GeoTracker GAMA
Groundwater Information System

Los Angeles Regional Board Meeting
November 10, 2011

John Borkovich, PG
GAMA Program
State Water Resources Control Board
Presentation Overview

- GAMA Background and Status
- Groundwater Information in GeoTracker
- GAMA
GAMA is:

Groundwater Ambient Monitoring and Assessment
GAMA Background

- Legislature’s concern about groundwater quality
- Budget Act of 2000
- Water Code Section 10780
  - Groundwater Quality Monitoring Act of 2001 - (AB 599, Liu)
  - Groundwater Quality Monitoring – (2008. AB 2222, Caballero)
GAMA Program Functions

- Coordinate with water agencies
- Collect new data
- Combine new and existing data
  (water quality, water level, contaminant sources)
- Assess groundwater quality
- Serve information to the public
GAMA Program
Current Projects

- Special Studies
- Priority Basins
- Domestic Wells
- GeoTracker GAMA

Sampling conducted in Voluntary Cooperation with Participants
Status: Priority Basins Project

- First statewide sampling cycle nearly complete
- 2,200 wells sampled
- Dozens of Reports, Fact Sheets published
- USGS Technical Lead, LLNL
Status: Special Studies Project

- Studies on nitrates from dairies, fertilizer, human wastewater
- Wastewater Indicator studies on effect of septic systems on shallow groundwater and areas influenced by recycled water
- Changes in chemistry of groundwater by recharge of surface water
- Innovations in lab analyses: age dating, isotopes, recharge tracers; water mining
- Lawrence Livermore Laboratory technical lead
Status: Domestic Well Project

- 1,100 Wells sampled by Board staff from 2003-11
- Key Results – ElDorado, Yuba, Tehama, Tulare, San Diego Counties
  - Total Coliform: 28% wells tested Positive
  - Nitrate: Average 10% wells tested above MCL
  - Nitrate: 41% Tulare County wells tested above MCL
  - Radionuclides: 33% San Diego above MCL
- Monterey County sampling completed 2011
GeoTracker GAMA: 
*Groundwater Information System*

- Fulfills AB599 intent: Central data system
- Shares data from CDPH, USGS, LLNL, DWR, DPR, State and Regional Water Boards
- Water quality, PLUS water levels, contaminant sources, groundwater publications
- Groundwater quality data collected with State funds must comply with AB 599 - but electronic submittal not specified (AB 1747)

*System is capable of expanding more*
Groundwater Quality Information
Access system through GAMA Homepage

Shared datasets listed here
Welcome to GeoTracker GAMA

GeoTracker GAMA (Groundwater Ambient Monitoring and Assessment) is an online database using Google Maps that:

- Makes searchable a number of groundwater quality databases
- Provides links to other groundwater quality data
- Provides links to other information about groundwater basics and groundwater protection

**Access all Data in System by County**

**Easy access to Groundwater and Surface Water Related databases**

Enter your address, zip to start query
Access to Groundwater and Surface Water Related databases
Access all Data in System by County - Over 100M results
File so large need to export to text Delimited format
Over 200K Wells in GeoTracker GAMA system
Several Features are available to the user
Chose a unique GIS to narrow your results.
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Concentrations over Time

Nitrate As NO3 Results for 3400121-002

- Nitrate As NO3
- Comparison Concentration

Sample Date:
- 4/20/2009
- 9/7/2009
- 11/15/2009
- 2/23/2009
- 6/3/2009
- 9/1/2009
- 12/2/2009
- 3/1/2010

Result (MG/L):
- 50
- 45
- 40
- 35
- 30
- 25
- 20
- 15
- 10
- 5
- 0
Other Groundwater Information
Allows access to Pertinent Tech reports and Well Logs
Shows Well Logs for over 130 K Monitoring Wells
Water Levels for 130K MWs
Shows Relative Water Elevations for Quarter chosen
Shows Relative Water Level Changes over Given Time
Click on a Well and get its Hydrograph (water level history)
Uses of GeoTracker GAMA
Hydrogeologically Vulnerable Areas and GAMA Priority Basins

Nitrate above MCL in Public Supply Wells
Hydrogeologically Vulnerable Areas and GAMA Priority Basins

Nitrate above MCL in Shallow Wells
Summary

- Legislature wanted groundwater quality data in GeoTracker GAMA
- GT GAMA - robust information system
  - Ability to integrate multiple disparate datasets – 100M analytical results
  - Also has “non” water quality functionality
    - Well logs, water levels
- Co-locating other groundwater data on Google maps interface of GeoTracker GAMA in the near future.
John Borkovich
GAMA Program Manager

www.waterboards.ca.gov/gama