

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

**MEETING OF JULY 17-18, 2013
BARSTOW, CA**

ITEM: 9

**SUBJECT: STATUS REPORT ON ACTIVITIES CONCERNING
CHROMIUM CONTAMINATION FROM PACIFIC GAS AND
ELECTRIC (PG&E) HINKLEY COMPRESSOR STATION**

CHRONOLOGY: This chronology lists the major Water Board actions since 2008 related to cleanup of chromium in groundwater.

2008-2012 Cleanup and Abatement Order (CAO) No. R6V-2008-0002 directed PG&E to continue interim remedial actions and to develop and implement a comprehensive cleanup strategy for chromium in groundwater. Amendment 1 established background chromium levels for developing and evaluating cleanup strategies. Amendment 2 allowed limited chromium increases to the east to allow operation of remediation systems to control the plume in the northwest direction. Amendment 3 (March 2012) required hydraulic containment of the plume in the vicinity of Thompson Road and was part of a settlement that included supplying water and a water treatment system to the Hinkley School.

2010-2013 PG&E submitted feasibility study for comprehensive cleanup in 2010. Water Board scoped and completed an environmental impact report evaluating impacts of cleanup strategies in the feasibility study.

Jan. 7, 2011 CAO No. R6V-2011-0005 and amendments directed PG&E to provide interim water supply (i.e., bottled water) and permanent replacement water supply to Hinkley residents having chromium in domestic wells within the affected area.

Jan. 6, 2013 Amended CAO No. R6V-2008-0002A4 directed PG&E to implement additional investigations for defining the full extent of chromium in groundwater.

DISCUSSION: Water Board staff, Pacific Gas and Electric Company, and Community Advisory Committee (CAC) representatives will update the Board on matters concerning groundwater investigation, cleanup and supplying replacement water at Hinkley, California. This is a routine standing item for Water Board meetings held in southern California. Enclosures will generally consist of the Water Board's most up to date monthly Status of Actions handout prepared for the CAC meetings and any materials provided by PG&E or the CAC.

PG&E will present information on the following topics:

- remediation activities
- western groundwater investigation
- the whole house replacement water program
- the revised background study.

The Hinkley CAC plans to discuss these topics:

- accomplishments
- goals
- a path forward.

In this month's status update, Water Board staff will discuss the following topics:

- chromium plume containment
- western extension of the chromium plume
- full chromium plume delineation
- whole house replacement water (WHRW) systems
- domestic well sampling program
- Supplemental Environmental Project at the Hinkley School
- the Technical Working Group.

RECOMMENDATION:

This is an information item only. The Water Board may provide direction to staff as appropriate.

ENCLOSURES:

ENCLOSURES	ITEM	BATE NO.
1	Status of Actions for PG&E Hinkley Chromium Contamination June 2013	9-5
2	Slide Presentations from Community Advisory Committee representative and consultant	9-9
3	Presentation by PG&E (provided under separate cover)	9-35

ENCLOSURE 1

This page is intentionally left blank.

Lahontan Regional Water Quality Control Board

Status of Actions For PG&E Hinkley Chromium Contamination June 2013

Enforcement

- 1. Supplemental Environmental Project (SEP):** The ACL settlement adopted by the Board on March 14, 2012 allows PG&E to spend at least \$1.8 million to update the drinking water system at the Hinkley School by the end of 2017. Although the Barstow Unified School District decided to close the Hinkley School this school year, the District has requested the Water Board continue to support completion of the drinking water system since the District may choose to use the Hinkley School in the future. In a May 8, 2013 letter, PG&E reported working with the county to retrofit current freshwater wells located south of the compressor station and to identify a location for a new well to supply water to the school. In second quarter 2013, pre-construction activities will be initiated for the school connection pipeline.
- 2. Cleanup and Abatement Order for Whole House Water (WHW) Supply:** Revised Order (R6V-2011-0005A2) was issued on June 7, 2012. During the spring, the Water Board received complaints that the WHW program is not being extended by PG&E to properties within one mile of small plume circles drawn on maps east of the main chromium plume. PG&E claims its position is to only offer its WHW program based on the one mile limit from the main (contiguous) chromium plume. The Water Board attorney will soon make a decision on the correct interpretation of directives in the CAO.
- 3. Cleanup and Abatement Order for Sampling Domestic Wells:** CAO R6V-2011-0005 and amendments require PG&E to sample domestic wells each quarter (3 months). In a March 6, 2013 letter, PG&E requested to cease quarterly sampling of inactive domestic wells on properties it has since acquired. The Water Board's Assistant Executive Officer signed a June 26, 2013 letter conditionally agreeing with PG&E's request. The exceptions were six domestic wells that did not meet criteria for ceasing quarterly sampling: chromium concentrations were greater than 2.0 ppb and nearby monitoring wells did not show similar concentrations. The letter also allows PG&E to abandon inactive domestic wells that are screened across both aquifers but to leave in place those domestic wells screened in just one aquifer for potential sampling in the future.
- 4. Cleanup and Abatement Order for Plume Definition:** Amended Order (R6V-2008-0002A4) issued on January 8, 2013 requires PG&E to delineate the extent of the chromium plume in groundwater and determine threats to domestic wells. PG&E has petitioned the CAO to the State Water Board. Until the State Board makes a decision, PG&E is obligated to comply with tasks and deadlines in the CAO. PG&E is in the process of obtaining access to properties and installing monitoring wells at 21 new locations. The new wells will be sampled during summer to assess chromium in groundwater. The full plume delineation findings are due by October 30, 2013.

Investigative and Reporting Orders

1. Chromium Plume Boundary

The first quarter 2013 chromium plume map is posted on the Water Board website at: www.waterboards.ca.gov/lahontan, on the "PG&E Hinkley Chromium Cleanup" page, at the bottom of page. The second quarter 2013 plume map is due at the end of July.

Chromium Plume Containment

Pursuant to the April 2012 Settlement Agreement, PG&E submitted the monthly Plume Capture Report on June 14, 2013 assessing chromium capture south of Thompson Road. The Water Board is still evaluating the report.

In the meantime, the Water Board Executive Officer issued a letter to PG&E on June 24, 2013 acknowledging compliance with chromium plume capture requirements south of Thompson Road during the months of February, March and April. The letter states that the Water Board is still evaluating whether hydraulic capture is effective in the vicinity of the freshwater injection wells on Serra Road. PG&E submitted additional information on the effectiveness of the freshwater injection system on June 25, 2013 and Water Board staff are evaluating this information.

2. Community Complaints of Manganese in Domestic Wells

The Water Board has forwarded manganese and other metal results of domestic well sampling collected during spring to Project Navigator who has compiled the information for the CAC.

3. Manganese Plume Investigation & Cleanup - Investigative Order (R6V-2012-0060)

PG&E has begun installing new monitoring wells around the In-situ Remediation Zone (IRZ), pursuant to a Water Board order. These new wells along with older wells will be sampled to evaluate manganese in groundwater. PG&E will also conduct two tracer tests this summer to track the path of groundwater flow from the IRZ areas. Initial results of the investigation will be reported by November 2013.

4. Whole House Water System - Investigative Order (R6V-2013-0001) – WHW systems are in operation at six residences. Water samples collected from the ion exchange and the reverse osmosis systems at the new locations were all of good quality--no exceedance for chromium or other metals. More residences are planned to have systems operating by end of June.**Status of Environmental Impact Report and Actions for Comprehensive Cleanup**

May 15, 2013: Final EIR is released. The Final EIR contains two volumes; Volume 1 is the responses to comments, and Volume 2 is the revised Draft EIR, showing all changes made in response to comments.

June 6, 2013: Water Board staff hosted public information meeting at Hinkley School from 6 to 8 pm. Key revisions to the Draft EIR, and future opportunities to provide comments on upcoming cleanup requirements were discussed.

July 17, 2013: Water Board meeting in Barstow to consider certifying Final EIR and providing direction concerning a General Permit for remediation activities.

Late Summer 2013: Water Board staff will develop draft site-wide General Permit and a new Cleanup and Abatement Order for comprehensive cleanup of chromium in groundwater, based on the alternatives and analysis in the final EIR. The draft Permit and Cleanup Order will be circulated for public review and comment. A public information meeting to discuss the draft documents will be held in September.

October 9, 2013: Water Board workshop to review draft WDRs and CAO.

Status of Revised Chromium Background Study

Water Board staff, members of the CAC and its IRP, PG&E and its consultants, and Dr. John Izbicki of the US Geological Survey (USGS) continue to meet monthly to develop a revised chromium background study plan. Dr. Izbicki provided recommendations on data collection and analyses. The contract for Dr. Izbicki's services to develop the revised study plan was given final approval by the State Water Board on June 5, 2013.

ENCLOSURE 2

This page is intentionally left blank.

PG&E's Chromium-6 Plume and the Hinkley Community

Hinkley Community Advisory Committee (CAC)
Notes Delivered by Lester White, CAC Chair
At
State Water Board Meeting, Barstow, CA
July 17, 2013



Notes from the Chairman

- Accomplishments
- Goals
- Path Forward



The CAC

Working to Represent Our Community

- Worked to Ensure the CAC is an Independent Body Delivering Value-Added Perspectives
- Meets Weekly with the IRP Manager
 - Project Navigator, Ltd.
- Monthly Community Meetings
- Independent, Neutral Facilitator, On Board:
 - Center for Collaborative Policy, California State University, Sacramento (CCP)
- Web Site Operational
 - www.HinkleyGroundwater.com





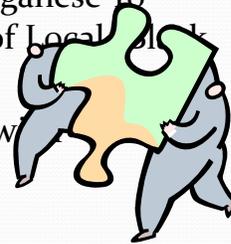
CAC Accomplishments

- Push for Improved Plume Definition in the North, East and West
- Commented on the Draft EIR
- Help Community Members Better Understand Plume Migration
- Continuance of the SEP Program at School
 - Despite closure of the Hinkley School
- CAC's Own Inspection of Domestic Wells
 - CAC helped with *pro bono* inspection and testing



CAC Accomplishments cont'd

- Advocated for Experts to Help Us Understand Critical Issues
 - Toxicologist to Explain the Health Effects of Cr-6
 - Dr. John Izbicki, USGS to Assist in Cr6 Background Study
- Pushed For Expanded Sampling Of Manganese To Better Understand Source and Impacts of Local Water”
- Set Up Technical Exchange Meetings w LRWQCB, USGS, PG&E, and IRP



Our Goals

- Improved plume definition
 - USGS long-term, independent participation in the Background Study
 - Ensure that the “IRZ” is not “leaking byproducts” such as Manganese
 - Make sure and feel reassured that the EIR has scoped the right remedy
- Community**
- Focus on health issues
 - Increased health outreach
 - Make technical education through our IRP manager and staff a top priority
 - Have more BBQs



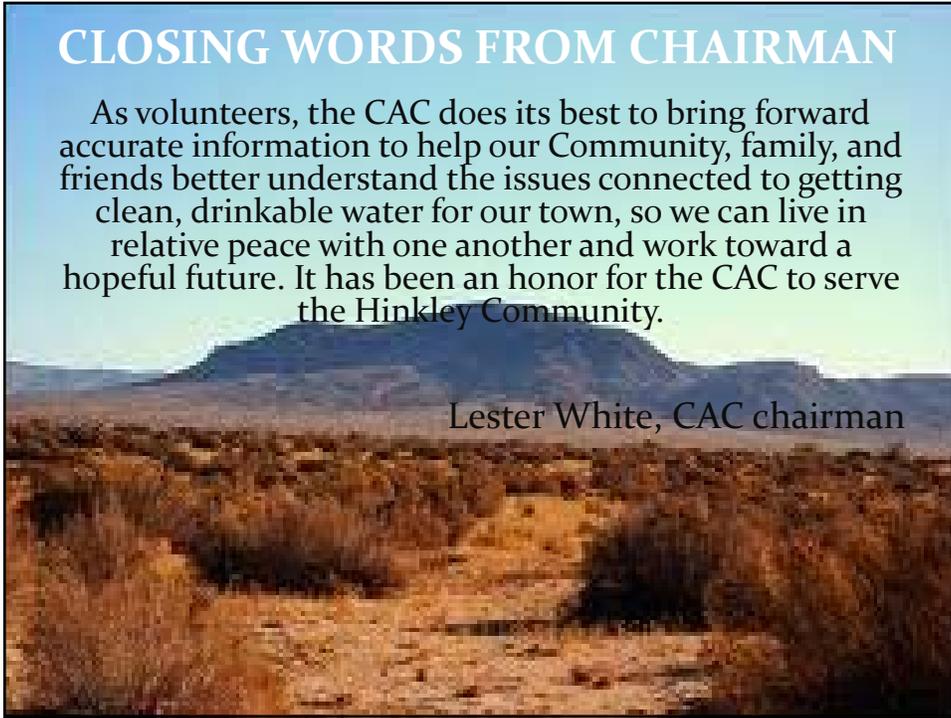
The Path Forward

- Continue monthly Community Meetings
 - Refine and improve meeting structure
 - Locate future public meeting site
- Continue CAC weekly meetings
 - Stay focused on critical topics
 - Maintain good working relationships with all government agencies
- Maintain open dialogue with County Supervisor's Office
- Continue working with RWQCB, Victorville office to better understand the black water issue
- Resolve Community's concerns about WHWR
- Work with Community to find a solution to the school's closure

CLOSING WORDS FROM CHAIRMAN

As volunteers, the CAC does its best to bring forward accurate information to help our Community, family, and friends better understand the issues connected to getting clean, drinkable water for our town, so we can live in relative peace with one another and work toward a hopeful future. It has been an honor for the CAC to serve the Hinkley Community.

Lester White, CAC chairman



The Hinkley Valley Has Lived with the Presence of the Cr6 Plume for Decades...But Now, the Community, (with Admitted Skepticism), Does Understand There is a Pathway to a Solution

“ PG&E has for many years acknowledged with genuine regret its responsibility for its chromium contamination in the Hinkley community. PG&E is committed to working cooperatively with the Water Board to expeditiously clean up groundwater contamination resulting from PG&E’s historical operations at the Hinkley Compressor Station. ”

~ PG&E, 2012

Remarks by Dr. Ian A. Webster, IRP Manager

At State Water Board Meeting, Barstow, CA, July 17, 2013

Contact: iwebster@projectnavigator.com or 714-388-1800

Some Opening Notes from the Hinkley Plume IRP Manager.

- IRP = Independent Review Panel Manager
- My mission is unbiased technical input, based on my professional judgment
- I have been given total autonomy to pursue my mission
- Yes, I am paid ultimately via PG&E funding...but that does not sway my opinions
- In my opinion, the most appropriate, well balanced remedy for the Hinkley Plume combines:
 - Groundwater management for plume hydraulic containment
 - In place (i.e. *in situ*) treatment of highest Cr6 concentrations
 - Natural treatment (i.e. *ex situ* phyto) of lowest Cr6 concentrations
 - Appropriate long-term monitoring
 - Clearly established treatment goals (and interim check points)
 - An adaptive management engineering and regulatory culture

The CAC selected the IRP Manager in early 2012.
Office space has been provided in the Community.



The CAC is the Interface Between Their Technical Advisor and the Community at Large.

CAC has met, debated and planned more than 50 times during past year.



IRP Manager Has Provided Technical Input at 15 Community Meetings Since 1st Q 2012.

Attendance ranges from 60 to 120 people.



The “Plume Created” Issues are Complex and Personal. The IRP Manager Uses Many Techniques to Explain.

Topics

- Plume Shape
- PG&E's *In Situ* Treatment Approach
- Plume Containment
- Can Cr6 Come Back from Cr3?
- Whole House Water Systems
- Health Effects

The Lahontan Water Board Has Held Briefings Separately from the CAC and PG&E.

Topics

- IRZ and Mn migration
- The EIR
- Community Water System Feasibility

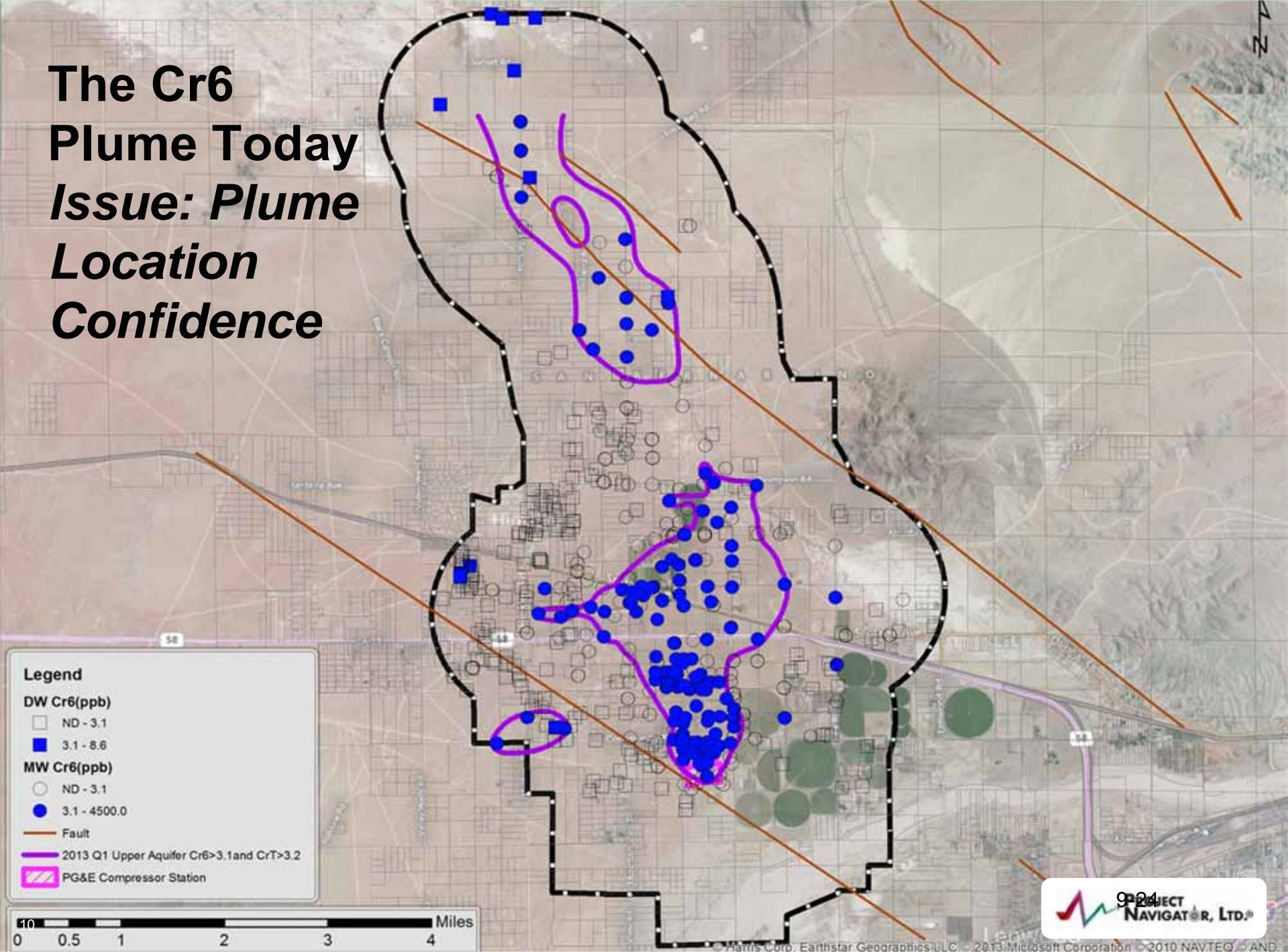
PG&E Performs Significant Technical Outreach...Here with the CAC at the IRZ.



So...Many Opportunities to Learn...But Also Become Confused Because of Conflicting Opinions.



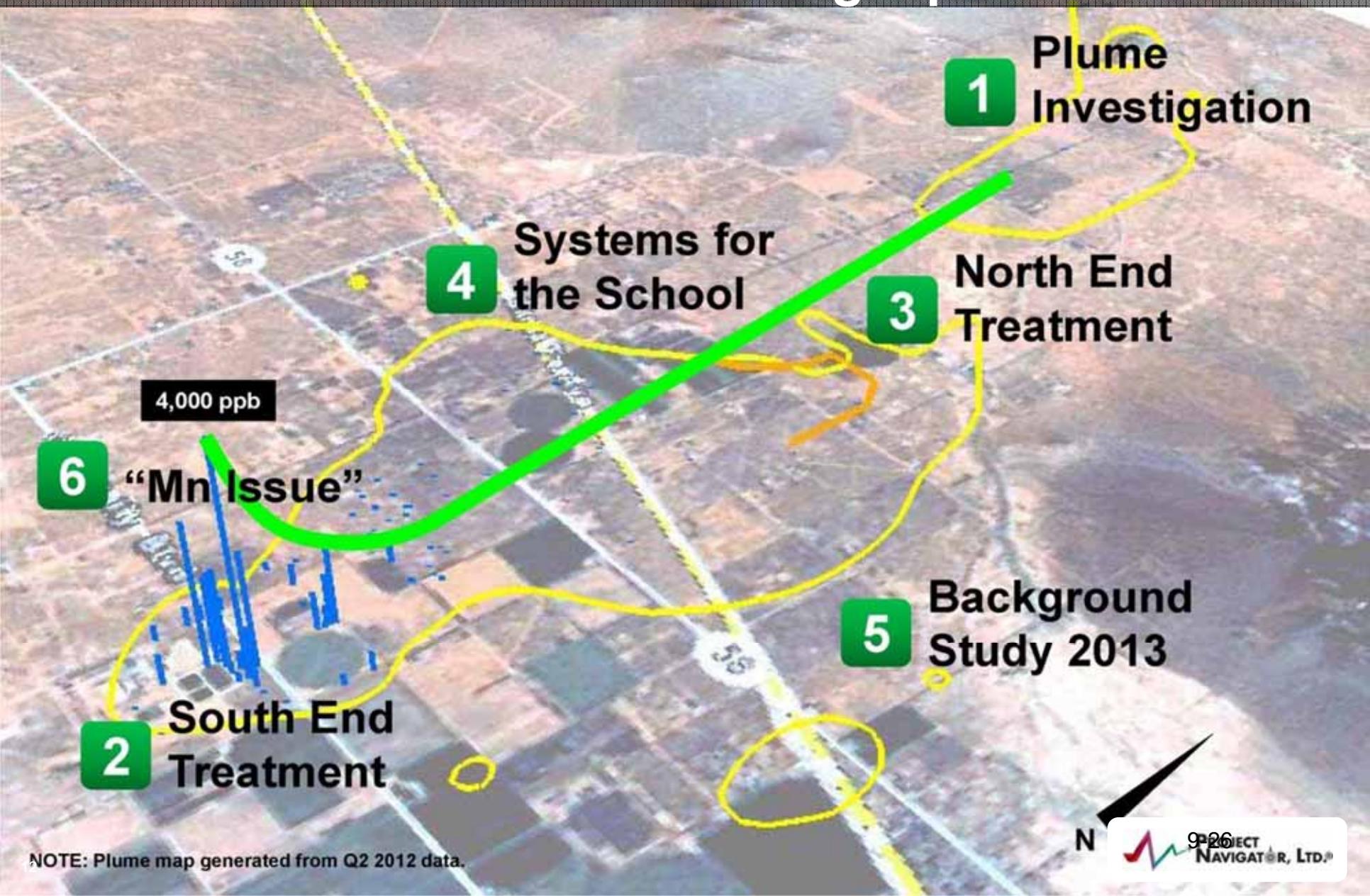
The Cr6 Plume Today *Issue: Plume Location Confidence*



Unfortunately for the Long-term Future of Hinkley, the Plume's Location When Coupled with PG&E's Property Purchase Program, Has Resulted in Folks Moving Out of Hinkley.

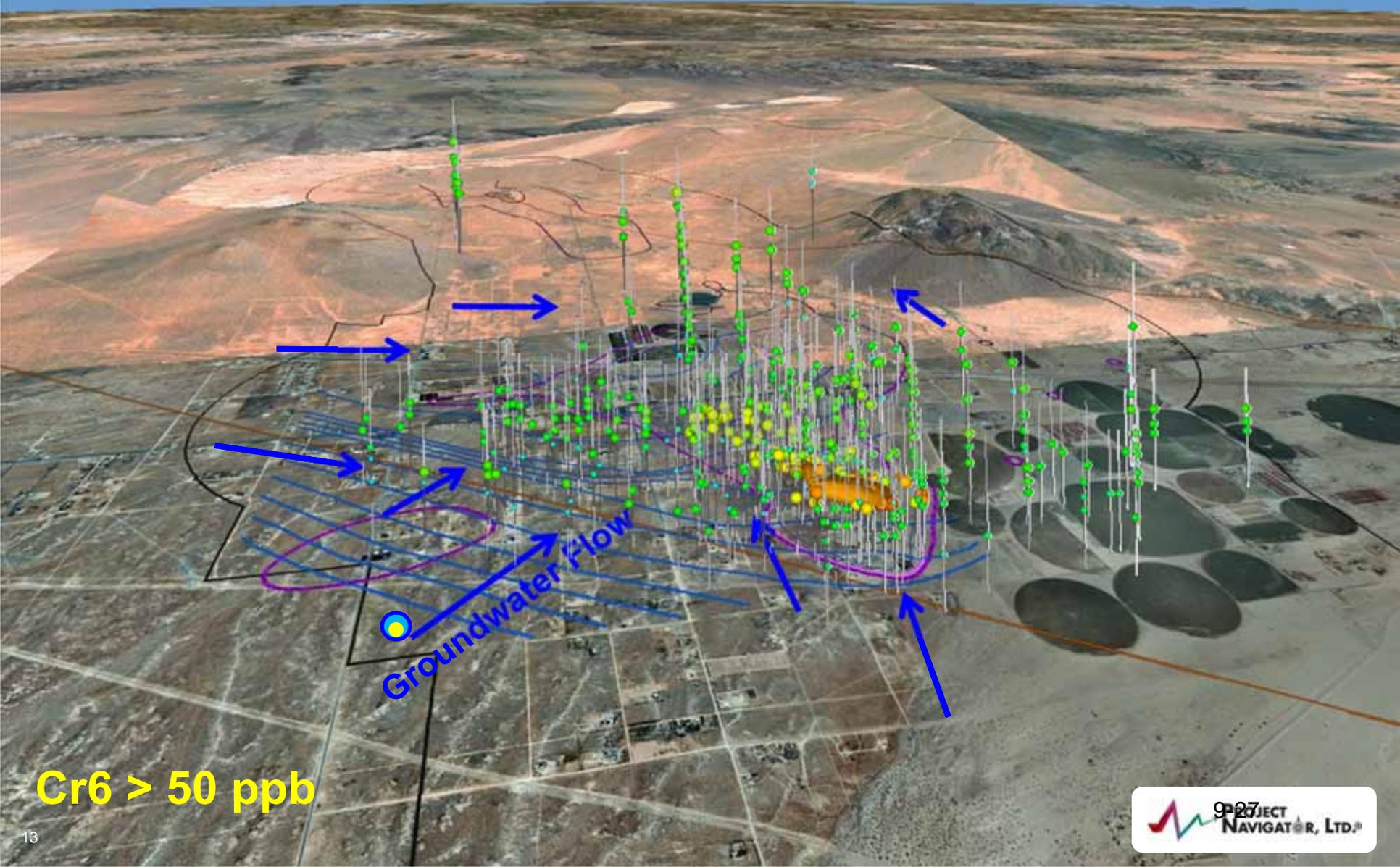


Where the CAC's Been Providing Input to PG&E.



NOTE: Plume map generated from Q2 2012 data.

IRP Manager's Views Towards a Sustainable Remedy... A. Knock Out Elevated Cr6 at the Source



Cr6 > 50 ppb

Towards a Sustainable Remedy... *B. Treat the Low Cr6 Conc's via an Approach Consistent with the Hinkley Environment.*



Towards a Sustainable Remedy... *C. Define the Ultimate Clean Up Goals via a Cr6 Background Study.*



Extensive “stakeholder” front-end planning.
Validated results: late 2016?

Towards a Sustainable Remedy... *D. A Sustainable Solution to Hinkley's Cr6 Impacts Should Incorporate:*

Environmental + Political + Cultural + Economic Considerations

Sustainable Hinkley-Compatible Features of Proposed Remedy

- “Best” Cr6 to Cr3 Operational Efficiency (“Best” as per EIR Evaluations)
- Conserves and protects natural resources such as water and air quality
- Minimize land and ecosystem impacts
 - e.g. *in situ* must be minimally invasive
 - *ex situ*: compatible with Hinkley’s land
 - Promote passive technologies (Ag units)
- Support the reuse of land presently “dedicated” by PG&E to the remedy

Long-term Stewardship Recommendations

- **Promote “Adaptive Management” Practices & Identify Measureable Interim Goals**
 - Use Interim Remedial Targets (IRTs) as initially described in Feasibility Study, Addendum 3, Table 3, Sept 15 2011
- **Continue to “solicit community involvement to increase public acceptance and awareness of long-term activities and restrictions.”**
 - Ref: EPA, “Incorporating Sustainable Environmental Practices into Remediation of Contaminated Sites, April 2008
- **PG&E has commented on “the opportunity to work with members of the Community and other key stakeholders to plan for the future of the Hinkley Community once we (PG&E) have more certainty around these major milestones.”** (*referring to Background Study, final EIR, and Hwy 58 relocation*)
 - Ref: PG&E, Questions & Answers from May 23, 2013 CAC Meeting

This page is intentionally left blank.

ENCLOSURE 3

This page is intentionally left blank.