

DECOMMISSIONING REPORT
MONITORING WELLS NO. 6 AND
TRACY PUMPING PLANT
(WESTERN AREA POWER ADMINISTRATION PROPERTY)
MOUNTAIN HOUSE AND KELSO ROADS
NORTHEASTERN ALAMEDA COUNTY, CALIFORNIA

CONFIDENTIAL
PROTECTION

AUG 26 AM 5:00

PREPARED FOR

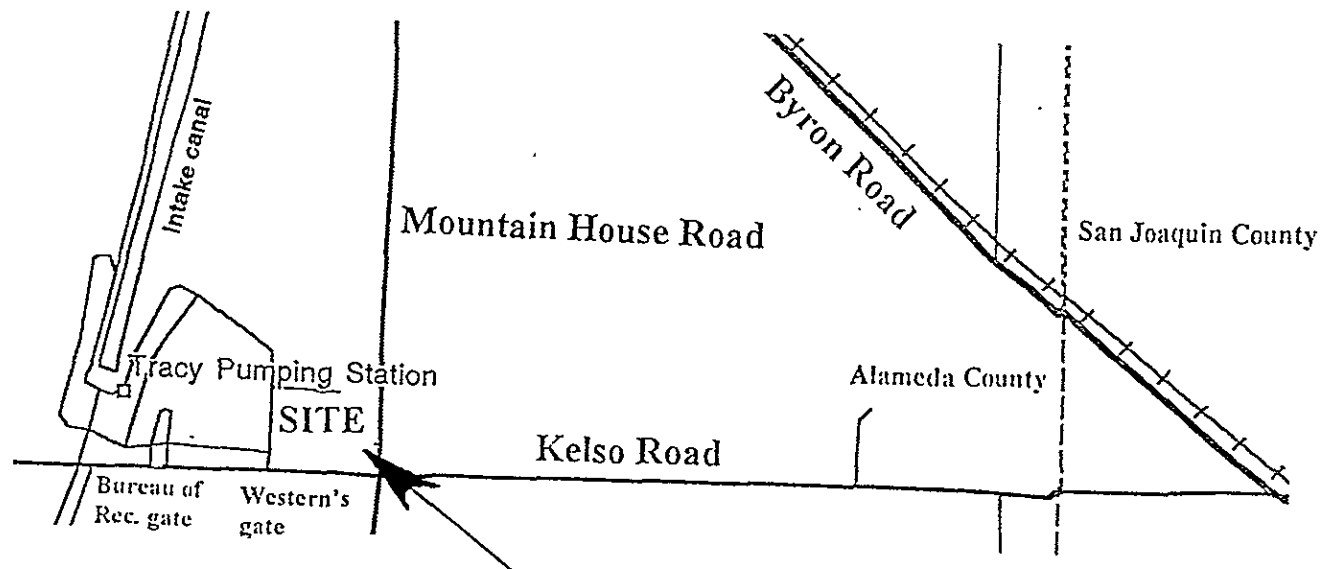
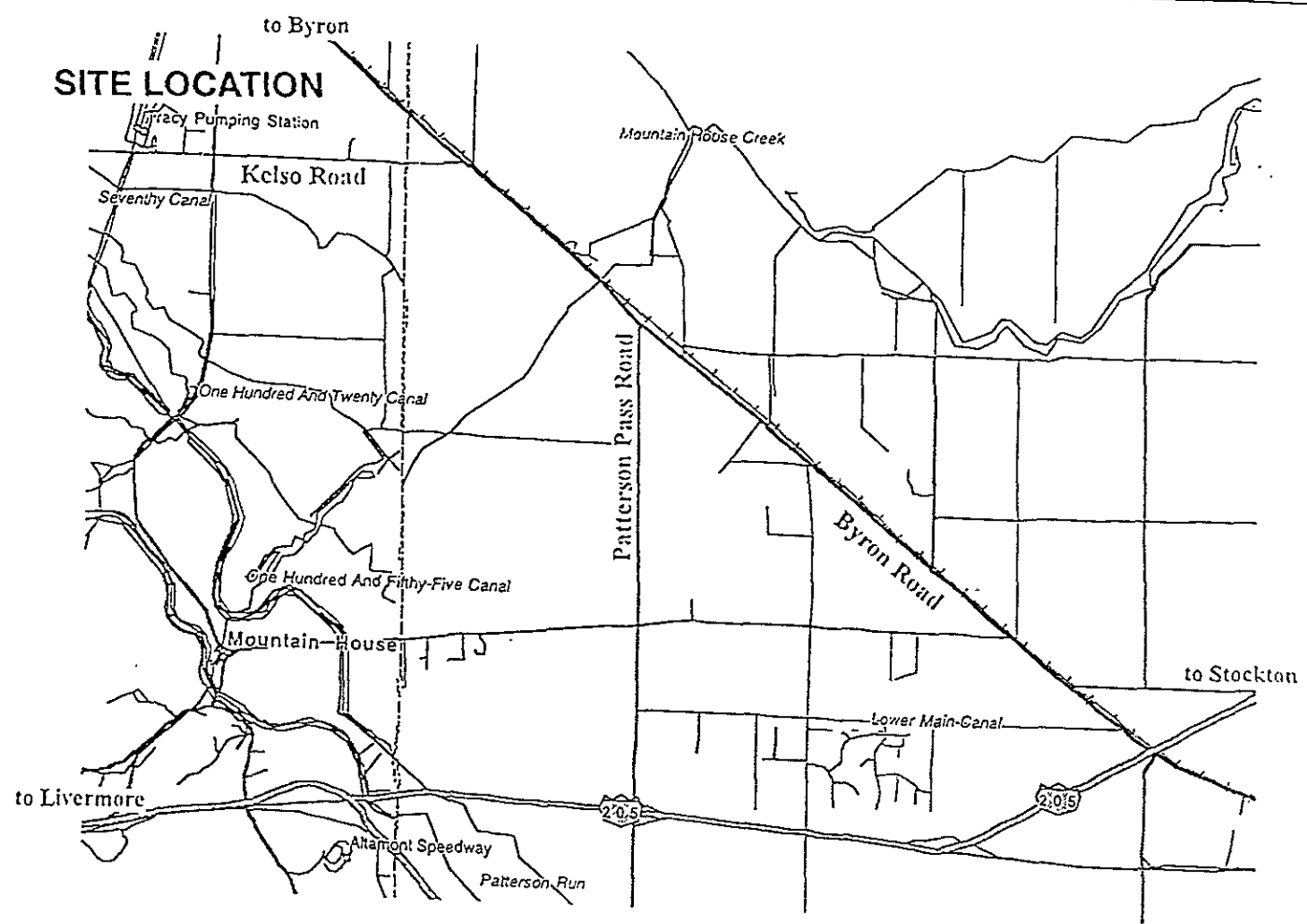
THE DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
PACIFIC REGION
SACRAMENTO OFFICE
2800 COTTAGE WAY
SACRAMENTO, CALIFORNIA

BY

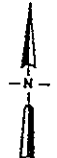
MOLDENHAUER ENGINEERING COMPANY
1107 KENNEDY PLACE, SUITE NO. 7
DAVIS, CALIFORNIA 95616
(530) 756-6249

AUGUST 1998

SITE LOCATION

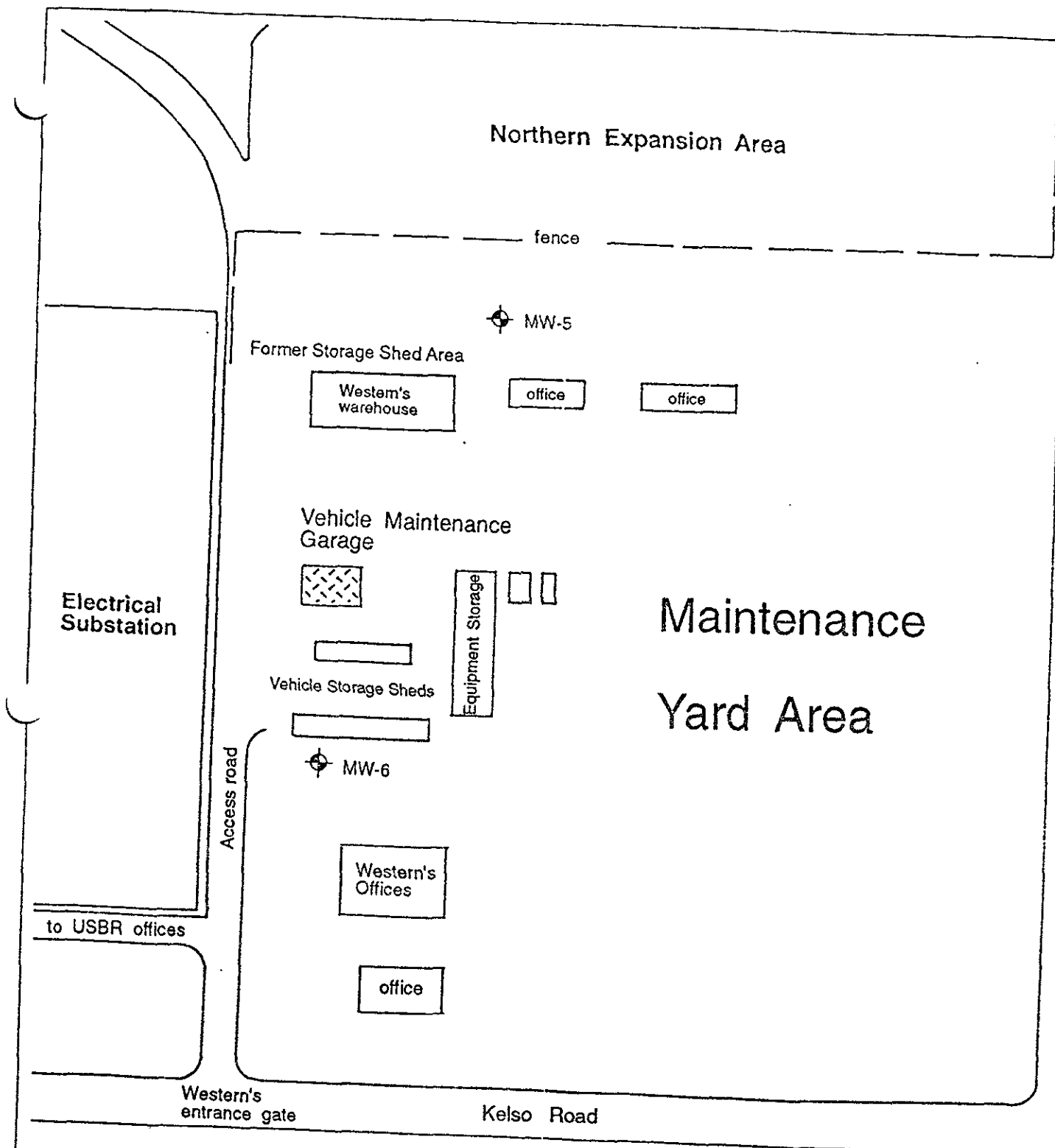


Area of Figure 1-2




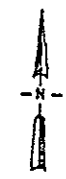
not to scale

Project No. S96203	Bureau of Reclamation	LOCATION MAP TRACY PUMPING PLANT AND SUBSTATION FACILITY	Figure 1-1
Woodward-Clyde			



LEGEND

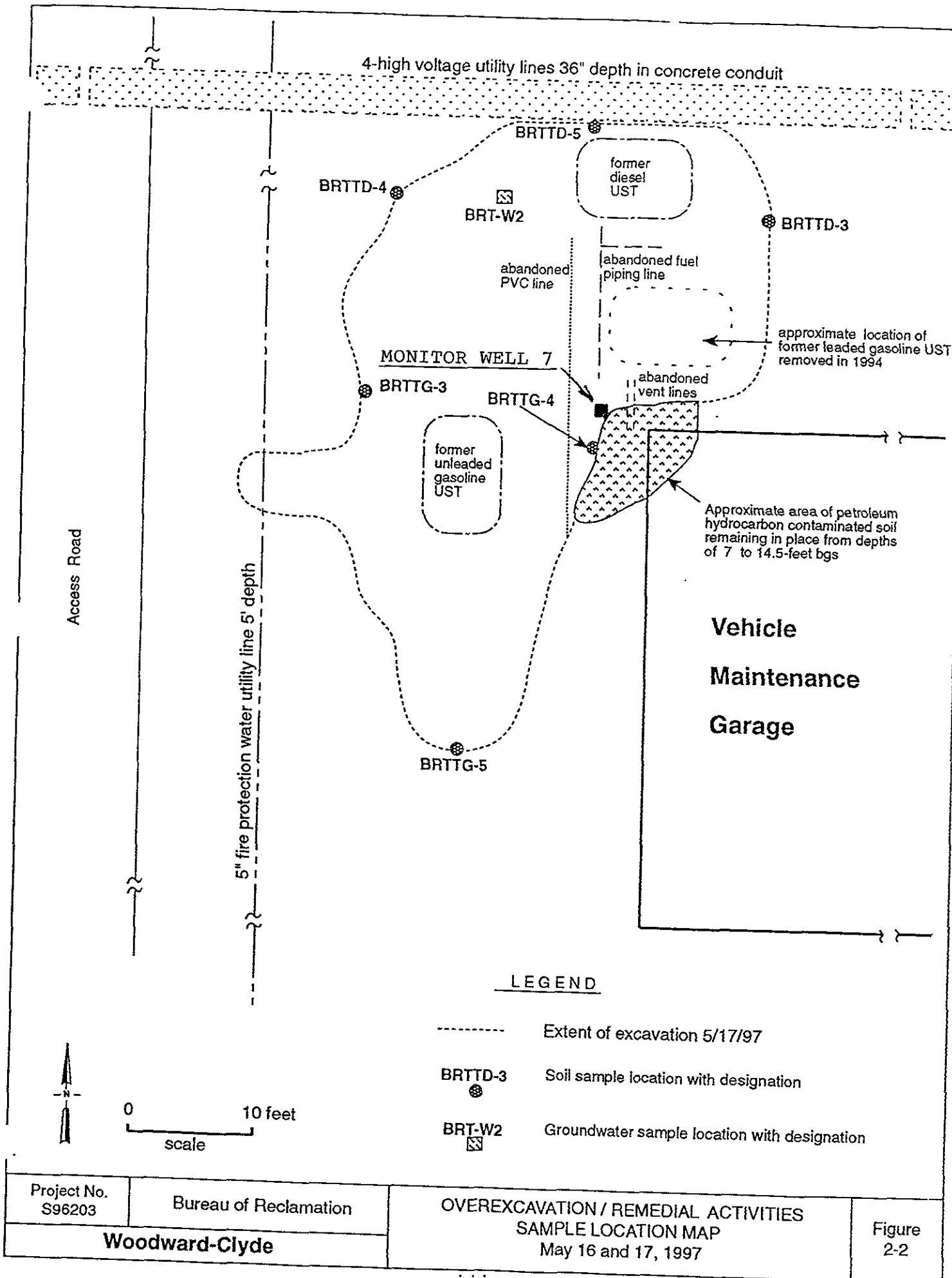
 MW-6 Location of groundwater monitoring wells installed by Chen Northern in 1990



Source: Chen Northern, 1990, figure 5

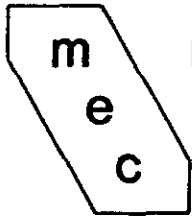
approximate scale: 1 inch = 200 feet

Project No. S96203	Bureau of Reclamation	MAINTENANCE YARD AREA SOUTHEAST CORNER OF TPPS FACILITY	Figure 1-2
Woodward-Clyde			



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**moldenhauer
engineering
company**

L. ALEX MOLDENHAUER, L.S., P.E.
PRINCIPAL

August 15, 1998

Eva Chu
Hazardous Materials Specialist
Alameda County
Health Care Services Agency
Environmental Protection (LOP)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
Phone (510) 567-6762 FAX (510) 337-9335

SUBJECT: Decommissioning of Monitoring Wells No. 6 and No.7 at 16800 Kelso Road (Kelso and Mountain House Roads) Alameda County, California; Located on Western Area Power Administration (WAPA) Property East of the Bureau of Reclamation Tracy Pumping Plant.

Greetings:

Moldenhauer Engineering Company is pleased to submit the attached Decommissioning Report for the above Monitoring Wells. A copy of the attached documents (Exhibit A) should be sent to Eva Chu, Hazardous Waste Specialist, Alameda County Health Care Services Agency, Environmental Health Services, Environmental Protection (LOP), 1131 Harbor Parkway, Suite 250, Alameda, CA 94502-6577 [Phone (510) 567-6700, FAX (510) 337-9335)], who can then be expected to send the Bureau a letter of approval for the closing of the above wells.

Even though there has been an extended time for the completion of this work, partly due to Alameda County's mix up in notifying other agencies and the lack of well drillers this spring, it has been a pleasure working for the Bureau of Reclamation again. Further delay was caused by Mr. Moldenhauer's illness this summer.

Please call me if you have any questions or comments. Phone (530) 756-6249.

Sincerely:


L. A. Moldenhauer P. E.; L. S.
Principal

cc: James Scullin, Bureau of Reclamation, Sacramento Office

1107 KENNEDY PLACE, SUITE 7, DAVIS, CA • (916) 920-3518
FAX (916) 756-5318

EXHIBIT A
REPORT CONCERNING
DECOMMISSIONING OF MONITORING WELLS 6 & 7
KELSO & MOUNTAIN HOUSE ROADS
ALAMEDA, COUNTY, CALIFORNIA
August 15, 1998

In the fall of 1997, Moldenhauer Engineering Company was hired by The Bureau of Reclamation, 2800 Cottage Way, Sacramento, California, to decommission the above Monitoring Wells located in Northeastern Alameda County at the Western Area Power Administration property east of the Bureau's Tracy Pumping Plant. Both of the Monitoring Wells were used during the removal of underground tanks and cleanup of soil contaminated by petroleum products located at the northwest corner of the Vehicle Maintenance Garage (See Figures 1-2 and 2-2 Page i, ii and iii). Approximately 619 tons of contaminated soil was removed, incinerated and hauled to an approved disposal site.

Monitoring Well No. 6, a four inch diameter PVC casing extending to a depth of 23.5 feet below the ground surface is located south of the Vehicle Storage Sheds as shown on Figure 1-2, Page ii..

Monitoring Well No. 7, a 2 inch diameter PVC casing extending to a depth of 19 feet below the ground surface is located within the excavated area northwest of the Northwest Corner of the Vehicle Maintenance Garage as shown on Figure 1-2. Page iii..

Both Monitoring Wells were equipped with locked tops and were clear of debris. The bottoms were equipped with PVC foot caps.

The Bureau of Reclamation crew and equipment was used to decommission both Monitoring Wells Nos. 6 and 7. The Bureau staff included the following:

1. J. Wendel Carlson, Geologist, Drilling Permit Applicant.
2. James Scullin, Environmental Specialist.
3. Al Vilarde, Driller (with 22 years experience)
4. Don Herdal, Driller's Helper.
5. Dan Daniels, Driller's Helper

Leonard A. Moldenhauer P. E. California Civi. 17381, Technical Field Supervision, was retained by the Bureau of Reclamation to provide professional field services including final Monitoring Well sampling and preparation of Final Report. On 23rd 1997, Mr. Moldenhauer personally took the final Monitoring Well samples, cooled the samples, and transported them under the Chain of Custody to The AnLab Laboratory (Sacramento, California) for chemical analysis. Laboratory analysis for the following:

1.	Gasoline	Non Detectable
2.	Benzene.	Non Detectable
3.	Toluene	Non Detectable
4.	Xylene.	Non Detectable
5.	Ethylbenzene	Non Detectable
6.	MTBE	Non Detectable

as shown on the An Lab test results (See Pages 6 and 7).

At the time the water samples were taken, each well was evacuated of three volumes of water from the well being sampled. Each sample was iced in the field prior to transport to AnLab Laboratory. by Mr. Moldenhauer. Copies of the laboratory results were sent to Eva Chu on 29 December 1997.

On April 27, 1998 Eva Cho authorized the Bureau to proceed with the Monitoring Well Decommissioning. (See Page 11)

On 27 May 1998, after notifying Alameda County Health Services and Zone 7, Alameda County Flood Control and Water Conservation District of the intent to start work at the Western Area Power Administration site near the Bureau's Tracy Pumping Plant, the Bureau's field crew and Mr. Moldenhauer started work decommissioning of Monitoring Wells 6 and 7.

A Drilling Permit No. 98081 was issued by The Alameda County, Zone 7 Water Agency, signed by Hyman Hong on 21 May 1998 (See Page 12 through 15)..

The Decommissioning work was started on 27 May 1998 by the Bureau of Reclamation's Drilling Crew supervised by Al Vilarde.

MONITORING WELL NO 7

Monitoring Well No. 7. located northwest of the Northwest Corner of the Vehicle Maintenance Garage. The 2 inch diameter PVC casing was equipped with a locked security cap. The monitoring well was clear of debris. Using a tremie tube Aqua Guard Bentonite mix was applied by a pressure pump filling the 2 inch casing to the surface. The Bentonite was left overnight to settle; it settled approximately 4 inches in 24 hours.

The following day the 2 inch casing was dug out and cut off approximately 16 inches below grade, filled to approximately 12 inches below grade with bentonite mix, 6 inches of concrete and 6 inches of asphalt (compacted) filling the drill hole to the surface level (asphalt pad).

The wells were plumbed by the Driller yielding the following results---Well No. 6---23.5 feet; Well No. 7---19 feet.

Using a 1 inch PVC Trim Pipe Well No.7 was pressure grouted from the bottom to the top using Aqua Guard Bentonite Mix. The 1 inch tremie was slowly withdrawn. The 2 inch casing was filled to the top and left to settle (slump) over night. The casing box was cut off 2 feet below the grade surface. The top of the well (1.5 FT.) was filled with 3/8 inch concrete. After setting of the concrete, asphalt was used to bring the hole level with the grade, compacted and left with a slight overfilled surface.

MONITORING WELL NO. 6

Monitoring Well No.6, located approximately 200 Ft. south of Monitoring Well No. 7, had a 4 inch PVC casing (23.5 Ft. Deep) was set in a 6 inch steel pipe, which was set in a 2 Ft. X 2 Ft. concrete block. The steel pipe extended approximately 18 inches above the surface of the concrete block. The steel pipe was cut off at the surface of the concrete block.

The well was filled with Aqua Guard Bentonite to the top of the steel pipe and left to settle over night. The bentonite mix settled approximately 6 inches. The 4 inch diameter PVC well casing was cut off 8 inches below the surface of the concrete block and filled with concrete. The concrete extended slightly above the concrete block surface. A sheet of plywood was placed over the filled monitoring well to protect it from the lite rain showers.

Maps, some drawings and documents used in this report were furnished by The Bureau of Reclamation who purchased them from Woodward-Clyde. Such were used in this report for clarity.

EXHIBIT A
DOCUMENTS

ALAMEDA COUNTY
HEALTH CARE SERVICES

AGENCY

DAVID J. KEARS, Agency Director



BUREAU OF RECLAMATION OFFICIAL FILE COPY RECEIVED
SEP 03 1997
150

StID 674

August 28, 1997

Mr. Jim Scullin
US Dep of Interior
Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95825

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION (LOP)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

RE: Additional Groundwater Sampling at the Tracy Vehicle
Maintenance Garage, 16800 Kelso Rd, Tracy, CA

Dear Mr. Scullin:

I have completed review of Woodward-Clyde's July 1997 Final Tank Closure Report for the above referenced site. This report documents the removal of two underground storage tanks in May 1997. In addition it describes overexcavation and sampling activities. It appears that hydrocarbon-impacted soil was removed to the extent possible. About 20 cubic yards of contaminated soil remains in place below the northwest corner of the Vehicle Maintenance Garage Building at approximately 7' to 14.5' bgs. Your consultant recommended that the USBR request closure for this site.

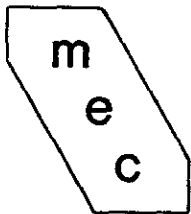
Before closure can be granted for this site, please conduct one additional groundwater sampling of wells MW-6 and MW-7 for TPHd, TPHg, BTEX, and MTBE. If these analytes are absent or found in insignificant concentrations, I will start the case closure process. Eventually the groundwater monitoring wells will need to be decommissioned if they will no longer be monitored.

If you have any questions, I can be reached at (510) 567-6762.

eva chu
Hazardous Materials Specialist

reclamat.6

Classification	Res 3.10
Project	GF
Control No.	97006467
Folder I.D.	6018



moldenhauer
engineering
company

L. ALEX MOLDENHAUER, L.S., P.E.
PRINCIPAL

29 December 1997

Eva Chu, Hazardous Materials Specialist
Alameda County
Health Care Services Agency
Environmental Health Services
Environmental Protection (LOP)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6762
FAX (510) 337-9335

SUBJECT; Bureau of Reclamation, Tracy Pumping Plant, Monitoring Wells No. 6
and No. 7 Closure Request.

Greetings:

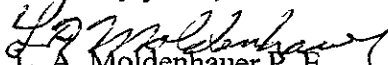
Attached are the Laboratory results for the above two wells; the test results indicate that all of the samples resulted in UNDETECTABLE concentrations of the six constituents sampled.

With your approval for closure of the above wells; the Bureau will proceed with having the closures performed by a Licensed Well Driller under the supervision of a California Licsened Civil Engineer Your office will be notified of the date the work will be done.

Once the work is complete, your office will be supplied with the necessary paper work that describes the two completed closures. If you have any questions regarding the above please call, L. A. Moldenhauer R. E. 17381, Moldenhauer Engineering Co. 1107 Kennedy Place, Suite No. 7, Davis, CA 95616. (916) 756-6249.

Thank you for your services; your approval will be awaited.

Sincerely yours,


L. A. Moldenhauer P. E.
Principal

cc: James Scullin, Bureau of Reclamation, Sacramento Office.



ANALYTICAL LABORATORY

1910 S STREET SACRAMENTO, CALIFORNIA 95814 • 916-447-2946 • FAX 916-447-8321

December 18, 1997

Attn: Red
Moldenhauer Eng.
1107 Kennedy Place, Ste 7
Davis, CA 95616

Project: Bureau of Rec.

Anlab I.D. AG16751
SAMPLE DESCRIPTION: #6
Sample collection date: 10/23/97
Lab submittal date: 10/23/97
Turn-Around-Time: REG

Client Code: 2534CR
Matrix: W
Time: 11:40
Time: 16:20
Sample Disposal: LAB

TEST PARAMETER	UNITS	TEST RESULT	DETECTION LIMIT
Multicomponent analysis: TPH by Modified 8015			
Petroleum Hydrocarbon as Diesel	mg/l	ND	0.050
Pet. Hydrocarbon as Motor Oil	mg/l	ND	0.50
Multicomponent analysis: Gas(8015)/BTX&E(8020) EPA 5030			
Gasoline	ug/l	ND	20
Benzene	ug/l	ND	0.50
Toluene	ug/l	ND	0.50
Xylene	ug/l	ND	0.50
Ethylbenzene	ug/l	ND	0.50
MTBE	ug/l	ND	4.0



ANALYTICAL LABORATORY

1910 S STREET SACRAMENTO, CALIFORNIA 95814 • 916-447-2946 • FAX 916-447-8321

Page: 2 of 3
December 18, 1997
Moldenhauer Eng.

Anlab I.D. AG16752
SAMPLE DESCRIPTION: #7
Sample collection date: 10/23/97
Lab submittal date: 10/23/97
Turn-Around-Time: REG

Client Code: 2534CR
Matrix: W
Time: 12:00
Time: 16:20
Sample Disposal: LAB

TEST PARAMETER	UNITS	TEST RESULT	DETECTION LIMIT

Multicomponent analysis: TPH by Modified 8015			
Petroleum Hydrocarbon as Diesel	mg/l	ND	0.050
Pet. Hydrocarbon as Motor Oil	mg/l	ND	0.50
Multicomponent analysis: Gas(8015)/BTX&E(8020) EPA 5030			
Gasoline	ug/l	ND	20
Benzene	ug/l	ND	0.50
Toluene	ug/l	ND	0.50
Xylene	ug/l	ND	0.50
Ethylbenzene	ug/l	ND	0.50
MTBE	ug/l	ND	4.0

ND = Not Detected

	<u>Date Extracted</u>	<u>Date Analyzed</u>
EPA 8015, Mod	10/30/97	11/05/97
EPA 5030		11/30/97



ANALYTICAL LABORATORY

1910 S STREET SACRAMENTO, CALIFORNIA 95814 • 916-447-2946 • FAX 916-447-8321

Page: 3 of 3
December 18, 1997
Moldenhauer Eng.

Anlab ID #s AG16750-52 (Continued)

Case Narrative:

Analysis: EPA 8015, Modified - TPH

Problem: An LCS/LCSD were analyzed. One of them was outside of the established control limits, therefore, the RPD between them was also outside of control limits.

Data Qualification: The MS/MSD performed on the sample had acceptable recoveries and RPDs. See enclosed QA/QC report.

MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate
RPD = Relative Percent Difference

Report Approved By: _____

ELAP ID #: 1468 Craig Hays
Quality Assurance Manager

:rr

Anlab Client Code: _____

CHAIN OF CUSTODY RECORD

Page _____ of _____



1910 "S" STREET • SACRAMENTO • CA • 95814
(916) 447-2946 • FAX (916) 447-8321

CLIENTS RELEASE OF SAMPLE TO ANLAB CONSTITUTES AN AGREEMENT TO PAY ANLAB WITHIN 30 DAYS OF BEING INVOICED FOR WORK PERFORMED. SHOULD ANLAB HAVE TO TAKE LEGAL ACTION FOR COLLECTION, CLIENT AGREES TO PAY ANLAB'S ATTORNEY FEES AND COST OF COLLECTION.

CLIENT INFORMATION

Company: Moltenihauser Eng Contact Name: Roe
 Address: 1107 Kennedy, Pleasant Hill CA 94777
 City: Davis State: CA Zip: 95616
 Billing Address: See Above
 Telephone: 916-756-6249 FAX: _____
 Project Name: Bureau of Rec P.O Number: _____
 Sampler's Co.: Moltenihauser Eng Sampler's Name: Moltenihauser

Anlab Use Only:
 Hours: _____
 Miles: _____
 Equip.: _____

ANALYSIS

SAMPLE IDENTIFICATION	Date	Time	MATERIAL	SOIL	SLOUDGE	Sample Type				Number of Containers				Preservation				
						W	W	S	S	P	G	V	S	T	A	B		
# 5	10/23	11:10	MT BE							4								
# 6	"	11:40								4								
# 7	"	12:00								4								

COMMENTS/SPECIAL INSTRUCTIONS:

Sample packed in ice.

TURNAROUND TIME:

16 HOUR 48 HOUR 72 HOUR
 5 DAY STANDARD
 QC LEVEL: A B C D

SAMPLE DISPOSAL:

HOLD
 RETURN DISPOSE
 SHIPPED VIA: D, King's
 UPS FED-EX BUS OVERNIGHT

SAMPLE RELINQUISHED BY

PRINT NAME/COMPANY

DATE/TIME

RECEIVED BY

PRINT NAME/COMPANY

<u>Bureau of Rec</u>	<u>Moltenihauser</u>	<u>10/23 4:00</u>	<u>[Signature]</u>	<u>10/23/97 11:00</u>
"	"	"	"	"
"	"	"	"	"

ANLAB WILL PERFORM THE SERVICES IN ACCORDANCE WITH THE NORMAL STANDARD OF WORKMANSHIP IN THE PROFESSION. THE TOTAL LIABILITY OF ANLAB, ITS OFFICERS, AGENTS, EMPLOYEES OR SUCCESSORS, TO THE CLIENT, SHALL NOT EXCEED THE INVOICED AMOUNT FOR SUCH SERVICES. CLIENTS ACCEPTANCE OF A WORK ORDER AND/OR PROPOSAL RELEASES ANLAB FROM ANY LIABILITY IN EXCESS OF THE INVOICED AMOUNT FOR THE SERVICES, NOTWITHSTANDING ANY PROVISION TO THE CONTRARY IN ANY CLIENT PURCHASE ORDER OR CONTRACT. ALL LITIGATION NOT DUE TO ANLAB'S NEGLIGENCE, WILL BE PAID BY THE CLIENT.

ALAMEDA COUNTY
HEALTH CARE SERVICES

AGENCY

DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION (LOP)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

StID 674

April 21, 1998

Mr. Jim Scullin
US Bureau of Reclamation
Environmental Affairs Division
2800 Cottage Way, Room E-2604
Sacramento, CA 95825

RE: Well Decommission at 16800 Kelso Road, Byron, CA

Dear Mr. Scullin:

This office and the Central Valley RWQCB have reviewed the case closure summary for the above referenced site and concur that no further action related to the underground tank release is required at this time. Before a remedial action completion letter is sent, the onsite monitoring wells (MW-6 and MW-7) should be decommissioned, if they will no longer be monitored. Please notify this office upon completion of well destruction so a closure letter can be issued.

Well destruction permits may be obtained from Alameda County Flood Control and Water Conservation, Zone 7. They can be reached at (510) 484-2600.

Well destruction permits may be obtained from Alameda County Public Works. They can be reached at (510) 670-5575.

If you have any questions, I can be reached at (510) 567-8762.

Sincerely,

eva chu
Hazardous Materials Specialist

reclamation-8



June 2, 1998

BUREAU OF RECLAMATION OFFICIAL FILE COPY RECEIVED		
JUN 03 1998		
CODE	ACTION	DATE
2027		
22	Shullin Order	
		WJ

To - in Shullin

Mr. Wendel Carlson
U.S. Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95825

Dear Mr. Carlson:

Enclosed is drilling permit 98081 for the destruction of wells 1S/4E 31P6 and 31P7 at Kelso Road and Mountain House Road near Livermore for the Tracy Pumping Station.

Please note that permit condition A-2 requires that a well destruction report be submitted after completion of the work. The report should include a description of methods and materials used to destroy the well, location sketch, date of destruction, and permit number. Please submit the original of your completion report. We will forward your submittal to the California Department of Water Resources.

If you have any questions, please contact Wyman Hong at extension 235 or me at extension 240.

Very truly yours,

Craig A. Mayfield
Craig A. Mayfield
Water Resources Engineer III

CAM:WH:arr

Enc.

NOTICE: IF YOU DETACH
ENCLOSURE PLEASE INSERT
CODE NO. _____
INITIAL _____
DATE _____

Classification	PRJ 15100-
Project	CVP
Control No.	98004460
Permit I.D.	2506



ZONE 7 WATER AGENCY

6997 PARKSIDE DRIVE, PLEASANTON, CALIFORNIA 94588-6127 PHONE (510) 484-2600 X235
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT TRACY PUMPING STATION
Mountain House & Keiso Roads
ALAMEDA COUNTY, CA
SEE ATTACHED DWGS.
California Coordinates Source _____ ft. Accuracy ± _____ ft.
CCN _____ ft. CCE _____ ft.
APN _____

PERMIT NUMBER 98081
WELL NUMBER 1S/4E 31P6 & 31P7
APN _____

CLIENT
Name US Bureau of Reclamation c/o Brian Skinnemo
Address Rural Rt. 1, Box 35 Phone (209) 836-6261
City Byron, CA Zip 94514-9614

APPLICANT
Name J. WENDEL CARLSON MP-221 USBR
Address 2800 Cottage Way Fax (916) 978-5345
City Sacramento, CA Phone (916) 978-5305
Zip 95825

TYPE OF PROJECT
Well Construction
Cathodic Protection Geotechnical Investigation
Water Supply General
Monitoring Contamination
Well Destruction

PROPOSED WATER SUPPLY WELL USE
New Domestic Replacement Domestic
Municipal Irrigation
Industrial Other _____

DRILLING METHOD:
Mud Rotary Air Rotary Auger
Cable Other Flight auger

DRILLER'S LICENSE NO. D/A Federal Agency

WELL PROJECTS
Drill Hole Diameter _____ in. Maximum _____ ft.
Casing Diameter 2 3/4 in. Depth 24 ft.
Surface Seal Depth _____ ft. Number 2

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum _____
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 5/26/98
ESTIMATED COMPLETION DATE 5/27/98

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-88.

APPLICANT'S SIGNATURE J. Wendel Carlson Date 5/20/98

PERMIT CONDITIONS

Circled Permit Requirements Apply

- A. GENERAL
 1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
 2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
 3. Permit is void if project not begun within 90 days of approval date.
- B. WATER SUPPLY WELLS
 1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
 2. Minimum seal depth is 60 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.
- C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
 1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
 2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
- D. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.
- E. CATHODIC. Fill hole above anode zone with concrete placed by tremie.
- F. WELL DESTRUCTION. See attached.
- G. SPECIAL CONDITIONS

Approved Wyman Hong Date 21 May 98
Wyman Hong

May 22, 1998

**Zone 7
Water Resources Engineering
Groundwater Protection Ordinance**

**U.S. Bureau of Reclamation
Kelso Road and Mountain House Road
Livermore
Wells 1S/4E 31P6 & 31P7
Permit 98081**

Destruction Requirements:

1. Clean out all bridged or poorly compacted materials to the bottom of the well.
2. Sound the well as deeply as practicable and record for your report.
3. Pressure grout the casing to two feet below the finished grade or original ground, whichever is the lower elevation.
4. Remove the casing, seal, and gravel pack to two feet below the finished grade or original ground, whichever is the lower elevation.
5. After the seal has set, backfill the remaining hole with compacted material.

ZONE 7
WATER RESOURCES ENGINEERING
DRILLING ORDINANCE

Destruction Requirements:

1. Drill out the well so that the casing, seal, and gravel pack are removed to the bottom of the well.
2. Sound the well as deeply as practicable and record for your report.
3. Using a tremie pipe, fill the hole to 2 feet below the lower of finished grade or original ground with neat cement.
4. After the seal has set, backfill the remaining hole with compacted material.

DAILY DRILL REPORT

FEATURE: TRACY DESTRUCTION OF WELL PROJECT: TRACY PUMP PLANT STATE: CA.

HOLE NO: 15/42 31P6 + 31P7 HOLE ANGLE: VERTICAL LOCATION: TRACY YARD

FROM (ft)	TO (ft)	Recovery (ft)	Hole Size & Type Bit RB, NOD-E.	Cementing or Casing Depth (start of each run)	DESCRIPTION	DRILLING CONDITIONS (Caving or raveling ground, open cavities, unusual water losses, et cetera)	Fluid Return(%) & Color CW, RW, BM	PERCOLATION TESTS					
								Interval Tested & Method P, CS, CM	Collar Pressure or Head lba/sq in	Loss gal/min	Length of Test min		
					31P6 - 2" PVC. STICK UP @ GROUND LEVEL								
					WELL @ 19' CLEAN PLASTIC BOTTOM. INSTALLED								
					1" PVC TRIM PIPE MIXED GROUT PUMPED FROM								
					19' UP TO SURFACE. PULLED OUT TRIM PIPE GROUTING								
					@ SAME TIME LET GROUT SET. DUG DOWN DESTROYED								
					BOX + CUT 2" PVC. DOWN DOWN PACKED 6/10 OF HOLE PUNG								
					COMPACTED - FINISHED W/ 4/10 OF COLD PATCH ASPHALT.								
					31P7 - 4" PVC. STICK UP 15' IN CONCRETE BLOCK 2x2								
					WELL @ 23' CLEAN PLASTIC BOTTOM. INSTALLED TRIM PIPE								
					+ GROUTED FROM BOTTOM TO TOP OF CASING (PROTECTIVE PIPE)								
					LET GROUT SET.								

1 16

NOTES:

Depth to Water (Start of First Shift Daily) N/A.

End of Shift, Hole at Ø

Casing at GROUTED.

Date 5/27/98

Shift DAY

Driller: W. ARNS

LEGEND *

RB= rockbit	BM= bentonite mud
H = haystellite bit	RW= recirculated water
D = diamond bit	CW= clear water
CB= casing bit	P= packer
DN= Denison	CS= bottom of casing
PR= penetration resistance	CM= cemented
	DS= drive sample

DAILY DRILL REPORT

FEATURE: TRACY DESTRUCTION OF WELLS PROJECT: TRACY PUMP PLANT STATE: CA.
 HOLE NO: 15/4E 31P6 + 31P7 HOLE ANGLE: VERTICAL LOCATION: TRACY YARD

FROM (ft)	TO (ft)	Recovery (ft)	Hole Size & Type Bit RB, MD, H.	Cementing or Casing Depth (start of each run)	DESCRIPTION	DRILLING CONDITIONS (Caving or raveling ground, open cavities, unusual water losses, et cetera)	Fluid Return (%) & Color CW, RW, BM	PERCOLATION TESTS				
								Interval Tested & Method P, CS, CM	Collar Pressure or Head lba/sqin	Loss gal/min	Length of Test (min)	
					31P7 - 4" PVC Grouted! Cut PROTECTIVE CASING to CONCRETE LEVEL - CUT 4" PVC Filled 4/10 of Pipe w/ CEMENT PLACED CEMENT CAP + COVER w/ Plywood OVER CAUSE of RAIN.			from	to			

17

NOTES:

Depth to Water (Start of First Shift Daily) _____

End of Shift, Hole at 0

Casing at Grouted

Date 5/28/98

Shift Day

LEGEND

- RB= rockbit
- H = haystellite bit
- D = diamond bit
- CB= casing bit
- DN= Denison
- PR= penetration
- BM= bentonite mud
- RW= recirculated water
- CW= clear water
- P= packer
- CS= bottom of casing
- CM= cemented

OPERATIONS SUMMARY

Type Drill & Rig No: _____

Expendable Supplies:

Type Pump & No: _____

Gasoline (gallons):	_____ (drill)	_____ (pump)
Oil (quarts):	_____ (drill)	_____ (pump)
Other:	_____	

Diamond Bit Record:

1. Bit No.	Size	Interval Drilled	Drilling Conditions	Bit Performance	Turned Bit: as Worn Out
		From _____ To _____	Rough <input type="checkbox"/>	Satisfactory <input type="checkbox"/>	Yes <input type="checkbox"/>
		Total _____	Smooth <input type="checkbox"/>	Unsatisfactory <input type="checkbox"/>	No <input type="checkbox"/>
2. Bit No.	Size	From _____ To _____	Rough <input type="checkbox"/>	Satisfactory <input type="checkbox"/>	Yes <input type="checkbox"/>
		Total _____	Smooth <input type="checkbox"/>	Unsatisfactory <input type="checkbox"/>	No <input type="checkbox"/>

Reaming Shell Record: Shell No. _____ Size _____

Drillers Shift Report:

Moving & Set-up Time 8 (hours)

Drilling Time _____ (hours)

Travel Time 2 (hours)

Down Time _____ (hours)

Reason: _____

Equipment Maintenance Performed:

Equipment Maintenance Needed:

Safety Notes:

Signature: _____

Al Velarde
 (driller)
 (Helpers) { DON HERDAL
DAN DANIELS

Foreman's Comments & Safety Notes:

Cost Authority No: _____

Signed: _____ (Foreman)

OPERATIONS SUMMARY

Type Drill & Rig No: _____

Expendable Supplies:

Type Pump & No: _____

<u>Gasoline</u> (gallons):	_____	(drill)	_____	(pump)	_____
<u>Oil</u> (quarts):	_____	(drill)	_____	(pump)	_____
<u>Other:</u>	_____				

Diamond Bit Record:

1. Bit No.	Size	Interval Drilled		Drilling Conditions	Bit Performance		Turned Bit 1 as Worn Out
		From	To		Satisfactory	Unsatisfactory	
				Rough <input type="checkbox"/>	Satisfactory <input type="checkbox"/>	Yes <input type="checkbox"/>	
		Total		Smooth <input type="checkbox"/>	Unsatisfactory <input type="checkbox"/>	No <input type="checkbox"/>	
2. Bit No.	Size	From	To	Rough <input type="checkbox"/>	Satisfactory <input type="checkbox"/>	Yes <input type="checkbox"/>	
		Total		Smooth <input type="checkbox"/>	Unsatisfactory <input type="checkbox"/>	No <input type="checkbox"/>	

Reaming Shell Record: Shell No. _____ Size _____

Drillers Shift Report:

Moving & Set-up Time 2 (hours)

Drilling Time _____ (hours)

Travel Time 3 (hours)

Down Time _____ (hours)

Reason: _____

Equipment Maintenance Performed:

Equipment Maintenance Needed:

Safety Notes:

Signature: _____

Olaf Ullande
(driller)

(Helpers) { DON MERDAL
DAN DANIELS

Foreman's Comments & Safety Notes:

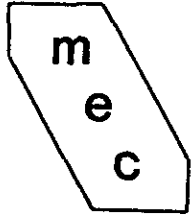
Cost Authority No: _____

Signed: _____
(Foreman)

EXPLORATION LOG

Project Name: WAPA Tracy Pumping Plant	Boring/Well Number: MW-6
Project Number: 5-459-90	Boring/Well Location: Between WAPA garage USBR g
Date Drilled: 8/28/90	Reference Elevation (ft): 59.7
Logged By: R. Giraud	Reference Point: Top of PVC Casing
Depth to Ground Water (ft): 12.20	Drilling Contractor: Westex
Date Measured: 08/28/90	Drilling Method: Hollow stem auger
	Boring Depth (ft): 24.0
	Well Depth (ft): 24.0
	Boring Diameter (in): 10.25

Sample Loc.	Blows/6-inch	OVM/OVA (ppm)	Depth in Feet	Lithology	LITHOLOGIC DESCRIPTION AND OBSERVATIONS	WELL CONSTRUCTION
				OL	OL, dark brown and black, topsoil, clay, silt and sand, roots present, poorly sorted	
	8-13-17	7		SM	SM, tan and brown, sand with some silt and clay, moderately sorted, grain supported texture with clay and silt in matrix, sand fine to coarse grained, angular to subangular sand	4" Schedule 40 with neat cement grout
	6-10-14	7		SM		
			5	SM		
	10-7-11	2		SW	SW, tan, sand, fine to medium fine grained, clay and silt matrix, grained supported texture, well sorted	1/4" Bentonite p seal
	5-11-13	0		CL	CL, tan, clay and silt with minor sand, matrix supported grains, sand fine to medium grained, rare coarse sand and very fine gravel pebbles (subrounded)	2/12 RMC Lones
	3-8-10			CL		
	5-12-16		10	CL		
	4-7-9			CL		
	5-11-16			CL		
	5-13-18		15	CL		
	6-13-19			SM	SM, tan, sand with silt and clay, sand fine to coarse grained, both grain and matrix supported texture depends on amount of clay and silt, clay and silt matrix, fine pebble gravel at 18-18.5'	.02 Machine slotted PVC
				CL	CL, tan, clay and silt with minor sand, matrix supported sand grains, massive	
	12-18-19		20	SM		
	6-9-15			SM		
	6-11-13			SM	SM, tan, sand with silt and clay, minor thin gravel layers and thin clay layers interbedded, both grain and matrix supported textures, fine to coarse grained sand	
	8-11-12			SM		
Bottom of boring 24 feet						



**moldenhauer
engineering
company**

L. ALEX MOLDENHAUER, L.S., P.E.
PRINCIPAL

Mr. James Brathovde
California Regional Water Quality Control Board
Central Valley Region
3443 Routier Road
Sacramento, CA 95827

SUBJECT: DECOMMISSIONING OF MONITORING WELLS 6 AND 7 LOCATED IN
ALEMEDA COUNTY, CALIFORNIA AT THE BUREAU OF
RECLAMATION--TRACY PUMPING PLANT.

Greetings:

Enclosed are the computations for the information you requested at our meeting this week. I believe this includes all of the information that you stated you needed to complete your approval of the above site.

The attached computations were prepared by William Loskutoff Geologist, for the Bureau of Reclamation and is based on data found in the , " Tank Closure Report--Vehicle Maintenance Garage, Tracy Pumping Plant and Substation", Prepared for the U. S. Department of the Interior, Bureau of Reclamation, 2800 Cottage Way, Sacramento, California 95825.

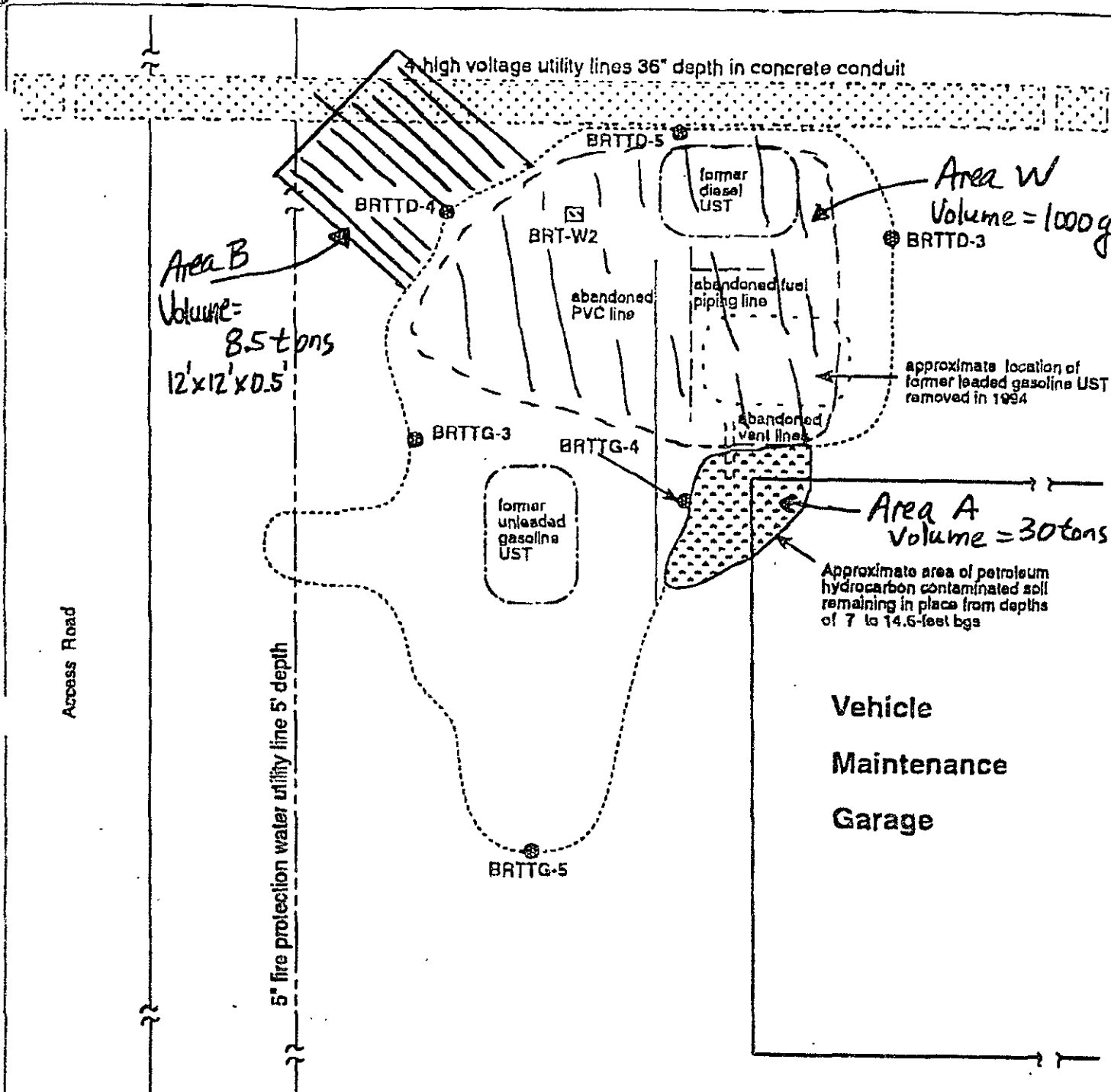
If you have any questions please don't hesitate to call.

Sincerely,

Leonard A. Moldenhauer P. E 17381, Principal

Enclosure: Item 1. Pages 1 through 2

cc: James Scullin, Environmental Specialist, Bureau of Reclamation



LEGEND

- Extent of excavation 5/17/97
- BRTTD-3 ● Soil sample location with designation
- BRT-W2 ◻ Groundwater sample location with designation



0 10 feet
scale

ITEM 1.

CALCULATIONS FOR DECOMMISSIONING OF MONITORING WELLS 6 AND 7
TRACY PUMPING PLANT, ALEMEDA COUNTY, CALIFORNIA

Here are the values of pounds of contaminant remaining in the soil and pounds of contaminant percolated to the groundwater at the Tracy facility. The figure is Figure 2-2 from the Closure Report. The table is Table 3-1 from the Closure Report. The estimated volume for Area B is much larger than it probably actually is, since we got ND values there for TPH-d,g and BTEX and no contamination was observed to be still in place.

MASS CALCULATION OF CONTAMINANTS

Area A Below Northwest corner of Vehicle Maintenance Garage Building:

Concentrations:	TPH-diesel = 3300 mg/km
Sample 6 #BRTT 6 to 4	TPH-gas = 150 mg/kg
-----	Benzene = 0.119 mg/km
depth = 9.5' bgs	Ethylbenzene = 1.95 mg/km
	Xylenes = 17.1 mg/km

Area B Northwest excavation well 0.5' above static water table

Concentration: MTBE = 0.405 mg/km

Sample # BRTTD-4
depth = 10.5'

Area W Water contained in excavation prior to backfilling--percolated into aquifer

Concentration: MTBE = 1.08 mg/Liter

Sample #BRT-w2

MASS CALCULATION OF CONTAMINANTS

$$\text{Soil } \left[\frac{\text{Conc}}{\text{kg}} \right] \text{ mg} \times 2.205 \times 10 \frac{\text{lbs}}{\text{mg}} \times 0.4536 \frac{\text{kg}}{\text{lbs}} \times \text{tons} \times 2000 \frac{\text{lbs}}{\text{ton}} = \text{lbs of contaminant}$$

Area A

$$3300 \frac{\text{mg}}{\text{kg}} \times 2.205 \times 10 \frac{\text{lbs}}{\text{mg}} \times 0.4536 \frac{\text{kg}}{\text{lbs}} \times 30 \text{ tons} \times 2000 \frac{\text{lbs}}{\text{ton}} = 198 \text{ lbs of THP -diesel}$$

$$150 \frac{\text{mg}}{\text{kg}} \times 2.205 \times 10 \frac{\text{lbs}}{\text{mg}} \times 0.4536 \frac{\text{kg}}{\text{lbs}} \times 30 \text{ tons} \times 2000 \frac{\text{lbs}}{\text{ton}} = 9 \text{ lbs of TPH gasoline}$$

$$0.1R \frac{\text{mg}}{\text{kg}} \times 2.205 \times 10 \frac{\text{lbs}}{\text{mg}} \times 0.4536 \frac{\text{kg}}{\text{lbs}} \times 30 \text{ tons} \times 2000 \frac{\text{lbs}}{\text{ton}} = 0.007 \text{ lbs benzene}$$

$$1.95 \frac{\text{mg}}{\text{kg}} \times 2.205 \times 10 \frac{\text{lbs}}{\text{mg}} \times 0.4536 \frac{\text{kg}}{\text{lbs}} \times 30 \text{ tons} \times 2000 \frac{\text{lbs}}{\text{ton}} = 0.117 \text{ lbs ethylbenzene}$$

$$17.1 \frac{\text{mg}}{\text{kg}} \times 2.205 \times 10 \frac{\text{lbs}}{\text{mg}} \times 0.4536 \frac{\text{kg}}{\text{lbs}} \times 30 \text{ tons} \times 2000 \frac{\text{lbs}}{\text{ton}} = 1.026 \text{ lbs xylene}$$

Area B

$$0.405 \frac{\text{mg}}{\text{kg}} \times 2,205 \times 10 \frac{\text{lbs}}{\text{mg}} \times 0.4536 \frac{\text{kg}}{\text{lbs}} \times 8.5 \text{ tons} \times 2000 \frac{\text{lbs}}{\text{ton}} = 0.0069 \text{ lbs MTBE}$$

Water

$$\left[\frac{\text{Con}}{\text{L}} \right] \text{ mg} \times 2.205 \times 10 \frac{\text{lbs}}{\text{mg}} \times 3.785 \frac{\text{liters}}{\text{gal}} \times \text{gals} = \text{lbs of contaminant in water}$$

Area W

$$1.08 \frac{\text{mg}}{\text{L}} \times 2.205 \times 10 \frac{\text{lbs}}{\text{mg}} \times 3.785 \frac{\text{liters}}{\text{gal}} \times 1000 \text{ gals} = 0.0090 \text{ lbs of MTBE in PitWater}$$

NOTE: The above calculations were prepared and furnished to the Bureau of Reclamation by William Loskutoff, Geologist, for the Bureau's use in evaluating the amount of contaminate in the vicinity of Monitoring Wells 6 and 7 at the Bureau's Tracy Pumping Plant located in Alameda County, California.

Table 3-1
Analytical Results of Samples Collected During Tank Removal and Remedial Activities, May 1997, Vehicle Maintenance Garage.

Sample Number	Location	Depth (1)	TPH as diesel (2)	TPH as gasoline (2)	Benzene (3)	Toluene (3)	Ethylbenzene (3)	Xylenes (3)	Total Lead (4)	MTBE (3)
Tank Removal Samples May 13, 1997										
BRTTD-1	east end diesel UST	10.5	48	<0.5 (5)	<0.005	<0.005	<0.005	<0.005	NA	<0.005
BRTTD-2	west end diesel UST	10	700	390	0.71	1.3	2.5	5.1	NA	<0.005
BRTTG-1	south end gasoline UST	10.5	NA	1900	20	31	23	113	NA	0.65
BRTTG-2	north end gasoline UST	11	NA	<2.5	<0.025	0.09	0.25	0.23	7.1	<2.5
B RTP-1	product pipeline	3.5	NA	<0.5	<0.005	<0.005	<0.005	<0.005	8.3	<0.025
B RTP-2	pump island, pipeline	3	NA	0.1	0.46	0.83	1.5	3	8.8	<0.005
Overexcavation Samples May 16 and 17, 1997										
BRTTD-3	east wall diesel excavation	11	<10	<0.05	<0.002	<0.002	<0.002	<0.002	6.33	<0.010
BRTTD-4	west wall of diesel excavation	10.5	<9	<0.05	<0.002	<0.002	<0.002	<0.002	7.46	0.405
BRTTD-5	north wall of diesel excavation	10.5	18.6	1.05	<0.002	<0.002	<0.002	<0.002	6.9	<0.010
BRTTG-3	west wall of gas excavation	10	<9	<0.05	<0.002	<0.002	<0.002	<0.002	7.2	<0.010
BRTTG-4#	east wall of gas excavation	9.5	3300	150	0.119	<0.05	1.95	17.1	7.61	<0.25
BRTTG-5	south end of gas excavation	13	<10	<0.05	<0.002	<0.002	<0.002	<0.002	5.75	<0.010
Stockpile Samples May 13, 1997										
DSTP-1	diesel stockpile		680	12	<0.005	9.2	6.7	15	NA	16
GSTP-1	gas stockpile		NA	<0.5	<0.005	<0.005	<0.005	<0.005	9.4	<0.005
Water Samples May 15 and 17, 1997										
BRT-W	gas excavation-pipe break		<0.05	0.11	<0.0005	0.0011	0.0015	0.017	<0.005	<0.005
BRT-W2	enlarged excavation seepage		3.32	7.04	0.45	0.274	0.442	2.27	<0.005	1.08

Sample BRTTG-4 was also analyzed for PAHs using EPA Method 8270. Results indicate non-detect for all analytes tested (see Analytical Reports, Appendix C).

- (1) Depth in feet below ground surface (bgs).
- (2) Total Petroleum Hydrocarbon as diesel and as gasoline using modified EPA Method 8015.
- (3) Benzene, toluene, ethylbenzene, xylenes (BTEX) and Methyl tertiary Butyl Ether (MTBE) using EPA Method 8020.
- (4) Total Lead using EPA Method 6010.
- (5) Not detected at or above Analytical Laboratory Reporting Limit.

Soil results are in mg/Kg (parts per million-ppm).

Water results are in mg/L (ppm).

NA = not analyzed

Shaded areas are results detected above analytical laboratory reporting limit.

25

HOUJIKAKU-VL11E

TEL: 9163680967

P. 006