

### ***About PHOENIX***

The Department of Energy has partnered with the Pacific Northwest National Laboratory on PHOENIX, a family of spatially enabled web applications providing quick access to decades of valuable scientific data and insight through intuitive query, visualization, and analysis tools.

PNNL-Hanford Online ENvironmental Information eXchange provides a single access point to multiple data sets via standard web browsers. PHOENIX also provides data visualization tools and provides explanations of key data sets to aid understanding. PHOENIX applications are based on the innovative technology applied by the Pacific Northwest National Laboratory (PNNL) to access and visualize other environmental data sets at the Hanford Site.

By integrating previously isolated datasets and developing relevant visualization and analysis tools, PHOENIX applications are enabling DOE to discover new correlations hidden in legacy data, allowing them to more effectively address complex issues at Hanford.

### ***What Can I Find in the Quick Start Guide?***

- A brief overview of each PHOENIX application
  - How each application can be used
  - What data is available in each application
- An overview of the PHOENIX landing page and information on how to navigate tabs and menus
- A guide to setting up a user profile and executing queries using the Profile Management System

### ***Questions, Comments, Concerns, Feedback?***

Contact the PHOENIX team: [PHOENIX@pnnl.gov](mailto:PHOENIX@pnnl.gov)

## Overview of PHOENIX Applications

The following tables present all available PHOENIX applications and highlight:

- How each application is used
- What data is available through each application
- How applications can be accessed from within one another to form workflows
- What additional features are available within the application (e.g., tablet friendly, GPS enabled)

Application	Use	Data Available	Access to Other PHOENIX Applications?	Features
PHOENIX Classic: Groundwater Edition	Multi-purpose tool to query HEIS and browse GIS layers	GIS layers, groundwater data, soil data, hydraulic head data	No	Stand-alone application; Adobe Flash Plug-In required – Not optimized for mobile devices
GIS Explorer	Browse GIS layers and identify features	GIS layers	Well Dashboard, Well Comparison Explorer, Well Contaminant Explorer, Tank Farms Dashboard	Tablet friendly
Quick Look-Up	Search for wells and other features on-site	Entry point to other applications to access well data	Well Dashboard, Well Comparison Explorer, Well Contaminant Explorer	Tablet friendly
Groundwater Well Explorer	Provides one-click access to concentration data over time for COPCs in Hanford site wells and aquifer tubes	GIS layers, groundwater data	No	Tablet friendly

Application	Use	Data Available	Access to Other PHOENIX Applications?	Features
Well Dashboard	View groundwater well attributes and historical contaminant dashboards	Groundwater data, hydraulic head data, well attributes	Well Comparison Explorer, Well Contaminant Explorer	Tablet friendly, integrated with Profile Management System
Well Comparison Explorer	Compare groundwater concentrations for a single contaminant across multiple wells	Groundwater data	Well Dashboard, Well Contaminants Explorer	Tablet friendly, integrated with Profile Management System
Well Contaminants Explorer	Compare groundwater concentrations for any sampled contaminant within a single well	Groundwater data, well attributes	Well Dashboard, Well Comparison Explorer	Tablet friendly, integrated with Profile Management System

Application	Use	Data Available	Access to Other PHOENIX Applications?	Features
PNNL Soil Study	2014 study of lead and arsenic concentrations at orchard sites	Surface soil data	No	Stand-alone application; Tablet friendly
Remediation Systems	Visualize groundwater remediation systems' effects on groundwater contamination at the Hanford Site	Groundwater data, groundwater plume contours	Well Dashboard, Well Comparison Explorer, Well Contaminant Explorer	Tablet friendly, integrated with Profile Management System
Groundwater Plume Animator	View changes in groundwater plumes over time	Groundwater plume contours	No	Stand-alone application; Tablet friendly

Application	Use	Data Available	Access to Other PHOENIX Applications?	Features
Tank Farms Explorer	Browse tank monitoring data from TWINS	Tank monitoring data (e.g., Best Basis Inventory data, waste surface level, in-tank temperature, volume transfer data) and tank attributes, atmospheric monitoring data (e.g., wind speed and direction, barometric pressure), groundwater data and well attributes, geophysical logging data	No	Stand-alone application
Tank Farms Dashboard	Dashboard summarizing tank and tank farm attributes and waste inventories	Information at the tank farm and individual tank level, including basic tank attributes, waste phase distributions, retrieval information, summary statistics about the waste stored in farms, and other monitoring data	Tank Farm Dashboard and Tank Dashboard	Tablet friendly
Waste Tank Summary Report	On-line version of the Monthly Tank summary report (HNF-EP-0182), which is the official inventory for radioactive waste stored in the tank farms	Monthly report summarizing Hanford tank inventories, space utilization, tank vessel integrity, and retrieval progress	Tank Farm Dashboard and Tank Dashboard	Tablet friendly

Application	Use	Data Available	Access to Other PHOENIX Applications?	Features
BBI Explorer	Visualize current and historical Hanford tank farm Best Basis Inventory data	Best Basis Inventory data, waste phase volume data	No	Tablet friendly, integrated with Profile Management System **Internal Use Only
BBI Ranking Dashboard	Rank user-selected tanks based on analyte inventories or waste phase volumes from the latest Best Basis Inventory	Best Basis Inventory data, waste phase volume data	Tank Farm Dashboard and Tank Dashboard	Tablet friendly, integrated with Profile Management System
BBI Waste Phases Dashboard	Graphical representations of the waste phases in the Hanford site tanks	Waste phase volume data	Tank Farm Dashboard and Tank Dashboard	Tablet friendly, integrated with Profile Management System
BBI Analytes Dashboard	Visualize the inventories of chemical and radiological constituents in the Hanford site tanks	Best Basis Inventory data	Tank Farm Dashboard and Tank Dashboard	Tablet friendly, integrated with Profile Management System

## PHOENIX Landing Page

The following page discussed how to navigate the PHOENIX landing page.

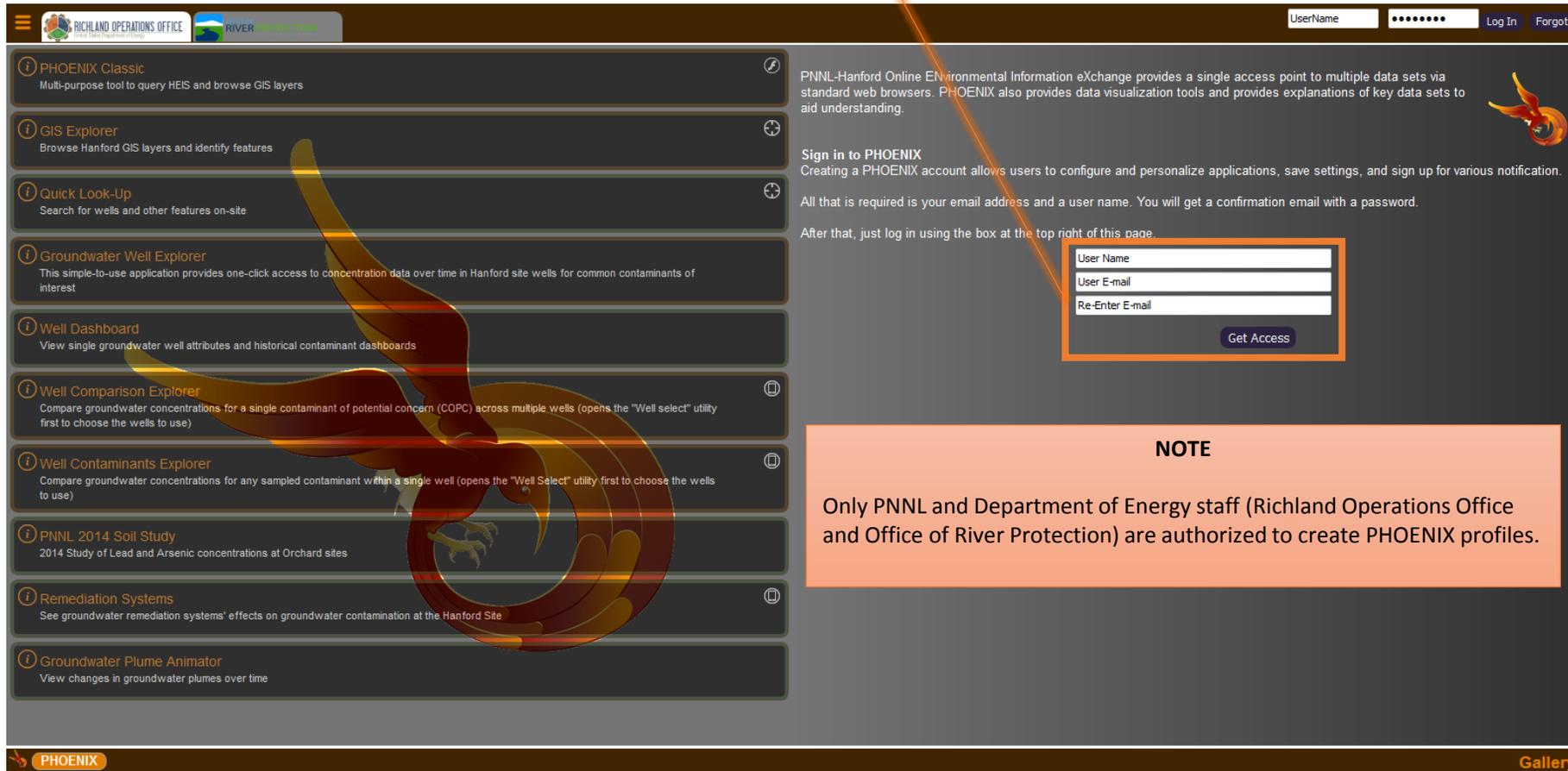


# PHOENIX Profile Management System

The following pages discuss the profile management system, how to setup a user profile, and how to manage saved queries.

### Create a User Profile

- Create a username – one word, no spaces (example – “username”)
- Enter and confirm your email address
- Click “Get Access”
- You will receive an email confirmation with your temporary password



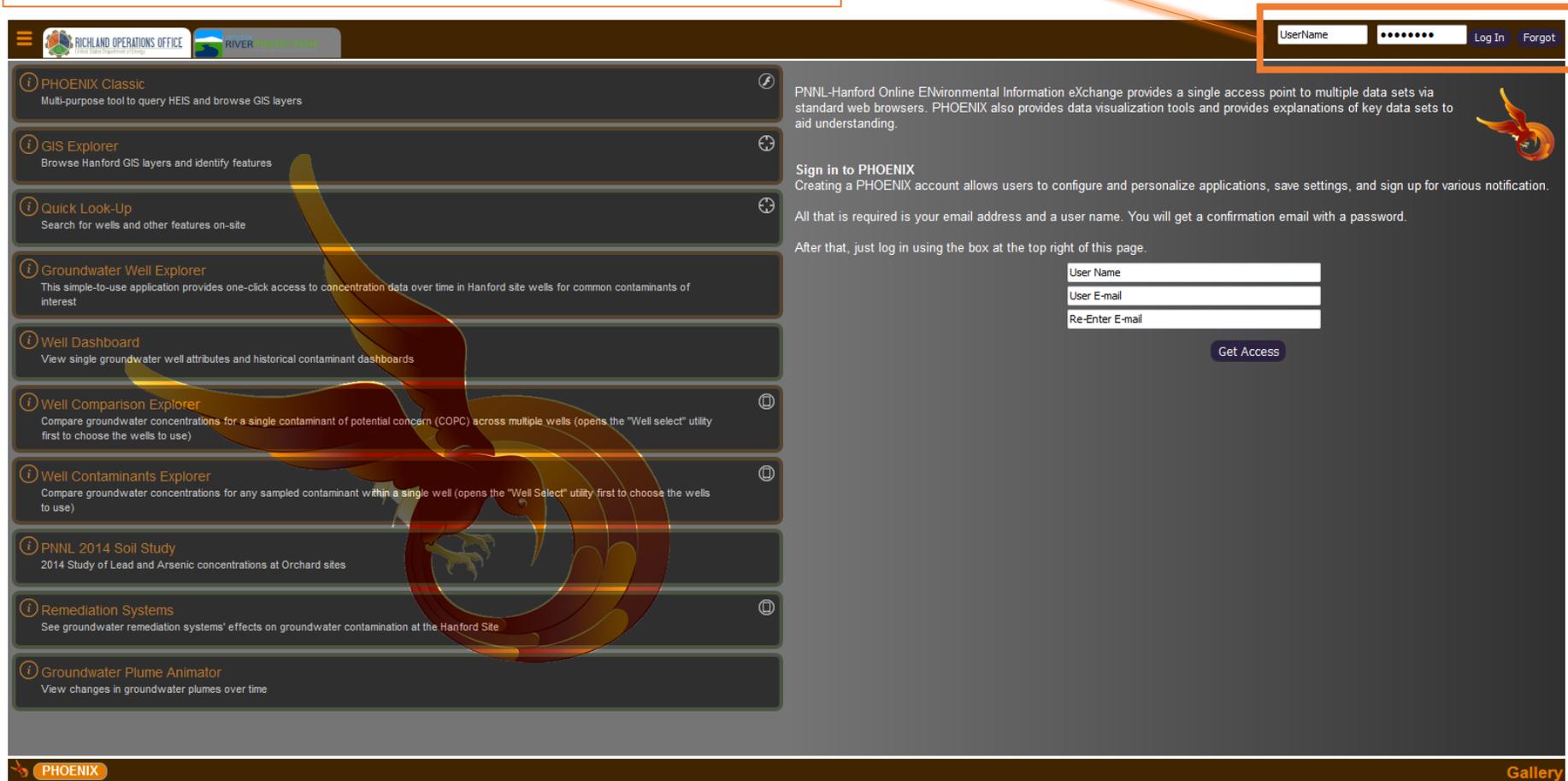
The screenshot displays the PHOENIX Profile Management System interface. At the top, there are logos for the Richland Operations Office and River Protection, along with a search bar and 'Log In' and 'Forgot' links. The main content area is divided into two columns. The left column lists various tools with brief descriptions, such as 'PHOENIX Classic', 'GIS Explorer', 'Quick Look-Up', 'Groundwater Well Explorer', 'Well Dashboard', 'Well Comparison Explorer', 'Well Contaminants Explorer', 'PNNL 2014 Soil Study', 'Remediation Systems', and 'Groundwater Plume Animator'. The right column contains a 'Sign in to PHOENIX' section with a 'Get Access' button. A callout box highlights the 'Get Access' button in the sign-in form.

**NOTE**

Only PNNL and Department of Energy staff (Richland Operations Office and Office of River Protection) are authorized to create PHOENIX profiles.

### Log In to Profile Management System

- Type in your user name and password
- Click “Log In”
- Click “Forgot” if you forgot your password. You will receive an email with a new temporary password.



**PHOENIX Classic**  
Multi-purpose tool to query HEIS and browse GIS layers

**GIS Explorer**  
Browse Hanford GIS layers and identify features

**Quick Look-Up**  
Search for wells and other features on-site

**Groundwater Well Explorer**  
This simple-to-use application provides one-click access to concentration data over time in Hanford site wells for common contaminants of interest

**Well Dashboard**  
View single groundwater well attributes and historical contaminant dashboards

**Well Comparison Explorer**  
Compare groundwater concentrations for a single contaminant of potential concern (COPC) across multiple wells (opens the "Well select" utility first to choose the wells to use)

**Well Contaminants Explorer**  
Compare groundwater concentrations for any sampled contaminant within a single well (opens the "Well Select" utility first to choose the wells to use)

**PNNL 2014 Soil Study**  
2014 Study of Lead and Arsenic concentrations at Orchard sites

**Remediation Systems**  
See groundwater remediation systems' effects on groundwater contamination at the Hanford Site

**Groundwater Plume Animator**  
View changes in groundwater plumes over time

PNNL-Hanford Online ENvironmental Information eXchange provides a single access point to multiple data sets via standard web browsers. PHOENIX also provides data visualization tools and provides explanations of key data sets to aid understanding.

**Sign in to PHOENIX**  
Creating a PHOENIX account allows users to configure and personalize applications, save settings, and sign up for various notification. All that is required is your email address and a user name. You will get a confirmation email with a password. After that, just log in using the box at the top right of this page.

User Name:

User E-mail:

Re-Enter E-mail:

[Get Access](#)

PHOENIX [Gallery](#)

Click on either “Well Queries” or “Tank Queries” to see a list of your saved queries under each category

Click “Change Password” to change your password.

Click “Log Off” to log off of your profile.

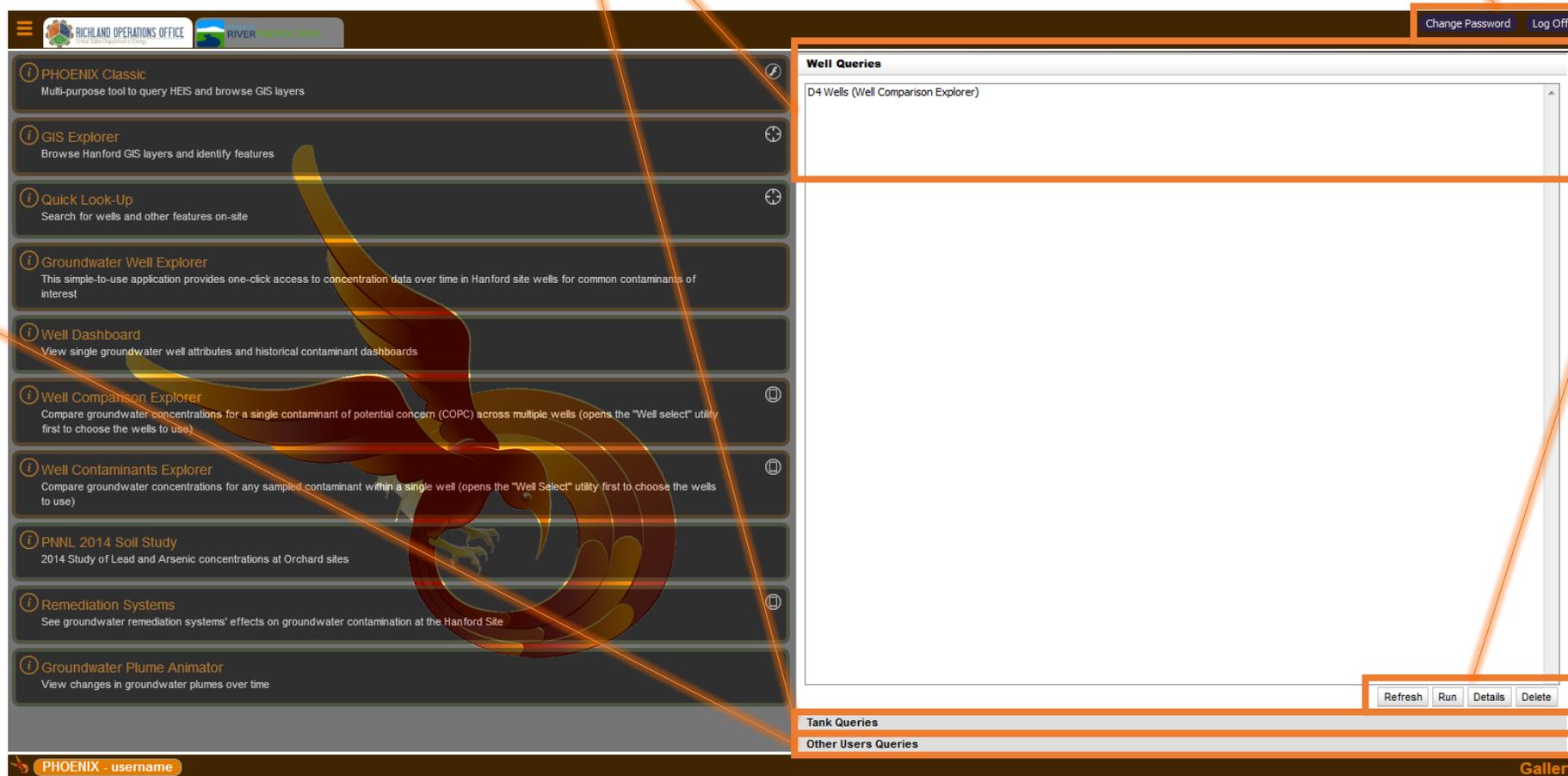
Click “Refresh” to refresh the PHOENIX landing page to refresh your query lists.

Click “Run” to execute the selected query (i.e. send your well or tank/analyte list to the saved application).

Click “Details” to see a pop-up with the details of your query (e.g., application saved in, well list or tank/analyte list).

Click “Delete” to delete the selected query from your list.

Click on “Other Users Queries” to see a list of all other queries saved by other PHOENIX users.



The screenshot shows the PHOENIX web application interface. At the top, there are logos for the Richland Operations Office and River Protection. The main content area is a list of application tiles, each with an information icon and a description. A large, semi-transparent phoenix graphic is overlaid on the tiles. On the right side, a modal window titled "Well Queries" is open, showing a list of saved queries. At the bottom of this modal, there are buttons for "Refresh", "Run", "Details", and "Delete". At the top right of the main interface, there are buttons for "Change Password" and "Log Off". At the bottom left, there is a user profile indicator "PHOENIX - username". At the bottom right, there is a "Gallery" button. Callout boxes with orange borders and arrows point to various elements: one points to the "Well Queries" and "Tank Queries" sections, another points to the "Change Password" and "Log Off" buttons, a third points to the "Refresh" button, a fourth points to the "Run" button, a fifth points to the "Details" button, a sixth points to the "Delete" button, and a seventh points to the "Other Users Queries" section.

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