Chapter 2
Comments Received on the Draft

Chapter 2
Comments Received on the Draft EIR

This chapter includes the letter of receipt from the State Clearinghouse; a list of the agencies, organizations and individuals who commented on the Draft EIR (Table 2-1); and the actual comment letters submitted. The comment letters have been numbered as shown in Table 2-1 and include letters, emails, comment cards, presentations, and relevant portions of the transcript from the September 12, 2012, Water Board meeting. The individual comments within each letter have been numbered in the margin. There is a response for each comment in Chapter 3, *Responses to Comments*. The location of the responses for each letter is indicated in Table 2-1.

1 **Table 2-1. List of Commenters and Location of Responses**

Letter #	Commenter	Location of Responses in Chapter 3 (Page #)
Agencies		
0	California Office of Planning and Research State Clearinghouse (SCH)	N/A
1	California Department of Fish and Game[1] (CDFG)	3-40
2	Native American Heritage Commission (NAHC)	3-43
3	Mojave Desert Air Quality Management District (MDAQMD)	3-45
Organizations and Individuals		
4A	Banks, Daron et al (Banks et al)	3-46
4B	Banks, Daron (Banks D)	3-46
4B	Banks, Daron (Banks D)	3-46
5	Burns, Floyd (Burns)	3-49
6A	Community Advisory Committee Independent Review Panel (CAC-IRP)	3-49
6B	Community Advisory Committee Independent Review Panel (CAC-IRP)	3-50
7A	Cheney, David (Cheney D)	3-72
7B	Cheney, David (Cheney D)	3-75
7C	Cheney, David (Cheney D)	3-77
8	Cheney, Teri (Cheney T)	3-77
9	Coffey, John (Coffey)	3-79
10	Diaz, Norm (Diaz)	3-82
11	Dodd, James (Dodd)	3-83
12A	Duitsman, Edward (Duitsman E)	3-84
12B	Duitsman, Edward (Duitsman E)	3-84
12C	Duitsman, Edward (Duitsman E)	3-85
12D	Duitsman, Edward (Duitsman E)	3-86
12E	Duitsman, Edward (Duitsman E)	3-86
13	Duitsman, John (Duitsman J)	3-86
14	Duitsman, Martha (Duitsman M)	3-87
15	Fletcher, Alan (Fletcher)	3-88
16	Griep, Larry (Griep)	3-88
17	Haefele, Ron (Haefele)	3-89
18	Halstead, Aquilla (Halstead A)	3-91
19	Halstead, Gary (Halstead G)	3-92
20A	Harper, Penny (Harper)	3-92
20B	Harper, Penny (Harper)	3-93
21	Hendrickson, Dan and Lloyd, Peter (Hendrickson-Lloyd)	3-94

[1] Effective January 1, 2013, the California Department of Fish and Game changed its name to the California Department of Fish and Wildlife. For purposes of this Final EIR, the agency will continue to be referenced as the California Department of Fish and Game for continuity.

Letter #	Commenter	Location of Responses in Chapter 3 (Page #)
22A	Hendrickson, Dan (Hendrickson)	3-98
22B	Hendrickson, Dan (Hendrickson)	3-98
22C	Hendrickson, Dan (Hendrickson)	3-99
23A	Hernandez, Evelio (Hernandez)	3-99
23B	Hernandez, Evelio (Hernandez)	3-101
24	Kegyulics, Aniko (Kegyulics)	3-104
25	Lloyd, Peter (Lloyd)	3-104
26A	Monk, Wanda(Monk)	3-105
26B	Monk, Wanda (Monk)	3-106
27A	Morris, Robert (Morris R)	3-107
27B	Morris, Robert (Morris R)	3-107
27C	Morris, Bobby (Morris R)	3-108
28A	Morris, Robert and Karla (Morris R-K)	3-109
28B	Morris, Robert and Karla (Morris R-K)	3-111
28C	Morris, Robert and Karla (Morris R-K)	3-112
29	Norman, Al and Janet (Norman)	3-113
30	Pacific Gas & Electric, Kevin Sullivan (PG&E)	3-113
31	Pitts, Loren (Pitts)	3-146
32A	Quass, Jonathan (Quass)	3-147
32B	Quass, John (Quass)	3-149
33	Shirkey, Betsy (Shirkey)	3-149
34	Turner, John (Turner)	3-150
35	Walker, Roberta (Walker)	3-151
36	Webster, Ian (Webster)	3-151
37A	White, Lester (White)	3-153
37B	White, Lester (White)	3-154
38	Anonymous (Anonymous)	3-155
39	Anonymous (Anonymous)	3-155
	Questionnaires	3-157
	Surveys	3-158

N/A = Not Applicable. The letter of receipt from the State Clearinghouse does not require a response.

1

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STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

November 7, 2012

Anne Holden
Regional Water Quality Control Board, Region 6 (Lahontan)
2501 Lake Tahoe Boulevard
South Lake Tahoe, CA 96150

Subject: General Permit for Site-wide Groundwater Remediation Project
SCH#: 2008011097

Dear Anne Holden:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on November 5, 2012, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

0-1

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

Document Details Report
State Clearinghouse Data Base

#0

SCH# 2008011097
Project Title General Permit for Site-wide Groundwater Remediation Project
Lead Agency Regional Water Quality Control Board, Region 6 (Lahontan), South Lake Tahoe

Type EIR Draft EIR

Description Note: Extended Review

PG&E has implemented remediation activities to clean the groundwater impacted by historical chromium discharges from the Hinkley Compressor Station, pursuant to existing Water Board orders. The Water Board has worked with PG&E to develop feasible remedial approaches to comprehensively contain and remediate the chromium plume. The EIR evaluates at an equal level of detail six project alternatives, each with different types and combinations of remediation activities. The project area for the analysis encompasses the chromium plume area; adjacent areas to the north, east and west where the plume may be defined in the future (due to migration and addition investigation); and where monitoring activities may occur and areas of potential effects due to groundwater pumping from the remediation alternatives.

Lead Agency Contact

Name Anne Holden
Agency Regional Water Quality Control Board, Region 6 (Lahontan)
Phone (530) 542-5450 **Fax**
email LDernbach@waterboards.ca.gov
Address 2501 Lake Tahoe Boulevard
City South Lake Tahoe **State** CA **Zip** 96150

Project Location

County San Bernardino
City
Region
Lat / Long 34° 54' 13.25" N / 117° 9' 29.28" W
Cross Streets Mountain View Rd/Community Boulevard/Hinkley Road/SR 58
Parcel No. Various
Township **Range** **Section** **Base**

Proximity to:

Highways Hwy 58
Airports
Railways BNSF
Waterways Mojave River
Schools Hinkley Elementary/MS
Land Use Agriculture, Rural Living, Regional Industrial, Neighborhood Commercial, General Commercial, Single Residential, Special Development

Project Issues Air Quality; Archaeologic-Historic; Biological Resources; Noise; Soil Erosion/Compaction/Grading; Water Quality; Water Supply; Aesthetic/Visual; Agricultural Land; Drainage/Absorption; Flood Plain/Flooding; Geologic/Seismic; Population/Housing Balance; Public Services; Recreation/Parks; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Wetland/Riparian; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Conservation; Department of Fish and Game, Region 6; Cal Fire; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 8; CA Department of Public Health; Air Resources Board, Major Industrial Projects; Department of Toxic Substances Control; Native American Heritage Commission; Public Utilities Commission; State Lands Commission

Document Details Report
State Clearinghouse Data Base

#0

Date Received 08/21/2012 ***Start of Review*** 08/21/2012 ***End of Review*** 11/05/2012

#1

State of California - The Resources Agency EDMUND G. BROWN, Jr. Governor
DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
Inland Deserts Region
407 West Line Street
Bishop, California 93514

September 19, 2012

Ms. Anne Holden
California Regional Water Quality Control Board, Lahontan
2501 Lake Tahoe Blvd
Lake Tahoe, CA 96150

Subject: Draft Environmental Impact Report (DEIR) Ground Water Cleanup Strategy/Historical Chromium Discharges from PG&E's Hinkley Compressor Station Project. SCH#2008011097

Dear Ms. Holden,

The Department of Fish and Game (Department) has reviewed the Draft Environmental Impact Report for the above referenced project. The proposed project is a remedial clean up of chromium contamination to local ground water due to historical chromium discharge from the PG&E Hinkley Compressor Station. The Water Board has required PG&E to slow and stop the plume from spreading by following these cleanup technologies:

- Groundwater extraction: contaminated groundwater is pumped from the subsurface (also called the *aquifer*) to contain the contamination plume.
- Agricultural re-use (also called *agricultural treatment, land treatment* or *agricultural units*): extracted groundwater is used to irrigate forage crops for livestock. Hexavalent chromium in the extracted groundwater is converted to trivalent chromium (Cr[III]) by contact with organic matter in the soil as it infiltrates through the soil. Hexavalent chromium is the toxic form of chromium; trivalent chromium has very low toxicity (OEHHA 2010).
- Subsurface treatment (also called *in - situ treatment* or *in - situ reactive zones*): carbon substances are injected into the groundwater aquifer to convert the Hexavalent chromium into trivalent chromium.
- Subsurface freshwater injection: freshwater is injected within the aquifer along the western side

1-1

The Department is providing comments on the EIR as the State agency which has the statutory and common law responsibilities with regard to fish and wildlife resources and

#1

habitats. California's fish and wildlife resources, including their habitats, are held in trust for the people of the State by the Department (Fish and Game Code §711.7). The Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitats necessary for biologically sustainable populations of those species (Fish and Game Code §1802). The Department's Fish and wildlife management functions are implemented through its administration and enforcement of Fish and Game Code (Fish and Game Code §702). The Department is a trustee agency for fish and wildlife under the California Environmental Quality Act (see CEQA Guidelines, 14 Cal. Code Regs. §15386(a)). The Department is providing these comments in furtherance of these statutory responsibilities, as well as its common law role as trustee for the public's fish and wildlife.

The Department has serious concerns with the potential impacts of this project on desert tortoise (*Gopherus aggassizzi*), which is listed as threatened under the California Endangered Species Act (CESA) and the Federal Endangered Species Act (FESA); the Mohave ground squirrel (*Xerospermophilus mohavensis*,) which is listed as threatened under CESA, and the burrowing owl, which is a state Species of Special Concern and protected under Fish and Game Code §3503.5.

1-1 cont'd

The Department's responsibilities in regard to the biological resources potentially impacted by the proposed project fall into two categories: (1) as Trustee agency for the state's fish and wildlife resources, the Department's role is to provide the California Regional Water Quality Board Lahontan with biological information and recommendations that the Board can use to comply with its responsibilities, as CEQA Lead Agency, to disclose the impacts of the proposed project, and adopt mitigation measures which will reduce the impacts to those resources to below significance and; (2) as a state Responsible Agency, is to issue permits, consistent with our authority, for the Incidental Take of state listed species; for the handling of wildlife species pursuant to research projects; and as appropriate, issue agreements for the alteration of state waters (Lake and Streambed Alteration Agreements). As a Responsible Agency, we must also rely on the Lead Agency's CEQA document on which to base our permits. Our comments on this project will address both of these roles.

Introduction

Table 1-1 on page 1-10: *Other required permits and approvals:* This section states the proposed project will need an Incidental Take Permit (ITP) from the Department for the Mohave ground squirrel. The ITP should include the desert tortoise due to the potential for Take of the species during remedial activities.

1-2

Table 1-1 on page 1-10: *Other required permits and approvals*: The project may require a Streambed Alteration Agreement pursuant to Fish and Game Code §1600 *et. seq.* The Department has direct authority under Fish and Game Code §1600 *et. seq.* in regard to any proposed activity that would divert, obstruct, or affect the natural flow or change the bed, channel, or bank of any waterway. Departmental jurisdiction under §1600 *et. seq.* may apply to all lands within the 100-year floodplain. Early consultation

1-3

with the Department is recommended, since modification of the proposed project may be required to avoid or reduce impacts to fish and wildlife resources.
Section 1600 *et. seq* of the Fish and Game Code requires the project applicant to notify the Department of any activity that will divert, obstruct or change the natural flow of the bed, channel or bank (which includes associated riparian habitat) or a river, stream or lake, or use material from a streambed prior to the applicant's commencement of the activity. Streams include, but are not limited to, intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams and watercourses with subsurface flow. 1-3 cont'd

Biological Resource

Page C-16 *Mohave ground squirrel*: This Section states that raw Mohave ground squirrel surveys were contucted. Were protocol surveys done with the correct trapping methods in the raw surveys? Survey data sheets need to be submitted to the Department before a proper review can be determined. 1-4

Throughout the Biological Resource Section the document referrers to surveys that were conducted on February 15th 2012. If this is the correct date for the surveys mentioned then it would be out of most of the protocol survey dates, for example a complete survey for burrowing owl consists of four separate site visits. Nesting Season Survey – begins as early as February 1 and continues though August 31. Survey for Winter Residents (non-breeding owls) – should be conducted between December 1 and January 31. For the desert tortoise protocol surveys should begin April-May and September-October and special status native plant species surveys should be conducted during the appropriate time of year when species are both evident and identifiable. Usually this is during flowering or fruiting. 1-5

If Mojave Fridge-toed lizard (Uma scoparia) habitat is impacted it will need to be replaced at a 3:1 ratio. . 1-6

Page C-4 *Field Investigation*: The document concludes that a site visit was conducted on December 20, 2011. No protocol surveys were conducted but the date is out of all surveying ranges for special-plant species. The Department recommends protocol surveys be conducted during the appropriate time and data sheets be returned to the Department upon completion for review. 1-7

Alternatives

The Department recommends either Alternative 4C-2 or 4C-5 as these will have the least impacts to biological resources and species habitat. 1-8

Biological Resources Mitigation Measures 3.4

BIO-MM-1a: Desert Tortoise protocol-level surveys will need to be conducted before the Department can make an adequate determination of presence at the project site. 1-9

Bio-MM-1a: No one shall "hunt, pursue, catch, capture, or kill or attempt to hunt, purse, catch, capture, or kill" a desert tortoise without an ITP. If a desert tortoise is handled or harmed it is considered Take without an ITP. 1-10

Bio-MM-1a: Will there be a qualified biologist on site at all times for all activities? Any authorized biologists need to be approved by USFWS and the CDFG. In addition, the Department also must approve the monitors. 1-11

Bio-MM-1a: The Department will also need a copy of the report regarding tortoise seen, injured, killed, excavated and handled. A translocation plan will need to be approved before moving any desert tortoise off site. 1-12

Bio-MM-1c: The Department recommends adding information for the American badger, Mojave river vole, desert kit fox, and sensitive plant species to the list of ongoing awareness and training programs. 1-13

Cumulative effects

Biological Impacts CUMUI-7 page 4-26: The Department recommends analyzing the cumulative effects of the Barstow General Plan Buildout due to its proximity to the project site. 1-14

Biological Impacts CUMUI-7 page 4-26: The Department recommends analyzing the cumulative effects of increased predators for special status species from the Desert View Dairy Operation, Hawes Composting Facility and Abengoa Mojave Solar project. 1-15

Questions regarding this letter and further coordination on these issues should be directed to Ms. Heather Weiche, Environmental Scientist, at (909) 980-8607, or Ms. Rebecca Jones, Senior Environmental Scientist, at (661)285-5867.

Sincerely,

Rebecca Jones
Senior Environmental Scientist

cc: Ms. Heather Weiche, CDFG
State Clearinghouse

STATE OF CALIFORNIA — Edmund G. Brown, Jr., Governor

#2

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

September 17, 2012

Ms. Anne Holden, Environmental Planner
California Water Quality Regional Control Board
Lahontan Region
2501 Lake Tahoe Boulevard
South Lake Tahoe, CA 96150

Re: SCH#2008011097; CEQA Notice of Completion; draft Environmental Impact Report (DEIR) for the **"Groundwater Cleanup Strategy/Historical Chromium Discharges from PB&E's Hinkley Compressor Station Project;"** located near the Community of Hinkley; San Bernardino County, California.

Dear Ms. Holden:

The Native American Heritage Commission (NAHC) is the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources pursuant to California Public Resources Code §21070 and affirmed by the Third Appellate Court in the case of EPIC v. Johnson (1985: 170 Cal App. 3rd 604).

This letter includes state and federal statutes relating to Native American historic properties or resources of religious and cultural significance to American Indian tribes and interested Native American individuals as 'consulting parties' under both state and federal law. State law also addresses the freedom of Native American Religious Expression in Public Resources Code §5097.9.

2-1

The California Environmental Quality Act (CEQA – CA Public Resources Code 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. The NAHC recommends that the lead agency request that the NAHC do a Sacred Lands File search as part of the careful planning for the proposed project.

2-2

The NAHC "Sacred Sites,' as defined by the Native American Heritage Commission and the California Legislature in California Public Resources Code §§5097.94(a) and 5097.96. Items in the NAHC Sacred Lands Inventory are confidential and exempt from the Public Records Act pursuant to California Government Code §6254 (r).

#2

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries of cultural resources or burial sites once a project is underway. Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We strongly urge that you make contact with the list of Native American Contacts on the attached list of Native American contacts, to see if your proposed project might impact Native American cultural resources and to obtain their recommendations concerning the proposed project. Pursuant to CA Public Resources Code § 5097.95, the NAHC requests cooperation from other public agencies in order that the Native American consulting parties be provided pertinent project information. Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). Pursuant to CA Public Resources Code §5097.95, the NAHC requests that pertinent project information be provided consulting tribal parties, including archaeological studies. The NAHC recommends *avoidance* as defined by CEQA Guidelines §15370(a) to pursuing a project that would damage or destroy Native American cultural resources and Section 2183.2 that requires documentation, data recovery of cultural resources.

2-3

2-4

Furthermore, the NAHC if the proposed project is under the jurisdiction of the statutes and regulations of the National Environmental Policy Act (e.g. NEPA; 42 U.S.C. 4321-43351). Consultation with tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The aforementioned Secretary of the Interior's *Standards* include recommendations for all 'lead agencies' to consider the historic context of proposed projects and to "research" the cultural landscape that might include the 'area of potential effect.'

2-5

Confidentiality of "historic properties of religious and cultural significance" should also be considered as protected by California Government Code §6254(r) and may also be protected under Section 304 of he NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APEs and possibility threatened by proposed project activity.

2-6

Furthermore, Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for inadvertent discovery of human remains mandate the processes to be followed in the event of a discovery of human remains in a project location other than a 'dedicated cemetery'.

2-7

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. Regarding tribal consultation, a relationship built around regular meetings and informal involvement with local tribes will lead to more qualitative consultation tribal input on specific projects.

2-8

#2

Finally, when Native American cultural sites and/or Native American burial sites are prevalent within the project site, the NAHC recommends 'avoidance' of the site as referenced by CEQA Guidelines Section 15370(a). 2-9

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Cc: State Clearinghouse

Attachment: Native American Contact List

Native American Contacts
San Bernardino County
September 17, 2012

#2

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairman
P.O. Box 391670 — Cahuilla
Anza , CA 92539
admin@ramonatribe.com
(951) 763-4105
(951) 763-4325 Fax

Colorado River Indian Tribe
Eldred Enas ,Chairman; Ginger Scott, Museum
26600 Mojave Road — Mojave
Parker , AZ 85344 — Chemehuevi
crit.museum@yahoo.com
(928) 669-9211-Tribal Office
(928) 669-8970 ext 21
(928) 669-1925 Fax

San Manuel Band of Mission Indians
Carla Rodriguez, Chairwoman
26569 Community Center Drive — Serrano
Highland , CA 92346
(909) 864-8933
(909) 864-3724 - FAX
(909) 864-3370 Fax

S an Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838 — Fernandeño
Newhall , CA 91322 — Tataviam
tsen2u@hotmail.com — Serrano
(661) 753-9833 Office — Vanyume
(760) 885-0955 Cell — Kitanemuk
(760) 949-1604 Fax

Chemehuevi Reservation
Edward Smith, Chairperson
P.O. Box 1976 — Chemehuevi
Chemehuevi Valley CA 92363
chair1cit@yahoo.com
(760) 858-4301
(760) 858-5400 Fax

AhaMaKav Cultural Society, Fort Mojave Indian
Linda Otero, Director
P.O. Box 5990 — Mojave
Mohave Valley AZ 86440
(928) 768-4475
LindaOtero@fortmojave.com
(928) 768-7996 Fax

Fort Mojave Indian Tribe
Timothy Williams, Chairperson
500 Merriman Ave — Mojave
Needles , CA 92363
(760) 629-4591
(760) 629-5767 Fax

Morongo Band of Mission Indians
Michael Contreras, Cultural Heritage Prog.
12700 Pumarra Road — Cahuilla
Banning , CA 92220 — Serrano
(951) 201-1866 - cell
mcontreras@morongo-nsn.gov
(951) 922-0105 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2008011097; CEQA Notice of Completion; draft Environmental Impact Report (DEIR) for the Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkly Compressor Station; located in San Bernardino County, California.

Native American Contacts
San Bernardino County
September 17, 2012

#2
Attachment

San Manuel Band of Mission Indians
Ann Brierty, Policy/Cultural Resources Departmen
26569 Community Center. Drive Serrano
Highland , CA 92346
(909) 864-8933, Ext 3250
abrierty@sanmanuel-nsn.gov
(909) 862-5152 Fax

Ernest H. Siva
Morongo Band of Mission Indians Tribal Elder
9570 Mias Canyon Road Serrano
Banning , CA 92220 Cahuilla
siva@dishmail.net
(951) 849-4676

Fort Mojave Indian Tribe
Nora McDowell, Cultural Resources Coordinator
500 Merriman Ave Mojave
Needles , CA 92363
NoraMcDowall@fortmojave.
(760) 629-4591
(760) 629-5767 Fax

Serrano Nation of Mission Indians
Goldie Walker, Chairwoman
P.O. Box 343 Serrano
Patton , CA 92369

(909) 528-9027 or
(909) 528-9032

Kern Valley Indian Council
Robert Robinson, Co-Chairperson
P.O. Box 401 Tubatulabal
Weldon , CA 93283 Kawaiisu
brobinson@iwvisp.com Koso
(760) 378-4575 (Home) Yokuts
(760) 549-2131 (Work)

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2008011097; CEQA Notice of Completion; draft Environmental Impact Report (DEIR) for the Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkly Compressor Station; located in San Bernardino County, California.

#3

Mojave Desert Air Quality Management District
14306 Park Avenue, Victorville, CA 92392-2310
760.245.1661 • fax 760.245.2699
Visit our web site: http://www.mdaqmd.ca.gov
Eldon Heaston, Executive Director

November 28, 2012

Anne Holden
Lahontan Water Board
2501 Lake Tahoe Boulevard
South Lake Tahoe, CA 96150

Project Title: Draft EIR for the Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station

Dear Ms. Holden:

The Mojave Desert Air Quality Management District (District) has reviewed the Draft EIR for the Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station. The proposed project consists of expanded remediation activities to address the full extent of the chromium contamination in groundwater. The Water Board and PG&E have worked to develop feasible remedial approaches to comprehensively contain and remediate the chromium plume. The DEIR evaluates at equal level of detail six project alternatives, each with different combinations and intensities of remediation activities. 3-1

The District has reviewed the DEIR for this project and concurs that the proposed mitigation measures for Air Quality (AIR-MM-1 through AIR-MM-8) represent feasible mitigation. The District has no comments based on the information available to us at this time. 3-2

Thank you for the opportunity to review this planning document. If you have any questions regarding this letter, please contact me at (760) 245-1661, extension 6726, or Tracy Walters at extension 6122.

Sincerely,

Alan J. De Salvio
Supervising Air Quality Engineer

AJD/tw PG&E Groundwater Cleanup

received 10/16/2012
to LK (from Daron Banks)

#4A

Petition by the Community of Hinkley in regards to the Enivirnmental Impact Reort to the California Regional Water Quality Control Board Lahontan

California Regional Water Quality Control Board Lahontan Region This is a petition for immediate action by the Lahontan Water Board from the Hinkley community members listed on this document. The people of Hinkley request that PG&E is ordered to clean the entire extent of their discharged chromium 6 and any other byproduct produced by their clean up procedures. As it pertains to the Environmental Impact Report the community requests that PG&E clean the plume with the least amount of impact on the environment and byproducts in the aquifer the community prefers that the plume be cleaned properly and in its entirety taking due caution not to make things worse for the community or its wildlife.

4A-1

	Print Name	Signature Please
1	Daron Banks	
2	JEFF TURNER	
3	RONALD W BROWN	
4	JOE TURNER	
5	John Turner	
6	NAZ AWAD	
7	Amy Carson	
8	Ron Carson	
9	Mike Merritt	
10	Michelle Garrison	
13	JoEllen Aguilar	
14	Mc Henry Cook	
15	Barbara Ray	
16	Reba Jordan	
17	Sandra Witherington	

15

Petition 3

#4A

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4A-1
cont'd

	Print Name	Signature Please
18	Scott Haislip	Scott Haislip
19	SHARON HAISLIP	Sharon Haislip
20	Louie Aviles	Louie Aviles
21	Marylou Seifert	Marylou Seifert
22	Jim Seifert	
23	JERRY VANHORN	Jerry VanHorn
24	Rebecca Spencer	Rebecca Spencer
25	Patricia A. Adair	
26	GUSTAVO AGUAYO	
27	JESUS AGUAYO	
28	RAMON AGUAYO	
29	Teresa J Gonzalez	Teresa Gonzalez
30	Don Depue	Don Depue
31	Jackie Depue	Jacklyn L Depue
32	Joelle Depue	
33	Brian Depue	
34	Manuela Velazquez	
35	LESTER WHITE C.A.C. CHAIR	
36		

#4A

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4A-1
cont'd

	Print Name	Signature Please.
56	JAY POTTER	
57	Dana Sowards	
58	Richard Green	
59	Lucille Acosta Royce	
60	Wanda S. Monk	
61	Fredrick A. monk	
62	Anna Aguilera	
63	Maria C. Aguilera	
64	DAVID CHENEY	
65	TERI CHENEY	
66	William Wright	
67	SERENA REDER	
68	Amy Turner	
69	Adam Turner	
70	Carolyne Abuhantash	
71	Ali Abu Hantash	
72	James Nelson	
73	William R. Brust SR	
74	Sakia A Luna-Borden	

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4A-1
cont'd

	Print Name	Signature Please.
151	PAUL GREENBERG	
152	Francisco Cava	
153	Norman Halstead	Norman Halstead
154	Aquilla Halstead	Aquilla Halstead
155	ANDY MARTINEZ	
156	Patti. Dickmann	
157	TONY ORTIZ	
158	IGNACIO ZAVALA	
159	DAN KELLEY	
160	Robert L Morris	Robert J Morris
161	MONICA HERNANDEZ	Monica L. Hernandez
162	Henry Roberts	
163	JOHN PIRTLE	
164	Reanna Walker-Banks	
165		
166		
167		
168		
169		

received
10/16/2012
LK (from Daron Banks)

15.1 total

#4B

Petition for the Community of Hinkley to the California Regional Water Quality Control Board Lahontan

California Regional Water Quality Control Board Lahontan Region This is a petition for immediate action by the Lahontan Water Board from the Hinkley community members listed on this document. The people of Hinkley request that the Lahontan Regional Quality Water Board have an independent entity not PG&E or PG&E affiliated do duplicate sampling of both domestic and monitoring wells. The people also request that independent research not PG&E or PG&E affiliated determine actual plume boundaries also testing to determine origin of chromium 6. The people of Hinkley feel that these issues are vital for proper plume clean up and accurate plume delineation. The community requests that these items be expedited we do want to wait any longer. It is the water boards' responsibility to determine the delineation of the plume to ensure that the discharger cleans the discharged hexavalent chromium in its entirety as stated by law so the Hinkley Valley is returned to its natural state prior to PG&E's unlawful discharge.

4A-2

Daron Banks

Print Name

Sign Name

1 Loretta Blevins
2 Barney
3 Verna Roberts
4 Gabriel Roberts
5 LESTER WHITE C. AC CHAIR
6
7
8
9
10
13
14
15

Sheilah Barnes (sorry)
Lorna E Roberts

Plume boundary

California Regional Water Quality Control Board Lahontan Region This is a petition for immediate action by the Lahontan Water Board from the Hinkley community members listed on this document. The people of Hinkley request that the Lahontan Regional Quality Water Board have an independent entity not PG&E or PG&E affiliated do duplicate sampling of both domestic and monitoring wells. The people also request that independent research not PG&E or PG&E affiliated determine actual plume boundaries also testing to determine origin of chromium 6. The people of Hinkley feel that these issues are vital for proper plume clean up and accurate plume delineation. The community requests that these items be expedited we do want to wait any longer. It is the water boards' responsibility to determine the delineation of the plume to ensure that the discharger cleans the discharged hexavalent chromium in its entirety as stated by law so the Hinkley Valley is returned to its natural state prior to PG&E's unlawful discharge.

4A-2
cont'd

34 JEFF TURNER
35 Jackie Nelson
36 Ronald W Brown
37 Richard S. Green
38 JOE TURNER
39 John Turner
40 Jacob Turner 12yrs
41 Victoria Penny Harper
42 Eric Brewer
43 MARY Joyce Brewer
44 JOYCE Armstrong
45 Lawana Morris
46 George Morris
47 Ruben Guelombo
48 Shelley Cooke
49 Joellen Aguilar
50 Michelle Garrison
51 NAZ AWAD
52 Mike Merritt
ANTONIO HERNANDEZ

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4A-2
cont'd

53	Sandra Wetherington	Sandra Wetherington
54	Scott Haislip	Scott Haislip
55	Sharon Haislip	Sharon Haislip
56	Louie Aviles	Louie Aviles
57	MaryLou Seifert	MaryLou Seifert
58	James Seifert	
59	Barbara Ray	
60	Janet A Norman	
61	Theresa Conger	
62	STEVEN D MCKAY	
63	RAL OGANDEGOS	
64	Gilbert Acosta	
65	GUSTAVO Aguayo	
66	JESUS Aguayo	
67	Ramon Aguayo	
68		Brian Depue
69	Joelle Depue	
70	Jackie Depue	
71	Don Depue	
72	Margaret Patterson	
73.	Geraldine Simpson	
74.	April Clark	

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4A-2
cont'd

73	Richard T. Monk	Richard T Monk
74	Wanda S. Monk	Wan S Monk
75	Fredrick A. monk	Fredrick A. Monk
76	Lucille Acenita Royce	Lucille Royce
77	CECILIA MONTES	Cecilia Montes
78	WALTER YOUNG	Walt Young
79	Anna Aguilera	
80	Maria C. Aguilera	maria aguilera
81	WILLIAM R. BRUST SR	William R Brust Sr
82	DAVID CHENEY	
83	TERI CHENEY	Teri L. Cheney
84	William Wright	
85	SERENA REDER	
86	Larry Lueb	antonio monta
87	JOE PIRTLE	John Pirtle
88	Norm Halstead	Norm Halstead
89	AQUILA Halstead	Aquila Halstead
90	Mark Orr	Amber Dodd
91	Jessie N. Orr	
92	Robert L Morris Manuela Melgoza	Robt L Morris

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4A-2
cont'd

93	Amber C. Dodd.	AMBER C Dodd.
94	Nicolette Grill	Nicolette Grill
95	Jay B	Jay B White
96	Francisco Lara	Cydjia Lara
97	ANTONIO HERNANDEZ	FLORA HERNANDEZ
98	Charles Schulz	Antonio Mont
99		
100		
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102		
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104		
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#4B

On Aug 29, 2012, at 8:15 PM, "Daron Banks" <daronbanks@aol.com> wrote:

> Questions on EIR better define temporary impact on wells from insitu process ie manganese and arsenic how long does it take to filter manganese and other biproducts and how much will disperse into aquifer 4B-1
>
> Sent from my iPad

#4C

Daron Banks

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. BANKS: Mr. Chair, thank you. My name is Daron Banks, D-a-r-o-n B-a-n-k-s. Before I read my statement, I wanted to talk a little bit about the EIR. I like the fact that it's -- as Ian stated -- a living, breathing document, that it can be changed as it goes along because the fact that remains is that we have no idea where the plume is. We have no idea. So we do know -- or at least according to Project Navigator that told me that, you know, according to PG&E's research that the plume was moved up to like -- what is it -- three miles per day -- no, three feet per day. I'm sorry. And so 50 years, three feet per day -- who knows. The board is really -- I know that they tried to -- to order PG&E, but PG&E always seems to have one step up on you. Three "A" is a perfect example. With that order -- or we would have had the ability to determine what is PG&E's and what is not. And there is technology done by the USGS and Mr. Izbicki and his colleagues that can determine whether or not the chromium 6 is PG&E's or if it's natural. It's appropriate that that be determined. How can you start a remediation or a cleanup when you have no idea of the extent of the cleanup? So I understand that the EIR needs to go through, but we still have to find out where our mess is before we can start the cleanup. So that should be our number one priority.

4C-1

4C-2

4C-3

And then, you know, their injections and things that they're doing -- we have no baseline. I don't want PG&E to come back ten years from now and all of a sudden we have exploded arsenic or manganese or uranium and them be able to say "There's no proof that that's ours" just as they stated 50 years ago or whatever. "That's not ours." That's what they'll do if you allow them to do it. So we need to get a baseline and we need someone other than PG&E to determine that baseline.

4C-4

We need to find out -- we know that their in-situ process increases the manganese by the well testing of 99,000 parts per billion from near their in-situ sites. So, you know, whatever they're doing to us, they're putting us in a petri dish and they're using us as test subjects and it's under the oversight of you people. So please, we need somebody with experience that can come in and at the very least oversee what's going on.

4C-5

The CAC has become something completely opposite of what this board's original intentions were. With that said, my first request is can this board publically ask Project Navigator what PG&E is paying them for their three-month contract and who do they negotiate the contract details with? Is it PG&E?

Second, can this board publically ask one of the CAC members -- preferably not a co-chair member – if PG&E has come uninvited to their non-public meetings?

Third, the board -- and specifically, Dr. Horne -- asked Project Navigator -- needs to ask Project Navigator why when they were clearly told by Dr. Horne to provide an independent facilitator for the CAC meetings, why has that not happened? Due to clear PG&E influence and intimidation, the CAC has become another vehicle for PG&E to inject their -- their will onto the community of Hinkley. So I would like to ask at this time that the Water Board staff can come once a month to facilitate our community advisory meetings without PG&E as board members or facilitators. PG&E can be present to answer

4C-6

questions, but have no authority or influence over the CAC or Project Navigator which was the intended purpose of the CAC. All issues before the CAC should be public knowledge and the board should oversee the process. I know that you can't oversee the process of the contract, but the CAC members are supposed to determine the -- the issues of the contract -- or at this time, Project Navigator's hands are tied to PG&E's belief on what their job is. Simple things like they're not permitted to do independent testing. PG&E doesn't allow that. If there are -- our expert advisor -- and they're not able to reaffirm or decide what is fact or fiction because every data that they use is what PG&E chooses to give them. It's eschewed as anything else that they've done.

4C-6 cont'd

Also, their contract -- they gave them another three-month contract. He worked a time period without contract, was compensated for that and then signed another three-month contract. On a contract that went three months, Project Navigator, I believe, can't do their job properly and independent without possible influence from PG&E. They can't do their job correctly. So their -- their contract needs to be a year which was the insinuation of what it was supposed to be after the first three months.

My second issue according to Project Navigator's PG&E research shows that the plume, like I said, moves as three feet per day. At that rate over 50 years, the actual plume boundary could be further than anyone realized. We know that the well tests as far as Harper Lake have come in at 10 parts per billion. It's time to properly define the plume. PG&E's baby-step progress that they proposed in defining the plume is just too slow. Thinking is just not -- it's just not big enough. They're not thinking big enough. So you need to bring in someone else to define the plume.

4C-7

Also, it's appropriate to order duplicate samplings of well testing in order to verify results. It's okay for this board to ask for help. For several reasons like budget issues and lack of resources, PG&E seems to be one step ahead of this board. So I request that you negotiate with PG&E to bring in USGS. I have talked to members of the USGS and they assure me that they are prepared and are capable of accurately defining the plume and can determine the chromium 6 origin. They can also evaluate PG&E's cleanup to ensure that we're not having to deal with the bigger issue with all of your other stuff going on. As it's explained to me, they're pumping all this stuff and we're getting oxygen-starved water that chemically can change the makeup of the plume which can increase the uranium and other issues.

4C-8

And these are all problems brought on by PG&E. So please, act on these motions. Don't wait. Thank you very much.

#5

Floyd Burns

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. BURNS: My name is Floyd Burns, F-l-o-y-d B-u-r-n-s. I won't take up much of your time. It's getting kind of late. A few years -- a few months ago I was way over in Central China about as far away from Hinkley as you can get. And people over there know all about Hinkley. This world (sic) is known around the world, not just here in Barstow. It's everywhere. You got people --

THE REPORTER: Sir, can you speak up a little?

THE WITNESS: Okay.

THE REPORTER: Thank you.

THE WITNESS: If you mentioned Erin Brockovich, then they know all about Hinkley. But anyway, this -- Hinkley will go down in history as a disaster. PG&E has wrecked and killed -- the company has killed many, many people. Nobody was ever prosecuted for this. If anybody has a right to hate that company -- I do. I won't go into that, but I do. But I do not -- I don't hate the company. I kind of feel sorry for them. The tragedy -- worst tragedy that ever happened to the United States happened in West Virginia, 1930. Union Carbide built a three-mile tunnel called the Hawk's Nest project. They would not allow the miners to use water in their drilling because they had to make that 22 feet a day. They killed over 700 miners. Nobody was ever prosecuted for that. Later on, the same company went to India in 1985 and they killed there 30,000 people. 1985. Same company. Nobody was ever prosecuted. The thing is that when you make decisions, think of all the people -- think of the people who died here in Hinkley, who moved away from Hinkley or died of cancer. No one really knows what happened to them. So think of that. Think of those people when you make your decisions. Thank you very much.

5-1

#6A

Brief Initial Comments on the Draft Environmental Impact Report (EIR)

Hinkley Groundwater Cleanup Program

Prepared for

Presentation to Lahontan Regional Water Quality Control Board

Prepared by
Dr. Ian A. Webster, Project Navigator, Ltd.
In the Role of Hinkley CAC IRP Manager

September 12, 2012
Barstow, CA
www.HinkleyGroundwater.com
www.ProjectNavigator.com

Early Review Comments and Perspectives from the Independent Review Panel (IRP) Manager Working for the Hinkley CAC…1.

- **The CAC Thanks the Water Board for the Issuing the EIR**
- **The 1,000-Page Document is Long-Awaited**
- **The CAC Fully Understands the *Critical-Path Significance of the EIR* on the Road to Final Remedy Selection and the Final Cleanup CAO…**
- **…and Full Scale, *Final* Remedy Operations**

2

6A-1

Early Review Comments and Perspectives from the Independent Review Panel (IRP) Manager Working for the Hinkley CAC…2.

- **The Process to Finalize the EIR, Should Take Into Consideration the Community's Grand Objectives**
  - "Clean water as soon as possible"
    - To Homes and in the Aquifer(s)
  - The CAC's Push for "Progress" → Can be Achieved via a Flexible EIR
    - Approval of an EIR, now, makes progress possible even though the final clean up methodology and goals for Cr6 are not yet established
    - A Flexible EIR allows permits to be issued and a final, performance based, CAO issued
  - Path-Forward Recommendations
    - CAC endorses a Flexible WB Enforcement Approach using EIR Amendments and CAO Amendments
    - This Approach Appears to be Consistent with PG&E's Stated Remedy Implementation "Adaptive Management Approach"

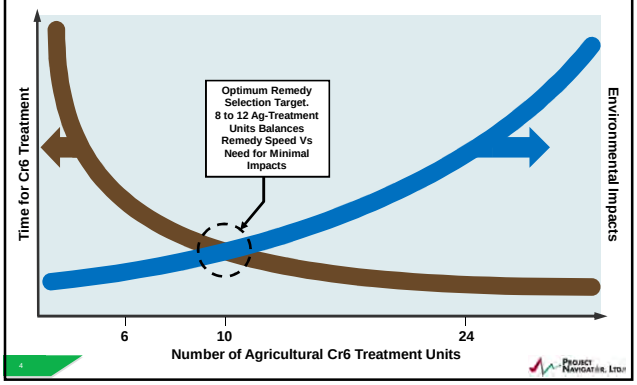
3

6A-2

6A-3

6A-4

CAC Ongoing Discussions Regarding the EIR, and IRP Manager Review and Perspectives



4

6A-5

#6B

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714.388.1839 *fax*
www.projectnavigator.com

November 5, 2012

Anne Holden
Lahontan Water Board
2501 Lake Tahoe Boulevard
South Lake Tahoe, CA 96150.
aholden@waterboards.ca.gov

Subject: Comments on the Draft Hinkley Groundwater Remediation EIR (dated August 2012). Submitted by the Hinkley Community Advisory Committee (CAC) and the Independent Review Panel (IRP) Manager

Dear Anne:

The Hinkley Community Advisory Community (CAC) thanks the Lahontan Water Board for managing the formulation of the above Draft Environmental Impact Report (EIR) and issuing the document for public comment in August, 2012. The process and debate towards its final adoption is an important and necessary milestone in the overall pathway towards an eventual cleanup of the Cr-6 impacted groundwaters in Hinkley, California. We also thank the Water Board for the numerous briefings you have prepared for the Hinkley Community during the past month describing the document, as well as extending the comment period. The extra time has allowed for improved CAC/Community understanding and improved comments. 6B-1

In general, in the Independent Review Panel (IRP) Manager's opinion, the overall project requires a *comprehensive, but simultaneously flexible* EIR (which could be modified, revised and amended in the future, as appropriate, as new, EIR-relevant data comes to light). The current draft EIR provides an excellent framework, and is a high quality document. 6B-2

The IRP Manager hopes that the Water Board will address the detailed comments supplied by our EIR review consultant, Environmental Audit, Inc., and use the comments, as appropriate, as the document is further discussed in the months ahead. 6B-3 In the IRP Manager's opinion, the document, as written, does provide a broad framework for documenting and starting to understand the effects of the proposed Hinkley groundwater remedies on the environment. In one major aspect, though, further work does seem required in the issue of secondary chemicals generation within the In Situ Reactive Zone (IRZ) and this particular topic is of such major concern to the CAC, that they wish to go on record, via these comments, of requesting that the EIR process be "suspended," and the IRZ systems "shut down" until more information is gathered. 6B-4

The IRP Manager has had lengthy discussions with the CAC on this matter, and also is proposing that some major technical exchange sessions should occur, wherein all relevant data, and conversely data gaps, are reviewed. 6B-5

Our comments are provided via three main **Attachments** to this cover letter, namely: 6B-6

1. Detailed EIR document review comments prepared by the EIR specialist firm, Environmental Audit, Inc. of Placentia, CA. (www.envaudit.com).

2. Comments by the IRP Manager specific to the In situ Reactive Zone (IRZ) and the present generation of secondary chemicals, and

3. Data collected by CAC Member Mr. Nick Grill for manganese in the vicinity of the IRZ.

More detailed discussions on each of these topics now follows:

1. General Comments on the EIR Prepared by Environmental Audit, Inc.

Environmental Audit, Inc. (EAI) was retained by the IRP Manager on behalf of the CAC to review the EIR. Their retention by the IRP Manager was made possible via the guidelines established in the Hinkley CAC's Memorandum of Agreement (MOA) between the CAC and PG&E. This allows for specialty expertise to be retained by the IRP Manager to assist the CAC, when deemed necessary and appropriate. 6B-7

EAI's comprehensive comments are provided in **Attachment A**. In particular, the CAC and IRP Manager wish to highlight the following EAI comments:

a. **The Environmental Impacts of Remediation Activities in the IRZ Have not been Fully Evaluated.** Namely, the draft EIR only addresses the impacts associated with Cr6 contamination and cleanup. Secondary, IRZ-produced, chemicals of concern, such as manganese and arsenic require further evaluation. More on this topic is discussed by the IRP Manager in the following Section 2. 6B-8

b. **Comprehensiveness of Health Risk Assessment (HRA).** The EIR contains a HRA for diesel truck emissions and above ground construction activities related to the implementation and operations of a remedy. Related to the above comment (1.a.), no HRA computations were performed for other potential exposure pathways, such as those created by secondary chemicals. 6B-9

c. **The Relative Phasing of the EIR and the Pending Background Study Needs to be Thought Through.** The new planned background study, which is at a work plan review status by the Water Board, will generate information on naturally occurring Cr6 background levels that will ultimately be used in establishing project cleanup goals. EAI's review points out the dilemma as to which document should be completed first, strongly suggesting that background Cr6 numbers are 6B-10

a precursor to the final grand approval of the EIR. The IRP Manager strikes more of a middle ground believing that the current, flexible, document (viewed as an "amendable EIR framework") can be pushed to completion, but then subsequently amended, as necessary, when background Cr6 levels are determined, perhaps more than 2 years from present.

6B-10 cont'd

2. IRP Manager Comments Specific to the In situ Reactive Zone (IRZ) and the Present Generation of Secondary Chemicals.

The CAC has also become concerned about how well the operating performance of the IRZ systems are understood. It has been well documented that the reductive processes occurring within the IRZ, while immediately conducive to the reduction of Cr6 to Cr3, also liberate secondary chemicals of concern, most notably manganese and arsenic. The draft EIR discusses these processes and relevant data at pages 3.1-31 and onwards. Figure 3.1-9 shows IRZ data for arsenic, while Fig 3.1-11 shows similar information for manganese. (Both Figures appear to have been prepared by PG&E and submitted to ICF and the Water Board for the EIR. Also, the timing of collection of the IRZ's arsenic and manganese data displayed in EIR Figures 3.1-9 and 3.1-11, respectively, is unclear. This is important since the recent As and Mn measurements made by CAC Member Mr. Nick Grill have been made within the last few months).

At page 3.1-32 of the draft EIR, the following is stated: "….the in situ remediation of the chromium plume has resulted in temporary and localized increase of arsenic in parts of the plume area. Based on experience with in-situ remediation, arsenic (and other byproducts) concentration increases in correlation to the amount of injected organic carbon, and then decreases in time as the organic carbon is consumed by microbial action. Arsenic levels in groundwater increase from less than 1 ppb to 15 ppb in areas up to 500 feet downgradient of the carbon injection point. Prior studies have indicated that after carbon amendment ceases, in-situ remedial byproducts declined back toward initial levels within several months to over a year, as organic carbon levels dropped. Current data shows arsenic as a by product only within the chromium plume, and not beyond the plume boundaries." Later on page 3.1-33 under descriptions of the manganese and its release phenomenon, a similar statement is made; namely "Current data shows manganese as by product only within the chromium plume, and ***not beyond the plume boundaries***."

6B-11

It is this last statement which concerns the CAC. Under the leadership of CAC Member Mr. Nick Grill the CAC has now had the opportunity to review groundwater samples collected by Mr. Grill from domestic wells to the immediate west of the IRZ. Also, previously, for use in discussions between the CAC and PG&E, the IRP Manager prepared a 3D plot of manganese data at the IRZ (see **Figure 1)**. Subject to the limitations of available PG&E data, the IRP Manager's Figure 1 appears to show that the manganese is contained within the IRZ area. This is in contrast to the new manganese data from Mr. Grill which appears to show elevated manganese readings outwith and to the west of the IRZ.

The IRP Manager has reviewed Mr. Grill's findings, and they have also been discussed at length at CAC Meetings. It this data, to a large extent, which is

driving the CAC towards their opinion that the IRZ should be "shut down," until more comprehensive sampling occurs, and the IRZ processes and PG&E's believed "containment" is better understood.

From an IRP Manager's perspective, taken at face value, and with no knowledge about the accuracy of the sampling exercise, Mr. Grill's highest magnitude data points (provided in **Figure 2**) display as the two (red colored) western data points in Figure 1. Such observations, implying a release of manganese beyond the bounds of the IRZ and the Cr6 plume boundary (also supported by anecdotal comments made by other community members at the CAC monthly meetings) causes the CAC to ask the IRP Manager to raise this issue in this EIR comments package. In addition, the IRP Manager has overlain the IRZ manganese Figure from the EIR over the aforementioned 3D data display, and the result is shown in **Figure 3**. The EIR claims that "based on available data," there appears to be no release of Mn to the west. (Draft EIR, p.3.1-33). It should be noted, however, that EIR Figure 3.1-11 does not show any information being collected to the west side of the plume. Mr. Grill's data appears to be one of the first manganese sampling efforts in this area. During August 2012, the Water Board also sampled some domestic wells in this area (see Figure 2), but measured manganese concentrations two to three orders of magnitude less than Mr. Grill's measurements.

Despite the variation in manganese readings to date at domestic wells to the west of the IRZ, the CAC has asked the IRP Manager to express their concern about the ability of the IRZ to contain generated chemicals.

6B-11 cont'd

The CAC met on November 1, 2012 to discuss the EIR, the IRZ, and what comments should be submitted specific to the above issue. After significant discussion, which involved the IRP Manager, the IRP Manager was directed to specifically comment as follows regarding the IRZ, and its ongoing operations relevant to the EIR. ***The CAC believes that too little is understood about secondary by-product generation in the form of arsenic and manganese, and that until a better understanding of the systems operations is gained, the IRZ should be "switched off."*** "Switching off" could also entail simply eliminating the present injection of ethanol, while at the same time attempting to use the current IRZ system for some form of hydraulic control***.***

In his role of providing candid technical advice, the IRP Manager has discussed with the CAC some of the ramifications of this action. These included eliminating the sole mechanism at the Cr6 plume hot spot location for treating Cr6, which could lead to downgradient releases of Cr6, and thereby possible impacts on plume shape and size.

6B-12

The IRP Manager also discussed with the CAC a variety of other approaches which could be considered to address the manganese and arsenic issues. They include the following, and the IRP Manager offers these ideas to the Water Board for deliberation and discussion:

1. Consider the installation of additional new monitoring wells adjacent to the IRZ area to definitively prove and monitor containment. This could

6B-13

be accomplished as part of the pending new groundwater monitoring Order. 6B-13 cont'd

2. Evaluate if there is an improved (lower, most likely) optimal dosing of the carbon source which would still treat Cr6, but minimize by-product formation. Consider an optimization program for the in situ reaction zone. PG&E may have already performed such work as they arrived at ethanol as the carbon source. Past work on the IRZ and its predicted performance should be dusted off and reviewed versus actual operating performance. 6B-14

3. Better quantify the actual quantities of arsenic and manganese being generated relative to Cr6 being treated, and thereby assess from a risk mitigation and health risk evaluation perspective what is the appropriate decision-making regarding the IRZ (related to 1.b., above), and finally most importantly, 6B-15

4. Immediately convene technical exchange meetings on the above, prior to any actions being taken, so that the right decisions can be made for the Hinkley Community as a whole. Viz: the need to balance the perceived risks of temporarily generated, and possibly contained (but not yet definitively proven in the minds of the CAC) manganese and arsenic Vs the upsides of *in situ* Cr6 plume hot spot treatment, which in the long-term appears to be the most expeditious way to remediate the entire plume to background levels. 6B-16

Manganese Data Collected by Mr. Nick Grill to the West of the IRZ

The manganese monitoring data collected by Mr. Nick Grill is provided in **Attachment B.** This is the data which is shown in Figure 2, and is plotted in Figure 1. (Figure 2 also lists Water Board collected data. The Water Board measurements are significantly less than those made by Mr. Grill). 6B-17

The CAC and the IRP Manager thank you for the opportunity to submit these comments on the draft EIR. Obviously the issue which is most pressing on the CAC's agenda pertaining to the completeness of the EIR, is the IRZ and its associated generation of secondary chemicals. We hope that that the Water Board can meet with the CAC soon, and involve PG&E, to immediately devise solutions and action items regarding the IRZ.

~~Please feel free to contact any~~ CAC Member or me at 714-863-0483 or at iwebster@projectnavigator.com.

Respectfully submitted,

Ian A. Webster, Sc.D.
IRP Manager

Attachment A: Comments on the Draft EIR by Environmental Audit, Inc.
Attachment B: Domestic Well Manganese Measurements made by CAC Member Mr. Nick Grill
Figure 1: IRP Manager's 3D data display for Manganese at the IRZ. Monitoring data was supplied by PG&E. Data supplied by Mr. Nick Grill has been added.
Figure 2: Manganese monitoring data collected and provided by Mr. Nick Grill.
Figure 3: IRP Manager's 3D display for Manganese at the IRZ overlain with similar Manganese data displayed in a Figure from the Draft EIR.

#6B

Attachment A
with comments

ATTACHMENT A

#6B

Attachment A
with comments

ENVIRONMENTAL AUDIT, INC. ®

1000-A Ortega Way, Placentia, CA 92870-7162
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33rd ANNIVERSARY
email:dbright@envaudit.com

November 5, 2012

Project No. 2800

Ian Webster
Project Navigator
One Pointe Dr., Suite 320
Brea, California 92821

Subject: Comments on the Draft Environmental Impact Report, Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station

Dear Mr. Webster:

Environmental Audit, Inc. (www.envaudit.com) was retained by Project Navigator, Ltd., in its role of Hinkley Community Advisory Committee (CAC) Independent Review Panel (IRP) Manager to assist the CAC review and comment ~~on the above document~~. We have met with both the CAC and the IRP Manager in conjunction with our review of the document. We also attended a Water Board Public briefing on the EIR held in Hinkley on October 16, 2012, and participated in the regularly scheduled CAC Monthly Community Meeting held on October 25, 2012. 6B-18

Environmental Audit, Inc. offers the following comments on the draft EIR:

1. Notice of Preparation/Initial Study (NOP/IS)

- The NOP, issued November 24, 2010, refers to the preparation of a Subsequent EIR. Sometime after the release of the NOP, a decision was made to change the document from a Subsequent EIR to a stand-alone EIR. The reason for this change was not discussed in in the Draft EIR. An explanation should be provided as to the reasons for the change in approach relative to CEQA compliance. 6B-19

2. Project Description

- The term "background level" refers to the water quality that existed before the discharge. The studies conducted to determine background levels were conducted after the PG&E release. Therefore, the accuracy of the background contaminant concentrations used in the EIR is questionable. The Water Board is requiring that PG&E conduct a new background study. We recommend that PG&E and the Water Board agree on a compliance schedule for completing the background study, as its results are important to the groundwater remediation efforts. It is difficult to determine appropriate clean-up methods, requirements, and related environmental impacts when the ultimate goal (background concentrations) is in a state of flux. The EIR's environmental setting and potential environmental impacts may need to be updated when the results of the new background study is completed. The background study is not an activity that 6B-20

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with comments

requires CEQA compliance, so PG&E should be required to implement the study as soon as possible (and not wait for a new Clean up and Abatement Order (CAO)). 6B-20 cont'd

- The Draft EIR only addresses the impacts associated with Cr(VI) contamination and cleanup. The impacts associated with cleanup of other contaminants in the aquifer (e.g. manganese, iron, arsenic and uranium) are not evaluated in the EIR. Therefore, by definition, the environmental impacts of remediation activities (both the interim actions and long-term) have not been fully evaluated and disclosed. 6B-21
- Instead of describing a proposed project, the Draft EIR evaluates 6 alternatives. It thereby maintains project "flexibility," and delivers a comprehensive platform for EIR decision-making. However, the EIR needs to define the "CEQA Project." 6B-22
- Page 2-6 Section 2.5.1. Affected wells "are those that do not meet federal, state, and local drinking water standards." Where no federal, state, or local standard yet exists, as is the case for Cr(VI), public health based goals (PHG) are appropriate to employ in "affected wells decision-making." The PHG for Cr(VI) is 0.02 ppb, but current technology does not allow for detection of Cr(VI) at 0.02 ppb, i.e., 0.06 ppb is the current laboratory detection limit for Cr(VI). Therefore, "affected wells" are those that contain a Cr(VI) concentrations equal to or greater than 0.06 ppb. The relationship between affected wells and background concentrations is unclear. 6B-23
- Figures ES-2 and 2-2b. The figures summarize data from 4th Quarter 2011 sampling results. No information was provided to explain how the plume labeled as "approximate" 3.1 ppb level was determined in the northern portion of the plume. Sampling data are not available in this portion of the plume, so the method used to define the plume should be provided. 6B-24

3. Water Resources and Water Quality

- Page 3.1-8. The term acre-feet should also be defined in terms of gallons as the general public is more familiar with gallons as a form of measurement. 6B-25
- The EIR does not provide a definition for "water supply well." 6B-26
- The EIR should quantify whether or not groundwater with elevated Cr(III) or Cr(VI) or other by-product concentrations are being used for showering, washing dishes, landscape watering, etc. The EIR should have included a health risk assessment that evaluates these potential exposure pathways. 6B-27 Page 3.1-16, second to last paragraph. The term "SCRIA project" should be defined. 6B-28
- Page 3.1-13, fourth bullet, indicates that where cleanup to background is infeasible, cleanup standards will be set at the lowest concentrations for the individual pollutant that, among other things, consider cumulative risks taking into account different routes of exposure and other pollutants. Considering that contaminated groundwater has been a long-term problem in Hinkley, a discussion of health risks associated with Cr(VI) and other remediation by-products should have been included in the EIR. (The only HRA in the EIR was prepared for diesel truck emissions and ex-situ construction). 6B-29
- Page 3.1-28, third paragraph. This paragraph indicates that PG&E submitted a Proposed Work Plan f~~or~~ Evaluation of Background Chromium in the Upper Aquifer of the Hinkley Valley, which proposes additional data to expand on the 2007 Background Study Report. The paragraph further indicates that the Water Board Staff is reviewing the proposed background study and considering the need for peer and/or expert review, so any new study will yield a valid, credible and defensible result. The results of the new background study should be incorporated into the Final EIR and the Final EIR should be revised and updated to reflect the latest data and information, as well as updating any environmental impact analysis. 6B-30

#6B

Attachment A
with comments

- Page 3.1-33, second complete paragraph, states that current data shows manganese as a by-product only within the chromium plume and not beyond the plume boundaries. Please provide a reference for these comments. It is not clear from the data provided if samples were taken outside of the chromium plume area to verify that no elevated concentrations of manganese exist outside of the chromium plume area. 6B-31
- Figure 3.1-12. The units on the figure (e.g., 8 ft/yr) appear to be incorrect as water is measured in volume. 6B-32
- Page 3.1-38, under In-Situ Treatment Experience to Date, first bullet point. The document should explain why ethanol is now favored for in-situ treatment. Also, 95% ethanol is used for in-situ treatment – what component makes up the other 5%? The water quality impacts of this chemical should also be addressed, as the total amount injected over the period of all remediation activities will be substantial. Also at the last bullet point in the same paragraph, a reference or data should be provided to support the statement that "The secondary byproducts also tend to reduce over time and distance from the reducing zone when exposed to oxidizing conditions in non-treated groundwater." 6B-33 6B-34
- As indicated in the EIR (Section 3.1.7 Significance Criteria) for Cr(VI), page 3.1-46, if and when an MCL is established for Cr(VI), it may not matter, because PG&E is required to cleanup Cr(VI) to background conditions, i.e., defined as 3.1 ppb Cr(VI), at this time. If the MCL for Cr(VI) is set at a concentration lower than the current background level, it suggests that the project will not require cleanup of the impacted groundwater to concentrations that are acceptable for human consumption. If, however, an MCL is established that is higher than the current background concentration, then there is no issue. PG&E is required to provide replacement water for any water supply well with a Cr(VI) concentration equal to or greater than 0.06 ppb (Section 2.5.1). However, when and if an MCL is established, the MCL will become the criterion. If an MCL is set below the background level, Cr(VI) will not be remediated to the MCL. 6B-35
- Significance Criteria, pages 3.1-46 through 3.1-49. For remediation byproducts, different significance criteria and boundaries are used as compared to the chromium contamination. Impacts are considered significant when remedial actions cause an increase in concentrations of total chromium within a water supply well within 1 mile of the defined chromium plume. Yet impacts for byproducts are considered significant when remedial actions cause an increase in concentration of byproducts within one-half mile upgradient or one quarter mile cross gradient of a water supply well. It is recommended that the significance criteria for byproduct contamination should be further discussed and made consistent with chromium contamination (1 mile). 6B-36
- Page 3.1-70, Alternative 4C-2. The EIR indicates that plume bulging can occur but will be mitigated as necessary. We recommend that further discussion be included to justify that the mitigation measures provided to minimize plume bulging are, in fact, adequate to control and monitor this impact. Mitigation should include monitoring outside the plume to assure that hydraulic control of the plume has, and will, continue to be maintained. 6B-37
- Page 3.1-90, WTR-MM-2. This mitigation measure should identify timeframes for implementation, including implementation of the "comprehensive program" to determine adversely affected wells and implementation of alternative water supplies, if necessary. 6B-38
- Pages 3.1-92 through 3.1-94, Mitigation Measure WTR-MM-2a and b, the definition of actually and potentially affected wells. New wells are currently being installed to define the plume and 6B-39

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with comments

additional wells may be installed as remediation progresses. It is not clear in the EIR how these mitigation measures apply to new wells where existing background data currently does not exist. In addition, a portion of these mitigation measures will rely on future water quality modeling. Also, the potential to employ different models, or updates to existing models, should also be provided. 6B-39 cont'd 6B-40

- Mitigation Measure WTR-MM-2b, Monitoring, page 3.1-94. This mitigation measure requires initial monitoring of domestic and agricultural wells within one-mile downgradient or cross-gradient or any proposed in-situ or agricultural treatment unit. Mitigation Measure WTR-MM-2b, should also require monitoring for remedial activity byproducts in domestic and agricultural wells within one mile of any in-situ or agricultural treatment unit on a twice yearly basis (as opposed to within one-half mile down gradient and one quarter-mile cross gradient). The chromium plume has expanded, appears to have not been completely defined. This observation, in part is what is driving numerous Community complaints that the plume may not be confined, and that by-products are being detected in wells outside the IRZ. Therefore, mitigation measures in the EIR must be formulated with the objective of assuring that further degradation of water quality in wells is prevented. 6B-41 6B-42
- Page 3.1-96, Monitoring. PG&E should immediately conduct initial monitoring of groundwater levels and water quality in more domestic and agricultural wells. At time of writing, we understand that the Water Board has a draft Amended CAO (No. R6V-2008-0002-A4), which will require PG&E to submit a new groundwater monitoring work plan which will take into account domestic well Cr(VI) data in the siting of new groundwater monitoring wells. PG&E should not have to wait until a new Cleanup and Abatement Order is provided to complete these types of studies. There are no new environmental impacts associated with monitoring of existing wells. Delays in implementing effective remediation measures have resulted in expansion of the chromium plume and any additional delays must be minimized. 6B-43
- Mitigation Measure WTR-MM-3. This measure requires the preparation of a Boundary Monitoring Plan (BMP) and a Contingency Plan for AUs but provides no information or requirements on what constitutes a BMP or Contingency Plan. In order to be considered mitigation, requirements, performance standards, and similar information needs to be provided to show how the BMP or Contingency Plan would be considered as mitigation. 6B-44
- Mitigation Measure WTR-MM-8. This mitigation measure requires that the treated water be sampled on an annual basis to demonstrate that the water quality of the source is acceptable for freshwater injection. We recommend that the water be sampled more frequently because of the complex groundwater issues involved with the remediation efforts. 6B-45
- Manganese Mitigation Plan. It does not appear that the environmental impacts associated with implementation of the existing Manganese Mitigation Plan have been included in the EIR. We recommend that the key elements of the mitigation measures in the Manganese Mitigation Plan should be included in the Mitigation Monitoring Program, and also included in the Cleanup and Abatement Order to assure that the requirements are ultimately enforceable. 6B-46
- It is possible that increased project groundwater pumping for agricultural treatment may also result in uranium and other associated radionuclide concentrations in groundwater; but the potential for this impact to occur is currently not well understood due to limited data. Increased concentrations of these contaminants could lead to significant health risks due to exposure. We recommend that these risks should be further discussed in the EIR. 6B-47
- Page 3.1-98, Mitigation Measure WTR-MM-5. There are no dates or requirements for when the investigations required under this mitigation measure would occur. There should be a 6B-48

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discussion added on to include enforceable compliance dates associated with implementation of the investigation on TDS, uranium, and other radionuclide levels. 6B-48 cont'd

4. Hazards and Hazardous Materials

- Ethanol is a flammable material. The EIR indicates that 95% ethanol is used for in-situ remediation. The potential hazards associated with ethanol storage, transportation, and use should be considered in the EIR. 6B-49

5. Geology and Soils

- Page 3.4-7, Local Geology. The references to the local geology rely on references from PG&E. A better general reference for existing geology would be data from the U.S. Geological Survey or California Geologic Survey or other similar type of reference. 6B-50

6. Air Quality

- Page 3.5-37, Mitigation measure AIR-MM-3. The mitigation measures should be consistent with the CARB ACTM for truck idling and idling should be limited to 5 minutes, instead of 3 minutes. Startup emissions are generally more than idling emissions. Frequent start up and shutdown of truck engines could actually result in higher emissions as opposed to reduced emissions. 6B-51
- Tables 3.5-11 and 3.5-12 on page 3.5-26. For Alternatives 4C-3 and 4C-5 the emissions totals are underreported when compared to Appendix D. Since Appendix D does not contain Table numbers or page numbers to easily identify the information, the Tables referenced are identified by the title of the page and the electronic version page number. The supporting documentation to the Construction Emissions Summary in Appendix D (electronic page 13) appears to omit the paving emissions associated with the treatment facility for Alternatives 4C-3 and 4C-5. The URBEMIS Construction Emissions Associated with Offroad Equipment and Fugitive Dust Table in Appendix D (electronic page 20) quantifies paving emissions associated with the treatment facility as 4.51, 32.65, 16.96, 1.77, and 1.63 pounds per day of ROG, NOx, CO, PM10, PM2.5, and CO_2, respectively, which are not included in the Alternative 4C-3 and Alternative 4C-5 Tables (electronic pages 17 and 19, respectively). The Alternatives Tables for alternatives are consolidated into the Construction Emission Summary. Consequently, the Construction Emissions Summary does not include the paving emissions for Alternatives 4C-3 and 4C-5, which in turn, is reported in Table 3.5-11 and 3.5-12. Therefore, the construction air quality impacts from these alternatives are understated. 6B-52
- Tables 3.5-17 and 3.5-18 on page 3.5-34. It is unclear in the supporting documentation to the Construction Emissions Summary in Appendix D (electronic page 13) if the CO_2e emissions have been calculated correctly. No details are presented in Appendix D detailing the CO_2e emissions conversions from pounds per day as reported in the URBEMIS Construction Emissions Associated with Offroad Equipment and Fugitive Dust Table (electronic page 20) to the No-Project and Alternatives Tables (electronic pages 14 through 19). The CO_2e emissions are summarized in the Construction Emissions Summary and in turn reported in Tables 3.5-17 and 3.5-18. Therefore, the project impacts on climate change could not be verified. 6B-53

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- It is unclear in the supporting documentation to the Construction Emissions Summary in Appendix D (electronic page 13) if the omission of the paving emissions that occurred for criteria pollutant emissions also occurred for CO_2e emissions. For Alternatives 4C-3 and 4C-5, the emissions totals may have been underreported when compared to Appendix D. 6B-54
- It is recommended that Table and page numbers be added to the Appendix for easier referencing. 6B-55

7. Noise

- Page 3.6-8, Existing Noise Levels, 2nd paragraph. The statement is made that the 60 L_{dn} contour for SR 58 is about 425 from the road and the 65 L_{dn} contour is about 200 feet from the road and references Table 3.6-9. Table 3.6-9 indicates that a 60 L_{dn} contour (28,000 ADT) would be about 790 feet. The calculation of the 60 L_{dn} and 65 L_{dn} contours for the SR 58 should be provided. 6B-56
- The proposed project could result in significant construction noise impacts (see Table 3.6-15, 3.6-17, 3.6-19, 3.6-21, 3.6-23, and 3.6-25). As explained below, these noise impacts are expected to remain significant following mitigation. These noise impacts show noise levels that exceed County noise ordinance levels (55 dBA daytime) up to 4,456 feet or close to one mile away. The EIR indicates that Mitigation Measure NOI-MM-1 would minimize noise impacts to less than significant by requiring a Noise/Vibration Control Plan but there is no requirement that shows how significant noise impacts (up to 93 dBA at 50 feet) would be reduced to 55 dBA. Some homes are expected to be within 200 feet of construction activities, so construction noise impacts at these locations would be above 80 dBA. None of the suggested measures can be expected to reduce noise impacts by 25 dBA. Therefore, it appears that construction noise impacts will remain significant. 6B-57

8. Biological Resources

- Page 3.7-47, paragraph. Please identify the Habitat Conservation Program referenced in this mitigation measure. 6B-58

9. Cultural Resources

- Page 3.8-27, Mitigation Measures CUL-MM-1, first paragraph. Suggest that the cultural resources surveys be limited to areas proposed for construction activities. The entire project area, as defined in the project description, includes the chromium plume and the one-mile area surrounding the plume. The mitigation should not require cultural resources surveys in areas where no remediation or construction activities are proposed. 6B-59

10. Other CEQA Topics

- The Cumulative Impact Analysis needs to include past, present and reasonably foreseeable future projects (CEQA Guidelines Section 15130). Therefore, the Analysis should recognize and discuss all existing and any previous Water Board Orders, and related remediation activities completed by PG&E in the Hinkley Valley. 6B-60

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with comments

- Page 4-46, Table 4-4. The potential impacts of "local aquifer drawdown" and "aquifer compaction" should be identified in Table 4-4 (they are blank in the Draft EIR). 6B-61
- Page 4-59, Identifying the Environmentally Superior Alternative. The EIR does not identify a single environmentally superior alternative; so this decision-making still needs to occur. The EIR should provide the reader more insights into the path forward beyond this document, and discuss how the Hinkley Community will have the opportunity for input. 6B-62

11. General Mitigation Issues

- In order to ensure that the mitigation measures and project revision identified in the EIR are implemented, the Water Board is required to adopt a mitigation monitoring program (MMP) (CEQA Guidelines Section 15097). The public should be allowed to review and comment on the MMP. Most optimally, the MMP needs to establish and enforce mitigation measures, and set compliance timeframes, which will further help in the implementation of future remediation activities. 6B-63
- Mitigation measures should be considered for inclusion in the Final Cleanup and Abatement Order issued by the Water Board to ensure the mitigation measures are enforced. 6B-64

In conclusion, we thank the CAC and the IRP Manager for selecting and allowing Environmental Audit to be of assistance to the CAC and Hinkley Community, and prepare these comments on the Draft EIR. Should you require further assistance or have questions, please do not hesitate to contact me at 714-632-8521. 6B-65

Respectfully submitted,

ENVIRONMENTAL AUDIT, INC.

Debra Bright Stevens

Debbie Bright Stevens
Senior Vice President

#6B

Attachment B
Relevant to 6B comments

ATTACHMENT B

#6B

Attachment B
Relevant to 6B comments

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories est 1906

Client Name:Terawatt Construction Inc.
Contact:Nick Grill
Address:P.O. Box 67
Hinkley, CA 92347

Report Date:08-Oct-2012

Analytical Report: Page 1 of 3
Project Name: No Project
Project Number: --PAID--Cr

Work Order Number: B2I2778

Received on Ice (Y/N): No Temp: 24°C

Attached is the analytical report for the sample(s) received for your project. Below is a list of the individual sample descriptions with the corresponding laboratory number(s). Also, enclosed is a copy of the Chain of Custody document (if received with your sample(s)). Please note any unused portion of the sample(s) may be responsibly discarded after 30 days from the above report date, unless you have requested otherwise.

Thank you for the opportunity to serve your analytical needs. If you have any questions or concerns regarding this report please contact our client service department.

Sample Identification

Lab Sample #	Client Sample ID	Matrix	Date Sampled	By	Date Submitted	By
B2I2778-01	#1 Flower St.	Water	09/26/12 13:30	Client	09/26/12 15:50	Nick
B2I2778-02	#2 Flower St.	Water	09/26/12 13:30	Client	09/26/12 15:50	Nick
B2I2778-03	21876 Pioneer Rd., Hinkley	Water	09/26/12 13:30	Client	09/26/12 15:50	Nick

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories est 1906

#6B

Attachment B
Relevant to 6B comments

Client Name:Terawatt Construction Inc.
Contact:Nick Grill
Address:P.O. Box 67
Hinkley, CA 92347

Report Date:08-Oct-2012

Analytical Report: Page 2 of 3
Project Name: No Project
Project Number: --PAID--Cr

Work Order Number: B2I2778

Received on Ice (Y/N): No Temp: 24°C

	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
B2I2778-01 *Sampled: 09/26/12 13:30*							
#1 Flower St.							
Arsenic	6.6	2.0	ug/L	EPA 200.8	10/01/12 23:01	AAV	
Manganese	29	20	ug/L	EPA 200.8	10/01/12 23:01	AAV	
B2I2778-02 *Sampled: 09/26/12 13:30*							
#2 Flower St.							
Arsenic	54	1.0	ug/L	EPA 200.8	10/05/12 11:15	AAV	Nconf
Manganese	1300	40	ug/L	EPA 200.8	10/01/12 23:44	AAV	
B2I2778-03 *Sampled: 09/26/12 13:30*							
21876 Pioneer Rd., Hinkley							
Arsenic	19	4.0	ug/L	EPA 200.8	10/01/12 23:45	AAV	Nconf
Manganese	5600	250	ug/L	EPA 200.8	10/05/12 13:27	AAV	

#6B

Attachment B
Relevant to 6B comments

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories est 1906

Client Name:	Terawatt Construction Inc.	Analytical Report:	Page 3 of 3
Contact:	Nick Grill	Project Name:	No Project
Address:	P.O. Box 67	Project Number:	--PAID--Cr
	Hinkley, CA 92347	**Work Order Number:**	**B2I2778**
Report Date:	08-Oct-2012	Received on Ice (Y/N):	No Temp: 24°C

Notes and Definitions

Nconf	Result(s) confirmed by re-analysis.
ND:	Analyte NOT DETECTED at or above the Method Detection Limit **(if MDL is reported)**, otherwise at or above the Reportable Detection Limit (RDL)
NR:	Not Reported
RDL:	Reportable Detection Limit
MDL:	Method Detection Limit
* / ''' :	NELAP does not offer accreditation for this analyte/method/matrix combination

Approval

Enclosed are the analytical results for the submitted sample(s). Babcock Laboratories certify the data presented as part of this report meet the minimum quality standards in the referenced analytical methods. Any exceptions have been noted. Babcock Laboratories and its officers and employees assume no responsibility and make no warranty, express or implied, for uses or interpretations made by any recipients, intended or unintended, of this report.

cc: e-Tab_Summary.rpt

#6B

Attachment B
Relevant to 6B comments

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories est 1906

Client Name:Terawatt Construction Inc.
Contact:Nick Grill
Address:P.O. Box 67
Hinkley, CA 92347

Report Date:08-Oct-2012

Analytical Report: Page 1 of 1
Project Name: No Project
Project Number: --PAID--Cr

Work Order Number: B2I2778

Received on Ice (Y/N): No Temp: 24°C

E.S. Babcock & Sons, Inc.
6100 Quail Valley Ct., Riverside, CA 92507
(951) 653-3351

Project Reference _____ Lab No. B2I 2778 AB

Sample Receipt Form SEP 26 2012

Client: Terawatt Const.
Submitted By: Nick
Date: 9/26/12
Time: 15:50

Per Credit card #90.00 prepaid

Sample Condition

Number of Containers:	3 qts		
Temperature:	24 °C		
Were Samples Submitted on Ice?	(No)	Yes	
Were Samples Received Intact?	No	(Yes)	
Were Samples in Proper Containers?	No	(Yes)	
Were Sample Custody Seals Intact?	No	Yes	(N/A)
Chain of Custody Received?	[No]	Yes	
Submitted within Reg. Holding Times?	No	(Yes)	
Is there Sufficient Volume?	No	(Yes)	

Comments: #1 Flower St. 9/26/12 @ 13:30
#2 Flower St. 1 1
21876 Pioneer Rd, Hinkley 9/26/12 @ 13:30
MW AS

Sample(s) Received By: Angie Brown

Problem Contact Information: Person Contacted:_____ Date/Init.: _____

Permission to Continue? Yes No

* Run As Received (Do not Filter) per client. AB

#6B

Attachment B
Relevant to 6B comments

E.S.BABCOCK & Sons Inc.
Environmental Laboratories

Client Name:Terawatt Construction Inc.
Contact:Nick Grill
Address:P.O. Box 67
Hinkley, CA 92347

Report Date:30-Jul-2012

Analytical Report: Page 2 of 3
Project Name: No Project
Project Number: --PAID--Ck/Cr

Work Order Number: B2G1632

Received on Ice (Y/N): No Temp: 24°C

	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
B2G1632-01 *Sampled: 07/16/12 13:00*							
Roberts							
Uranium	ND	1.0	pCi/L	EPA 200.8	07/25/12 12:44	KRV	
Arsenic	9.7	2.0	ug/L	EPA 200.8	07/23/12 19:54	KRV	Nconf
Hexavalent Chromium	ND	0.060	ug/L	EPA 218.6	07/18/12 03:20	AAV	
Manganese	77	20	ug/L	EPA 200.8	07/23/12 19:54	KRV	Nconf
B2G1632-02 *Sampled: 07/16/12 13:00*							
22280 Lower							
Uranium	7.8	1.0	pCi/L	EPA 200.8	07/25/12 12:45	KRV	
Arsenic	6.7	2.0	ug/L	EPA 200.8	07/23/12 19:57	KRV	
Hexavalent Chromium	1.1	0.060	ug/L	EPA 218.6	07/18/12 03:35	AAV	
Manganese	ND	20	ug/L	EPA 200.8	07/23/12 19:57	KRV	

mailing
P.O. Box 132
Riverside, CA 92502-0132

location
6100 Quail Valley Court
Riverside, CA 92507-0704

P 951 653 3351
F 951 653 1662
www.babcocklabs.com

NELAP no. 02101CA
CA ELAP no. 2698
EPA no. CA00102

#6B

Attachment B
Relevant to 6B comments

E.S.BABCOCK&Sons Inc.
Environmental Laboratories

Client Name:Terawatt Construction Inc.
Contact:Nick Grill
Address:P.O. Box 67
Hinkley, CA 92347

Report Date:30-Jul-2012

Analytical Report: Page 1 of 3
Project Name: No Project
Project Number: --PAID--Ck/Cr

Work Order Number: B2G1632

Received on Ice (Y/N): No Temp: 24°C

Attached is the analytical report for the sample(s) received for your project. Below is a list of the individual sample descriptions with the corresponding laboratory number(s). Also, enclosed is a copy of the Chain of Custody document (if received with your sample(s)). Please note any unused portion of the sample(s) may be responsibly discarded after 30 days from the above report date, unless you have requested otherwise

Thank you for the opportunity to serve your analytical needs. If you have any questions or concerns regarding this report please contact our client service department.

Sample Identification

Lab Sample #	Client Sample ID	Matrix	Date Sampled	By	Date Submitted	By
B2G1632-01	Roberts	Water	07/16/12 13:00	Client	07/16/12 15:52	Nick
B2G1632-02	22280 Lower	Water	07/16/12 13:00	Client	07/16/12 15:52	Nick

The following samples were split from an unpreserved container at the laboratory after submittal and preserved appropriately. Federal guidelines (40CFR Parts 136 and 141) instruct preservation be performed on a separate container collected at site:

B2G1632-01

B2G1632-02

Included in this Data Package please find an amended report for the laboratory number(s) referenced below.
Laboratory Number: B2G1632
Reason for Amendment: Due to laboratory error, sample bottles were not labeled properly.
This report supersedes the report issued on 27-Jul-2012.

mailing
P.O. Box 472
Riverside, CA 92502-0472

location
6100 Quail Valley Court
Riverside, CA 92507-0704

P 951 653 3351
F 951 653 1662
www.babcocklabs.com

NELAP ID: 02101CA
CA ELAP ID: 2698
CSDLAC ID: 10102

#6B

Attachment B
Relevant to 6B comments

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories

Client Name:Terawatt Construction Inc.
Contact:Nick Grili
Address:P.O. Box 67
Hinkley, CA 92347

Report Date:30-Jul-2012

Analytical Report: Page 3 of 3
Project Name: No Project
Project Number: --PAID--Ck/Cr

Work Order Number: B2G1632

Received on Ice (Y/N): No Temp: 24°C

Notes and Definitions

Nconf	Result(s) confirmed by re-analysis.
ND:	Analyte NOT DETECTED at or above the Method Detection Limit **(If MDL is reported)**, otherwise at or above the Reportable Detection Limit (RDL)
NR:	Not Reported
RDL:	Reportable Detection Limit
MDL:	Method Detection Limit
* / '" :	NELAP does not offer accreditation for this analyte/method/matrix combination

Approval

Enclosed are the analytical results for the submitted sample(s). Babcock Laboratories certify the data presented as part of this report meet the minimum quality standards in the referenced analytical methods. Any exceptions have been noted. Babcock Laboratories and its officers and employees assume no responsibility and make no warranty, express or implied, for uses or interpretations made by any recipients, intended or unintended, of this report.

Tauren Tyner, Project Manager

cc:

e-Tab_Summary.rpt

#6B

Attachment B
Relevant to 6B comments

E.S.BABCOCK & Sons, Inc.
Environmental Laboratories

Title 22 Drinking Water Requirements
Regulated Chemicals
Maximum Contaminant Levels

Analyte	MCL
Nitrate	45 mg/L
Nitrate + Nitrite as N	10 mg/L
Nitrite as N	1 mg/L
Cyanide	0.15 mg/L
MBAS	0.5 mg/L
Asbestos	7 MFL
Fluoride	2 mg/L
Perchlorate	6 ug/L
Aluminum	1000 ug/L
Antimony	6 ug/L
Arsenic	10 ug/L
Barium	1000 ug/L
Beryllium	4 ug/L
Cadmium	5 ug/L
Chromium	50 ug/L
Copper	1000 ug/L
Iron	300 ug/L
Lead	15 ug/L
Manganese	50 ug/L
Mercury	2 ug/L
Nickel	100 ug/L
Selenium	50 ug/L
Silver	100 ug/L
Thallium	2 ug/L
Zinc	5000 ug/L

P.O. Box 437 Riverside, CA

#6B

Attachment B
Relevant to 6B comments

Clinical Laboratory of San Bernardino, Inc.

Terawatt Construction P.O. Box 67 Hinkley CA, 92347	Project: Routine Sub Project: Project Manager: Nick Grill	Work Order: 12H0245 Received: 08/02/12 17:00 Reported: 08/16/12

35375 Tamarack Rd — **12H0245-01 (Water)** — **Sample Date:** 08/02/12 15:05 **Sampler:** Not Listed

Analyte	Method	Result	Units	Rep. Limit	MCL	Prepared	Analyzed	Batch	Qualifier
Metals									
Manganese (Mn)	EPA 200.7	ND	ug/L	20	50	08/09/12	08/09/12	1232208	

35784 Mountain View Rd — **12H0245-02 (Water)** — **Sample Date:** 08/02/12 15:05 **Sampler:** Not Listed

Analyte	Method	Result	Units	Rep. Limit	MCL	Prepared	Analyzed	Batch	Qualifier
Metals									
Manganese (Mn)	EPA 200.7	ND	ug/L	20	50	08/07/12	08/08/12	1232032	

35838 Mountain View Rd — **12H0245-03 (Water)** — **Sample Date:** 08/02/12 15:05 **Sampler:** Not Listed

Analyte	Method	Result	Units	Rep. Limit	MCL	Prepared	Analyzed	Batch	Qualifier
Metals									
Manganese (Mn)	EPA 200.7	98000	ug/L	1000	50	08/13/12	08/14/12	1232422	

36325 Mountain View Rd — **12H0245-04 (Water)** — **Sample Date:** 08/02/12 15:05 **Sampler:** Not Listed

Analyte	Method	Result	Units	Rep. Limit	MCL	Prepared	Analyzed	Batch	Qualifier
Metals									
Manganese (Mn)	EPA 200.7	**30**	ug/L	20	50	08/07/12	08/08/12	1232032	

ND Analyte NOT DETECTED at or above the reporting limit

Bob Glaubig

Bob Glaubig

Laboratory Director

Post Office Box 329 San Bernardino, CA 92402 (909) 825-7693 Fax (909) 825-7696 ELAP Number 1088

Chain of Custody

Geo-Monitor, Inc.

17152 Darwin Ave Hesperia, CA 92340 (760) 244-3481

Paid check # 14606 $160 12H0245

Client	Terawatt Construction			Client Job No.	G20518
Address	PO Box 67 Hinkley, CA 92347			Destination Laboratory	[ ] Geo-Monitor, Inc [ ] Other:
Phone No.	760 825 60	Fax No.	760 253 7766		
Contact	Nick Goll	Cell No.	760 827 6019		
System No.					
Project Name					
Sampled By					
Comments	Please email Results terawatt@juno.com				

Analysis Requested: Arsenic

Turn Around Time

	Date	Time	Sample Identification	Matrix	No.	Pres.	Type	
1A	8/2/12	3:05	35375 TAMARACK Rd					/
2A	8/2/12	3:05	35784 Mountain View rd					/
3A	8/2/12	3:05	35832 Mountain View rd					/
4A	8/2/12	3:05	36325 Mountain View rd					/

Preservatives: (1) $Na_2S_2O_3$ (3) Cold (2) H_2SO_4/HNO3 (4)

Sample Types: (1) Routine (2) Repeat (3) Replacement (4) Special (W) Well (D) Distribution

All turn around times are expressed as working days / Not all analyses can be processed as rush

Relinquished By (Sign)	Print Name / Company	Date / Time	Received By (Sign)	Print Name / Company
Nicolette Goll	Nicolette Goll / GM GeoMonitor	8/2/12 3:10		Krystal Rodriguez / GeoM
		8-2-12 1720		

Rec'd at Lab By: Rec'd Date / Time: Comments:

Rec'd on Ice Yes ✓ No ___ Rec'd Intact Yes ✓ No ___ Receipt Temperature: 6.7° C

Shipped Via | | Fed X | | Golden State | | UPS | | Client | | Other ___ Page ___ of ___

#6B

Attachment B
Relevant to 6B comments

#6B

Attachment B
Relevant to 6B comments

21881 BARTON ROAD
GRAND TERRACE, CA 92313
GENERAL MINERAL & PHYSICAL & INORGANIC ANALYSIS (9/99)

Date of Report: 06/10/26 Sample ID No.G60782-1A
Laboratory Signature Lab Director:
Name: CLINICAL LABORATORIES OF SAN BERNARDINO
Name of Sampler:NICK GRILL Employed By: N.G.
Date/Time Sample Collected:06/10/16/1400 Date/Time Sample Received @ Lab:06/10/16/1640 Date Analyses Completed:06/10/24

System Name:NICK GRILL System Number: 36CXX54
Name or Number of Sample Source:EAST WELL

* User ID: 36C Station Number:
* Date/Time of Sample: |06|10|16|1400| Laboratory Code: 3761
YY MM DD TTTT YY MM DD
* Date Analysis completed: |06|10|24|
* Submitted by: Phone #:

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3) (mg/L)	00900	290	5.0
	mg/L	Calcium (Ca) (mg/L)	00916	95	1.0
	mg/L	Magnesium (Mg) (mg/L)	00927	15	1.0
	mg/L	Sodium (Na) (mg/L)	00929	80	1.0
	mg/L	Potassium (K) (mg/L)	00937	2.7	1.0
Total Cations		Meq/L Value: 9.52			
	mg/L	Total Alkalinity (as CaCO3) (mg/L)	00410	160	5.0
	mg/L	Hydroxide (OH) (mg/L)	71830	ND	5.0
	mg/L	Carbonate (CO3) (mg/L)	00445	ND	5.0
	mg/L	Bicarbonate (HCO3) (mg/L)	00440	190	5.0
*	mg/L+	Sulfate (SO4) (mg/L)	00945	100	0.50
*	mg/L+	Chloride (Cl) (mg/L)	00940	150	1.0
45	mg/L	Nitrate (as NO3) (mg/L)	71850	4.2	2.0
2.0	mg/L	Fluoride (F) (Natural-Source)	00951	0.50	0.10
Total Anions		Meq/L Value: 9.52			
	Std.Units+	PH (Laboratory) (Std.Units)	00403	7.8	
***	umho/cm+	Specific Conductance (E.C.) (umhos/cm)	00095	940	2.0
****	mg/L+	Total Filterable Residue@180C(TDS) (mg/L)	70300	570	5.0
15	Units	Apparent Color (Unfiltered) (Units)	00081		3
3	TON	Odor Threshold at 60 C (TON)	00086		1
5	NTU	Lab Turbidity (NTU)	82079		0.1
0.5	mg/L+	MBAS (mg/L)	38260	ND	0.10

* 250-500-600 ** 0.6-1.7 *** 900-1600-2200 **** 500-1000-1500

#6B

Attachment B
Relevant to 6B comments

AGE 4 OF 2

INORGANIC CHEMICALS

G60782-1A

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
1000	ug/L	Aluminum (Al) (ug/L)	01105	ND	50
6	ug/L	Antimony (ug/L)	01097	ND	6.0
10	ug/L	Arsenic (As) (ug/L)	01002	ND	2.0
1000	ug/L	Barium (Ba) (ug/L)	01007	150	100
4	ug/L	Beryllium (ug/L)	01012	ND	1.0
5	ug/L	Cadmium (Cd) (ug/L)	01027	ND	1.0
50	ug/L	Chromium (Total Cr) (ug/L)	01034	ND	10
1000	ug/L+	Copper (Cu) (ug/L)	01042	ND	50
300	ug/L+	Iron (Fe) (ug/L)	01045	ND	100
	ug/L	Lead (Pb) (ug/L)	01051	ND	5.0
50	ug/L+	Manganese (Mn) (ug/L)	01055	ND	20
2	ug/L	Mercury (Hg) (ug/L)	71900	ND	1.0
100	ug/L	Nickel (ug/L)	01067	ND	10
50	ug/L	Selenium (Se) (ug/L)	01147	ND	5.0
100	ug/L+	Silver (Ag) (ug/L)	01077	ND	10
2	ug/L	Thallium (ug/L)	01059	ND	1.0
5000	ug/L+	Zinc (Zn) (ug/L)	01092	ND	50

ADDITIONAL ANALYSES

	ug/L	Boron (ug/L)	01020	140	100
	ug/L	Nitrate + Nitrite as Nitrogen(N) (ug/L)	A-029	940	400
10000	ug/L	Nitrite as Nitrogen(N) (ug/L)	00620	ND	400
1000	ug/L	Cyanide (ug/L)	01291	ND	100
150	ug/L	Vanadium (ug/L)	01087	8.7	3.0
	ug/L	Chromium, hexavalent (CrVI) (ug/L)	01032	1.9	1.0
	ug/L				

+ Indicates Secondary Drinking Water Standards

#6B

Attachment B
Relevant to 6B comments

CLINICAL LAB OF SAN BERN.
21881 BARTON ROAD
GRAND TERRACE, CA 92313

GENERAL MINERAL & PHYSICAL & INORGANIC ANALYSIS (9/99)

Sample ID No.G60782-2A

Date of Report: 06/10/26

Signature Lab Director: _____

Laboratory Name: CLINICAL LABORATORIES OF SAN BERNARDINO

Employed By: N.G.

Name of Sampler:NICK GRILL

Date/Time Sample Collected:06/10/16/1405

Date/Time Sample Received @ Lab:06/10/16/1640

Date Analyses Completed:06/10/24

System Name:NICK GRILL

System Number: 36CXX54

Name or Number of Sample Source:WEST WELL

* User ID: 36C

* Date/Time of Sample: |06|10|16|1405| YY MM DD TTTT

Station Number:

Laboratory Code: 3761

Date Analysis completed: |06|10|24| YY MM DD

Phone #: _____

* Submitted by: _____

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3) (mg/L)	00900	110	5.0
	mg/L	Calcium (Ca) (mg/L)	00916	32	1.0
	mg/L	Magnesium (Mg) (mg/L)	00927	7.3	1.0
	mg/L	Sodium (Na) (mg/L)	00929	61	1.0
	mg/L	Potassium (K) (mg/L)	00937	2.0	1.0
Total Cations		Meq/L Value: 4.90			
	mg/L	Total Alkalinity (as CaCO3) (mg/L)	00410	150	5.0
	mg/L	Hydroxide (OH) (mg/L)	71830	ND	5.0
	mg/L	Carbonate (CO3) (mg/L)	00445	ND	5.0
	mg/L	Bicarbonate (HCO3) (mg/L)	00440	180	5.0
*	mg/L+	Sulfate (SO4) (mg/L)	00945	40	0.50
*	mg/L+	Chloride (Cl) (mg/L)	00940	38	1.0
45	mg/L	Nitrate (as NO3) (mg/L)	71850	ND	2.0
2.0	mg/L	Fluoride (F) (Natural-Source)	00951	0.63	0.10
Total Anions		Meq/L Value: 4.89			
	Std.Units+	PH (Laboratory) (Std.Units)	00403	8.1	
***	umho/cm+	Specific Conductance (E.C.) (umhos/cm)	00095	470	2.0
****	mg/L+	Total Filterable Residue@180C(TDS) (mg/L)	70300	320	5.0
15	Units	Apparent Color (Unfiltered) (Units)	00081		3
3	TON	Odor Threshold at 60 C (TON)	00086		1
5	NTU	Lab Turbidity (NTU)	82079		0.1
0.5	mg/L+	MBAS (mg/L)	38260	ND	0.10

* 250-500-600 ** 0.6-1.7 *** 900-1600-2200 **** 500-1000-1500

#6B

Attachment B
Relevant to 6B comments

OF 2

INORGANIC CHEMICALS

G60782-2A

	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
	ug/L	Aluminum (Al) (ug/L)	01105	ND	50
	ug/L	Antimony (ug/L)	01097	ND	6.0
	ug/L	Arsenic (As) (ug/L)	01002	9.4	2.0
	ug/L	Barium (Ba) (ug/L)	01007	ND	100
	ug/L	Beryllium (ug/L)	01012	ND	1.0
	ug/L	Cadmium (Cd) (ug/L)	01027	ND	1.0
	ug/L	Chromium (Total Cr) (ug/L)	01034	ND	10
	ug/L	Copper (Cu) (ug/L)	01042	ND	50
	ug/L+	Iron (Fe) (ug/L)	01045	ND	100
	ug/L+	Lead (Pb) (ug/L)	01051	ND	5.0
	ug/L	Manganese (Mn) (ug/L)	01055	ND	20
	ug/L+	Mercury (Hg) (ug/L)	71900	ND	1.0
	ug/L	Nickel (ug/L)	01067	ND	10
	ug/L	Selenium (Se) (ug/L)	01147	ND	5.0
	ug/L	Silver (Ag) (ug/L)	01077	ND	10
	ug/L+	Thallium (ug/L)	01059	ND	1.0
	ug/L	Zinc (Zn) (ug/L)	01092	ND	50
	ug/L+				

ADDITIONAL ANALYSES

	ug/L	Boron (ug/L)	01020	130	100
	ug/L	Nitrate + Nitrite as Nitrogen(N) (ug/L)	A-025	ND	400
	ug/L	Nitrite as Nitrogen(N) (ug/L)	00620	ND	400
	ug/L	Cyanide (ug/L)	01291	ND	100
	ug/L	Vanadium (ug/L)	01087	25	3.0
	ug/L	Chromium, hexavalent (CrVI) (ug/L)	01032	1.2	1.0

+ Indicates Secondary Drinking Water Standards

#6B

Attachment B
Relevant to 6B comments

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories

Client Name:Terawatt Construction Inc.
Contact:Nick Grill
Address:P.O. Box 67
Hinkley, CA 92347

Report Date:08-Oct-2012

Analytical Report: Page 1 of 3
Project Name: No Project
Project Number: --PAID--Cr

Work Order Number: B2I2778

Received on Ice (Y/N): No Temp: 24°C

Attached is the analytical report for the sample(s) received for your project. Below is a list of the individual sample descriptions with the corresponding laboratory number(s). Also, enclosed is a copy of the Chain of Custody document (if received with your sample(s)). Please note any unused portion of the sample(s) may be responsibly discarded after 30 days from the above report date, unless you have requested otherwise.

Thank you for the opportunity to serve your analytical needs. If you have any questions or concerns regarding this report please contact our client service department.

Sample Identification

Lab Sample #	Client Sample ID	Matrix	Date Sampled	By	Date Submitted	By
B2I2778-01	#1 Flower St.	Water	09/26/12 13:30	Client	09/26/12 15:50	Nick
B2I2778-02	#2 Flower St.	Water	09/26/12 13:30	Client	09/26/12 15:50	Nick
B2I2778-03	21876 Pioneer Rd., Hinkley	Water	09/26/12 13:30	Client	09/26/12 15:50	Nick

#6B

Attachment B
Relevant to 6B comments

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories

Client Name: Terawatt Construction Inc.
Contact: Nick Grill
Address: P.O. Box 67
Hinkley, CA 92347

Report Date: 08-Oct-2012

Analytical Report: Page 2 of 3
Project Name: No Project
Project Number: --PAID--Cr

Work Order Number: B2I2778

Received on Ice (Y/N): No Temp: 24°C

	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
B2I2778-01 *Sampled: 09/26/12 13:30*							
#1 Flower St.							
Arsenic	6.6	2.0	ug/L	EPA 200.8	10/01/12 23:01	AAV	
Manganese	29	20	ug/L	EPA 200.8	10/01/12 23:01	AAV	
B2I2778-02 *Sampled: 09/26/12 13:30*							
#2 Flower St.							
Arsenic	54	1.0	ug/L	EPA 200.8	10/05/12 11:15	AAV	Nconf
Manganese	1300	40	ug/L	EPA 200.8	10/01/12 23:44	AAV	
B2I2778-03 *Sampled: 09/26/12 13:30*							
21876 Pioneer Rd., Hinkley							
Arsenic	19	4.0	ug/L	EPA 200.8	10/01/12 23:45	AAV	Nconf
Manganese	5600	250	ug/L	EPA 200.8	10/05/12 13:27	AAV	

E.S.BABCOCK & Sons, Inc.
Environmental Laboratories

Client Name: Terawatt Construction Inc.
Contact: Nick Grill
Address: P.O. Box 67
Hinkley, CA 92347

Report Date: 08-Oct-2012

Analytical Report: Page 3 of 3
Project Name: No Project
Project Number: –PAID–Cr

Work Order Number: B2I2778

Received on Ice (Y/N): No Temp: 24°C

Notes and Definitions

Nconf	Result(s) confirmed by re-analysis.
ND:	Analyte NOT DETECTED at or above the Method Detection Limit **(If MDL is reported)**, otherwise at or above the Reportable Detection Limit (RDL)
NR:	Not Reported
RDL:	Reportable Detection Limit
MDL:	Method Detection Limit
* / " ;	NELAP does not offer accreditation for this analyte/method/matrix combination

Approval

Enclosed are the analytical results for the submitted sample(s). Babcock Laboratories certify the data presented as part of this report meet the minimum quality standards in the referenced analytical methods. Any exceptions have been noted. Babcock Laboratories and its officers and employees assume no responsibility and make no warranty, express or implied, for uses or interpretations made by any recipients, intended or unintended, of this report.

cc: e-Tab_Summary.rpt

#6B

Attachment B
Relevant to 6B comments

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories

Client Name:Terawatt Construction Inc.
Contact:Nick Grill
Address:P.O. Box 67
Hinkley, CA 92347

Report Date:08-Oct-2012

Analytical Report: Page 1 of 1
Project Name: No Project
Project Number: --PAID--Cr

Work Order Number: B2I2778

Received on Ice (Y/N): No Temp: 24°C

E.S. Babcock & Sons, Inc.
6100 Quail Valley Ct., Riverside, CA 92507
(951) 653-3351

Project Reference _____ Lab No. B2I 2778 AB

Sample Receipt Form SEP 26 2012

Client: Terawatt Const.
Submitted By: Nick
Date: 9/26/12
Time: 15:50

Per Credit card #90.00 prepaid

Sample Condition

Number of Containers: 3 qts
Temperature: 24 °C

Were Samples Submitted on Ice?	(No)	Yes
Were Samples Received Intact?	No	(Yes)
Were Samples in Proper Containers?	No	(Yes)
Were Sample Custody Seals Intact?	No	Yes (N/A)
Chain of Custody Received?	[No]	Yes
Submitted within Reg. Holding Times?	No	(Yes)
Is there Sufficient Volume?	No	(Yes)

Comments: #1 Flower St. 9/26/12 @ 13:30
#2 Flower St. 〃 〃
21876 Pioneer Rd, Hinkley 9/26/12 @ 13:30
MW AS

Sample(s) Received By: Angie Brown

Problem Contact Information: Person Contacted: _____ Date/Init.: _____

Permission to Continue? Yes No

* Run AS Received (Do not Filter) per client. AB

#6B

Attachment B
Relevant to 6B comments

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories

Client Name: Terawatt Construction Inc.
Contact: Nick Grill
Address: P.O. Box 67
Hinkley, CA 92347

Report Date: 15-Oct-2012

Analytical Report: Page 1 of 3
Project Name: No Project
Project Number: 36325 Mountain View Rd., Hinkley

Work Order Number: B2J0295

Received on Ice (Y/N): Yes Temp: 11°C

Attached is the analytical report for the sample(s) received for your project. Below is a list of the individual sample descriptions with the corresponding laboratory number(s). Also, enclosed is a copy of the Chain of Custody document (if received with your sample(s)). Please note any unused portion of the sample(s) may be responsibly discarded after 30 days from the above report date, unless you have requested otherwise.

Thank you for the opportunity to serve your analytical needs. If you have any questions or concerns regarding this report please contact our client service department.

Sample Identification

Lab Sample #	Client Sample ID	Matrix	Date Sampled	By	Date Submitted	By
B2J0295-01	2nd Higher	Liquid	10/02/12 10:50	Nicolette	10/02/12 16:15	Nick
B2J0295-02	3rd Lower	Liquid	10/02/12 10:50	Nicolette	10/02/12 16:15	Nick

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories

Client Name: Terawatt Construction Inc.
Contact: Nick Grill
Address: P.O. Box 67
Hinkley, CA 92347

Report Date: 15-Oct-2012

Analytical Report: Page 2 of 3
Project Name: No Project
Project Number: 36325 Mountain View Rd., Hinkley

Work Order Number: B2J0295

Received on Ice (Y/N): Yes Temp: 11°C

	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
B2J0295-01 *Sampled: 10/02/12 10:50*							
2nd Higher							
Arsenic	100	5.0	ug/L	EPA 200.8	10/09/12 18:56	AAV	
Total Chromium	37	20	ug/L	EPA 200.8	10/09/12 18:56	AAV	
Hexavalent Chromium	ND	1.0	ug/L	EPA 218.6	10/04/12 15:14	AAV	
Manganese	7600	100	ug/L	EPA 200.8	10/12/12 14:07	AAV	
B2J0295-02 *Sampled: 10/02/12 10:50*							
3rd Lower							
Arsenic	52	5.0	ug/L	EPA 200.8	10/09/12 18:59	AAV	
Total Chromium	22	20	ug/L	EPA 200.8	10/09/12 18:59	AAV	
Hexavalent Chromium	ND	1.0	ug/L	EPA 218.6	10/04/12 15:29	AAV	
Manganese	1600	10	ug/L	EPA 200.8	10/09/12 18:59	AAV	

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories

Client Name: Terawatt Construction Inc.
Contact: Nick Grill
Address: P.O. Box 67
Hinkley, CA 92347

Report Date: 15-Oct-2012

Analytical Report: Page 3 of 3
Project Name: No Project
Project Number: 36325 Mountain View Rd., Hinkley

Work Order Number: B2J0295

Received on Ice (Y/N): Yes Temp: 11 °C

Notes and Definitions

ND:	Analyte NOT DETECTED at or above the Method Detection Limit **(if MDL is reported)**, otherwise at or above the Reportable Detection Limit (RDL)
NR:	Not Reported
RDL:	Reportable Detection Limit
MDL:	Method Detection Limit
* / " :	NELAP does not offer accreditation for this analyte/method/matrix combination

Approval

Enclosed are the analytical results for the submitted sample(s). Babcock Laboratories certify the data presented as part of this report meet the minimum quality standards in the referenced analytical methods. Any exceptions have been noted. Babcock Laboratories and its officers and employees assume no responsibility and make no warranty, express or implied, for uses or interpretations made by any recipients, intended or unintended, of this report.

cc:

e-Tab_Summary.rpt

#6B

Attachment B
Relevant to 6B comments

E.S.BABCOCK & Sons, Inc.
Environmental Laboratories

Client Name: Terawatt Construction Inc.
Contact: Nick Grill
Address: P.O. Box 67
Hinkley, CA 92347

Report Date: 15-Oct-2012

Analytical Report: Page 1 of 1
Project Name: No Project
Project Number: 36325 Mountain View Rd., Hinkley

Work Order Number: B2J0295

Received on Ice (Y/N): Yes Temp: 11°C

E.S. Babcock & Sons, Inc.
6100 Quail Valley Ct., Riverside, CA 92507
(951) 653-3351

10.2.12

Project Reference _____ Lab No. B2J0295

Sample Receipt Form

Client: Terawatt Construction

Submitted By: Nick

Date: 10.2.12

Time: 1615

PAID $270.— C.C.

Sample Condition

Number of Containers:	2 Qt.	
Temperature:	11 °C	
Were Samples Submitted on Ice?	No	(Yes)
Were Samples Received Intact?	No	(Yes)
Were Samples in Proper Containers?	No	(Yes)
Were Sample Custody Seals Intact?	No	Yes (N/A)
Chain of Custody Received?	[No]	Yes
Submitted within Reg. Holding Times?	No	(Yes)
Is there Sufficient Volume?	No	(Yes)

Comments: 36325 Mountain View Rd Hinkley
Cr6 28.6 2nd Higher 10.2.12 1050 by Nicolette
AS 3rd Lower " 1050 by "
Mn
Cr

Sample(s) Received By: [signature]

Problem Contact Information: Person Contacted: _____ Date/Init.: _____

Permission to Continue? Yes No

mailing
P.O. Box 432
Riverside, CA 92502-0432

location
6100 Quail Valley Court
Riverside, CA 92507-0704

P 951 653 3351
F 951 653 1662
www.babcocklabs.com

NELAP no. 02101CA
CA Elap no. 2698
EPA no. CA00102

#6B

Attachment B
Relevant to 6B comments

E.S.BABCOCK & Sons, Inc.
Environmental Laboratories

Client Name: Morris, Bobby
Contact: Bobby Morris
Address: 21876 Pioneer Rd.
Hinkley, CA 92347

Report Date: 23-Oct-2012

Analytical Report: Page 1 of 4
Project Name: No Project
Project Number: --PAID--Cr

Work Order Number: B2J1452

Received on Ice (Y/N): No Temp: 20°C

Attached is the analytical report for the sample(s) received for your project. Below is a list of the individual sample descriptions with the corresponding laboratory number(s). Also, enclosed is a copy of the Chain of Custody document (if received with your sample(s)). Please note any unused portion of the sample(s) may be responsibly discarded after 30 days from the above report date, unless you have requested otherwise.

Thank you for the opportunity to serve your analytical needs. If you have any questions or concerns regarding this report please contact our client service department.

Sample Identification

Lab Sample #	Client Sample ID	Matrix	Date Sampled	By	Date Submitted	By
B2J1452-01	#1 049428202	Water	10/11/12 10:30	Client	10/11/12 15:37	R.J. Morris
B2J1452-02	#2 049428202	Water	10/11/12 10:30	Client	10/11/12 15:37	R.J. Morris
B2J1452-03	#3 049428202	Water	10/11/12 10:30	Client	10/11/12 15:37	R.J. Morris
B2J1452-04	C.C. Matthiesen 36771 Hidden River Rd., Hinkley CA 92347	Water	10/11/12 08:00	Client	10/11/12 15:37	R.J. Morris
B2J1452-05	Roberts 22275 Granada, Hinkley Ca 92347	Water	10/11/12 11:00	Client	10/11/12 15:37	R.J. Morris
B2J1452-06	37414 Mulberry, Hinkley	Water	10/11/12 08:30	Client	10/11/12 15:37	R.J. Morris

#6B

Attachment B
Relevant to 6B comments

E.S.BABCOCK & Sons, Inc.
Environmental Laboratories

Client Name: Morris, Bobby
Contact: Bobby Morris
Address: 21876 Pioneer Rd.
Hinkley, CA 92347

Report Date: 23-Oct-2012

Analytical Report: Page 2 of 4
Project Name: No Project
Project Number: --PAID--Cr

Work Order Number: B2J1452

Received on Ice (Y/N): No Temp: 20°C

	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
B2J1452-01 *Sampled: 10/11/12 10:30*							
#1 049428202							
Arsenic	170	40	ug/L	EPA 200.8	10/19/12 17:01	AAV	N_noH, Nconf
Manganese	140000	5000	ug/L	EPA 200.8	10/19/12 15:15	AAV	
B2J1452-02 *Sampled: 10/11/12 10:30*							
#2 049428202							
Arsenic	71	2.0	ug/L	EPA 200.8	10/19/12 15:37	AAV	Nconf
Manganese	320	20	ug/L	EPA 200.8	10/17/12 15:17	AAV	
B2J1452-03 *Sampled: 10/11/12 10:30*							
#3 049428202							
Arsenic	5.6	2.0	ug/L	EPA 200.8	10/17/12 15:20	AAV	
Manganese	66	20	ug/L	EPA 200.8	10/17/12 15:20	AAV	
B2J1452-04 *Sampled: 10/11/12 08:00*							
C.C. Matthiesen 36771 Hidden River Rd., Hinkley CA 92347							
Arsenic	22	2.0	ug/L	EPA 200.8	10/19/12 15:39	AAV	Nconf
Manganese	320	20	ug/L	EPA 200.8	10/17/12 15:22	AAV	
B2J1452-05 *Sampled: 10/11/12 11:00*							
Roberts 22275 Granada, Hinkley Ca 92347							
Arsenic	11	2.0	ug/L	EPA 200.8	10/16/12 16:54	AAV	Nconf
Manganese	87	20	ug/L	EPA 200.8	10/16/12 12:48	AAV	

#6B

Attachment B
Relevant to 6B comments

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories

Client Name:Morris, Bobby
Contact:Bobby Morris
Address:21876 Pioneer Rd.
Hinkley, CA 92347

Report Date:23-Oct-2012

Project Name: No Project
Project Number: --PAID--Cr

Work Order Number: B2J1452

Received on Ice (Y/N): No Temp: 20°C

	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
B2J1452-06 *Sampled: 10/11/12 08:30*							
37414 Mulberry, Hinkley							
Arsenic	24	2.0	ug/L	EPA 200.8	10/19/12 15:40	AAV	Nconf
Manganese	ND	20	ug/L	EPA 200.8	10/17/12 15:24	AAV	

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories

Client Name:Morris, Bobby
Contact:Bobby Morris
Address:21876 Pioneer Rd.
Hinkley, CA 92347

Report Date:23-Oct-2012

Analytical Report: Page 4 of 4
Project Name: No Project
Project Number: --PAID--Cr

Work Order Number: B2J1452

Received on Ice (Y/N): No Temp: 20°C

Notes and Definitions

N_noH Sample was non-homogeneous.

Nconf Result(s) confirmed by re-analysis.

ND: Analyte NOT DETECTED at or above the Method Detection Limit **(If MDL is reported)**, otherwise at or above the Reportable Detection Limit (RDL)

NR: Not Reported

RDL: Reportable Detection Limit

MDL: Method Detection Limit

* / ": NELAP does not offer accreditation for this analyte/method/matrix combination

Approval

Enclosed are the analytical results for the submitted sample(s). Babcock Laboratories certify the data presented as part of this report meet the minimum quality standards in the referenced analytical methods. Any exceptions have been noted. Babcock Laboratories and its officers and employees assume no responsibility and make no warranty, express or implied, for uses or interpretations made by any recipients, intended or unintended, of this report.

cc:

e-Tab_Summary.rpt

#6B

Attachment B
Relevant to 6B comments

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories

Client Name:Morris, Bobby
Contact:Bobby Morris
Address:21876 Pioneer Rd.
Hinkley, CA 92347

Report Date:23-Oct-2012

Analytical Report: Page 1 of 1
Project Name: No Project
Project Number: --PAID--Cr

Work Order Number: B2J1452

Received on Ice (Y/N): No Temp: 20°C

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories

6100 Quail Valley Court Riverside, CA 92507
(951) 653-3351 • FAX (951) 653-1662
www.babcocklabs.com

Chain of Custody & Sample Information Record

Client: Morris, Bobby | Contact: | Fax No. | Additional Reporting Requests: Include QC Data Package: ☐Yes ☐No; FAX Results: ☐Yes ☐No; Email Results: ☐Yes ☐No; State EDT ☐Yes ☐No (Include Source Number in Notes)

Phone No. | email:

Project Name: | Turn Around Time: Routine *72 Hour Rush *48 Hour Rush *24 Hour Rush

Project Location: | *Lab TAT Approval: By: *Additional Charges Apply

Sampler Information: Name: Employer: Signature:

Sample ID	Date	Time	# of Containers & Preservatives: Unpreserved	H_2SO_4	HCl	HNO_3	$NaSO_3$	NaOH	NaOH/Zn Acetate	NH_4Cl	MCAA	Total # of Containers	Sample Type: Routine	Resample	Special	Analysis Requested: Mn* Cr(VI) As	Matrix	Notes
1) 0494282C2 #1	10/10/12	10:30	X									1				X X		Pre paid per credit card $180.00
" " #2	"	"										1				X X		
" " #3	"	"										1				X X		
2) C.C. Matthiesen 36771 Hidden River Rd Hinkley, CA 92347	10/11/12	8:00										1				X X		
3) Roberts - 22275 Granada Hinkley, CA 92347	10/11/12	11:00										1				X X		
4) 37414 Mulberry	10/11/12	8:30										1				X X		

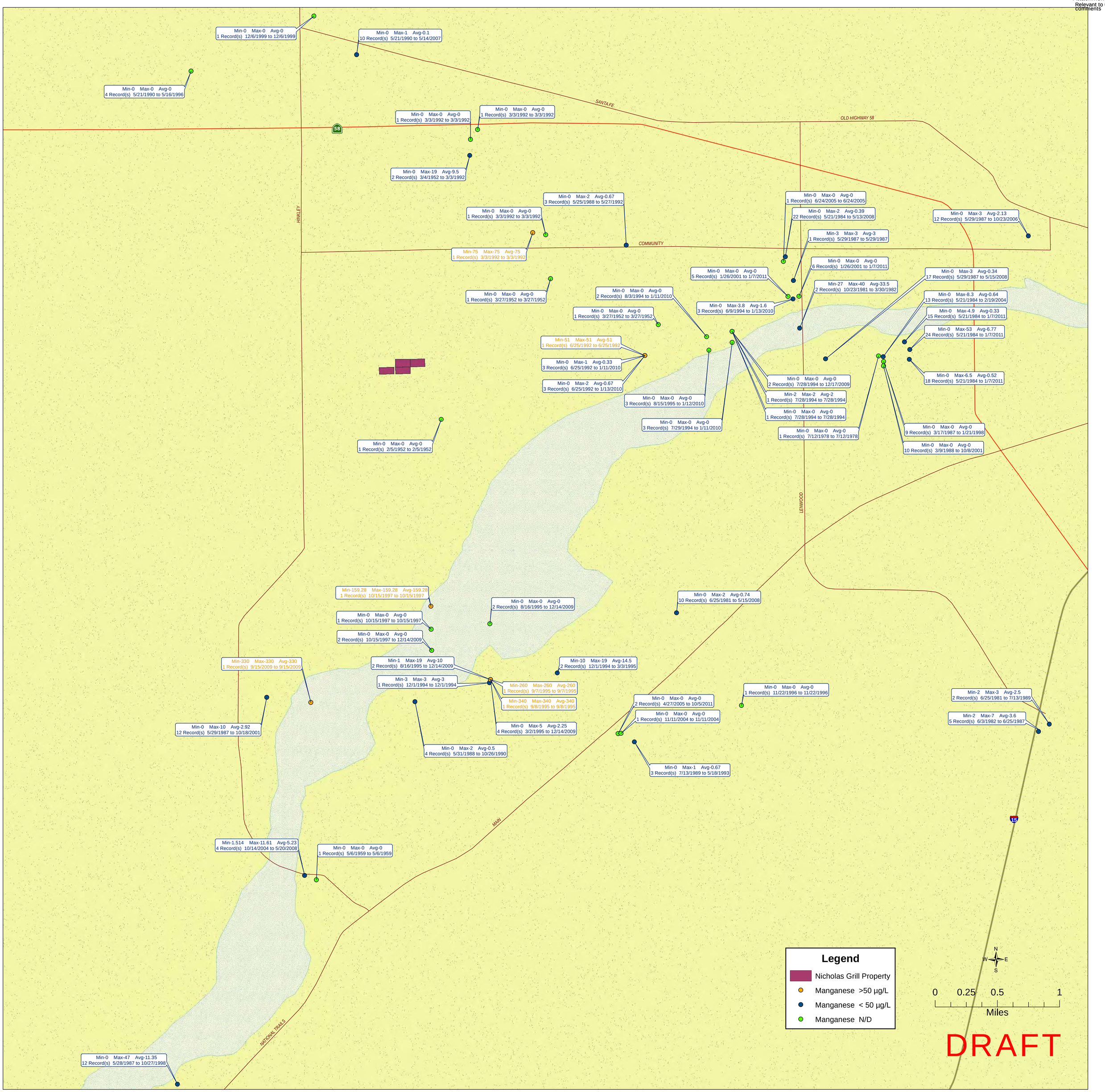
Relinquished By (sign)	Print Name / Company	Date / Time	Received By (sign)	Print Name / Company
X Bobby Morris		10/11/12 16:37	Angie Brown	Angie Brown / ESB

(For Lab Use Only) Sample Integrity Upon Receipt/Acceptance Criteria

Sample(s) Submitted on ice? Yes (No)
Custody Seal(s) Intact? Yes No (NA)
Sample(s) Intact? (Yes) No
Temperature: 20 °C ☐Cooler Blank

Sample meets laboratory acceptance criteria? (Yes) No
Permission to continue: Yes No
Deviation/Notes:
Signature/Date:

Lab No. B2J1452
Logged In By/Date: OCT 12 2012 AB
Page 1 of 1


Min-0 Max-0 Avg-0
1 Record(s) 12/6/1999 to 12/6/1999
Min-0 Max-1 Avg-0.1
10 Record(s) 5/21/1990 to 5/14/2007
Min-0 Max-0 Avg-0
4 Record(s) 5/21/1990 to 5/16/1996
SANTA FE
OLD HIGHWAY 58
58
Min-0 Max-0 Avg-0
1 Record(s) 3/3/1992 to 3/3/1992
Min-0 Max-0 Avg-0
1 Record(s) 3/3/1992 to 3/3/1992
Min-0 Max-19 Avg-9.5
2 Record(s) 3/4/1952 to 3/3/1992
HINKLEY
Min-0 Max-2 Avg-0.67
3 Record(s) 5/25/1988 to 5/27/1992
Min-0 Max-0 Avg-0
1 Record(s) 3/3/1992 to 3/3/1992
COMMUNITY
Min-75 Max-75 Avg-75
1 Record(s) 3/3/1992 to 3/3/1992
Min-0 Max-0 Avg-0
1 Record(s) 6/24/2005 to 6/24/2005
Min-0 Max-2 Avg-0.39
22 Record(s) 5/21/1984 to 5/13/2008
Min-0 Max-3 Avg-2.13
12 Record(s) 5/29/1987 to 10/23/2006
Min-3 Max-3 Avg-3
1 Record(s) 5/29/1987 to 5/29/1987
Min-0 Max-0 Avg-0
6 Record(s) 1/26/2001 to 1/7/2011
Min-0 Max-0 Avg-0
5 Record(s) 1/26/2001 to 1/7/2011
Min-0 Max-3 Avg-0.34
17 Record(s) 5/29/1987 to 5/15/2008
Min-27 Max-40 Avg-33.5
2 Record(s) 10/23/1981 to 3/30/1982
Min-0 Max-0 Avg-0
1 Record(s) 3/27/1952 to 3/27/1952
Min-0 Max-0 Avg-0
2 Record(s) 8/3/1994 to 1/11/2010
Min-0 Max-8.3 Avg-0.64
13 Record(s) 5/21/1984 to 2/19/2004
Min-0 Max-3.8 Avg-1.6
3 Record(s) 6/9/1994 to 1/13/2010
Min-0 Max-0 Avg-0
1 Record(s) 3/27/1952 to 3/27/1952
Min-0 Max-4.9 Avg-0.33
15 Record(s) 5/21/1984 to 1/7/2011
Min-0 Max-53 Avg-6.77
24 Record(s) 5/21/1984 to 1/7/2011
Min-51 Max-51 Avg-51
1 Record(s) 6/25/1992 to 6/25/1992
Min-0 Max-1 Avg-0.33
3 Record(s) 6/25/1992 to 1/11/2010
Min-0 Max-2 Avg-0.67
3 Record(s) 6/25/1992 to 1/13/2010
Min-0 Max-0 Avg-0
2 Record(s) 7/28/1994 to 12/17/2009
Min-0 Max-6.5 Avg-0.52
18 Record(s) 5/21/1984 to 1/7/2011
Min-2 Max-2 Avg-2
1 Record(s) 7/28/1994 to 7/28/1994
Min-0 Max-0 Avg-0
3 Record(s) 8/15/1995 to 1/12/2010
Min-0 Max-0 Avg-0
1 Record(s) 7/28/1994 to 7/28/1994
Min-0 Max-0 Avg-0
3 Record(s) 7/29/1994 to 1/11/2010
Min-0 Max-0 Avg-0
1 Record(s) 7/12/1978 to 7/12/1978
Min-0 Max-0 Avg-0
9 Record(s) 3/17/1987 to 1/21/1998
Min-0 Max-0 Avg-0
10 Record(s) 3/9/1988 to 10/8/2001
Min-0 Max-0 Avg-0
1 Record(s) 2/5/1952 to 2/5/1952
LENWOOD
Min-159.28 Max-159.28 Avg-159.28
1 Record(s) 10/15/1997 to 10/15/1997
Min-0 Max-0 Avg-0
2 Record(s) 8/16/1995 to 12/14/2009
Min-0 Max-0 Avg-0
1 Record(s) 10/15/1997 to 10/15/1997
Min-0 Max-0 Avg-0
2 Record(s) 10/15/1997 to 12/14/2009
Min-0 Max-2 Avg-0.74
10 Record(s) 6/25/1981 to 5/15/2008
Min-330 Max-330 Avg-330
1 Record(s) 9/15/2009 to 9/15/2009
Min-1 Max-19 Avg-10
2 Record(s) 8/16/1995 to 12/14/2009
Min-10 Max-19 Avg-14.5
2 Record(s) 12/1/1994 to 3/3/1995
Min-3 Max-3 Avg-3
1 Record(s) 12/1/1994 to 12/1/1994
Min-260 Max-260 Avg-260
1 Record(s) 9/7/1995 to 9/7/1995
Min-340 Max-340 Avg-340
1 Record(s) 9/8/1995 to 9/8/1995
Min-0 Max-0 Avg-0
1 Record(s) 11/22/1996 to 11/22/1996
Min-0 Max-0 Avg-0
2 Record(s) 4/27/2005 to 10/5/2011
Min-0 Max-0 Avg-0
1 Record(s) 11/11/2004 to 11/11/2004
Min-2 Max-3 Avg-2.5
2 Record(s) 6/25/1981 to 7/13/1989
Min-2 Max-7 Avg-3.6
5 Record(s) 6/3/1982 to 6/25/1987
Min-0 Max-10 Avg-2.92
12 Record(s) 5/29/1987 to 10/18/2001
Min-0 Max-2 Avg-0.5
4 Record(s) 5/31/1988 to 10/26/1990
Min-0 Max-5 Avg-2.25
4 Record(s) 3/2/1995 to 12/14/2009
Min-0 Max-1 Avg-0.67
3 Record(s) 7/13/1989 to 5/18/1993
MAIN
15
Min-1.514 Max-11.61 Avg-5.23
4 Record(s) 10/14/2004 to 5/20/2008
Min-0 Max-0 Avg-0
1 Record(s) 5/6/1959 to 5/6/1959
NATIONAL TRAILS
Min-0 Max-47 Avg-11.35
12 Record(s) 5/28/1987 to 10/27/1998
Legend
Nicholas Grill Property
Manganese >50 µg/L
Manganese < 50 µg/L
Manganese N/D
N
W
E
S
0 0.25 0.5 1
Miles
DRAFT

#6B

Attachment B
Relevant to 6B comments

JUNO
Email on the Web

Print Message Close

From : "Bergen, Brianna@Waterboards" <Brianna.Bergen@waterboards.ca.gov>
To : "terawatt@juno.com" <terawatt@juno.com>
Subject : Sample Results
Date : Fri, Oct 12, 2012 04:34 PM
Attachment(s) : 5 file(s)/document(s) | Total File Size: 616K

Nick,

Attached are sample results from last month's sampling effort.

Well 1 is Lorna Roberts' well (22275 Granada) – well 34-58

Well 2 is Joel Valenzuela's well closest to Mt View – well 34-01

Well 3 is Joel's well to the west – well 34-64

Well 4 is Ignacio Zavala's well (36325 Mt. View) – well 35-04

Well 5 is Pablo Huerta's well (35838 Mt. View) – well 03-01A

Well 6 is Carlos Tapia's well (35605 Fairview)

Thank you for all of your help.

If you have any questions, please let me know.

Brianna Bergen, P.G.

Engineering Geologist

California Water Quality Control Board

Lahontan Region

14440 Civic Drive, Suite 200

Victorville, CA 92392

760.241.7305 – direct

760.241.6503 – office

760.241-6565 – office

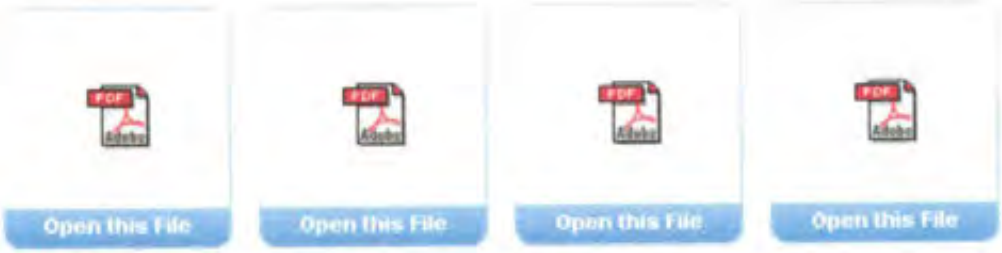
760.241-7308 – fax

#6B

Attachment B
Relevant to 6B comments

Files & Documents

Help



Attachments Scanned - No Virus Detected (Learn More)

#6B

Attachment B
Relevant to 6B comments

Excelchem Environmental Labs

Lahontan RWQCB 14440 Civic Drive Suite 200 Victorville, CA 92392	Project: Project Number: Project Manager:	Hinkley [none] Brianna Bergen	Date Reported: 09/25/12 11:07

Well 1
1208398-01 (Drinking Water)

Analyte	Result	Reporting Limit	Units	Batch	Date Prepared	Date Analyzed	Method	Notes
Ion Chromatography								
Hexavalent Chromium	ND	1.0	ug/l	AVH0369	08/30/12	08/30/12	EPA 7199	
Total Recoverable Metals								
Aluminum	ND	50.0	ug/l	AVH0381	08/31/12	09/04/12	EPA 200.7	
Antimony	ND	10.0	"	"	"	"	"	
Arsenic	ND	10.0	"	"	"	"	"	
Barium	**106**	5.0	"	"	"	"	"	
Beryllium	ND	5.0	"	"	"	"	"	
Boron	**191**	50.0	"	"	"	"	"	
Cadmium	ND	5.0	"	"	"	"	"	
Calcium	**23100**	100	"	"	"	"	"	
Chromium	ND	5.0	"	"	"	"	"	
Cobalt	ND	5.0	"	"	"	"	"	
Copper	ND	5.0	"	"	"	"	"	
Iron	ND	20.0	"	"	"	"	"	
Lead	ND	5.0	"	"	"	"	"	
Magnesium	**6400**	50.0	"	"	"	"	"	
Manganese	**94.0**	10.0	"	"	"	"	"	
Mercury	ND	0.200	"	AVI0009	09/04/12	09/04/12	EPA 245.1	
Molybdenum	**7.2**	5.0	"	AVH0381	08/31/12	09/04/12	EPA 200.7	
Nickel	ND	5.0	"	"	"	"	"	
Potassium	**2810**	100	"	"	"	"	"	
Selenium	ND	20.0	"	"	"	"	"	
Silver	ND	5.0	"	"	"	"	"	
Sodium	**50900**	200	"	"	"	"	"	
Thallium	ND	20.0	"	"	"	"	"	
Vanadium	ND	5.0	"	"	"	"	"	
Zinc	ND	10.0	"	"	"	"	"	

Excelchem Environmental Lab.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Laboratory Representative

#6B

Attachment B
Relevant to 6B comments

Excelchem Environmental Labs

Lahontan RWQCB	Project:	Hinkley	
14440 Civic Drive Suite 200	Project Number:	[none]	Date Reported:
Victorville, CA 92392	Project Manager:	Brianna Bergen	09/25/12 11:07

Well 1

1208398-01 (Drinking Water)

Analyte	Result	Reporting Limit	Units	Batch	Date Prepared	Date Analyzed	Method	Notes
EPA 200.8								
Uranium	ND	1	ug/L	[none]	09/04/12	09/04/12	EPA 200.8	

Excelchem Environmental Lab.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Laboratory Representative

#6B

Attachment B
Relevant to 6B comments

Excelchem Environmental Labs

Lahontan RWQCB	Project:	Hinkley	
14440 Civic Drive Suite 200	Project Number:	[none]	Date Reported:
Victorville, CA 92392	Project Manager:	Brianna Bergen	09/25/12 11:07

Well 2
1208398-02 (Water)

Analyte	Result	Reporting Limit	Units	Batch	Date Prepared	Date Analyzed	Method	Notes
Ion Chromatography								
Hexavalent Chromium	ND	1.0	ug/l	AVI0369	08/30/12	08/30/12	EPA 7199	
Total Recoverable Metals								
Aluminum	ND	50.0	ug/l	AVI0381	08/31/12	09/04/12	EPA 200.7	
Antimony	ND	10.0	"	"	"	"	"	
Arsenic	ND	10.0	"	"	"	"	"	
Barium	**132**	5.0	"	"	"	"	"	
Beryllium	ND	5.0	"	"	"	"	"	
Boron	**171**	50.0	"	"	"	"	"	
Cadmium	ND	5.0	"	"	"	"	"	
Calcium	**31700**	100	"	"	"	"	"	
Chromium	ND	5.0	"	"	"	"	"	
Cobalt	ND	5.0	"	"	"	"	"	
Copper	ND	5.0	"	"	"	"	"	
Iron	ND	20.0	"	"	"	"	"	
Lead	ND	5.0	"	"	"	"	"	
Magnesium	**7270**	50.0	"	"	"	"	"	
Manganese	**54.9**	10.0	"	"	"	"	"	
Mercury	ND	0.200	"	AVI0009	09/04/12	09/04/12	EPA 245.1	
Molybdenum	**5.6**	5.0	"	AVI0381	08/31/12	09/04/12	EPA 200.7	
Nickel	ND	5.0	"	"	"	"	"	
Potassium	**3900**	100	"	"	"	"	"	
Selenium	ND	20.0	"	"	"	"	"	
Silver	ND	5.0	"	"	"	"	"	
Sodium	**49000**	200	"	"	"	"	"	
Thallium	ND	20.0	"	"	"	"	"	
Vanadium	ND	5.0	"	"	"	"	"	
Zinc	**13.7**	10.0	"	"	"	"	"	

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Laboratory Representative

#6B

Attachment B
Relevant to 6B comments

Excelchem Environmental Labs

Lahontan RWQCB	Project:	Hinkley	
14440 Civic Drive Suite 200	Project Number:	[none]	Date Reported:
Victorville, CA 92392	Project Manager:	Brianna Bergen	09/25/12 11:07

Well 2

1208398-02 (Water)

Analyte	Result	Reporting Limit	Units	Batch	Date Prepared	Date Analyzed	Method	Notes
EPA 200.8								
Uranium	**3.9**	1	ug/L	'[none]'	09/04/12	09/04/12	EPA 200.8	

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Lahontan RWQCB	Project:	Hinkley	
14440 Civic Drive Suite 200	Project Number:	[none]	Date Reported:
Victorville, CA 92392	Project Manager:	Brianna Bergen	09/25/12 11:07

Well 3

1208398-03 (Water)

Analyte	Result	Reporting Limit	Units	Batch	Date Prepared	Date Analyzed	Method	Notes
Ion Chromatography								
Hexavalent Chromium	**1.3**	1.0	ug/l	AVH0369	08/30/12	08/30/12	EPA 7199	
Total Recoverable Metals								
Aluminum	**299**	50.0	ug/l	AVH0381	08/31/12	09/04/12	EPA 200.7	
Antimony	ND	10.0	"	"	"	"	"	
Arsenic	ND	10.0	"	"	"	"	"	
Barium	**87.5**	5.0	"	"	"	"	"	
Beryllium	ND	5.0	"	"	"	"	"	
Boron	**125**	50.0	"	"	"	"	"	
Cadmium	ND	5.0	"	"	"	"	"	
Calcium	**41100**	100	"	"	"	"	"	
Chromium	ND	5.0	"	"	"	"	"	
Cobalt	ND	5.0	"	"	"	"	"	
Copper	**10.3**	5.0	"	"	"	"	"	
Iron	**297**	20.0	"	"	"	"	"	
Lead	ND	5.0	"	"	"	"	"	
Magnesium	**7520**	50.0	"	"	"	"	"	
Manganese	**12.3**	10.0	"	"	"	"	"	
Mercury	ND	0.200	"	AV10009	09/04/12	09/04/12	EPA 245.1	
Molybdenum	ND	5.0	"	AVH0381	08/31/12	09/04/12	EPA 200.7	
Nickel	ND	5.0	"	"	"	"	"	
Potassium	**2800**	100	"	"	"	"	"	
Selenium	ND	20.0	"	"	"	"	"	
Silver	ND	5.0	"	"	"	"	"	
Sodium	**55400**	200	"	"	"	"	"	
Thallium	ND	20.0	"	"	"	"	"	
Vanadium	**7.3**	5.0	"	"	"	"	"	
Zinc	**128**	10.0	"	"	"	"	"	

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Attachment B
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Lahontan RWQCB	Project:	Hinkley	
14440 Civic Drive Suite 200	Project Number:	[none]	Date Reported:
Victorville, CA 92392	Project Manager:	Brianna Bergen	09/25/12 11:07

Well 3

1208398-03 (Water)

Analyte	Result	Reporting Limit	Units	Batch	Date Prepared	Date Analyzed	Method	Notes
EPA 200.8								
Uranium	**9.3**	1	ug/L	[none]	09/04/12	09/04/12	EPA 200.8	

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Attachment B
Relevant to 6B comments

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Lahontan RWQCB 14440 Civic Drive Suite 200 Victorville, CA 92392	Project: Project Number: Project Manager:	Hinkley [none] Brianna Bergen	Date Reported: 09/25/12 11:07

Well 4
1208398-04 (Water)

Analyte	Result	Reporting Limit	Units	Batch	Date Prepared	Date Analyzed	Method	Notes
Ion Chromatography								
Hexavalent Chromium	ND	1.0	ug/l	AVH0369	08/30/12	08/30/12	EPA 7199	
Total Recoverable Metals								
Aluminum	ND	50.0	ug/l	AVH0381	08/31/12	09/04/12	EPA 200.7	
Antimony	ND	10.0	"	"	"	"	"	
Arsenic	**13.7**	10.0	"	"	"	"	"	
Barium	**108**	5.0	"	"	"	"	"	
Beryllium	ND	5.0	"	"	"	"	"	
Boron	**169**	50.0	"	"	"	"	"	
Cadmium	ND	5.0	"	"	"	"	"	
Calcium	**25100**	100	"	"	"	"	"	
Chromium	ND	5.0	"	"	"	"	"	
Cobalt	ND	5.0	"	"	"	"	"	
Copper	ND	5.0	"	"	"	"	"	
Iron	**68.9**	20.0	"	"	"	"	"	
Lead	ND	5.0	"	"	"	"	"	
Magnesium	**5970**	50.0	"	"	"	"	"	
Manganese	**27.4**	10.0	"	"	"	"	"	
Mercury	ND	0.200	"	AVI0009	09/04/12	09/04/12	EPA 245.1	
Molybdenum	**5.5**	5.0	"	AVH0381	08/31/12	09/04/12	EPA 200.7	
Nickel	ND	5.0	"	"	"	"	"	
Potassium	**2580**	100	"	"	"	"	"	
Selenium	ND	20.0	"	"	"	"	"	
Silver	ND	5.0	"	"	"	"	"	
Sodium	**44200**	200	"	"	"	"	"	
Thallium	ND	20.0	"	"	"	"	"	
Vanadium	**55.6**	5.0	"	"	"	"	"	
Zinc	ND	10.0	"	"	"	"	"	

Excelchem Environmental Lab.

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Laboratory Representative

#6B

Attachment B
Relevant to 6B comments

Excelchem Environmental Labs

Lahontan RWQCB	Project:	Hinkley	
14440 Civic Drive Suite 200	Project Number:	[none]	Date Reported:
Victorville, CA 92392	Project Manager:	Brianna Bergen	09/25/12 11:07

Well 4

1208398-04 (Water)

Analyte	Result	Reporting Limit	Units	Batch	Date Prepared	Date Analyzed	Method	Notes
EPA 200.8								
Uranium	**1.5**	1	ug/L	[none]	09/04/12	09/04/12	EPA 200.8	

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Attachment B
Relevant to 6B comments

Excelchem Environmental Labs

Lahontan RWQCB 14440 Civic Drive Suite 200 Victorville, CA 92392	Project: Project Number: Project Manager:	Hinkley [none] Brianna Bergen	Date Reported: 09/25/12 11:07

Well 5

1208398-05 (Water)

Analyte	Result	Reporting Limit	Units	Batch	Date Prepared	Date Analyzed	Method	Notes
Ion Chromatography								
Hexavalent Chromium	ND	1.0	ug/l	AVH0369	08/30/12	08/30/12	EPA 7199	
Total Recoverable Metals								
Aluminum	ND	50.0	ug/l	AVH0381	08/31/12	09/04/12	EPA 200.7	
Antimony	ND	10.0	"	"	"	"	"	
Arsenic	**15.8**	10.0	"	"	"	"	"	
Barium	**106**	5.0	"	"	"	"	"	
Beryllium	ND	5.0	"	"	"	"	"	
Boron	**159**	50.0	"	"	"	"	"	
Cadmium	ND	5.0	"	"	"	"	"	
Calcium	**34300**	100	"	"	"	"	"	
Chromium	ND	5.0	"	"	"	"	"	
Cobalt	ND	5.0	"	"	"	"	"	
Copper	ND	5.0	"	"	"	"	"	
Iron	**22.5**	20.0	"	"	"	"	"	
Lead	ND	5.0	"	"	"	"	"	
Magnesium	**7500**	50.0	"	"	"	"	"	
Manganese	**86.9**	10.0	"	"	"	"	"	
Mercury	ND	0.200	"	AVH0009	09/04/12	09/04/12	EPA 245.1	
Molybdenum	**5.4**	5.0	"	AVH0381	08/31/12	09/04/12	EPA 200.7	
Nickel	ND	5.0	"	"	"	"	"	
Potassium	**2220**	100	"	"	"	"	"	
Selenium	ND	20.0	"	"	"	"	"	
Silver	ND	5.0	"	"	"	"	"	
Sodium	**51000**	200	"	"	"	"	"	
Thallium	ND	20.0	"	"	"	"	"	
Vanadium	**6.1**	5.0	"	"	"	"	"	
Zinc	ND	10.0	"	"	"	"	"	

Excelchem Environmental Lab.

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Laboratory Representative

#6B

Attachment B
Relevant to 6B comments

Excelchem Environmental Labs

Lahontan RWQCB 14440 Civic Drive Suite 200 Victorville, CA 92392	Project: Project Number: Project Manager:	Hinkley [none] Brianna Bergen	Date Reported: 09/25/12 11:07

Well 5

1208398-05 (Water)

Analyte	Result	Reporting Limit	Units	Batch	Date Prepared	Date Analyzed	Method	Notes
EPA 200.8								
Uranium	**3.0**	1	ug/L	[none]	09/04/12	09/04/12	EPA 200.8	

Excelchem Environmental Lab.

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Attachment B
Relevant to 6B comments

Excelchem Environmental Labs

Lahontan RWQCB	Project:	Hinkley	
14440 Civic Drive Suite 200	Project Number:	[none]	Date Reported:
Victorville, CA 92392	Project Manager:	Brianna Bergen	09/25/12 11:07

Well 6
1208398-06 (Water)

Analyte	Result	Reporting Limit	Units	Batch	Date Prepared	Date Analyzed	Method	Notes
Ion Chromatography								
Hexavalent Chromium	ND	1.0	ug/l	AVH0369	08/30/12	08/30/12	EPA 7199	
Total Recoverable Metals								
Aluminum	**64.7**	50.0	ug/l	AVH0381	08/31/12	09/04/12	EPA 200.7	
Antimony	ND	10.0	"	"	"	"	"	
Arsenic	ND	10.0	"	"	"	"	"	
Barium	**112**	5.0	"	"	"	"	"	
Beryllium	ND	5.0	"	"	"	"	"	
Boron	**102**	50.0	"	"	"	"	"	
Cadmium	ND	5.0	"	"	"	"	"	
Calcium	**37400**	100	"	"	"	"	"	
Chromium	ND	5.0	"	"	"	"	"	
Cobalt	ND	5.0	"	"	"	"	"	
Copper	**5.0**	5.0	"	"	"	"	"	
Iron	ND	20.0	"	"	"	"	"	
Lead	ND	5.0	"	"	"	"	"	
Magnesium	**6840**	50.0	"	"	"	"	"	
Manganese	ND	10.0	"	"	"	"	"	
Mercury	ND	0.200	"	AVI0009	09/04/12	09/04/12	EPA 245.1	
Molybdenum	ND	5.0	"	AVH0381	08/31/12	09/04/12	EPA 200.7	
Nickel	ND	5.0	"	"	"	"	"	
Potassium	**1940**	100	"	"	"	"	"	
Selenium	ND	20.0	"	"	"	"	"	
Silver	ND	5.0	"	"	"	"	"	
Sodium	**47600**	200	"	"	"	"	"	
Thallium	ND	20.0	"	"	"	"	"	
Vanadium	ND	5.0	"	"	"	"	"	
Zinc	**14.3**	10.0	"	"	"	"	"	

Excelchem Environmental Lab.

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#6B

Attachment B
Relevant to 6B comments

Excelchem Environmental Labs

Lahontan RWQCB	Project:	Hinkley	
14440 Civic Drive Suite 200	Project Number:	[none]	Date Reported:
Victorville, CA 92392	Project Manager:	Brianna Bergen	09/25/12 11:07

Well 6
1208398-06 (Water)

Analyte	Result	Reporting Limit	Units	Batch	Date Prepared	Date Analyzed	Method	Notes
EPA 200.8								
Uranium	**5.1**	1	ug/L	'[none]'	09/04/12	09/04/12	EPA 200.8	

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Laboratory Representative

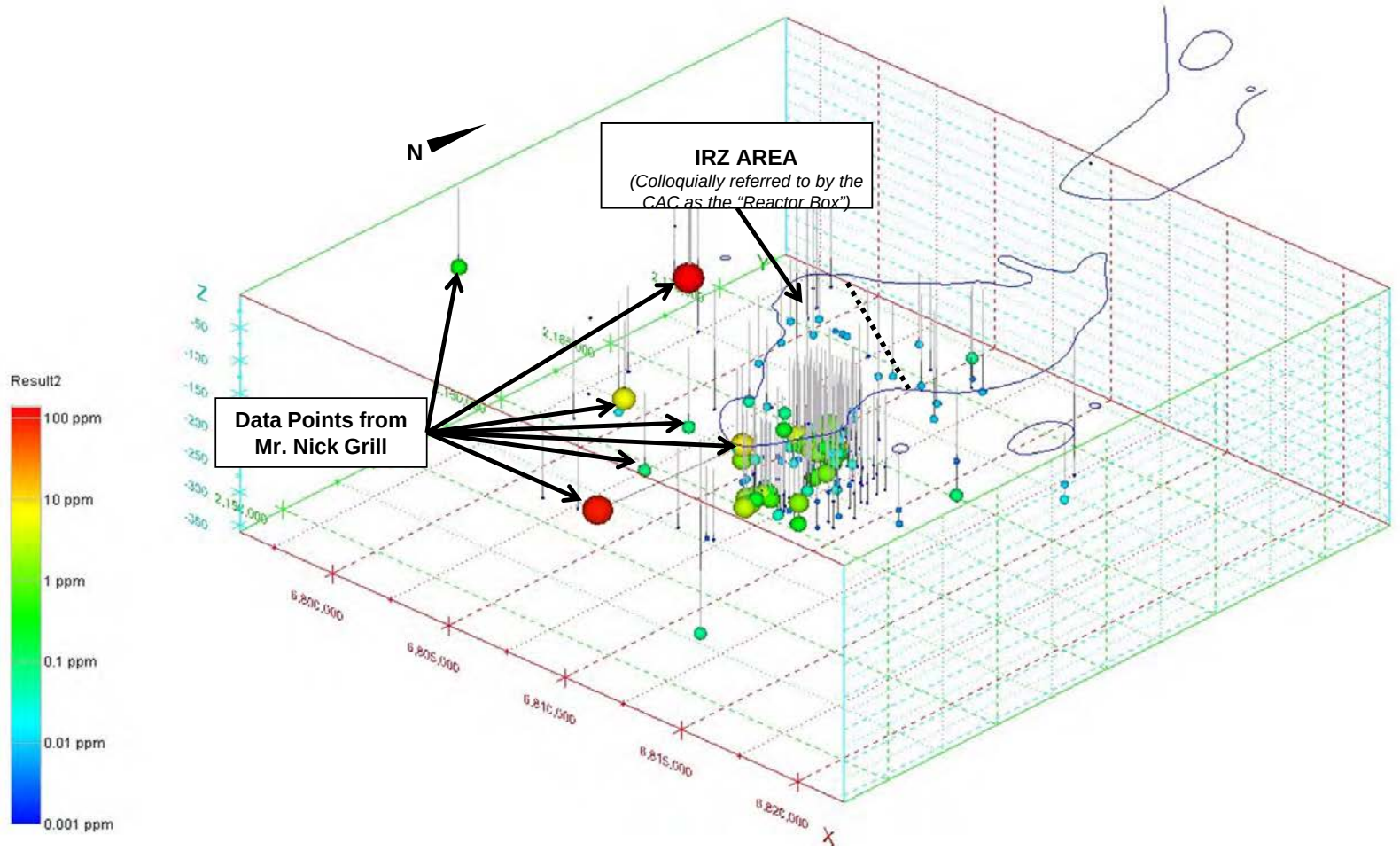
FIGURE 1

IRZ Manganese Data Distribution

(Displayed data was obtained from 3 different sources: PG&E, Nick Grill et al. and Water Board)

#6B

Attachment B
Relevant to 6B comments



Note: All information shown in this Figure was derived from Google Earth topography. Groundwater sampling data was supplied to PNL by PG&E in PNL's role as IRP Manager. Data independently collected by CAC Member Mr. Nick Grill, and separately by the Water Board is also included (see Figure 2 for this raw data.)

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FIGURE 2

Manganese Data Collected Separately in the Vicinity of the IRZ by Mr. Nick Grill and the Water Board

#6B

Attachment B
Relevant to 6B comments

LocID	SampleDate	AnalyteLC	UnitsCode	Result2	BotOfPerf	Address	Data_Origi
34-64	8/30/2012	Manganese, dissolved	mg/L	0.0123	120	Joel's well to the west	Water Board
34-01	8/30/2012	Manganese, dissolved	mg/L	0.0549	120	Joel Valenzuela's well closest to Mt View	Water Board
35-04	8/30/2012	Manganese, dissolved	mg/L	0.0274	120	Ignacio Zavala Well	Water Board
03-01A	8/30/2012	Manganese, dissolved	mg/L	0.0869	120	Pablo Huerta's Well	Water Board
Carlos	8/30/2012	Manganese, dissolved	mg/L	0	120	Carlos Tapai's Well	Water Board
34-58	8/30/2012	Manganese, dissolved	mg/L	0.094	120	2275 Granada - Lorna Roberts' Well	Nick et al.
12H0245-01	8/2/2012	Manganese, dissolved	mg/L	0	120	35375 Tamarack Rd	Water Board
12H0245-02	8/2/2012	Manganese, dissolved	mg/L	0	120	35784 Mountain View	Nick et al.
12H0245-03	8/2/2012	Manganese, dissolved	mg/L	99	120	35838 Mountain View Rd	Nick et al.
B2J0295-01	10/2/2012	Manganese, dissolved	mg/L	7.6	120	36325 Mountain View -@ 120 ft	Nick et al.
B2I2778-03	9/26/2012	Manganese, dissolved	mg/L	5.6	120	21876 Pioneer Rd	Nick et al.
Flower-1	9/26/2012	Manganese, dissolved	mg/L	0.029	120	Flower #1	Nick et al.
Flower-1	10/11/2012	Manganese, dissolved	mg/L	0.32	120	Flower #1	Nick et al.
Flower-2	9/26/2012	Manganese, dissolved	mg/L	1.3	120	Flower #2	Nick et al.
Flower-3	10/11/2012	Manganese, dissolved	mg/L	0.066	120	Flower #3	Nick et al.
Flower-2	10/11/2012	Manganese, dissolved	mg/L	140	120	Flower #2	Nick et al.
12H0245-03	8/2/2012	Manganese, dissolved	mg/L	0.03	120	36325 Mountain View Rd.	Nick et al.
B2J0295-02	10/2/2012	Manganese, dissolved	mg/L	1.6	142	36325 Mountain View -@ 142 ft	Nick et al.
B2j11452-04	10/11/2012	Manganese, dissolved	mg/L	0.32	120	36771 Hidden River	Nick et al.
B2J1452-05	10/11/2012	Manganese, dissolved	mg/L	0.087	120	22275 Granada	Nick et al.
B2j1452-06	10/11/2012	Manganese, dissolved	mg/L	0	120	37414 Mulberry	Nick et al.

Note: PNL was simply provided with the above numbers. PNL has plotted the data in accompanying Figure 1. Since PNL was not involved in the Nick Grill or separate Water Board sampling events. We therefore do not know if the data was collected in accordance with an SOP per a Work Plan. PNL renders no judgement as to the accuracy of the information and data. Nick Grill provided data for specific domestic wells and Water Board results during October 2012.

FIGURE 3

IRZ Manganese Data Distribution

#6B

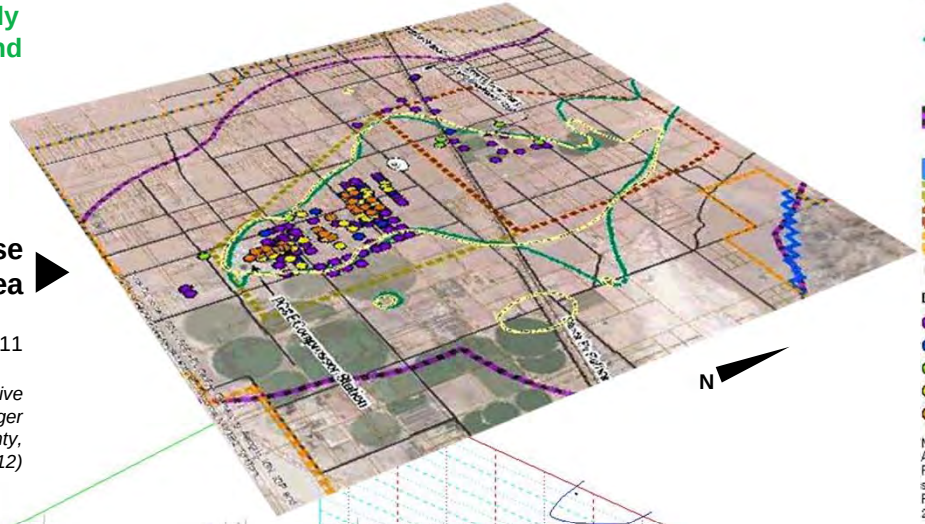
Attachment B
Relevant to 6B comments

The upper image, taken from the EIR, shows only Mn data located within the 3.1 ppb Cr6 plume and OU1 areas. Recent data collection by Mr. Nick Grill, (which is of interest to the CAC), suggests that Mn measurements also occur beyond the above boundaries.

Existing Dissolved Manganese within the Project Area

Upper image: Extracted from the Draft EIR's Figure 3.1-11

(Figure 3.1-11, Draft Environmental Impact Report, Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharger from PG&E's Hinkley Compressor Station, San Bernardino County, prepared by ICF International August 2012)



LEGEND

- Approximate outline of Cr(VI) or Cr(T) in Upper Aquifer exceeding values of 3.1 and 3.2 µg/L, respectively, Fourth Quarter 2011
- One-mile buffer from the contiguous portions of the approximate outline of Cr(VI) or Cr(T) in Upper Aquifer exceeding values of 3.1 and 3.2 µg/L, respectively, Fourth Quarter 2011
- Study Area
- OU1
- OU2
- OU3
- County Parcel Boundary

Dissolved Manganese Concentrations in mg/L

- 0.00-0.01
- 0.01-0.05
- 0.05-0.10
- 0.10-1.00
- >1

Notes:
As requested by the Water Board for use in the EIR, Fourth Quarter 2011 laboratory-measured Manganese data is shown. If Manganese data were not collected in a well with in Fourth Quarter 2011, but were collected within First Quarter 2012, then First Quarter 2012 data are shown.

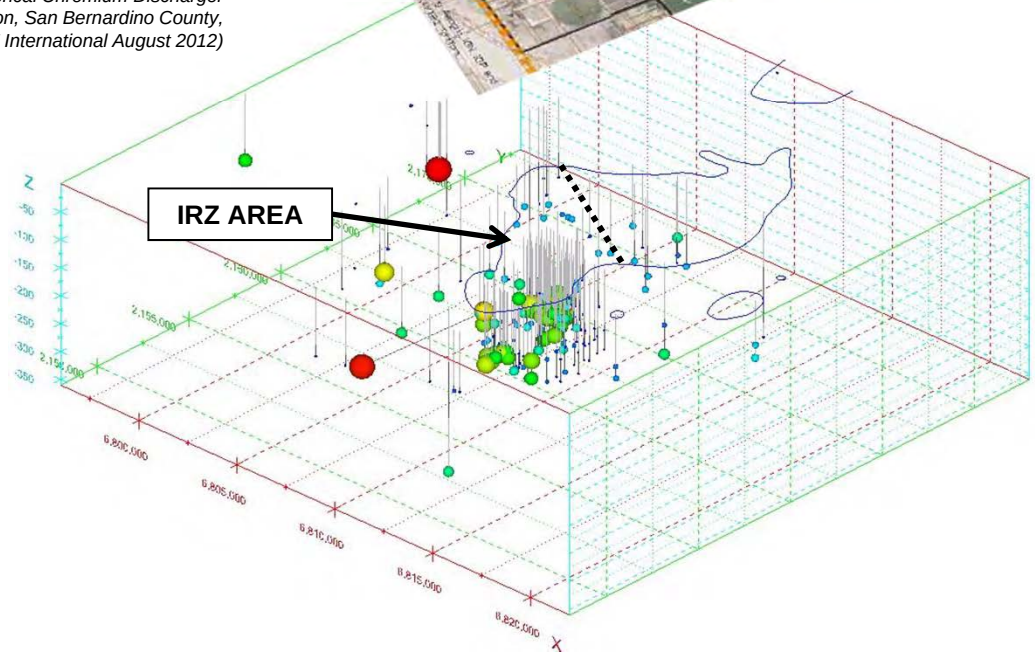
Data shown are from private supply (e.g. domestic) and PG&E monitoring and extraction wells, where available.

Source: Prepared by PG&E, 2012 for the EIR using recent monitoring data.

Dissolved Manganese Distribution

Lower image: Also shown in Figure 1, was prepared by the IRP Manager, and includes Mr. Nick Gill's Mn data points

(PG&E + Nick et al. and Water Board)



Note: All information shown in this Figure was derived from Google Earth topography. Groundwater sampling data was supplied to PNL by Nick Grill and PG&E. PNL was not present during Nick Grill's sampling of groundwater in the southwest area adjacent to the IRZ. Nick Grill provided data for specific domestic wells and Water Board results during October 2012.

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#7A

Holden, Anne@Waterboards

From: Dave Cheney <genman_1@yahoo.com>
Sent: Wednesday, September 19, 2012 10:20 AM
To: Holden, Anne@Waterboards
Cc: Dernbach, Lisa@Waterboards; Dave Cheney
Subject: Comment on Draft E I R Comprehensive Groundwater Cleanup Strategy/Hinkley/PGE

Dear Ms. Holden,

The following are strong concerns that I feel should be addressed.

1.) Education.

The presentation of the Draft E I R is not sufficient. Hinkley residents and others cannot get an understanding of a 1000 page document in a few hours of presentation. There seems to be a lack of interest in educating the public to a level of understanding. The following are suggestions to help remedy the lack of project understanding.

1.a) I propose that there be an ongoing educational(outreach) workshop. This workshop would be staffed by Water Board personnel full time for the purpose of educating the public and answering questions. This provides an opportunity to go over the project section by section at convenient times. This also provides a means of training the public how to respond to documents etc. This needs to be staffed and managed by the Lahontan Water Board as a resource for the public and the CAC. An onsite expert could go over documents such as this EIR on more of a one on one basis. This provides the opportunity for better understanding and can be a training tool for responses. People are most generally afraid of things that they do not understand.

1.b) EIR presentations and education sessions need to be separated from comment sessions. More time needs to be implemented for questions and answers rather than comments and complaints.

7A-1

2.) Onsite Management.

The Lahontan Water Board needs to maintain a full time onsite manager. A project of this magnitude demands full time onsite,day to day management. This manager and staff should have an open door policy with the residents of Hinkley and the public. Remote management is unacceptable.This manager should be the direct liaison with the CAC.

7A-2

3.) Terminology.

Many of the remediation efforts and techniques are experimental. They have the potential for unexpected and unwanted results. These need to be labeled as such. The water filtration systems are experimental, injection of foreign substances into the water table etc. are not addressed as experimental technologies. All unproven remediation technologies need to be termed "experimental" for the purpose of identifying them as what they are. This gives the residents and public the opportunity to further scrutinize such actions if need be.

7A-3

#7A

4.) Wildlife Impact.

The biological impact of the buyout program is inadequate. Any source of water in a desert area is subject to becoming a wildlife habitat. I do not believe that PG&E is performing adequate evaluation of properties before tearing them down and leveling the properties. Year long studies are required to evaluate impact to migratory species. If there is a viable program in place then where is the information? How many species have been identified? What action has been taken? Where are the reports to the Dept. of Fish and Game showing game loss due to loss of habitat ? All of this information should be available to the public at a resource/information center staffed by Water Board personnel. I contest that not one more property be compromised until the biological impact is identified and mitigated !!! Have there been any studies on the effect of Ch-6 on the local wildlife???

7A-4

5.)Human Impact

The impact to human life and and health has been grossly overlooked. The people that are focused on money are being dealt with but what about everyone else?? The entire remediation/buyout program has had adverse mental and physical effect on the residents of Hinkley. My neighbor suffered a panic attack from trying to decide to sell his home. Deadlines are being put on people and stress levels increase. Another neighbor is on the verge of divorce due to the stress of the buyout program. The mental and physical effect of having byproduct of the remediation contaminate your well, being told you have to sell or accept experimental filtration that produces hazardous waste is high stress in any household. PG&E forcing buyout participants to sign an agreement to never live in the Hinkley Zip code again is more compounding stress. Being told that you can never live near your friends and family again and that your children must go to another school. There needs to be free counseling provided for the residents of Hinkley. PG&E should have to pay for medical issues resulting from this project. Where does the pain and suffering stop for Hinkley residents ???????

7A-5

6.) Plume identification.

It is very obvious that PG&E has as continues to lie about the plume. Why does the Water Board accept this information as viable?? Bring in an outside source to identify the plume area accurately and fine PG&E for each acre foot of contaminated water that they failed to identify. USGS needs to be involved. Lahontan has evidence of c-6 4 miles Northeast of the plume and is not acting on that data. WHY ???

7A-6

7.) Stop Remediation and abandon current plan until fresh clean water is supplied to Hinkley.

Remediation experimentation has proven a hazard to wildlife and human life. Not one of the methods had the desired results. Some methods are causing further contamination to water via remediation(experimentation) methods. Stop all effort and provide pipe line clean water. Efforts should be redirected toward first removing hazard by getting clean water to the residents. Then remediation can resume. Water filtration cannot be considered as a method of clean water as it is still in the experimental stages and should be defined as such.

7A-7

In Summary I feel that the entire cleanup has been grossly mismanaged by the Lahontan Water Board to this point. They have allowed PG&E to experiment on the residents of Hinkley. Poor and unstudied remediation experiments have been allowed to go forward. Human and wildlife have been impacted on a large scale as a result. Mr. Haefele has demonstrated with hard evidence that the Lahontan Water Board has covered up evidence of groundwater contamination in Hinkley. I feel that the coverup continues as the Water Board refuses to identify the true perimeter of the contamination

7A-8

plume. It is time for Lahontan to take control of the situation. Lahontan has the skills and backing to do this right. Let's get management on site and in gear and everybody wins!

7A-8
cont'd

Thank You,

David G. Cheney
22230 Highcrest Rd
Hinkley Ca. 92347
genman_1@yahoo.com

#7B

Dear Ms. Holden,

In response to the EIR pertaining to the Hinkley/PG&E cleanup.

Appendix A Groundwater and Remediation Supporting Documentation;

A.2.1)

I believe that A.2.1 needs further review. A.2.1's assessment of the Manganese migration is not accurate. Manganese migration has been severely underestimated and is a much larger problem than stated in this EIR. 7B-1

A.2.2) Groundwater elevation monitoring is inadequate and possibly inaccurate. Elevation monitoring needs to be done with automated real time logging equipment. 7B-2

3.2.3.3) Census data is from the year 2000. Most recent census was within the last 3 years. 7B-3

3.3-12 line 41 you state that Manganese is not considered toxic and does not meet the definition of a hazardous waste. Please refer to the EPA study on Manganese. http://www.epa.gov/ogwdw/ccl/pdfs/reg_determine1/support_cc1_magnese_dwreport.pdf. It is known to cause severe neurological problems in humans and animals. Especially when inhaled. Infants and young animals are at higher risks. Why are residents and workers not being informed of this remediation produced toxin? 7B-4

I a~~m~~ still working on reading and understanding the EIR. At this point I believe much of it to be insufficient. 7B-5

Please halt all remediation. Deal with human and animal issues first. Return only to remediation when it can be done safely. 7B-6

Thank You,

David G. Cheney

#7C

David Cheney

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. CHENEY: Hello. My name is David Cheney, spelled C-h-e-n-e-y. I would like to thank the board for being here tonight. I know there's a lot of expertise and collectively you guys have got a lot of experience, a lot of education. But what we're seeing in Hinkley is the job is not getting done.

There's a lot of points that have been made tonight from a lot of people, good points. One of the best ones by Mr. Diaz about why is PG&E cleaning up this mess? It's not their business.

This whole deal is known worldwide. You guys have got the opportunity to go down in history as the people that helped out a town and put it back together or the ones that stood back and let PG&E tear it apart. So I think that you have the tools to do your job and I would really appreciate it like everybody else in here if we saw it start to get done.

7C-1

The people that live in Hinkley have been used like the laboratory rats. I don't appreciate someone coming to my home and telling me I've got two weeks to tell them if I want to sell my home. It's ludicrous.

7C-2

I want clean water. That's all I want. Thank you.

7C-3

#8

Holden, Anne@Waterboards

From: Teri <sassanach1960@yahoo.com>

Sent: Tuesday, October 16, 2012 3:48 PM
To: Holden, Anne@Waterboards
Cc: Dave; Teri
Subject: EIR Pertaining to the Hinkley/PG&E Cleanup

Dear Ms. Holden,

This is in response to the EIR pertaining to the Hinkley/PG&E cleanup.

Appendix A Groundwater and Remediation Supporting Documentation;

A.2.1)

I believe that A.2.1 needs further review. A.2.1's assessment of the Manganese migration is not accurate. Manganese migration has been severely underestimated and is a much larger problem than stated in this EIR.
There are currently high levels of Maganese in wells close to my home which is very close to the PG&E plant. I live on Highcrest Rd. My well has non detect Maganese at this point, my neighbors haven'r been so lucky. 8-1

A.2.2) Groundwater elevation monitoring is inadequate and possibly inaccurate. Elevation monitoring needs to be done with automated real time logging equipment. The technicians seem to forget that we're talking about water, "tides" come and go out, rain fills up the water tables, etc. There needs to be a substantial amount of time studying the water and monitoring it. 8-2

3.2.3.3) Census data is from the year 2000. Most recent census was within the last 3 years.
Let's not forget that Hinkley used to be a bustling farm town. A lot of people have died and moved away from the original C6 contamination so the population has become sparse but not because no one wanted to live here.
The few people that are left are just as important as a big city like San Bernardino.
Maybe an independant census should be taken to get an accurate account of residents. 8-3

#8

3.3-12 line 41 you state that Manganese is not considered toxic and does not meet the definition of a hazardous waste. Please refer to the EPA study on Manganese. http://www.epa.gov/ogwdw/ccl/pdfs/reg_determine1/support_cc1_magnese_dwreport.pdf. It is known to cause severe neurological problems in humans and animals. Especially when inhaled. Infants and young animals are at higher risks. Why are residents and workers not being informed of this remediation produced toxin? We didn't know what the remediation entailed and the black water was a mystery. PG&E never told us what could happen nor did LaHontan water district and I blame them both for their lack of concern and for poisoning the water...again

8-4

Has anyone thought of the wildlife that lives in our area besides the desert tortoise? At my home we have hundreds of birds, mammals, snakes and what have you feeding and getting water from our place. We are a registered wildlife habitat and I see more and more animals showing up because of the people moving and theirs homes being bulldozed or being empty and water shut off.
What about the displacement of the wildlife? Where is the study? They are important to our enviroment as well.

8-5

I am still working on reading and understanding the EIR. At this point I believe much of it to be insufficient.

8-6

Please halt all remediation. Deal with human and animal issues first. Return only to remediation when it can be done safely.

8-7

Thank You,

Teri A. Cheney

"Happiness is a Choice"

#9

John Coffey

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

JOHN COFFEY: Good evening board -- good evening,vboard members. My name is John Coffey and I'm sure some of you are not happy to see me here again. I need to make some disclosures about my appearance tonight. I'm a member of HealthHinkley.org, but I am not here representing them. I've also represented the Defenders of Wildlife in a number of hearings here and other places on other projects, but I am not representing Defenders of Wildlife tonight. I'm also the endorsed democratic candidate for the 33rd Assembly District, but I'm not here in that capacity tonight. The opinions that I express are based on public records, my own research and I am solely responsible for their content. I would like to go back in time for just a few years when the remediation plan was adopted. It was an ill-advised plan. And the board was informed formally with an appeal of what the problems were with the remediation plan of how injecting this massive quantity of fluid into an aquifer was going to cause more trouble than it could ever solve. An aquifer is an active, living thing. The water comes from the north and from the west and it flows through the rocks and it moves south and east. It is an active thing. There are dynamics. There are electrolysis, there are pH values. There's a lot of energy involved in an aquifer. And you just can't stick a hose in it like a hot air balloon or an helium balloon and expect bad things not to happen.

9-1

9-2

And you didn't do your due diligence on the plan that was proposed by PG&E even though you were advised.

Now, procedurally after a good deal of time, the appeal was withdrawn but for reasons that had nothing to do with the merits of the appeal or the science that the appeal involved. Therefore, the board and, by inference, the State of California is in pari delicto with Pacific Gas & Electric for a new release of not only chromium 6 but arsenic, manganese and uranium.

I will leave that to the legal system to sort out and it will be sorted out. But under the circumstances, since you have through neglect or lobbying or whatever reason you did not take seriously to form an appeal, you are in pari delicto and therefore you must recuse yourself from any further consideration because you're just as guilty and Pacific Gas & Electric for what has happened now.

There is no shortage of agencies that would be happy to step in and finish this appropriately. Environmental Protection Agency comes to mind right away. They're really good at this and they don't have the problems dealing with Pacific Gas & Electric that the State of California by the evidence I've seen seems to have. If you are unable or unwilling to recuse yourself or ask a court to relieve you of your responsibilities in this matter, then it is my intention to introduce into the assembly or cause to be introduced into the assembly to require this recusal.

9-3

Now, deeper wells. To drill a hole in the ground, to go from the upper aquifer into the lower aquifer expecting to get better water -- well, all you're going to have is seepage and transfer of water from the upper aquifer into the lower aquifer and so you're going to have a bigger mess. So the deeper wells will only exacerbate the current problem.

9-4

#9

Now, we have all this arsenic and uranium floating around now. That's a federal issue. You start talking about neutron sourced radiation and here come the feds sooner or later. Hopefully sooner. And this must be remediated along with all the other problems that have been caused by this ill-advised remediation effort. 9-5

Now, PG&E caused the property values to go below zero. They should be compensating homeowners at the point in time before the problems became public knowledge and the banks started redlining the whole community. 9-6

PG&E also purchases the water rights. Every person here who has a home in Hinkley has the right to ten acre-feet of water on their property. That water has a value. I would propose that that value is probably $20,000 per acre feet.

PG&E is going to be the largest single water owner -- water right owner in the western Mojave. Are they going to take a loss? No. They're going to remediate the water for about $400 an acre-foot according to the proposal that I've seen. So they're not going to lose any money compensating homeowners for the lost water rights that the homeowners are giving up. 9-7

These whole house systems that are proposed -- at best they can do two acre-feet a year which means that the homeowners do not get the benefit of the full ten acre-feet if they wanted to use it. So these water rights must be adjudicated separately. 9-8

If PG&E wants to buy the house and the land, fine. But the homeowners should be entitled to keep the water rights because some day that water is going to be worth money even if PG&E doesn't want to pay them what it's worth now. $20,000 is a figure I got out of Las Vegas. 9-9

And, of course, when we're looking at the endangered species eradication plan, these things always turn into the tortoise loses again, the kangaroo rat loses again, the French toad lizard loses again. And the lost ratio for relocating a tortoise from some place he's been living for 250,000 years is about 90 percent by the federal plans that have -- they have attempted to implement these plans. And in the first year there's a 90 percent loss. That's not relocation. That's eradication.

And that's exactly what developers want. They don't want to have to deal with the endangered species. They want them all gone so that they don't have to do this. 9-10

So in conclusion, it's time for the EPA to step in and deal with these problem quickly and appropriately. 9-11

(In Spanish)

#10

Norm Diaz

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. DIAZ: Hello, board. Norm Diaz, D-i-a-z. I'm sorry I'm late. I was at the sports park working with some soccer kids doing something a little bit funner (sic) than this. So I know I missed a lot of the information that was passed on, but could not pass up an opportunity to listen. I wasn't going to speak, but just thought I had to say something really quickly.

Back in 2006, I came to this board in Adelanto. Some of you board members were on the board at that point. Some are new. And what I asked for back at that point was why isn't PG&E cleaning up this mess? PG&E is not a water cleanup company. They are a for-profit company that is -- their job is to make money for their shareholders. They don't clean up water. That's not what they do. So I think that it's time, as I asked back then, to ask for PG&E to fit the bill. They have the money. And let's hire somebody else. Let's quit yelling at PG&E about their lack of progress and their -- and how they're doing things and how they're shuffling things and all the conspiracy theories that go on. Let's hire someone completely independent. Let's kick PG&E out of this community and let's bring in someone that is a water cleanup company that will do this job on PG&E's dime and do it the way the people want it done. 10-1

The other problem I have is that we're just drawing lines. The lines have changed throughout these years. There's always a line. There's always going to be somebody on the other side of that line. I've watched this line being drawn. And I'm outside my -- my family homestead was here in 1900 and we've been here six generations. I am on the outside line. I want to stay on the outside. But there's always going to be no matter where you draw that line, there's going to be someone else that says "What about me? What about me?" And I think that -- I don't think -- I'm afraid the community is not going to survive. I used to have hope that the community was going to survive. Talking about 100 more houses being bought? What's going to be left of us? There's just nothing going to be left. I'm worried that we lost. 10-2

But I do think PG&E should be taken out of this fight. Let's hire somebody that does know how to clean up water because obviously there's people that spoken here. They can't get it done. I've watched the PR teams come and go. They're probably retired by now. 10-3

There's an interesting newsletter that PG&E puts out called "PG&E Currents" and it's interesting to read that newsletter and to listen to what PG&E's PR people come up here and talk about in Hinkley. And then you read about the spin back on how they speak to their shareholders. It's a completely different story and they're just trying to do this as cheaply as possible and I think they're doing a pretty good job. 10-4

So again, sorry I was late. Sorry I missed some of the stuff. I will read that EIR as much as I can. But again, I'm an art student. I don't know if I can read that thing, but I'll do the best I can.

Thank you very much for your time and thank you for all your work and your staff and everyone else. I know this is a hard thing, but it's got to be done. 10-5

Thank you.

#11

Mr. Dodd

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. DODD: I've only got a couple of comments, and one is I would like to recognize Harold Singer being here. He was one of the first ones on this Water Board that wrote an order against PG&E and that was over in Victorville. I used to go to Victorville to the Water Board meetings. And like Lester said -- excuse the term -- but somebody grow balls. He did and he wrote the first order. And I just want him recognized. He's here. He's on retirement, but he's here tonight. 11-1

And then about the well testing -- Daron, I agree with you. Somebody should be testing them. I've hired an independent company to do mine every time PG&E does it. And when they've come back, I haven't had any tests yet come back different. Okay? I'm going to tell you that right up front. 11-2

And something that hasn't been brought to a lot of people's attention are the dairies that are out here. Okay. The dairy over on Mountain View, Mountain View Dairy -- we got people over there that are polluted, grossly polluted -- nitrates, sodium. I mean, his well is like a cesspool. They're telling him that he might not be able to get a system to take care of it. Wife died two months ago of cancer. He's a widower. Nothing is being done. I mean, I make phone calls, I'm trying to help him out.

I'm on the advisory board, the CAC committee. People call my house all the time and I talk to them. And we're not looking at nitrates. There was a dairy on Fairview and Community Boulevard they tore down right across from the PG&E building. What happened to all that? You got the in-situ, but is it treating the nitrates, sodium, the total dissolved solids? These are things that are not being tested for. 11-3

As you heard tonight, the manganese, the arsenic, uranium -- but there's three other things that nobody has been talking about and there's Mountain View Dairy, there's Fairview Dairy and there's this spread that goes with the plume. But nobody is addressing these issues either. 11-4

And I hope you guys take this to heart because there's a lot of people here tonight that came out to be here more than there's been in the past. And I want to thank everybody for coming out. 11-5

#12A

Holden, Anne@Waterboards

From: Edward Duitsman <ddcap@msn.com>
Sent: Saturday, October 20, 2012 4:52 PM
To: Holden, Anne@Waterboards; Dernbach, Lisa@Waterboards
Subject: Hinkley

RE: October 16th, 2012 presentation page 11.

25% of screen depth?
please explain and give an example. 12A-1

Thanks,

Edward Duitsman

#12B

Holden, Anne@Waterboards

From: Edward Duitsman <ddcap@msn.com>
Sent: Saturday, October 20, 2012 9:28 PM
To: Holden, Anne@Waterboards; Dernbach, Lisa@Waterboards; Plaziak, Mike@Waterboards
Cc: Dave Cheney; Martha
Subject: Hinkley

Attn: Anne Holden, Lisa Dernbach, Kevin Sullivan, Mike Plaziak and Ian Webster

As you all know the concern now most of us have is the **"unavoidable byproducts".**

I do not like the use of this phrase because they are avoidable, you are producing them.

Many of us feel strongly that with all the assumptions, confusion and conflicting old/bad data

the subsurface treatment by injecting ethanol into the groundwater should be **halted immediately**. 12B-1

I have been unable to find a complete list of all the **"ingredients"** that have been dumped into our water. (help please) 12B-2

I understand that 70,000 gallons of **vegetable oil** is on the list.

This might explain why the Manganese is **not contained** within your boundaries?

Could it be that the manganese is suspended in 70,000 gallons of Vegetable oil?

Could this be why it is not in the solid form at the water table as it states in your fact sheet August 2012 page 2.

Could this explain why this black water sometimes appears slimy and oily?

When I mentioned Manganese in our wells on Mountainview, Kevin Sullivan at the Hinkley meeting looked me in the eye and said "**impossible** !" 12B-3

He said it cannot get through his **"picket fence"** flow up hill and over the fault line.

Ian Webster said the same thing.

Kevin is so blinded with old/bad data he is not open to possible explanations.

2010 had sustained river flow and months of flooding.

This increased water flow and raised water table levels in the aquifers.

Could this have caused the flow up hill and over or around that fault line to the west-side?

Like an underground tide rising pushing north and returning back south as it settles? Over the fault line? Around

?

Just some ideas, I do not know either.

The fact that it is **not contained** within the boundaries as you state in the handouts.(page 2. par 3)

Kevin insists that **"any Manganese outside the picket fence on Mountianview is not from PG&E."**

Kevin says it was already there or **background.**

12B-3
cont'd

What is the background level for vegetable oil?

That might be a good test? I think I will order that on Monday?

Can I please be reimbursed to test 8 wells outside of the **boundaries** for **vegetable oil**?

12B-4

Thanks,

Edward Duitsman
ddcap@msn.com
35691 Dixie Road
Hinkley, Ca. 92347

#12C

Holden, Anne@Waterboards

From: Edward Duitsman <ddcap@msn.com>
Sent: Monday, November 05, 2012 11:30 PM
To: Holden, Anne@Waterboards
Subject: Comments for the EIR

RE: November 5th letter, Request for data and info on metals in domestic wells.

Thank you for listening,

At every meeting Lahonton hands out a two page flyer.
Page 2 section 3 says "Manganese concentrations are more than 100 times the secondary MCL of 50ppb **but remain within the boundaries of the chromium plume.**"
The second quarter 2012 report states that 245 domestic wells were sampled.
What did you test for in those 245 wells? Only Chromium 6?
Some of us are gathering samples outside the PG&E "Boundaries" to test for the Byproducts Manganese and Arsenic.
These tests take time and money.
We are also having to take time off work.
On Friday November 2nd 2012 we collected samples from 15 wells.
We plan to sample 15 more this week. We may not have all the results by the 26th of November.
There are many wells that need and should be tested.
I have asked PG&E to test my wells for the "unavoidable by products" manganese and arsenic. They refused, only concerned with Chromium 6.

I ask the Water Boards to do your job and quit relying only on what PG&E feeds you.
At the first sign of escaping byproducts you should have been all over it.
Why is the burden on us to have to test and produce data?
This is costing me and others thousands of dollars in lost time at our jobs and lab fees.
You get over here and test these 245 wells and give us the results by November 26th. (where did that date come from?)

12C-1

It appears that the byproducts are outside the boundaries.
PG&E project manager Kevin Sullivan says impossible.
Maybe he is right. I think that this should be very simple to prove or disprove.
Until you prove one way or another all PG&E's pumping, injecting, ethanol remediation should be halted immediately.

12C-2

Edward Duitsman
35691 Dixie Road
Hinkley, CA. 92347
760 912-4802

#12D

Oct 16th, 2012
Edward Duitsman
35691 Dixie Road
Hinkley CA 92347
ddcap@msn.com

Stop remediation and A.U. watering. 12D-1

- Manganese is NOT contained within the boundaries of the plume.
- Manganese is not "unavoidable." 12D-2
- Creating Manganese is Not acceptable or restoring the water to its "Natural State"

#12E

Edward Duitsman ddcap@msn.com
35683 Dixie Rd
35691 Dixie Rd
35681 Dixie Rd
Hinkley CA 92347

- The Black water and high levels of Manganese + arsenic outside the "box" / boundaries is still being denied by PG+E.
- Stop all remediation until this mystery is solved.

12E-1

#13

10/10/12

Anne Holden

John Duitsman 35683 Dixie Rd 760 912 7888

Hold / postpone injecting ethanol until Nick Grills' data is studied in regard to "unavoidable by-products" — manganese. 13-1

Why wait years to do tracing of water flow when we have a perfect tracing element in place in manganese. 13-2

Using compressors to raise pressure in the aquifer will not move chromium 6 or ethanol + its byproducts in a predictable way — because of irregularities in the strata + fault lines + ... 13-3

Because of these and other concerns — please (over →) HALT the compression/injection process — now. 13-4

#13

Kindly refer to specific many study that supports use of ethanol → anaerobic remediation.

13-5

#14

Provide other comments:

I have read the EIR. I believe that the EIR supports the fact that there is no safe way to perform any remediation.

I call for an immediate halt to all remediation until a community water system is installed and completed.

14-1

Martha Duitsman

Name (optional)

35691 Dixie Rd. Hinkley CA 92347

Address (optional)

ALL COMMENTS ARE DUE TO THE WATER BOARD BY ~~OCTOBER 19~~ Nov 5th, 2012.

For questions, contact Anne Holden at (530) 542-5450 or aholden@waterboards.ca.gov.

Fax No. (530) 544-2271

#15

PG & E GAVE US 3 OPTIONS = DEEPER WELL, FILTRATION OR PROPERTY PURCHASE. THEY ALSO HAD A DEADLINE FOR AUG 31. THEN MOVED IT TO OCT 15.
"THERE SHOULD BE NO DEADLINE AT ALL." NONE!
IF THEY WANT A DEADLINE. IT SHOULD BE AFTER THE WATER IS SAFE AND DRINKABLE

15-1

WE SHOULD BE OFFERED ALL 3 OPTIONS.
1. PG & E DIGS A DEEPER WELL
2. PG & E INSTALL FILTER SYSTEM
3. PG & E OFFERS PROPERTY PURCHASE

ALAN J FLETCHER
36566 FLOWER ROAD
760-977-8215 FLETCH0467@GMAIL.COM

#16

Larry Griep

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. GRIEP: My name is Larry Griep, L-a-r-r-y G-r-i-e-p. I have a property at 36363 Livingston Road in Hinkley. My concern is the Water Board, state and local -- there's a great dereliction of duty for years by the people in these boards. Now, they're paid for by the people for the people. The dereliction of the duty by the Water Board is -- are partly to blame for all of these tragedies that happened to the people in Hinkley. 16-1

You had un-lying ponds. They went neglected for years, but nobody on the Water Board or anything was concerned about what was being dumped in the water by this corporation.

My question is why? What was the ties between PG&E and these Water Boards through all these years?

And then when you did have a tragedy, Erin Brockovich got -- they kind of stiffened their jaws a little bit through that in the payments and stuff. And then what happened? Still there was no testing. So I believe there should be a complete analysis of this water in all areas that are concerned by the citizens of Hinkley. 16-2

This should be done by our local Water Board. I mean, what the hell are you guys doing? You're not concerned with what the people are drinking? What's your job? What is your job for the people? Why are you getting paid and doing nothing? Do you have no interest in what kind of water we're getting? I'm asking you. Do you even care? Evidently not, because this has been going on a long time. 16-3

That's all I got to say.

#17

Ron Haefele

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. HAEFELE: Hi. My name is Ron Haefele, R-o-n H-a-e-f-e-l-e. I am from the Hinkley Uranium Contamination Fan Club. I'm not going to take too much of your time. I'm just going to read a brief statement. I would like to address the widespread uranium and radio nuclei contamination of Hinkley's groundwater.

I do find it encouraging that the Lahontan Regional Water Quality Control Board has recently brought --

THE REPORTER: Sir, a little slower please.

MR. HAEFELE: Okay.

THE REPORTER: Thank you.

MR. HAEFELE: -- has recently brought the presence of uranium in Hinkley water at levels that far exceed current USEPA maximum contaminant levels into the public arena. It is troubling, however, that the board claims this situation was discovered only recently and they have very limited data as to its extent when, in fact, they have had knowledge of this existence for almost 20 years.

I would like to read a quote from an article that appeared on the -- page 1, July 30th, 1993, Desert Dispatch and it was titled "High levels of uranium found in Hinkley well." "Hisam Baqai, supervising engineer for the Lahontan Regional Water Quality Control Board said he was not aware of the find." 1993, people. I had many subsequent conversations with Mr. Baqai after this story went public informing him of the progress of the area-wide testing that the discovery of the uranium prompted the Mojave Water Agency to undertake. The results of that testing -- which Mr. Baqai was keenly aware of -- conducted in August 1993 showed varying unsafe levels of uranium present in groundwater throughout the Hinkley valley. There were also measurable levels of beta radio nuclei activity detected in every well tested. 17-1

Beta activity is only present when the source of radioactivity has been created, altered or enhanced by man's activities. The simple bottom line is this is not natural. There's a point of origin. There's a party who created it and they must be held accountable just as PG&E is being made held accountable for chromium 6.

It's not my intention to impede or diminish the necessity of the (inaudible) chromium mitigation. It's been way too long and coming. But in reality, won't it be an exercise of futility to focus on it if we know there are other contaminants out there that are dangerous to others?

This cleanup plan needs to be expanded to encompass all contaminants that are present. And the final Environmental Impact Report must be modified to be very clear on that.

Let me conclude with a blunt assessment. I believe that the Lahontan Regional Water Quality Control Board knows much more about the radioactivity issue in Hinkley, California than you're letting on. And 17-2

I'm serving notice that I am going to take every opportunity to use the information I've obtained in the last 20 years and anyone who will listen to me, I'm going to state my case. You are part of a cover-up and it's gone on far enough.

You know, the gentleman before me was talking about the endangered species. The endangered species we need to be worried about are the people of Hinkley, California.

17-2
cont'd

You may find this -- my biggest hope after making such an accusation is that you can prove me wrong. It really is.

And anyone interested in learning more about the Hinkley uranium groundwater contamination can go on Facebook to the Hinkley Uranium Contamination Fan Club under groups.

Thank you.

#18

Aquilla Halstead

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MS. HALSTEAD: A-q-u-i-l-l-a H-a-l-s-t-e-a-d. My name is Aquilla Halstead and my family and I live on Halstead Road, my husband's family home. He's homesteaded out there for 100 years or so. And we privately had our well tested which came back 2.3. We're seven-tenths of a mile from the plume and we can't get PG&E to come out and test our well because -- well, maybe by the second quarter.

By then, everything that is available to the people that are in the plume will not be available to us. I don't think that's fair. I think something needs to be done. I think there needs to be a wider broadband for like -- Well, everything that I wanted to say everybody else has already said. Testing for everybody.

18-1

But as a Hinkley resident, I urge the Water Board to approve the EIR so that full chromium 6 remedies can be put into action.

We had a meeting today, a group of us with Ian -- with Ian Webster and -- you know, for about an hour and a half. And we would like the EIR passed. And from what I understand, it's because the tortoises are Endangered, you know. So we're having value put on the tortoises, but we're not having value put on our lives here in Hinkley? You know, come on. We want to survive and live too just like the tortoises.

Thank you very much.

18-2

#19

Gary Halstead

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. HALSTEAD: Hi. My name is Gary Halstead. G-a-r-y H-a-l-s-t-e-a-d. My family has been here for over 100 years. We were one of the first settlers. At least every six months there's like a family member dying and it's sad. At one time I was upset with you people when my dad had died, you know, and didn't realize what was going on. And now it's been a problem. It's been a major problem in my whole life. We -- we found out about it. We found out we had 2.3 chromium in our water which we never had before.

My friend in the back, Ron Haefele had tested it before and now it's got -- he's got chromium in there now. And why? It must be PG&E. Who else would it be?

The thing is when we went to go get water, they refused us water. Refused that we were in the plume. We couldn't get nothing. I had to complain, I had to complain -- me and my brother and sister-in-law. We finally have gotten bottled water. For the last month we've had bottled water. We have never had bottled water before this.

And they still say we're out of the plume because now we're west. If you look at the way the water runs, why do you think we have a dry lake called Harper Lake? It goes right smack by us. Humongous readings out in Harper Lake and stuff out in Lockhart and stuff is because it's all running that way. You know, the sea level is low and the water runs the other way. 19-1

You know, I just want to say that, you know, like John Turner says, those that are out of the mile marker, why are you refusing people?

You guys -- like I said, in the last month I've finally gotten water. My health isn't great. I got a lot of ailments and stuff. But that's beside the point. The point is I got my neighbors. There's more than just us living on there. There's also two other families that live on Halstead Road. It used to be all agriculture, alfalfa fields. It's no more. No longer. We got people that bought the property and they won't even build nothing because it's like they're locked. They can't do nothing about it.

They asked us about it and we told them about the water situation. In the last couple years, we had people buy next to us and somebody else buy property. And what they got -- they got suckered into buying the land and now they wish they never would have bought the land. They got nothing to do. That isn't fair.

That's all I got.

#20A

Holden, Anne@Waterboards

From: Penny Harper <pennyharper@msn.com>
Sent: Friday, November 02, 2012 10:05 PM
To: Holden, Anne@Waterboards
Subject: Hinkley EIR

Just get the water board draft EIR approved as fast as possible so we can get the Cr6 cleaned out of the Hinkley water as fast as possible. I'd like to live to see clean water coming out of my well. 20A-1

I am not selling my property to PG&E and intend to live here the rest of my life. I live 5 miles north of the Hinkley School and have 2.3 ppb Cr6 on my well water. I grow vegetables in my garden and fruit trees in my orchard. 20A-2

Penny Harper, RN
21966 Plymouth Road
Hinkley, CA 92347

at Aquarius Ranch
...where Earth meets the Sky

#20B

Penny Harper

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MS. HARPER: Good evening, Water Board. I hope you enjoyed your trip here to the Barstow area. I'm Penny Harper, P-e-n-n-y H-a-r-p-e-r. I'm a Hinkley resident and former Citizens Advisory Committee member.

I'm speaking for my neighbors north of Hinkley. We live five miles north of the Hinkley School. One neighbor on Friend Street told me Monday, September 10th that PG&E sampled the well water in July. He got the results: 4.1 parts per billion. And he said that his neighbors living on Sunset Road had their water tested by PG&E and the results were all 3.8 parts per billion.

These streets are northwest of the current plume boundary as delineated by PG&E on their maps. If PG&E adheres to the Water Board order of July 25th of this year to consider domestic well sampling results, the plume boundary at the north end should be extended immediately. This will give these residents the option to apply for whole house water replacement, deeper wells or have PG&E buy their property.

20B-1

Also, shouldn't the USGS be involved in this chromium 6 issue? Could PG&E set up an escrow account to pay for their services?

20B-2

I think this also -- while I have your attention since you -- the Water Board formed the Citizen's Advisory Committee, I would like to mention that I think that the CAC should be chaired by one Hinkley citizen. If the citizens of Hinkley are to advise PG&E, it seems like a conflict of interest to have a PG&E co-chair. PG&E, of course, should have a representative on the committee and currently that is PG&E engineer Kevin Sullivan and he's doing a good job.

20B-3

Back to the EIR: I ask the board to please pass the EIR as soon as possible so PG&E can go ahead with the full remediation methods to remove the chromium 6 from the Hinkley groundwater. The negative impact on the health of Hinkley residents has gone on too long and the plume is moving north at a rate of five -- two feet a day as we speak.

20B-4

Thank you.

Anne

#21

Recommendations Concerning Draft Environmental Impact Report (EIR) of August 2012 - Remediation of chromium discharges in Hinkley, CA

Dan Hendrickson and Peter Lloyd

Libre Energy, Inc.

Cell 619-972-7536

hendrickson01@cox.net

#21

Objectives - Discuss

- Cr(VI) plume concentration and sizes
- Limitations of five EIR Alternatives
- Electrocoagulation (EC) for remediation of:
  - 7,500 acre-foot 50 - 3.500 ppm plume
  - 15,000 acre-foot 10 - 50 ppm plume
- EC pretreatment for potable water
- 10 GPM EC water treatment trailer
- Conclusions

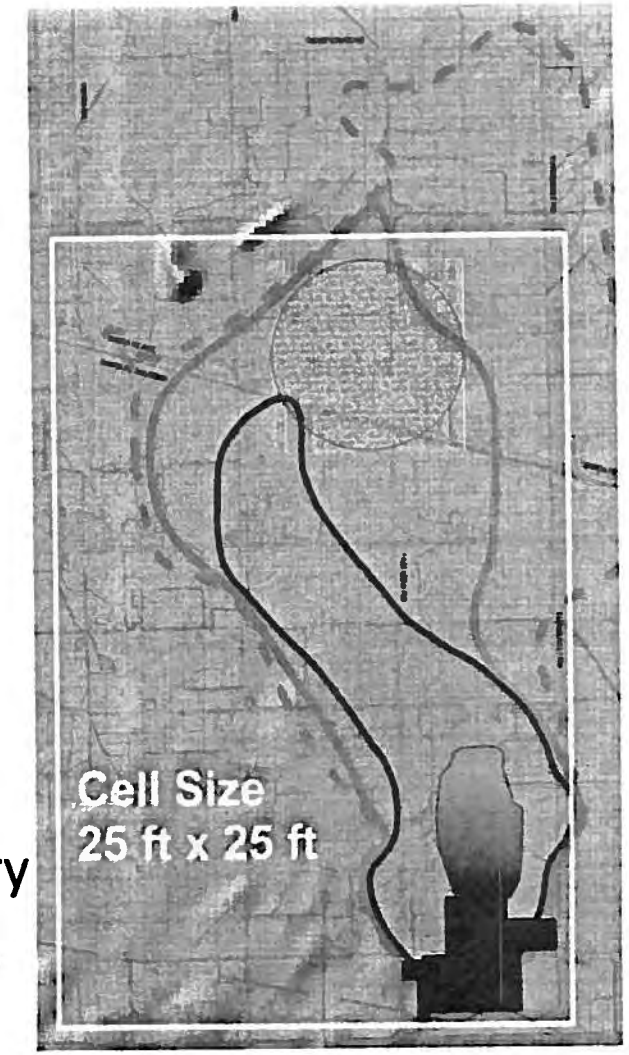
21-1

#21

Plume Concentration and Size

21-1 cont'd

- Blue > 50 ppb Cr[VI]
  - Purple Core 1,000 - 3,500 ppb
  - 7,500 acre-feet
- Green 10 - 50 ppb Cr[VI]
  - 15,000 acre-feet
- Dashed Green 3.2 - 10 ppb Cr[VI]
  - 21,500 acre-feet
  - Plume bulge moving west
- Total Size
  - 44,000 acre-feet
  - 5 miles long x 2.5 miles wide
  - 77% expansion in 1 year
- Brown TDS & nitrates: Desert View Dairy
  - Can treatment for Cr[VI] eliminate TDS?



#21

Limitations in Draft EIR Alternatives

21-2

Plume Size as of	Jan-10	Jan-11	Jan-11	Jan-11	Jan-11
Alternative	4-B	4C-2	4C-3	4C-4	4C-5
Years to 50 ppb Cr(VI)	6	6	4	3	20
Years to 3.1 ppb Cr(VI)	40	39	36	29	50
Years to 1.3 ppm Cr(VI)	95	90	85	75	95
Acres	446	575	575	1,394	575
Net Present Value	$85M	$118M	$276M	$173M	$171M

- **All Remediation alternatives require too much time**

21-3

- Plume Migration into Hinkley?
  - *Is the Bulge* in the 3.1 – 10 ppb plume moving west toward school/homes?
  - Extract water from center of plume near dairy and inject at the western edge of the bulge

21-4

- Cr(VI) contamination in *dry soil* above the water table at plume core is not discussed.

Electrocoagulation (EC)

- Electrochemical conversion of Cr(T)/Cr(VI) to CrO_3:
  - CrO_3 passes Toxic Classification Leaching Procedure (TCLP) and
  - Can be returned to the soil/aquifer
- Shorter remediation of 50 to 3,500 ppm plume:
  - 0.9 year to 50 ppb Cr(VI) in 50 to 3,500 ppb Cr(VI) Plume
  - 2.2 years to 3.1 ppb Cr(VI)
  - 3.5 years to 1.3 ppb Cr(VI)
- Smaller Physical Footprint
- Greater well pumping and above-ground distribution
- Lower environmental impact
  - Reduce Cr(VI) to 3.1 ppb to augment AU treatment AND
  - Reduce Cr(VI) to 1.3 ppb and inject into aquifer at plume boundaries

#21

Electrocoagulation (EC) Treatment

- Treats a Wide Range of Contaminants
  - 96% Cr[VI] removed/minute of treatment
  - 99% Cr[T] removed/minute of treatment
  - Effective for TDS (90%), Nitrates (60%), Arsenic (99%), Manganese (98%) & Uranium (99%)
- No Process Chemicals Required
  - Reduced costs, storage and waste stream
- Minimal Waste Disposal
  - Converts Cr(T) to chromium oxide (CrO_3) passes Toxic Classification Leaching Procedure
  - No clarifier required - H2O/solids pumped into injection well after 0.5 - 2.5 minutes.

21-5
cont'd

- Small Footprint - 40' ISO Container with:
  - 600 GPM (830,000 GPD) EC™ Train
  - Distribution Pump Station
- Low Capital and O&M Expense
- EC™ widely used in industrial, municipal and power plant water treatment
  - Valley Detroit Diesel Allison, Bakersfield, CA: 3 GPM cleaning water from Cr plating.
  - Samsung: 360 and 600 GPM EC™ removes Nickel from LCD production line wash water.
  - Abu Dhabi and Jamaica: 135 GPM gas well production water treatment in 40' containers.
  - El Paso Electric Power: 2 x 500 GPM cooling tower and boiler feed water treatment.

Predicted EC™ Treatment Results

21-5 cont'd

- 7,500 acre-foot 50 to 3,500 ppm Cr(VI) Plume

  Four (4) 600 GPM EC™ Trains (1,378 GPM average)

  - 0.94 year to 50 ppb vs. 3 years (Alternative 4C-4)
  - 2.2 years to 3.2 ppb vs. 29 years "
  - 3.5 years to 1.3 ppb vs. 75 years "

- 15,000 acre-foot 10 to 50 ppm Cr(VI) Plume

  Four (4) 600 GPM EC™ Trains (2,261 GPM average)

  - 1.7 years to 3.2 ppb vs. 29 years (Alternative 4C-4)
  - 4.1 years to 1.3 ppb vs. 75 years "

#21

EC™ for Potable Water Pretreatment

21-6

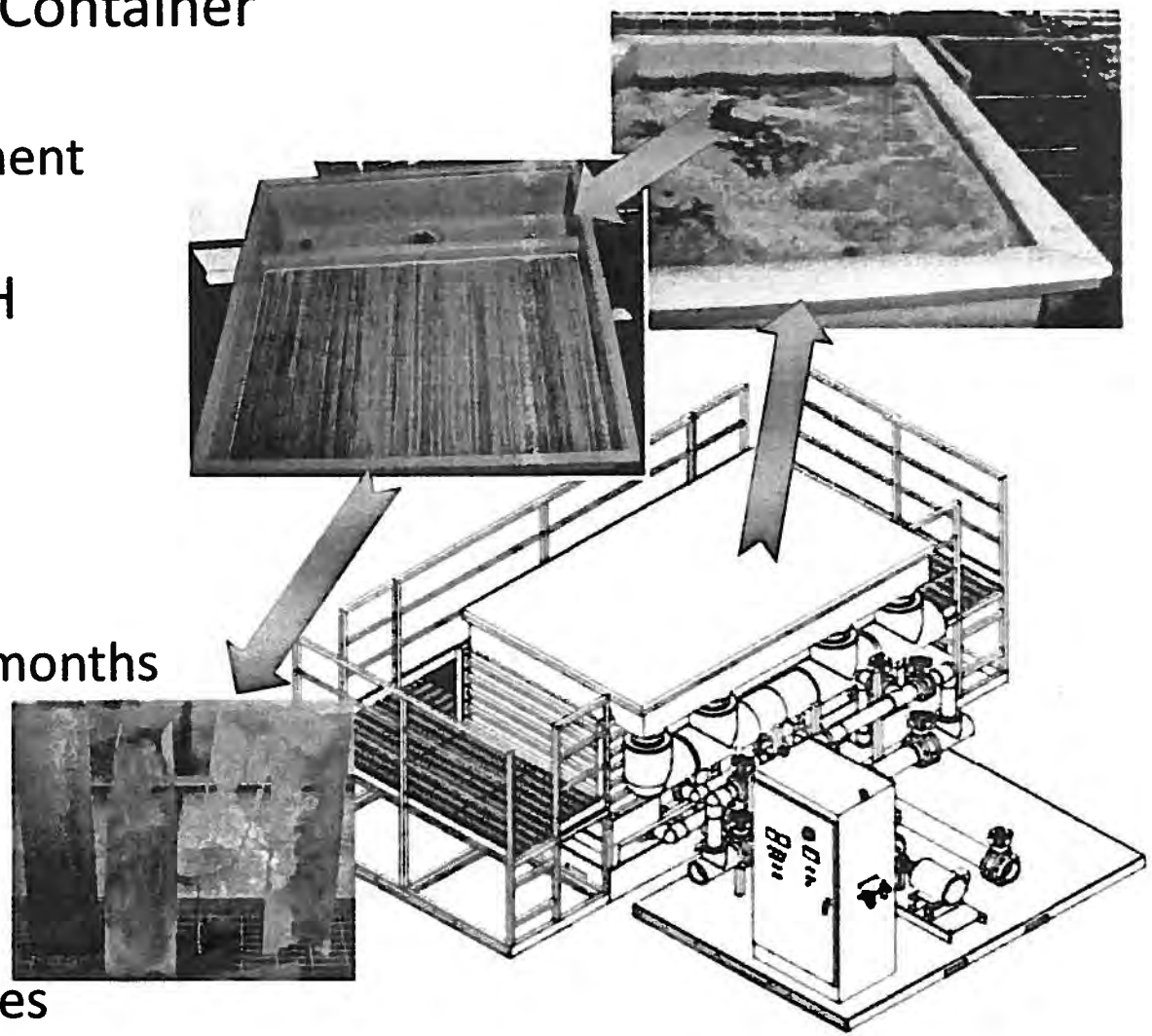
- Effective for treating a wide range of contaminants
  - Suspended solids,
  - Colloidal solids,
  - Grease,
  - Bacteria & viruses,
  - Heavy metals (Arsenic, Cr(T), Iron, Manganese, Uranium, etc.)
  - Hardness,
  - Silica, and
  - Organics (TDS, nitrates, phosphorus. etc.)
- Kills 99.999% of pathogens
- Reduces demands on reverse osmosis, ion-exchange and sterilization
  - Extends service life
  - Reduces maintenance
- No chemicals added, waste volume is minimal (~ 0.02% by volume).
- Sludge removed with a 2-hour clarifier treatment, and
- Discharged to dumpsters for haul-off to landfill.

#21

600 GPM Powell Water EC™ Train

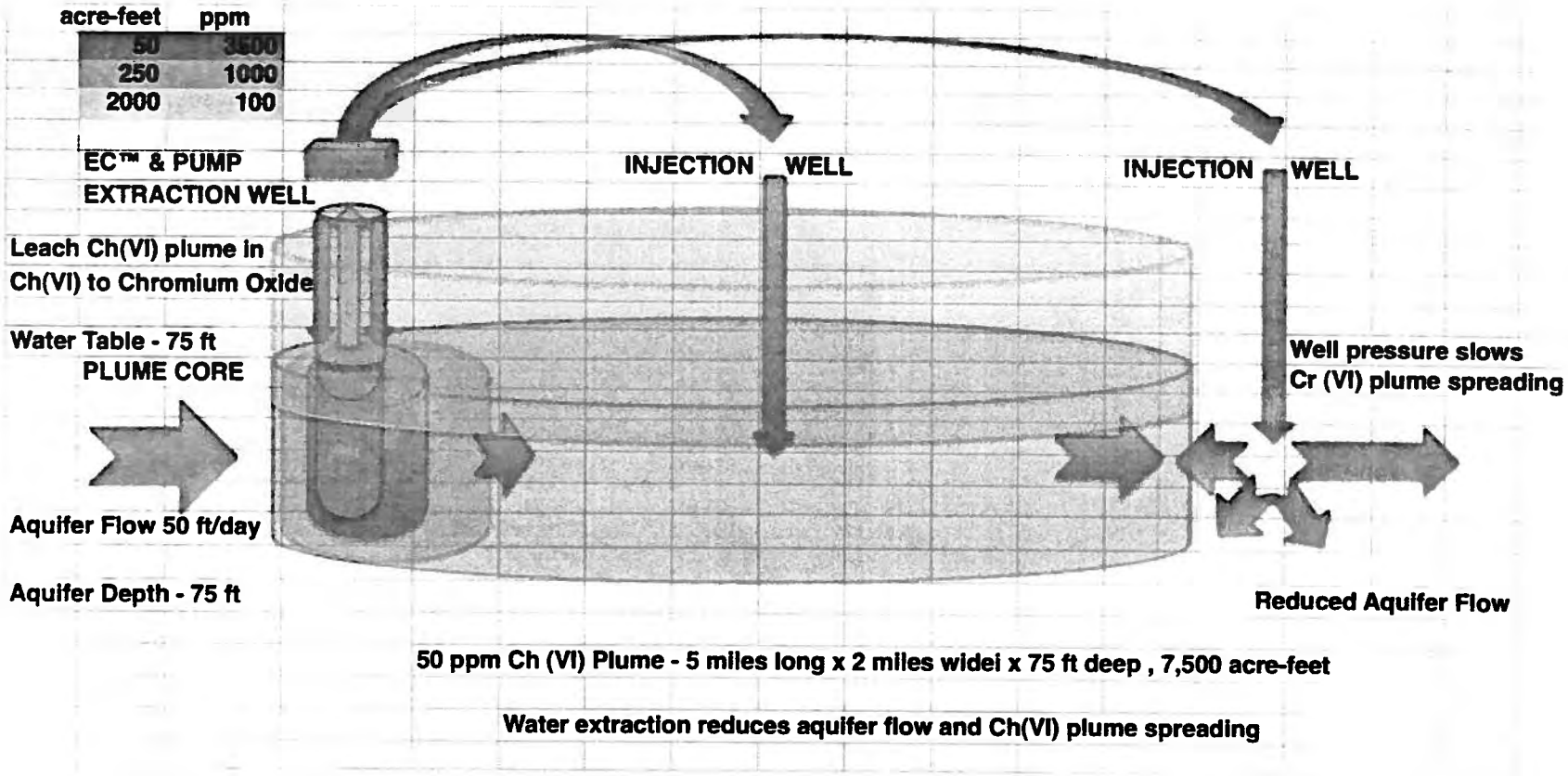
- Housed in 40' ISO Container
- 830,000 GPD
  - 60 second treatment
  - 480 VDC
- 17' L x 18' W x 7' H
- Gross weight:
  - 53,098 lb.
- Electrodes:
  - 30,380 lb.
  - Replace every 4 months

21-6
cont'd



1. 600 GPM EC™ Train
2. EC™ Chamber
3. Empty EC™ Chamber
4. New & used electrodes

50 - 3,500 ppb Plume EC™ Treatment



21-6
cont'd

- Plume cross-section shows:
  - ***Use of residual EC™ charge to treat Cr[VI] contamination in dry soil above plume core***
  - Injection into wells at plume western boundary - reducing fresh water injection
  - Injection into wells at the edges the 10 to 50 ppm Cr[VI] plume

#21

Recommend

- Modify Alternative 4C-5 to Include:
  - Use electrocoagulation vs. chemical treatment
  - Reduce remediation time and cost
  - Reduce AU treatment and land/water rights costs
- Lower environmental impact
  - Reduced footprint - 40' ISO Containers
  - Transportable - nominal site preparation
  - Higher capacity - 800,000 GPD/Container - low cost/Acre-Foot
  - Possible use of 1 MW CHP Module - Reduced CO_2 emissions
  - ***Reduce Cr(VI) plume to 3.1 ppb in 2.2 years***

21-7

Conclusions: EC™ and CHP

21-8

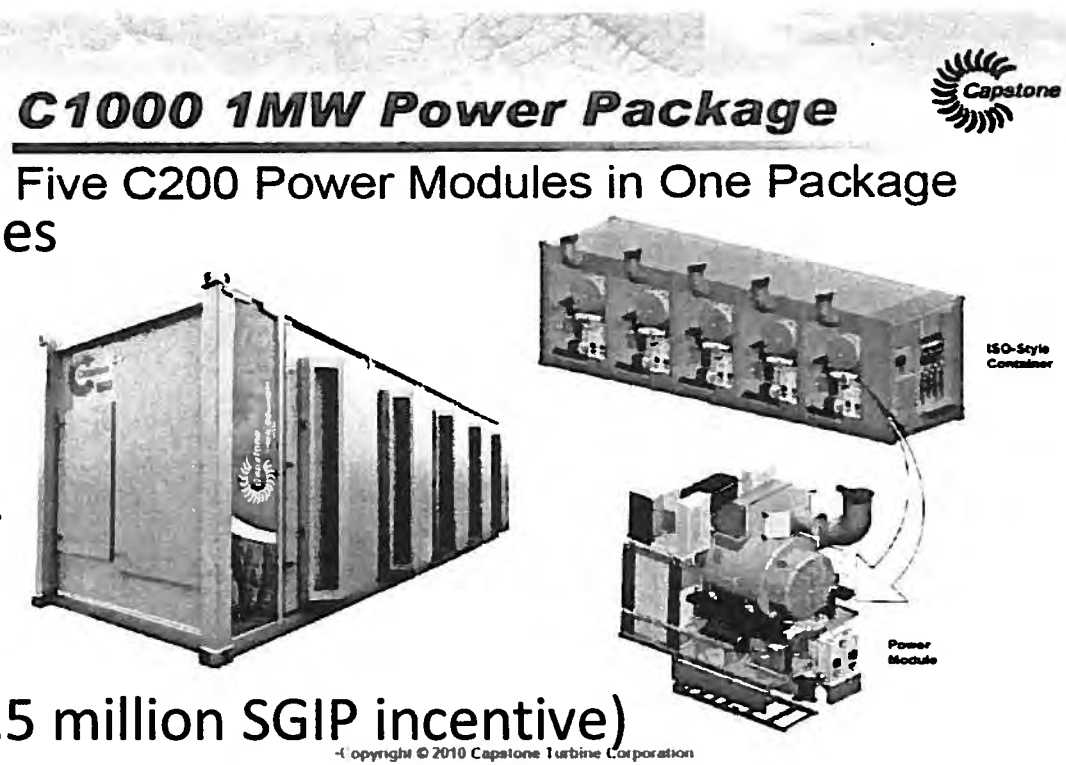
- EC™ is a viable ex-situ treatment for Cr[VI] at 2 sites
  - Plume Core – Increase capacity 5.5 x C4-3/C4-5 250 GPM to 1,378 GPM
  - Desert View Dairy – Increase capacity 2 x C4-3 1,100 GPM to 2,260 GPM
- Reduced remediation times:

	3.1 ppm	**1.3 ppm**
– 7,500 acre-foot 50 to 3,500 ppb Plume	2.2 years	1.4 years
– 15,000 acre-foot 10 to 50 ppb Plume	3.5 years	4.1 years

- Demonstrate 10 GPM Powell Water EC™ Trailer
  - 16,000 GPD from 50 ppb Cr[VI] groundwater source
  - EC™ pre-treatment for Hinkley water supply after demonstration?
- 1 MW natural gas fueled CHP Package provides:
  - 7,446 MWH/year electricity
  - $ 246,000/year savings in electric power costs
- Low environmental impact
  - Minimum site preparation and footprint
  - Reduced traffic, storage, facilities and cost vis-à-vis chemical coagulation
  - 388 ton/year net reduction in CO2 emissions

C1000 1 MW Power Package

- 30’ ISO Container
- High Reliability
  - 5 x 200 kW Microturbines
- 7,446 MWH/year
- Low GHG emissions
  - Saves 388 tons CO2/yr
- Net Capital Cost
  - $ 1.75 million (with $ 0.5 million SGIP incentive)
- O&M Cost
  - $ 0.10/kWh vs. $ 0.134/kWh from Southern California Edison



Combined Heat and Power (CHP)

21-9 cont'd

- Electric power for 8 600 GPM EC™ trains
  - Would cost ~ $ 1.27 million/year
  - 68% of O&M costs
  - Can be reduced > 25% with natural gas fueled CHP package
- 40' ISO Container with 1 MW CHP package provides
  - 7,446 MWH/year electricity - enough for
    - 100% of power for ***six*** 600 GPM EC™ systems
  - $ 0.9 million savings during 3.5 years of operation
    - $ 1.75 million net capital costs (with $ 0.5 million SGIP Incentive)
    - Simple payback = 5.5 years
  - Electric power redundancy
  - Demand management
  - 3,717 ton/year reduction in CO2 emissions

#21

4 x 600 GPM EC™ Treatment of 7,500 acre-foot, 50 - 3,500 ppm Plume

Cum Years	Time Years	EC™ GPM	Plume ppb	Remediation ppb	148 sec ppb	118 sec ppb	72 sec ppb	59 sec ppb	38 sec ppb	60 sec EC™	Cum Days
0.03	0.03	934	3500	1.3	3.1					96%	12
0.30	0.26	1172	1000	1.3		2.9				96%	101
0.94	0.65	1920	100	1.3			3.2			96%	323
2.24	1.30	2363	50	1.3				3.2		96%	782
3.50	1.26	3638	3.2	1.3					1.3	96%	1231
										Totals	
				Acre Feet Treated	50	500	2000	4950	7500	7500	AF
				Treatment Time - Days	12	97	236	474	459	1277	Days
				Plume Dilution	1.0	39	117	156	151	463	AF
				Corrected Treatment Volume - AF	49.0	461	1883	4794	7349	7349	AF
				Treatment Time Corrected for Dilution	11.9	89	222	459	449	1231	Days

21-9
cont'd

- Remediation:
  - 0.94 year to 50 ppb
  - 2.2 years to 3.2 ppb
  - 3.5 years to 1.3 ppb
- Groundwater flow/mile of plume width is 120 acre-feet/year
- Groundwater plume dilution reduces volume treated by 2% in 3.5 years
- 7,963 acre-feet flows into the 10 - 50 ppb plume diluting & reducing its treatment time

#21

Draft EIR Comments (Continued)

21-10

Backup Slides

4 x 600 GPM EC™ Treatment of 15,000 acre-foot 10 to 50 ppm Plume

Cum Years	Time Years	EC™ GPM	Plume ppb	Remediation ppb	59 sec ppb	58 sec ppb	56 sec ppb	53 sec ppb	35 sec ppb	60 sec EC™	Cum Days
0.21	0.21	2343	50		**2.8**					**96%**	76
0.52	0.78	2383	40.0	1.3		**2.9**				**96%**	189
0.94	1.13	2469	30.0	1.3			**3.1**			**96%**	343
1.69	1.98	2608	20.0	1.3				**3.0**		**96%**	**618**
4.11	2.52	3950	3.0	1.3					**1.3**	**96%**	**1501**
										Totals	
				Acre Feet Treated	2250	3000	4500	5250	15000	**15000**	
				Treatment Time - Days	217	285	412	722	920	**2339**	**Days**
				Plume Dilution	1463	1804	2828	3250	605	9951	**AF**
				Corrected Treatment Volume - AF	787	1196	1672	2000	14395		**AF**
				Treatment Time Corrected for Dilution	75.96	113.5	153.3	274.9	883.2	1501	**Days**

21-10
cont'd

- Remediation: 1.7 years to 3.2 ppb, 4.1 years to 1.3 ppb
- Groundwater flow/2 miles of plume width is 240 acre-feet/year
- Plume dilution from groundwater plus treated water cascading from the 50 - 3,500 ppb plume *reduces density of Cr(VI) in the 10 -50 ppm plume by 66% - reducing EC™ treatment time.*

#21

600 GPM EC™ Train Costs

21-10
cont'd

600 GPM EC™ System Capital Expense					
[redacted] 600 GPM EC™ Train Installed Cost			$	1,102,400	82.3%
[redacted] 40' ISO containers			$	6,000	0.4%
[redacted] Coolerado M50 Air Conditioner			$	7,500	0.6%
Shipping			$	3,000	0.2%
Project Management/Engineering/Profit			$	221,402	16.5%
600 GPM EC™ System Capital Expense			**$**	**1,340,302**	**57.5%**
600 GPM EC™ O&M Expense					
Electric Power	**kWh/yr**	**Cost/kWh**		**kWh Cost/yr**	
140 kW	**1185760**	**$ 0.13**	$	158,892	67.9%
Labor - Hours	**1095**	**$ 30.00**	$	32,850	14.0%
EC™ Electrodes			$	27,740	11.9%
Maintenance			$	14,379	6.1%
600 GPM EC™ System O&M Expense			**$**	**233,861**	
O&M expense: 3.5 years - 3% escalation			**$**	**992,413**	**42.5%**
50 ppb Plume Total EC™ Expense to 1.2 ppb			**$**	**2,332,715**	
O&M expense: 4.1 years - 3% escalation			**$**	**1,018,727**	**43.2%**
10 - 50 ppb Plume Total EC™ Expense to 1.2 ppb			**$**	**2,359,029**	
Total Expense Eight 600 GPM EC™ Systems to 1.2 ppb			**$**	**18,766,976**	

Budgetary estimate: eight 600 GPM EC™ Trains operating simultaneously

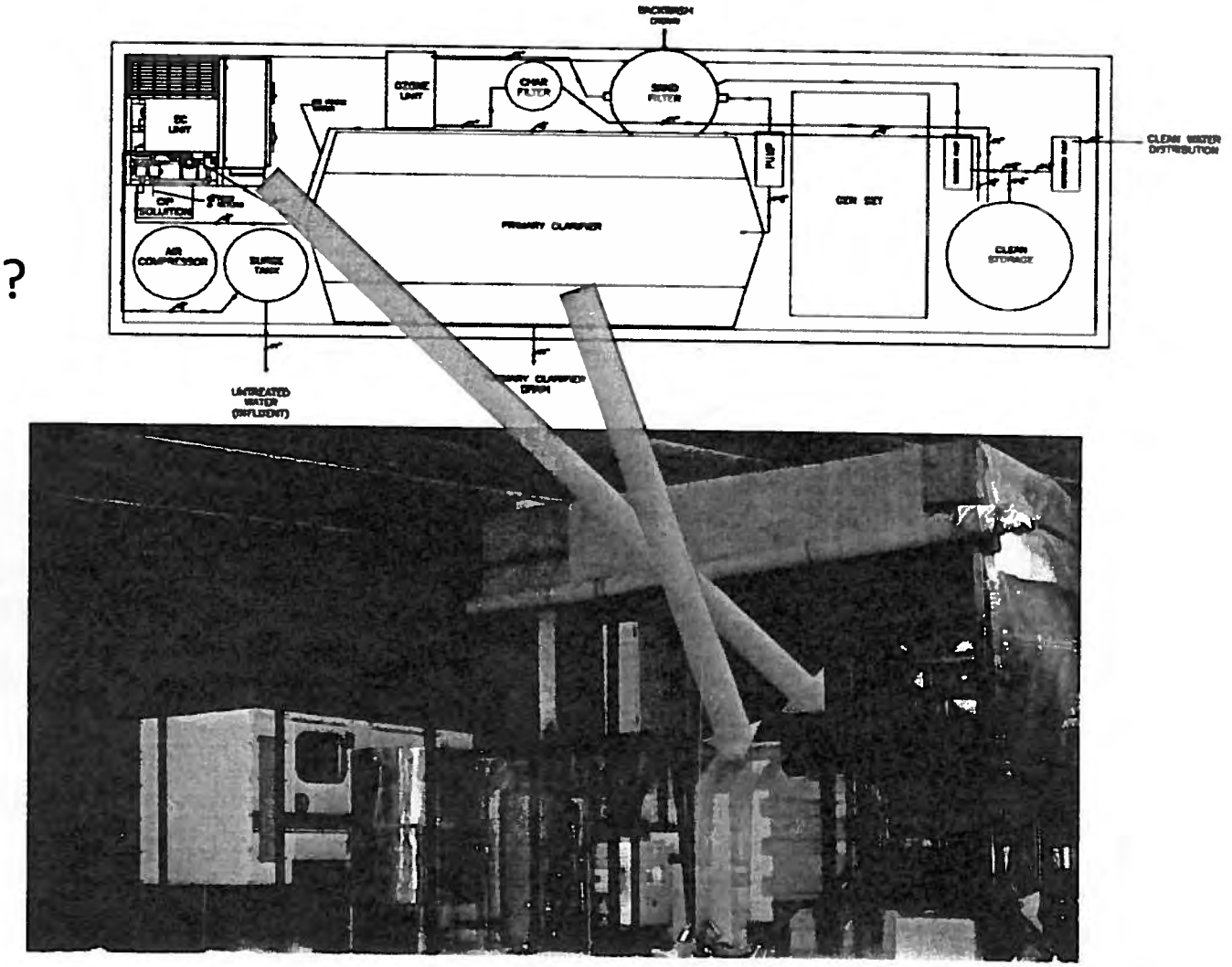
Total Capital Expense - $ 10.7 million

4.1 year O&M Expense - $ 8.1 million

#21

10-GPM Powell Water Trailer

- 16,000 GPD
- 24' x 8'
- Demonstration?



21-10
cont'd

#21

POWELL WATER SYSTEMS, INC.

Tel (303) 627 0320 Fax (303) 627 0116
19331 East Tufts Circle
Centennial, Colorado 80015-5820 USA
Web information www.powellwater.com
E-mail: powellwater@powellwater.com

21-10 cont'd

The following drinking water tests were performed on natural well water in California to determine the effectiveness of electrocoagulation at low contamination levels.

Item	MCL	Before EC	After EC	% removal
Chromium 6		32 ppb	less than 1 ppb	96%
Arsenic	10 ppb	76 ppb	2.2 ppb	97%
Total Alpha	15 pCi/l	24 pCi/l	Less than 1 pCi/l	95%

The metals made separable from water using electrocoagulation are in the oxide form or non hazardous which saves significant disposal costs.

POWELL WATER SYSTEMS, INC

Tel (303) 627 0320 Fax (303) 627 0116
19331 East Tufts Circle
Centennial, CO 80015 - 5820 U S A
Web information www.powellwater.com
E-mail: powellwater@powellwater.com

21-10 cont'd

This work was performed under the auspices of the U.S. Department of Energy by the University of California, Lawrence Livermore National Laboratory by Bill Daily Jr.

Sample Description	Uranium (µg/L)	% Removal
Influent	130	
Influent Duplicate	130	
2 electrodes @ 1 gpm	1.9	98%
2 electrodes @ 1 gpm dup	1.8	98%
2 electrodes @ 2 gpm	5.2	96%
3 electrodes @ 2 gpm	0.64	99%
3 electrodes @ 1 gpm	0.24	99%
5 electrodes @ 1 gpm	0.36	99%
5 electrodes @ 2 gpm	0.22	99%

Uranium Lawrence Livermore National Laboratory

#22A

Received 8/29/12

Executive Summary:

This paper refers to the California Regional Water Quality Control Board, Lahontan Region Draft Environmental Impact Report of August 2012 Concerning Chromium Discharges from PG&E's Hinkley Compressor Station.

It discusses the status of the Ch[VI] plume contaminating the Hinkley Valley Aquifer and recommends use of Powell Water Electrocoagulation (EC™) as a more rapid (4-years with 1.200 GPM or 1.8-year with 2,400 GPM EC™ train options) affordable ($ 6.86 million budgetary estimate) alternative to the 250 GPM chemical reduction/precipitation ex-situ treatment described in Alternative 4C-5 of the Draft EIR. 22A-1

The small physical and environmental footprint of two to four 600 GPM EC™ treatment trains, each packaged in and operated from a transportable 40' ISO container not including costs for extraction wells. Pump stations, facilities for injection of carbon for in-situ groundwater treatment, transfer piping and injection wells,

EC™ effluent would be pumped to injection wells along the western boundary of the plume and at the northern end of the plume. The short (10 to 150 second) EC™ treatment times could allow up to 10 times that of the 250 GPM chemical reduction/precipitation treatment system.

A 250 GPM removal of Ch(VI) from the plume core over 20-years would permit additional Ch[VI] to flow into the aquifer allowing it to contribute to plume growth over the near term and increase requirements for in-situ remediation over the long term. 22A-2

Powell Water EC™ equipment is installed in 150 facilities worldwide and provides a proven and affordable Cr(VI) remediation capability.

A 24' x 8' Powell Water Treatment (fifth wheel) trailer could be made available for 2-3 months of EC™ demonstration to support Water Board evaluation of options concerning implementation of Alternative 4C-5.

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Attachment

Plume Area

As described in Chapter 1, of th Water Board Report Introduction, the Water Board requires PG&E to monitor and report on the concentrations of total chromium (Cr[T]) and Cr[VI] present to establish the extent of waste chromium in groundwater. PG&E has sampled for Cr[T] and Cr[VI] contamination levels for many years by installing monitoring wells throughout the project area. Monitoring activities consist of sampling of groundwater and soils (i.e., collection of groundwater and soils for testing) and water level readings. Data collected during sampling is used to determine the geographical variance in contamination levels that is then used to develop boundaries to represent the presence of Cr[T] and Cr[VI] contamination. The maximum extent of these boundaries is characterized as the plume area and the groundwater contours for different levels of contamination are depicted on plume maps. At present, the plume maps depict contours representing Cr[VI] concentrations of 3.1 parts per billion (ppb, essentially equivalent to micrograms per liter) (Figure 2-2b), 10 ppb (Figure 2-2c), and 50 ppb (Figure 2-2d). These concentrations were mapped for the following reasons:

Figure 1 shows the Hinkley Valley aquifer plume area

3.1 ppb for Cr[VI] This (Dashed Green) contour traces the outer boundary of what is defined as the chromium plume in groundwater as of the Fourth Quarter 2011. The 3.1 ppb value for Cr[VI] was determined based on a 2007 Background Study Report conducted by PG&E that evaluated background levels of Cr[T] and Cr[VI] in areas that were then outside the recognized plume area. The results of that study estimated that maximum background levels were 3.1 ppb for Cr[VI] and 3.2 ppb for Cr[T] and ***the average background levels were 1.2 ppb for Cr[VI] and 1.5 ppb for Cr[T]*** (Pacific Gas and Electric 2007). The *Water*

Fig 1, Hinklyy Valley Aquifer CH(VI) Plume Contours

Board will use these values as cleanup targets for the remediation unless and until new evidence is developed that background levels are different than these cleanup targets or PG&E demonstrates that background levels of water quality cannot be restored, at which time the Water Board will identify the best water quality achievable, consistent with the procedures set forth in State Water Resources Control Board Resolution 92-49 (described in detail in Section 2.5 of the Draft IR).

10 ppb for Cr[VI] – This (Solid Green) contour defines the portion of the plume where medium-level concentrations occur. The 10 ppb level is not tied to a regulatory level or a background level.

50 ppb for Cr[T] or Cr[VI] – This (Blue)contour defines the portion of the plume wherein Cr[T] orCr[VI] concentrations are at or above the California Maximum Contaminant Level (MCL) of 50 ppb for Cr[T], which includes Cr[VI]. The MCL is the current drinking water standard and is only specified for total chromium, not hexavalent chromium. Since initiating monitoring activities, PG&E has prepared quarterly groundwater monitoring reports (GMP) in accordance with Water Board orders that have been used to track the area of contamination. GMPs are also used as a means to determine effectiveness of remediation activities being implemented as well as their ability to meet interim remedial targets. In sampling from monitoring wells conducted between 2006 through the second quarter of 2010 (Q2 2010), a level of 4.0 parts per billion (ppb) was used to delineate the extent of the plume area. ***Subsequently, the 3.1 ppb Cr[VI] and Cr[T] levels have been used to delineate the extent of the plume area.*** Figures 2-2b through 2-2d of the Draft EIR refers.

Model Simulation of In-Situ Remediation Zone Treatment Areas

Figure 3.1-13, Section 3.1 Water Resources and Water Quality, shows a diagram of the two different types of In-situ Remediation Zones that can be used to help understand the in-situ remediation zone monitoring results from the 2005 pilot testing and full-scale in-situ remediation zone areas (Central, Source, and SCRIA) within the Hinkley chromium plume. This conceptual model was used to better understand information, such as what the 3D groundwater flow (MODFLOW) and chemical transport model (MT3DMS) would calculate within a representative model cell. The size of the conceptual model example cell was an acre with a time-step of a month for a year. This allowed the change in groundwater flow and Cr[VI] concentrations within the example cell to be tracked for a39 year, to understand the likely effects of different in-situ remediation zone designs with various assumed aquifer properties. As described previously, model assumptions for the Hinkley Valley groundwater flow in the upper aquifer include a saturated thickness of about 75 feet, with a porosity of about 20% and a hydraulic conductivity of about 50 ft/day (1,520 ft/month). There is a regional groundwater elevation gradient of 20 ft/mile, which indicates a northward water tracer movement of about
1 ft/day through the aquifer thickness. This regional water movement through the one acre example cell (about 210 feet wide)can be specified as a regional flow rate (15 gpm based on model assumptions). The in-situ remediation zone cell would include some injection of carbon-amended water into the cell, which is specified as an injection rate (gpm). These flow parameters will provide the basic aquifer movement and pumping rate required for in-situ remediation zone treatment within the cell. A higher regional flow will move the plume faster, but will require increased carbon injection pumping to create the necessary chemical conditions to cause the Cr[VI] to be reduced and precipitate as Cr[III]."

The highest concentrations of Cr[VI] remain below the Compressor Station evaporation ponds suggesting that not all of the water in the aquifer is moving north with the groundwater elevation gradient (regional flow). Some portion of the aquifer porosity is trapped behind clay layers or lenses that prevent movement in this portion of the aquifer. For the conceptual model, half of the porosity (10%) will be assumed to be mobile (water moving with the groundwater gradient) and half will be assumed to be immobile (trapped within the aquifer matrix). The water between these two porosity units will exchange (mix) at a specified rate (% of the mobile volume mixing with the immobile volume each month). The conceptual model will track the Cr[VI] concentration and the injected carbon concentration, which will can be used to indicate reduced chemical conditions within the one-acre example cell. The Cr[VI] in the mobile porosity will be transported by the regional groundwater flow. The injection flow will replace some of the regional flow from the south. The Cr[VI] in the immobile porosity will slowly exchange with the mobile porosity, and will cause the concentrations of Cr[VI] in the cell to remain higher than if the entire cell porosity was mobile and being moved and diluted by the regional groundwater flow.

Assuming the above transport model is correct, use of ex-situ EC™ treatment to reduce Cr [VI] concentration to < 1.5 ppb before mixing carbon into the water for in-situ treatment and injecting this treated water into the northern end of the plume at the 10 ppb boundary where it would dilute and provide in-situ treatment for Cr [VI] concentrations between 1.3 ppb and 10 ppb.

2010 Feasibility Study Addendum 3 (September 2011)

Following review of Feasibility Study Addendum 2, the Water Board solicited input from the California Department of Toxic Substances Control (DTSC) and the U.S. EPA on the 2010 Feasibility Study, Feasibility Study Addendum 1, and Feasibility Study Addendum 2. Based on this input and review, the Water Board requested PG&E to develop further options to implement a program that maintained maximum year-round pumping and plume containment, evaluated the need for and effectiveness of varying pumping schedules, further evaluated the potential for additional cleanup time-frame reduction from that estimated under Alternative 4B, developed milestones for cleanup of different parts (or "operable units") of the plume, developed optimization periods to facilitate adaptive management of the remedial activities, and established a contingency plan to maintain year-round plume capture. Optimization refers to changes that would be made in the remediation system configuration (e.g., change extraction well locations) to maximize remediation as plume cleanup progresses and the plume shape changes.

In response to the Water Board's request, PG&E developed four additional alternatives as part of Feasibility Study Addendum 3 (Pacific Gas and Electric 2011c) that used the same general remediation technologies as the previously studied Alternative 4B with the addition of extraction/treatment features and increases to extraction flow rates, continuous year-round pumping for enhanced year-round hydraulic control, winter-crop agricultural unit operation, and the consideration of winter water treatment by an ex-situ (above-ground) treatment plant. The purpose of the ex-situ treatment approach is to maintain fixed rate, year-round extraction rates since the agricultural units have a reduced capacity to treat water on a per-acre basis during winter months when less water can be absorbed. The additional alternatives were:

Alternative 4C-1. In-situ and enhanced agricultural treatment, including additional extraction wells and agricultural units (AU) and associated infrastructure with higher extraction rates. Only one crop would be used for each agricultural treatment unit, resulting in seasonal fluctuations in flow rates. *Estimated time to cleanup to 3.1 ppb Cr[VI]:* ***40 years***

Alternative 4C-2. Same in-situ and enhanced agricultural treatment as Alternative 4C-1, except a winter crop would be added to increase extraction rates in winter relative to Alternative 4C-2. *Estimated time to cleanup to 3.1 ppb Cr[VI]:* ***39 years***

Alternative 4C-3. Same in-situ and enhanced agricultural treatment as Alternative 4C-2 with operations during summer and winter and the addition of ex-situ treatment with additional injection wells to accommodate the excess flow from the agricultural units in the winter in order to maintain a continuous extraction flow year-round. *Estimated time to cleanup to 3.1 ppb Cr[VI]:****36 years***

Alternative 4C-4. Same in-situ as Alternative 4C-2 with substantially expanded agriculture operations occurring during summer and winter, with addition of new agricultural units for winter-only operations in lieu of ex-situ treatment in order to maintain continuous extraction flow year-round. *Estimated time to cleanup to 3.1 ppb Cr[VI]:* ***29 years***

After review of Feasibility Study Addendum 3, the Water Board recommended development of a more aggressive combined alternative that approximately matched the cleanup timeframe of Alternatives 4C-1 through 4C-4 while providing for removal of chromium from the aquifer in the high concentration portion of the plume. PG&E developed a new "Alternative 4C-5" in March 2012 to respond to the Water Board's recommendation.

Alternative 4C-5. This alternative combines the in-situ and land treatment approaches proposed under Alternative 4C-2 with ex-situ approaches proposed under the previous Combined Alternative to remove chromium from the overall site from the high concentration portion of the plume. *Estimated time to cleanup to 3.1 ppb Cr[VI]:* ***50 years***

<u>Above-ground Ex-situ Treatment</u>.
Above ground (ex-situ) treatment includes various physical-chemical and biological treatment processes that can be used to treat extracted groundwater containing chromium. The treatment process options include liquid-phase treatment to reduce toxicity, mobility, or mass of chromium in groundwater prior to reuse/injection. The physical-chemical methods that can be used to remove chromium from groundwater include chemical reduction/precipitation, electrochemical precipitation, coagulation/microfiltration, ion exchange, and reverse osmosis.

In general, chemical reduction/precipitation treatment is implemented by mixing treatment chemicals with the water stream to promote a reduction/oxidation (redox) reaction. Redox reactions involve the transfer of electrons from one compound to another. Specifically, one reactant is oxidized (loses electrons) and one is reduced (gains electrons). For the case of Cr[VI] treatment, the chromate ion would gain electrons and be reduced to Cr[III], and iron would lose electrons and be converted from Fe2 to Fe3. Reducing agents most commonly used for treatment of Cr[VI] are ferrous sulfate, ferrous chloride, sodium bisulfite, and sodium hydrosulfite. Redox chemicals must be added in quantities greater than the stoichiometric ratio because the chemicals will be consumed by other oxidized chemicals.

Unit processes for chemical reduction/precipitation systems for chromium removal typically include a reactant feed system, reaction (reduction) vessel, aeration tank for oxidation of excess iron, filtration system, and solids handling equipment for dewatering and disposal of precipitated materials. The technology has been proven effective for chromium removal in both bench and full-scale applications, has been implemented at a number of similar sites for groundwater treatment, and could be implemented at the Hinkley site. The process does generate a chemical waste sludge that will require disposal, possibly as a hazardous waste (Pacific Gas and Electric 2010).

Reduction and precipitation of Cr[VI] from groundwater involves at least two reactors. The ferrous iron reduction process is typically carried out with two reactors in series, the first for Cr[VI]reduction and the second, an aerated reactor to oxidize residual ferrous iron to the insoluble ferric state. Flocculants to aid settling of the Cr[III] and Fe3 are added. The precipitated solids containing Cr[III] and Fe3 hydroxides are removed by media filtration. Filter backwash is collected in a large tank where solids are settled, and clear liquid decanted for reuse/disposal.

There are generally two major limitations for surface treatment of Cr[VI] pumped from groundwater. The treatment capacity needed to treat the Hinkley plume within a reasonable time would be relatively large. Because there is an estimated volume of about 7,500 acre-feet with concentrations of greater than 50 ppb, a facility with a capacity of 250 gpm would pump and treat about 400 acre-feet per year, requiring 20 years to pump and treat the plume core (> 50 ppb).

A facility with a capacity of 1,000 GPM would still require five years to pump the existing plume core (> 50 ppb) volume. The second limitation is that it is difficult to pump all of the contaminant from the groundwater, because of immobile porosity zones within the aquifer material. The Hinkley Source Area monitoring wells suggest that this is a characteristic of the chromium plume. Therefore, pumping several times the existing plume volume may be required to remove the majority of the Cr[VI] from the plume core. Pumping several times the core plume volume would require many more years. The sludge would likely be considered a toxic waste and would need to be disposed of in an appropriate landfill facility.

However, unlike agricultural land treatment and in-situ operations, above-ground ex-situ treatment would remove highly concentrated Cr[VI] at the plume core where > 1,000 ppb concntrations remain and could significantly reduce the amount of contamination that over time could significantly spread the plume with hydraulic action thereby increasing the area cost and time required for in-situ remediation in the Hinkley Valley aquifer.

Powell Water is the industry leader and the world's largest supplier of industrial electrocoagulation (EC) systems with over 150 installations worldwide. EC has become recognized as a very effective means for economically treating a wide variety of challenging water treatment applications:

The Powell Water EC™ System has distinct advantages over other ex-situ treatment:

1. *No Process Chemicals Required* - The treatment process requires no chemicals. The EC™ system is periodically cleaned with an acid solution that is recycled.

2. *Nominal Operator Requirements* - Even the largest systems can be operated with only

1 or 2 operators. Operator training is straightforward. The simple design ensures the system is very reliable and cannot be damaged by operator error or process upset.
3. *Low Capital Cost* -

4. *Low Operating Cost* – Besides manpower, the only operating costs are power and periodic electrode replacement. Power consumption is typically 4 kWh/1,000 gallons and electrode consumption is about 0.20 lb./1000 gallons.

5. *Minimal Maintenance* – Maintenance is limited to periodic replacement of the flat blade electrodes which consist of generic 1/8" seel plate that can be purchased locally

6. *Minimal Waste Disposal* – ***Most contaminants are precipitated as oxides which renders them non-hazardous and able to pass the TCLP.*** Since no additional chemicals are added, the waste volume is minimal (~ 0.02% by volume) and can typically be discharged to dumpsters for haul-off or on site landfill. In the Hinkley Valley Cr[VI] Plume remediation, a clarifier for separation of solids and their disposal in a landfill would not be required unless the EC™ train effluent is to be used for Title 22 non-potable water or potable water as is done on the 10 GPM Powell Water Trailer developed for Hurricane Katrina relief. The solids produced by EC™ treatment is stable Iron-Chromium Oxide (iron ore) and presents itself in small grains that would be filtered by the soil surrounding injection wells or the surface as is done with a leach field. Figure 1 shows the 24' long x 8' wide Powell Water Trailer.

7. *Treats a Wide Range of Contaminants* – Minimal, if any, pretreatment is required for a system effective on a broad range of items including suspended solids, colloidial solids, Emulsions, fats, grease, bacteria, viruses, heavy metals, hardness, silica, boron, Selenium, and organics.

Figure 2 shows 600 GPM Powell Water Treatment Train

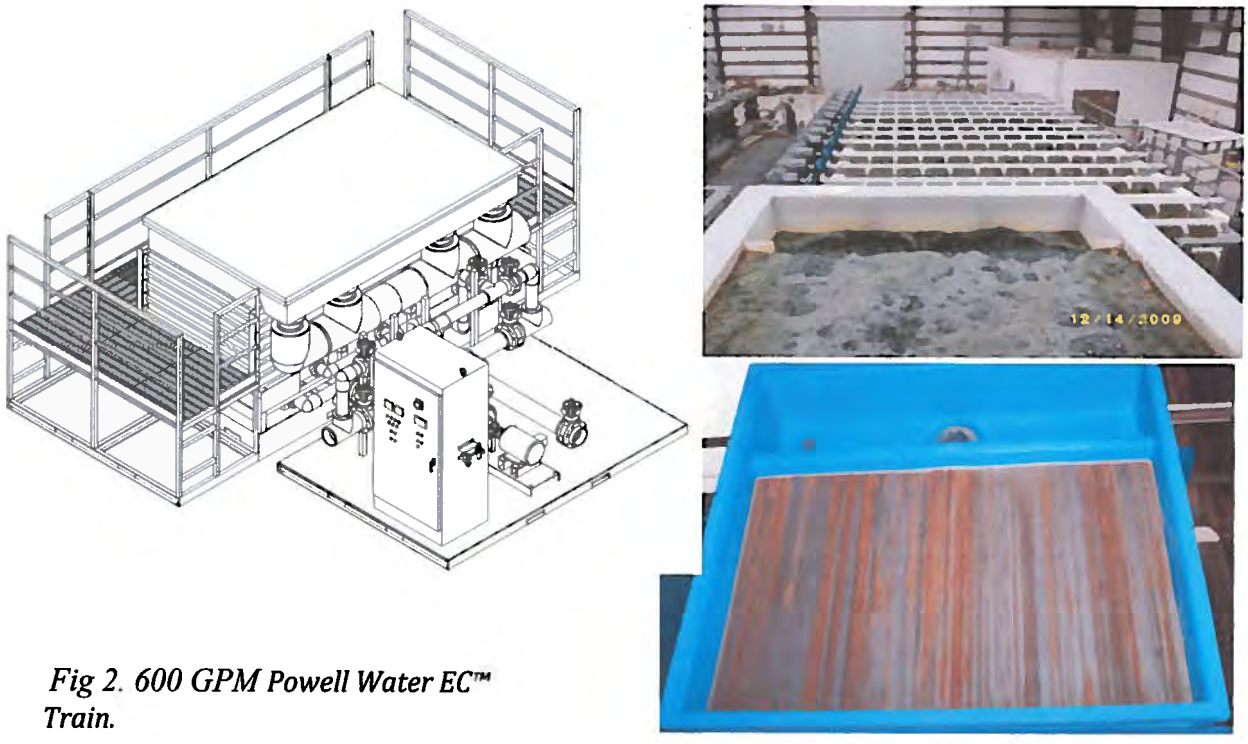

Fig 2. 600 GPM Powell Water EC™ Train.

A primary advantage of the EC™ process is high removal of contaminants (96% for CH(VI) and 99% for CH(T)) with no chemical additions other than those required for pH adjustment and cleaning, minimum waste produced, low power, nominal manpower and a small *footprint* compared to chemical treatmnt. Ease of control to adapt to varying water treatment flow rates and changes to influent water quality. Moreover, EC™ treatment causes toxic metal contaminants (< 0.1% by volume) to form non-soluble oxides that do not require separation from the EC™ effluent. This allows a 600 GPM treatment train to b housed in a transportable 40' ISO container with a possibility of also including pump station controls in th same container.

An estimated 7,500 acre-feet of contaminated water would be:

1. Extracted from within the highest concentration contour of Ch[VI] (***from 50 ppb at the plume contour to 3,500 ppb at the plume core***),
2. Treated with ex-situ remediation,
3. Treated with carbon (methane) to facilitate in-situ treatment, and
4. Injected along the least concentrated plume area between the 10 ppb plume and the 3.1 ppb plume boundaries to the north adjacent to irrigation wells for alfalfa cultivation.

The hydraulic flow gradient within the more highly concentrated parts of the plume (> 10 ppb) would be reduced, thereby reducing plume mobility to the north.

Moreover, over time as plume core concentration is reduced, the EC™ treatment time (96% reduction of Ch[VI] concentration per minute of EC™ treatment time) can also be reduced, allowing a greater volume of water from the plume core to be treated.

Table 1 shows EC™ treatment time, reduction in concentration and flow assuming:

1. The plume volume is 7,500 acre-feet

2. Cr[VI] concentration ranges from 3,500 ppb at the plume core to 50 ppb at the plume perimeter, and

3. The EC™ system would initially treat the core with a 150 second residence time and 460 GPM production, would achieve < 50 ppb throughout the plume in 2.8 years, would reduce EC™ treatment time to 58 seconds and flow rate to 1177 GPM. Increase production flow exponentially to 7,056 GPM to achieve a 3.1 ppb Ch(VI) concentration throughout the 7,500 acre-foot plume volume after 4-years.

Table 1. EC™ Flow, Ch[VI] Concentration, EC™ Treatment Time/Effluent ppb vs. Years

Years	GPM	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	EC™	Days
0.07	461	3500	3.2	2.9								96%	25
0.27	576	1000	3.2		1.6							96%	98
1.35	922	100	3.2			3.0						96%	491
1.16	1176	50	3.2				2.0					96%	423
0.48	1304	21.2	3.2					3.2				96%	173
0.43	1440	14.1	3.2						3.0			96%	157
0.15	2016	7.1	3.2							3.1		96%	56
0.04	7056	3.5	3.2								3.0	96%	16
		1.8	3.2									Totals	
3.94	Years	Acre Feet Treated		50	250	2000	2200	1000	1000	500	500	7500	AF
		Treatment Time - Days		25	98	491	423	173	157	56	16	1440	Days

Figure 3 shows a diagram of the groundwater extraction, EC™ treatment, pumping into an insertion well at the north end of the plume and the hydrodynamic effects of water extraction and insertion in reducing aquifer flow to the north.

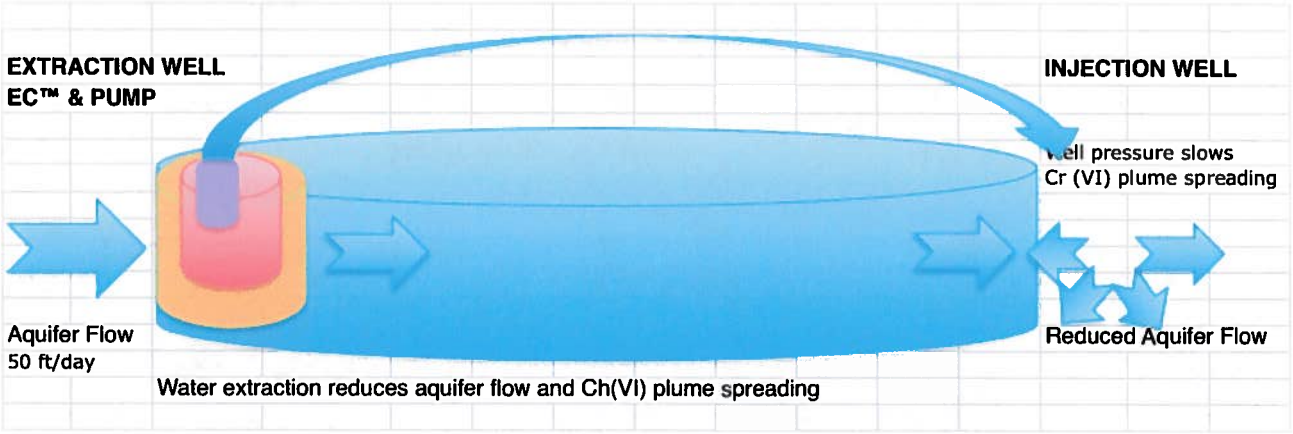

Fig. 3. Extraction, EC™ Treatment and Insertion of Plume Water into the Aquifer

The EC™ train effluent concentrations highlighted in blue show the ppb of Ch[VI] that would be produced with the corresponding EC™ train treatment times and flow rates. The 7,500 af of primary plume having a Ch[VI] concentration of 50 ppb at its perimeter and increasing to 3,500 ppm at its core could be reduced to an average of 3.1 ppb in 4-years.

EC™ reduces Ch[III] at 99.5% per minute of treatment allowing Ch[III] levels to be reduced below 1.5 ppb in about 2.5 years.

The EC™ flow increasing to 7,016 GPM during year 4 would provide 5 x the water volume proposed for in-situ remediation with carbon during a 4-year timeframe.

The EC™ train is expected to remove 257 (dry) gallons of Ch[VI] in 4 years while the Hinkley Valley aquifer flow is expected to spread 62 (dry) gallons of Ch[VI] into the 10 ppm and 3.5 ppm plumes to the north during the 4-year EC™ ex-situ treatment period. This additional spreading of concentrated plume contamination can be reduced/offset by:

1. Increasing the volume of EC™ treated water, and possibly

2. Increasing the amount of in-situ treatment

Doubling the EC™ train capacity to 2,400 GPM would reduce remediation time to 1.8 years and would reduce the increase in plume volume by 55% with a $ 2.8 million increase in EC™ capital costs and a $ 0.3 million decrease in O&M costs for a net increase of $ 2.4 million in total costs. This increase in EC™ train and in-situ remediation flows could conceivably reduce total remediation costs while resolving the plume in 4-years rather than the 50 year schedule and $ 171 million cost of Alternative 4C-5.

If the amount of EC™ treatment is equal to the agricultural irrigation demand to the west, north and east of the plume it may be possible to reduce spreading of the plume.

The use of two 600 GPM EC™ trains to treat the 7,500 acre-foot with 50 ppb to 3,500 Ch[VI] plume concentration to:

1. Reduce the Ch [VI] plume concentration to 3.2 ppb in ~ 4 years with a 1,200 GPM EC™ or in 1.8 years with a 2,400 EC™ train, and

2. Produce up to 100,000 GPD of potable water for 200 Hinkley homes and the school.

Since the EC™ process transforms toxic metal contaminants into benign, non-soluble metal oxides that meet the TLCP, there is no need for clarification of EC™ train effluent before re-injecting it into injection wells or surface within the plume boundaries.

If EC™ flow is doubled, the time required for plume cleanup would be reduced from 4-years to 1.8 years, and the spreading of the 50 ppb plume would be decreased by ~ 55%. Table 2 shows a 1.8-year plume remediation timeline using four 600 GPM EC™ trains that would be 54% faster than the 4-year timeline provided with two 600 GPM EC™ trains.

Table 2. 1.8 Year Ch[VI] Plume Remediation Timeline with Four 600 GPM EC™ Trains

Time	EC™	Plume	Remediation	150 sec	120 sec	75 sec	60 sec	53 sec	48 sec	35 sec	10 sec	60 sec	
Years	GPM	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	EC™	Days
0.03	922	3500	3.2	2.9								96%	12
0.13	1152	1000	3.2		1.6							96%	49
0.67	1843	100	3.2			3.0						96%	246
0.58	2352	50	3.2				2.0					96%	212
0.24	1304	0.0	3.2					0.0				96%	87
0.05	2880	0.0	3.2						0.0			96%	18
0.08	4032	0.0	3.2							0.0		96%	28
0.02	14112	0.0	3.2								0.0	96%	8
		0.0	3.2									Totals	
1.81	Years	Acre Feet Treated		50	250	2000	2200	1000	1000	500	500	7500	AF
		Treatment Time - Days		12	49	246	212	87	18	28	8	659	Days
Gallons of Ch(VI) removed with EC™				57.0	81.5	68.4	35.8	0.0	0.0	0.0	0.0	242.7	Gallons Cr(VI)
Gallons of Ch(VI) carried by aquifer				7.7	9.4	9.2	4.2	0.0	0.0	0.00	0.00	30.5	Gallons Cr(VI)

Alternatively, after 61 days when the concentrated Ch(VI) part of the plume core (3,500 ppb and 1,000 ppb) has been treated, one or two of the 600 GPM EC™ trains could leapfrog up to a mile downstream from the core allowing them to recover most of the contamination carried away from the core by aquifer flow during the initial EC™ treatment. Table 2 shows only 30.5 gallons of Ch(VI) would be lost to the aquifer flow vs. 62 gallons in Table 1.

Four 600 GPM C™ trains could provide 10 x the 250 GPM in-situ treatment rate discussed in Alternative 4C-5 over 1.8-years of treatment. This could increase the rate and effectiveness of plum containment du to the hydraulic flows shown in Figure 2 and could also deploy 10 x more carbon for in-situ plume remediation.

Each 600 GPM EC™ train would be packaged into a 40' long x 8' wide x 9' high ISO container allowing it to have a small physical and environmental footprint compared to an ex-situ chemical coagulation treatment system.

Table 3 shows O&M costs and capital expenses for to and for 600 GPM EC™ trains.

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Table 3. Alternative 4C-5 Modifications to use Powell Water EC™ with 4-year and 1.8-year remediation

Remediation of 7,500 AF 50 ppm Ch(VI) Plume in 4 years									
O&M Expense									
Ex-Situ Treatment	**GPM**	**GPY**	**kWh/yr**	**kWh Cost/yr**	**Labor**	**Electrodes**	**Maintenance**	**O&M Cost/yr**
Flow IRZ	1128	592876800	2371507	$ 118,575	$ 58,400	$ 55,480	$ 28,758	$ 261,214
Extraction Wells	20	kW	270.72	@ $ .05/kWh				
Injection Wells	90	1820	Acre-Feet/year					
	1128		2371507	$ 118,575	$ 58,400	$ 55,480	$ 28,758	$ 261,214
4-year O&M costs with 3%/year cost escalation								$ 1,108,486
Capital Expense								
1,000 GPM EC™ = 7-year treatment								
2 x 600 GPM EC™ Train Installed Cost								$ 2,875,826
2 x 40' ISO containers								$ 12,000
2 x Coolrado M50 Air Conditioner								$ 15,000
Shipping								$ 5,000
Project Management/Engineering								$ 50,000
Total 1,000 GPM EC™ Capital Costs								$ 2,957,826
								$ 1,108,486
Total 7,500 Acre-Foot 50 ppm Ch(VI)plume 4-year EC™ ex-situ treatment cost								$ 4,066,312
Doubling EC™ flow to 2,400 GPM with 1.8-year EC™ treatment vs. 4-year treatment								
O&M Expense								
Ex-Situ Treatment	**GPM**	**GPY**	**kWh/yr**	**kWh Cost/yr**	**Labor**	**Electrodes**	**Maintenance**	**O&M Cost/yr**
Flow IRZ	2256	1185753600	4743014	$ 237,151	$ 58,400	$ 110,960	$ 57,517	$ 464,027
Extraction Wells	20	kW	541.44	@ $ .05/kWh				
Injection Wells	90	3640	Acre-Feet/year					
	2256		4743014	$ 237,151	$ 58,400	$ 110,960	$ 57,517	$ 464,027
1.8-year O&M costs with 3%/year cost escalation								$ 857,767
Capital Expense								
4 x 600 GPM EC™ Train Installed Cost								$ 5,751,652
4 x 40' ISO containers								$ 24,000
4 x Coolrado M50 Air Conditioner								$ 30,000
Shipping								$ 10,000
Project Management/Engineering								$ 50,000
2,000 GPM EC™ System Capital Costs								$ 5,865,652
2,000 GPM EC™ System 1.8 year O&M Costs								$ 857,767
Total 50 ppm 7,500 af plume 1.8-year EC™ ex-situ treatmnt cost								$ 6,723,419
Cost difference between 1.8-year and 4-year treatment timeframe								$ 2,657,107
100,000 GPD EC™ Potable Water Supply Upgrade								
O&M Expense								
Hinkley H2O 1,000	69	36500000	146000	$ 7,300	$ 29,200	$ 3,929	$ 1,867	$ 42,296
		112	Acre-Feet/yea	3.1%	of 2,400 GPM EC™ Option			
1.8-year O&M expense with 3%/year escalation								78,186
Capital Expense								
70 GPM Atmospheric Clarifier								$ 25,200
Filter								$ 30,000
Sterilization								$ 50,000
RO Skid								TBD
SCADA								$ 27,000
Total 100,000 GPD EC™ Potable Water Upgrade Capital Cost								$ 132,200
								$ 78,186
								$ 210,386
Total Costs with Potable								$ 6,855,619

Table 3 shows O&M and Capital Costs for the 1,200 and 2,400 GPM C™ options as well as the incremental cost of adding a 100,000 potable water treatment capability to an EC™ train. operating parameters, power, labor and electrode replacement estimated to be $ 288,187/ year as well as a breakdown of $ 3,090,026 estimated capital costs. It is assumed that 1,600 kW of electric power provided by PG&E would cost $ 0.05/kWh. *Table 2 does not include capital costs for wells, pumps, piping carbon injection or water distribution system O&M costs.*

Costs for EC™ treatment of 100,000 GPD of potable water for use in Hinkley using a one of the 600 GPM EC™ treatment trains. On of the 40' ISO containers could be augmented with skid(s) equipped with a SCADA, filter, pump and sterilization system to provide up to potable water for 200 Hinkley homes located inside the plume plus the Hinkley school. This

container would be augmented with an 8,400 gallon (12' diameter x 12' high) clarifier. The EC™ trains would operate on a 96% duty cycle (23 hours/day) to provide 821,000 GPD output at a 60 second EC™ treatment time.

EC™ treatment budgetary estimates in Table 3 are modest when compared to those of Alternative 4C-5 costing $ 271 million with a 50-year remediation time vs. a 1.8-year or a 4-year EC™ ex-situ remediation timeframe. ***EC™ costs are expected to be less than those of a chemical reduction/precipitation ex-situ system.*** Moreover the EC™ system would:

1. Reduce the physical and environmental footprint of ex-situ treatment by using four (4) 600 GPM EC™ systems in transportable 40' ISO Containers vs. a 250 GPM chemical reduction/precipitation system having only 10% of the CH(VI) removal rat as a 2400 GPM EC™ system that is expected to require 3 to 4 times the 1.324 SF required for 4 containers and a 8,400 gallon clarifier (if the 100,000 GPD EC™ potable water option is undertaken).

2. Significantly reduce plume growth and remediation expense by using a 1.8-year 2,400 GPM EC™ treatment vs. a 20-year 250 GPM chemical reduction/precipitation treatment program.

3. Despite its larger capacity pumping and water transport infrastructure, 2,400 GPM EC™ treatment would have a smaller physical and environmental impact than 250 GPM chemical reduction/precipitation treatment facilities would require shipment, handling and on-site chemical storage, settling ponds, more truck traffic and 3 to 4 times the labor force required for EC™ treatment.

4. Eliminate a chemical reduction/precipitation requirement for extensive landfill volume and cost over 20-years.

5. Provide a low cost option for 100,000 GPD of EC™ treated potable water for Hinkley residents that would produce soft water with > 98% of the hardness, silicates, CaCO3 and other groundwater constituents that foul filters and Reverse Osmosis (RO) treatment systems causing them to require extensive back-flushing and media replacement. Use of EC™ would also eliminate requirements for water softeners and would reduce fouling of desert (direct evaporative) coolers and cooling towers.

6. A 24' x 8' Powell Water Treatment (fifth wheel) trailer could be made available for 2-3 months of EC™ demonstration to support Water Board evaluation of options concerning implementation of Alternative 4C-5.

Reference:
California Regional Water Quality Control Board, Lahontan Region
Groundwater and Remediation Supporting Documentation
Comprehensive Groundwater Cleanup Strategy for Historical
Chromium Discharges from PG&E's Hinkley Compressor Station
Draft Environmental Impact Report
A-34
August 2012
ICF 00122.

#22B

Comments Concerning Dra Environmental Impact Report (EIR) of August 2012 Remedia on of chromium discharges in Hinkley, CA

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#22B

Objecv es - Discuss

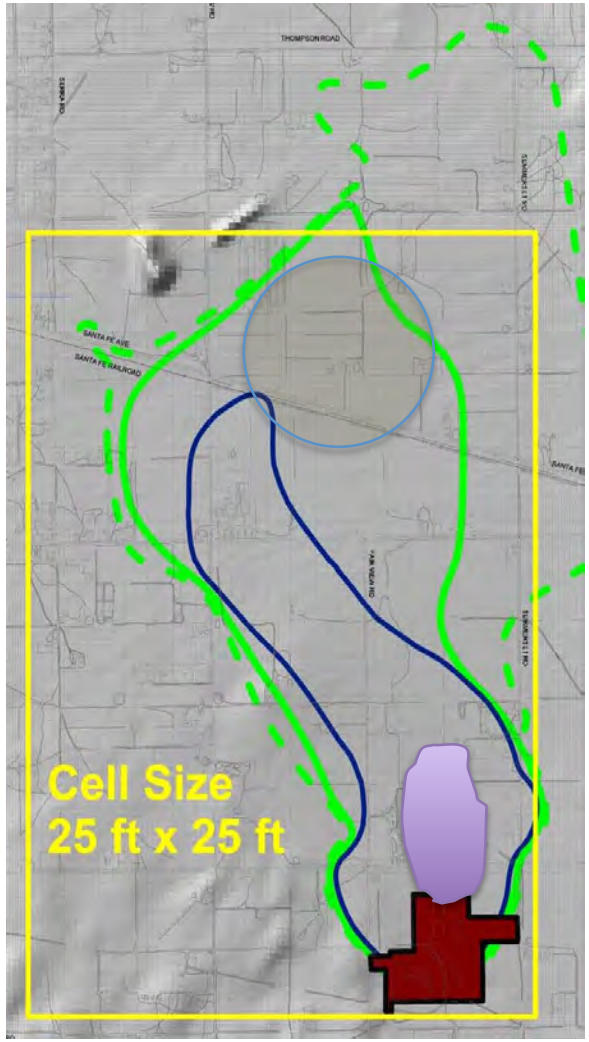
22B-1

- Cr(VI) plume concentra on and sizes
- Limita ons of five EIR Alterna ves
- Electrocoagula on (EC) for remedia on of:
  - 7,500 acre foot 50 3.500 ppm plume
  - 15,000 acre foot 10 50 ppm plume
- EC pretreatment for potable water
- 10 GPM EC water treatment trailer
- 1 MW Power Package
- Conclusions

Plume Concentra on and Size

22B-1 cont'd

- Blue > 50 ppb Cr[VI]
  - Purple Core 1,000 3,500 ppb
  - 7,500 acre feet
- Green 10 - 50 ppb Cr[VI]
  - 15,000 acre feet
- Dashed reen .2 - 10 ppb Cr[VI]
  - 21,500 acre feet
  - Plume bulge moving west
- Total Size
  - 44,000 acre feet
  - 5 les ong x 2.5 miles wide
  - 77% expansion in 1 year
- Brown TDS & nitrates: Desert View Dairy
  - Can treatment for Cr[VI] liminate TDS?



#22B

Limita ons in Dra EIR

22B-2

- All Remedia on alterna ves require too much @me

Plume Size as of	Jan-10	Jan-11	Jan-11	Jan-11	Jan-11
Alternative	4-B	4C-2	4C-3	4C-4	4C-5
Years to 50 ppb Cr(VI)	6	6	4	3	20
Years to 3.1 ppb Cr(VI)	40	39	36	29	50
Years to 1.3 ppm Cr(VI)	95	90	85	75	95
Acres	446	575	575	1,394	575
Net Present Value	$85M	$118M	$276M	$173M	$171M

22B-3

- Plume Migra on into Hinkley
  - *Bulge* in 3.1 ppb plume is moving west toward school/homes

22B-4

- Cr(VI) contamina on remaining in *dry soil* above the water table and plume core is not discussed.

Areas Inves@gated

- Electrocoagula on (EC) treatment:
  - Shorter remedia on 50 to 3,500 ppm plume:
    - 0.9 year to 50 ppb Cr(VI) in 50 to 500 ppb Cr(VI) lume
    - 2.2 years to 3.1 ppb Cr(VI) “
    - 3.5 years to 1.3 ppb Cr(VI) “
  - Smaller Physical Footprint
  - Greater above ground pumping capacity and distribu@on
  - Lower environmental impact
- Combined Heat and Power (CHP)
  - Reduced O&M cost
  - Reduced CO2 emissions

Electrocoagula on (EC) Treatment

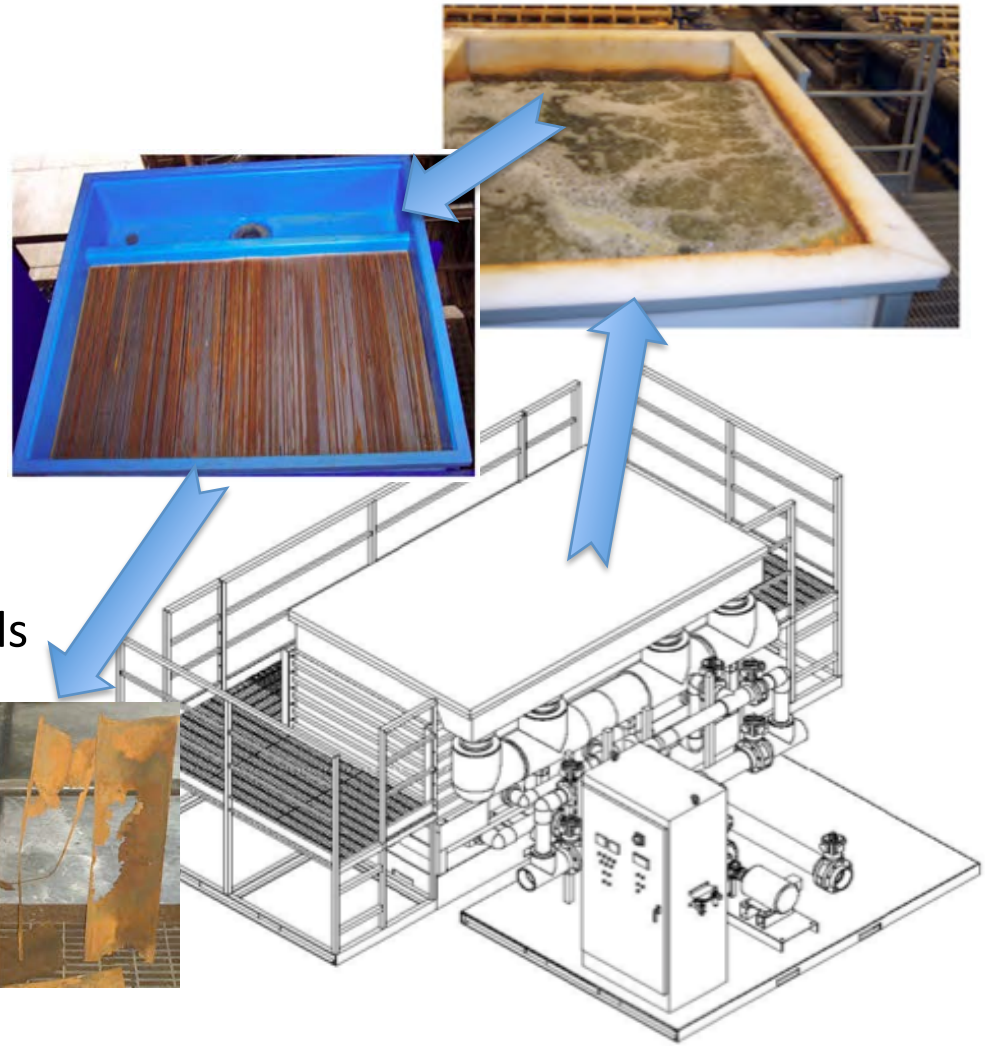
22B-5
cont'd

- Treats a Range of Contaminants
  - 96% Cr[VI] removed/minute of treatment
  - 99% Cr[T] removed/minute of treatment
  - Effec@ve against TDS (90%), nitrates (60%), arsenic (99%), magnesium and uranium
- No Process Chemicals Required
  - Reduced costs, storage and waste stream
- Minimal Waste Disposal
  - Converts Cr(T) to chromium oxide (CrO3) passes Toxic Classifica on Leaching Procedure
  - No clarifier r*e*quired H2O/solids pumped into injec@on *w*ell a er 0.5 2.5 minutes.
- Small Footprint 40' ISO Container houses 600 GPM EC™ Train
- Low Environmental Impact
- Low Capital and O&M Expense
- EC™ widely used in industrial, municipal and power plant water treatment
  - Valley Detroit Diesel Allison, Bakersfield, CA: 3 GPM cleaning water from Cr pla ng.
  - Samsung: 360 and 600 GPM EC™ emoves Nickel from LCD produc@on line wash water.
  - Abu Dhabi and Jamaica: 135 GPM gas well produc@on water treatment in 40' containers.
  - El Paso Electric Power: 2 x 500 GPM cooling tower and boiler feed water treatment.

600 GPM Powell Water EC™ Train

22B-5
cont'd

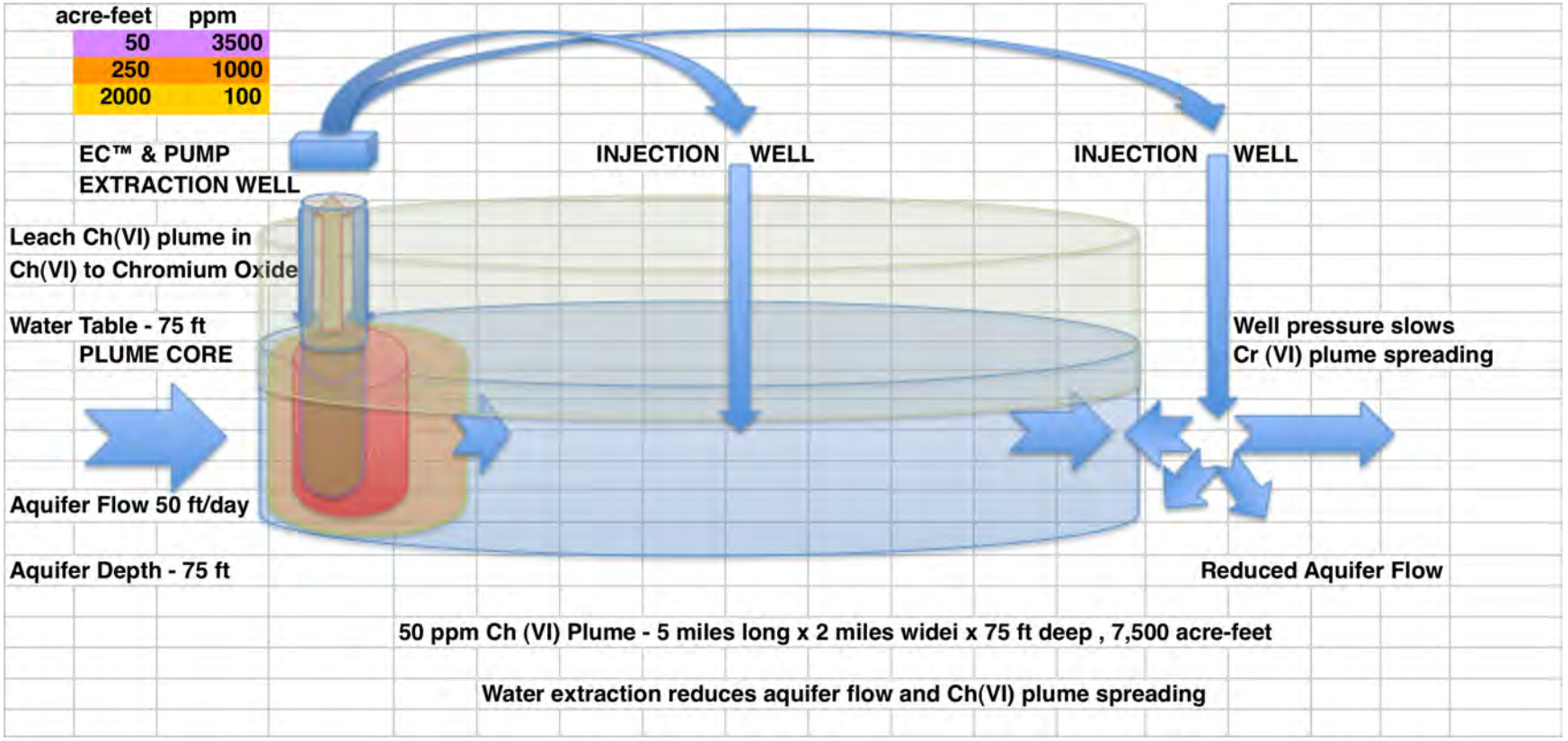
- Housed in 40’ ISO Container
- 830,000 GPD
  - 60 second treatment
  - 480 DC
- 17‘ x 18’ x 7’ H
- Gross weight:
  - 53,098 b.
- Electrodes:
  - 30,380 b.
  - Replace at 4 month intervals



1. 600 GPM EC™ Train
2. EC™ Chamber
3. Empty EC™ Chamber
4. New & used electrodes

50 - 3,500 ppb Plume EC™ reatment

22B-5
cont'd



- Plume cross sec on shows:
  - Use of residual C™ charge o eat ***Cr[VI] contamination in dry soil above plume core***
  - Injection into ells t plume western boundary - reducing esh ater injection
  - Injection into ells in the 10 to 50 ppm Cr[VI] plume

#22B

Hybrid EC™+ Microbial In situ Treatment

22B-5
cont'd

- Extract groundwater star@ng at the 3,500 ppb plume ore,
- Treat with EC™:
  - 2.3 year remedia on to 3.2 ppb, or
  - 3.5 year remedia on to 1.2 ppb
- Treat EC™ effluent with carbon (ethanol) to:
  - Augment EC™ treatment with in situ carbon/microbial remedia on
- Inject in wells in a less concentrated plume area west and north of the plume core as shown in EIR Figure 3.1 18

ALSO:

- Install a 600 GPM EC™ train west of the Desert View Dairy between the 10 ppb plume and the 3.1 ppb plume boundaries
- Inject 3.1 ppb H2O at western edge of 3.1 to 10 ppm plume o control plume *bulge* toward Hinkley school.

Predicted EC™ Treatment Results

22B-5
cont'd

- 7,500 acre foot 50 to 3,500 ppm Cr(VI) lume

  Four (4) 600 GPM EC™ Trains (1,378 GPM average)

  – 0.94 year to 50 ppb vs. 3 years (Alterna ve 4C 4)
  – 2.2 years to 3.2 ppb vs. 29 years “ EC™
  – 3.5 years to 1.3 ppb vs. 75 years “

- 15,000 acre foot 10 to 50 ppm Cr(VI) lume

  Four (4) 600 GPM EC™ Trains (2,261 GPM average)

  – 1.7 years to 3.2 ppb vs. 29 years (Alterna ve 4C 4)
  – 4.1 years to 1.3 ppb vs. 75 years “

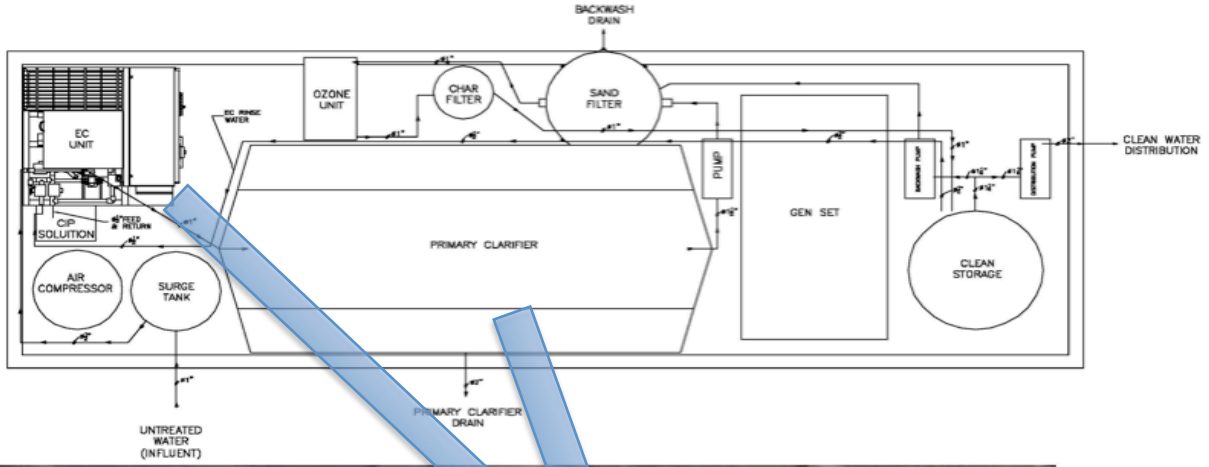
EC™ for Potable Water Pretreatment

22B-5
cont'd

- Effec@ve on a wide range of contaminants
  - Suspended solids,
  - Colloidal solids,
  - Grease,
  - Bacteria & viruses,
  - Heavy metals (Cr(T), Iron, etc.)
  - Hardness,
  - Silica,
  - Magnesium, and
  - Organics (TDS, nitrates, phosphorus. etc.)
- Kills 99.999% of pathogens
- Reduces demands on reverse osmosis, ion exchange and steriliza on
  - Extends rvice life
  - Reduces maintenance
- No chemicals added, waste volume is minimal (~ 0.02% by volume).
- Sludge emov**e**d with a 2 hour clarifi**e**r treatment, and
- Discharged to dumpsters for haul off or on site landfill.

10 GPM Powell Water Trailer

- 16,000 GPD
- 24’ x
- Demonstra on?



22B-5
cont'd

600 GPM EC™ Train Costs

22B-5
cont'd

600 GPM EC™ System Capital Expense				
4 x 600 GPM EC™ Train Installed Cost			$ 1,102,400	82.3%
4 x 40' ISO containers			$ 6,000	0.4%
4 x Coolerado M50 Air Conditioner			$ 7,500	0.6%
Shipping			$ 3,000	0.2%
Project Management/Engineering/Profit			$ 221,402	16.5%
600 GPM EC™ System Capital Expense			**$ 1,340,302**	**57.5%**
600 GPM EC™ O&M Expense				
Electric Power	**kWh/yr**	**Cost/kWh**	**kWh Cost/yr**	
140 kW	**1185760**	**$ 0.13**	$ 158,892	67.9%
Labor - Hours	**1095**	**$ 30.00**	$ 32,850	14.0%
EC™ Electrodes			$ 27,740	11.9%
Maintenance			$ 14,379	6.1%
600 GPM EC™ System O&M Expense			**$ 233,861**	
O&M expense: 3.5 years - 3% escalation			**$ 992,413**	**42.5%**
50 ppb Plume Total EC™ Expense to 1.2 ppb			**$ 2,332,715**	
O&M expense: 4.1 years - 3% escalation			**$ 1,018,727**	**43.2%**
10 - 50 ppb Plume Total EC™ Expense to 1.2 ppb			**$ 2,359,029**	
Total Expense Eight 600 GPM EC™ Systems to 1.2 ppb			**$ 18,766,976**	

Budgetary es@mate for eight 600 GPM EC™ Trains opera ng simultaneously:

Total Capital Expense would be $ 10.7 million

Total O&M Expense would be $ 8.1 million

Combined Heat and Power (CHP)

22B-5
cont'd

- Electric power for 8 600 GPM EC™ trains
  - Would cost ~ $ 1.27 million/year
  - 68% of O&M costs
  - Can be reduced > 25% with natural gas fueled CHP package
- 40’ ISO Container with 1 MW CHP package provides
  - 7,446 MWH/year electricity enough for
    - 100% f ower or ***six*** 600 GPM EC™ systems
  - $ 0.9 million savings during 3.5 years of opera on
    - $ 1.75 million net capital costs (with $ 0.5 million SGIP Incen@ve)
    - Simple payback = 5.5 years
  - Electric power redundancy and demand management
  - 3,717 ton/year reduc@on in CO2 emissions

C1000 1 MW Power Package

22B-5
cont'd

30’ ISO Container

High Reliability

5 x 200 kW Microturbines

7,446 MWH/year

Low GHG emissions

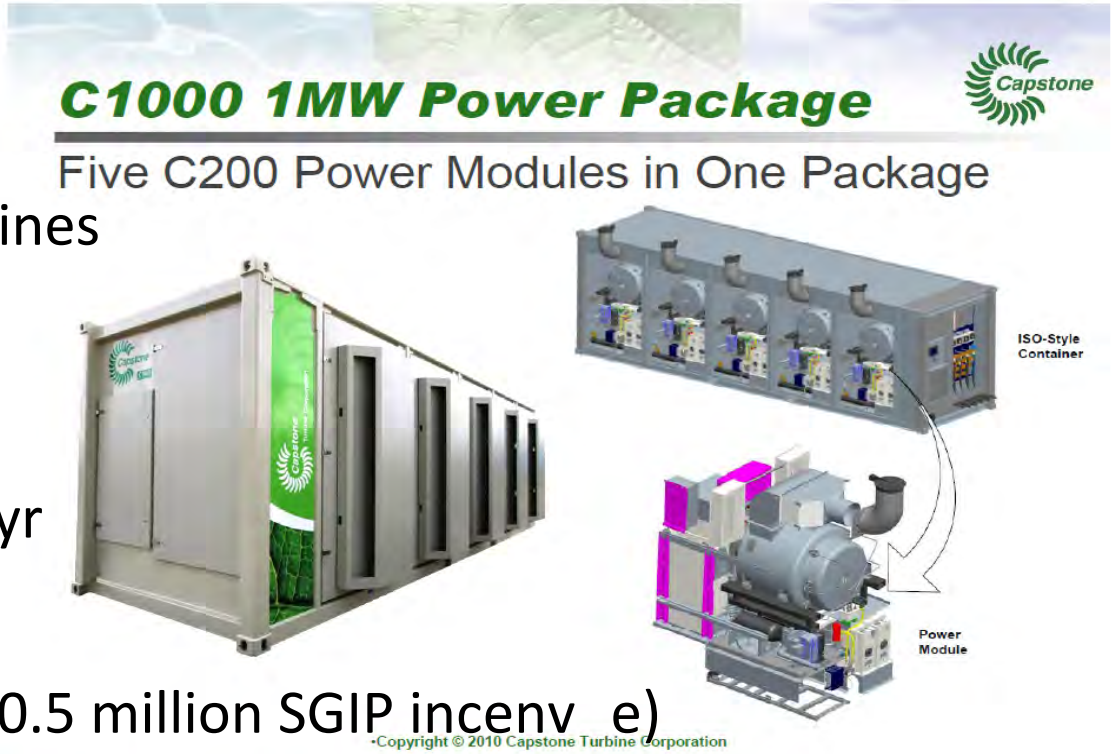
Saves 388 ons O2/yr

Net Capital Cost

$ 75 llion with $ 0.5 million SGIP incenv e)

O&M Cost

$ 0.10/kWh vs. $ 0.134/kWh from Southern California Edison



Conclusions: EC™ and CHP

22B-5
cont'd

- EC™ is a viable ex situ treatment for Cr[VI] at 2 sites
  - Plume Core – Increase capacity 5.5 x C4 3/C4 5 250 GPM to 1,378 GPM
  - Desert View Dairy – Increase capacity 2 x C4 3 1,100 GPM to 2,260 GPM
- Reduced remedia on @mes:

	3.1 ppm	**1.3 ppm**
– 7,500 acre foot 50 to 3,500 ppb Plume	2.2 years	1.4 years
– 15,000 acre foot 10 to 50 ppb Plume	3.5 years	4.1 years

- Demonstrate 10 GPM Powell Water EC™ Trailer
  - 16,000 GPD from 50 ppb Cr[VI] groundwater source
  - EC™ pre treatment for Hinkley water supply a er demonstra on?
- 1 MW natural gas fueled CHP Package provides:
  - 7,446 MWH/year electricity
  - $ 246,000/year savings in electric power costs
- Low environmental impact
  - Minimum site prepara on and footprint
  - Reduced traffic, storage, facili@es and cost vis à vis chemical coagula on
  - 388 ton/year net eduction in CO2 missions

Dra EIR Comments (Con@nued)

22B-6

Backup Slides

#22B

4 x 600 GPM EC™ Treatment of 7,500 acre foot, 50 3,500 ppm lume

Cum Years	Time Years	EC™ GPM	Plume ppb	Remediation ppb	148 sec ppb	118 sec ppb	72 sec ppb	59 sec ppb	38 sec ppb	60 sec EC™	Cum Days
0.03	0.03	934	3500	1.3	3.1					96%	12
0.30	0.26	1172	1000	1.3		2.9				96%	101
0.94	0.65	1920	100	1.3			3.2			96%	323
2.24	1.30	2363	50	1.3				3.2		96%	782
3.50	1.26	3638	3.2	1.3					1.3	96%	1231
										Totals	
			Acre Feet Treated		50	500	2000	4950	7500	7500	AF
			Treatment Time - Days		12	97	236	474	459	1277	Days
			Plume Dilution		1.0	39	117	156	151	463	AF
		Corrected Treatment Volume - AF			49.0	461	1883	4794	7349	7349	AF
		Treatment Time Corrected for Dilution			11.9	89	222	459	449	1231	Days

22B-6
cont'd

- Remedia on:
  - 0.94 year to 50 ppb
  - 2.2 years to 3.2 ppb
  - 3.5 years to 1.3 ppb
- Groundwater flow/mile of plume width is 120 acre feet/year
- Groundwater plume dilu@on reduces volume treated by 2% in 3.5 years
- 7,963 acre feet flows into the 10 50 ppb plume dilu@ng & reducing its treatment @me

4 x 600 GPM EC™ Treatment of 15,000 acre foot 10 to 50 ppm lume

22B-6
cont'd

Cum Years	Time Years	EC™ GPM	Plume ppb	Remediation ppb	59 sec ppb	58 sec ppb	56 sec ppb	53 sec ppb	35 sec ppb	60 sec EC™	Cum Days
0.21	0.21	2343	50		**2.8**					**96%**	76
0.52	0.78	2383	40.0	1.3		**2.9**				**96%**	189
0.94	1.13	2469	30.0	1.3			**3.1**			**96%**	343
1.69	1.98	2608	20.0	1.3				**3.0**		**96%**	618
4.11	2.52	3950	3.0	1.3					**1.3**	**96%**	1501
										Totals	
			Acre Feet Treated		2250	3000	4500	5250	15000	**15000**	
			Treatment Time - Days		217	285	412	722	920	**2339**	**Days**
			Plume Dilution		1463	1804	2828	3250	605	9951	**AF**
		Corrected Treatment Volume - AF			787	1196	1672	2000	14395		**AF**
		Treatment Time Corrected for Dilution			75.96	113.5	153.3	274.9	883.2	1501	**Days**

- Remedia on: 1.7 years to 3.2 ppb, 4.1 years to 1.3 ppb
- Groundwater flow/2 miles of plume width is 240 acre feet/year
- Plume dilu@on from groundwater plus treated water cascading from the 50 3,500 ppb plume *reduces density of Cr(VI) in the 10 -50 ppm plume by 66% - reducing EC™ treatment time*.

#22C

Dan Hendrickson

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. HENDRICKSON: Good evening, members of the board, citizens of Hinkley. I'm Dan Hendrickson. I'm an energy and systems engineer.

The reason we have -- and my associate Peter Lloyd. The reason we have an interest in Hinkley's predicament is that we have a technology that we represent which was rejected in the draft EIR because of its potential cost. We've run some numbers on that and we have a report that is going to be given to you concerning that.

There's not been enough time for me to give a presentation we had hoped to give, but the bottom line is this: The technology is electrocoagulation. It is superior to chemical coagulation and was chosen as one of the options in alternative 4-C-5.

And in other cases, electrocoagulation has been used to displace chemical coagulation because it is much less demanding on the environment. And in this particular case, the treatment times would range from about 40 seconds for 10 parts per billion up to about two and a half minutes for 3,500 parts per billion.

The difference between this chemical coagulation is that the solids that come out are converted to a chromium oxide which is essentially chromium ore. And they will not go back in solution except if it's in an acid. The bottom line is the solids can go back on the ground. They don't need to go -- they don't need to go through a clarifier, they don't need to be hauled away to a landfill. And in many cases, these solids for metals and other contaminants have been used for ground covering. 22C-1

So what this means is that your treatment is quite quick. The 600-gallon-per-minute system fits into a 40-foot container. The numbers that we came up with --we're going to -- 3.1 parts per billion are on the order of 3 -- pardon me -- 2 and a half -- 2.2 years for the most concentrated plume and for the secondary plume that is between 10 and 50 parts per billion. It would be 1.4 years.

What this would allow you to do is pull water out of the aquifer and put it back into the -- essentially the same part of the aquifer. It would not change your mass balance on the water. It would not give you a lot of problems in transporting it when you clean up the upper most concentrated plume.

That clean water can be used in lieu of fresh well water and I think that your solution could be done quite rapidly compared to the other alternatives.

If there's any questions or anyone that wants to talk about this, I'll be available after the meeting.

Thank you very much.

Oh, one other thing is that electrocoagulation also removes uranium and nucleis changes the uranium to uranium oxide. It takes out all of the material that is contaminating the aquifer underneath the desert dairy and so it's a general purpose cleanup system for aboveground treatment.

#22C

Thank you.

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
LAHONTAN REGIONAL WATER QUALITY CONTROL BOARD

To whom it may concern,

My name is Evelio Hernandez. First, I would like to thank you for the opportunity for taking the time to read this letter. At the Lahontan Regional Water Quality Control Board meeting on September 13, 2012 in Barstow, I was very impressed with the board's performance. The water board conducted themselves in a very informative and respectable manner. Despite the negative remarks that are commonly stated in these meetings, the water board always responds in the most professional manner, not only to the Community Advisory Committee (CAC), but also to the community members who attend these meetings. With that said, I do believe that these meetings should be run by an independent, neutral third party in order to ensure that the water board and the community members of Hinkley get an equal chance to participate. 23A-1

Throughout this letter, I would like to address some serious concerns that I have as a current home-owner in the Hinkley community, and as a member of the Community Advisory Committee (CAC). I have seen how the hexavalent chromium contamination caused by Pacific Gas and Electric Company (PG&E) has affected the community of Hinkley over the last 50 years. My concerns are about PG&E not taking into consideration the suggestions that the community has asked for in regards to solutions to clean-up the chromium plume. PG&E has their agenda already in place, including how their solution to the contaminated water problem is to either install a whole-house water treatment system, a deeper-well, or (if qualified) for Hinkley residents to participate in the buy-out program. The water board, in conjunction with PG&E, continues to neglect the voice of the community members whose lives are truly affected by this ordeal. It is time for the suggestions given by the Hinkley community members of how to 23A-2

solve this problem be put into effect. Otherwise, if left in the hands of PG&E, resident's lives will continue to be ruined by these problems, as they have now for so many years. We need the Lahonton Water Board to hear our voice and advocate on our behalf to PG&E to solve the problem of providing safe drinking water to all the residents of Hinkley. 23A-2 cont'd

The community of Hinkley has suffered over the last 50 years from the loss of some three-thousand people who have either moved willingly or have had no other choice to move given that to stay, would be sacrificing their health. In addition, the property value has decreased dramatically for the Hinkley home-owners over the last several years due to the contamination problem. 23A-3

When PG&E conducts studies and makes decisions on behalf of the Hinkley community, they base their decision solely off of those individuals who they feel are affected by the chromium contamination and they do not consider the community as a whole. PG&E determines who is included within the plume and who is not. Below in Appendix I, I have suggestions as to how I believe the plume should be defined. The reality is, everyone in Hinkley is affected by the hexavalent chromium contamination directly or indirectly. PG&E must address the concerns of those individuals who live just outside the predetermined plume affected areas as well as those who live within the plume area whose water seems to test clean, for now anyways. Take for example my home, which is located at 36236 Serra Rd, Hinkley, CA, 92347. The adjacent neighbor to my right has been bought-out as well my neighbor to the left. Every other house around me has also been tested and found contaminated due to their water testing positive for levels of chromium six. Ironically, despite the fact that there is contaminated water surrounding my entire property, the test results of CH2MHill (a global project delivery company contracted by PG&E) deemed my water safe from harmful levels of chromium. 23A-4

Thus, I am faced with several problems in regards to my water, my health, the future of my community and the never-ending contamination in my neighborhood. According to PG&E, I do not meet the criteria to be eligible to participate in the buy-out program. My concern for my health and the health of my family increases each day due to the contamination in all the areas surrounding my home. Today my water may test clean, but who knows what tomorrow will bring. Not to mention my dreams of retiring in a neighborhood with close friends next door have diminished as the water contamination forced them to move away. In addition, with the value of my property dramatically decreased due to the dwindling of my neighborhood and the contamination of the water surrounding me, it is nearly impossible to get what I put into the house and to be able to rebuild the home I have worked so hard for anywhere else.

23A-4 cont'd

23A-5

Furthermore, it is equally disconcerting that no one appears to take into consideration the fact that extremely high levels (6.9, 5.2, 4.8 etc.,) of CH6 are appearing on Hinkley Road. I believe PG&E has a fiduciary responsibility to accept and correct any and all hexavalent chromium within the entire zip code of Hinkley. It is possible that PG&E has missed a stream or vein of water that is contaminating the area west of their compressor station. Either recent floods (2011) have carried the CH6 to the west of the compressor station or the in situ treatment has caused the redirection of a water vein to the west when PG&E stopped it from traveling towards the school.

23A-6

I am suggesting that PG&E pipe in water lines from the Mojave Water Agency main water line to everybody's house in Hinkley in order to save what is left of the Hinkley community and to solve this problem once and for all. This would include installing pipes to landowners as well so they would have the opportunity to build on their property in the future. The past is the past and the damage has already been done. The focus must be on moving forward and ensuring environmental justice for the residents of Hinkley.

23A-7

I agree and am in favor of the idea proposed of the whole-house water treatment as a temporary solution. However, in order to solve the contamination problem completely, Hinkley residents need a long-term solution. The idea I suggested of installing water lines would decouple all families affected by the plume from chromium six and other contaminants. This would allow potential for the Hinkley community to be restored and even for lots that are currently vacant to have the opportunity to turn into a place of residence again. This would save the community of Hinkley from being completely diminished and would allow the possibility for the community to begin to rebuild and start to grow again, which in turn would increase property value.

23A-8

In addition, I am strongly suggesting that the water board and PG&E further investigate the concern recently brought to my attention regarding the unsafe levels of arsenic and manganese in the water. As you can see from the example in Appendix II listed below, dangerous levels of arsenic and manganese were shown in wells that were tested back on 10/11/12 by E.S.Babcock & Sons, Inc. (an Environmental Laboratory). This concern needs to be addressed immediately because the levels of manganese and arsenic are more dangerous than the chromium six levels we were facing to begin with. The Community Advisory Committee (CAC) is in majority agreement that the “in situ treatment program” should be shut-down until we can figure out why these other containments are coming up so high. It is ludicrous for the residents of Hinkley to be subjected to increasingly more dangerous contaminants (arsenic and manganese) which appear to be the direct by-products of ethanol injections, while PG&E is given credit for the chromium six cleanup.

23A-9

For any further questions or concerns please feel free to contact me. I look forward to your response. The water board's willingness to accept public comments on important issues, such as the cleanup project and unsafe containments in the water is very much appreciated. 23A-9 cont'd

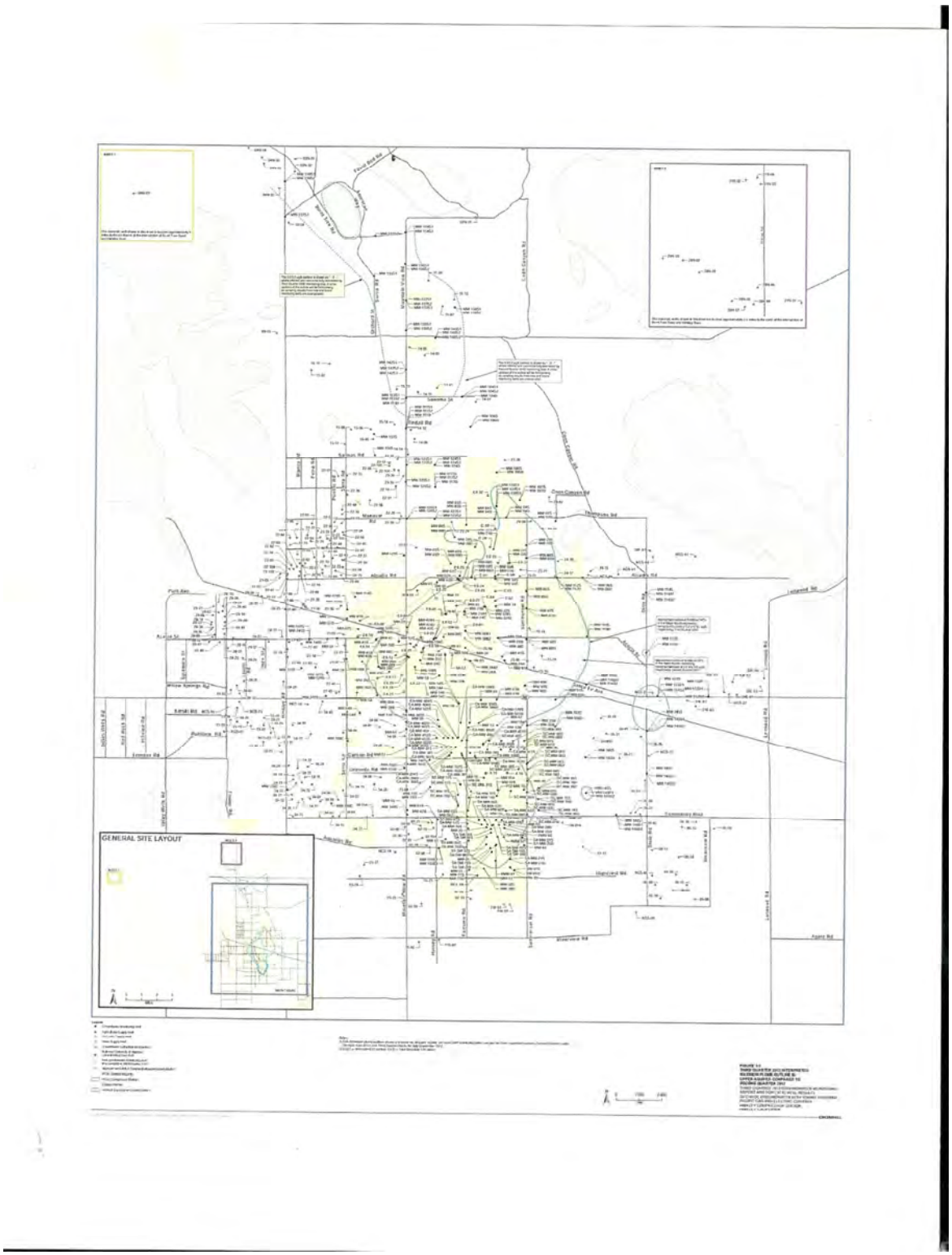
Sincerely,

Evelio Hernandez

Phone: (760)912-3611
E-mail: billysup@earthlink.net

Appendix I

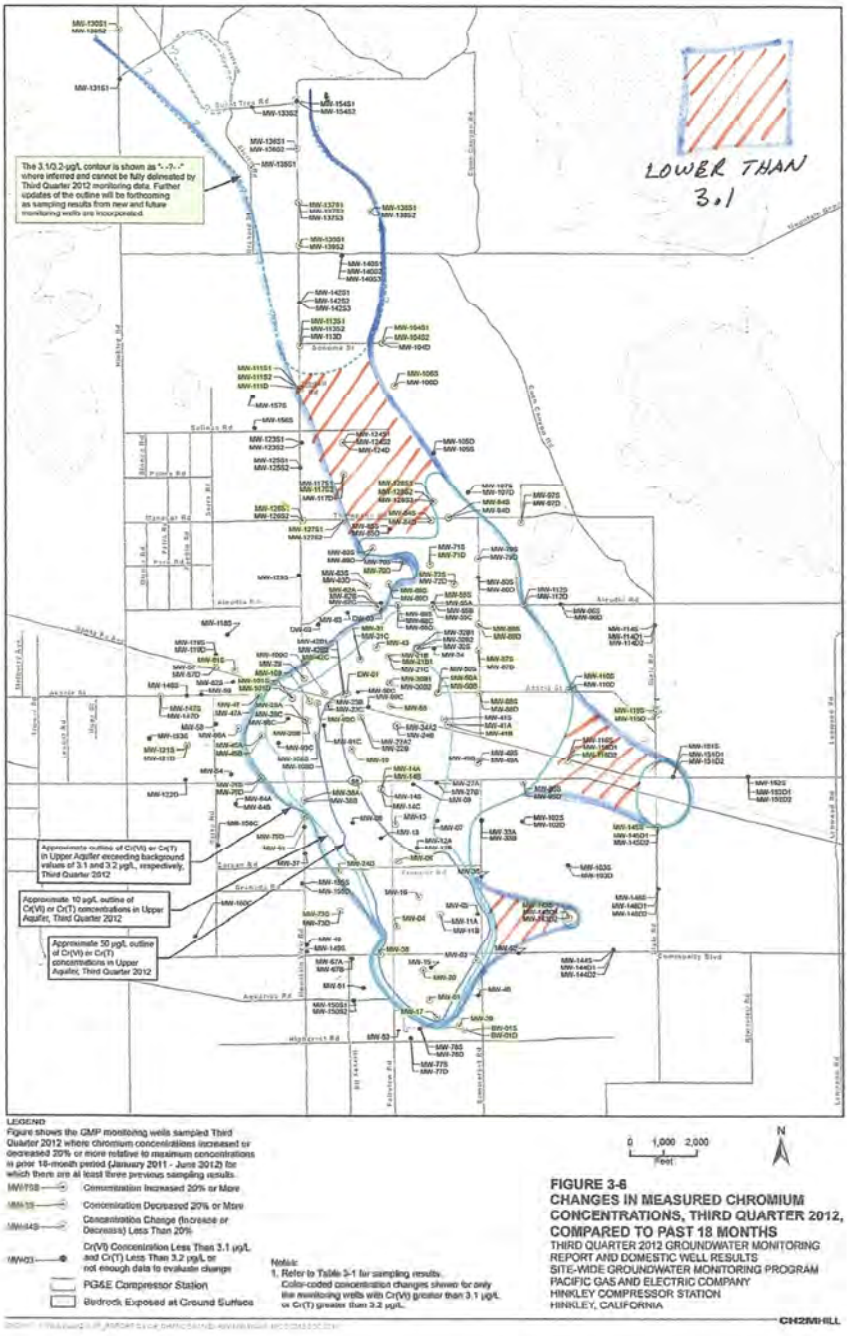
This is an example of the most current 2012 plume map which I believe is misleading:



#23A

Attachment
with comments

This is the same map however it includes the suggestions I believe should be taken into consideration when drawing the plume map. Instead of showing individual plume areas, we should show the public the affected areas and the path that it took to get there and if the path is lower than



23A-10
cont'd

#23A

Attachment
Referenced in
Comment 23A-9

Appendix II

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories est 1906

Client Name:Morris, Bobby
Contact:Bobby Morris
Address:21876 Pioneer Rd.
Hinkley, CA 92347

Report Date:23-Oct-2012

Analytical Report: Page 2 of 4
Project Name: No Project
Project Number: --PAID--Cr

Work Order Number: B2J1452
Received on Ice (Y/N): No Temp: 20°C

	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
B2J1452-01 *Sampled: 10/11/12 10:30*							
#1 049428202							
Arsenic	170	40	ug/L	EPA 200.8	10/19/12 17:01	AAV	N_noH, Nconf
Manganese	140000	5000	ug/L	EPA 200.8	10/19/12 15:15	AAV	
B2J1452-02 *Sampled: 10/11/12 10:30*							
#2 049428202							
Arsenic	71	2.0	ug/L	EPA 200.8	10/19/12 15:37	AAV	Nconf
Manganese	320	20	ug/L	EPA 200.8	10/17/12 15:17	AAV	
B2J1452-03 *Sampled: 10/11/12 10:30*							
#3 049428202							
Arsenic	5.6	2.0	ug/L	EPA 200.8	10/17/12 15:20	AAV	
Manganese	66	20	ug/L	EPA 200.8	10/17/12 15:20	AAV	
B2J1452-04 *Sampled: 10/11/12 08:00*							
C.C. Matthiesen 36771 Hidden River Rd., Hinkley CA 92347							
Arsenic	22	2.0	ug/L	EPA 200.8	10/19/12 15:39	AAV	Nconf
Manganese	320	20	ug/L	EPA 200.8	10/17/12 15:22	AAV	
B2J1452-05 *Sampled: 10/11/12 11:00*							
Roberts 22275 Granada, Hinkley Ca 92347							
Arsenic	11	2.0	ug/L	EPA 200.8	10/16/12 16:54	AAV	Nconf
Manganese	87	20	ug/L	EPA 200.8	10/16/12 12:48	AAV	

mailing
P.O. Box 432
Riverside, CA 92502-0432

location
6100 Quail Valley Court
Riverside, CA 92507-0704

P 951 653 3351
F 951 653 1662
www.babcocklabs.com

NELAP no. 02101CA
CA Elap no. 2698
EPA no. CA00102

23A-10
cont'd

#23B

Evelio Hernandez

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. HERNANDEZ: Thank you for listening. I agree with the EIR report. 23B-1

MS. KAPAHI: Could you state your name please, sir, and spell it.

MR. HERNANDEZ: Sorry. My name is Evelio Hernandez. I'm a community resident. I'm part of the -- CAC member also. My name is spelled E-v-e-l-i-o H-e-r-n-a-n-d-e-z. Okay. I like the idea of going forward with all this stuff. There's some things that I don't agree with, but I do like -- a thousand pages is kind of hard. I'm not a reader so it's going to take me a while.

But I like the idea of progress. You know, it's very important. I don't like the fast options that they have because they'll mess up too many things. So I'm kind of in the middle where I think you need to do something that's kind of slow. I agree with the water program that they have in place to temporarily get people separated from the chromium 6. 23B-2

But a lot of the things that have been going on since -- the impact of this environment, the social impact of this, we've lost probably 3,000 people from like 1970 to now out of the community. They're gone. And this all started back in 1952.

So we have a hard time as community members where they say they've used the3.1 number as a level to just this is what we're going to use so we can have something to go by. But for so many years, from 1952 to roughly the '90s at least, maybe the 2000s, there was no data that shows where the chromium came from or which one is PG&E and which one isn't PG&E's.

One of the other things that happened during this time -- there's a 3-A amendment in there that says -- what it does is it tries to prove which chromium 6 is PG&E's and which one is natural. That was suspended. And it was done with no -- nobody asked the community anything. It was just done between the Water Board and PG&E. 23B-3

And I think that should be put back. We need to find out which chromium 6 is PG&E's and that's what they need to be responsible for. One of the fears that I have is if the state comes back in a couple of years and says hey, 5 percent is good, then they just walk away and say hey, whether it's theirs or not. They should be responsible for what is theirs.

And that's something that I kind of think that, you know, somebody scratches my car. And if they say hey, a two-inch scratch is okay. Well, no, you got to fix the whole fender, not just -- you know, everybody says no, that's okay. No. If you have insurance or whatever that says it's going to take care of everything, then it should take care of everything, not just send it to this guy and then send it to this guy because they're going to slap it together and here you go.

Our community has died, I mean, big time. And we have issues as far as, you know, whether it should be a property -- a property purchase or not. My opinion and a lot of people's opinion is that it should go 23B-4

hand in hand with this cleanup. You know, it's going to take 26 to 40 years from what I'm understanding to clean this up with whatever method we go with. So people should have an option.

None of the members here on this board can tell me what they're going to be doing in 26 to 40 years. Where are you going to be? One of my biggest things is if I die in five years, what am I leaving my kids? I'm probably the last person that has built something in Hinkley. I came to live with my neighbors that I've known for more than 15 to 20 years. They live on both sides of me and now they're gone. So I've spent a lot of money. I had my house paid for and now I couldn't sell it unless it's to PG&E. And they want to cut that program out and I don't think it's right.

23B-4 cont'd

So we as a community don't have a lot of ways to implement things against PG&E. I think they're trying. But they're always trying as long as it fits their agenda. You know, if PG&E would have came in back when this first Erin Brockovich thing broke loose and everything happened and they came and they addressed the whole community and said, you know what? We're going tobuild a water system and we're going to supply water to everybody, it would have disconnected everybody at that point in time and they could have took forever to clean it up.

But everybody would have been safe, we wouldn't have lost the 3,000 people. You know, we still wouldn't be losing people now.

One of the things that I bring up is my property value is gone. You know, it's in half. And people say well, it's gone for everybody. No. When I had -- when I built my house a couple years ago, it was paid for. And any other property that I have gone to get an equity line on, I've never had to produce is your water okay. I've never had to do that. I had to do it this time. And I've got a small portion of what I can use now because of this -- the property value is gone.

I mean, it's a social thing where I tell people if it was -- if my house was somewhere else -- my daughters are getting to the point right now where they can get married. They both graduated from college and this and that. You know, having your house paid for is -- one of the things that most people at this time will borrow money to pay for a wedding, borrow money to maybe give them money to buy a house themselves. I would have liked to have had them near me. I don't want them to buy property next to me, you know. I can't in good conscious tell anybody to go out and buy property in Hinkley right now. And this agenda -- part of it -- the way it impacts people and the issues that I have, that's my personal issue. But I know people that bought property out there. And the agenda and criteria that they set -- let's say you have property. I know people that have property out there and the property -- they can't do anything with it. They can't get a loan, you know. They can't build anything on it. But at the same time, sincethey don't have a well or a residence on that, their property is paid for, they can't sell it to anybody either. Their hands are tied. They're locked up. So, you know, the agendas and the criterias that are set sometimes aren't for the community.

23B-5

I agree to this whole house water system as a short-term solution.

23B-6

But I haven't heard anything for the long range like the water system. And when they brought it up -- and it was one of the things that I've been shouting about for about a year and a half. But it was

23B-7

neglected and taken off the table -- not by us, but by them -- because it wasn't feasible. Well, it wasn't feasible because of the plume.

Well, they're only dealing with this small area in a mile.

When I think of the community of Hinkley, I think of the whole zip code. You know, this is -- it's like you hear Beverly Hills, you think of, you know, Hollywood and all the stars. You think of San Diego, you think nice climate. Someone says Hinkley -- whoa. Step back. It's contaminated water, we don't want nothing to do with it.

But PG&E has only been -- like I said, the data that they have, they have nothing from 1950 up to a certain point. I agree that everything that they've been doing from like 2005, 2007 is really well. They have thrown a lot of money at this.

But I think if they would have thrown the money at a water system, it would have helped the community as a whole a lot better. You know, it would have saved our community.

And I'll get up and I'll speak for a lot of people in a lot of different ways, but these are the kind of issues. And we as the community really don't have a way to enforce anything.

23B-7 cont'd

And that's one of the things that -- I would like that 3-A to go back and be reinstated. I think that's very important. They need to be responsible for what they caused for however long it takes.

23B-8

You know, but we have to have that. If you want something to grow, you have to start with the proper foundation. And the proper foundation to me seems that you have to disconnect everybody, but the -- the thing about the filtration systems -- no one really knows how much they cost. And if this five-year term comes along, then they can, you know -- they can -- we don't know what's going to happen exactly after five years.

23B-9

And I thank you for listening and I appreciate

#24

Holden, Anne@Waterboards

From: Aniko Kegyulics <aniko95@hotmail.com>
Sent: Monday, September 17, 2012 10:26 AM
To: Holden, Anne@Waterboards
Subject: PGE Hinkley Clean up Comments

Here is my comment about the PG&E and Hinkley Clean Up issue:

I believe that public water to the city of Hinkley would be the only solution during the time they need to clean it up naturally. The chemically induced clean up is making it worse.

I know this comment doesn't make a difference, but I just wanted to make my opinion noted.

24-1

Thanks,
Aniko

#25

Peter Lloyd

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. LLOYD: My name is Peter Lloyd, L-l-o-y-d. And just following on from Dan Hendrickson, we work together on the electric coagulation. I just want to point out a very strong point about what Dan is saying is that the environmental impact of electrocoagulation is very small.

It's -- like he said, it's in a 40-foot container. You bring the water in, it goes straight through the electrodes and then out. And then it converts whatever -- chromium, magnesium, uranium and heavy metals into an oxide which settles out. It becomes a solid and therefore, it becomes benign as far as toxicity is concerned.

It's a very easy system to implement. We do have a 10-gallon-per-minute system that could be done as a testbed to see -- to -- in order to investigate if what I'm saying is true. And that could be implemented very quickly for the citizens of Hinkley to see the results of that.

The main issue about this thing is that it's just electrifying the chromium, just taking it out and then letting the oxygen bind to that chromium and letting it settle out.

So anyway, I brought this up and here is the report that we have. It has an executive summary and I would like to present it to the board.

Thank you very much.

25-1

#26A

OCTOBER 18, 2012

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION
2501 LAKE TAHOE BLVD.
SOUTH LAKE TAHOE, CA. 96150

ATTENTION: LISA DERNBACH & ANNE HOLDEN

AS PER OUR CONVERSATION AT HINKLEY MIDDLE SCHOOL ON OCT. 16, 2012 COULD YOU PLEASE SEND US SOMETHING IN WRITING PERTAINING TO THE FOLLOWING QUESTIONS –

1. TEST RESULTS FOR TESTS THAT PG&E HAVE DONE ON OUR WELLS LOCATED AT 34655 MTN. VIEW RD. — 26A-1
2. PG&E STATED THAT THE DEEPER WELL OPTION WAS NOT FEASIBLE FOR US BECAUSE WE DON'T HAVE ANY CLAY WHERE WE LIVE. — 26A-2
3. PG&E POOL TEST RESULTS – HOW MUCH CHROMIUM WERE WE EXPOSED TO BY PG&E ALLOWING PEOPLE AND ORGANIZATIONS TO SWIM IN THEIR POOL AT THE HINKLEY COMPRESSOR STATION? — 26A-3
4. DOCUMENTION THAT PG&E ACKNOWLEDGES THEIR POOL AT THE HINKLEY COMPRESSOR STATION EXISTED. — 26A-4

WE KNOW THAT CHROMIUM 6 IS IN THE AREA THAT WE LIVE IN (SOUTH OF THE COMPRESSOR STATION) BECAUSE WE HAVE BEEN TOLD BY THREE OF OUR NEIGHBORS THAT THEY HAVE CHROMIUM 6 IN THEIR WELLS. ONE NEIGHBOR HAS OVER 4.0 PPB OF CHROMIUM 6. ANOTHER NEIGHBOR HAS OVER 3.0 PPB OF CHROMIUM 6. AND STILL ANOTHER NEIGHBOR HAS OVER 2.0 PPB OF CHROMIUM 6. ALL OF THESE NEIGHBORS ARE OVER ½ MILE SOUTH OF RIVERVIEW ROAD. SO THE CHROMIUM 6 IS FLOWING UP-STREAM AND IN INCREASING AMOUNTS. PG&E IS SUPPLYING THEM ALL WITH BOTTLED WATER AND HAS EVEN OFFERED TO BUY THEIR PROPERTY. OUR NEIGHBOR THAT HAS OVER 2.0 PPB OF CHROMIUM 6 HAS BEEN APPROACHED BY PG&E TO BUY THEIR PROPERTY – WATER TESTED AND PROPERTY SURVEYED. THUS EVEN PG&E MUST BELIEVE THAT THE AREA IN WHICH WE LIVE IN IS CONTAMINATED BY CHROMIUM 6. PG&E HAS ALL OF THIS INFORMATION BECAUSE THEY DID THE WATER TESTS ON THE WELLS. — 26A-5

ALSO, WE HAVE INCLUDED COPIES OF ITEMS THAT WE DISCUSSED AT HINKLEY MIDDLE SCHOOL ON OCT. 16, 2012. AND THE NAME & THE PHONE NUMBER OF THE MAN THAT STATED HE COULD CLEAN UP THE CHROMIUM 6 PLUME MUCH FASTER AND CLEANER (NO BY-PRODUCTS) WITH A PROCESS CALLED "ELECTROCOAGULATION". THIS IS OUR CHOICE FOR THE CLEAN-UP OF CHROMIUM 6. — 26A-6

IF YOU HAVE ANY QUESTIONS PLEASE FEEL FREE TO CONTACT US AT:

#26A

WANDA S. MONK, P.O. BOX 2221, BARSTOW, CA. 92312 OR (760) 253-7686.

THANK YOU,

Wanda S Monk

WANDA S. MONK

#26A

Attachment

PACIFIC GAS & ELECTRIC COMPANY

PG and E + P.O. BOX 1060, BARSTOW, CA 92311 - (619) 253-2991

January 22, 1988

Wanda Monk
Post Office Box 305
Hinkley, CA 92347

Dear Ms. Monk:

As part of a program to determine the chromium content in groundwater in a small area north of the PG&E Hinkley Compressor Station, water samples were taken from your well. The samples were analyzed by an independent, state-certified testing laboratory, Analytical Technologies, Inc., (ATI), in San Diego.

The attached laboratory report confirms that the water from your well contains less than 50 parts per billion (ppb) chromium. The U.S. Environmental Protection Agency and the State Department of Health Services have set the acceptable levels of chromium in drinking water at 50 parts per billion.

Should you have any questions regarding this laboratory report, please contact PG&E at (619) 253-2991 or the San Bernardino County Department Environmental Health Services at (714) 387-3044. Your cooperation with this testing program has been appreciated.

Sincerely,

Robert A. Cook
Manager, Southern Area
Pipe Line Operations

RAC/ce

Attachment
488-113-24

#26A

Attachment

Pacific Gas and Electric Company

Southern Pipeline Operations
32999 Community Boulevard
Hinkley, CA 92347
619/253-7991

February 18, 1993

Wanda Monk
34349 Mountain View Road
Hinkley, CA 92347

Dear Mrs. Monk:

At your request Pacific Gas and Electric Company (PG&E) sampled your well located at 34349 Mountain View Road in Hinkley earlier this month. PG&E had the water sample from your well analyzed for the presence of chromium. The laboratory analysis results are enclosed.

The water sample from your well is designated as Sample Number 1 on the report. The identification number for your well is DMR-1. The concentration of chromium reported by the laboratory for your well was less than .01 milligrams per liter (<0.01 MG/L). Since the minimum concentration that can be measured by the analysis method used by the laboratory is .01 milligrams per liter the laboratory report indicates that no chromium was detected in your well. The maximum concentration of chromium allowed in drinking water by California regulatory standards is .05 milligrams per liter. These results indicate that your well has not been significantly effected by the groundwater contamination near PG&E's compressor station in Hinkley.

If you have any further questions about the analysis results or would like more information please, call me at (619) 253-7879.

Sincerely,

Glen Riddle

Glen Riddle
Facility Engineer

Enclosure

Pacific Gas and Electric Company

#26A

Attachment

José H. Moreno
Community Relations Manager
Hinkley Groundwater Remediation Project

22999 Community Blvd
Hinkley, California 92347
(855) 816-9722
HinkleyInfo@pge.com

August 16, 2012

Wanda Monk
PO Box 2221
Barstow, CA 92312

Subject: Results of Water Well Sampling - July 2012
Well(s) #11-04 at 34655 Mountain View Rd., APN 0488-113-24

Dear Ms. Monk:

Thank you for participating in Pacific Gas and Electric Company's (PG&E) domestic well sampling program. The purpose of this letter is to provide you with the results of the July 2012 sampling effort. In addition, the attached table summarizes historical and current results.

Background

On July 18, 2012, samples were collected from the domestic well(s) on your property, well ID(s) #11-04. The samples were sent to Advanced Technology Laboratories, a California-certified laboratory, and analyzed for total chromium using U.S. Environmental Protection Agency (EPA) Method 6020A. The laboratory also analyzed the samples for hexavalent chromium using EPA Method 218.6.

The following are the results of the recent sampling:

For **Well #11-04** sampled on 07/18/2012:

- Total chromium was not detected
- Hexavalent chromium was detected at a concentration of: 0.36 parts per billion (ppb)

State and Federal Drinking Water Standards

The federal drinking water standard for total chromium is 100 parts per billion (ppb), and the California drinking water standard for total chromium is 50 ppb. Total chromium is the sum of all forms of chromium that may be present, including hexavalent chromium. Hexavalent chromium is currently regulated under the total chromium standard of 50 ppb.

Based on the results, the water from your well(s) is within the total chromium standard established by the California Department of Public Health for drinking water of 50 ppb and the Federal standard of 100 ppb.

Next Steps

The sampling results from July 2012 for your well ID(s) #11-04 will be included in our *Third Quarter 2012 Groundwater Monitoring Report,* to be submitted to the Water Board at the end of October 2012.

#26A
Attachment

Please Contact Us With Your Question

Our local, bilingual (English/Spanish) staff is available to answer any questions about the sampling results for your well(s). Please contact Jessica Davtian at (855) 816-9722 or visit our Hinkley Community Resource Office located at 22999 Community Boulevard. We are open Monday through Friday from 9 a.m. to 5 p.m. If you are unable to visit us during these hours we'd be happy to schedule a time that is convenient for you. You may also contact us by e-mail at HinkleyInfo@pge.com.

Thank you very much for your participation in our program.

Sincerely,

cc: Jessica Davtian

cc: Current Tenant
34655 Mountain View Rd
Hinkley, CA 92347

Attachment: Table of historical and current results

#26A

Attachment

Groundwater Sampling Results - July 2012

Well(s) #11-04 at 34655 Mountain View Rd., APN 0488-113-24

Well Number	Sample Date	Concentrations in parts per billion (ppb)		Drinking Water Standards for Total Chromium	
		Total Chromium Method 6020A	Hexavalent Chromium Method EPA 218.6	Federal	State of CA
11-04	Jul-18-2012	ND <1.0 (not detected)	0.36	100	50

Drinking Water Standard: The federal drinking water standard for total chromium is 100 ppb and the California drinking water standard for total chromium is 50 ppb. Total chromium is the sum of all forms of chromium that may be present, including hexavalent chromium. Hexavalent chromium is currently regulated under the total chromium standard of 50 ppb.

Key to Groundwater Sampling Results

-- Not Sampled

ND Not Detected

J A "J" shown next to a concentration indicates that the concentration is estimated based on data validation and quality control criteria

< The less than (<) symbol, if shown, in front of a result indicates that the compound was not detected (ND) in the groundwater sample. Analytical equipment is limited by its capability to detect a compound below a specific level, and this limit is expressed on the table with a less than (<) symbol in front of the number representing the concentration below which the instrument cannot measure.

Dan Hendrickson, President
964 D Avenue
Coronado, CA 92118
(619) 972-7536
hendrickson01@cox.net

Coolerado Indirect-Evaporative Air Conditioners
Waste-to-Energy Systems
Solar-Thermal Systems
Hot Water ADsorption Chillers™
Water and Wastewater Treatment
Sustainable Residential & Commercial Design

Electrocoagulation system

#26A

Attachment

#26A

Attachment

#26A

Attachment

Pacific Gas and Electric Company®

Jose H. Moreno
Community Relations Manager
Hinkley Groundwater Remediation Project

22999 Community Blvd
Hinkley, California 92347
760-253-7896
HinkleyInfo@pge.com

April 25, 2012

MONK, WANDA
PO BOX 2221
BARSTOW, CA 92312-2221

Subject: **Voluntary Whole House Water Program**
34655 MOUNTAIN VIEW RD
HINKLEY, CA 92347

Dear Hinkley Property Owner:

In May of last year, Pacific Gas and Electric Company (PG&E) committed to doing a better job working with and listening to the Hinkley community. Since then, PG&E has been working with the Community Advisory Committee and listening carefully to Hinkley residents. We value the feedback we've received from community members and we are taking your comments to heart.

We've heard from families that, although they appreciate the bottled water we provide for drinking, they remain concerned about using their well water for other household purposes. The State of California is currently involved in a multi-year process for determining a drinking water standard specifically for chromium 6. Until that process is completed, we recognize that families in Hinkley will still have questions about whether their well water is safe.

Responding to input from members of the community and Community Advisory Committee, last August PG&E made a commitment to explore ways of providing replacement whole house water. We immediately hired experts and began a process to evaluate a range of replacement water alternatives, several of which were suggested by Community Advisory Committee members. We recently submitted a report to the Lahontan Water Board that recommends two approaches for providing whole house water.

Changes to PG&E's Water Provision Program in Hinkley

Later this year, PG&E will begin implementing a voluntary program to provide whole house water to eligible residents. **See fact sheet for eligibility requirements.** The details of this program will be refined over the next several months to reflect community input and work through installation and implementation issues. In the meantime, PG&E will be meeting with eligible residents beginning later this month to discuss the program. As soon as this plan is completed, for eligible residents who choose, we will provide a reliable water supply to their household that can be used for indoor uses such as drinking, cooking and bathing. For eligible residents who choose this option, this program will replace our bottled water program.

#26A

Attachment

The water supply will come from one of two options which have been shown to provide reliable water supply for indoor domestic uses at levels below the current laboratory reporting limit for chromium 6 of 0.06 ppb:

- Drilling a deeper well (where feasible) on your property to draw water from the lower aquifer, or;
- Individual whole house systems that treat water at the well head (supplemented by small under-sink treatment systems)

Our commitment includes installation, maintenance and monitoring of the treatment systems until the State of California has adopted a drinking water standard specifically for chromium 6 (expected in the next 2 to 3 years), or for up to 5 years at which time the program will be evaluated to ensure that new studies and data can be considered. **See attached fact sheet for program details.**

To supplement this program of water provision, PG&E will consider purchasing the property of eligible residents who would prefer that option. **See attached fact sheet for program details.**

PG&E's willingness to offer this comprehensive program is the direct result of our discussions with the Community Advisory Committee and members of the community over the past year. We share the mutual goal of ensuring a safe, reliable water supply for the residents of Hinkley to ease their concerns for community health and well-being. We also share a commitment to a vision of a brighter future for the community of Hinkley.

Getting Started

Please see the attached fact sheet or call us to confirm your property's eligibility for this program. Eligible residents should contact us at (760) 253-7896 to schedule an appointment with PG&E staff to discuss the whole house water program. We will begin scheduling appointments for the week of April 30. Our goal is to provide reliable whole house water for you and your family. However, we understand that every family's needs are different and the whole house water program may not be right for every eligible property owner. If this is the case for you, at your request, PG&E will offer to purchase your property following an appraisal.

For More Information

Our local, bilingual (English/Spanish) staff is available to answer any questions you have about PG&E's programs. If you have questions about your eligibility for whole house replacement water programs or would like your well tested by PG&E, please contact us at (760) 253-7896 by email at HinkleyInfo@pge.com or visit our Hinkley Community Resource Office located at 22999 Community Boulevard. We are open Monday through Friday from 9 a.m. to 5 p.m. If you are unable to visit us during these hours we'd be happy to schedule a time that is convenient for you.

Sincerely,

Jose H. Moreno

#26A

Attachment

Pacific Gas and Electric Company

Jose H. Moreno
Community Relations Manager
Hinkley Groundwater Remediation Project

22999 Community Blvd
Hinkley, California 92347
760-253-7896
HinkleyInfo@pge.com

April 27, 2012

34655 MOUNTAIN VIEW RD
Hinkley, CA 92347

Subject: Voluntary Whole House Water Program

Dear Resident:

In May of last year, Pacific Gas and Electric Company (PG&E) committed to doing a better job working with and listening to the Hinkley community. Since then, PG&E has been working with the Community Advisory Committee and listening carefully to Hinkley residents. We value the feedback we've received from community members and we are taking your comments to heart.

We've heard from families that, although they appreciate the bottled water we provide for drinking, they remain concerned about using their well water for other household purposes. The State of California is currently involved in a multi-year process for determining a drinking water standard specifically for chromium 6. Until that process is completed, we recognize that families in Hinkley will still have questions about whether their well water is safe.

Responding to input from members of the community and Community Advisory Committee, last August PG&E made a commitment to explore ways of providing replacement whole house water. We immediately hired experts and began a process to evaluate a range of replacement water alternatives, several of which were suggested by Community Advisory Committee members. We recently submitted a report to the Lahontan Water Board that recommends two approaches for providing whole house water.

Changes to PG&E's Water Provision Program in Hinkley

Later this year, PG&E will begin implementing a voluntary program to provide whole house water to eligible residents. **See fact sheet for eligibility requirements.** The details of this program will be refined over the next several months to reflect community input and work through installation and implementation issues. In the meantime, PG&E will be meeting with eligible residents beginning later this month to discuss the program. As soon as this plan is completed, for eligible residents who choose, we will provide a reliable water supply to their household that can be used for indoor uses such as drinking, cooking and bathing. For eligible residents who choose this option, this program will replace our bottled water program.

#26A

Attachment

The water supply will come from one of two options which have been shown to provide reliable water supply for indoor domestic uses at levels below the current laboratory reporting limit for chromium 6 of 0.06 ppb:

- Drilling a deeper well (where feasible) on your property to draw water from the lower aquifer, or;
- Individual whole house systems that treat water at the well head (supplemented by small under-sink treatment systems)

Our commitment includes installation, maintenance and monitoring of the treatment systems until the State of California has adopted a drinking water standard specifically for chromium 6 (expected in the next 2 to 3 years), or for up to 5 years at which time the program will be evaluated to ensure that new studies and data can be considered. **See attached fact sheet for program details.**

To supplement this program of water provision, PG&E will consider purchasing the property of eligible residents who would prefer that option. **See attached fact sheet for program details.**

PG&E's willingness to offer this comprehensive program is the direct result of our discussions with the Community Advisory Committee and members of the community over the past year. We share the mutual goal of ensuring a safe, reliable water supply for the residents of Hinkley to ease their concerns for community health and well-being. We also share a commitment to a vision of a brighter future for the community of Hinkley.

Getting Started

Please see the attached fact sheet or call us to confirm your property's eligibility for this program. Eligible residents should contact us at (760) 253-7896 to schedule an appointment with PG&E staff to discuss the whole house water program. We will begin scheduling appointments for the week of April 30. Our goal is to provide reliable whole house water for you and your family. However, we understand that every family's needs are different and the whole house water program may not be right for every eligible property owner. If this is the case for you, at your request, PG&E will offer to purchase your property following an appraisal.

For More Information

Our local, bilingual (English/Spanish) staff is available to answer any questions you have about PG&E's programs. If you have questions about your eligibility for whole house replacement water programs or would like your well tested by PG&E, please contact us at (760) 253-7896 by email at HinkleyInfo@pge.com or visit our Hinkley Community Resource Office located at 22999 Community Boulevard. We are open Monday through Friday from 9 a.m. to 5 p.m. If you are unable to visit us during these hours we'd be happy to schedule a time that is convenient for you.

Sincerely,

Jose H. Moreno

#26A

Attachment

Pacific Gas and Electric Company
Groundwater Remediation Program

April 2012

Whole House Water Program Fact Sheet

Pacific Gas and Electric Company (PG&E) has been listening to the concerns of Hinkley residents regarding their domestic well water. The State of California is in the process of determining a safe drinking water standard specifically for chromium 6. PG&E understands that while that process is underway, the community continues to have questions about whether their well water supplies are safe. In response to these concerns and as part of PG&E's commitment to the community, PG&E is offering a voluntary program to provide whole house water to eligible residents.

Whole House Water Program

For eligible residents who choose to participate, PG&E's whole house water program will provide a reliable water supply to your household that can be used for indoor uses such as drinking, cooking and bathing. This program will replace our bottled water program.

As part of the program, PG&E will pay for one of the following two whole house water options (including installation, maintenance and monitoring of the systems):

- Drilling a deeper well (where feasible) on your property to draw water from the lower aquifer;
- Individual whole house systems that treat water at the well head (supplemented by small under-sink treatment systems)

These options have been shown to provide reliable water supply for indoor domestic uses at levels below the current laboratory reporting limit for chromium 6 of 0.06 ppb. Because every domestic well and residence is different we will work with you to understand which program option is the best fit.

Property Purchase Option

Our goal is to provide reliable whole house water for you and your family. However, we understand that every family's needs are different and the whole house water program may not be right for every eligible property owner. If this is the case for you, at your request, PG&E will offer to purchase your property following an appraisal. All property purchase transactions are confidential, so please call us to schedule an appointment if you would like more information.

Program Eligibility

In order to be eligible for the whole house water program or property purchase option, your residence must meet all of the following criteria:

- The property has a residence with an active domestic well and is located within one mile of the Fourth Quarter 2011 chromium 6 plume (see figure next page); and
- The domestic well has been tested by PG&E within the last six months with results for chromium 6 levels greater than non-detect. If your well has not been recently tested by PG&E, please call us to schedule an appointment to have your well tested at no charge to you.

Important note: *property owner consent is required for well testing and all Whole House Water options.*

Whole House Water Program Term

PG&E's whole house water program will be offered for a period of up to 5 years or until the State of California has adopted drinking water standard specifically for Chromium 6. The process of developing the drinking water standard is currently underway and is anticipated to take two to three years. Upon the adoption of the California drinking water standard for chromium 6, or no later than 5 years from implementation, PG&E will review the whole house water program, utilizing all available information to determine the future of the program.

Getting Started

Eligible residents should contact us at (760) 253-7896 to schedule an appointment with PG&E staff to discuss the whole house water program. We will begin scheduling appointments for the week of April 30. We are committed to meeting with you and your family to share the details of our program with you and answer all your questions. We are asking eligible residents to let us know which option they would like to pursue, either whole house water or property purchase, on or before August 31, 2012. For residents that select the whole house water option, our goal is to begin installation of the systems or being drilling deeper wells this fall. For residents that select the property purchase option, our goal will be to work with you to complete the purchase by end of the year. At the end of 2012, PG&E's property purchase program in Hinkley will come to a close, except in select instances where the property is needed for remediation purposes.

For More Information

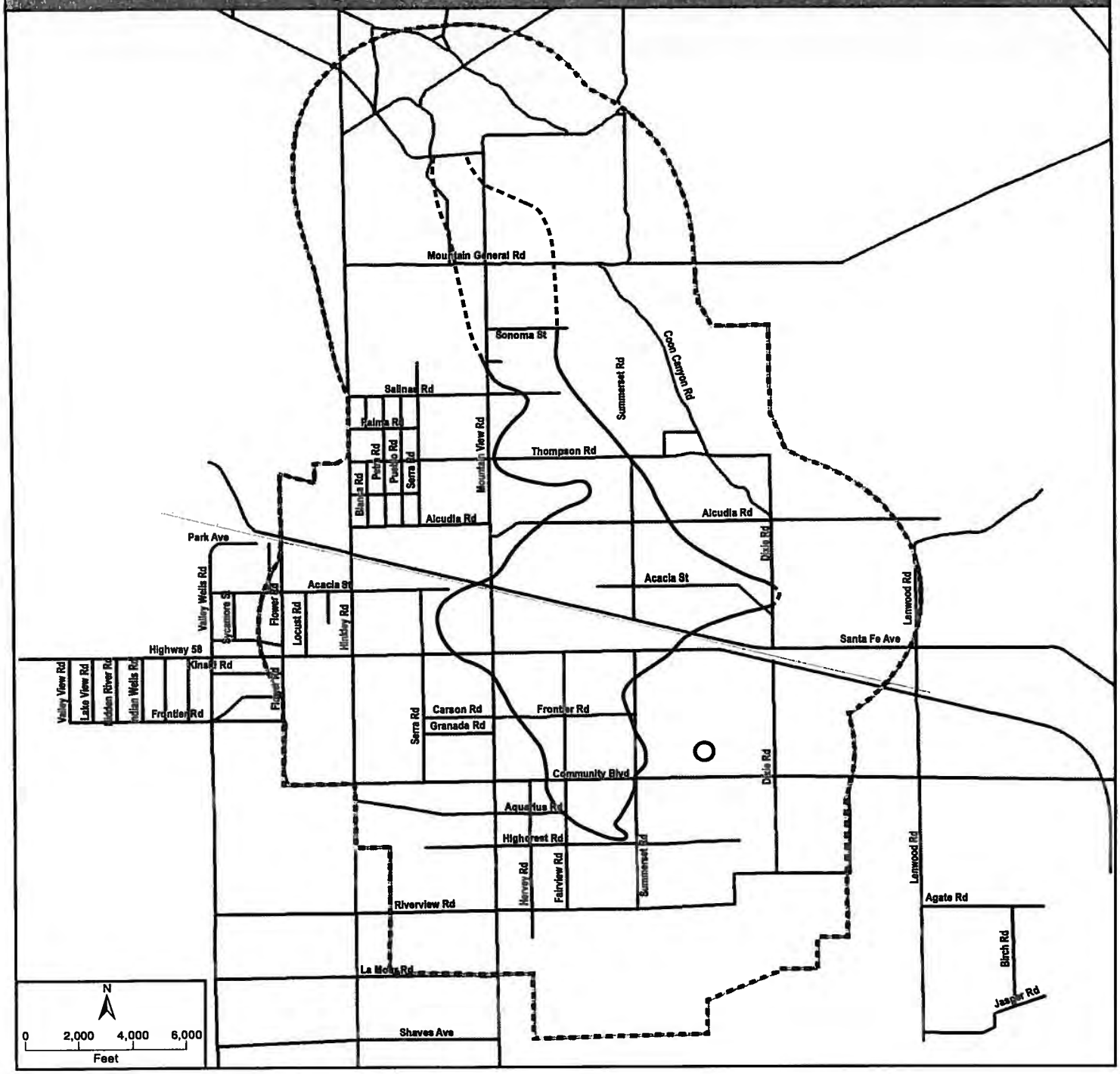
Our local, bilingual (English/Spanish) staff is available to answer any questions you have about PG&E's programs. If you have questions about your eligibility for the whole house water program or would like your well tested by PG&E, please contact us at (760) 253-7896 by email at HinkleyInfo@pge.com or visit our Hinkley Community Resource Office located at 22999 Community Boulevard. We are open Monday through Friday from 9 a.m. to 5 p.m. If you are unable to visit us during these hours we'd be happy to schedule a time that is convenient for you.

#26A

Attachment

Whole House Water Program Fact Sheet

Whole House Water Program Area



LEGEND

Approximate outline of Cr(VI) or Cr(T) in Upper Aquifer exceeding background values of 3.1 and 3.2 µg/L, respectively, Fourth Quarter 2011

Whole House Water Program Area Boundary

#26A

Attachment

Pacific Gas and Electric Company

PG&E
22999 Community Blvd.
Hinkley, CA 92347

PRSRT STD
US POSTAGE
PAID
SACRAMENTO CA
PERMIT NO. 1890

August 2012

Hinkley Whole House Replacement Water Program

3/1/321
Wanda Monk
PO Box 2221
Barstow, CA 92312-2221

Important: Whole House Replacement Water Program Information

If you have not yet spoken with PG&E regarding your eligibility for Whole House Replacement Water, please contact us at (760) 253-7896, by email at HinkleyInfo@pge.com or visit our Hinkley Community Resource Office located at 22999 Community Blvd. We are open Monday through Friday from 9 a.m. to 5 p.m. Our local and bilingual (English/Spanish) staff is available to answer any question you may have about PG&E's programs.

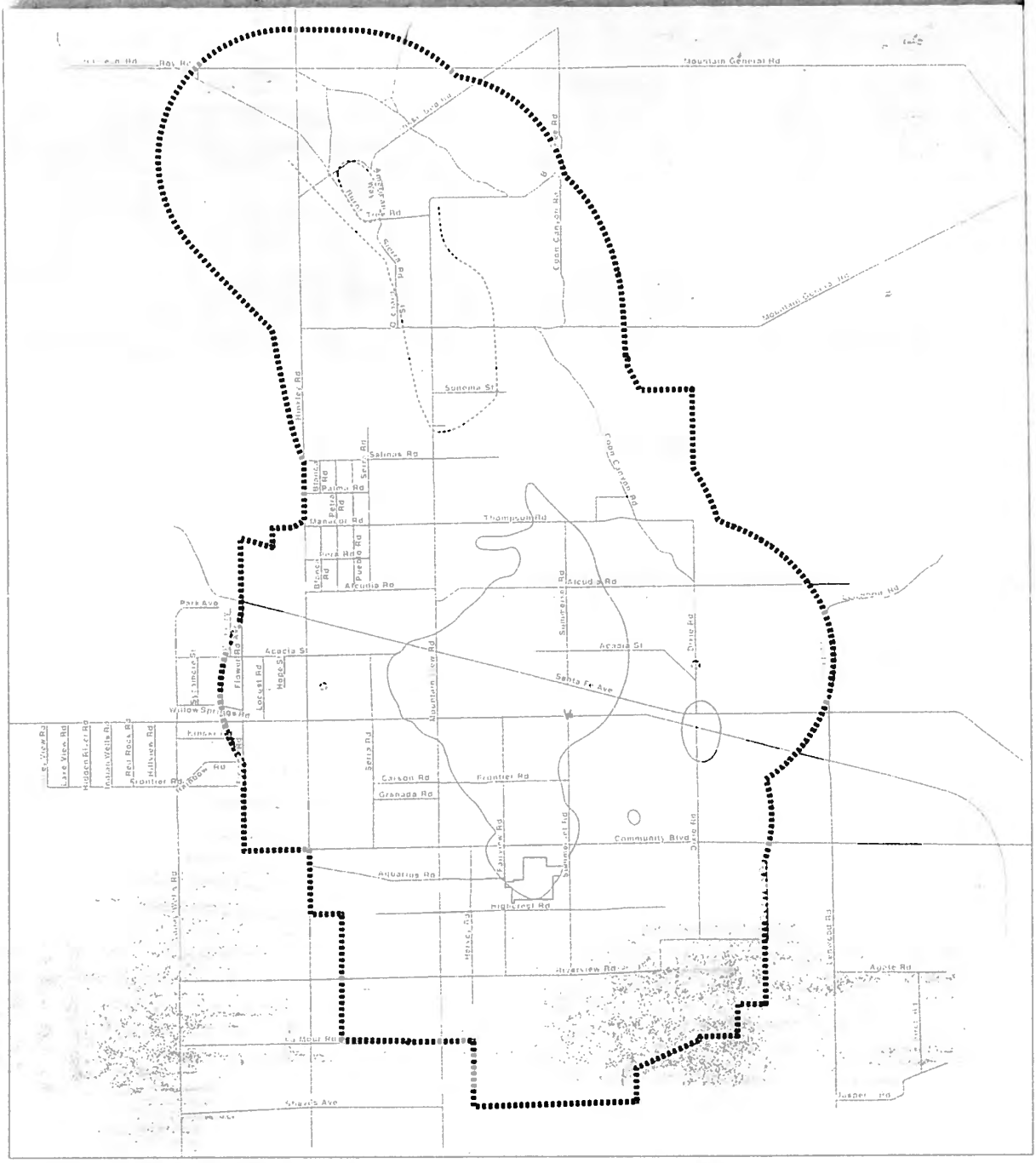
Thank you.

#26A

Attachment

Hinkley House Replacement Water Program

Whole House Replacement Water Program Area



LEGEND

- Approximate outline of Cr(VI) or Cr(T) in Upper Aquifer exceeding background values of 3.1 and 3.2 µg/L, respectively, Second Quarter 2012
- Whole House Water Program Area Boundary (Third Quarter 2012)

#26A

Attachment

MOJAVE BASIN AREA
WATERMASTER

FOR
CITY OF BARSTOW, ET AL, VS. CITY OF ADELANTO, ET AL,
CASE NO. 208568 - RIVERSIDE COUNTY SUPERIOR COURT

October 1, 2012

Wanda Monk
P.O. Box 2221
Barstow, CA 92312

RE: Ordinance 11

Ms. Monk,

Under the Minimal Producers Program (Ordinance 11), you would be allowed to pump up to 10 acre feet on your property for domestic use. This amount is non-transferable and non-negotiable, regardless of acreage owned. For your convenience I have attached some more information regarding the Minimal Producers Program.

If you have any more questions, please feel free to contact me.

Kindest Regards,

Brenton Laidler
Watermaster Services Technician II

Enclosures: Ordinance No. 11 Packet,
FAQ about the Minimal Producers Program

13846 Conference Center Drive • Apple Valley, California 92307-4304
(760) 946-7000 • 1-800-254-4242 • FAX (760) 240-2642 • E-Mail: Watermaster@mojavewater.org

#26A

Attachment

ORDINANCE NO. 11

AN ORDINANCE OF THE MOJAVE WATER AGENCY FOR REGULATION OF MINIMAL PRODUCERS AND ESTABLISHING THE MINIMAL PRODUCERS PROGRAM

WHEREAS the Board of Directors of the Mojave Water Agency (MWA) hereby finds:

1. The Mojave Water Agency in *City of Barstow, et al. v. City of Adelanto, et al.* (Riverside Superior Court #208568) is directed to implement a Minimal Producers Program for water wells or facilities that produce up to ten acre-feet per water year. Such a Program "shall achieve an equitable allocation of the costs of the Physical Solution that are attributable to Production" by Minimal Producers.

2. The Judgment in *City of Barstow, et al. v. City of Adelanto, et al.*, *supra*, enjoins any water production within the Mojave Basin except pursuant to the provisions of the Judgment and the Minimal Producers Program adopted by MWA and approved by the Court after entry of Judgment. MWA began the Minimal Producers Program in order to better understand water use by Minimal Producers and their impact upon the Basin. Through the program MWA has catalogued thousands of wells and accumulated data on water use by Minimal Producers. MWA continues to gather and analyze data regarding water use by Minimal Producers.

3. After undertaking this process the Board of Directors has determined that the pools for Minimal Producers established in the Judgment are sufficient for existing Minimal Producers. The Board of Directors has also determined that these pools have been exhausted and it is necessary to establish a program to regulate new Minimal Producers. Furthermore, given the thousands of wells and the vast number of Minimal Producers already identified by MWA, the Board of Directors finds that it would be too costly for MWA to attempt to manage a program that encompasses all Minimal Producers. New Minimal Producers are readily identifiable. Therefore, the Board of Directors has determined that it is necessary to distinguish between Minimal Producers existing before April 1, 2000 and after. This distinction is necessary because:

   a. The Mojave Basin is currently in a state of overdraft;

   b. All new production by Minimal Producers starting on or after April 1, 2000 will contribute to the overdraft and such production needs to be regulated in order to assure an adequate water supply within the Basin;

   c. The Minimal Producers Program will take effect April 1, 2000; and

   d. The Judgment allows for the distinction.

4. In order to acquire more supplemental water to recharge the Mojave Basin, the Board of Directors finds that it has become necessary to implement an annual Minimal Producers Fee that shall only be applicable to those Minimal Producers whose production begins on or after April 1, 2000.

Be it ordained by the Board of Directors of the Mojave Water Agency as follows:

CLASSIFICATION OF MINIMAL PRODUCERS UNDER THE JUDGMENT IN THE *CITY OF BARSTOW, ET AL. V. CITY OF ADELANTO, ET AL.* (RIVERSIDE SUPERIOR COURT #208568) AND ESTABLISHMENT OF THE MINIMAL PRODUCERS PROGRAM:

Section 1. Definition of Minimal Producers. Minimal Producers are defined in the Judgment as "Any Person whose Base Annual Production, as verified by MWA is not greater than ten (10) acre-feet" and who has not stipulated to the Judgment. A Person designated as a Minimal Producer whose Annual Production exceeds ten (10) acre-feet in any year following the date of entry of Judgment is no longer a Minimal Producer and is subject to the terms of the Judgment.

Section 2. Minimal Producers Fee. A Minimal Producers Fee shall be paid each year to MWA by every Minimal Producer whose water production began on or after April 1, 2000. The Minimal Producers Fee shall be the then going rate for one acre foot of aqueduct water charged to MWA by the State of California, plus any transportation costs established by the Board of Directors. The Minimal Producers Fee is a charge for water and is not a parcel charge. The Minimal Producers Fee shall be collected in the same manner, by the same persons, at the same time as, and together and not separately from, the collection of annual county ad valorem property taxes imposed upon real property. Failure to pay the fee on time shall subject the Minimal Producer to an additional penalty charge of $25.00. Minimal Producers Fees not paid shall be considered delinquent and MWA may collect this amount as a lien on the San Bernardino County tax rolls.

Section 3. Exemption of Minimal Producers existing prior to April 1, 2000. Minimal Producers who began water production prior to April 1, 2000 shall not be subject to the Minimal Producers Fee, pursuant to the Agency Act, but records will be maintained and catalogued by MWA regarding pre-April 1, 2000 Minimal Producers. All Minimal Producers whose well permit applications were deemed approved by the San Bernardino County Department of Public Health on or before March 31, 2000 shall not be subject to the Minimal Producers Fee. Replacement wells for Minimal Producers existing prior to April 1, 2000 also shall not be subject to the Minimal Producers Fee.

Section 4. Funds used to purchase supplemental water. All funds collected by MWA pursuant to Minimal Producers water charges, including penalty fees, shall be used exclusively to acquire supplemental water to help recharge the Mojave Basin area. MWA shall keep all funds collected under this Program separate from other funds and MWA shall provide an annual financial report on the status of these funds. Water charges from each sub-area will be used for water deliveries in that sub-area.

Section 5. Minimal Producers production non-transferable. Minimal Producers not subject to the Judgment shall be confined to the parcel on which the water production facility exists. Such Minimal Producer's status would transfer on any sale or alienation of that property or parcel.

#26A

Attachment

Section 6. Monitoring Wells, Rules and Regulations. MWA staff is authorized to monitor wells to assure compliance and establish rules and regulations to implement the Program.

Section 7. Annual Production greater than ten acre-feet. Any Minimal Producer who produces more than ten acre-feet in any given year shall no longer be considered a Minimal Producer and shall become a Party subject to the provisions of the Judgment.

Section 8. Enforcement. The Board of Directors may direct staff to bring a civil action seeking enforcement, including injunctive relief, of the provisions of this Ordinance. This enforcement provision is in addition to all other enforcement provisions, including those in the Agency Act, the Judgment, and otherwise provided by law.

Section 9. Severability. If any section, sentence, clause or phrase of this Ordinance is for any reason held to be invalid or unconstitutional by the decision of a court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Ordinance. The Board of Directors declares that it would have passed this Ordinance, and each section, subsection, clause, sentence or phrase thereof irrespective of the fact that any one or more other sections, subsections, clauses, sentences or phrases may be declared invalid or unconstitutional.

Section 10. Effective Date. This Ordinance shall be in full force and effect upon April 1, 2000, and shall be published in full in a newspaper of general circulation within ten (10) days from the date of adoption.

Passed and adopted this 25th day of January, 2000, by the following vote:

Ayes: Directors Almond, Fortyune, Hall, Lowry, Parker, Stringer and Weldy
Noes: None
Abstain: None
Absent: None

George R. Parker
President, Board of Directors

ATTEST:

Scott Weldy
Secretary, Board of Directors

Mojave Water Agency

FREQUENTLY ASKED QUESTIONS ABOUT THE MINIMAL PRODUCERS PROGRAM

#26A

Attachment

Q.

A.: The Minimal Producers Program is an administrative program that has been developed by the Mojave Water Agency to account for minimal producers—those entities pumping 10 acre-feet or less of groundwater per year.

Q.

A.: The majority of the MWA is experiencing groundwater overdraft. That is, more groundwater is used each year than is replaced by nature. The development of a Minimal Producers Program was required by court action as described in the Mojave River Basin Adjudication.

Q.

A.: The MWA estimates there are up to 6,500 minimal producer wells in the Mojave River Basin and is checking their operational status, specific location and amount of production. The Minimal Producer Ordinance, adopted by the MWA Board on January 25, 2000, will apply only to well owners within the boundaries of the Mojave Basin Area Adjudication who produce 10 acre-feet or less of water per year, and did not stipulate to the Judgment. ***However, it still has to receive final approval from Riverside Superior Court Judge Michael Kaiser, as a result of a 1990 lawsuit, which is currently pending. If and when this Ordinance is approved by the Riverside Superior Court, you will be notified.***

Q.

A.: No. The MWA does not require water meters for currently known minimal producers.

Q.

A.: Yes, a fee will be collected every year from Minimal Producers who begin water production after March 31, 2000. Conversely, the fee would **not** be applicable to Minimal Producers that produced water on or prior to that date. Each Minimal Producer subject to the fee would pay for one acre-foot of water per year in accordance with the supplemental water rates adopted by the Board of Directors, specific to the subarea in which the Minimal Producer is located. The fees collected will be used to purchase supplemental water for the subarea from which the fees were collected.

Q.

A.: April 1, 2000. The Minimal Producer status will be determined by the date that a well permit application was deemed approved by the San Bernardino County Department of Public Health. Any Minimal Producer filing for a well permit after April 1, 2000 or who does not have an approved well permit by that date will be subject to the Minimal Producer fee once water production begins.

Q.

A.: Yes. Replacement wells for Minimal Producers existing prior to April 1, 2000 shall not be subject to the Minimal Producers fee. Minimal Producer status shall be confined to the parcel on which the water production facility exists and would remain with the new property owner upon change of ownership.

Q.

A.: You can visit the Mojave Water Agency Website at: www.MojaveWater.org, or call (760) 946-7000 or (800) 254-4242 during business hours.

#26A

Attachment

Mojave Water Agency

David Seielstad
Senior Watermaster Technician

Direct: (760) 946-7028
Cell: (760) 403-4652
Email: dseielstad@mojavewater.org

13846 Conference Center Drive
Apple Valley, CA 92307

(760) 946-7000
FAX (760) 240-4523
www.mojavewater.org

V CARD

WEBSITE

Mojave Water Agency Mission:

To manage the region's water resources for the common benefit to assure stability in the sustained use by the citizens we serve.

#26B

10/16/2012 EIR mtg
40 people in attendance

Wanda S. Monk
34655 Mtn View Road Hinkley CA 92347
P.O. Box 2221 - Barstow, CA 92312

1. How do we get the historical records of well test results for our property? (PG&E test results)

2. How much exposure to Chromium 6 did we get from the pool that PG&E allowed people to swim in in the 1960's + 1970's?

3. We live in the old riverbed and PG&E said we do not qualify for a deeper well because there is no clay (blue) Why is this?

26B-1

#27A

Put a stop order on ethanol NOW

let ~~PG&E~~ USGS Proue ethanol is not Releasing Manganese In to aquifer. 27A-1

Robert L Morris
21876 Pioneer rd
Hinkle Cg
92347

#27B

Ms. Laurie Kemper
Ms. Ann Holden
California Regional Water Quality Control Board
Lahontan Region
2501 Lake Tahoe Blvd.
South Lake Tahoe, CA 96150

Dear Ms. Kemper and Ms. Holden:

At the Tuesday EIR meeting one of you stated that it was your belief that the flood of 2010 released manganese into the water in Hinkley. For your information, I have lived in Hinkley, CA since 1961. I have seen many floods on the Mojave River. I have never heard before of any black water from any flood. There has never been manganese released into the houses of Hinkley before. If you check your USGS maps you will find there is no manganese. During the flood of 1968/69 water flowed all the way from the Mojave River through PG&E's property to the Lenwood Road crossing of the Santa Fe tracks (the Barstow to Mojave feed). This flood rolled a train completely off the tracks at Lenwood Rd, before continuing all the way to Harper Lake. Before this flood, the first street bridge with the little rock it ties into on the North side of the river; there was an island with houses on the west side of it. These houses have not been seen since. At Lenwood Rd. the water was flowing 14 feet deep, bank to bank. 144 feet a second crossed Lenwood Rd. Santa Fe had to park a loaded train on top of the old railroad bridge to keep it from bouncing. This was the largest flood I remember on this river and I have seen many. And none of these floods have brought out your black water manganese before. The first time I heard of black water in Hinkley was 2 years ago when Nick Grill asked me if I had ever seen black water out here before. As I told him then, I will tell you now...I have never heard of black water before! The manganese that we are now seeing in this water is the fault of Lahontan Water and Pacific Gas and Electric. Comparing the 2010 flood with the big floods of 67, 68 & 69 the flood of 1978, 83 and many others; the flood of 2010 was the weakest flood of them all.

27B-1

Long before PG&E was allowed to pump the ethanol into the ground, you should have dumped a million gallons of food coloring into the wells that would have no side effects and no heavy metals to see where this water flowed. You have completely failed in the protection of the people of Hinkley. If gross polluters had to register like pedophiles, Lahontan Water Board's name would be right there with PG&E's. Lahontan Water Board should not be in charge of any clean-ups. They do not have the expertise or the knowledge to handle such tasks. In the 30 years they've been in charge of this mess they have failed.

27B-2

Sincerely,

Robert L. Morris
21876 Pioneer Rd.
Hinkley, CA 92347
760/953-3270
hinkleymule@yahoo.com

#27C

Bob Morris

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. MORRIS: Hello. My name is Bob Morris. I've lived in Hinkley since 1960. Morris is M-o-r-r-i-s. My only concern tonight is that not all the wells in Hinkley are being tested. Anybody that's in the Hinkley area should have their well tested. PG&E should have a part in that. And this is what I was going to ask you to do is to have every well tested. Then you can have a real plume instead of a line on the map and we're not going to go a mile from here and that kind of stuff. Give up on the bull on this and go ahead and test them all. 27C-1

Thank you.

#28A

October 16, 2012

Laurie Kemper
California Regional Water Quality Control Board
Lahontan Region
2501 Lake Tahoe Blvd.
South Lake Tahoe, CA 96150

Dear Ms. Kemper:

I believe that the Hinkley CA Water Clean-up EIR should be thrown out. 28A-1

This EIR 3.3-12, line 41states that manganese is not considered toxic.

The following two reports:
http://www.epa.gov/ogwdw/ccl/pdfs/reg_determine1/support_cc1_magnese_dwreport.pdf and
www.cdph.ca.gov/certlic/drinkingwater/pages1manganese.aspx report manganese to be very toxic and deadly above 50 parts per billion (ppb). 28A-2

EIR 3.3-13 line 1 states that Arsenic at 5000 ppb would be standard. www.epa.gov/drink/index and www.cdph.ca.gov/certlic/drinkingwater/pages1arsenic.aspx states that arsenic above 10 ppb is toxic. 28A-3

Once a gross polluter, i.e., PG&E, is allowed to lower the EPA/CDPH standards, the standards are never returned to safe levels. www.ewg.org/book/export/html/8626 states that. PG&E and Dennis Paustenbach, founder and president of ChemRisk, destroyed the first and only CR_6 study over 30 years ago. 28A-4

Plume boundaries: Lahontan and PG&E place the west boundary of the plume at Mountain View Rd in Hinkley , CA.

Don and Jackie Depue, 36227 Hinkley Rd, Hinkley, CA have a Hexavalent chromium level of 7.8 parts per billion, per water test. Bob and Karla Morris, 21876 Pioneer Rd, Hinkley, CA show manganese at 5600 ppb and arsenic at 19 ppb, per their latest water test. These prove that the plume boundary should at Hinkley Rd. Floyd Burns, 37362 Mulberry Ave, Hinkley, CA water test in 1987 shows total chrome at 10 ppb. 28A-5

Quoting Ian Webster, IRP Manager, "If total chrome is 10 ppb, Hexavalent chrome would be 9.5 ppb".

Bob and Karla Morris' property on Flower St., (site of the old Hinkley Water CO. or parcel # 049428202) reports manganese at 1300 ppb and arsenic at 56 ppb. These two are witness that the west plume boundary should be at Mulberry Avenue or that the plume should be 2 1/4 miles west of Mountain View Rd.

Therefore, I believe the Lahontan Water Board and Pacific Gas & Electric should be released and removed from Hinkley water clean-up. Lahontan Water Board should be replaced by the USGS for data collection and interpretation, who without prejudice would give us a real plume boundary. PG&E should be replaced by the Army Corps of Engineers who are used to cleaning up other peoples messes; to purge the Hinkley aquifer of all contamination and would follow the Environmental Protection Agency and the California Department of Public Health standards. 28A-6

Sincerely,

Robert and Karla Morris
21876 Pioneer Rd
Hinkley, CA 92347
760/953-3270
hinkleymule@yahoo.com

#28B

October 14, 2012

Ann Holden
California Regional Water Quality Control Board
Lahontan Region
2501 Lake Tahoe Blvd.
South Lake Tahoe, CA 96150

Dear Ms. Holden:

In response pertaining to the Hinkley, CA/PG&E clean up (EIR):

My highest concern is a total disregard for following EPA regulations and California Department of Public Health regulations. 28B-1

EIR 3.3-12 line 41states that manganese is not considered toxic.

EPA and CDPH studies on manganese:

http://www.epa.gov/ogwdw/ccl/pdfs/reg_determine1/support_cc1_magnese_dwreport.pdf

www.cdph.ca.gov/certlic/drinkingwater/pages1manganese.aspx

Both these studies show manganese to be very toxic above 50 parts per billion. Arsenic is at 10 parts per billion. (See report above with arsenic replacing the word manganese.) 28B-2

Our well at 21876 Pioneer Rd., Hinkley, CA 92347 has 5600 ppb of manganese and 19 ppb of arsenic. See E. S. Babcock report attached.

We also own property on Flower Street in Hinkley, parcel #049428202 which has manganese at 1300 ppb and arsenic at 56 ppb. See E. S. Babcock report attached.

Our house is 1 and 3/4 miles west of PG&E. Our property is 3 miles west of PG&E. 28B-3

PG&E has been studying the water flow of Hinkley and their chromium 6 plume for well over 50 years. PG&E should be removed from the studies and cleanup and all their data and EIR report should be disregarded. The USGS and Army Corps of Engineers should be put in charge of collecting data and clean up to ensure that this problem is dealt with and cleaned up properly. 28B-4

Furthermore, all water should be removed from the ground, cleaned and replaced. 28B-5

Sincerely,

Robert J Morris

Robert and Karla Morris
21876 Pioneer Rd
Hinkley, CA 92347
760/953-3270
hinkleymule@yahoo.com

#28B

Attachment

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories est 1906

Client Name:Terawatt Construction Inc.
Contact:Nick Grill
Address:P.O. Box 67
Hinkley, CA 92347

Report Date:08-Oct-2012

Analytical Report: Page 3 of 3
Project Name: No Project
Project Number: --PAID--Cr

Work Order Number: B2I2778

Received on Ice (Y/N): No Temp: 24°C

Notes and Definitions

Nconf	Result(s) confirmed by re-analysis.
ND:	Analyte NOT DETECTED at or above the Method Detection Limit **(if MDL is reported)**, otherwise at or above the Reportable Detection Limit (RDL)
NR:	Not Reported
RDL:	Reportable Detection Limit
MDL:	Method Detection Limit
* / '" :	NELAP does not offer accreditation for this analyte/method/matrix combination

Approval

Enclosed are the analytical results for the submitted sample(s). Babcock Laboratories certify the data presented as part of this report meet the minimum quality standards in the referenced analytical methods. Any exceptions have been noted. Babcock Laboratories and its officers and employees assume no responsibility and make no warranty, express or implied, for uses or interpretations made by any recipients, intended or unintended, of this report.

Lauren G. Tyner
CN = Lauren G. Tyner C = US O = Babcock Laboratories, Inc. OU = Project Manager
2012.10.08 11:57:42 -07'00'

cc:

e-Tab_Summary.rpt

#28B

Attachment

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories since 1900

Client Name:Terawatt Construction Inc.
Contact:Nick Grill
Address:P.O. Box 67
Hinkley, CA 92347

Report Date:08-Oct-2012

Analytical Report: Page 2 of 3
Project Name: No Project
Project Number: --PAID--Cr

Work Order Number: B2I2778

Received on Ice (Y/N): No Temp: 24°C

	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
B2I2778-01 *Sampled: 09/26/12 13:30*							
#1 Flower St.							
Arsenic	6.6	2.0	ug/L	EPA 200.8	10/01/12 23:01	AAV	
Manganese	29	20	ug/L	EPA 200.8	10/01/12 23:01	AAV	
B2I2778-02 *Sampled: 09/26/12 13:30*							
#2 Flower St.							
Arsenic	54	1.0	ug/L	EPA 200.8	10/05/12 11:15	AAV	Nconf
Manganese	1300	40	ug/L	EPA 200.8	10/01/12 23:44	AAV	
B2I2778-03 *Sampled: 09/26/12 13:30*							
21876 Pioneer Rd., Hinkley							
Arsenic	19	4.0	ug/L	EPA 200.8	10/01/12 23:45	AAV	Nconf
Manganese	5600	250	ug/L	EPA 200.8	10/05/12 13:27	AAV	

#28B

Attachment

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories est 1906

Client Name:Terawatt Construction Inc.
Contact:Nick Grill
Address:P.O. Box 67
Hinkley, CA 92347

Report Date:08-Oct-2012

Analytical Report: Page 1 of 3
Project Name: No Project
Project Number: --PAID--Cr

Work Order Number: B2I2778

Received on Ice (Y/N): No Temp: 24°C

Attached is the analytical report for the sample(s) received for your project. Below is a list of the individual sample descriptions with the corresponding laboratory number(s). Also, enclosed is a copy of the Chain of Custody document (if received with your sample(s)). Please note any unused portion of the sample(s) may be responsibly discarded after 30 days from the above report date, unless you have requested otherwise.

Thank you for the opportunity to serve your analytical needs. If you have any questions or concerns regarding this report please contact our client service department.

Sample Identification

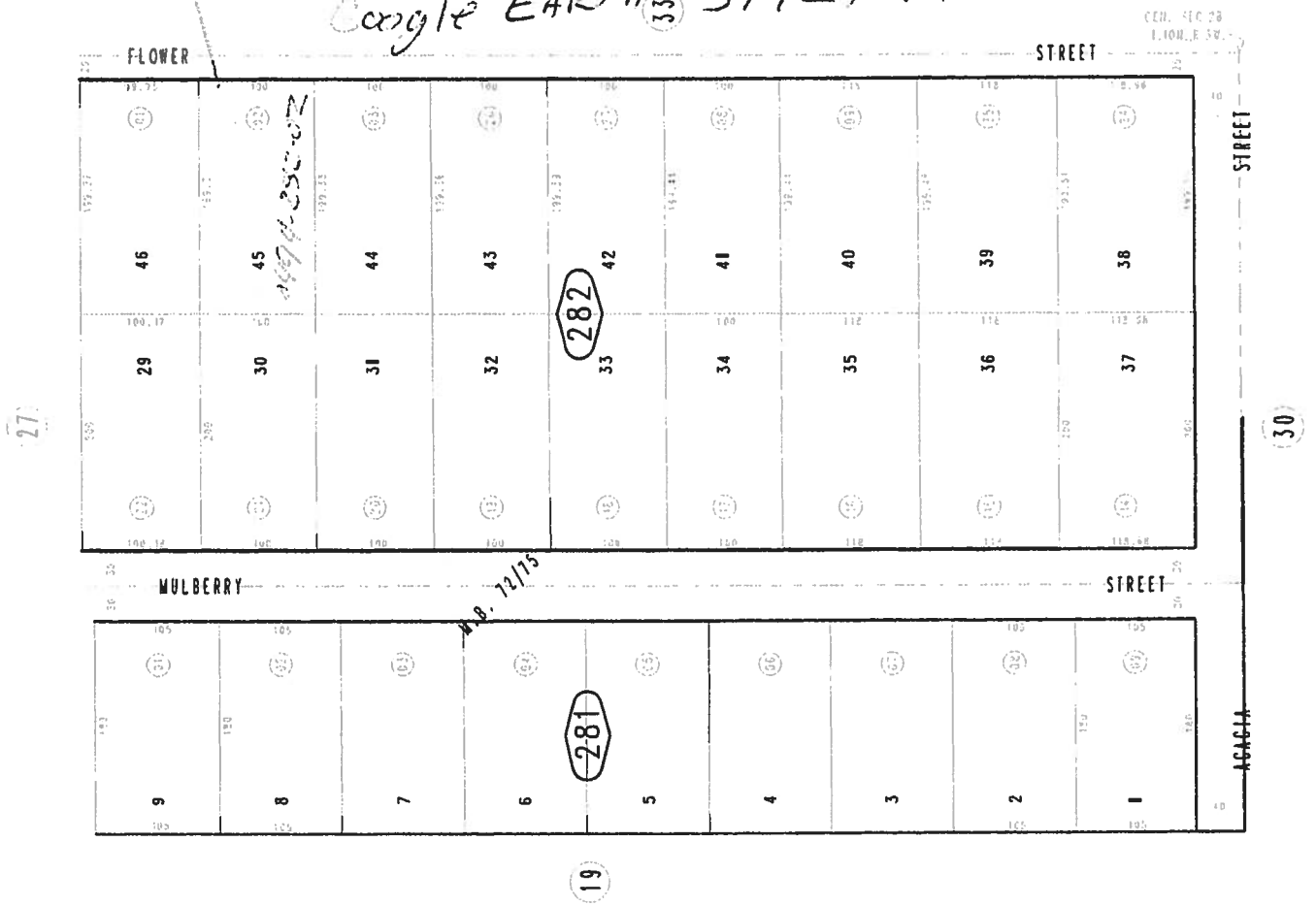
Lab Sample #	Client Sample ID	Matrix	Date Sampled	By	Date Submitted	By
B2I2778-01	#1 Flower St.	Water	09/26/12 13:30	Client	09/26/12 15:50	Nick
B2I2778-02	#2 Flower St.	Water	09/26/12 13:30	Client	09/26/12 15:50	Nick
B2I2778-03	21876 Pioneer Rd., Hinkley	Water	09/26/12 13:30	Client	09/26/12 15:50	Nick

Ptn. Tract No. 5714, M.B. 72/75

Barstow Unified
Tax Rate Area
56109

0494 – 28

1300 PPB Manganese
54 PPB ARSENIC.
Eagle EARTH 37424 Flower



Ptn. E.1/2, Sec. 28
T.10N., R.3W.

Assessor's Map
Book 0494 Page 28
San Bernardino County

February 2004

Attachment #28B

You can see how dirty the water is on 9/27/2012

This is PVC pipe. It is white pipe. You can see black manganese stuck to the water pump on 9/27/2012.

We purchased this property October of 2010.

Before purchase we had the water checked by two independent environmental laboratories; E. S. Babcock, Riverside, CA, and B. C. Labs, Bakersfield, CA. Both tests came back 0 for Chromium 6.

Our well was clean for first 9 months and then PG&E started testing. First test was .08, second test was .1, third test was .18. Now we have manganese at 5600 parts per billion (ppb) and arsenic at 19 ppb.

In less than 2 years our water has gone from perfectly healthy to hazardous waste.

Robert Morris
21876 Pioneer Road
Hinkley, CA 92347
760/953-3270
hinkleymule@yahoo.com

Attachment #28B

#28C

October 24, 2012

Ann Holden
California Regional Water Quality Control Board
Lahontan Region
2501 Lake Tahoe Blvd.
South Lake Tahoe, CA 96150

Ms. Holden::

Remediation needs to stop now. There should be no more ethanol injected in to the Aquifer/drinking water in Hinkley Ca. PG&E and Lahontan water have failed to control manganese and arsenic. 28C-1

The plume boundary needs to be redefined. This is the latest water test for my property on flower street; parcel #049428202. This should be easy for you to check because Lahontan Water did a water test the same day. 28C-2

Robert and Karla Morris
21876 Pioneer Rd.
Hinkley, CA 92347
760/953-3270
hinkleymule@yahoo.com

Stop EIR Now
R J Morris 28C-3

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories since 1909

Client Name:Morris, Bobby
Contact:Bobby Morris
Address:21876 Pioneer Rd.
Hinkley, CA 92347

Report Date:23-Oct-2012

Analytical Report: Page 2 of 4
Project Name: No Project
Project Number: --PAID--Cr

Work Order Number: **B2J1452**
Received on Ice (Y/N): No Temp: 20°C

	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
B2J1452-01 *Sampled: 10/11/12 10:30*							
#1 049428202							
Arsenic	170	40	ug/L	EPA 200.8	10/19/12 17:01	AAV	N_noH, Nconf
Manganese	140000	5000	ug/L	EPA 200.8	10/19/12 15:15	AAV	

#29

We want

No Ground water drawdown.
Find source of mag and uranium, etc before poisoning every one.
Have not horned toads around the last few years along with turtles.
No aquifer compaction!

29-1
29-2
29-3
29-4

Al & Janet Norman
37823 Serra Rd
Hinkley, CA 92347

#30

Pacific Gas and Electric Company

Kevin M. Sullivan
Principal Remediation Specialist
Hinkley Remediation Project

3401 Crow Canyon Rd
San Ramon, CA 94583
(925) 415-2615
kmsu@pge.com

November 5, 2012

Anne Holden
Engineering Geologist & EIR Project Manager
California Regional Water Quality Control Board, Lahontan Region
2501 Lake Tahoe Boulevard
South Lake Tahoe, California 96150

Subject: Draft Environmental Impact Report, Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from Pacific Gas and Electric Company's Hinkley Compressor Station San Bernardino County

Dear Ms. Holden:

Pacific Gas and Electric (PG&E) submits the attached comments (Attachments 1 and 2) on the Draft Environmental Impact Report (EIR) released by the Lahontan Regional Water Quality Control Board (Water Board) in August 2012 for the Groundwater Cleanup Strategy for the PG&E Hinkley Compressor Station site located in Hinkley, California.

The EIR document provides sufficient flexibility required to implement the final groundwater remedy in the most efficient and least impactful manner. The six alternatives analyzed in the EIR (4B through 4C-5) provide a range of options that weigh the speed of groundwater cleanup against potential environmental impacts. PG&E believes that the most beneficial alternative is either Alternative 4B or 4C-2, as both of those alternatives provide the best balance between clean-up speed and minimization of potential environmental impacts. In addition, those alternatives are consistent with PG&E's on-going efforts to actively and effectively remediate the hexavalent chromium groundwater plume utilizing proven technologies previously approved by the Water Board, namely the operation of agricultural units in the northern portion of the plume and in-situ treatment in the southern higher-concentration areas. 30-1

Over the past several years, under the regulatory oversight of the Water Board, PG&E has collected extensive data on the effectiveness of and potential impacts from the operation of agricultural treatment units and in-situ treatment. We have also collected data for constituents other than chromium as part of our voluntary Whole House Replacement Water program. While the EIR appropriately utilizes all of this existing data to determine the effectiveness and potential impacts of the remedial alternatives, we believe that the EIR and related permits should also acknowledge that the implementation of the remedy can be optimized during the operational period to reduce impacts. This can be done using such features as crop rotation and advanced irrigation strategies in the agricultural treatment units, to reduce the amount of by-products that are generated. The EIR and related permits should be flexible enough to allow for such future optimization efforts to reduce by-products and address potential impacts as they develop and are 30-2

observed. Absent such flexibility, the potential impacts may be overestimated in this EIR and in turn the mitigation measures will be unnecessarily over-reaching. 30-2 cont'd

With respect to the mitigation measures, PG&E believes that the environmental impacts of the mitigation measures should also be considered in the impacts analysis and should not be more disruptive and impactful that the original impact. In particular, the time frames proposed for the completion of the potential post chromium remediation mitigation measures are unrealistically short, technically impracticable and are not in proportion to the overall aquifer remediation program. For example, Total Dissolved Solids (TDS) mitigation could potentially require the construction and operation of a reverse osmosis treatment system to remove TDS from the aquifer. Impacts from such a system should be considered in the impacts analysis. 30-3

Further, we suggest that the EIR allow for consideration of natural restoration processes and/or basin-wide solutions that achieve the same basin-wide restoration goals with reduced environmental impacts; these options are discussed more thoroughly in Attachment 2. 30-4

PG&E is committed to continuing the substantial progress we've made in cleaning up the hexavalent chromium groundwater plume. Since beginning operations in 2004, the Desert View Dairy Land Treatment Unit has treated over one billion gallons of extracted groundwater. In 2010, PG&E began to expand agricultural operations, increasing extraction capacity from 168 million gallons per year in September 2009 to 546 million gallons per year in September 2012. In addition, in-situ remediation efforts have reduced hexavalent chromium concentrations across 54 acres of the plume core from over 1,000 ppb (parts per billion) to less than 3.1 ppb. Continuing to implement these proven technologies is in the best interest of all the stakeholders and is consistent with the historical agricultural presence in Hinkley. 30-5

Increased agricultural presence in the Hinkley Valley will support local dairies as well as local agriculture, dairy-related jobs and local economic activity. These alternatives also minimize the long-term negative effects, such as excessive aquifer drawdown, by-product generation, unsightly treatment plant construction and long-term truck traffic. 30-6

We look forward to continue to work together with the Water Board and the community of Hinkley, on selection of a final remedy that appropriately balances the speed of the cleanup with the least amount of environmental impacts. 30-7

PG&E appreciates this opportunity to comment on the EIR. If you have any questions, feel free to contact me at (925) 415-2615.

Sincerely,

Kevin M. Sullivan

Enclosures:
Attachment 1 – Main Comment Table
Attachment 2 - Discussion of Alternate Mitigation Options for Effects due to Agricultural Treatment

Attachment 1 –Main Comment Table
Hinkley Comprehensive Groundwater Cleanup Strategy
Draft Environmental Impact Report

Comments of Pacific Gas and Electric Company
November 5, 2012

Page	Lines	Comment	
CHAPTER 2 – PROJECT DESCRIPTION			
2.0-20 ES-9	25-27 6-7	The statement, "This expansion is proposed to achieve and maintain year-round extraction/hydraulic control of the plume movement to foster faster cleanup periods compared to Alternative 4B" is not accurate. Alternative 4B includes year-round extraction and achieves year-round hydraulic control, as indicated by the hydraulic analysis in Addendum 3 of the Feasibility Study (Figure 8). The difference between Alternative 4B and Alternative 4C-2 is the amount of winter pumping. The following revision is suggested to resolve this issue: "This expansion is proposed <u>to increase winter pumping rates and</u> to foster faster cleanup periods compared to Alternative 4B"	30-8
2.0-18	39	For Alternative 4B, there would still be pumping and treatment during winter months, although at a lower rate than the 4C series alternatives. The statement "land treatment will not occur during winter months," is inaccurate and should be deleted.	30-9
2.0-23	1-5	The size of the two aboveground treatment plants associated with Alternative 4C-3 would total approximately 81,060 square feet, which is approximately five times larger than the aboveground treatment plant at Topock. Given the comparison of the proposed plants with "similar operations that have been implemented by PG&E at its Topock site" in the preceding text, the following language should be included for context: There would be up to a total of two above-ground treatment facilities<u>, in structures of approximately 81,060 square feet (approximately five times the size of the existing above-ground treatment plant at Topock)</u>. One treatment facility would be located generally near the Compressor Station adjacent to the southern boundary of the Source Area IRZ in OU1, and one treatment facility would be located generally near the Desert View Dairy adjacent to the northwestern boundary of OU2.	30-10
2.0-33	6	The discussion in the section regarding the operating characteristics of wells applies to monitoring wells as well. Thus, revise "extraction and injection" to "extraction, injection, and monitoring"	30-11
2.0-33	32	The description of the well operation only refers to "freshwater supply wells." Add a description of well operation for monitoring wells by inserting the following new text: <u>Monitoring wells would also continue to be operated as under existing conditions. The wells will be used for groundwater samplings and water level readings, with samples being taken quarterly, semi-annually, annually or less frequently, depending on the well. PG&E may sometimes sample more frequently at a new well. Monitoring wells may be established throughout the project area. Access to the wells is</u>	30-12

		<u>generally from existing secondary roads or from public streets where feasible.</u>	30-12 cont'd
Various	Tables and Figures	Proposed changes and additions to Section 2 tables and figures are attached to this table.	30-13
CHAPTER 3 - EXISTING CONDITIONS			
Chapter 3.1 – Water Quality			
3.1-5 3.1-66	Table 3.1-2 Table ES-1 Table 3.1-11	The No Project cleanup timeframes in the EIR may be overestimated. Based on groundwater modeling, we recommend revising the estimated No Project timeframes as follows: • Total chromium MCL (50 µg/L): 6 years • 80% Chromium Mass Removal: 10 to 13 years • Maximum background (3.1 µg/L): 75 to 150 years • Average background (1.2 µg/L): 130 to 220 years	30-14
3.1-5	Table 3.1-2	It appears that the maximum drawdown at scaled flows was estimated overly conservatively, perhaps assuming a linear relationship between flowrate and maximum drawdown. As the project is scaled, pumping would occur in areas outside of the FS pumping center, for example in areas to the north, and, as such, maximum drawdown at the FS pumping center is not expected to increase linearly with the scaling. It should be noted that the scaled maximum drawdown estimates are likely conservative. For additional comments on this issue refer to the comment on Table 3.1-8 (page 3.1-55). The number of potentially affected wells listed on Table 3.1-2 does not match with the quantities shown on Table 3.1-8. Please revise Table 3.1-2 to make the numbers match those listed in Table 3.1-8.	30-15 30-16
3.1-6	Table 3.1-2	The analysis indicates that the amount of plume bulging increases with increased in situ flow rates for Alternatives 4C-2, 4C-3, and 4C-5 over existing conditions, without considering the additional extraction for agricultural treatment in OU-1 in those alternatives. The additional extraction in those alternatives should decrease the potential for bulging in those alternatives in comparison with existing conditions. Accordingly, the text in the third row of the table under the columns corresponding to Alternatives 4C-2 and 4C-3 should be revised as shown: Injection for in-situ remediation, higher pumping rate (431 gpm) increases potential for plume "bulging," <u>but the addition of the three AUs in OU1 reduces the potential for plume bulging in comparison with Alternative 4B and the No Project Alternative.</u> The text in the third row of the table under the column corresponding to Alternatives 4C-5 should be revised as shown: Injection for in-situ remediation, higher pumping (244 gpm) than existing increases potential for plume "bulging," but ~~lower than other alternatives~~ <u>the addition of the three AUs in OU1 reduces the potential for plume bulging in comparison with Alternative 4B and the No Project Alternative.</u>	30-17
3.1-9	11-15	The EIR should clarify that the MCL for total chromium regulates Cr[VI]. In fact Cr[VI] represents that vast majority of health risk that drives the MCL for	30-18

		total chromium. (For further discussion, see our comment to page 1-9 of the EIR on this same topic). Accordingly, revise the text as follows: Maximum Contaminant Levels are federal enforceable limits for contaminants in drinking water. The federal rules for chromium include a Maximum Contaminant Level of 100 parts per billion (ppb) for total chromium. <u>There are two forms of chromium, Cr[VI] and Cr[III], that may be significant as drinking water contaminants. Chromium III has not been shown to be carcinogenic to animals or humans by the oral route. Thus the MCL for total chromium protects against the health risks associated with Cr[VI].</u> There is no established federal Maximum Contaminant Level for Cr[VI]. Federal Maximum Contaminant Levels are presented below in Table 3.1-3.	30-18 cont'd
3.1-13	27	Change "pm" to "ppm."	30-19
After 3.1-22	Figure 3.1-2	The Harper Lake label is in the incorrect location on this figure. Please move the label to the correct location.	30-20
3.1-23	21	The settlement agreement should be referenced in the EIR in the same way that it is referenced in the Board's February 1, 2012 announcement of the agreement, and consistent with the terms of the Agreement itself, which notes in the recitals that the question of violations is disputed. Therefore, prior to the word "violations" in line 21, the word "alleged" should be inserted. This is the same terminology as used in the Water Board's announcement of the proposed settlement.	30-21
3.1-24	38-40	The delineation of the northern boundary of the plume has been a key concern from the public in the public meetings on the EIR. Therefore, to provide more information about what is being done to delineate the boundary, revise the text as follows: At present, the plume is thought to be at least 5.5 miles north of the Compressor Station, but the northern boundary is not fully delineated ~~yet~~ <u>; ongoing assessment is being conducted and a revised background study has been proposed and is currently under review by the Water Board</u>. The plume length, however, was greatly influenced by pumping and movement by others instead of under natural conditions.	30-22
3.1-29	19-23	The TDS concentrations near the Hinkley Compressor station are subject to many mechanisms that impact concentration and movement, including nearby farming/dairy activities, fluctuating groundwater levels, and natural groundwater movement. PG&E is not aware of any studies that concluded that the pumping of PG&E's station water supply wells pulled TDS south to the station property. A review of gradient data obtained since the mid-1990s (while the station supply wells were in operation) does not show evidence of any significant southward gradients. Given the farming and dairy activities adjacent to PG&E's Hinkley station, it would require significant study to sort out whether TDS present in groundwater near PG&E's Hinkley station came from farming and dairy activities south, east, west, or north of the station. A similar point can be made about chromium levels near the Hinkley station supply wells. It would require additional study in order to conclude that any chromium in a certain area of the Hinkley station was pulled to that location by Hinkley station supply well pumping as opposed to a number of additional mechanisms, including naturally occurring chromium levels in the groundwater and natural groundwater	30-23

		movement. Since this text is speculative and not critical to the EIR, it should be deleted.	30-23 cont'd
3.1-31	1-2	The EIR states that half of the lysimeters are currently yielding nitrate concentrations of more than 10 ppm [as nitrogen]. However, only 3 of 14 wet lysimeters (approximately 20 percent) yielded concentrations of nitrate above 10 mg/L N in the fourth quarter 2011. Therefore revise the text as follows: Current data from the agricultural treatment unit reveals that 3 ~~about half~~ of the 14 ~~samples from~~ lysimeters in the alfalfa fields have yielded samples with nitrate concentrations ~~of less than 1 ppm, and half of the samples have nitrate concentrations~~ of more than 10 ppm. About half of the lysimeters have yielded samples with nitrate concentrations of less than 1 ppm.	30-24
3.1-39	21	Revise the text to reflect the fact that the revised manganese mitigation plan was submitted in May 2012, rather than March 2012.	30-25
3.1-40	23-26	The EIR's reference to occupational studies of Cr[VI] exposure should be clarified by noting that the occupational studies were based on exposure in industrial settings, so that the reader understands that these results are limited to such settings and not based on domestic or household exposures. We recommend the following changes: While Cr[VI] has long been recognized as a cancer-causing substance (also referred to as a "carcinogen") via inhalation in occupational and industrial settings, there is sufficient evidence that Cr[VI] is also carcinogenic by the oral route of exposure (meaning drinking or consuming) at high concentrations, based on studies in rats and mice conducted by the National Toxicology Program (OEHHA 2010).	30-26
3.1-40	36-41	The EIR's reference to occupational studies of Cr[VI] exposure should be clarified by noting that the occupational studies were based on exposure in industrial settings, so that the reader understands that these results are limited to such settings and not based on domestic or household exposures. We recommend the following addition: Mice that ingested drinking water containing high doses (14,000 ppb or greater) of Cr[VI] had statistically significant increases in stomach, oral cavity, and intestine tumors compared to control subjects (OEHHA 2010). Review of occupational studies in which humans were exposed to Cr[VI] in industrial settings primarily by the inhalation route identified reports of significantly increased risk of lung cancer. It is estimated that exposure to airborne Cr[VI] is 1000 times more potent than exposure from drinking water (OEHHA 2009).	
3.1-42	4	Revise the text to reflect that the formula for sodium chloride is "NaCl", rather than "$NACl_2$".	30-27

3.1-46	16-24	The EIR states that there is no current MCL for Cr[VI]. Although that is true, the EIR should clarify that the MCL for total chromium governs the standard for Cr[VI] until the Department of Public Health sets an MCL for Cr[VI]. The MCL for total chromium is largely based on health risks associated with Cr[VI]. In addition, the EIR should state that if the Department of Public Health sets an MCL for Cr[VI], that MCL would constitute the applicable threshold of significance.	30-28
3.1-46 3.1-47	25-36 1-8	A significance criteria was added for any wells that have detectable Cr[VI] concentrations below maximum background levels within one mile of the plume, but whose Cr[VI] increases. This significance criteria is not appropriate, because concentrations of Cr(VI) may increase below the maximum background concentration and be unrelated to remedial actions. Accordingly, the Water Supply Well Impacts (Hexavalent Chromium) significance criteria should be revised as follows: • Impacts to water supply wells are considered significant when remedial actions cause concentrations of hexavalent chromium in a water supply well that was previously below background levels to exceed background levels. • If water supply wells already contain hexavalent chromium that exceed background levels, and remedial actions cause an increase in concentration by 10% or more <u>and is statistically significant</u>, this is also considered significant. • If and when California adopts a MCL for hexavalent chromium, if the MCL exceeds the Hinkley Valley background level, then the <u>MCL would constitute the applicable threshold of significance</u> ~~the background level shall continue to be used as the significance criteria due to the evidence of potential health effects from concentrations above the PHG.~~ If the MCL is less than the Hinkley Valley background level, then the background level shall also continue to be used as the significance criteria because PG&E is only responsible for levels that exceed background levels. • ~~Because the plume is defined by the maximum background hexavalent chromium level, it is possible that wells may be affected by hexavalent chromium contamination due to remedial action at detectable levels below the maximum background level. Thus, impacts are also considered significant when remedial actions cause an increase in concentrations of hexavalent chromium within a water supply well within 1 mile of the defined chromium plume. This criterion is also designed to address the potential for wells to become affected in a short period of time after detection of increased hexavalent chromium levels in groundwater nearby due to remedial actions.~~	30-29

3.1-47	9-26	The EIR states that the MCL for total chromium is "outdated" because it does not consider the health threat from Cr[VI]. The MCL for total chromium is largely based on health risks associated with Cr[VI] and is not outdated for this reason. In addition, the EIR should state that if the Department of Public Health sets an MCL for Cr[VI], that MCL would constitute the applicable threshold of significance. Accordingly, the EIR should be revised as follows: The existing California MCL for total chromium of 50 ppb is not used as a significance criterion for this EIR ~~because (1) the ratio of hexavalent to total chromium in the Hinkley Valley is high (PG&E's groundwater monitoring report data show that 85 to 100% of the chromium detected in monitoring wells is in the hexavalent form) and (2) the MCL is outdated as it does not consider the more recent health data and information for hexavalent chromium; therefore, the MCL for total chromium is not adequately sensitive to determine significant impacts.~~ Instead, the maximum background level for total chromium (currently 3.2 ppb Cr[T]) will be used as a significance criterion. <u>If the Department of Public Health sets an MCL for Cr[VI], that MCL would constitute the applicable threshold of significance.</u> • Impacts to water supply wells are considered significant when remedial actions cause concentrations of total chromium in a water supply well that was previously below background levels to exceed background levels. • ~~Because the plume is defined by the maximum background total chromium level, it is possible that wells may be affected by chromium contamination due to remedial action at detectable levels below the maximum background level. Thus, impacts are also considered significant when remedial actions cause an increase in concentrations of total chromium within a water supply well within 1 mile of the defined chromium plume.~~	30-30
3.1-47 3.1-48	27-44 1-7	A 10 percent threshold for wells that start out above an MCL may not be significant. For instance, if an initial concentration of arsenic is 10 ppb, a change of 10 percent to 11 ppb may be natural variation and not significant. To address this issue, it is recommended to include statistical significance in the evaluation. In addition, the analysis of whether remediation byproducts would violate water quality standards or Waste Discharge Requirements or otherwise substantially degrade water quality, the EIR should clarify that the project must cause the increase in concentrations of remediation byproducts before mitigation will be imposed. The EIR should use the phrase "due to remedial actions" as stated in MM-2a. Accordingly, please rewrite the text starting on line 33 as follows: • If a water supply well has concentrations of these remediation byproducts that currently exceed a California primary Maximum Contaminant Level (see Table 3.1-3), then a 10% increase above	30-31

		current levels in a water supply well due to remedial actions, which is also statistically significant, is considered significant ~~(unless it can be demonstrated that an increase is statistically significant at a different level). This criterion is set to address the significance threshold of substantial degradation to water quality, and the 10% increase level is set conservatively to recognize the known and recognized health risks associated with these constituents in drinking water.~~ • If a water supply well has concentrations of these remediation byproducts that currently exceed a California primary Maximum Contaminant Level (see Table 3.1-3), then a 10% increase above current levels in a water supply well due to remedial actions, which is also statistically significant, is considered significant ~~(unless it can be demonstrated that an increase is statistically significant at a different level). This criterion is set to address the significance threshold of substantial degradation to water quality, and the 10% increase level is set conservatively to recognize the known and recognized health risks associated with these constituents in drinking water.~~ • ~~If a water supply well has concentrations of these remediation byproducts that are currently less than a California primary Maximum Contaminant Level (see Table 3.1-3) then a 20% increase above current contaminant levels in a water supply well is considered significant (unless it can be demonstrated that an increase is statistically significant at a different level). This criterion is set to address the significance threshold of substantial degradation to water quality, and the 20% increase level is set to comply with the State Board Resolution 68-16 and the Nondegradation Objective (Lahontan Basin Plan at p. 3-14). The Nondegradation Objective is an integral part of the water quality objectives contained in the Lahontan Basin Plan, and provides that where the existing quality of water is better than that needed to protect all beneficial uses, that existing high quality is an appropriate goal to be maintained.~~	30-31 cont'd
3.1-48	21-41	Similarly to the comment above, we suggest to rewrite text on page 3.1-48, lines 21-41 as follows: • If remediation byproduct levels in a water supply currently exceed a Federal or California secondary Maximum Contaminant Level (see Table 3.1-3) or water quality objective (see Table 3.1-4), then a 20% increase above current levels in a water supply well due to remedial actions, which increase is also statistically significant is considered significant ~~(unless it can be demonstrated that an increase is statistically significant at a different level). This criterion is set to address the significance threshold of substantial degradation to water quality. The criterion is set at 20% increase because there are no primary MCLs for these contaminants, only Secondary MCLs. Secondary MCLs are based on taste, odor, and visual thresholds rather than on adverse health effects, and so a higher significance threshold is appropriate.~~	

		• ~~If remediation byproduct levels are currently less than a Federal or California secondary Maximum Contaminant Level (see Table 3.1-3) or water quality objective (see Table 3.1-4), then a 20% increase above current levels in a water supply well is considered significant (unless it can be demonstrated that an increase is statistically significant at a different level). This criterion is set to address the significance threshold of substantial degradation to water quality, and the 20% increase level is set to comply with the State Board Resolution 68-16 and the Nondegradation Objective (Lahontan Basin Plat at p. 3-14).~~	30-31 cont'd
3.1-55	Table 3.1-8	It appears that the maximum drawdown at scaled flows was estimated overly conservatively, perhaps assuming a linear relationship between flow rate and maximum drawdown. As the project is scaled, pumping would occur in areas outside of the FS pumping center, for example in areas to the north and as such maximum drawdown at the FS pumping center is not expected to increase linearly with the scaling. As such, it should be noted that the scaled maximum drawdown estimates are likely conservative. Comment b should be extended to all alternatives for the Maximum Drawdown at Scaled Flows column. As described in the text on page 3.1-55 lines 5-17, drawdown greater than 30 to 40 feet is not anticipated to be sustainable and pumping would have to be reduced as these levels are approached. This would be particularly the case for the FS extraction rates for Alternatives 4C-3 and 4C-4. For the scaled flows, this would be the case for Alternatives 4B, 4C-2, and 4C-5 as well where the predicted drawdown is listed as greater than 50 feet.	30-32
		Note "b" should reference Table 3.1-7 not 3.1-6. Please revise.	30-33
3.1-56	Table 3.1-9	To ensure that the level of certainty of the information is properly disclosed, add a footnote that states “Groundwater elevations in private wells were estimated based on available data from monitoring wells. The actual number of partially or fully affected private wells may differ.”	30-34
3.1-56	24	Based on the sum of the number of wells listed in Table 3.1-9, change “133 wells” to “147 wells.”	30-35
3.1-62	Table 3.1-10	For comments on this issue refer to the comment on Table 3.1-8 (page 3.1-55).	30-36
3.1-68	21	The EIR indicates that freshwater injection wells have the potential to cause plume spreading. The freshwater injections are designed to be placed sufficiently outside the Cr[VI] plume and would cause a decrease in plume area, rather than an increase. Accordingly, revise the text to explain that the freshwater injection wells are designed to decrease the plume area.	30-37
3.1-68	25-28	A 10 % increase may not be significant, therefore, we suggest revising the text as follows: This impact is considered significant if: • remedial actions cause concentrations of hexavalent or total chromium in a water supply well to increase from below background levels to above background levels or increase by 10% or more <u>and the increase is statistically significant</u> if current levels are exceed the background level; or	30-38

3.1-68	29-30	It appears that lines 29-30 are redundant to the information provided in lines 26-28. Therefore, we suggest deleting lines 29-30.	30-39
3.1-70	14-15	The analysis indicates that the amount of plume bulging increases with increased in situ flow rates for Alternatives 4C-2 over existing conditions, without considering the additional extraction for agricultural treatment in OU-1 in that alternative. The additional extraction should decrease the potential for bulging in those alternatives in comparison with existing conditions. Accordingly, the text should be revised as shown: ~~Thus, w~~ With increased injection and irrigation, there ~~is~~ could be a greater potential for localized plume bulging to occur during implementation, but the addition of the three AUs in OU1 results in net extraction in this area and reduces the potential for plume bulging as compared to Alternative 4B and the No Project Alternative.	30-40
3.1-70	29-30	The analysis indicates that the amount of plume bulging increases with increased in situ flow rates for Alternatives 4C-3 over existing conditions, without considering the additional extraction for agricultural treatment in OU-1 in that alternative. The additional extraction should decrease the potential for bulging in those alternatives in comparison with existing conditions. Accordingly, the text should be revised as shown: ~~Thus, w~~ With increased injection and irrigation, there ~~is~~ could be a greater potential for localized plume bulging to occur during implementation, but the addition of the three AUs in OU1 results in net extraction in this area and reduces the potential for plume bulging as compared to Alternative 4B and the No Project Alternative.	
3.1-70	7, 22, 37	The EIR states, "Freshwater injection for plume control would similar to increased conditions." This sentence appears to be missing a word. Suggest revising the sentence to state "Freshwater injection for plume control would be similar to existing conditions."	30-41
3.1-70 3.1-71	7-40 1-7	Alternatives 4C-2, 4C-3, and 4C-4 include increased extraction in OU1 for additional southern agricultural units. The increased extraction would decrease the potential for spreading of the plume for these alternatives in comparison to Alternative 4B. The influence of southern extraction in these alternatives on the potential for plume spreading should be discussed in this section.	30-42
3.1-71	7, 25	The EIR states, "Freshwater injection for plume control would similar to increased conditions." This sentence appears to be missing a word. Suggest revising the sentence to state "Freshwater injection for plume control would be similar to existing conditions."	30-43
3.1-71 3.1-72	38-41 1-6	A 10 or 20% increase may not be significant, therefore, we suggest revising the text as follows: "Where existing levels of TDS in groundwater in the study area already exceed the secondary Maximum Contaminant Levels (both federal and state), an increase of more than 20% above existing levels and statistically significant is considered significant. Where existing levels of uranium and gross alpha already exceed the primary Maximum Contaminant Level (presently known to occur in wells near the Gorman agricultural treatment unit) a 10% increase in uranium and gross alpha concentrations above current levels and statistically significant is considered significant. In areas where TDS, uranium or other radionuclide levels do not exceed the Maximum Contaminant Levels, this impact is considered	30-44

		significant if levels increase by 20% and statistically significant.	30-44 cont'd
3.1-72 3.1-73	12-43 1-32	The EIR acknowledges on page 3.1-72 that "mitigation of increased TDS concentrations in the aquifer as a whole is generally feasible but challenging. TDS can be removed from water by reverse osmosis or boiling but is expensive and energy-intensive." In addition, moving agricultural units to areas with relatively low TDS is found to be infeasible because it would reduce remedial options available to clean up the chromium plume. However, the EIR does not acknowledge the duration of addressing TDS using reverse osmosis (RO), which could take just as long as remediating the chromium in groundwater and would likely have additional impacts to the environment, such as biological and cultural impacts resulting from the construction and operation of an RO system and impacts from the off-site transportation and disposal of brine. To potentially meet this requirement, the reverse osmosis plant would have to be large (up to 25,000 square feet) and would require excessive energy use (approximately 5,260,000 kwh). This option also would also generate excessive greenhouse gasses and would be very unsustainable. These significant additional impacts and resulting mitigation measures that would likely have to be evaluated and are not considered in this EIR.	30-45
3.1-73	37-38	Change the reduced form of uranium to U[IV], rather than U[III].	30-46
3.1-74	2	Change the reduced form of uranium to U[IV], rather than U[III].	
3.1-75 3.1-76	13, 35 18, 43	The area shown in figures 3.1-19 to 3.1-22 depict the area of “potential” impacts, rather than the area of “likely” impacts. The hashed areas include downgradient and cross-gradient buffer zones beyond areas that are anticipated to be impacted to be protective and conservative. The areas within these buffers should not be considered to be “likely” impacted because they are included as protective buffers. Therefore, change “likely” to “potential” in the text.	
After 3.1-76	Figures 3.1-19 to 3.1-22	The area shown in figures 3.1-19 to 3.1-22 depict the area of “potential” impacts, rather than the area of “likely” impacts. The hashed areas include downgradient and cross-gradient buffer zones beyond areas that are anticipated to be impacted to be protective and conservative. The areas within these buffers should not be considered to be “likely” impacted because they are included as protective buffers. Therefore, change “likely” to “potential” in the figure titles.	30-47
3.1-77 3.1-84 3.1-85	25 16, 29 1, 14, 29	The area shown in figures 3.1-19 to 3.1-22 depict the area of “potential” impacts, rather than the area of “likely” impacts. The hashed areas include downgradient and cross-gradient buffer zones beyond areas that are anticipated to be impacted to be protective and conservative. The areas within these buffers should not be considered to be “likely” impacted because they are included as protective buffers. Therefore, change “likely” to “potential” in the text.	
3.1-78	14-18	A 10 or 20% increase may not be significant, therefore, we suggest revising the text as follows: “This impact is considered significant if remedial activities would increase nitrate concentrations in groundwater or water supply wells to levels above Maximum Contaminant Levels (if current concentrations are less than the standard) or would increase nitrate concentration by more than 10% and is statistically significant (if current concentrations exceed the standard) or would increase nitrate concentration by more than 20% and is statistically significant (if current concentrations do not exceed the standard).”	30-48

3.1-82	1-6	A 10 or 20% increase may not be significant, therefore, we suggest revising the text as follows: This impact is considered significant if in-situ remediation results in an increase of concentrations above primary or secondary Maximum Contaminant Levels, an increase of 10% or more of arsenic and is statistically significant if current levels are more than the primary Maximum Contaminant levels, an increase of 20% of more of iron or manganese and is statistically significant if current levels are more than secondary Maximum Contaminant Level, or an increase of 20% or more and is statistically significant if current levels are less than the primary or secondary Maximum Contaminant Levels.	30-48 cont'd
3.1-90	5-7	The EIR currently requires that, if PG&E fails to acquire adequate water rights, PG&E must implement above-ground treatment. In the unlikely event that PG&E is not able to obtain sufficient water rights, PG&E may be able to modify the remedy in a manner that is sufficient to compensate for any loss in in planned agricultural treatment. Suggest revising the final bullet point as follows: If PG&E fails to acquire adequate water rights and FPA to support agricultural treatment, PG&E will be required to modify the operation of the remedy in a manner sufficient to compensate for any loss in planned agricultural treatment, or implement above-ground treatment adequate to compensate for any loss in planned agricultural treatment.	30-49
3.1-92	33-34	Similar to the comment provided in the significance criteria for remedial by-products, the definition of actually affected wells in WTR-MM-2a should be revised to include a statistical basis, rather than a straight percentage that may not have statistical significance. Accordingly, rewrite the text on page 3.1-92, lines 33-34 as follows: • "Concentrations increase by 10% or more and is statistically significant (if the well previously had concentrations that exceed background levels)."	30-50
3.1-93	21-35	Similar to the comment provided in the significance criteria for remedial by-products, the definition of actually affected wells in WTR-MM-2b should be revised to include a statistical basis, rather than a straight percentage that may not have statistical significance. Accordingly, rewrite the text on page 3.1-93, lines 21-35 as follows: "Actually affected domestic wells" will be defined as any domestic water supply well with remediation byproduct concentrations that exceed any of the following criteria due to remedial actions: • concentrations above a California primary or secondary Maximum Contaminant Levels if the well currently contains concentrations that are less than California primary or secondary Maximum Contaminant Level or water quality objective; or • a 10% and statistically significant increase above current levels if the well has concentrations that currently exceed a California primary Maximum Contaminant Level ~~(unless it can be demonstrated that an increase is statistically significant at a different level);~~ or	30-51

		• a 20% and statistically significant increase above current levels if the well has concentrations that currently exceed a California secondary Maximum Contaminant Level or water quality objective (~~unless it can be demonstrated that an increase is statistically significant at a different level); or~~ • ~~a 20% increase above current levels if the well has concentrations that currently are less a California primary or secondary Maximum Contaminant Level or water quality objective (unless it can be demonstrated that an increase is statistically significant at a different level).~~	30-51 cont'd
3.1-94	1-3	The EIR currently states, "All wells located within one-half mile downgradient or one-quarter mile cross gradient of an "actually affected domestic well" or an affected monitoring well (when no domestic well exists within these intervals)." The text does not state what the definition of an affected monitoring well is. Additional text should be added to define an affected monitoring well similarly to the requirements of the current WDRs and Notice of Applicability of the IRZs: **Defining Actually Affected Monitoring Wells** "Actually affected monitoring wells" will be defined as any monitoring well within the remedial action monitoring program which, due to remedial actions, contains remediation byproduct concentrations that increase more than 25 percent above the maximum baseline monitoring well concentration and which are statistically significant.	30-52
3.1-94	6	The phrase "water quality modeling" is unclear. Suggest changing to 'groundwater flow and transport modeling'	30-53
3.1-94	40	The text should be revised to describe a Water Board approval of PG&E-provided alternate water supply. Suggest revising text as follows: "If any domestic or agricultural wells are found to be impacted by remedial byproducts (as described below), PG&E will increase monitoring of the impacted well to once-a-month until alternate water supply is provided to the satisfaction of the Water Board ~~well owner~~, after which monitoring can be reduced to twice-yearly (semi-annual) basis."	30-54
3.1-95	10-15	Mitigation measure WTR-MM-2b, *Water-Supply Program for Water Supply Wells Affected by Remedial Activity Byproducts*, is overly broad and should not include the requirement to monitor any chemicals applied to fields as fertilizers, pesticides, etc., in the byproducts of agricultural treatment units. The farming community is not currently required to monitor groundwater for applied herbicides, fertilizers, and pesticides. The use of pesticides and fertilizers in accordance with those product's labels and other applicable local, state, and federal environmental laws adequately protects the health of workers, nearby residents, and the environment. For example, pesticide and fertilizer use is regulated by the California Department of Pesticide Regulation and PG&E must follow that department's regulations, as well as the applicable rules in the California Pesticide Contamination Prevention Act. Pesticide sale and use also is regulated by the United States EPA under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). Such state and federal regulations make additional monitoring unnecessary, especially because it exceeds the requirements placed on similarly situated agricultural operators.	30-55

		Rewrite the following paragraph of mitigation measure WTR-MM-2b as follows: Agricultural treatment unit byproduct monitoring will consist of TDS~~,~~ and nitrate~~, and any chemicals applied to fields as fertilizers, pesticides, etc~~. If the investigation required by Mitigation Measure WTR-MM-5 identifies that agricultural treatment would significantly affect uranium or gross-alpha levels in groundwater, then agricultural treatment unit byproduct monitoring will also include uranium, gross-alpha, and any other applicable radionuclide, such as radium.	30-55 cont'd
3.1-95	38-40	Similar to the comment provided in the significance criteria, the definition of actually affected wells in WTR-MM-2c should be revised to include a statistical basis, rather than a straight percentage that may not have statistical significance. Accordingly, please rewrite the text on page 3.1-95, lines 38-40 as follows: • All wells where groundwater drawdown of at least 10 feet occurs and water quality sampling shows at least a 10% increase over baseline conditions and is statistically significant of arsenic, uranium, or gross alpha.	30-56
3.1-97	5-27	As written, mitigation measure WTR-MM-3 contains very detailed specifications for requirements that will be included in the new CAO and associated WDRs for site-wide remediation. The provision of such detailed requirements in the EIR may limit the flexibility for drafting and amending the CAO and WDRs as conditions evolve over time. For instance, the current capture metric specified in R6V-2008-0002A3 may be initially expanded, making some of the current metric components irrelevant, and then be retracted over time as the plume is remediated and shrinks. A provision for a flexible metric that can evolve overtime with the plume would avoid conflicts between the EIR requirements and future changes to the capture metric and boundary monitoring program is suggested, as follows: **Mitigation Measure WTR-MM-3: Boundary ~~Control~~ Monitoring, Enhancement and Maintenance of Hydraulic Control and Plume Water Balance to Prevent or Reduce Potential Temporary Localized Chromium Plume Bulging** The Water Board will include requirements in the new CAO and associated WDRs issued for the remediation for boundary monitoring and requirements for plume containment to be evaluated through establishment of a hydraulic capture metric. The monitoring plan and hydraulic capture metric will be flexible to allow for expansion and contraction of the plume overtime as the entirety of the plume is addressed and remediated. The monitoring plan and hydraulic capture measure is expected to contain the following options~~ as follows~~: • ~~PG&E will develop a Boundary Monitoring Plan to identify the entirety of the chromium plume over time.~~	30-57

		• During remedial pumping and injection activities, PG&E ~~will~~ can limit plume bulges by maintaining hydraulic control with adjustments to pumping rates where necessary, and inward gradients will be maintained as long as necessary to prevent Cr[VI] migration. Hydraulic control can be obtained by capturing the plume at extraction wells. Although the plume can be allowed to move toward these extraction wells, the extraction wells will be designed to stop the spread of the plume beyond the wells. PG&E also may limit plume bulges by adding or modifying the operational design of injection wells. • ~~PG&E will operate and maintain the existing groundwater extraction system to achieve and maintain hydraulic capture within targeted areas on a year-round basis consistent with CAO R6V-2008-0002A3, (Lahontan Regional Water Quality Control Board 2012). PG&E will expand plume containment and monitoring to include the entirety of the chromium plume over time and develop a contingency plan in case containment is not met.~~ • Agricultural treatment units and/or above-ground treatment can be used for water treatment as appropriate to assist with inward hydraulic gradients, plume water balance, and water quality restoration of the aquifer. • PG&E will implement the Contingency Plan for AU Operations as described in the Feasibility Study Addendum No. 3 (Pacific Gas and Electric Company 2011c).	30-57 cont'd
3.1-97 3.1-98	28-40 1-11	WTR-MM-4: PG&E suggests that Water Quality Mitigation Measure 4 be restructured to allow for larger-scale, more effective aquifer management strategies that would achieve the goal of aquifer protection and restoration while maintaining or even improving the productive use of the resource. The logic behind this restructuring is in Attachment 2.	30-58
3.1-97	35-37	Any new impacts that are found to exist in excess of the assimilative capacity of the aquifer due to remedial activities, but not exceeding a water quality objective, will be assessed for their ability to be naturally attenuated. We suggest edits to lines 35-37 as follows: "If the assessment finds that the aquifer contains constituents, exceeding drinking water standards or water quality objectives and are in excess <u>of</u> baseline conditions and <u>of the assimilative capacity of the aquifer</u>, and that these constituents are likely to be present upon the conclusion of remedial actions, PG&E will"…	30-59
3.1-97 3.1-98	28-40 1-11	The comments below are offered for Water Board consideration on WTR-MM-4 as written. PG&E suggests a more substantial revision to this which is discussed in Attachment 2 (described two rows above). The comments below are also included in the proposed new text in Attachment 2. First, the measure should recognize that PG&E may be able to operate the	30-60

remedy in a manner that avoids changes in the aquifer baseline conditions.

Second, the requirement to return the aquifer to baseline is overbroad – the aquifer is not static, and there are other farming operations in the Hinkley Valley, as there historically have been for some time. The mitigation measure should be limited to adverse changes that are attributable to the remedy. This is stated to some extent in the measure as currently worded, but needs to be made explicit.

Third, the ten-year time frame for restoration of the aquifer to baseline conditions may be unrealistic. Since there are increases in TDS in groundwater due to agricultural operations at the site and in the Hinkley Valley, we believe that restoring the TDS in the aquifer to background as described in water quality mitigation measure WTR-MM-4 may not be practicable or feasible in the 10 year timeframe indicated in the EIR. As currently drafted, the measure imposes an arbitrary timeline that does not appear to account for its practicability or for the potential secondary impacts of such an aggressive schedule, and the time required for the restoration work should be determined at the time that the comparison to baseline is assessed. Mitigation Measure WTR-MM-4 should accordingly be revised to read as follows:

> **Mitigation Measure WTR-MM-4: Mitigation Program for Restoring the Hinkley Aquifer Affected by Remedial Activities for Beneficial Uses**
>
> This requirement holds PG&E responsible for restoring the Hinkley aquifer back to baseline conditions to the extent changes from baseline conditions are attributable to the implementation of the remedy. PG&E may operate the remedy in a manner that avoids changes to baseline conditions, or PG&E will comply with the following procedures to determine and implement the necessary level of restoration activity.
>
> No later than 5 years prior to the conclusion of the proposed project, PG&E will conduct an assessment to evaluate adverse impacts or potential adverse impacts to the Hinkley aquifer attributable to its remedial actions.
>
> - If the assessment finds (a) that the aquifer contains constituents, exceeding drinking water standards or water quality objectives and are in excess baseline conditions, (b) that these constituents are likely to be present upon the conclusion of remedial actions. and (c) that these changes from baseline conditions are attributable to the implementation of the remedy, PG&E will propose cleanup actions to restore the aquifer for beneficial uses as soon as possible, as approved by the Water Board. The assessment shall specify the time required for restoration activities, and a~~A~~quifer water quality restoration to baseline conditions will occur within that time frame, subject to adjustment as needed, with approval of the Water Board, based on the implementation of the restoration activities~~ no longer than 10 years after completion of chromium remediation~~.

30-60 cont'd

		• If the assessment finds that the aquifer includes groundwater drawdown such that domestic or agricultural wells were still experiencing water supply shortages and require alternative water supplies, and these excess levels are likely to exist upon the conclusion of remedial actions, and these changes are attributable to the implementation of the remedy, PG&E will propose actions to restore the aquifer for beneficial uses as soon as possible, as approved by the Water Board or Mojave Water Agency. The assessment shall specify the time required for restoration activities, and g~~G~~roundwater levels will be restored to baseline conditions within that time frame, subject to adjustment as needed, with approval of the Water Board or the Mojave Water Agency, based on the implementation of the restoration activities ~~no longer than 20 years after the completion of chromium remediation~~. • Every year ~~afterwards~~ following preparation of the assessment, PG&E must submit a status report of actions to restore the aquifer for beneficial uses. The status report will describe all actions taken over the course of the year and list proposed actions for implementation during the following year. An updated schedule will be provided predicting fulfillment of aquifer restoration.	30-60 cont'd
3.1-98	26-35	Mitigation measure WTR-MM-5 is overly broad. The EIR should clarify that the mitigation measure will be imposed if the impacts it mitigates are "due to remedial actions." The mitigation measure should be revised as follows: The Water Board will include requirements in the new CAO and/or associated WDRs issued for the remediation as follows: . . . • If TDS, uranium, and other radionuclides levels are determined to increase measurably by a statistically significant amount due to agricultural treatment associated with remedial actions, then PG&E will monitor these levels in and adjacent to all agricultural treatment units for the duration of operation and propose remedial methods to restore the aquifer to baseline conditions. • If the study of agricultural units indicates that TDS, uranium, and other radionuclide concentrations increase due to ~~in association with~~ agricultural operations associated with remedial actions and boundary monitoring confirms an increase in these levels, then corrective actions and or alternative water supplies will be provided per **Mitigation Measure WTR-MM-2** and **Mitigation Measure WTR-MM-4** will be implemented toward the end of chromium plume remediation to restore aquifer beneficial uses.	30-61
3.1-99	3-13	Similar to the comment provided in the significance criteria, the definition of	30-62

		actually affected wells in WTR-MM-6 should be revised to include a statistical basis, rather than a straight percentage that may not have statistical significance. Accordingly, please rewrite the text on page 3.1-99, lines 3-13 as follows: • Given that prior agricultural treatment at the Desert View Dairy has been shown to reduce nitrate levels substantially, it is possible that use of irrigation water with higher nitrate levels may not result in increased nitrate levels in groundwater beneath new agricultural treatment locations. In order to confirm if this is occurring, PG&E will monitor nitrate levels for one year before creating new agricultural treatment units (as feasible without delaying remediation), monitor at the start of new agricultural treatment, and continue monitoring nitrate levels during implementation of all new agricultural treatment units. If nitrate levels do not increase above 10 ppm (as N) or by more than 10% <u>and is statistically significant</u> compared to existing levels (if current levels are already above 10 ppm as N), or by more than 20% <u>and is statistically significant</u> compared to existing levels (if current levels are less than 10 ppm as N) then no further action, other than monitoring, will be required.	30-62 cont'd
3.1-99	25-34	WTR-MM-6: Similar to mitigation measure WTR-MM-4, PG&E requests that nitrate levels in the aquifer also be treated on a basin-wide approach. As noted above on page 3.1-99, line 3 of the EIR, prior agricultural treatment associated with the remedy has substantially reduced nitrates, and any increases associated with the remedy should be netted out or balanced against reductions in nitrates associated with the remedy. Suggest revising lines 33-34 as follows: • "PG&E will be held accountable for implementing remedial methods to restore the aquifer to baseline conditions <u>such that, determined over the basin as a whole, and taking into account any reductions in nitrates associated with the remedy, there is overall no net increase in nitrates associated with the remedy</u>." We believe that well planned agricultural management in the Hinkley Valley could result in more predictable plume hydraulic control, overall lower TDS levels, lower nitrate levels, and greater forage crop production per gallon of water used.	30-63
3.1-99	37	In the text of mitigation measure WTR-MM-6, it appears that the EIR is mixing the use of or interchanging the terms "background" and "baseline" concentrations. These phrases are not interchangeable and the EIR should be revised so that the terms are used consistently throughout the document. For example, the text on line 37 should be revised to use the word "baseline": PG&E will estimate the duration of nitrate impairment of water quality due to remedial activities and will identify how affected groundwater nitrate levels will return to ~~background~~ <u>baseline</u> conditions prior to the timeframe for remediation of the chromium plume to the established cleanup levels. The duration of nitrate impairment due to remedial activities may possibly extend beyond the time necessary to remediate	30-64

		the chromium plume; the goal of remedial operation in the later stages of the cleanup should be to minimize the duration of all impacts.	30-64 cont'd
3.1-100	14-19	The EIR text currently requires implementation of additional mitigation for in-situ remediation by-products, if concentrations above Maximum Contaminant Levels or Secondary Maximum Contaminant Levels are detected. Based on baseline sampling of existing in-situ remediation system monitoring wells, some concentrations of these constituents naturally occur above the water quality standards at baseline. The criteria in these lines should be replaced to allow for increases to 25 percent above maximum baseline and is statistically significant which is consistent with the thresholds in the current WDRs and Notice of Applicability for the IRZs as follows: PG&E will construct and operate additional extraction wells or implement an equally effective mitigation measure along or upgradient of the designated IRZ treatment boundary to prevent effects to domestic water supply wells, if concentrations of dissolved arsenic, iron, or manganese increase to more than 25 percent above the maximum baseline monitoring well concentration and is statistically significant.	30-65
Section 3.2: Land Use, Agriculture, Population and Housing			
3.2-7	14-17	Local land use requirements generally apply when some local discretionary permit required for the activity, and in many cases the remediation activities will not require any local permits. To clarify this, revise lines 14-17 as follows: "As a state agency, the Water Board itself is not subject to local land use authority; however provided exercise of local land use regulations does not impede or hinder state exercise of authority over the remediation, remedial actions can be subject to ~~local~~ applicable local land use requirements."	30-66
3.2-23	12-34	Discussion of the potential secondary impacts of home acquisition is beyond the scope of CEQA since they result from contracts between private parties and do not involve a discretionary government approval. Accordingly, this discussion should be deleted.	30-67
3.2-24	4-7	PG&E will obtain approvals from BLM for proposed remedial activities on federal land. The consistency of the remedial activities on federal land with BLM policies will be considered by BLM in determining whether to approve the activities, and the BLM approval of any such activities will be evidence of such consistency. To avoid the potential of inconsistent determinations of policy consistency by two agencies, the Water Board should rely on the BLM approval as evidence of such consistency, rather than requiring PG&E to separately demonstrate such consistency to the Water Board. In order to keep the Water Board informed of BLM policies and approvals, PG&E will provide copies of these approvals to the Water Board. The following revisions are suggested to the text: PG&E will obtain approvals any required approvals from BLM for proposed remedial activities on federal land ~~prior to implementing such actions~~. PG&E will ~~demonstrate consistency with all relevant~~ provide copies of BLM ~~policies for use of the subject land and provide evidence of such consistency~~ submittals and approvals to the Water Board to keep them informed of any proposed remedial activities on federal land ~~prior any construction on federal land~~.	30-68
3.2-24	8-17	PG&E's operation of the remedy will increase agricultural uses, and may	30-69

		increase the use of existing important farmland as defined in the EIR. The mitigation to require PG&E to obtain easements should be modified to require such easements if there has been a net loss of such existing important farmland. On line 12, suggest adding "<u>if there has been a net loss of such important farmland considering any additions to such farmland that have occurred as a result of implementation of the remedy</u>."	30-69 cont'd
Section 3.3: Hazards and Hazardous Materials			
3.3-2	Table 3.3-1	Impact Haz-1b is listed both as potentially and less than significant in the significance before mitigation column. The text of the EIR on page 3.3-17 indicates this impact is potentially significant for all alternatives, so the entry in this table referring to the impact as less than significant should be deleted.	30-70
3.3-20	27-37	Soil excavation and grading activities will be conducted under the oversight of an experienced, qualified and licensed professional engineer or professional geologist. Professional engineers and geologists are licensed by the state and are required under licensure terms to practice only in areas where they are competent and qualified. A separate review and approval of those individual(s) by the Water Board is therefore unnecessary. Therefore, please revise lines 29-32 of this section as follows: PG&E will ~~provide the resume of~~ <u>work with</u> an experienced and qualified Professional Engineer or Professional Geologist, who will be available for consultation during soil excavation and grading activities~~, to the Water Board for review and approval. The resume will demonstrate experience in remedial investigation and feasibility studies~~.	30-71
3.3-21	4-5	The items listed to be covered by the spill plan seem to pertain to operations and maintenance activities rather than construction. Therefore, revise this heading as follows: "Mitigation Measure HAZ-MM-2: Implement Spill Containment, Control, and Countermeasures Plan During ~~Construction~~ <u>Operations and Maintenance</u>."	30-72
3.3-21	4-25	PG&E will work with the San Bernardino County Fire Department to prepare the necessary Spill Prevention, Control, and Countermeasure Plans (SPCC) or equivalent, if required by the County. An SPCC Plan is typically required for aboveground petroleum storage of greater than 1,320 gallons. To avoid any conflict between the requirements of the County and the EIR, the following edits are suggested for lines 6-14: To prevent accidental spills and contain spills of hazardous substances that might occur, PG&E will prepare a Spill Prevention, Control, and Countermeasure Plan (SPCC Plan~~), prior to commencement of construction activities for approval~~ <u>if required</u> by the San Bernardino County Fire Department <u>prior to commencement of construction activities</u>. The SPCC plan will be in accordance with all federal and state laws that addresses procedures to (1) properly handle, use, store, and/or transport potentially flammable and/or other chemical hazardous wastes, (2) emergency response protocols to contain these substances in the event of an accidental spill or release, (3) specific worker safety training and (4) reporting requirements in the event of an accidental spill or release. <u>If the SPCC Plan is required, it is anticipated that it</u> ~~The SPCC Plan~~ will	30-73

		include the following features:	30-73 cont'd
3.3-21	26-33	Hazardous materials storage and usage will be in accordance with the requirements of the San Bernardino County Fire Code. To avoid any conflict between the requirements of this agency and the EIR, revise the EIR as follows: Hazardous materials storage and usage will be in accordance with the requirements of the San Bernardino County Fire Code, Articles 79 and 80. A Business Contingency/Emergency Plan will be prepared in accordance with San Bernardino County Fire Department requirements for chemicals stored on-site for more than 30 days in excess of the regulatory thresholds (55 gallons, 500 pounds, or 200 standard cubic feet of gas). It is anticipated that t~~T~~he plan will list hazardous materials handled and include procedures for emergency response, training, and inspections. Hazardous wastes will be managed in accordance with the requirements of Title 22, California Code of Regulations, Division 4.5.	30-74
Section 3.4: Geology and Soils			
3.4-11	25, 29	It appears that the references to the land subsidence sections be to Section 3.4.3.3, rather than 3.4.3.2.	30-75
3.4-13	36-39	The statement that the northern part of the project area has a greater fraction of fine-grained silts and clays is inaccurate and should be deleted. Our rationale is as follows: Stantec has described the stratigraphy of investigation areas in several reports, including the Technical Memorandum - Update to Upper Aquifer Groundwater Investigation Activities (Stantec, February 2012). One of the key stratigraphic layers identified is a clay layer that is present at some locations between the upper (A1) and lower (A2) portions of the upper aquifer (i.e., the "Brown Clay" or Upper Aquifer Confining Clay Layer - UACCL). The majority of investigations conducted to date that have assessed stratigraphy at and below the depth of the Brown Clay have been south of Sonoma Road, with the majority of borings to this depth south of Thompson Road. Monitoring wells have been installed north of Sonoma Road, extending to Red Hill near Burnt Tree Road. The majority of the borings for these wells have focused on the uppermost portion of the upper aquifer (i.e., the A1) with limited assessment of deeper geologic conditions. The geologic conditions north of Sonoma Road, as they are currently understood, are depicted on Cross Sections A, B, C, P, Q, R, and S in the above-referenced report. As shown on the referenced cross-sections, there is no current data suggesting the Brown Clay increases in thickness to the north. There is no indication of continuous section of clay materials from 80 to 150 feet below ground surface near Red Hill as suggested. Further, as shown on sections A, B, C, R, and S there is data suggesting substantial thickness of A1 sandy deposits in the northern part of the valley including the vicinity of wells MW-139 and MW-142.	30-76
3.4-18 3.4-19	13-43 1-33	Impact Geo-1c: Same comments as in section 3.1 related to drawdown/aquifer compaction	30-77
3.4-20	19-20	Generally, as noted in the discussion at pages 3.4-19, there is no history of land subsidence problems or damage in the Hinkley area, despite a long history of substantial groundwater usage and drawdown for historical agricultural and dairy	30-78

		operations. This point should be added to the discussion of Impact Geo-1c on page 3.4-20, lines 16-22 as follows: In the northern part of the project area (generally north of Thompson Road), there are more limited number of residential or non-residential structures and far fewer roads than in the southern and central parts of the project area. However, individual structures or roads might be affected, if land subsidence were to occur. <u>But as noted previously, the overall potential for substantial land subsidence is low.</u> It cannot be concluded <u>for certain</u> that land subsidence will occur due to the project given the nature of this impact and the available data and thus, this is considered a potentially significant impact of all the action alternatives, with the greatest potential for effect due to Alternative 4C-4.	30-78 cont'd
3.4-22	32-39	An accidental exposure to chromium-laden water or remediation byproducts is not a "substantial" risk to human health and safety. As stated on page 3.1-41, lines 7-13, the California PHG for hexavalent chromium is based on the consummation of 2 liters of waters a day for 70 years, not from spray of a few minutes. The risk that a person would be harmed from a short-term, accidental exposure is speculative and should be removed from EIR.	30-79
3.4-24 3.4-25	18-44 1-2	According to the General Industry Safety Orders from CalOSHA regulations, Title 8, Chapter 4, Subchapter 7, Group 1, Article 2, Section 3220 (e) (3), it is typically not required to prepare an Emergency Response Plan or Emergency Action Plan for fewer than 10 full-time staff on-site. Rather than prepare a separate detailed emergency response plan to be implemented in the event of a major earthquake, PG&E recommends including a section in the system operation and maintenance (O&M) manual and/or the site Health and Safety Plan (HASP) that describes the specific procedures to be followed. PG&E also recommends specifying the spill and release notifications procedures in the WDRs rather in each section in the EIR, such that there will be one unified set of requirements for notification, regardless of whether a spill or release is caused by seismic activity or equipment malfunction. Recommended edits to the text include the following: PG&E will prepare a ~~detailed emergency response plan~~ <u>section in the treatment system operation and maintenance (O&M) manual and/or Health and Safety Plan (HASP)</u> that describes the specific procedures to be followed in the event of ~~earthquake-induced damage to project pipelines or above-ground storage tanks in order to avoid all human exposures to contaminated groundwater or stored chemicals. The plan will include, at a minimum, the following~~ <u>a major seismic event</u>: • Shut-down of remedial pumping of contaminated water ~~in the event of a major seismic event~~. • Visual inspection of project pipelines and aboveground tanks to determine if any leakage has occurred. • Spill containment <u>and recovery</u> procedures ~~to contain~~ <u>for</u> any	30-80

		recoverable contaminated groundwater ~~or chemical~~ that ~~has reached the surface or spilled onto the ground and to prevent human exposure. Procedures to reinfiltrate or siphon contaminated groundwater or chemicals into appropriate storage containers to prevent long-term exposure to workers or nearby residents~~ may have leaked from project pipelines or aboveground tanks. • Spill containment and recovery procedures for any chemicals that may have spilled from project pipelines or aboveground tanks. • Pressure testing of project pipelines and above-ground storage tanks ~~following a major seismic event~~ to determine ~~pipeline and/or tank~~ integrity prior to ~~putting these features back in service~~ resuming system operation. ~~• Repair of any damaged pipelines or above-ground storage tanks prior to putting these features back in service.~~ ~~• Details of failed pipelines, tanks, or other structures resulting in rupture and exposure of contaminated groundwater or chemicals to workers will be reported to the Water Board either verbally or through electronic messaging within 3 working days and with a report within 30 days. The report will cite appropriate information such as the cause of the release, volume of the release, number of workers affected, whether surface waters were affected, and the types of repairs or remedial actions planned.~~ ~~All workers will be required to review the emergency plan annually, and a copy of the plan will be kept at appropriate workstations used by the employees.~~ Communication requirements for notifying the Water Board of spills and releases will be specified in the WDRs for the project.	30-80 cont'd
3.4-24	10-17	Mitigation Measure GEO-MM-1 needs to be revised to set forth a Water Board process for determining if subsidence is caused by remedial activities, so that a claim that subsidence has occurred and is caused by the remedy can be independently evaluated and confirmed. We suggest the following revisions to the text: Where changes in ground surface elevations greater than 1 foot are identified by PG&E or the Water Board or where structural damage is identified by PG&E or reported by a landowner, PG&E will investigate site structures for subsidence-related damage. If damage is identified by PG&E and/or landowners, PG&E will retain an expert to evaluate whether the damage is due to remedial-induced groundwater drawdown. If the expert determines that the damage is ~~and is determined to be~~ due to remedial-induced groundwater drawdown, then PG&E will identify proposed remedial actions to the Water Board and, once approved by the Water Board, will repair, replace, and/or reimburse for any damaged structures (e.g., buildings, garages, barns) or infrastructure (e.g., pipelines, septic systems, supply wells) to its baseline condition. ~~PG&E will report all identified areas of structural damage whether identified by~~	30-81

		~~PG&E and/or reported by landowners and identify proposed remedial actions to the Water Board.~~	30-81 cont'd
Section 3.5: Air Quality and Climate Change			
3.5-1	26	The sentence appears to be missing the word "that."	30-82
3.5-6	19-24	Greenhouse Gas (GHG) emissions were calculated using URBEMIS, a model to calculate air emissions for land use projects. There are EPA methodologies that may be more appropriate (EPA, 2012). The EPA guidelines were published this year (as opposed to 2007 for URBEMIS) and provides guidance and emissions factors relevant to remediation activities.	30-83
3.5-20	Table 3.5-9	Proposed revisions to Table 3.5-9 are attached.	30-84
3.5-21	Table 3.5-10	The existing and no project alternatives do not have emissions listed for harvesting and plowing of existing agricultural operations, such as the Desert View Dairy. This oversight should be remedied. The numbers for Alternative 4C-3 in this table are incorrect. For example, some of the numbers in the daily VMTs column are actually monthly VMTs and thus inconsistent with the yearly VMTs shown. The worker commute number is substantially overestimated. In addition, the VMT numbers do not line up with the activity that they are associated with. Proposed revisions to Table 3.5-10 are attached.	30-85
3.5-23	7	The generator set default number from URBEMIS is 549 HP is larger than the size that the proposed project will use. The EIR should use a generator set size of 400 HP because that size may be more appropriate for this project.	30-86
3.5-38 3.5-38 3.5-39	4-5 38-39 8-9	It is not necessary for PG&E to hire a third-party monitor to periodically inspect construction equipment and practices to ensure compliance of AIR-MM-3, 4 and 5. PG&E is required to comply with all mitigation measures in the EIR. Accordingly, this requirement should be deleted.	30-87
3.5-39	12-15	Rather than submit a separate plan for review and obtain approval from San Bernardino County Planning Department, PG&E would like to amend the text to specifically state their activities to reduce greenhouse gas (GHG) emissions during construction. Specific recommended edits to text are as follows: PG&E or its contractor will ~~submit for review and obtain approval from County Planning or a signed letter agreeing to~~ include as a condition of all construction contracts/subcontracts requirements to reduce GHG emissions and submit~~ting~~ documentation of ~~compliance~~ results. PG&E or its contractor will do the following	30-88
3.5-39	16	PG&E recommends removing the requirement to submit a separate Coating Restriction Plan (CRP) to the County for approval. This is not a greenhouse gas reduction measure as it is primarily used to reduce Volatile Organic Compounds (VOC) emissions. VOC emissions do not exceed thresholds and do not need to be addressed under this mitigation measure. Therefore the requirement to "implement a County approved Coating Restriction Plan" should be deleted.	30-89
3.5-42	30-33	To avoid potential conflicts between County Planning requirements and this EIR, the following text edits are suggested: PG&E will ~~submit for review and obtain approval from~~ work with County Planning ~~of~~ and submit any required reports for evidence that all applicable GHG performance standards have been installed and implemented properly, and that specified performance objectives are being met to the satisfaction of County Planning and County Building and	30-90

		Safety.	30-90 cont'd
3.5-42	36-38	To avoid potential conflicts between County Planning requirements and this EIR, the following text edits are suggested: In this case, PG&E will work with County Planning and submit ~~for review and obtain approval from County Planning of~~ any required evidence that emissions will be reduced by ~~a minimum of 31 percent by a project-specific reduction plan~~ required amounts.	30-91
Section 3.6: Noise			
3.6-7	3-6	Local land use requirements generally apply if there is some local discretionary permit required for the activity, and in many cases the remediation activities will not require any local permits. To clarify this, add the following sentences: The purpose of the San Bernardino County General Plan (2007a) Noise Element is to limit the exposure of the community to excessive noise levels. The Noise Element is used to guide decisions concerning land use and the location of new roads and transit facilities, which are common sources of excessive noise. The San Bernardino County General Plan would apply to the project only if the project will require local permits. It is not anticipated that such permits will be required for project activities, but the following discussion is included here for informational purposes.	30-92
3.6-8	34-35	Throughout this section, tables list the number of wells, while the text states that the numbers of pumps are quantified in the tables. Not every remedial well will have a pump. Only extraction wells will be equipped with pumps, while many of the remedial wells listed are injection wells which will not be equipped with pumps. Accordingly, revise the text as follows: Table 3.6-10 shows the number of ~~pumps~~ wells and linear feet (LF) of pipeline associated with the existing remediation program.	30-93
3.6-24	20-38	Rather than submit a separate noise/vibration control plan, PG&E recommends including noise/vibration control measures as part of the construction specifications. The following text edits are recommended: **Mitigation Measure NOI-MM-1: Employ Noise/Vibration-Reducing Construction Practices to Comply with County Noise Standards** PG&E or its contractor will ensure that noise/vibration-reducing construction practices are implemented so that construction noise does not exceed applicable County standards. As part of the construction specifications, t~~T~~he project contractor ~~will prepare a noise/vibration control plan that~~ will identify feasible measures that can be employed to reduce construction noise/vibration. These may include the measures listed below. • Scheduling substantial noise-generating/vibration activity during	30-94

		exempt daytime hours • Requiring construction equipment to be equipped with factory-installed muffling devices and all equipment to be operated and maintained in good working order to minimize noise generation • Locating noise/vibration-generating equipment as far as practical from noise-sensitive uses including avoiding vibration-generation within 25 feet of any residence, wherever feasible • Using temporary noise/vibration-reducing enclosures around noise-generating equipment • Placing temporary barriers between noise/vibration sources and noise-sensitive land uses or taking advantage of existing barrier features (e.g., terrain, structures, edge of trench) to block sound transmission ~~The noise/vibration control plan will demonstrate that~~ Per the construction specifications, control measures will be implemented to reduce noise and vibration to a level that is in compliance with County noise standards.	30-94 cont'd
Section 3.7: Biological Resources			
3.7-3	Impact Bio-4	Change impact to "Less than Significant" for desert tortoise and see comment below regarding Impact BIO-4.	30-95
3.7-15	26	Existing agricultural units currently support Bermuda grass and sudan grass in addition to alfalfa.	30-96
3.7-21	25	The word 'biologists' is redundant and should be deleted.	30-97
3.7-31	21-31	See comment below on Impact BIO-4.	30-98
3.7-32	35-36	Impacts from Alternative 4B should be considered less than significant for desert tortoise movement. See comment below regarding Impact BIO-4.	
3.7-33	7-8	Impacts from Alternative 4C-2 should be considered less than significant for desert tortoise movement. See comment below regarding Impact BIO-4.	
3.7-33	22-23	Impacts from Alternative 4C-3 should be considered less than significant for desert tortoise movement. See comment below regarding Impact BIO-4.	
3.7-33	35-36	Impacts from Alternative 4C-4 should be considered less than significant for desert tortoise movement. See comment below regarding Impact BIO-4.	
3.7-34	1-4	Impacts from Alternative 4C-5should be considered less than significant for desert tortoise movement. See comment below regarding Impact BIO-4.	
3.7-36	36-39	Harm to burrowing owls from exposure to waterborne hexavalent chromium is exceedingly speculative and unsupported by any data; accordingly, it should be deleted.	30-99
3.7-38	41-43	The EIR text here states that BIO-MM-1n will limit construction to occur outside the breeding season for the loggerhead shrike and northern harrier; however, the mitigation measure itself (page 3.7-51, lines 8-23) requires pre-construction surveys and imposes buffer requirements, rather than preventing construction altogether. The EIR text on lines 41 through 43 should be revised to read as follows: "**Mitigation Measure BIO-MM-1n** would further avoid or reduce these impacts to a less-than-significant level by requiring pre-construction surveys and	30-100

		imposing buffer requirements when needed ~~limiting construction to occur outside breeding season and establish exclusionary areas for project related disturbance~~."	30-100 cont'd
3.7-43 3.7-44 3.7-45	2-3 23-44 1-22	In the discussion of Impact BIO-4, the EIR suggests (page 3.7-43, lines 42 & 43) that there is an east-west movement corridor north of Thompson Road and south of the existing agricultural unit, south of State Route 58, by stating that there is suitable habitat for desert tortoise there. However, no studies were completed to document any movement of tortoises in this area. The EIR biological Resources report does not reference such a movement corridor in its discussion of the desert tortoise, and the pattern of tortoise sightings reported in the EIR does not support this conclusion. (EIR Appendix C). Therefore, the statement that there is an east-west movement corridor for the desert tortoise north of Thompson Road and south of the existing agricultural treatment units is incorrect and unsubstantiated. Further, there are two existing barriers to movement in the area assumed to be an east-west corridor: (1) State Route 58, which runs east west and (2) the railroad which runs diagonally through the area. To state that this is an existing open, expansive area for tortoise movement is incorrect. Development of agricultural units in this area, which is already disturbed and contains a patch work rural residential development, may impact habitat were tortoises currently exist but will not isolate a tortoise or a population of tortoises from movement and the potential to continue breeding. Accordingly, we suggest that the text be revised as follows: **Impact BIO-4: Conflicts with Wildlife Movement (Less than Significant~~, No Project Alternative; Potentially Significant~~, All ~~Action~~ Alternatives)** . . . ~~Although d~~Desert tortoise would be physically able to move through the agricultural treatment units and there would not be any physical barriers (like fences) to their movement~~.~~. Even though they would likely avoid the agricultural treatment areas because they would be largely unsuitable irrigated parcels that would not favor tortoise locomotion, desert tortoise movement would not be significantly impacted. There are no known east-west corridors in the area, which is disturbed by State Route58 and a railroad, as well as a patchwork of other development. This impact is ~~potentially~~ less than significant ~~impact~~ for all ~~action~~ alternatives ~~because it could result in a substantial constraint of a general east-west movement pattern for desert tortoise individuals~~. Because the impact is less than significant for all alternatives, no mitigation is required Further, w~~W~~hile feasible mitigation was reviewed for this impact, none of the following measures are recommended for the following reasons: • Wildlife movement corridors. A mitigation measure was considered to require PG&E to segregate new agricultural treatment areas (by perhaps 500 to 1,000 feet). This mitigation is not proposed because	30-101

it is highly uncertain whether desert tortoise would actually use such corridors and because spreading out (as opposed to concentrating) agricultural areas would actually increase fragmentation of habitat even further and would push more agricultural areas further north, which is considered counterproductive in terms of maintain habitat for the desert tortoise.

- Limit the number of agricultural treatment areas. A mitigation was considered to limit the areas new agricultural treatment such that substantial desert tortoise east-west movement areas could be maintained throughout the Hinkley Valley. For example, if agricultural treatment units were limited to the 40 acres for Alternative 4B included in the Feasibility Study/Addenda (and shown in Figure 3.7-5), then east-west movement areas would be maintained. This measure is not recommended because it would substantially slow down remediation and may impede hydraulic containment of the plume.

- Adopt one of the alternatives with less agricultural treatment. One mitigation option would be to adopt the No Project Alternative, but this would not meet the project objectives and was thus rejected. Another option would be to adopt Alternative 4B which would have the least amount of new agricultural treatment, but since this alternative may need to be scaled up to provide up to 264 acres of new agricultural treatment, this alternative would lower but would not avoid a potentially significant impact.

- Eliminate new agricultural treatment. One mitigation option would be to use a different remediation technology than new agricultural treatment. One option could include wide-scale above-ground treatment ("plume-wide pump and treat"). While this option would provide for hydraulic containment if extraction flows were sufficiently high, as discussed in Chapter 2, *Project Alternatives*, Section 2.8, this alternative would take approximately 50 years to reduce Cr[VI] concentrations throughout the plume to 50 ppb, approximately 140 years to reduce Cr[VI] concentrations to 3.1 ppb, and 210 years to reduce Cr[VI] concentrations to 1.2 ppb. This alternative was rejected because it does not meet the fundamental project objectives because it does not clean up chromium in groundwater within a meaningful period of time. Chapter 2, *Project Alternatives,* Section 2.8, also discusses why other alternatives were not carried forward fur further analysis.

Mitigation was examined even though impacts are less than significant and no mitigation is required. However, ~~Since~~ no feasible mitigation was identified that would meet most of the project goal objectives~~ and would reduce this impact to a less than significant level, the action alternatives are considered to result in a potentially significant and unavoidable impact related to desert tortoise movement (depending ultimately on the amount and configuration of new agricultural treatment areas)~~. Because mitigation is not required for an impact found to be less than significant and there are no feasible mitigation measures, no mitigation measures will be imposed.

30-101
cont'd

3.7-46 3.7-47	20-42 1-7	PG&E will obtain appropriate incidental take authorizations following consultation with CDFG and USFWS for potential impacts to desert tortoise. Minimization measures within either of these two permits would supersede these minimization measures, to the extent of any conflict. To avoid the possibility of conflicting requirements, we suggest inserting the following text at line 20 on page 3.7-46, before the six bulleted paragraphs: "<u>The following measures shall be implemented to reduce construction impacts to the desert tortoise. These measures shall be implemented in a manner consistent with any incidental take authorizations issued by CDFG and USFWS, and to the extent that the below measures may be inconsistent with the requirements imposed by CDFG and USFWS, the requirements imposed by those agencies shall govern.</u>"	30-101 cont'd
3.7-48	18-30	Rather than specifying that a separate raven management plan be developed, the specific requirements for raven management should be included in any incidental take authorizations issued by CDFG and USFWS to meet the requirements of Section 10(a) of the Endangered Species Act. In addition, construction may or may not occur on BLM lands therefore there is a strong likelihood that BLM would have no nexus to approve any plans for the project. To avoid any conflict between the requirements of this agency and the EIR, PG&E suggests revising this section as follows: <u>PG&E will implement measures to minimize and prevent attraction of predators during construction and operation in compliance with the incidental take authorizations issued by CDFG and USFWS, as necessary. It is anticipated that the mitigation measures will include:</u> • Litter control measures will be implemented. Trash and food items will be contained in closed containers and removed daily to reduce the attractiveness or the area to opportunistic predators such as common ravens (*Corvus corax*), coyotes (*Canis latrans*), and feral dogs. • If water trucks are to be used, pooling of water will be avoided so to minimize the potential to attracting common ravens or other potential predators. • Potential perches and nest substrates for the common raven will be reduced to the greatest extent practicable within permanent project facilities. • ~~A raven management plan will be developed by the project proponent and approved by BLM that will include at a minimum establishing a common raven population baseline, with ongoing and post-construction monitoring of common raven populations, and triggers for adaptive management actions if ravens are occurring above baseline conditions and observed to be utilizing facilities and structures built as part of this project.~~	30-102

3.7-49	3, 8-9	As noted in this discussion compensatory mitigation ratios for loss of habitat would be determined through consultation with CDFG and USFWS. Field surveys of the project area have yet to be completed. Once surveys are completed to quantify the quality of habitat occurring on the project site, effective compensation ratios can be determined. While this survey effort supports that habitat exist within the study area and that compensation would likely be required, the actual compensation ratios should and will be determined by the resource agencies with jurisdiction over this issue. Therefore, the text on these lines should be modified to say that these proposed ratios "could be" or "may be" applicable as minimum compensation, but ratios would be determined after surveys are completed and in consultation with appropriate resource agencies.	30-103
3.7-49	19-32	Rather than developing a separate AU integrated pest management (IPM) plan and adaptive management plan, the specific requirements should be included in any incidental take authorizations issued by CDFG and USFWS, as necessary. To avoid any potential conflict between the requirements of this agency and the EIR, revise the text as follows: **Mitigation Measure BIO-MM-1i: Integrated Pest Management and Adaptive Management Plan for Agricultural Treatment Units** ~~An agricultural unit integrated pest management (IPM) plan will be developed and implemented for all new (and existing) agricultural units, and will be compliant with the California Statewide IPM year-round program for alfalfa and any other crops that may be proposed for use. The plan will explicitly detail an integrated pest management plan to ensure that risks of any proposed use of herbicides, pesticides, or rodenticides will pose a negligible risk to wildlife species. Herbicides, pesticides, or rodenticides will only be used at new agricultural units if specifically authorized by USFWS and CDFG in the take permits for the desert tortoise and the Mohave ground squirrel. The adaptive management plan will detail the predicted harvest of the agricultural crops and how harvest will be conducted in such a manner to reduce potential impacts to nesting birds. The adaptive management plan will provide other population monitoring guidelines for predatory species such as brown-headed cowbird, with management actions that will be required if fields are found to be supporting these species. The adaptive management plan will also outline irrigation control to avoid pooled water, as well as dust control methods.~~ PG&E will implement measures to manage pests at all new (and existing) agricultural units in ways that pose a negligible risk to wildlife species and are aligned with the current land use for agricultural crops in compliance with any incidental take authorizations issued by CDFG and USFWS, as necessary. Mitigation measures in the incidental take authorizations may include: • Pest management actions will be compliant with the California Statewide IPM year-round program for alfalfa and any other crops grown on the agricultural units.	30-104

		• Herbicides, pesticides, or rodenticides will only be used at new agricultural units if they pose a negligible risk to wildlife species and are consistent with USFWS and CDFG requirements for the desert tortoise and the Mohave ground squirrel. • The incidental take authorizations are anticipated to include an adaptive management plan for agricultural treatment units. This section of the incidental take authorizations is anticipated to detail the predicted harvest of agricultural crops and how harvest will be conducted in such a manner to reduce potential impacts to nesting birds. • The incidental take authorizations adaptive management plan is anticipated to provide other population monitoring guidelines for predatory species such as the brown-headed cowbird, with management actions that would be required if fields are found to be supporting these species. • The incidental take authorizations adaptive management plan is anticipated to also outline irrigation control measures to avoid pooled water on the fields.	30-104 cont'd
3.7-50	10-17	The first bullet of Mitigation Measure BIO-MM-1l states that the focused survey for burrowing owl will utilize the most recent CDFG protocol. CDFG at times approves modifications to the protocol for specific surveys. To avoid any inconsistencies between the survey requirements of CDFG and the EIR mitigation measures, suggest revising the first bullet as follows: • To confirm the current existing condition for burrowing owls in the study area, a focused nesting season survey for burrowing owl will be completed for all potential disturbance limits and a minimum 400 feet buffer area, where accessible, prior to construction. This focused survey will utilize the most recent CDFG protocol (including any variations in that protocol that may be approved by CDFG for the survey).	30-105
3.7-50	24-29	Rather than submit an avian protection plan, the specific requirements for protecting burrowing owls can be specified in any incidental take authorizations issued by CDFG and USFWS, as necessary. To avoid any conflict between the requirements of that agency and the EIR, PG&E suggests revising Mitigation Measure BIO-MM-1l as follows. • Avoid impacting burrows occupied during the non-breeding season (September 1–January 31) by migratory or non-migratory resident burrowing owls. • ~~An avian protection plan will be developed in consultation with CDFG~~ If necessary, procedures to address burrowing owls or signs of burrowing owls should they be found on site during the focused nesting or preconstruction surveys will be specified in any incidental take authorizations issued by CDFG and USFWS, as necessary . ~~Unless otherwise approved by CDFG, the minimum no construction buffers will be 160 feet for occupied burrows during the~~	30-106

		~~non-breeding season of September 1 through January 31 and 250 feet during the breeding season of February 1 through August 31.~~ • If burrowing owls and their habitat can be protected in place on or adjacent to a project area, the use of buffer zones, visual screens (such as hay bales) or other feasible measures while project activities are occurring will be used to minimize disturbance impacts. These will be outlined in the avian protection plan.	30-106 cont'd
3.7-52	5-10	Remove the text related to the preparation of a brief analysis to determine if removal of non-listed special status plant species would be significant under CEQA. Such a requirement is unnecessary. We already commit to avoiding such plants to the maximum extent feasible. Moreover, because the species are not listed, impacts to those species are not significant under CEQA. Further impacts to such species will not be significant for a project such as the one here, which proposes to install discrete facilities rather than develop the entire property.	30-107
3.7-52	14-24	Rather than develop a separate compensatory mitigation program or plan, the specific requirements for compensatory mitigation should be specified by the appropriate agencies. PG&E proposes the following text revisions to mitigation measure BIO-MM-2: **Mitigation Measure BIO-MM-2: Habitat Compensation for Loss of Sensitive Natural Communities** If new remediation activities result in the permanent removal and loss of sensitive natural communities such as the California joint fir scrub, ~~a~~PG&E will implement compensatory mitigation. ~~program or plan will be developed and implemented through consultation~~ PG&E will consult with the USFWS, CDFG, and the Lahontan Water Board~~. Compensatory mitigation may include a fee-based program and/or direct habitat replacement on a~~ to replace habitat on an anticipated minimum 1:1 basis ~~and in accordance with those agencies' recommendations~~. Lands provided as mitigation for desert tortoise, Mohave ground squirrel, and burrowing owls may also be used to provide mitigation for any loss of sensitive nature community habitat, if the land in question includes sensitive natural communities. If 1:1 direct habitat replacement is not practicable, PG&E will consult with USFWS, CDFG, and the Lahontan Water Board to supplement the compensatory mitigation with fees.	30-108

Section 3.8: Cultural Resources			
3.8-17	11-14	These are the preliminary findings of FWARG's survey, and have since been updated. Please use the following data: FWARG recorded 74 resources, including 42 historic period sites with 55 features, mostly refuse scatters or elements of water/irrigation systems; 26 historic-period isolates consisting of 32 irrigation system elements and two miscellaneous features; two small prehistoric flaked stone scatters, three single flake isolates, and one other prehistoric isolate consisting of a ground stone fragment and one piece of flaked stone.	30-109
3.8-28	17-32	Propose deleting this mitigation measure CUL-MM-4 (Evaluate Archaeological Resources to Determine if Historical Resources under CEQA or Unique Archaeological Resources under PFC 21083.2). Any necessary evaluation of archaeological resources is already covered under mitigation measure CUL-MM-6, following an opportunity to redesign and avoid impacting archaeological resources (CUL-MM-5).	30-110
3.8-28 3.8-29	17-32 6-40	Both CUL-MM-4 and CUL-MM-6 require evaluation of archaeological sites, which is confusing. It would seem more appropriate for MM-4 to be limited to identification of sites. If those sites that are identified can be avoided, MM-5 (avoidance) comes into play. If the site cannot be avoided MM-6 (evaluation/data recovery) would be implemented. If these items are changed, the Table on 3.8-1 would need to be updated as well. It also identified both MM-4 and MM-6 as evaluating archaeological resources.	30-111
Section 3.11: Aesthetics			
3.11-10	18	Delete the "3" at the end of the sentence.	30-112
3.11-3.12	33-40 1-20	The screening mitigation measures should only apply to "major above-ground treatment facilities."	30-113
Section 3.12: Socioeconomics			
3.12-1	16-17	Generally, chapter 3.12 of the EIR overstates the potential for blight resulting from implementation of the remedy, and our comments are directed at this in several specific respects. The text suggests that any departure of people from the community causes blight, which is incorrect. The text should be revised to read as follows: These secondary effects could result in people leaving the community; <u>if such departures result in a substantial number of</u> vacant lots and homes <u>this could contribute to</u> physical deterioration or blight.	30-114
3.12-5	15-19	The EIR states the project could "disrupt, hinder or otherwise discourage existing residential and other land use due to effects of groundwater drawdown and water quality changes from remedial actions that might result in blighted conditions." There is no causal link between groundwater drawdown and water quality changes due to the project and blight, and suggesting otherwise is speculation. Moreover, the project will improve water quality in the long term. Further, as stated on page 3.12-6, the temporary groundwater drawdown that the project may cause would "take decades at a minimum" to impact water supply wells in the area. Finally, mitigation measures WTR-MM-2 through WTR-MM-8 ensure that any affected homes, businesses, and agricultural facilities would receive alternative water supplies and that PG&E restore the aquifer for all beneficial uses. (DEIR at 3.12-6:40–3.12-7:5.) Accordingly, the EIR should be revised as	30-115

		follows: The project could create blighted conditions that could result in secondary physical impacts due to land and water rights acquisition to facilitate remedial actions. The project could also disrupt, hinder or otherwise discourage existing residential and other land use due to effects of groundwater drawdown and water quality changes from remedial actions, but those actions likely would not ~~that might~~ result in blighted conditions and associated secondary physical impacts.	30-115 cont'd
3.12-5	21-38	Several revisions should be made in the discussion of the effects of property purchases associated with the remediation. • In line 24, the word "local" appears to be out of place • In lines 28-29, there is no basis for asserting that properties could be subject to arson, or that if there were fires due to arson, that fires would affect other neighbors given the fact that homes and structures in the area where the remedy will be implemented are generally widely dispersed. This sentence is speculative and should be deleted. • The statement that PG&E acquisitions under the land acquisition program should not be stated as part of the paragraph analyzing the No Project Alternative. It is correct that the private purchases are outside the scope of the project and the CEQA analysis, but this conclusion is not limited to the No Project Alternative. This should be made into a separate paragraph, prefaced with "Under any of the alternatives, including the No Project Alternative and the action alternatives"	30-116 30-117 30-118
3.12-5	24-39	Revise the text in this section to clarify that all private purchase and sale agreements, not just those in the no project alternative, are outside of the project mandated by the Water Board and outside the scope of the CEQA analysis in this EIR.	
CHAPTER 4 - OTHER CEQA ANALYSIS			
4-27; 4-30	18-26; 8-29	The EIR suggests that agricultural units could substantially impede east-west desert tortoise movement through the center of Hinkley Valley. However, the EIR biological resources report does not reference such a movement corridor in its discussion of the desert tortoise, and the pattern of tortoise sightings reported in the EIR does not support this conclusion. Further, present infrastructure in the area that the EIR suggests is a movement corridor, including State Route 58 and the railroad, are a barrier for movement of desert tortoise. Therefore, as noted above in the comment regarding impact BIO-4, it is speculative and highly unlikely that such a movement corridor for tortoises exists. The effect of all alternatives on the movement of desert tortoises is not cumulatively considerable. Therefore, the development of agricultural units in this area does not contribute to a potentially significant cumulative impact.	30-119
4-47	Table 4-4	Alternatives 4C-2, 4C-3, and 4C-4 include increased extraction in OU1 for additional southern agricultural units. The increased extraction would decrease the potential for spreading of the plume for these alternatives in comparison to Alternative 4B. Therefore, Alternatives 4C-2, 4C-3, and 4C-3 should be ranked with less severity for this impact than 4B.	30-120
4-47	Table 4-4	The amount of in situ remediation is similar among alternatives 4B, 4C-2, 4C-3, and 4C-4 and by-product impacts are expected to be similar, as indicated in the	30-121

		text on page 4-52, lines 26-28. These alternatives should therefore have similar rankings for in-situ by-product impacts in Table 4-4, rather than alternative 4C-3 being ranked less severe than the others.	30-121 cont'd
4-51	17-20	Alternatives 4C-2, 4C-3, and 4C-4 include increased extraction in OU1 for additional southern agricultural units. The increased extraction would decrease the potential for spreading of the plume for these alternatives in comparison to Alternative 4B. Therefore, Alternatives 4C-2, 4C-3, and 4C-3 should be ranked with less severity for this impact than 4B.	30-122
4-60	32-34	In the overall comparison of alternatives, the EIR states that Alternative 4B would have the least groundwater drawdown, the lowest level of remedial byproducts, and the least new disturbance of special-status species habitat, but it would take "much longer" to treat the plume under Alternative 4B than Alternatives 4C-2, 4C-3, or 4C-4. The statement that it will take "much longer" overstates the magnitude of the time difference. Although it would take longer to treat the plume under Alternative 4B than Alternatives 4C-2, 4C-3, or 4C-4, the statement that it will take "much longer" does not reflect the fact that the time differentials are not substantial, and does not take into account the uncertainties of the modeling assumptions that produced this number. The model, like all mathematical models of natural systems, has accuracy limitations due to the underlying simplifications and assumptions incorporated into the model. Accordingly, the simulated times to cleanup are qualitative estimates based upon the mathematical representation of the hydrogeologic system and has inherent uncertainties. Examining the time to clean up the Cr[VI] to 3.1 ppb shows that under Alternative 4B the time to clean up is estimated to be 40 years. Under Alternative 4C-2, the time to clean up is estimated to be 39 years; under Alternative 4C-3, the time to clean up is estimated to be 36 years, and under Alternative 4C-4, the time to clean up is estimated to be 29 years. Taking into account both the length of time and the model accuracy, the time to treat the plume under Alternatives 4B, 4C-2, and 4C-3 is comparable. A relative comparison of the remedial time frames of Alternatives 4B, 4C-2, and 4C-3 relative to a 40 year baseline remedy indicates that there is less than a 10% range in timeframe differential, whereas Alternative 4C-4 has greater than a 25% range in timeframe differential.	30-123

#30

Attachment 1

Table ES-1. PG&E Hinkley Groundwater Remediation Alternatives Analyzed in the EIR

Alternatives	No Project[a]	4B	4C-2	4C-3	4C-4	4C-5
Source of Information	FS Addendum 3	FS Addendum 2	FS Addendum 3	FS Addendum 3	FS Addendum 3	~~FS Addendum 4~~Technical Memorandum
Plume FS analysis based on	Q1/2011	Q1/2010	Q1/2011	Q1/2011	Q1/2011	Q1/2011
OU1–Remedial Method for High Concentration Plume	In-Situ	In-Situ	In-Situ	In-Situ	In-Situ	Above-ground Treatment/ In-situ
Time to 50 ppb	6[b]	6	6	4	3	20
Time to 80% Cr[VI] Mass Conversion to Cr[III] or Removal	13[b]	10	7	6	6	15
OU 1/2/3–Remedial method for low concentration plume	IRZ/ AUs[c]	IRZ for 20 years[x] AUs for 95 years	IRZ for 20 years[x] AUs for 90 years	IRZ for 20 years[x] AUs for 85 years Aboveground Treatment	IRZ for 20 years[x] AUs for 75 years	IRZ for ~~32~~ 20 years[xx] AUs for 95 years
Time to 3.1 ppb cleanup	NA[c]	40	39	36	29	50
Time to 1.2 ppb cleanup	NA[c]	95	90	85	75	95
Fate of Cr3+ in the soil	Leaves	Leaves	Leaves	Leaves	Leaves	Removes from high concentration area
AU Pumping Rates[c]	1,100 gpm (FS)	1,270 gpm (FS) 2,395 gpm (total)	2,042 gpm (FS) 3,167 gpm (total)	2,829 gpm (FS) 4,388 gpm (total)	2,829 gpm (FS) 4,388 gpm (total)	2,042 gpm (FS) 3,167 gpm (total)
AUs[d, e]	182 acres	222 acres (FS)/ 446 acres (total)	351 acres (FS)/ 575 acres (total)	351 acres (FS)/ 575 acres (total)	895 acres (FS)/ 1,394 acres (total)	351 acres (FS)/ 575 acres (total)
FS Estimated Costs (NPV)[f]	N/A	$84.9M	$118M	$276M	$173M	$171M
Key Feature	Required by CEQA	Less groundwater pumping, AU acreage and lower cost.	Year round pumping for plume control (winter Crop).	Year round pumping for plume control (winter above-ground treatment).	Year round pumping for plume control. Fastest cleanup of all alternative.	Removal of chromium from the high concentration plume area.

Alternatives	No Project[a]	4B	4C-2	4C-3	4C-4	4C-5

Notes:

[a] No Project Alternative defined based on the No Project details provided for Alternative 4C-2 in FS Addendum No. 3.

[b] Based on FS Alternative No. 4 cleanup times because FS Addendum No. 3 did not identify cleanup times for No Project conditions.

[c] No Project Alternative limited to addressing the 2008–2010 plume. Thus, no duration for cleanup of entire plume is identified.

[x] Intermittent, low concentration carbon amendment continues beyond 20 years in SCRIA injection area and Source Area

[xx] Intermittent, low concentration carbon amendment continues beyond 20 years in SCRIA injection area and begins at year 32 in the Source Area

[d] Two pumping rates shown for action alternatives. First is highest pumping rate in the FS/Addenda marked with a (FS). Second is scaled up to account for expanded plume beyond that at the time of the FS/Addenda.

[e] Two acreages shown for agricultural units for action alternatives. First is from the FS/Addenda marked with a (FS). Second is scaled up to account for expanded plume beyond that at the time of the FS/Addenda.

[f] Costs are based on FS/Addenda costs to remediate to 1.2 ppb Cr[VI] level and only include the infrastructure described in the FS/Addenda and do not account for the additional cost for the infrastructure and activities to address the expanded plume.

AU = Agricultural Units
FS = Feasibility Study
gpm = gallons per minute
IRZ = In-Situ Remediation
NPV = Net present value
ppb = parts per billion

Table 2-3. Summary of Components under No Project Alternative[a]

Optimization Period	Initial Buildout (0–5 years)	Year 5 (5–10 years)	Year 10 (10–20 years)	Year 20 (20+ years)
Agricultural Land Application				
Agricultural Units (AUs)	182 acres[b]			
AU Extraction Wells	29			
Pipelines	24,499 lf			
AU Extraction Flow[c]	1,100 gpm			
In-Situ Remediation Zone (IRZ)				
Extraction Wells	17	17	20	20
Injection Wells	86	86	89	89
Pipelines	31,392 lf	31,992 lf	33,892 lf	33,892 lf
Carbon amended IRZ flow (SCRIA, SAIRZ)[c, d]	190 gpm (110 gpm – SCRIA; 80 gpm – SAIRZ)			
IRZ Recirculation flow (CAIRZ)[c, d]	83 gpm			
Northwest Area Freshwater Injection				
Extraction Wells	~~5~~3			
Injection Wells	~~3~~5			
Pipelines	31,886 lf			
Northwest Freshwater Reinjection Flow[c]	80 gpm			
Monitoring Wells				
Monitoring Wells	446			
Wells and Supporting infrastructure acreage[e]	39	39	39	39
Access roads	1	1	1	1

Notes:

[a] All totals include existing infrastructure (see Table 2-1)

[b] Agricultural Units = DVD, Gorman, Cottrell, and Ranch (all existing).

[c] All flows are based on average annual rates.

[d] SCRIA refers to the South Central Reinjection Area.
SAIRZ refers to the Source Area In-Situ Remediation Zone.
CAIRZ refers to the Central Area In-Situ Remediation Zone.

[e] Includes acreage for all wells, including Agricultural Units, In-Situ Remediation, Northwest Freshwater Reinjection, and monitoring wells.

lf = linear feet

gpm = gallons per minute

Comment [d1]: 24,499 is the linear feet of trenching, we suggest adding a note to clarify. Also applies to IRZ pipeline totals below

1 **Table 2-4. Summary of Components under Alternative 4B[a]**

Optimization Period	Initial Buildout (0–5 years)	Year 5 (5–10 years)	Year 10 (10–20 years)	Year 20 (20+ years)
Agricultural Land Application				
Agricultural Units (AUs)[b]	446 acres			
AU Extraction Wells	65	65	90	90
AU Pipeline	59,049 lf	59,049 lf	78,419 lf	78,419 lf
AU Extraction Flow[c]	2,395 gpm			
In-Situ Remediation Zone (IRZ)				
Extraction Wells	21	21	~~21~~25	25
Injection Wells	108	108	111	111
Pipelines	39,240 lf	39,990 lf	42,365 lf	42,365 lf
Carbon-amended IRZ flow (SCRIA/SAIRZ)[c,d]	431 gpm	244 gpm	319 gpm	213 gpm
IRZ Recirculation flow (CAIRZ)[c,d]	~~279~~ 175 gpm	175 gpm	175 gpm	0 gpm
Northwest Area Freshwater Injection				
Extraction Wells	~~5~~3			
Injection Wells	~~4~~6			
Pipelines	36,669 lf			
Northwest Freshwater Reinjection Flow[c]	92 gpm			
Monitoring Wells/Supporting Infrastructure				
Monitoring Wells	558			
Wells and Supporting Infrastructure (acres)[e]	51	51	53	53
Access roads (acres)	3	3	5	5

Notes:

[a] All totals include existing infrastructure. All estimates have been scaled up from the data from the Feasibility Study and Addenda to account for a larger plume than used in the feasibility study. See discussion in text.

[b] Desert View Dairy, Gorman, Cottrell, Ranch, plus additional Agricultural Units.

[c] All flows are based on average annual rates.

[d] SCRIA refers to the South Central Reinjection Area; SAIRZ refers to the Source Area In-Situ Remediation Zone; CAIRZ refers to the Central Area In-Situ Remediation Zone.

[e] Includes acreage for all wells, including Agricultural Units, In-Situ Remediation, Northwest Freshwater Reinjection, and monitoring wells.

lf = linear feet

gpm = gallons per minute

Comment [d1]: Totals are linear feet of trenching, we suggest adding a note to clarify

Comment [d2]: 140 gpm + 25% contingency

Comment [d3]: 5 + 15% contingency

Comment [d4]: Suggest clarifying that well estimates include the number of wells to be constructed; not all wells may be operating at one time

#30

Attachment

Table 2-5. Summary of Components under Alternative 4C-2[a]

Optimization Period	Initial Buildout (0–5 years)	Year 5 (5–10 years)	Year 10 (10–20 years)	Year 20 (20+ years)
Agricultural Land Application				
Agricultural Units (AUs)[b]	575 acres			
AU Extraction Wells	80	80	102	102
AU Pipeline	68,489 lf	68,489 lf	83,374 lf	83,374 lf
AU Extraction Flow[c]	3,167 gpm			
In-Situ Remediation Zone (IRZ)				
Extraction Wells	21	21	25	25
Injection Wells	108	108	111	111
Pipelines	39,240 lf	39,990 lf	42,365 lf	42,365 lf
Carbon-amended IRZ flow (SCRIA/SAIRZ)[c,d]	431 gpm	244 gpm	319 gpm	213 gpm
IRZ Recirculation flow (CAIRZ)[c,d]	~~279~~ 175 gpm	175 gpm	175 gpm	0 gpm
Northwest Area Freshwater Injection				
Extraction Wells	~~53~~			
Injection Wells	~~46~~			
Pipelines	36,669 lf			
Northwest Freshwater Reinjection Flow[c]	92 gpm			
Monitoring Wells/Supporting Infrastructure				
Monitoring Wells	558			
Wells and Supporting Infrastructure Acreage[e]	52	52	54	54
Access roads (acres)	4	4	5	5

Notes:

[a] All totals include existing infrastructure. All estimates have been scaled up from the data from the Feasibility Study and Addenda to account for a larger plume than used in the feasibility study. See discussion in text.

[b] Desert View Dairy, Gorman, Cottrell, Ranch, plus additional Agricultural Units.

[c] All flows are based on average annual rates.

[d] SCRIA refers to the South Central Reinjection Area.
SAIRZ refers to the Source Area In-Situ Remediation Zone.
CAIRZ refers to the Central Area In-Situ Remediation Zone.

[e] Includes acreage for all wells, including Agricultural Units, In-Situ Remediation, Northwest Freshwater Reinjection, and monitoring wells.

lf = linear feet
gpm = gallons per minute

Comment [d1]: Totals are linear feet of trenching, we suggest adding a note to clarify

Comment [d2]: 140 gpm + 25% contingency

Comment [d3]: 5 + 15% contingency

Comment [d4]: Suggest clarifying that well estimates include the number of wells to be constructed; not all wells may be operating at one time

Table 2-6. Summary of Components under Alternative 4C-3

Optimization Period	Initial Buildout (0–5 years)	Year 5 (5–10 years)	Year 10 (10–20 years)	Year 20 (20+ years)
Agricultural Land Application				
Agricultural Units (AUs)[a]	575 acres			
AU Extraction Wells	80	80	102	~~103~~102
AU Pipeline	72,751 lf	72,751 lf	83,374 lf	83,374 lf
AU Extraction Flow	4,388 gpm	4,388 gpm	4,388 gpm	3,606 gpm
In-Situ Remediation Zone (IRZ)				
Extraction Wells	~~22~~21	~~22~~21	25	25
Injection Wells	108	108	111	111
Pipelines	39,240 lf	39,990 lf	42,365 lf	42,365 lf
Carbon-amended IRZ flow (SCRIA/SAIRZ)[b,c]	431 gpm	244 gpm	319 gpm	213 gpm
IRZ Recirculation flow (CAIRZ)[b, c]	~~279~~ 175 gpm	175 gpm	175 gpm	0 gpm
Ex-Situ Treatment				
~~Extraction~~ Injection Wells	31			
Pipelines	41,816 lf			
~~Extraction~~ System Flow (annualized average)	1,222 gpm			
Northwest Area Freshwater Injection				
Extraction/Injection Wells	~~5/4~~3/6			
Pipelines	36,669 lf			
Northwest Freshwater Reinjection Flow[b]	92 gpm			
Monitoring Wells/Supporting Infrastructure				
Monitoring Wells	558			
Wells and Supporting Infrastructure acreage[d]	54	54	56	56
Access roads (acres)	7	9	12	15

Notes:

All totals include existing infrastructure. All estimates have been scaled up from the data from the Feasibility Study and Addenda to account for a larger plume than used in the feasibility study. See discussion in text.

[a] Desert View Dairy, Gorman, Cottrell, Ranch, plus additional Agricultural Units.

[b] All flows are based on average annual rates.

[c] SCRIA refers to the South Central Reinjection Area.
SAIRZ refers to the Source Area In-Situ Remediation Zone.
CAIRZ refers to the Central Area In-Situ Remediation Zone.

[d] Includes acreage for all wells, including Agricultural Units, In-Situ Remediation, Northwest Freshwater Reinjection, and monitoring wells.

lf=linear feet

gpm = gallons per minute

Comment [d1]: Totals are linear feet of trenching, we suggest adding a note to clarify

Comment [d2]: 140 gpm + 25% contingency

Comment [d3]: 5 + 15% contingency

Comment [d4]: Suggest clarifying that well estimates include the number of wells to be constructed; not all wells may be operating at one time

Table 2-7. Summary of Components under Alternative 4C-4

Optimization Period	Initial Buildout (0–5 years)	Year 5 (5–10 years)	Year 10 (10–20 years)	Year 20 (20+ years)
Agricultural Land Application				
Agricultural Units (AUs)[a]	1,394 acres			
AU Extraction Wells	149	149	190	190
AU Pipeline	132,875 lf	132,875 lf	147,374 lf	147,374 lf
AU Extraction Flow	4,388 gpm			
In-Situ Remediation Zone (IRZ)				
Extraction Wells	~~22~~21	~~22~~21	25	25
Injection Wells	108	108	111	111
Pipelines	39,240 lf	39,990 lf	42,365 lf	42,365 lf
Carbon-amended IRZ flow (SCRIA/SAIRZ)[b,c]	431 gpm	244 gpm	319 gpm	213 gpm
IRZ Recirculation flow (CAIRZ)[b,c]	~~279~~175 gpm	175 gpm	175 gpm	0 gpm
Northwest Area Freshwater Injection				
Extraction Wells	~~5~~3			
Injection Wells	~~4~~6			
Pipelines	36,669 lf			
Northwest Freshwater Reinjection Flow[b]	92 gpm			
Monitoring Wells/Supporting Infrastructure				
Monitoring Wells	558			
Wells and Supporting Infrastructure acreage[d]	56	56	59	59
Access roads (acres)	8	8	9	9

Notes:
All totals include existing infrastructure. All estimates have been scaled up from the data from the Feasibility Study and Addenda to account for a larger plume than used in the feasibility study. See discussion in text.

[a] Desert View Dairy, Gorman, Cottrell, Ranch, plus additional Agricultural Units.
[b] All flows are based average annual rates.
[c] SCRIA refers to the South Central Reinjection Area.
SAIRZ refers to the Source Area In-Situ Remediation Zone.
CAIRZ refers to the Central Area In-Situ Remediation Zone.
[d] Includes acreage for all wells, including Agricultural Units, In-Situ Remediation, Northwest Freshwater Reinjection, and monitoring wells.
lf = linear feet
gpm = gallons per minute

Comment [d1]: Totals are linear feet of trenching, we suggest adding a note to clarify

Comment [d2]: 140 gpm + 25% contingency

Comment [d3]: 5 + 15% contingency

Comment [d4]: Suggest clarifying that well estimates include the number of wells to be constructed; not all wells may be operating at one time

Table 2-8. Summary of Components under Alternative 4C-5

Optimization Period	Initial Buildout (0–5 years)	Year 5 (5–10 years)	Year 10 (10–20 years)	Year 20 (20+ years)
Agricultural Land Application				
Agricultural Units (AUs)[a]	575 acres			
AU Extraction Wells	80	80	102	102
AU Pipeline	68,489 lf	68,489 lf	83,374 lf	83,374 lf
AU Extraction Flow[b]	3,167 gpm	3,167 gpm	3,167 gpm	2,618 gpm
In-Situ Remediation Zone (IRZ)				
Extraction Wells	19	19	23	23
Injection Wells	90	90	91	91
Pipelines	33,940 lf	34,690 lf	36,340 lf	36,340 lf
Carbon-amended IRZ flow (SCRIA~~/SAIRZ~~)[b,c]	244 gpm	244 gpm	319 gpm	213 gpm
IRZ Recirculation flow (CAIRZ)[b,c]	~~279~~ 175 gpm	175 gpm	175 gpm	0 gpm
Ex-Situ Treatment				
Extraction Wells	~~20~~6	~~20~~6	~~24~~6	~~24~~6
Injection Wells	10	10	13 (year 15)	13
Pipelines	7,719 lf	7,719 lf	8,594 lf	8,589 lf
~~Extraction~~ System Flow (annual)	250 gpm	250 gpm	250 gpm	~~0~~ 250 gpm
Northwest Area Freshwater Injection				
Extraction/Injection Wells	~~5/4~~3/6			
Pipelines	36,669 lf			
Northwest Freshwater Reinjection Flow[b]	92 gpm			
Monitoring Wells/Supporting Infrastructure				
Monitoring Wells	558			
Wells and Supporting Infrastructure(acres)[d]	52	52	54	54
Access roads (acres)	4	4	5	5

Notes:

All totals include existing infrastructure. All estimates have been scaled up from the data from the Feasibility Study and Addenda to account for a larger plume than used in the feasibility study. See discussion in text.

[a] Desert View Dairy, Gorman, Cottrell, Ranch, plus additional Agricultural Units.

[b] All flows are based on average annual rates.

[c] SCRIA refers to the South Central Reinjection Area.

~~SAIRZ refers to the Source Area In-Situ Remediation Zone.~~

CAIRZ refers to the Central Area In-Situ Remediation Zone.

[d] Includes acreage for all wells, including Agricultural Units, In-Situ Remediation, Northwest Freshwater Reinjection, and monitoring wells.

lf = linear feet

gpm = gallons per minute

Comment [d1]: Totals are linear feet of trenching, we suggest adding a note to clarify

Comment [d2]: 140 gpm + 25% contingency

Comment [d3]: 5 + 15% contingency

Comment [d4]: Suggest clarifying that well estimates include the number of wells to be constructed; not all wells may be operating at one time

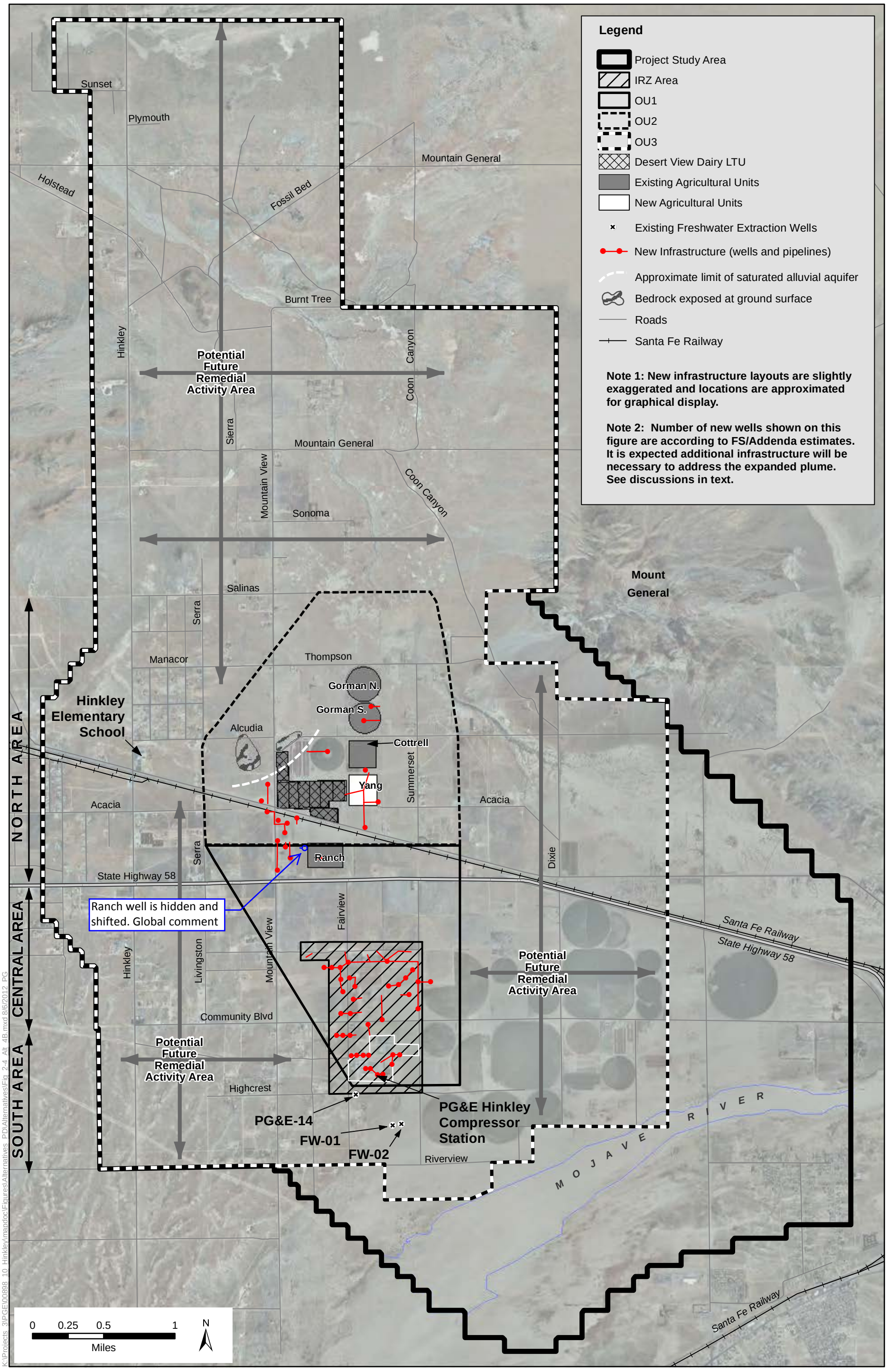
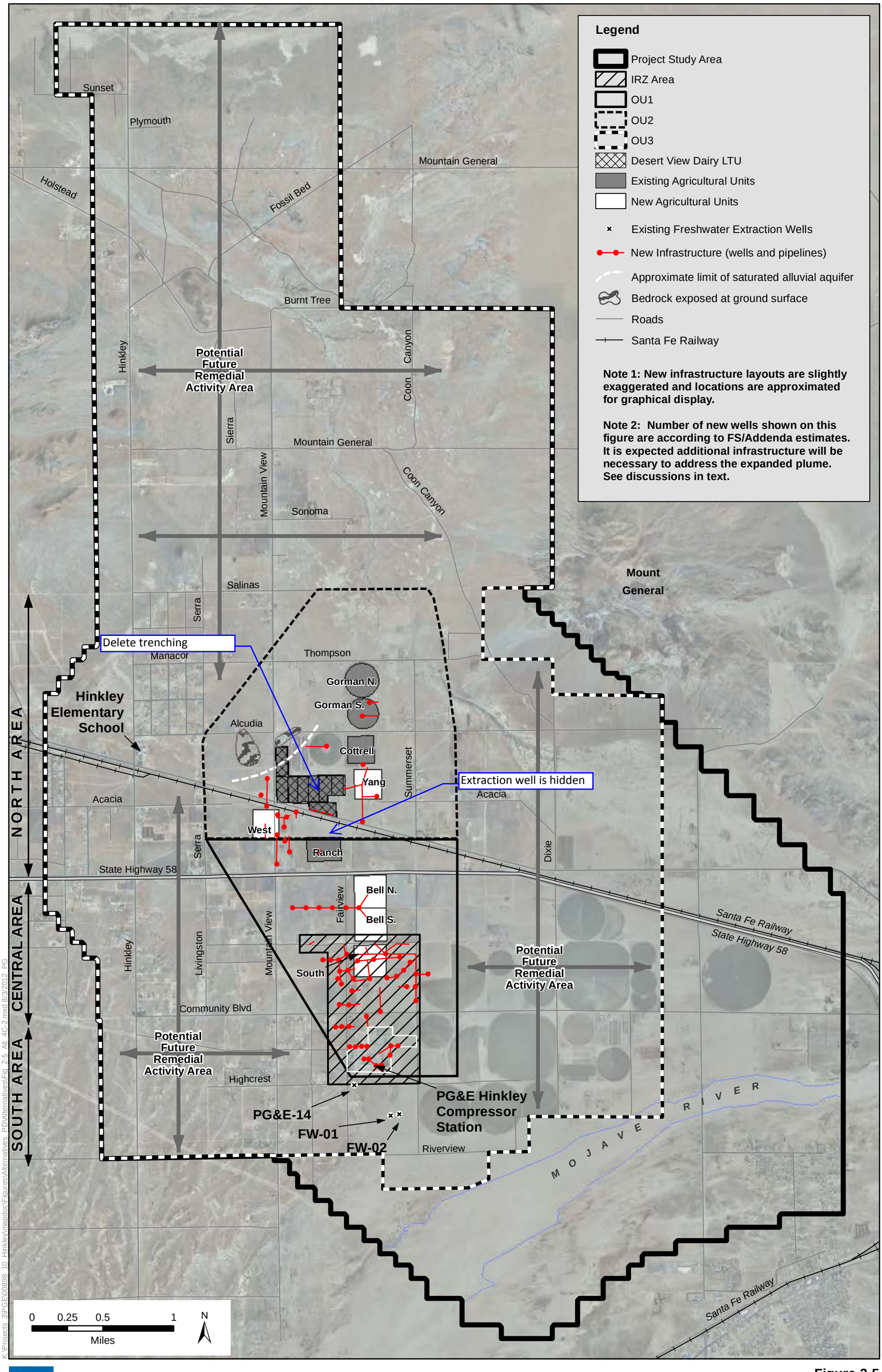


Figure 2-4
Alternative 4B Conceptual Layout
(Initial Buildout to Year 20)



K:\Projects_3\PGE\00898_10_Hinkley\mapdoc\Figures\Alternatives_PD\Alternatives\Fig_2-5_Alt_4C-2.mxd 8/3/2012 PG

Figure 2-5
Alternative 4C-2 Conceptual Layout
(Initial Buildout to Year 20)

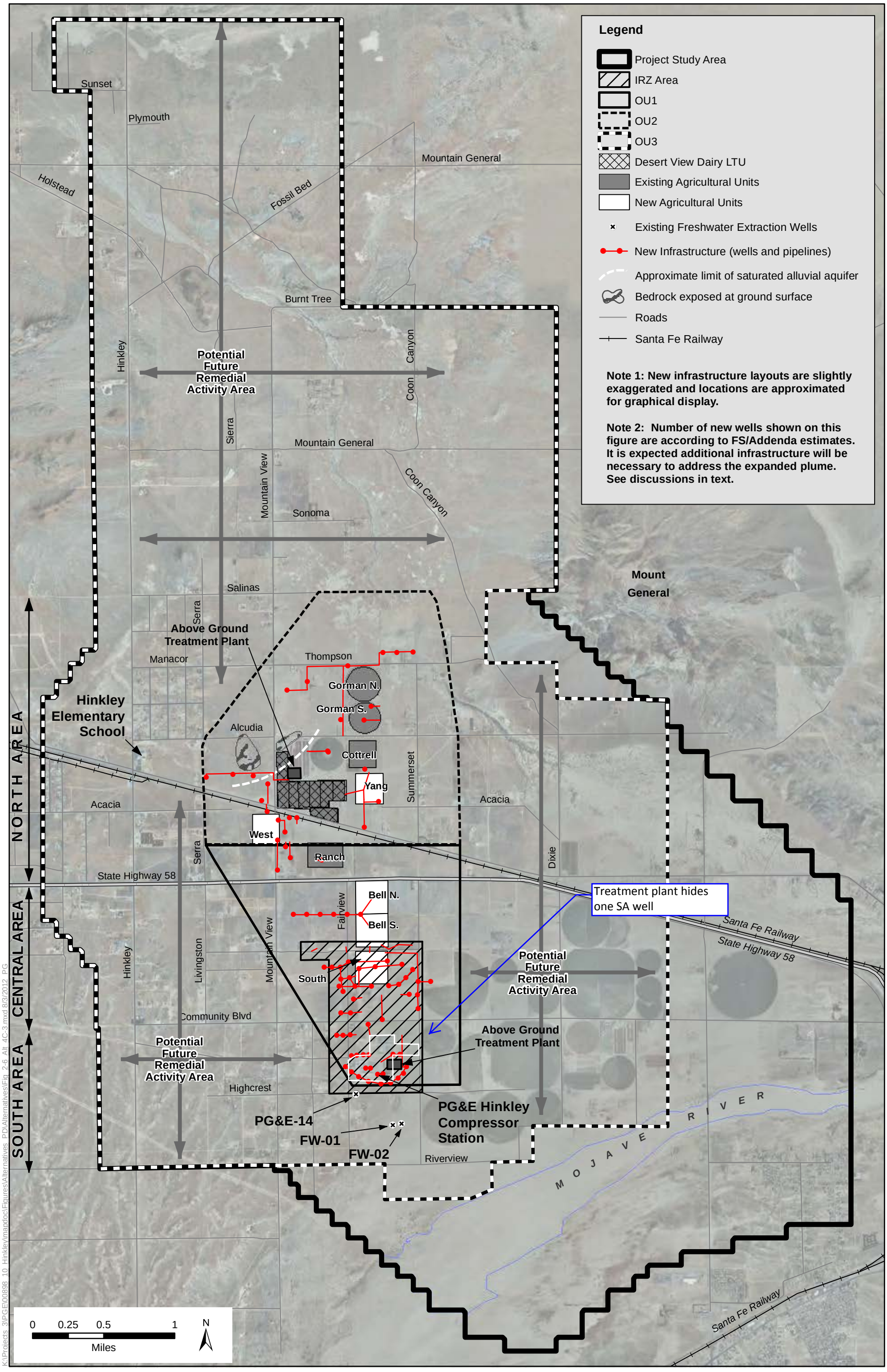


Figure 2-6
Alternative 4C-3 Conceptual Layout
(Initial Buildout to Year 20)

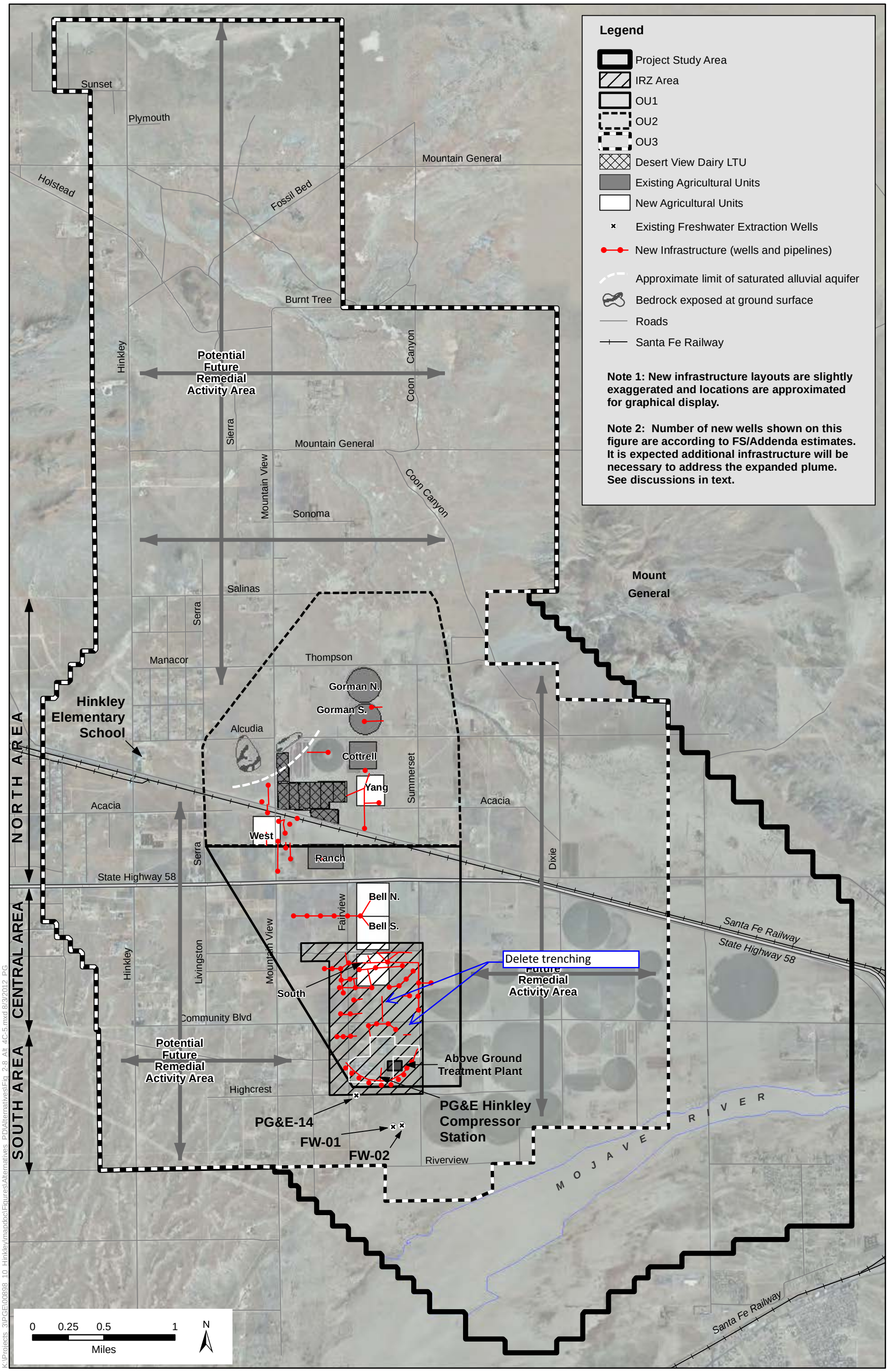


Figure 2-8
Alternative 4C-5 Conceptual Layout
(Initial Buildout to Year 20)

Table 3.5-9. Estimated New Construction Quantities by Alternative

Alternative	Before Scaling: Agricultural Treatment Unit (Acres)	Before Scaling: Pipeline (linear feet)	Before Scaling: Wells	Before Scaling: Above-Ground Treatment Facility (square feet)	After Scaling: Agricultural Treatment Unit (Acres)	After Scaling: Pipeline (linear feet)	After Scaling: Wells	After Scaling: Above-Ground Treatment Facility (square feet)
No Project	0	16,407	45	0	0	16,407	45	0
4B	40	19,557	48	0	264	58,805	219	0
4C-2	~~168~~169	26,142	60	0	~~392~~393	68,245	233	0
4C-3	~~168~~169	50,322	~~82~~79	81,060	~~392~~393	~~72,507~~114,323	265	125,705
4C-4	713	40,572	~~63~~60	0	1,212	132,631	303	0
4C-5	~~168~~169	~~32,317~~28,077	60	37,500	~~392~~393	70,664	~~233~~234	37,500

Notes:
All numbers represent new infrastructure in addition to that which already existed as of late 2011.
"Before Scaling" refers to the data on remedial infrastructure provided by PG&E based on the conceptual alternatives design in the Feasibility Study/Addenda. As discussed in Chapter 2, the Feasibility Study/Addenda evaluated the remedial infrastructure needed to address chromium plume as it is existed in 2010 and early 2011.
"After Scaling" refers to estimates of the potential amount of remedial infrastructure that may be needed to address the chromium plume as it existing in the Fourth Quarter 2011, when it was somewhat larger than in 2010 and early 2011, plus an assumed 15% potential expansion in the future. As discussed in Chapter 2, ICF worked with PG&E to scale up the potential infrastructure using various scaling factors and considerations for different remedial actions. The "after scaling" numbers are used for environmental analysis as they represent a conservative estimate.

Comment [d1]: 351-182

Comment [d2]: 575-182

Comment [d3]: +41,816 ex-situ trenching

Comment [d5]: 51 AU wells + 39 IRZ +20 ex-situ + 124 monitoring = 234

Comment [d4]: 16,407-4,240(Source Area)+9,735+6,175 = 28,077

3.5.5.2 Operations Emissions

Operational activities associated with each alternative would result in a continuous source of criteria pollutant and GHG emissions associated with worker vehicle commute trips, materials delivery truck trips, waste hauling truck trips, and the operation of wells and above-ground treatment facility equipment.

Emissions associated with worker vehicle commute trips, materials delivery truck trips, and waste hauling truck trips from each alternative were quantified using emission factors from the EMFAC2011 web tool and trip data from the project applicant. Exhaust emission factors from EMFAC2011 for light duty vehicles, light duty trucks, and medium duty vehicles were utilized in conjunction with the worker commute trip data received from the project applicant in estimating emissions associated with worker trips. Similarly, an emission factor for heavy-duty tractor trucks was used with the materials delivery and waste hauling trip data to account for delivery and waste hauling trips. Re-entrained road dust was quantified using EPA re-entrained road dust methodologies for paved and unpaved roads. The variables used to estimate motor vehicle emissions are summarized in Table 3.5-10. Note that while materials delivery and waste hauling trips would occur sporadically throughout the year, the daily emission calculations assume one trip on the maximum day.

#30

Attachment 1

Table 3.5-10. Maintenance and Operations Sources of Emissions by Alternative

		Totals Before Scaling		Totals After Scaling (1)	
Alternative	Activities	Max. Daily	Annual	Max. Daily	Annual
Existing	*Worker Commute (VMT)*	*25*	*6,000*	*25*	*6,000*
	Ethanol Deliveries (VMT)	*240*	*~~2,880~~1,485*	*240*	*~~2,880~~1,485*
	Electricity Consumption (kwh)	*8,510*	*2,042,501*	*8,510*	*2,042,501*
No Project	Worker Commute(VMT)	25	6,000	25	6,000
	Ethanol Deliveries (VMT)	240	~~2,880~~1,485	240	~~2,880~~1,485
	Electricity Consumption (kwh)	27,422	6,581,323	27,422	6,581,323
Alternative 4B	Worker Commute (VMT)	50	12,000	73	17,549
	Ethanol Deliveries(VMT)	240	~~2,880~~1,485	300	~~4,212~~1,856
	Electricity Consumption (kwh)	29,055	6,973,263	42,491	10,197,856
	Harvesting and Plowing (acres)	--	40	--	264
Alternative 4C-2	Worker Commute (VMT)	50	12,000	72	17,164
	Ethanol Deliveries (VMT)	240	~~2,472~~1,485	300	~~3,536~~1,856
	Electricity Consumption (kwh)	30,362	7,286,815	42,491	10,422,673
	Harvesting and Plowing (acres)	--	168	--	392
Alternative 4C-3	Worker Commute (Ex-Situ) (VMT)	120	28,800	186	44,662
	Material Deliveries (Ex-Situ) (VMT)	240	2,880	372	4,466
	Worker Commute (VMT)	288	69,120	418	100,242
	Ethanol Deliveries (VMT)	240	1,485	300	~~2,154~~1,856
	Treatment Residue Disposal (VMT)	424	5,088	658	7,890
	Ex-Situ Diesel Fuel (gallons)	5	1,200	8	1,861
	Electricity Consumption (kwh)	40,424	9,701,702	58,625	14,069,994
	Harvesting and Plowing (acres)	--	168	--	392
Alternative 4C-4	Worker Commute(VMT)	50	12,000	97	23,268
	Ethanol Deliveries(VMT)	240	~~2,472~~1,485	300	~~4,793~~1,856
	Electricity Consumption (kwh)	30,484	7,316,211	59,109	14,186,259
	Harvesting and Plowing (acres)	--	713	--	1,212

Comment [d6]: There are only a few ethanol deliveries per year

Comment [d7]: 288 miles per day which assumes 4 people for 3 shifts (12 miles each way). This number is excessive by a factor of 2 or more

Comment [d8]: 240 VMT/month, not daily

Comment [d9]: 424 VMT/month, not daily

#30

Attachment 1

Alternative	Activities	Totals Before Scaling Max. Daily	Totals Before Scaling Annual	Totals After Scaling (1) Max. Daily	Totals After Scaling (1) Annual
Alternative 4C-5	Worker Commute (Ex-Situ) (VMT)	120	28,800	120	28,800
	Material Deliveries (Ex-Situ) (VMT)	240	2,880	240	2,880
	Worker Commute (VMT)	400	96,000	572	137,214
	Ethanol Deliveries (VMT)	240	1,485	300	~~2,123~~1,856
	Treatment Residue Disposal (VMT)	424	5,088	424	5,088
	Ex-Situ Diesel Fuel (gallons)	5	1,200	5	1,200
	Electricity Consumption (kwh)	30,261	7,262,532	43,252	10,380,413
	Harvesting and Plowing (acres)	--	168	--	392

Source: PG&E 2011, 2012 data responses.

(1) Data shown herein is the total for each emission source by alternative, and not net new over existing.

(2) PG&E data based on Feasibility Study/addenda based on February 2011 plume. ICF scaled up based on estimated plume size 15% larger than December 2011 plume (see discussion in Chapter 2, *Project Description*).
Scaling factors used: Worker Commute(Ex-Situ) = ex situ gpm; Material Deliveries(Ex-Situ) = ex situ gpm; Worker Commute(VMT/day) = # of wells (not including monitoring wells); Ethanol Deliveries(VMT/day)= carbon injection gpm; Treatment Residue Disposal(VMT/day) = ex situ gpm; Ex-Situ Diesel Fuel (gals/yr)= ex situ gpm; Electricity Consumption(kwh/yr) = # of wells (not including mon. wells).

VMT = vehicle miles traveled; kwh = kilowatt hours; yr = year; ex-situ = above-ground treatment facility

Comment [d10]: 288 miles per day which assumes 4 people for 3 shifts (12 miles each way). This number is excessive by a factor of 2 or more

Comment [d11]: 240 VMT/month not daily

Comment [d12]: 424 VMT/month, not daily

#30

Attachment 1

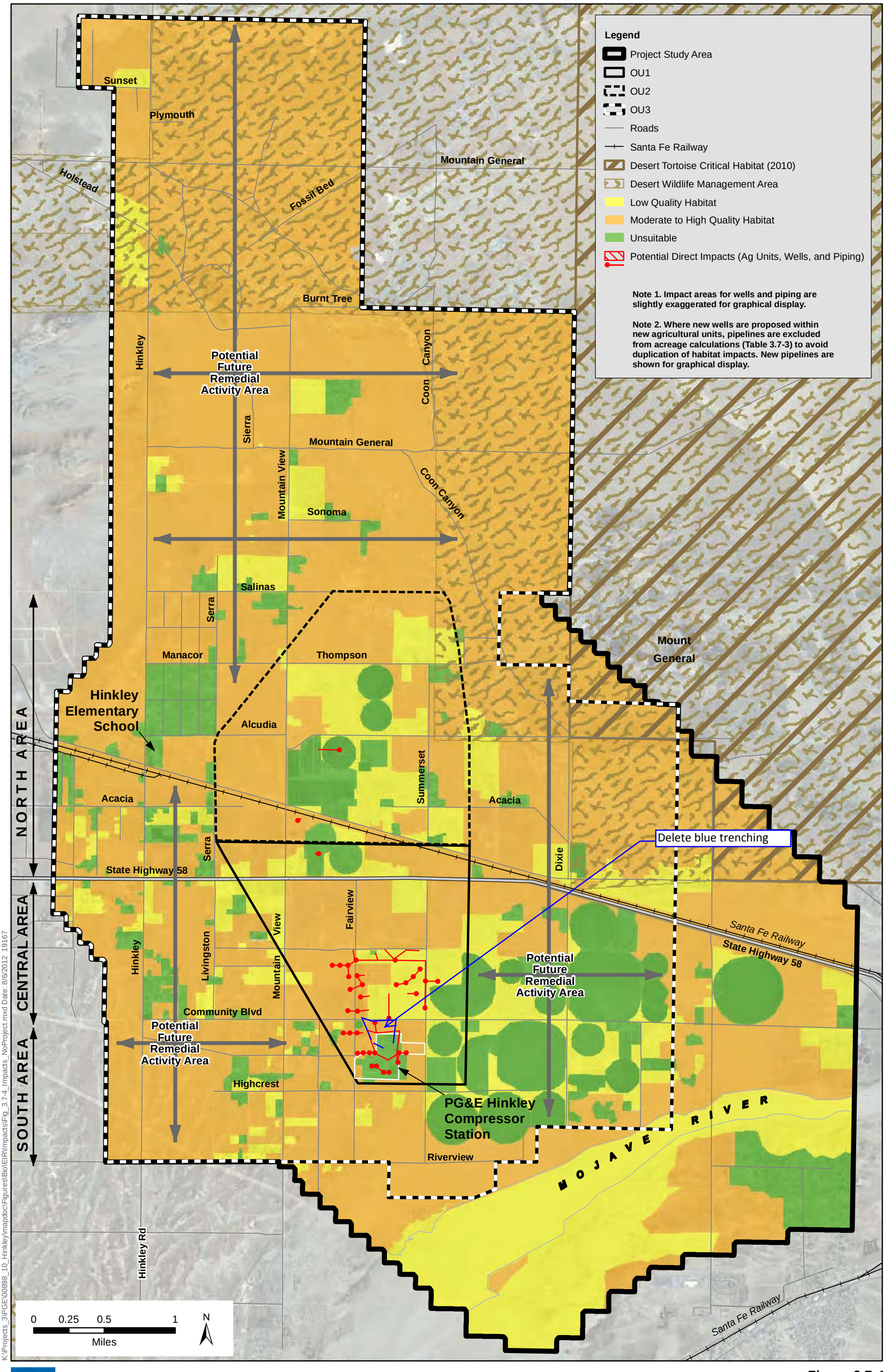


Figure 3.7-4
No Project Alternative
Potential Areas of Direct Impacts

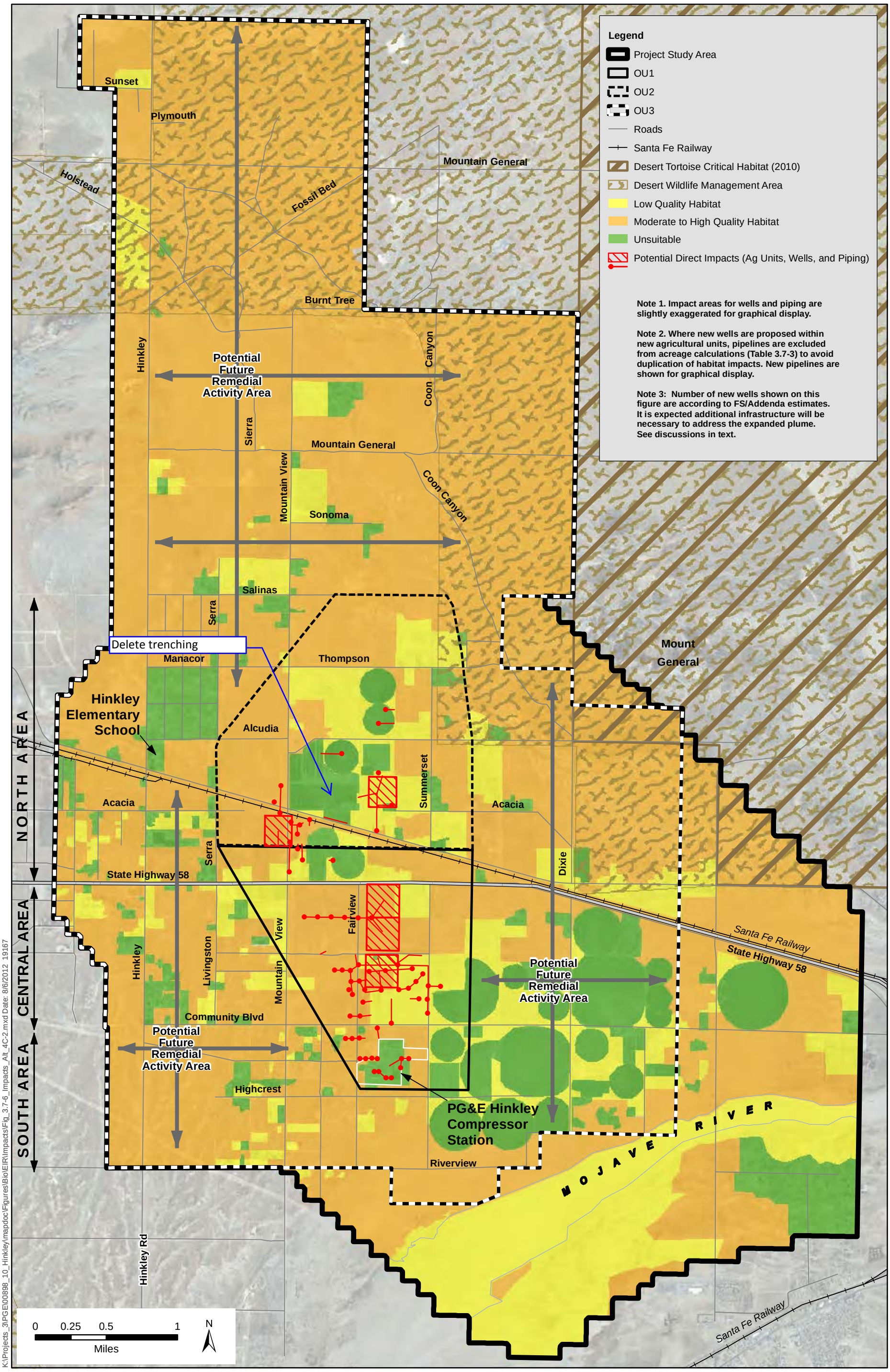


Figure 3.7-6
Alternative 4C-2
Potential Areas of Direct Impacts

#30

Attachment 1

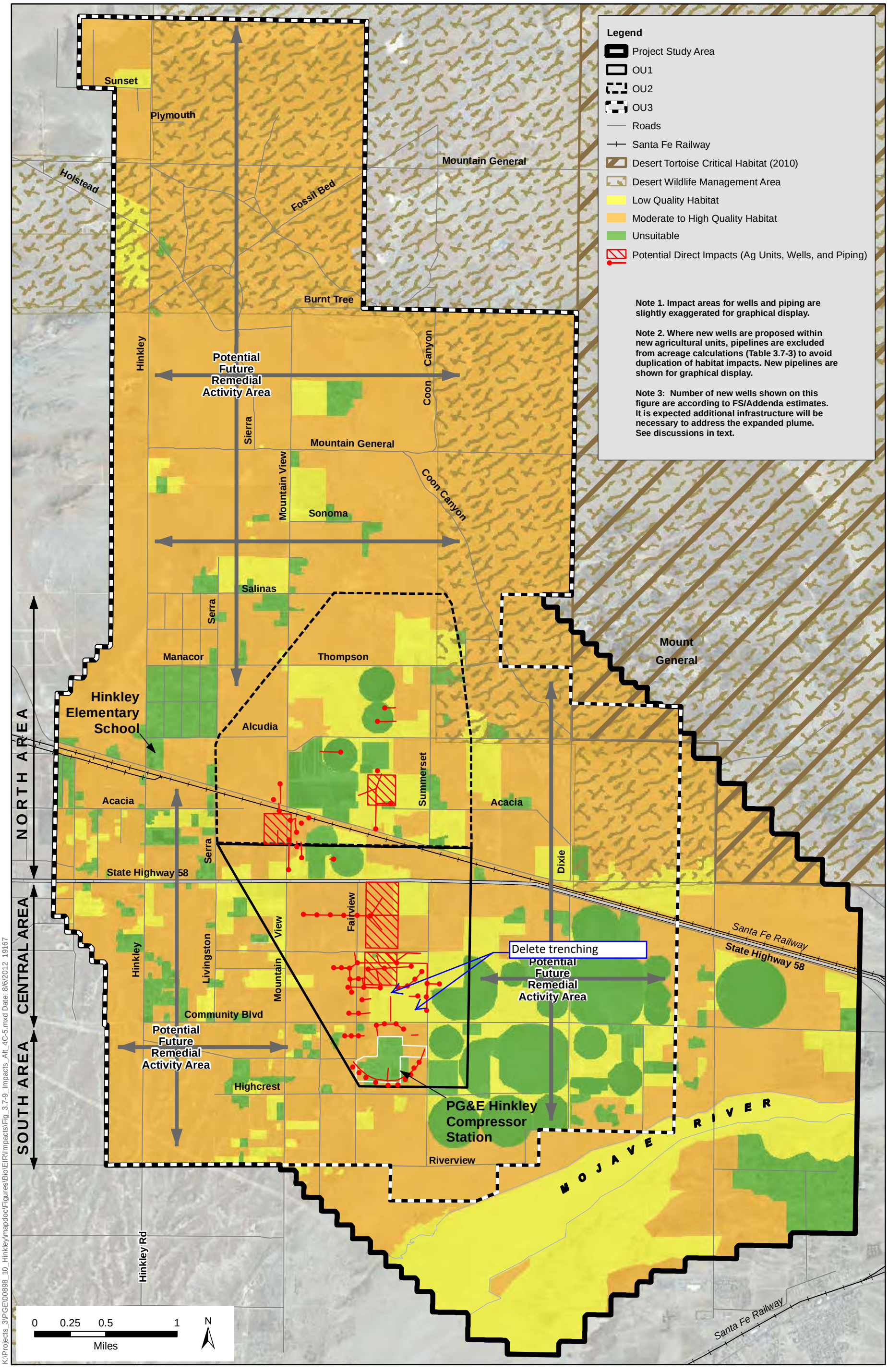


Figure 3.7-9
Alternative 4C-5
Potential Areas of Direct Impacts

Attachment 2 – Discussion of Alternate Mitigation Options for Effects due to Agricultural Treatment

Background: A key aspect of the proposed remedy is the use of agricultural treatment for treatment of hexavalent chromium. In addition to being a well-proven method for groundwater treatment, this treatment approach has several large-scale benefits for the community and the environment, including:

1) Beneficial utilization of the groundwater resource during the life of the cleanup
2) Production of a useful, locally-used product (crops/animal feed)
3) Creating a land use that is consistent with and builds upon the agricultural heritage of the Hinkley area
4) Providing employment for local agricultural-related workers and contractors
5) Potential avoidance of greenhouse gas and other transport-related emissions due to the reduction in trucking of animal feeds from areas outside the Hinkley Valley
6) Providing a basis for a stable, sustainable economic activity in the Hinkley area

As noted in the EIR, agricultural treatment may have impacts on groundwater quality (such as potential increases in total dissolved solids [TDS] and nitrate). At some level, these impacts may require mitigation, as set out in Mitigation Measures WTR-MM-4, WTR-MM-5 and WTR-MM-6 of the draft EIR. This addendum is intended to offer an alternative and potentially superior approach to these draft mitigation measures for the RWQCB's consideration.

Groundwater quality issues related to agricultural impacts are a challenge facing much of California. State Water Board Policies acknowledge the need for area-wide and basin-wide approaches to salt and nutrient management. This is shown in the state's Recycled Water Policy, adopted in Resolution No. 2009-0011.[1] A Regional Water Quality Control Board, Lahontan Region (LRWQCB) staff briefing to the Board in January 2012 stated in part "The Recycled Water Policy…. establishes goals to manage a sustainable water supply through increased use of recycled water, enhanced stormwater management, and improved water conservation efforts. The Water Boards have determined that regulating individual waste discharges in a groundwater basin may not be effective or efficient at ensuring long-term protection of groundwater resources and its beneficial uses without some overall evaluation of potential salt and nutrient loading."

The location and geometry of the Hinkley plume may afford a unique opportunity for positive basin-level salt and nutrient management approaches. Conceptually, if beneficial uses of groundwater in the basin (such as farming) can be relocated from an area where they may cause a significant impact (near other quality-sensitive water users) to an area where they do not (in an area away from other quality-sensitive

[1] Language from this policy states: These challenges also present an unparalleled opportunity for California to move aggressively towards a sustainable water future. The State Water Resources Control Board (State Water Board) declares that we will achieve our mission to "preserve, enhance and restore the quality of California's water resources to the benefit of present and future generations." To achieve that mission, we support and encourage every region in California to develop a salt/nutrient management plan by 2014 that is sustainable on a long-term basis and that provides California with clean, abundant water. These plans shall be consistent with the Department of Water Resources' Bulletin 160, as appropriate, and shall be locally developed, locally controlled and recognize the variability of California's water supplies and the diversity of its waterways. We strongly encourage local and regional water agencies to move toward clean, abundant, local water for California by emphasizing appropriate water recycling, water conservation, and maintenance of supply infrastructure and the use of stormwater (including dry-weather urban runoff) in these plans; these sources of supply are drought-proof, reliable, and minimize our carbon footprint and can be sustained over the long-term. We declare our independence from relying on the vagaries of annual precipitation and move towards sustainable management of surface waters and groundwater, together with enhanced water conservation, water reuse and the use of stormwater.

users), then the overall water quality and usefulness of the groundwater resources of the basin may actually be improved (when compared to baseline conditions).

PG&E is planning to explore this option in cooperation with existing farmers and dairy producers in the Hinkley area. Conceptually, the idea of a 'farm swap' during the life of a cleanup may offer significant environmental benefits. By having a local farmer remove a given field from production (idling), and transferring that pre-existing farming to a field planned for use as part of the remedy, the overall net effect will be that no extra salt or nutrient impacts will be created. In fact, if the idled field uses an older, less efficient form of irrigation (when compared to a new high-efficiency irrigation method such as drag drip, as discussed below) the overall environmental impact of this farming activity will be reduced. This reduction in net environmental impact may reduce or eliminate the need for some of the mitigation measures.

In a related but separate vein, the agricultural approaches being used at Hinkley may hold promise for a net reduction of the potential groundwater impacts of agriculture in the area. The advanced drag-drip irrigation systems currently being deployed at the site have several benefits for arid-land agriculture. By applying water directly to the base of the crop (rather than spraying it out into the air) a significant source of evaporation is eliminated. This reduction in evaporation results in less water use per unit of agricultural production, which is turn leads to the following environmental benefits:

1) Less use of limited groundwater resources
2) Reduction in agriculture-induced aquifer drawdown
3) Lower salt loading to the aquifer for a given unit of agricultural production
4) Reductions in electric use for pumping (thereby reducing secondary effects of power generation such as GHG emissions, transmission impacts, etc.,)

The higher capital costs of the drag-drip systems have been a deterrent to having local farmers employ this method. PG&E is prepared to explore the development of demonstration/incentive programs to encourage adaptation of these or similar conservation-focused agricultural techniques for the Mohave basin. PG&E believes that having the current agricultural units as demonstration units that local farmers can see and observe in everyday use may assist in dispelling concerns about operational issues, maintenance, etc. Such a conservation program, if successful, would reduce the net water usage and salt and nutrient load on the basin. This reduction would serve as mitigation for the potential impacts of the project.

PG&E believes that these approaches offer a significant opportunity for environmental benefits at the area and basin level of analysis. However, it is important that these approaches are not misconstrued to mean impacts to water users in the immediate vicinity of the project will not be mitigated. PG&E notes that Mitigation Measure WTR-MM-2: Water Supply Program for Wells that are Affected by Remedial Activities is specifically designed to address and mitigate this concern. PG&E is fully supportive of the adoption of WTR-MM-2, and regardless of approach, will work to minimize and, if necessary, mitigate the potential impacts of the remedy on local groundwater users.

As such, PG&E offers the draft text edits for the RWQCB's consideration. The intent of the text is to provide the necessary flexibility to allow PG&E to pursue the programs described above. It is structured to provide alternatives: either mitigation via the use of the alternative mitigation strategies enumerated here, OR to ensure mitigation via the approaches already contained within the EIR. The existing language from the EIR has been extensively copied below. At the RWQCB's discretion, PG&E is prepared to assist in the refinement of this language, in order to allow for these environmentally superior alternative mitigations to be employed.

Proposed Revised EIR text is provided below in italics.

Mitigation Measure WTR-MM-4: Mitigation Program for Restoring the Hinkley Aquifer Affected by Remedial Activities for Beneficial Uses

This requirement holds PG&E responsible for restoring the Hinkley aquifer back to baseline conditions to the extent changes from baseline conditions are attributable to the implementation of the remedy, or otherwise mitigating the effects on the aquifer of the remedial actions.

Due to the beneficial nature of the agricultural treatment proposed for the site, this may be accomplished in one of two ways, or some combination thereof:

1) *Aquifer restoration*
2) *Agricultural offsets and/or salt/nutrient mitigation*

Aquifer restoration

1) *No later than 5 years prior to the conclusion of the proposed project, PG&E will conduct an assessment to evaluate adverse impacts or potential adverse impacts to the Hinkley aquifer from its remedial actions.*

a) *If the assessment finds that (i)the aquifer contains constituents, exceeding drinking water standards or water quality objectives and are in excess of baseline conditions and of the assimilative capacity of the aquifer, (ii) that these constituents are likely to be present upon the conclusion of remedial actions in a manner that would restrict beneficial uses of the aquifer and (iii) that these changes from baseline conditions are attributable to the implementation of the remedy, PG&E will propose cleanup actions to restore the aquifer for beneficial uses as soon as possible, as approved by the Water Board. Aquifer water quality restoration to baseline conditions will occur no longer than 30 years after completion of chromium remediation.*

b) *If the assessment finds that the aquifer includes groundwater drawdown such that domestic or agricultural wells were still experiencing water supply shortages and require alternative water supplies, and these excess levels are likely to exist upon the conclusion of remedial actions, and these changes are attributable to the implementation of the remedy, PG&E will propose actions to restore the aquifer for beneficial uses as soon as possible, as approved by the Water Board or Mojave Water Agency. The assessment shall specify the time required for restoration activities, and groundwater levels will be restored to baseline conditions within that time frame, subject to adjustment as needed, with approval of the Water Board or the Mojave Water Agency, based on the implementation of the restoration activities.*

c) *Every year following preparation of the assessment, PG&E must submit a status report of actions to restore the aquifer for beneficial uses. The status report will describe all actions taken over the course of the year and list proposed actions for implementation during the following year. An updated schedule will be provided predicting fulfillment of aquifer restoration.*

Agricultural offsets and or salt/nutrient mitigation

2) *In the case of impacts due to agricultural treatment, it is recognized that some increases in TDS and other dissolved constituents may occur. These potential increases are an inherent result of the beneficial use of the aquifer for farming, and are similar to impacts that are caused by other agriculture in the Hinkley Valley and the greater Mojave Basin. Acknowledging that salt and*

nutrient issues are most effectively managed on a basin-wide plan, the Board may approve the use of agricultural offsets, or salt and nutrient management programs in lieu of aquifer restoration as set forth in item 1a above (or to reduce the scope of potential aquifer restoration). (However, this section is not intended to relieve PG&E of any responsibility for mitigating impacts to individual well owners as described in MM-WTR-2.) The measures used under this section must provide an equivalent level of mitigation , and may include the following:

a) *Temporary relocation of current farming activities (agricultural offsets) – extensive farming is currently taking place in close proximity to the planned remediation site. PG&E may work with farmers to relocate existing agricultural activities into the footprint of currently planned AUs; or may elect to pipe water from the current extraction wells to nearby currently irrigated fields. These agricultural offsets will have the net effect of not adding additional agriculture to the basin, and shall therefore serve as complete mitigation for the water quality impacts to the aquifer of those agriculture units which are offset (on an acre for acre basis). However, this section is not intended to any relieve PG&E of responsibility for mitigating impacts to individual well owners as described in MM-WTR-2.*

b) *Funding of salt/nutrient management planning and mitigation programs – PG&E may work with farmers, local agencies and other interested parties to develop salt/nutrient management, planning and mitigation programs. These programs may include measures such as incentives and outreach for reducing water use in local agriculture, funding for development of regional plans, studies and strategies, and/or funding for regional salt/nutrient removal or management programs.*

Mitigation Measure WTR-MM-5: Investigate and Monitor Total Dissolved Solids, Uranium, and Other Radionuclide Levels in relation to Agricultural Treatment and Take Contingency Actions

The Water Board will include requirements in the new CAO and/or associated WDRs issued for the remediation as follows:

- *PG&E will submit an investigation plan to the Water Board concerning TDS, uranium, and other radionuclides levels in relation to existing agricultural treatment by sampling water used for agricultural treatment and in groundwater upgradient, beneath and downgradient of agricultural treatment units*
- *After approval of the investigation plan by the Water Board, PG&E will conduct the investigation and provide the results to the Water Board along with an analysis of whether agricultural treatment is affecting naturally occurring uranium levels.*
- *PG&E will monitor all new agricultural treatment units by establishing a baseline of TDS, uranium, and other radionuclides levels at the outset agricultural treatment and during operation.*
- *If TDS, uranium, and other radionuclides levels are determined to increase measurably by a statistically significant amount due to agricultural treatment associated with remedial actions, then PG&E will monitor these levels in and adjacent to all agricultural treatment units for the duration of operation and propose remedial methods to restore the aquifer to baseline conditions.*
- *If the study of agricultural units indicates that TDS, uranium, and other radionuclide concentrations increase due to agricultural operations associated with remedial action and boundary monitoring confirms an increase in these levels, then corrective actions and or alternative water supplies will be provided per* ***Mitigation Measure WTR-MM-2*** *and* ***Mitigation***

Measure WTR-MM-4 *will be implemented toward the end of chromium plume remediation to restore aquifer beneficial uses.*

Alternatively, this mitigation measure may be implemented through the use of the Agricultural offsets and or salt/nutrient mitigation program as described in Mitigation Measure WTR-MM-4.

Mitigation Measure WTR-MM-6: Monitor Nitrate Levels and Manage Agricultural Treatment to Avoid Significant Increases in Nitrate Levels and Provide Alternative Water Supplies As Needed

Agricultural treatment will likely reduce nitrate levels in the groundwater aquifer overall. However, if groundwater is extracted from an area of higher nitrate concentrations and then treated in an area with much lower nitrate concentrations, it is possible that nitrate concentrations could increase in those areas.

The Water Board will include requirements in the new CAO and/or associated WDRs issued for the remediation as follows:

- *Given that prior agricultural treatment at the Desert View Dairy has been shown to reduce nitrate levels substantially, it is possible that use of irrigation water with higher nitrate levels may not result in increased nitrate levels in groundwater beneath new agricultural treatment locations. In order to confirm if this is occurring, PG&E will monitor nitrate levels for one year before creating new agricultural treatment units (as feasible without delaying remediation), monitor at the start of new agricultural treatment, and continue monitoring nitrate levels during implementation of all new agricultural treatment units. If nitrate levels do not increase above 10 ppm (as N) or by more than 10% compared to existing levels (if current levels are already above 10 ppm as N) and is statistically significant, or by more than 20% compared to existing levels (if current levels are less than 10 ppm as N) and is statistically significant then no further action, other than monitoring, will be required.*
- *If monitoring indicates that nitrate levels are approaching 10 ppm (as N) or increasing by more than the criteria noted above, then PG&E will implement a contingency plan for managing nitrate levels which may include some combination of the following:*
    - *Extraction source water will be shifted from application where it would raise concentrations substantially to locations with existing higher concentrations provided it would not cause an exceedance of nitrate levels at any domestic well.*
    - *Extraction source water will be blended before application to agricultural treatment units so as to avoid exceedance of 10 ppm as N and avoid increases in existing levels that exceed the criteria noted above.*
    - *Above-ground treatment may be used as necessary to meet the concentration levels described above.*
    - *If control of nitrate cannot meet these requirements, PG&E may request permission from the Water Board to allow temporary increases in nitrate conditions at certain agricultural treatment units, if and only if, the following can be demonstrated:*
        - *no domestic wells will contain nitrate concentrations above 10 ppm or an increase in nitrate levels exceeding the criteria above; or*
        - *PG&E will provide whole house water for any affected domestic well until such a time as nitrate concentrations return to existing concentrations at the affected well, and*
        - *PG&E will be held accountable for implementing remedial methods to restore the aquifer to baseline conditions.*

- *PG&E will estimate the duration of nitrate impairment of water quality due to remedial activities and will identify how affected groundwater nitrate levels will return to background conditions prior to the timeframe for remediation of the chromium plume to the established cleanup levels. The duration of nitrate impairment due to remedial activities may possibly extend beyond the time necessary to remediate the chromium plume; the goal of remedial operation in the later stages of the cleanup should be to minimize the duration of all impacts.*

- *The Water Board will retain the authority to approve or deny temporary impairment of the aquifer due to nitrate contamination and will make determinations on a case by case basis taking into account information on remedial progress, the affected wells and community, the certainty of returning affected groundwater to background water quality over time and any other relevant considerations.*

Alternatively, this mitigation measure may be met through the use of the Agricultural offsets and or salt/nutrient mitigation program as described in Mitigation Measure WTR-MM-4.

#31

1. Is water replacement available for livestock as well? 31-1

2. Are beef and milk from dairy safe to consume? 31-2

3. How safe is exposure to swamp coolers? 31-3

4. How long will water replacement last? should be lifetime 31-4

Loren Pitts
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#32A

November 4, 2012

Jonathan Quass
36433 Hinkley Road
Hinkley, CA 92347

Anne Holden
Lahontan Water Board
2501 Lake Tahoe Boulevard
South Lake Tahoe, CA 96150.
aholden@waterboards.ca.gov

Dear Ms. Holden,

I have reviewed the Draft Environmental Impact Report (EIR) for chromium cleanup in groundwater at Hinkley (the "Project"). I submit these comments to you in regards to the Project's impacts on arsenic and manganese in Hinkley groundwater. 32A-1

The State CEQA Guidelines require an EIR summary to identify areas of controversy known to the Lead Agency including issues raised by agencies and the public. (State CEQA Guidelines § 15123.) When the EIR was released for public review, the Lahontan Water Board ("LWB") was aware of the areas of controversy affecting this proposed project. However, the EIR did not include increases in secondary byproducts, such as dissolved arsenic and manganese, in the discussion of areas of known controversy. As a result of carbon injection remediation techniques, PG&E has already increased the amount of these byproducts in our groundwater. Further, these by products may potentially be another threat to human health in our community. Accordingly, LWB should revise this section of the EIR to reflect this issue of vital importance to the community. 32A-2

Under CEQA, a lead agency must describe the physical conditions in the area of the project at the time the Notice of Preparation is released. (State CEQA Guidelines, § 15125.) This "environmental setting" is normally the baseline condition against which a project's impacts are measured. (Ibid.) The selection of the baseline cannot be arbitrary, and must set forth a good faith and complete explanation for why a baseline other than the environmental setting is justified; this explanation must be supported by substantial evidence to be upheld. (*E.g., County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931.) The EIR attempts to set the baseline for "Concentrations of Other Constituents" such as arsenic and manganese. However, the EIR's description of the Environmental Setting contains several significant problems under CEQA and cannot be certified until these issues are corrected. 32A-3

The EIR claims that the background levels of arsenic in the Hinkley area may range from less than 1 ppb to 200 ppb. However, the data that LWB used to reach its estimate of background levels does not reflect the changed conditions in Hinkley. Specifically, the EIR relied upon studies conducted in 2001 and 2007, both of which do not account for the PG&E's use of carbon-amendment injections to groundwater, and thus reflects levels prior to in-situ 32A-4

remediation. (EIR 3.1-32.) Accordingly, LWB should conduct an independent study to determine the current background levels of arsenic in the project area, which will include the arsenic currently in the groundwater as a result of PG&E's carbon-amendment injections. The LWA should also consider the Mojave Water Agency's 1997 study entailed "Concentrations for Total Dissolved Solids, Arsenic, Boron, Fluoride, and Nitrite-Nitrate for Wells Sampled in the Mojave Water Agency Management Area, California, 1991-1997." (available at http://www.mojavewater.org/document-library.html.)

32A-4 cont'd

The EIR also provides manganese is a naturally-occurring in Hinkley and ranges from less than 1 ppb to 48 ppb. (EIR 3.1-33.) Again, the data that LWB used to reach its estimate of background levels does not reflect the changed conditions in Hinkley. The EIR relied upon one single study conducted in 2007, which does not account for the PG&E's use of carbon-amendment injections to groundwater, and thus reflects levels prior to in-situ remediation. (EIR 3.1-33.) Accordingly, LWB should conduct an independent study to determine the current background levels of manganese in the project area, which will include the manganese currently in the groundwater as a result of PG&E's carbon-amendment injections.

32A-5

The EIR plainly states that carbon-amendment injections to groundwater result in an increase in arsenic and manganese. Specifically, "[a]rsenic levels in groundwater increase from less than 1 ppb to 15 ppb in areas up to 500 feet downgradient of the carbon injection point." (EIR 3.1-32.) Further, "manganese levels in groundwater increased from less than 226 ppb up to over 4,000 ppb in areas downgradient of the carbon injection point and then declined back toward initial levels over time and distance as organic carbon levels dropped." (EIR 3.1-33.) Thus, the EIR's depiction of the environmental setting as it relates to arsenic and manganese does not reflect the increases that have occurred as a result of carbon-amendment injections.

32A-6

Section 3.1 of the EIR claims that project impacts to water supply associated with dissolved manganese and arsenic can be reduced to a less than significant level through Mitigation Measures WTR-MM-2 (alternative water supply), WTR-MM-4 (remediation of byproduct plumes) and WTR-MM-7 (byproduct plume control). However, LWB cannot assume that these mitigation measures will be effective unless the current levels of arsenic and manganese is disclosed as required by CEQA. (State CEQA Guidelines, § 15125.) The EIR is insufficient for failure to determine the existing environmental setting as required by CEQA.

32A-7

Sincerely,

Jonathan Quass

#32B

Mr. Quass

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. QUASS: Good evening, board. Thank you for being in our community and taking this time to listen to our concerns. Serving on the PG&E CAC, we've put a lot of hours and time into this EIR trying to look at it. And it's quite a time-consuming volume. Personally, I've still got a long ways to go. But the EIR is very important to us in that we -- we got to keep pushing ahead. We got to keep moving. And so if this EIR is to your pleasure to pass it, we would ask that you would leave some liberties in. Where they can be amended is technology as new information comes forward so that the process of remediation can move forward. And therefore, I support what I've seen so far of it in it being passed. 32B-1

Only one problem that we have is that the time for comment -- it sure would be nice if you gave us an extra 15 days on the deadline. We just -- we've just kind of really run up against it and we're trying to get all the way through the program. Thank you. 32B-2

#33

Betsy Shirkey

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MS. SHIRKEY: I usually can speak without one. Good evening. My name is Betsy -- that's B-e-t-s-y Shirkey, S-h-i-r-k-e-y. My husband and I own the property at 38949 Mountain View Road just on the corner of Sonoma and Mountain View. We have a 60-acre parcel, 10,000 pistachio trees, two houses, four wells -- da, da, da. We purchased this property by choice in 1990. We could have lived anywhere we wanted to. We had the financial wherewithal to live anywhere we wanted. And we chose Hinkley for the lifestyle, for the school, for the warm summer nights, for the clear skies, for the lack of noise. 60 fenced acres. And my friends would say what do you do with 60 fenced acres? Well, we shut the gate because we enjoy our privacy. We had four of our children attend Hinkley School. It was a wonderful school. It was an award winning state school.

I'm not -- I've read a little bit of the documentation. I'm not a scientist nor am I a healthcare professional. I am a wife, a mother, a grandmother, an experienced real estate professional -- and I know that the community of Hinkley has been destroyed. This has been destroyed by the inactions and actions of PG&E.

And to think that after 60 years of polluting the community, they're all of a sudden going to fix it quickly and without harm. It's just ludicrous.

17 years ago they were supposedly brought to their knees and not -- and instead of the plume being contained, it has spread. 33-1

I am concerned with the quality of the water as we all are, but I'm concerned with the effects of the remediation. I'm -- I was trusting. I was told oh, you're in a great place, your water is never going to be affected. It flows from the north through the south through your property and you're getting your water from the Tehachapis and nothing will ever go wrong with your water. And then out of nowhere, we're in the plume. We're right in the middle of the plume. And I -- hey, I'm a Republican. I like corporations. You know, I'm a free enterprise kind of person. And now I am brought to being afraid.

And, of course, then you read in the Internet, you know, there's nothing wrong with anything except for what those hysterical California people think. So maybe if we were in the Midwest, people would pay attention to what is going on.

So I think -- I truly as a real estate professional think that our community will not survive this.

We've been -- there's been an order that this be fixed for 17 years. It hasn't been fixed.

Unless we go with the suggestion that the two gentlemen made where we can have a quick resolution to this, I can see that not in my lifetime will this community be the same.

I think our legacy to Hinkley should be that of fixing the problem with the least damage to the environment. I think that would be 4-C-5 maybe with those guys doing their electrical magic to the water before it goes back in. 33-2

I -- I didn't know about you. So I have a question for Ian. And that is at what year does the sweet point hit that you had discussed? 33-3

And I'm sorry like John Turner that I didn't pay attention sooner. I would have been active in the Community Advisory Committee. And I thank you for your time. 33-4

#34

John Turner

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. TURNER: John Turner, J-o-h-n T-u-r-n-e-r. All right. I just want to kind of top things off. I want to discuss a little bit about the EIR. I'm all for it. I think it's great. But what's going to happen is that there's going to be large effects on all areas of Hinkley.

This does not say that hey, here is the project area, this is the place that's going to be affected. It's almost guaranteed that somewhere outside that project area is going to be affected. And that needs to be addressed to go back to hearing about the plume. The plume needs to be addressed. 34-1

In this report, it is mentioned 30 times "contaminated chromium." Okay. Contaminated chromium. So ask yourself, your common sense. I'm just a low high school graduate, don't know nothing, but I hear "contaminated chromium." However, we don't know what -- where it's at.

We don't know. There's nobody saying this is the contaminated chromium and this is natural. They say oh, we're going to get it down to background levels, which in this EIR report states that it's an open issue. 34-2

So looking at this EIR report and seeing that we don't have a defined plume, it tells me that, again, PG&E has an open book to do whatever they want to do and call it whatever they want to call it. It needs to be defined. You've heard it. 34-3

And I want to say one final thing. I've heard from four different CAC members tonight and I liked what I heard, but I never heard that from any CAC meeting. Why is that? 34-4

Thank you.

#35

Roberta Walker

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. WALKER: Hello. My name is Roberta Walker. I've lived in Hinkley for over 35 years.

Myself and many people in the community have concerns about the CAC, Community Advisory Committee. We are very intimidated by the way PG&E directs the course of every meeting. Direct questions are never really answered and the people are intimidated to speak their concerns because of PG&E's presence.

35-1

And why is there a PG&E employee on the CAC?

Why isn't there an independent facilitator on the CAC when we asked for one?

Also, PG&E are not allowing us to receive our ion (phonetic) exchange unit if we intend to discuss ion with them even though it is under order by you.

35-2

Thank you.

#34

Mr. Webster

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. WEBSTER: Good evening. Good evening. Thank you Mr. Chairmen, the rest of the board members for letting me make a few brief remarks. My name is Ian Webster. I am the IRP, Independent Review Panel manager for the Hinkley Community Advisory Committee. I've been in this position since early March and I've been helping the CAC understand the project better including this major document, 1002 pages of the EIR. As a -- professionally, I'm an environmental engineer for about 30 years. I run an Asian (inaudible) environmental firm. That is what I do for a living. 36-1

The EIR is much needed in the project. The CAC understands the critical path and nature using engineering power in this document. We can't get to plume definition, extra work in the plume area until this document is approved. 36-2

By way of understanding the CAC itself, the Community Advisory Committee stands an independent body that is supposed to provide technical input to PG&E on the complex technical issues of this project. So my role is to basically try and understand and define what PG&E is doing, translate it into a form that my clients and the community and community advisory members can understand, make presentations, take their input and feed it back to PG&E. That process has been on with its ups and downs for the past four or five months, but the CAC, process in my opinion, is working. Nothing it perfect, but it's working. 36-3

So in the spirit of that, here is some very general remarks about the EIR going ahead. So we do thank you for issuing this EIR. The CAC and the community have been waiting for this document for a long time. It's always been one more step over the horizon with the EIR on the street in a flexible engineering form that can be adopted and approved right now.

Even though we understand the final cleanup goal is not yet adopted, as long as the EIR is flexible enough, it is a living, working document that can be amended down the line to basically meet the eventual cleanup goal that can be set. There's a lot of work to be placed eventually to set that goal, but with a flexible EIR of which I think this is, this is a major step in the right direction. 36-4

The -- the full -- the desire to move rapidly, obviously to comply with all regulations on a full-scale remedy is on the tip of the tongue of every community member. I think probably the community behind you tonight will come forth in allegiance saying clean water now as fast as possible and please pick a protective remedy. 36-5

So here are some details: I think that the -- personally as an independent manager for the CAC, what the community wants is progress. And progress can be achieved through this document. It has reviewed a number of alternatives in trying to balance the need for speed in the remedy, i.e., not hundreds of years to meet the chrome safe ultimate goal, but decades. And I think this document does that. 36-6

In the same time, when you take any environmental action, the impacts on the environment have to be assessed and mitigated. And I think from my initial review of this document, is does that competently.

And I'll show a graph in a minute that tries to show the balance between speed of cleanup and environmental impacts, very close to what Anne already showed.

The second bullet there which basically is the push for progress and the approval for EIR now -- again, to reiterate my remarks, there's been a lot of discussion within the community about how -- it's the chicken and egg situation. Do we have to require to establish a cleanup goal or a standard before you do the EIR which basically discusses the remedies, doing the requirement to get that done before the EIR is done.

The answer, from my perspective, is an emphatic "no," especially from the way the documents have been produced right now. This document can move along for the job. Like I said, a living, breathing document can take the tools that can follow the project so that the affects of the project can be mitigated as it moves ahead towards the final cleanup goal.

So the last bullet there, basically the CAC does endorse a flexible, agreed Water Board enforcement approach using an EIR that basically uses possible amendments and an ultimate CEO (sic) that possibly can be amended down the road.

36-6 cont'd

The key thing that I've seen also from the PG&E engineering approach here is that the word "adaptive management" has been used many, many times especially in the feasibility study. Adaptive management basically means as your information is gathered as ongoing remediation is going on, the actual remedial approach is flexible enough that it could be expanded or contracted or change to meet the changing conditions. That's a very important three or four words there in the PG&E approach.

36-7

As an engineer working on many projects around the country, that is a powerful tool to have in your toolbox. So in conclusion and to add kind of a cherry on the cake here in terms of my remarks, this is all very qualitative. And it is -- again, early comments on this -- John Quass who is the chair of the CAC who spoke a few minutes ago who is requesting an extra 15 days of possible review, I would thoroughly endorse that that is required given the voluminous document.

36-8

As the IRP manager on behalf of the CAC, I intend to submit written comments to the Water Board on the document. So in general, I think the document as written -- and I've tried to (inaudible) here the chrome 6 cleanup time, there is a number of agricultural treatment units. One of the major horse-powered techniques in the six-mile-long, two-mile-wide plume is the use of the land treatment units -- basically take the chrome 6 to chrome 3.

So a major variable in terms of its impact on the environment is how many of these do you have.

And Anne, actually, by, again, great coincidence showed that nice graph of basically the acreage versus the time of the chrome 6 cleanup so I guess we're thinking similarly.

So what I've done is conceptually applaud the speed of cleanup time versus the number of ag units. And obviously, if you have a large number of ag treatment units and thousands of acres and land treatment, you will get a decade's-like cleanup time.

36-9

However, because of the amount of impacts that generates, you get this blue line rising which obviously the Environmental Impact Report looks at.

So in general, the EIR is trying to balance an engineering judgment between speed of cleanup and the overall environmental impacts on the environment even though some of these can be mitigated.

36-9 cont'd

So in my overall general conclusions -- 15 days or so into hopefully the 75-day comment period as opposed to 60 -- is that there's a balance in here between probably 8 to 12 ag units is the appropriate acreage. And I think that's the sweet spot that this EIR should be heading towards.

So that concludes my remarks. Hopefully I've helped you out in your analysis yourself and I'll be happy to take any questions before I sit down.

36-10

#37A

From: lester white [mailto:lestersw@live.com]
Sent: Monday, November 05, 2012 5:17 PM
To: Kemper, Lauri@Waterboards; Holden, Anne@Waterboards; Plaziak, Mike@Waterboards; Dernbach, Lisa@Waterboards; Kouyoumdjian, Patty@Waterboards; amy-horne@sbcglobal.net
Subject: EIR comment

I Lester White CAC chairman do give my comment on the EIR for the town of Hinkley ca 92347. Their has been a big learning prose's for me in the last 17 months. As well for the community of Hinkley. We believe as a community that the treatment prose's that are in use at this time should have never been used in a residential area it was a big mistake and we need to come back to the table and come up with another way to clean up the chrome problem in hinkley because their is a significant risk to the remainder of our community's health. We would like the ethanol in all IRZ to "STOP" pumping or to be shut off. We would like the pumping to continue on but with fresh water so as to keep containment of the arsenic and manganese plumb. We would like to see the electrolysis to be put to use its a pump and treat system and its also is good for plum containment if done the right way. We as a community and a CAC board it is vary unsafe to use alfalfa fields it's good for crom but not a safe way. You will be bringing unsafe toxic water to the service of the ground most levels of toxins will be above federal standers and then we in hinkley will be the ones to suffer not any one at the other end of this e-mail and we would like to see more sample well's in place north of plumb and south and east of the compressor station so we and the community of Barstow and all towns east will not suffer the same fate as us and to the west. We want the plumb defined. Thank you Lester White

37A-1

37A-2

37A-3

#37B

Lester White

This is an excerpt from the September 12, 2012, public meeting transcript (Appendix X).

MR. WHITE: My name is Lester White. That's L-e-s-t-e-r. Last name is White like the color. I've been on the Community Advisory Committee for just a little over a year and I'm a co-chair on the board now.

And the community wants to have a Community Advisory Committee without PG&E on it and they also want different facilitator and they want one appointed by you guys. And I want you to know that if you guys choose to use the CAC that's existing or you choose another one, I will volunteer all my time to it and I will give myself to it because I want to see this problem fixed like everybody else does. 37B-1

And I came in here and I asked -- in the last meeting I spoke to you guys about a human risk assessment and I was told by you guys that the CAC would get the information on it and we never received it. And Ms. Horne said that the human risk assessment -- you guys had a little bit on that and you would give it to us and we haven't received anything. 37B-2

And I also said the community wanted to see cross-grade testing on laboratory animals to see -- as a full toxic cocktail of all of the contaminants used to be put into an animal to see what happens to them and we want to see it on video. Because we have too many people dying of the same types of cancer and we have too many people dieing of massive coronaries. And we want to see these test results on video. We want to see what happens to these animals and we want to see if these animals have any type of effect as the people in Hinkley. 37B-3

And we expect you guys to do this. Because if you're not going to get the federal government in here -- we want the USGS in our community. We want them. We don't want any more of this playing games with PG&E. And if you guys can't do this, what are we going to do then? If you cannot help us do this, we'll take the law into our own hands. Because we will because we have too many people being lost. 37B-4

And we just want you guys to grow some balls and stick up to these people. And stop being afraid of them. I will stand by you guys. I'll follow you. Just take the lead. I'll follow you and so will these other people. Just get out there and do it. 37B-5

That's all I got to say.

#38

parts per billion

It is my understanding that PPB is .000000002 so why is this being downplayed and anyone over .01 is way over the legal drinking limit for Hexavalent Chrom. 6

38-1

#39

10/16/2012

PGBE is the perpetrator in this situation so it is very difficult for the Community to trust their Data. It seems that the Water Board relies on PGBE for answers and that fuels the mistrust. I believe we need to move forward with the EIR but feel there are no concrete answers. If the Water Boards hands are tied, we need a solution to find answers weather it be a Federal Authority or seperate entity not influenced by PGBE. I feel PGBE has to much control and it needs to change. They are a business, that is how they are approaching the contamination.

39-1

39-2

39-3