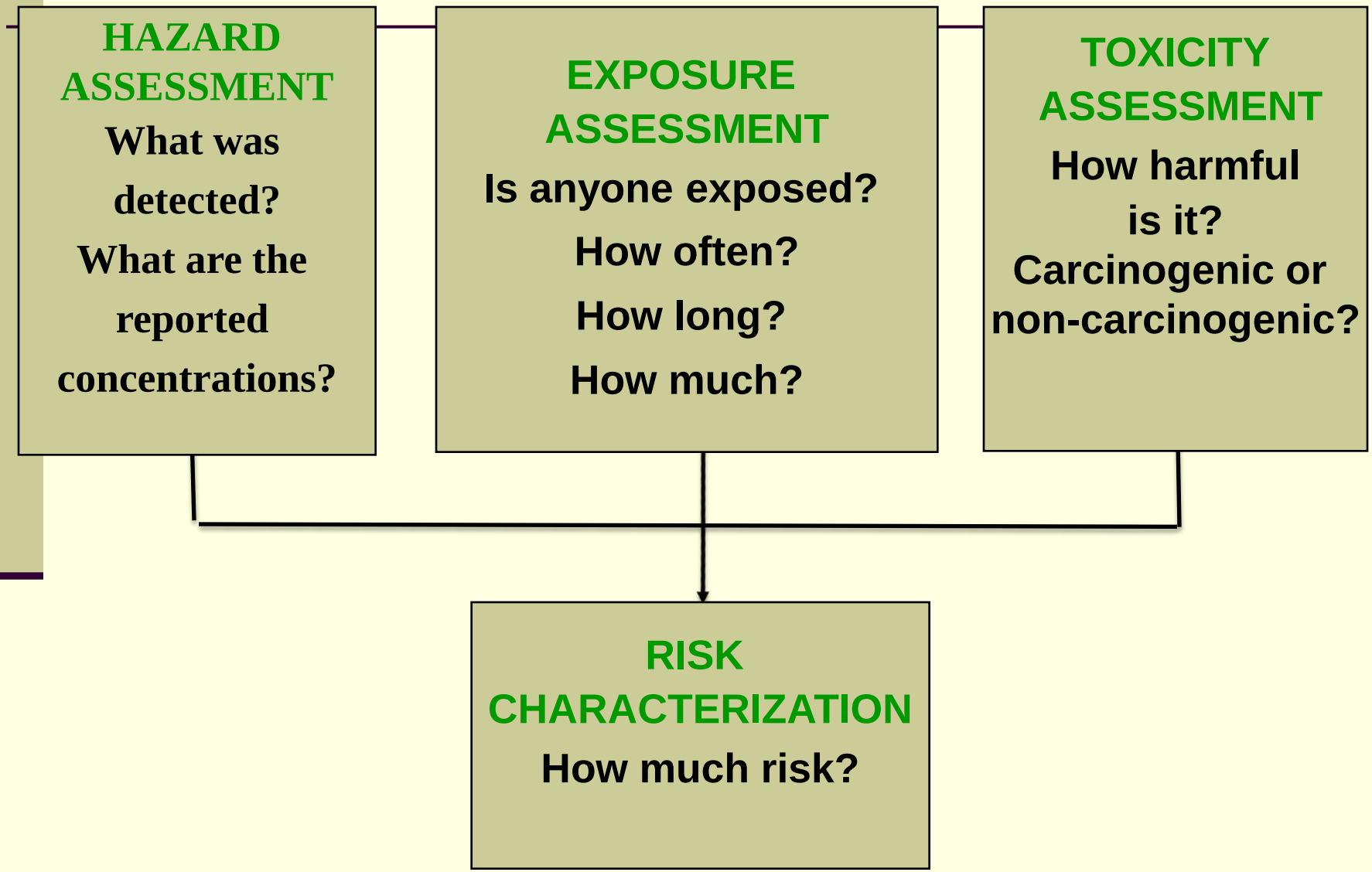
Conceptual Model



Risk Evaluation



Risk Evaluation



Risk Evaluation

- The following must occur to have a complete exposure pathway:
  - chemical release
  - route of exposure
  - potential receptor (current and/or future)
- Incomplete exposure pathways do not result in exposure and are not included in the risk evaluation

Remediation and Restoration

- Investigation and Site Assessment
- Develop remedial action objectives based on nature and extent of impacts, potential risk, and proposed reuse
- Identify feasible alternatives, ranging from no action to full-scale remediation
- Design
- Implementation
- Operation & Maintenance)

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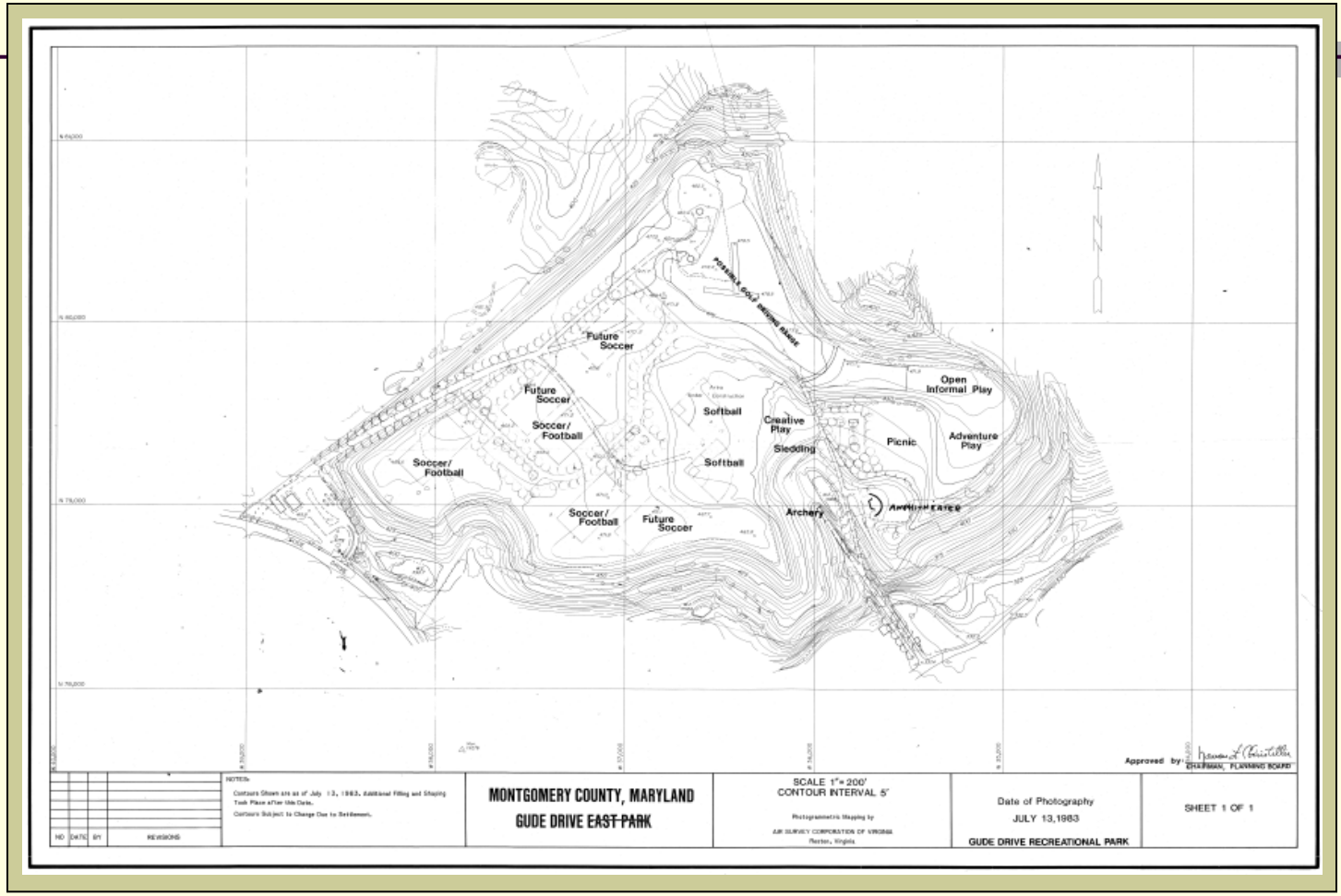
Reuse of Gude Landfill
1983 M-NCPPC Plan



In 1983 the County was planning a park on the Gude Landfill - athletic fields, picnic areas, golf driving range, amphitheater,…

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Reuse of Gude Landfill

Settling Waste

Reuse Categories

None → Heavy Construction

Remediation Efforts

Simple	Complex
Not Expensive	Very Expensive
Months	Years

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Reuse of Gude Landfill

Walking Paths

Community Center

Archery Range

Soccer Fields

Baseball Fields

Dog Park

Toddler Playground

"Water Park"

Xtry Bike Paths

Solar Farm

Picnic Area

Running Trails

Tennis Courts

Kids Play Area

Model Acft

Community Vegetable Gardens

Tree Farm

Help us fill this in

Send your ideas: GLCC@Hollybrooke.org

Closing

- **We need your ideas for re-use**
- **Your ideas are important, and your opinion counts**
- **Tell us what you would like on the Gude Landfill**
- **Contact any one of us – at any time**
- **Remediation will not be a quick process, so be patient**
- **We can make the Landfill into a good neighbor**
- **And limited reuse may be possible**

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