

Protecting Environmental Health During a Pike Eradication Project

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Lake Davis Treatment Background

- **In 1997 DFG Poisoned Lake Davis to Eradicate Northern Pike**
- **Northern Pike are a non-native, invasive and highly predatory fish**
- **Lake Davis is the drinking water source for the City of Portola and is surrounded by private lots and numerous groundwater wells**





Lake Davis Treatment History

- In 1997, rotenone had never been used in drinking water reservoir on this scale
- The rotenone formulation also contained volatile organics, Prop 65 listed chemicals, synergists and other “inert” ingredients in the formulation. This info was not shared with the public before the treatment
- DFG down played and largely ignored community concerns and proceeded with the project









1997 Treatment Missteps

- **Minimal EH involvement**
- **DFG inadequate communication with public**
- **Chemical residuals lasted for months not weeks as the “experts” predicted**
- **The public was outraged to learn that possible carcinogens were added to their drinking water supply**
- **Negative publicity destroyed tourism, the local economy and tore apart the local rural community**



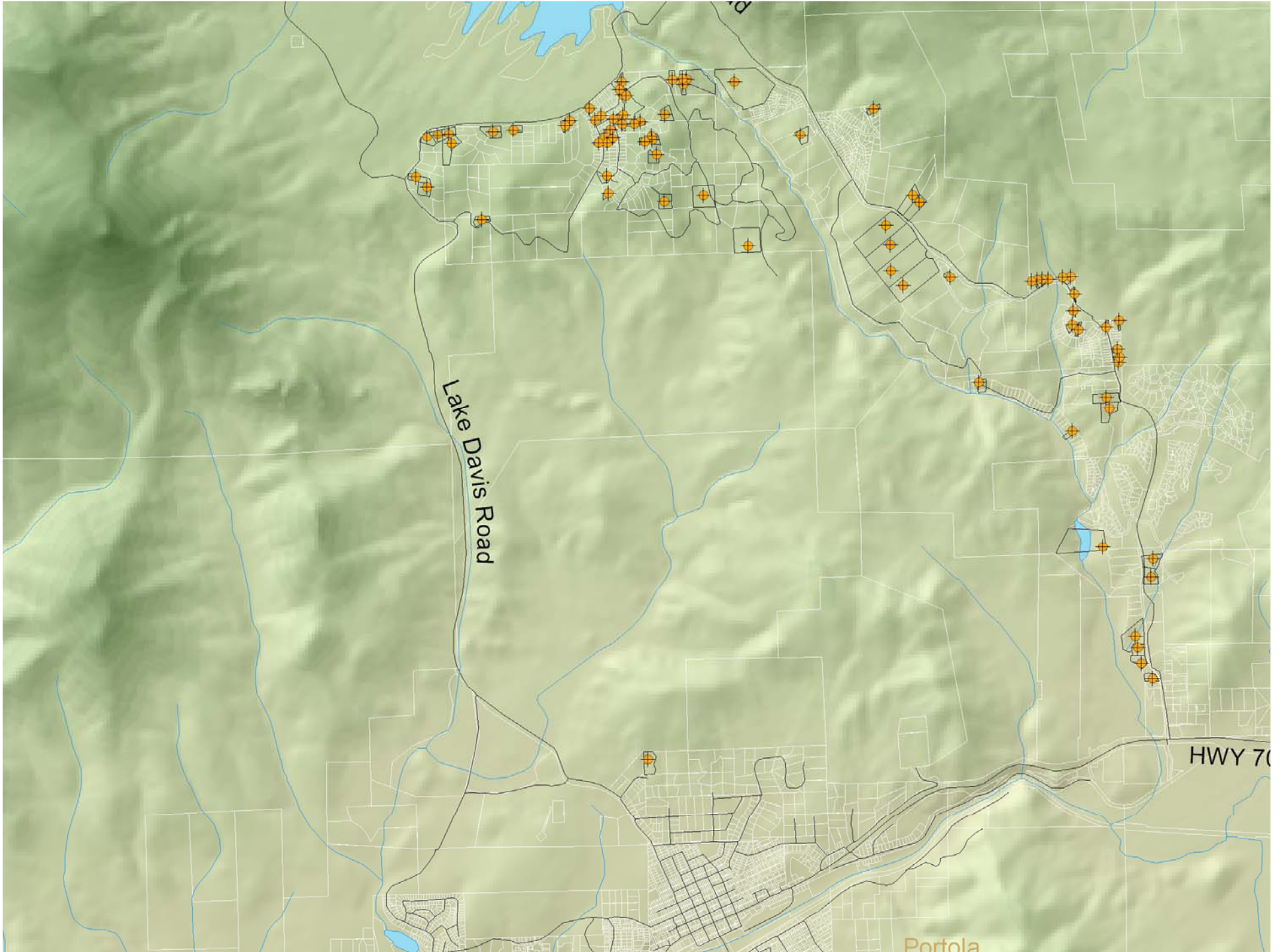




1997 Lake Davis Settlement

- In 1998 special legislation settled lawsuits over \$9,000,000 with local residents, the City of Portola and Plumas County
- Part of the settlement included long-term groundwater monitoring as well as a new surface water treatment plant
- Environmental Health coordinated water quality sampling with approximately 80 property owners annually for 10 years
- Sampling and analysis of over 50% of wells in the vicinity
- Total cost of the 10 year program: \$800,000





Problems with 1997 GW Monitoring Project

- **EH could not justify why some wells were included but others were not (based on settled litigation)**
- **No consideration was given to well construction, location, sanitary survey conditions or other EH criteria**
- **EH found many detections not associated with Lake Davis treatment chemicals**
- **Although funded by DFG, the program was very expensive**



In 1999, pike were rediscovered in Lake Davis

An outraged public, 10
years and \$800,000
later, perhaps there's
a better way to
ensure groundwater
protection



EH Works Closely with DFG on 2008 Lake Davis Project

EH Goals in the project

- Restore public trust—attend lots of meetings (and listen)!**
- Ensure groundwater/public health protection**
- Minimize costs/maximize return on investment**
- Science-based not politically driven**

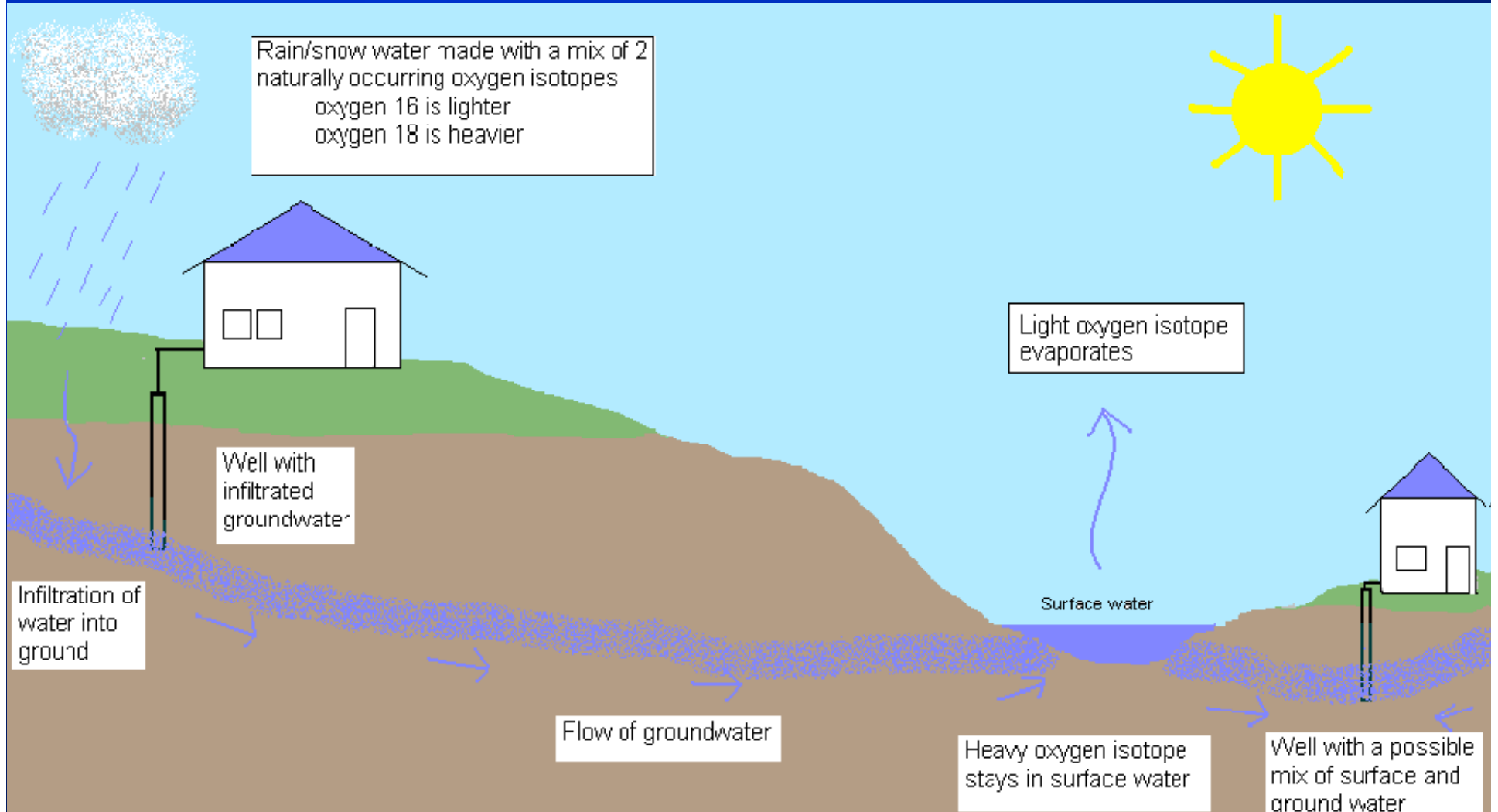


2007 Isotopic Analysis

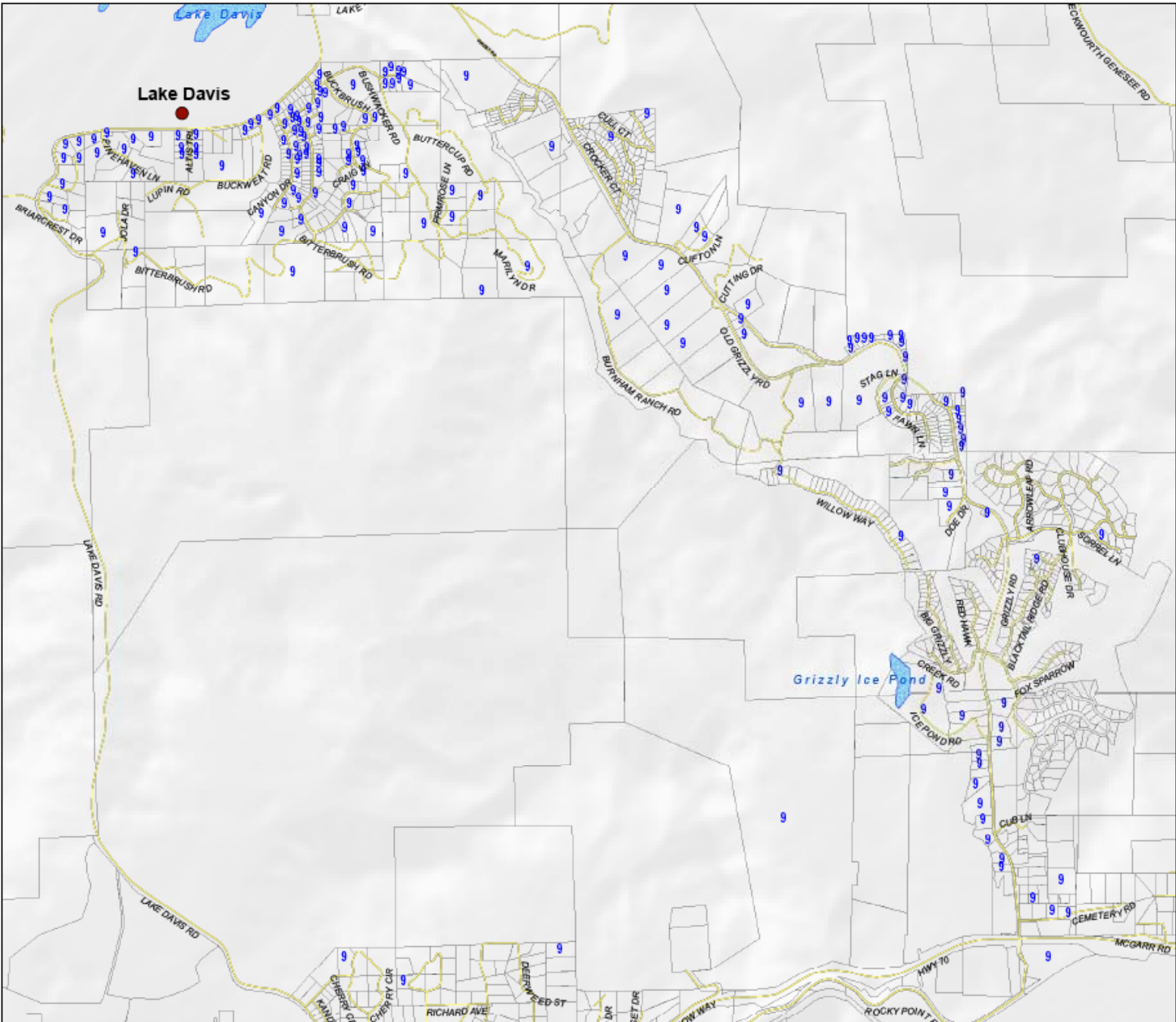
- **EH consultation with Lawrence Livermore National Laboratories**
- **Identified isotopic fingerprint of surface water (Lake Davis, its tributaries, and Grizzly Creek)**
- **Offered testing to all well owners (now over 200 wells in this vicinity)**
- **Compared well isotopic signatures with surface water**



Lake Davis Isotope Signatures



LAKE DAVIS ISOTOPE SAMPLING




Legend

- 9 Lake Davis Well Sample
- Plumas County Roads
- Plumas County Lakes
- Parcels
- Plumas County Comm

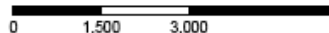


Vicinity Map
Not to Scale

K



PLUMAS COUNTY
CALIFORNIA
1854

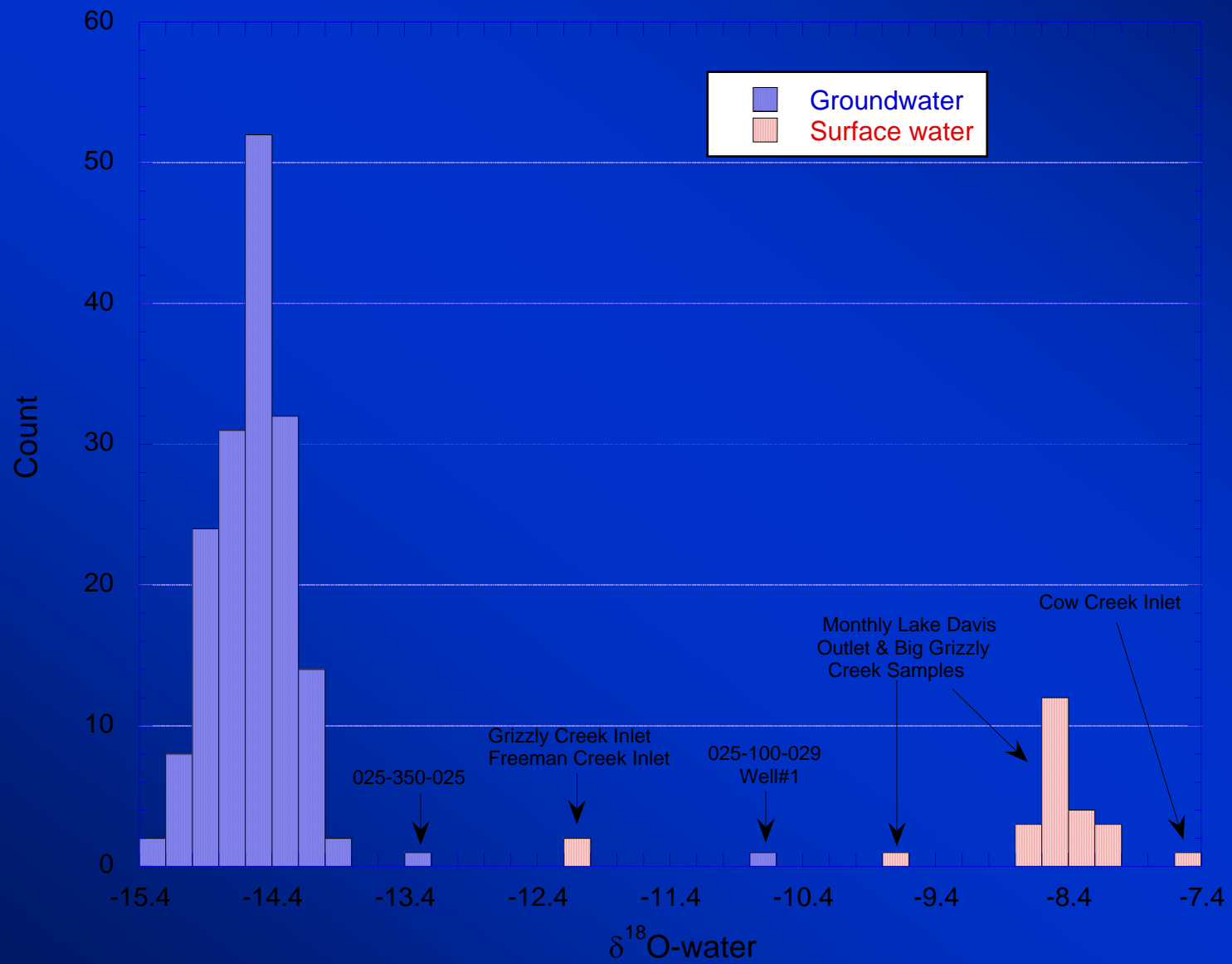


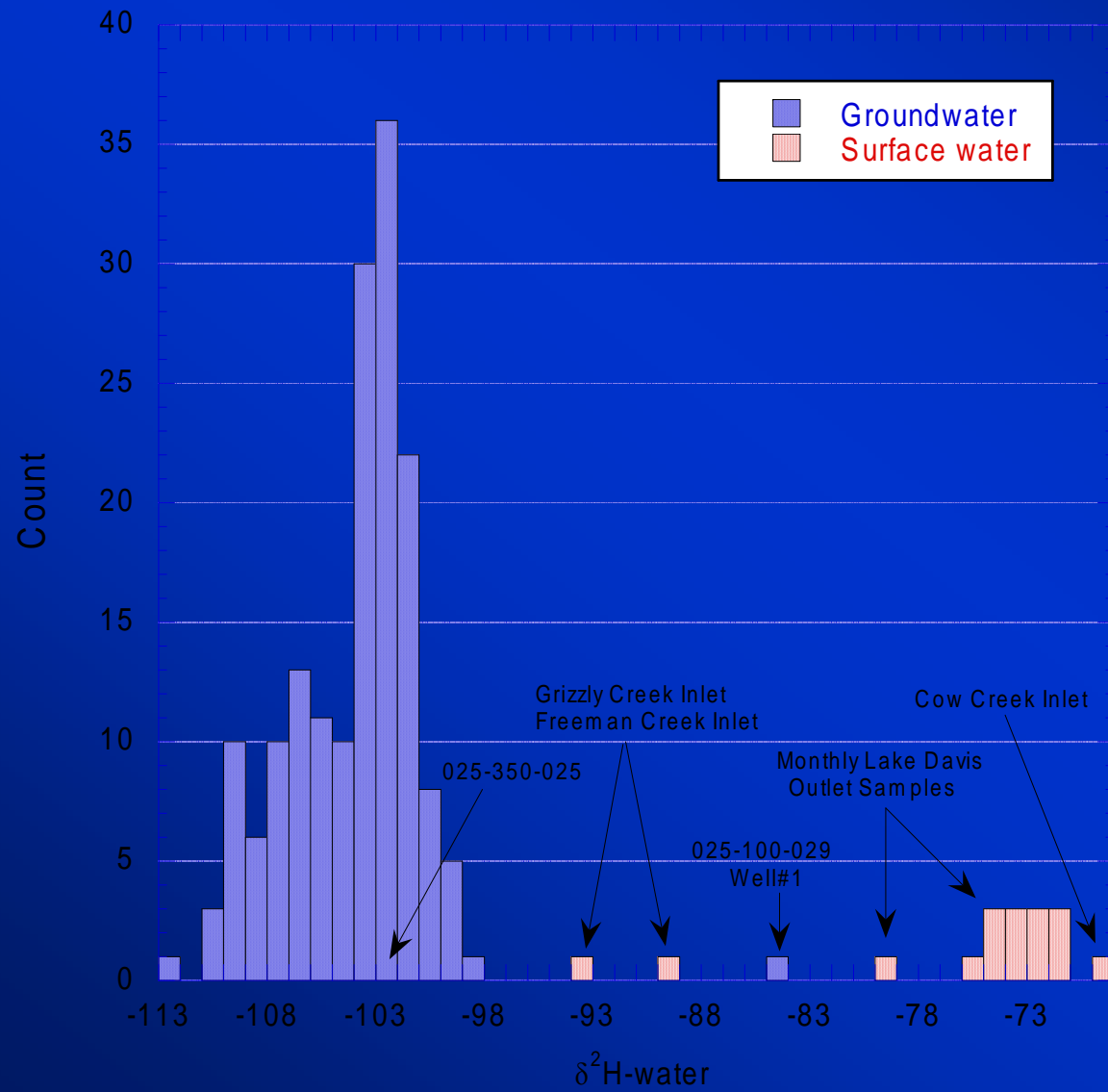
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Date Created: 7/26/2007
Created by: Plumas Co. Planning & Building Services
Printer: HP 5500 Plotter







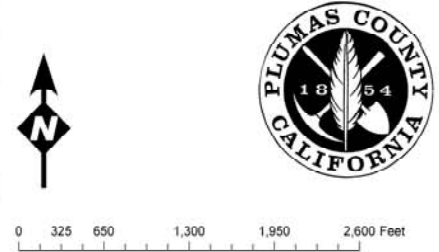
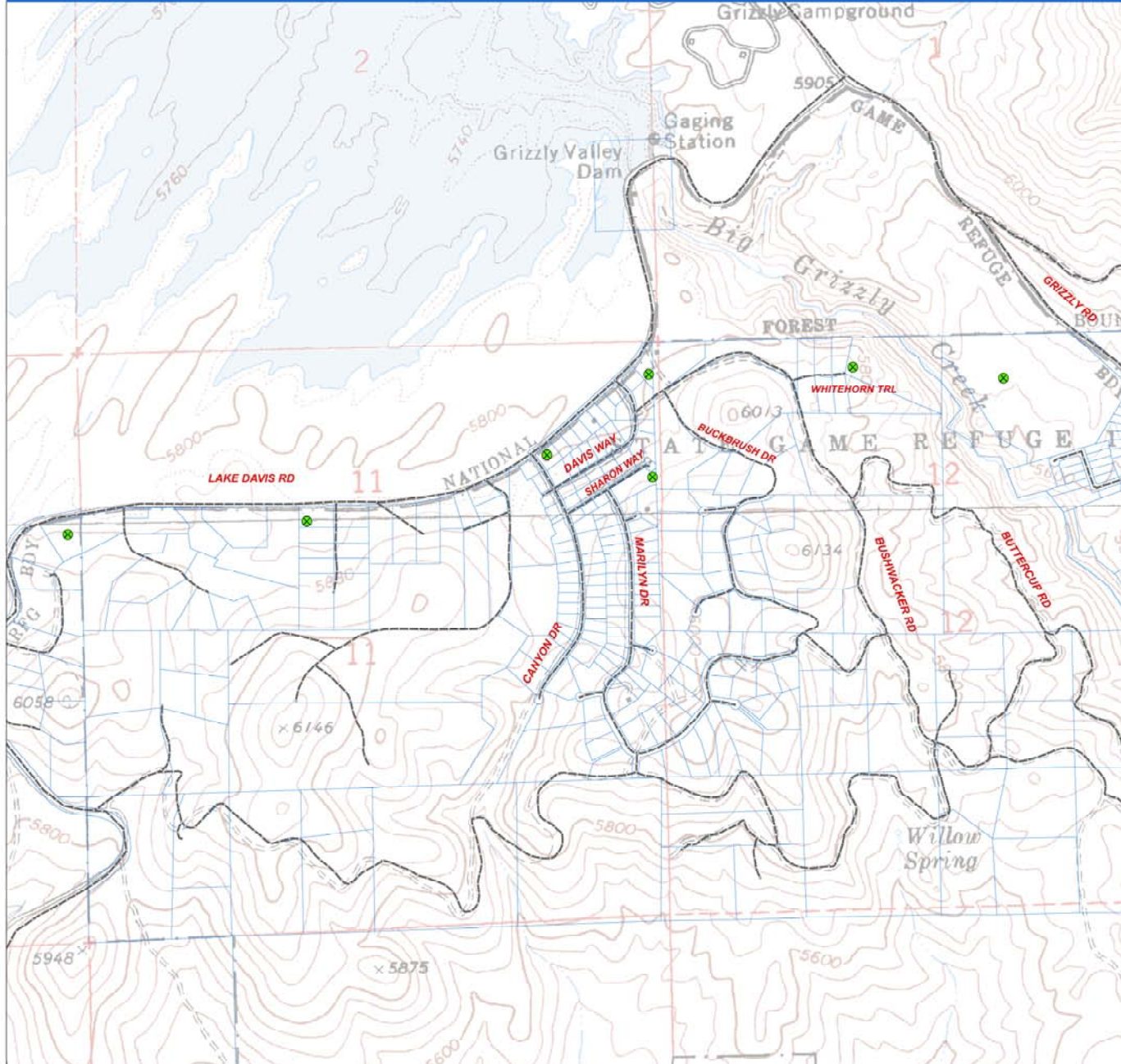


2007 Isotope Study Results

- **EH provided consultation to property owners on well maintenance and disinfection practices, cross connection control, and other sanitary practices**
- **LLNL identified 7 wells for long-term monitoring**
- **Cost of 10 year monitoring was reduced to \$170,000 (\$800,000 in 1997)**



Lake Davis Vicinity 2007 Well Sampling Sites



Source File: 2007_Final_Sampling_Sites.mxd
Date Created: 7/26/2007 Date Updated: 6/3/2008
Created by: Plumas Co. Planning & Building Services
Projection: NAD 1983 State Plane California



Legend

- Final 2007 Sampling Sites
- Roads and Streets
- Parcel Boundaries

Conclusions

- **Environmental Health Services Save Money**
- **Environmental Health Services Add Value**
- **There is Great Value in Local Environmental Health Services**
- **Isotopic Analysis is an Effective Tool to Evaluate Surface-Groundwater Relationships**



