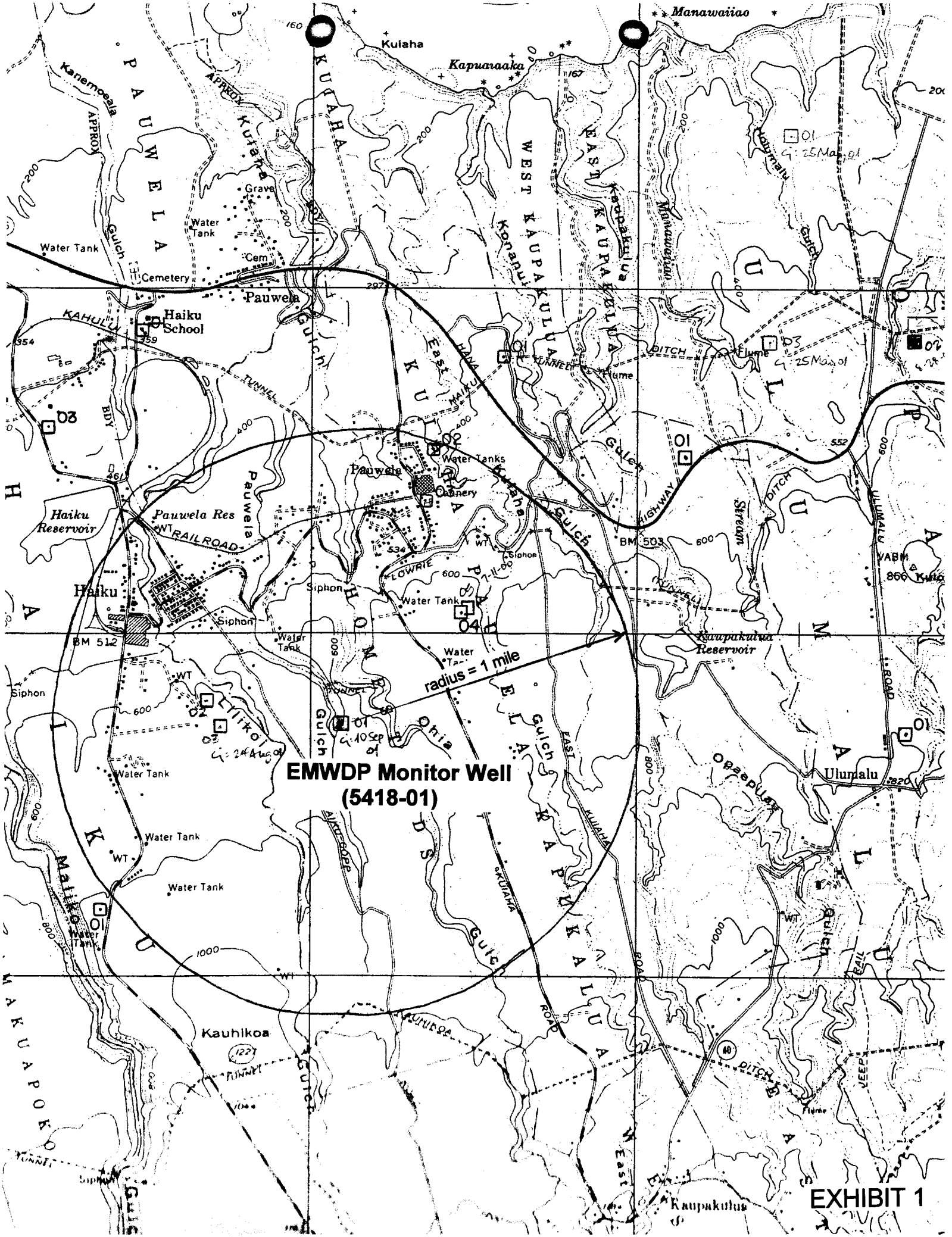
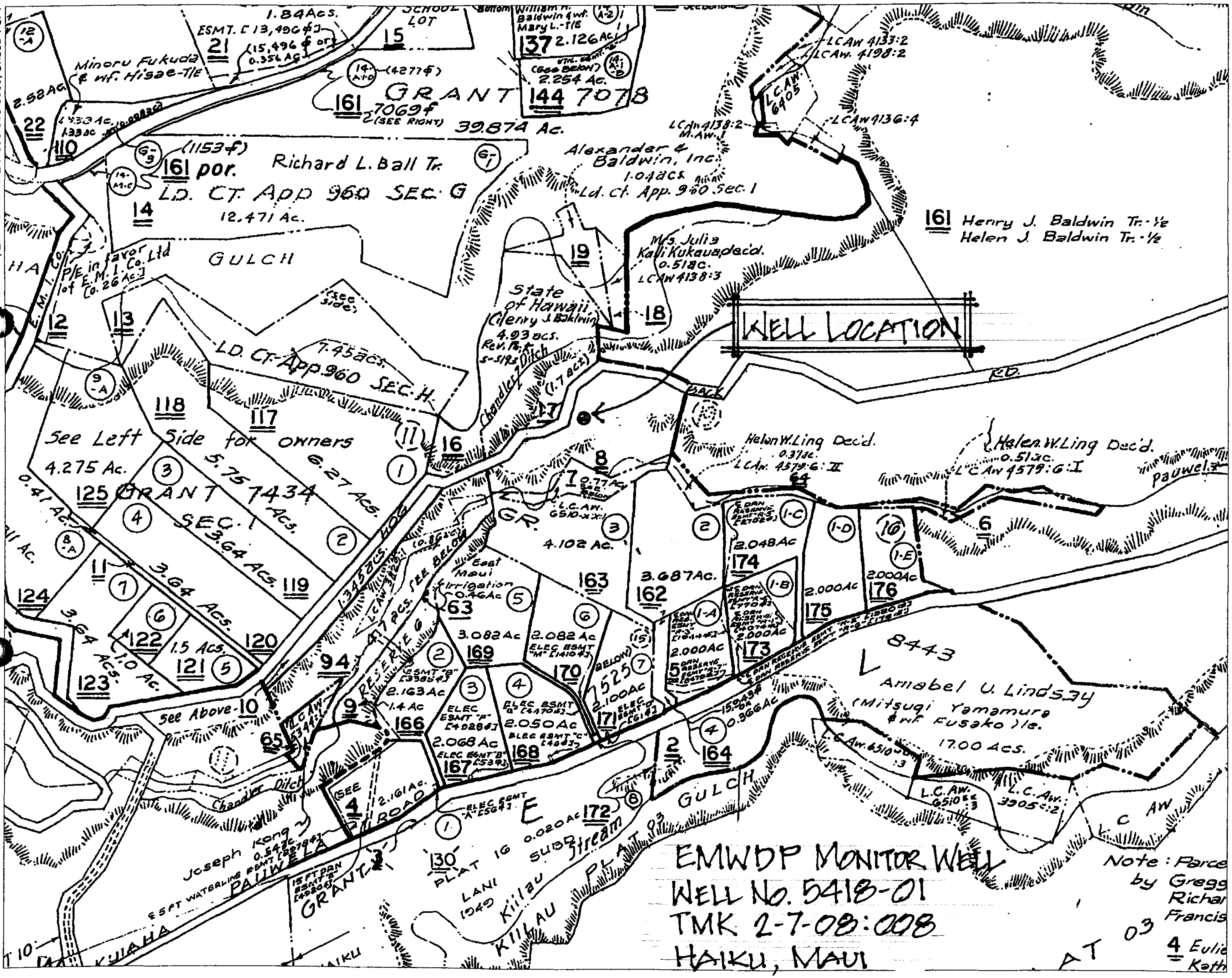

EMWDP Monitor Well
(5418-01)
radius = 1 mile
EXHIBIT 1
Haiku
Pauwela
Kuiaha
Kapuaaaka
Manawaiiao
Haiku Reservoir
Pauwela Res
Kaupakulua Reservoir
Kauhikoa
Ulumalu
Haiku School
Cemetery
Water Tank
Water Tanks
Cannery
Siphon
Flume
Tunnel
Ditch
Stream
Gulch
Railroad
Highway
Road
BM 512
BM 503
VABM 866



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

April 15, 2002

5418-01.wcr.acc.doc

Mr. David Craddick
County of Maui
Department of Water
200 South High Street
Wailuku, HI 96793

Dear Mr. Craddick:

Well Completion Report for Well No. 5418-01

We have received your Well Completion Report Part I for the East Maui Water Development Plan Monitor Well (Well No. 5418-01), and accept it as complete.

As noted in the special conditions for this well, an acceptably complete application for pump installation permit will require transmittal of:

1. Documentation of compliance with Chapter 343 (Special Condition #4).
2. A copy of the Governor's Executive Order setting aside the site for this purpose (Special Condition #4).

If you have any questions, please contact Charley Ice of the Commission staff a 587-0251 or toll-free at 984-2400, extension 70251.

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

CI:ss

Well Name: EMWDP Monitor Well No. 5418-01
Date of Test: January 19, 2002
Date of Analysis: 03-Apr-02

Alternative way for determing T from step-drawdown data (Mink, per. comm)

Q =ft^3/d	Q1 (gpm) =	705	=	135713	ft^3/d
s = ft.	Q2 (gpm) =	438	=	84315	ft^3/d

Set up two equations:

s1 = jQ1 + nQ1^2
s2 = jQ2 + nQ2^2

green = input
red = calculated
blue = equations

Q2 =	84315	s2 =	0.69
Q1 =	135713	s1 =	1.62
Well Depth below sea level =			65.9
Radius of well (ft) =	0.583	= r	

n = s1 - (Q1/Q2)s2/Q1(Q1-Q2) = 7.3E-11
j = s/Q - nQ = 2E-06

Laminar flow equation:
s = jQ = 0.274998 16.98% Head loss due to laminar flow

Thiem Eq.

T = 1/2pij(ln{re/r})

re = Well Depth BSL * 1.6 = 105.44
Therefore:
T = 1/2pij(ln{re/r}) = 408246 ft^2/d

MEMO and ROUTE SLIP

04/02/02

WCR 1 Check for Well No. 5418-01 (survey to regulation memo)

1. ***Pump Tests Check*** Glenn Bauer ____ (initial) 4/17/02

	Yes	No	If no, describe deficiency
Step–Drawdown Test:			
followed WCPI Stds	☑	☐	
analysis attached	☑	☐	monitor well
proposed pump cap o.k.	☐	☐	
Aquifer Pump Test:			
followed WCPI Stds	☑	☐	
T & S analysis attached	☐	☑	
Well Interference: estimated Steady-State drawdown at 1-mile radius is minimal ft.			
analysis attached	☐	☐	
Stream Surface Water Impacted:	☐	☐	← If yes, identify most probable stream

2. ***Construction Check*** Mitch Ohye ____ (initial) 4-17-02

	Yes	No	If no, describe deficiency
data complete	☑	☐	
followed WCPI Stds	☑	☐	
well database updated	☑	☐	

Future pro... of course

3. Charley/Lenore/Ryan ____ (initial) **take action based on above analysis**

ATTACHMENTS FOR PUMP INSTALLATION PERMIT: ____ not necessary – only WCP.

1 COVER LETTER ____
2 PERMIT (2x) ____
3 DOH COMMENTS ____
4 LAND DIV. COMMENTS ____
5 WCR 2 FORM ____
6 WUR FORM ____

} To be sent to applicant

[redacted]

4. Roy ____ (initial) check see comments. ci ✓
5. Subia ____ (initial) finalize
6. Linnel ____ (initial) signature
7. Charley/Lenore/Ryan **File**

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-6109
TELEPHONE (808) 270-7816 • FAX (808) 270-7833 • www.mauiwater.org

March 21, 2002

Dept. of Land and Natural Resources
Commission on Water Resource Management
P. O. Box 621
Honolulu, Hawaii 96809

Gentlemen:

Subject: EAST MAUI WATER DEVELOPMENT PLAN MONITOR WELL
WELL NO. 5418-01, HAIKU, MAUI

Transmitting the following in accordance with the Well Construction Permit.

1. Well Completion Report - Part 1
2. Elevation Certification
3. As-built sectional drawing of the well
4. Location maps
5. Pump Test records for Step-Drawdown Test and Constant Rate Test

Should you have any questions, please contact our engineering division at 808-270-7835.

Sincerely,

Hubert Kozuma

for David R. Craddick
Director

AM:sc
Enclosures: 5 as noted above
xc: Mink & Yuen w/out encl
Water Resources International w/out encl

State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources

WELL COMPLETION REPORT - PART I
Well Construction

Instructions: Please print in ink or type and send completed report (with attachments, if applicable) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. The Commission may not accept incomplete reports. This form shall be submitted within 60 days of the completion of work. For assistance, please consult the Hawaii Well Construction and Pump Installation Standards or call the Regulation Branch at **587-0225**. For updates to this form or additional information, please visit our website at http://www.state.hi.us/dlnr/cwrm/

For Official Use Only:

RECEIVED
02 MAR 28 A10:19

1. State Well No.: **5418-01** Well Name: **EMWDP Monitor Well** Island: **Maui**
2. Address: **Pauwela Gulch at 600 ft. el., Pauwela Homesteads, Makawao** Tax Map Key: **2-7-8:8**
3. Drilling Company: Water Resources International, Inc.
4. Drilling method used during contruction: ☒ Rotary ☐ Percussion ☐ Other (describe)
5. Date Well Construction (drilled,cased,grouted) completed: 2/7/02 (month/day/year) **Fill out attached Driller's Log**
   In addition to the driller's log, if a geologic log was prepared, please submit with this form.
6. Was the subject well cored? ☒ Yes ☐ No
7. Initial water-level encountered 662.33 ft. below ground Date and time of measurement: 11/21/01 8:30 AM (month/day/year time)
8. Step-Drawdown Test completed? ☐ No ☒ Yes **Attach Step-Drawdown Test form (*12/17/97 SDPTD Form*)**
9. Constant Rate Aquifer Test completed? ☐ No ☒ Yes **Attach Constant Rate Aquifer Test form (*12/17/97 CRPTD Form*)**

Parameters prior to pump test:

10. Water-level: 4.68 ft. above msl Date and time of measurement: 1/19/02 11:45 AM (month/day/year time)
11. Chloride: 50 ppm Date and time of sampling: 1/19/02 11:45 AM (month/day/year time)
12. Temperature: 69.98 °F Date and time of measurement: 1/19/02 11:45 AM (month/day/year time)
13. **Fill in the as-built section on the other side of this sheet.** See attached "As Built"
14. **Fill in attached surveyor's report.**
15. If a pump is not planned to be installed, please describe (below in the remarks section) how well is secured to prevent unauthorized access (example: lockable cover, threaded coupling, etc.)
16. The proposed manufacturer's rated pump capacity is na gpm at a head of na ft.
17. Remarks: Lockable cover *

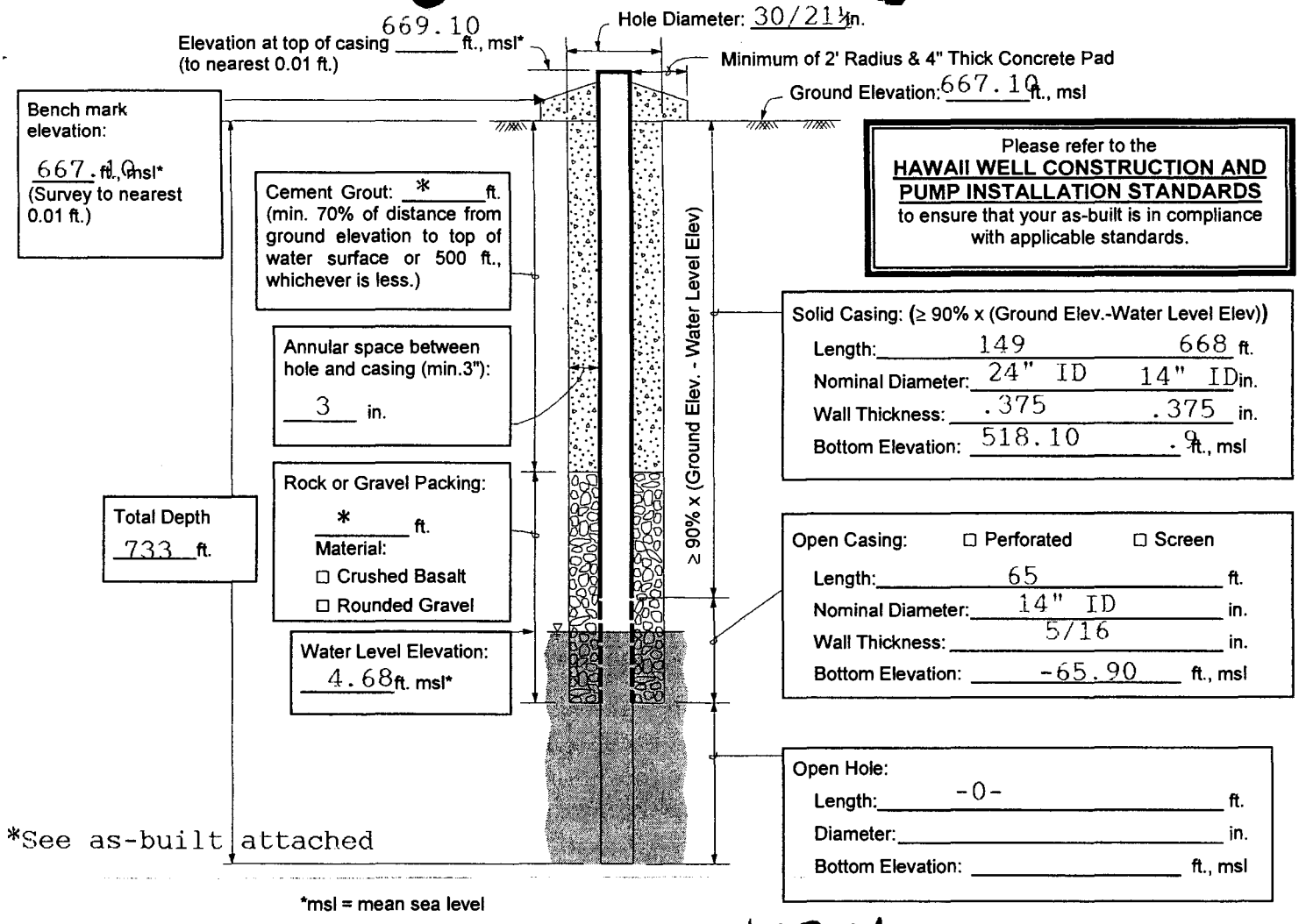
Licensed Driller (print) Blaise Clay C-57 Lic. No. AC-05058

Signature Blaise Clay Date March 8, 2002

Permittee (print) David Craddick

Signature David Craddick Date

13. AS-BUILT WELL SECTION *(Please attach as-built if different from diagram provided below)*



*msl = mean sea level

6-5418-01 EMWDD Monitor

Solid Casing Material:

Carbon Steel: compliant with (*check one or more*): ☐ ANSI/AWWA C200 ☐ API Spec. 5L ☐ ASTM A53 ☒ ASTM A139
And compliant with (*check one or more*): ☐ ASTM A242 ☒ Type E ☐ Type S ☒ Grade B ☐ Other
Stainless Steel: (*check one*): ☐ ASTM A409 (production wells) ☐ ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F480 and ASTM D1527: (*check one*) ☐ Schedule 40 ☐ Schedule 80
PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (*check one*): ☐ Schedule 40 ☐ Schedule 80 ☐ Schedule 120
Thermoset Plastic: (*check one*)
☐ Filament Wound Resin Pipe conforming to ASTM D2996
☐ Centrifugally Cast Resin Pipe conforming to ASTM D2997
☐ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
☐ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
☐ PTFE Fluorocarbon Tubing conforming to ASTM D3296
☐ FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:

Carbon Steel: compliant with (*check one or more*): ☐ ANSI/AWWA C200 ☐ API Spec. 5L ☐ ASTM A53 ☒ ASTM A139
And compliant with (*check one or more*): ☐ ASTM A242 ☒ Type E ☐ Type S ☒ Grade B ☐ Other
Stainless Steel: (*check one*): ☐ ASTM A409 (production wells) ☐ ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F480 and ASTM D1527: (*check one*) ☐ Schedule 40 ☐ Schedule 80
PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (*check one*): ☐ Schedule 40 ☐ Schedule 80 ☐ Schedule 120
Thermoset Plastic: (*check one*)
☐ Filament Wound Resin Pipe conforming to ASTM D2996
☐ Centrifugally Cast Resin Pipe conforming to ASTM D2997
☐ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
☐ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
☐ PTFE Fluorocarbon Tubing conforming to ASTM D3296
☐ FEP Fluorocarbon Tubing conforming to ASTM D3296

A&B PROPERTIES, INC.
A SUBSIDIARY OF ALEXANDER & BALDWIN INC

33 Lono Avenue, Suite 400
Kahului, Hawaii 96732-1608
P.O. Box 156
Kahului, HI 96733-6656
www.abprop.com
Tel (808) 877-5523
Fax (808) 871-7497

March 8, 2002

SURVEYOR'S CERTIFICATION

TO: WATER RESOURCES INTERNATIONAL, INC.

I hereby certify, to the best of my knowledge and ability, that on February 13, 2002, under the direction of the undersigned, a bench level survey was performed from an established control station whose elevation is based on a U.S.G.S Reference bench mark to the Haiku Monitor Well located on Tax Map Plat: (2) 2-7-08:8. Based on said bench level survey, the concrete pad at the base of well casing of the Haiku Monitor Well is 667.10 feet above Mean Sea Level.

A&B PROPERTIES, INC.

This work was prepared by me or under my supervision.

KEN T. NOMURA
LICENSED PROFESSIONAL LAND SURVEYOR
No. LS-7633
HAWAII, U.S.A.

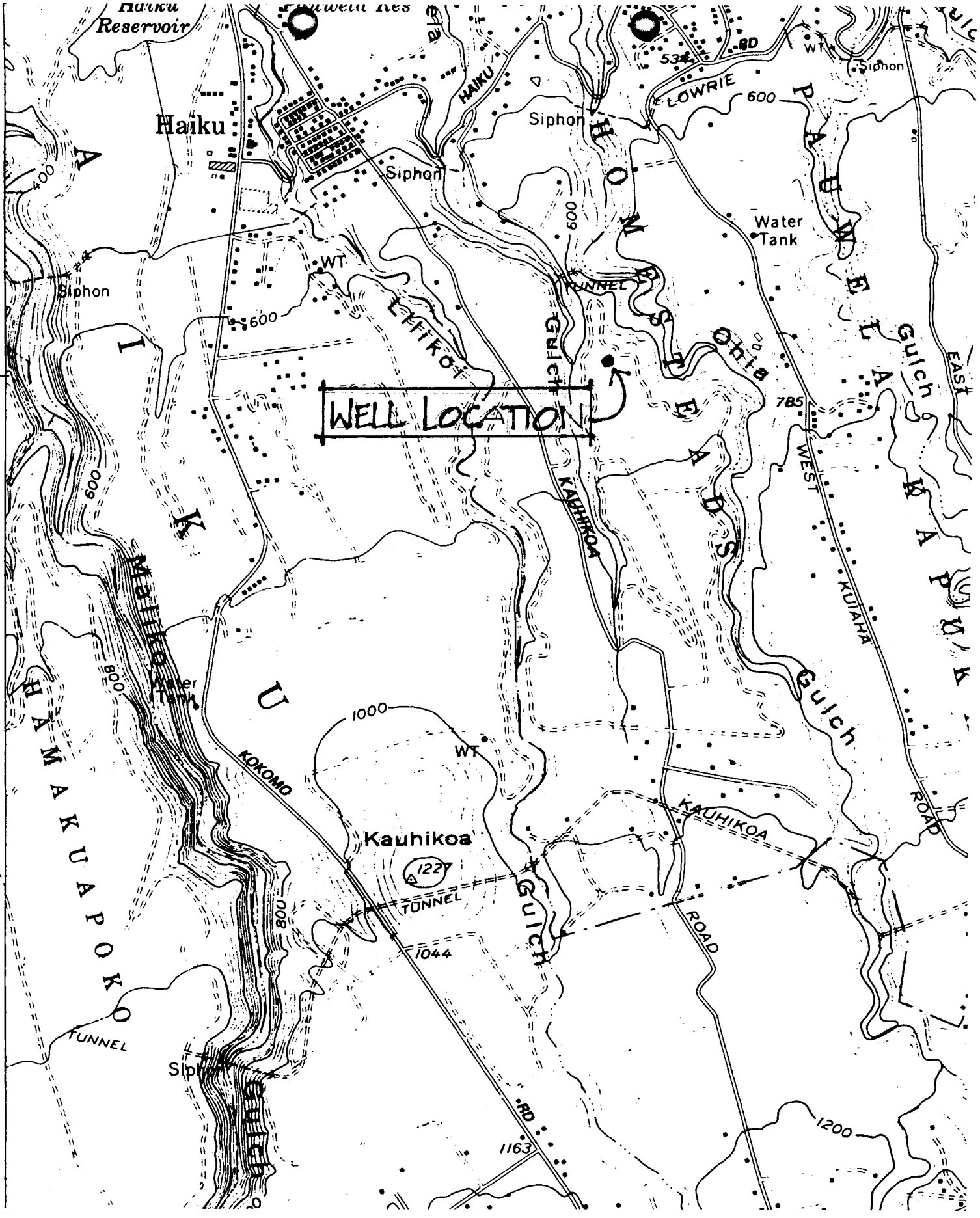
Ken T. Nomura
Licensed Professional Land Surveyor
Certificate No. LS-7633

KTN:co

cc: Properties, Honolulu

6-5418-01 EMWDP Monitor Well

[redacted]



EMWDP MONITOR WELL
WELL NO. 5418-01
TMK 2-7-08:008
HAIKU, MAUI

Table 1 (SDPTD Form 12/17/97)

STEP-DRAWDOWN PUMP TEST DATA

(not required for wells producing < 100,000 gpd or 70 gpm)

Pumped Well No. 54W8-85 Observation well no. _____ Eden @GL. 667.19

Pumped Well Name AUXILIARY MONITOR WELL Distance between Obs. & Pumped Well _____ ft.

Target Q 450, 550, 650, 250 gpm Reference pt. for depth to water 670.44 ft. msl (GL. + 3.25

Static Water Level @ start of test 662.51 ft. msl 4.68' Hen

Water level measurements by: ☐ steel tape ☐ pressure transducer ☒ airline static PSI 16.8 ft

(Solinst 665.76 ft/Ref. Pt.

START TEST Date: 1/19/02 Time of day: 11:45 AM

Flow Meter Reading Start: 21106000 gals

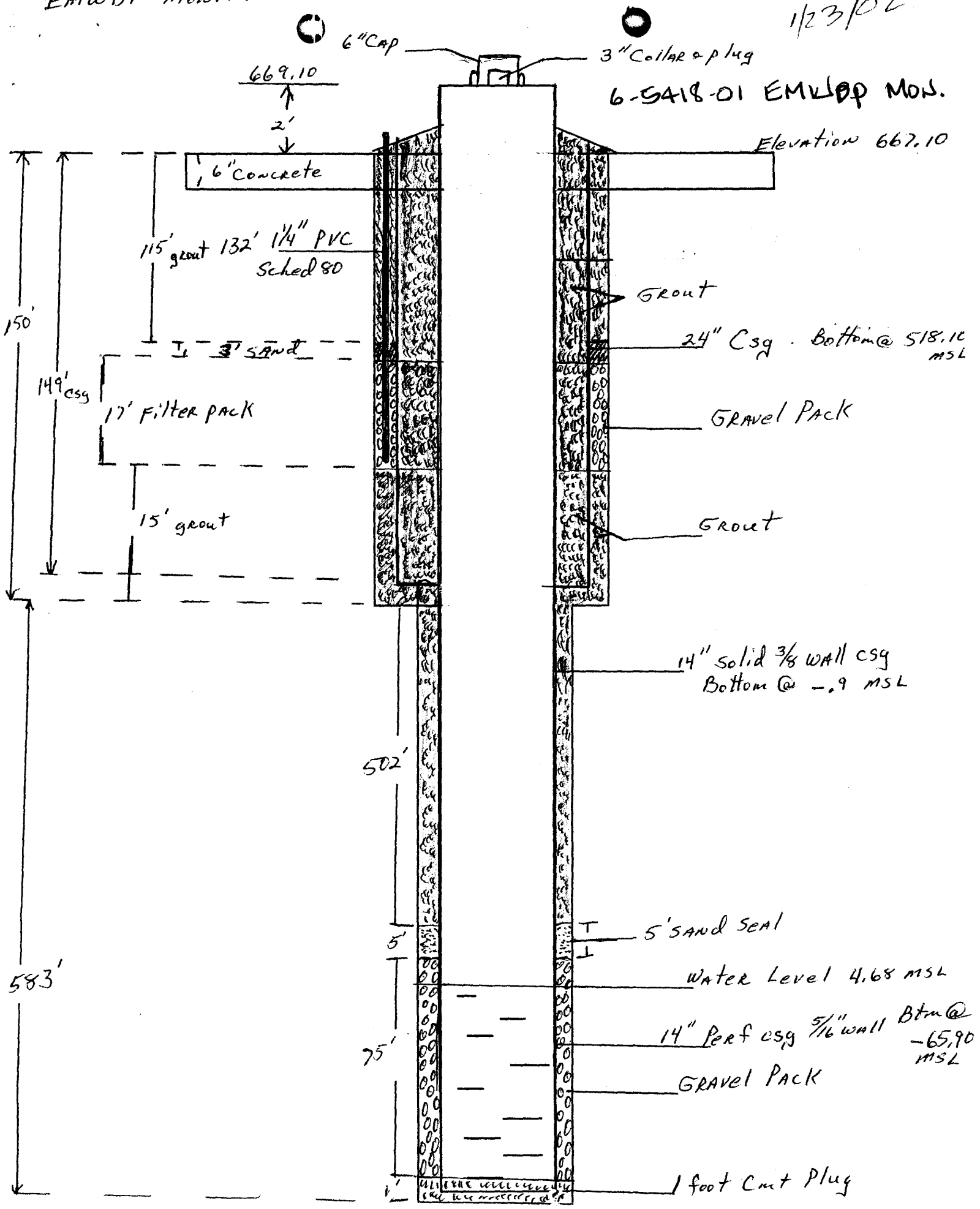
Suggested Elapsed time t (min)	Actual Elapsed Time t (min)	Depth to water (nearest 0.1 ft)	Airline ft / D.D. S (unadjusted to nearest 0.1 ft)	Pumping rate Q (at least 3 steps) (gpm)	EC (µmhos)	Cl⁻ (mg/l)	Temp. ___°F or X°C	Data in this table is for: ☑ Pumped Well ☐ Observation Well Remarks
-45	-45	665.76		0			.	Start test/ Step 1
-30	-30	"		0			.	
-15	-15	"		0			.	
0	0	"					.	Start pump
1	1	666.68	16.4 / .92	850 RPM			.	
1.5							.	
2	2	665.88	16.75 / .12				.	
2.5							.	
3	3	665.88	16.75 / .12				.	
4	4	"	16.75 / .12				.	
5		.		900 RPM			.	
6	6	666.11	16.65 / .35				.	
7							.	
8	8	665.99	16.7 / .23	1000 RPM			.	
10	10	666.45	16.5 / .69	439			.	
15	15	"	16.5 / .69	441			.	
20	20	"	16.5 / .69	433			.	
25	25	"	16.5 / .69	439			.	
30[2]	30	"	16.5 / .69	447	234	<50[3]	21.1	Chloride sample taken
45	45	"	16.5 / .69	432			.	Step 2 begin?
step 46	46	666.68	16.4 / .92	552			.	
	50	"	16.4 / .92	541			.	
	55	"	16.4 / .92	541	257		20.1	
	60	"	16.4 / .92	550			.	
	75	"	16.4 / .92	550			.	

Table 1 (SDPTD Form 12/17/97)

Suggested Elapsed time t (min)	Actual Elapsed Time t (min)	Depth to water (nearest 0.1 ft)	Drawdown S (unadjusted to nearest 0.1 ft)	Pumping rate Q (at least 3 steps) (gpm)	EC (µmhos)	Cl (mg/l)	Temp. ___° F or X °C	Data in this table is for: ☒ Pumped Well ☐ Observation Well Remarks
	90	666.68	16.4 .92	526			.	
	100	"	16.4 .92	543			.	
	120	666.68	16.4 .92	537	258	<50	20.6	
Step	125	667.03	16.25 1.27	651			.	
	130	667.15	16.2 1.29	648			.	
	135	"	16.2 1.39	643			.	
	150	"	16.2 1.39	647			.	
	165	"	16.2 1.39	652			.	
	180	667.15	16.2 1.39	642	260		20.0	
	182	667.38	16.1 1.62	753			.	
	190	"	16.1 1.62	771	260		19.8	67.64°F.
	200	"	16.1 1.62	760			.	
	210	"	16.1 1.62	750			.	
	220	"	16.1 1.62	753			.	
	230	"	16.1 1.62	747			.	
	240	667.38	16.1 1.62	751	262		19.6	67.28°F
							.	
							.	Meter Reading
Note: Per		John					.	211245000
Minks Inst. -		Go					.	
Straight into		Ext.					.	
test.							.	
From well Development							.	
Runs, well recovers							.	
immediatly to		Static					.	
							.	
							.	
							.	
							.	
							.	
							.	
							.	
							.	

EMWDP Monitor Well

1/23/02



CONSTANT-RATE PUMP TEST DATA

Table 2 (CRPTD Form 12/17/97)

Pumped Well No. 5492-05
Pumped Well Name [illegible]
Target Q 250 gpm

Observation well no. _____
Distance between Obs. & Pumped Well _____ ft.
Reference pt. for depth to water 620.44 ft. msl
Static Water Level @ start of test 4.68 ft. msl

Water level measurements by: ☐ steel tape ☐ pressure transducer ☒ airline (Colinet wl. 665.16 S/Ref)

START TEST Date: 1/19/02 Time of day: 3:45 set @ -34.13' MSL

Flow Meter Reading Start: 211245000 gals

Suggested elapsed time t (min)	Actual elapsed time t (min)	Depth to water S/Ref Pt (nearest 0.1 ft)	Drawdown s Airline DD (unadjusted to nearest 0.1 ft)	Pumping rate Q (gpm)	EC (µmhos)	Cl⁻ (mg/l)	Temp. ___°F or X °C	Data in this table is for: ☐ Pumped Well ☐ Observation Well Remarks
-45		Straight into Ext test from						Start Test
-30		Step test Per John Mink						
-15								
1/19/02 0	0		0.00			1	.	Start pump/Cl⁻ taken
~~4:00pm~~ 1		~~[illegible]~~	16.1 / 1.62	751	262	<50	19.6	
~~3:45~~ 1.5		667.38					.	
2							.	
2.5							.	
3							.	
4							.	
5							.	
6							.	
7							.	
8							.	
10							.	
1/19 4:00pm 15	15	667.61	16.0 / 1.85	770	263		19.6	
20				[illegible]			.	
25							.	
30							.	
40							.	
50							.	
60							.	
5:00 70	75	667.61	16.0 / 1.85	764	262		19.6	
80							.	
90							.	
6:00 100	135	667.38	16.1 / 1.62	755	265	50	19.4	
7:00 150	195	667.38	16.1 / 1.62	766			.	

Table 2 (CRPTD Form 12/17/87)

Suggested Elapsed time t (min)	Actual Elapsed Time t (min)	Depth to water (nearest 0.1 ft)	Drawdown s (unadjusted to nearest 0.1 ft)	Pumping rate Q (at least 3 steps) (gpm)	EC (µmhos)	Cl⁻ (mg/l)	Temp. ___° F or ___° C	Data in this table is for: ☐ Pumped Well ☐ Observation Well Remarks
8:00	255	667.38	16.1 / 1.62	740			.	
9:00	315	"	16.1 / 1.62	768			.	
10:00	375	"	16.1 / 1.62	761			.	
11:00	435	"	16.1 / 1.62	750			.	
12:00 1/20 AM	495	667.38	16.1 / 1.62	753	267	50	19.9	
1:00	555	667.15	16.2 / 1.39	745			.	
2:00	615	667.15	16.2 / 1.39	750			.	
3:00	675	667.38	16.1 / 1.62	757	268	55	19.9	
4:00	735	"	16.1 / 1.62	748			.	
5:00	795	"	16.1 / 1.62	747			.	
6:00	855	"	16.1 / 1.62	750	267	55	19.9	
7:00	915	"	16.1 / 1.62	764			.	
8:00	975	"	16.1 / 1.62	748			.	
9:00	1035	"	16.1 / 1.62	752	276		1 .	
10:00	1095	"	16.1 / 1.62	746			.	
11:00	1155	"	16.1 / 1.62	745			.	
12:00 PM 1/20	1215	"	16.1 / 1.62	752			.	
1:00 PM	1275	"	16.1 / 1.62	760			.	
2:00	1335	"	" / "	763			.	
3:00	1395	"	" / "	758			.	
4:00	1455	"	" / "	763			.	
5:00	1515	"	" / "	763			.	
6:00	1575	"	16.1 / 1.62	758			.	
7:00	1635	"	16.1 / 1.62	748	275		19.9	
8:00	1695	"	" / "	751	278		19.9	
9:00	1755	"	" / "	760	276		19.9	
10:00	1815	"	" / "	758	278		19.9	
11:00	1875	"	" / "	747	275		19.9	
1/21 12:00 AM	1935	"	" / "	753	274		19.9	
1:00	1995	"	" / "	760	276		19.9	
2:00	2055	"	" / "	749	274		19.9	
3:00	2115	"	" / "	756	274		19.9	
4:00	2175	667.38	16.1 / 1.62	742	275		19.9	

Table 2 (CRPTD Form 12/17/97)

Suggested Elapsed time t 1/21/02 (min)	Actual Elapsed Time t (min)	Depth to water (nearest 0.1 ft)	Drawdown s (unadjusted to nearest 0.1 ft)	Pumping rate Q (at least 3 steps) (gpm)	EC (µmhos)	Cl⁻ (mg/l)	Temp. ___ °F or °C	Data in this table is for: ☒ Pumped Well ☐ Observation Well Remarks
1/21 5:00 PM	2235	667.38	16.1 / 1.62	748	275		19.9	
6:00	2295	"	16.1 / 1.62	750	275		19.9	
7:00	2355	"	16.1 / 1.62	748	276		19.9	
8:00	2415	"	16.1 / 1.62	742	275	60	19.8	
9:00	2475	"	16.1 / 1.62	747	277		19.8	
10:00	2535	"	16.1 / 1.62	747	278		19.8	
11:00	2595	667.38	16.1 / 1.62	739	278		20.1	
12:00 PM NOON	2655	667.15	16.2 / 1.39	753	273	55	20.1	
1:00 PM	2715	667.15	16.2 / 1.39	744	290		20.1	
2:00	2775	"	16.2 / 1.39	740	292		20.1	
3:00	2835	"	16.2 / 1.39	745	297		20.0	
4:00	2895	"	16.2 / 1.39	743	296		19.8	
5:00	2955	667.15	16.2 / 1.39	747	297		19.8	
6:00	3015	667.38	16.1 / 1.62	744	298	55	19.9	
7:00	3075	667.38	16.1 / 1.62	739	297		19.9	
8:00	3135	"	16.1 / 1.62	742	297		19.9	
9:00	3195	"	16.1 / 1.62	741	299		19.9	
10:00	3255	"	16.1 / 1.62	749	298		19.9	
11:00	3315	"	16.1 / 1.62	739	299		19.9	
1/22/02 12:00 AM	3375	"	16.1 / 1.62	745	298	55	19.9	
1:00 AM	3435	"	16.1 / 1.62	749	298		19.9	
2:00	3495	"	16.1 / 1.62	745	299		19.9	
3:00	3555	"	16.1 / 1.62	752	301		19.9	
4:00	3615	"	16.1 / 1.62	742	301		19.9	
5:00	3675	667.38	16.1 / 1.62	751	302		19.9	
6:00	3735	667.15	16.2 / 1.39	740	306	55	19.8	
7:00	3795	667.15	16.2 / 1.39	738	305		19.8	
8:00	3855	"	16.2 / 1.39	745	306		19.8	
9:00	3915	"	16.2 / 1.39	736	308		20.0	
10:00	3975	"	16.2 / 1.39	744	310		20.3	
11:00	4035	"	16.2 / 1.39	770	308		20.5	
12:00 PM	4095	"	16.2 / 1.39	776	306	60	20.4	
1:00 PM	4155	"	16.2 / 1.39	768	306		20.5	

Table 2 (CRPTD Form 12/17/97)

Suggested Elapsed time t (min)	Actual Elapsed Time t (min)	Depth to water (nearest 0.1 ft)	Drawdown s (unadjusted to nearest 0.1 ft)	Pumping rate Q (at least 3 steps) (gpm)	EC (µmhos)	Cl⁻ (mg/l)	Temp. ___°F or X°C	Data in this table is for: ☐ Pumped Well ☐ Observation Well Remarks
12/22/02 PM 2:00	4215	662.15	16.2 / 1.39	770	303		20.4	
3:00	4275	"	16.2 / 1.39	775	297		20.4	
4:00	4335	"	16.2 / 1.39	767	298		20.4	
5:00	4395	"	16.2 / 1.39	777	297		20.4	
6:00	4455	662.15	16.2 / 1.39	760	291	50	19.9	
7:00	4515	662.38	16.1 / 1.62	760	292		19.9	
8:00	4575	"	16.1 / 1.62	775	309		19.9	
9:00	4635	"	16.1 / 1.62	769	304		19.9	
10:00	4695	"	16.1 / 1.62	773	307		19.9	
11:00	4755	"	16.1 / 1.62	768	303		19.9	
12/23/02 AM 12:00	4815	"	16.1 / 1.62	759	306	50	19.9	
1:00	4875	"	16.1 / 1.62	767	309		19.9	
2:00	4935	"	16.1 / 1.62	753	306		19.9	
3:00	4995	662.38	16.1 / 1.62	772	312		19.9	
4:00	5055	662.15	16.2 / 1.39	758	306		19.9	
5:00	5115	662.15	16.2 / 1.39	761	303		19.9	
6:00	5175	662.38	16.1 / 1.62	756	314	60	19.9	
7:00	5235	"	16.1 / 1.62	785	307		19.9	
8:00	5295	"	16.1 / 1.62	788	304		19.7	
9:00	5355	"	16.1 / 1.62	778	310		19.7	
10:00	5415	"	16.1 / 1.62	774	309		20.4	
11:00	5475	"	16.1 / 1.62	774	311		21.2	
12:00 PM	5535	662.15	16.2 / 1.39	765	314	60	20.9	
~~1:00~~	~~5595~~						.	Meter Rdg
~~2:00~~	~~5655~~						.	
~~3:00~~	~~5715~~						.	
~~3:45~~	~~5760~~						.	
12:45	5580	662.15	16.2 / 1.39	768	305		20.9	
							.	
							.	
							.	
							.	
							.	

Table 2 (CRPTD Form 12/17/97)

Suggested elapsed time t (min)	Actual elapsed time t (min)	Depth to water (nearest 0.1 ft)	Recovery Drawdown Air line Feet (unadjusted to nearest 0.1 ft)	Pumping rate t (gpm)	EC (µmhos)	Cl⁻ (mg/l)	Temp. ___°F or ___°C	Data in this table is for: ☐ Pumped Well ☐ Observation Well Remarks
0	0			0			.	Start recovery
1	1/2		17,15 + .80	0			.	
1.5	1		17.35 + 1.27	0			.	
2	1 1/2		17.3 + 1.15	0			.	
2.5	2		17.2 + .92	0			.	
3	2 1/2		17.15 + .80	0			.	
4	3		17.05 + .58	0			.	
5	3 1/2		16.95 + .35	0			.	
6	4		16.9 + .23	0			.	
7	5		16.85 + .12	0			.	
8	6		16.8 0	0			.	
10	7		16.8 0	0			.	
15	8		16.85 + .12	0			.	
20	9		16.8 0	0			.	
25	10		16.8 0	0			.	
30	15		16.85 + .12	0			.	
40	20		16.8 0	0			.	
50	25		16.82 + .05	0			.	
60	30		16.85 + .12	0			.	
70	40		16.9 + .23	0			.	
80	50		16.9 + .23	0			.	
90	60		16.9 + .23	0			.	
100	1260 min		16.8 0	0		@ 08:45. 1/24/02		
150				0			.	
200				0			.	X 100%
250				0			.	☐ 80% recovery achieved ☐ 80% recovery not achieved

END TEST Date: 1/23/02 Time of day: (Start Recovery @ 12:45 PM)

ADDITIONAL REMARKS:

Person in charge of pump test (print): Tracy Underwood

Signature: Tracy Underwood

The signature above indicates that the data reported on this form is accurate and true to the best of the person's knowledge who operated this pump test.

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

January 11, 2002

Mr. David Craddick, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, HI 96793

Dear Mr. Craddick:

After-the-Fact Variance
East Maui Water Development Plan Monitor Well (Well No. 5418-01)

Thank you for your letter of December 18, 2001, announcing your instructions to drill "the monitor well in Haiku" (sic) deeper than one-fourth the theoretical aquifer thickness. Only the Commission can issue an after-the-fact variance, subject to possible fines.

Please be aware that we have adopted a process whereby the necessity to drill deeper in such instances as you describe (with evidence of higher water levels) can be approved in a one-day turnaround period by contacting us with your information before you exceed the standard one-fourth limitation . There may be other circumstances in which drilling deeper than one-fourth the theoretical aquifer thickness could be approved administratively, but these, too, would require evidence and discussion prior to administrative variance approval.

If you have any questions, please contact Charley Ice of the Water Commission staff at 587-0251 or toll-free at 984-4644, extension 70251.

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

CI:ss

c: Water Resources International, Inc.

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-6109
TELEPHONE (808) 270-7816 • FAX (808) 270-7833 • www.mauiwater.org

12/21/01

DEC 21 A10 : 17

December 18, 2001

Ms. Linnel Nishioka, Deputy Director
Commission on Water Resource Management
Dept. of Land & Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Nishioka:

The monitor well in Haiku, Maui, which is being drilled to comply with the Court Order specifying the requirements for a Supplemental Environmental Impact Statement (SEIS), has reached its projected depth of 50 feet below sea level (BSL), but we believe another 15 feet of depth is required to allow a test yield of up to 1000 gpm. Video logs of the well show good water movement in the lowest 5 feet of the well. Preliminary measurements place the water level at approximately 5 feet ASL, somewhat less than predicted, although this level is preliminary and may rise by up to a foot. The CWRM well standards suggest the depth of a well in a basal aquifer be no more than 25 percent of the theoretical thickness of the freshwater lens at the well site. If the water level is 5 feet ASL, the suggested depth should be 50 feet BSL (.25x40x5).

We have instructed the driller to drill an additional 15 feet. This decision was made in order to minimize costs that would accrue from the delay awaiting permission from the Commission.

Sincerely,

David R. Craddick
Director

DRC:sc

DEC 2 0 2001

COMMISSION ON WATER RESOURCE MANAGEMENT (3/01)

FROM: LINNEL DATE: DEC 21 2001 SUSPENSE DATE: _____

TO:	INIT.	TO:	INIT.	FOR:	PLEASE:
___ BAUER, G.	___	___ KUNII		roval	___ See Me
___ CHING, F.	___	___ NAKA		nature	___ Review & Comment
___ DANBARA, S.	___	___ NAKA		rmation	___ Take Action
___ FUJII, N.	___	___ NISHI			___ Type Draft
2 ✓ HARDY, R.	___	___ OHYE			___ Type Final
___ HIGA, D.	___	___ SAKO			___ File
___ HIRANO, E.	___	3 ___ SUBIA			___ Xerox ___ copies
✓ 1 ICE, C.	___	___ SWAN			___ Last person - trash
___ IMATA, R.	___	___ UYEN(			
___ JINNAI, R.	___	___ YODA,			

✓

Roy,
Is this letter okay with you normally people don't get ATF variances let's discuss Thanks,

Isn't this Sub

Craddick: Enforcement act
will pay to re-cement if pump

Charley edits o.k.?

? Pump tests will be fine most likely – it's optimization of infrastructure that is the issue. ATF variance not Mike Roberson

Craddick he's corrected his writer already

BSL – nice.

did I get them right? – ignoring that. Our new can administratively approve, but unwritten policy seems to be they pump test – get us data same day – we analyze and give O.K. to go deeper. Charley, please call and let them know – otherwise violation.

12/20/01

WATER RESOURCES INTERNATIONAL, INC.
P.O. Box 44301
Kamuela, Hawaii 96743
Tel: (808) 882-7207 Fax: (808) 882-7655

LETTER OF TRANSMITTAL

Date: December 17, 2001	Job No.
RE: EMWDP Monitor Well	
Well No. 5418-01	

Mitch - please log in. thx
L. P

TO: Department of Land and Natural Resources
Commission on Water Resource Management
PO Box 621
Honolulu, Hawaii 96809
ATT: Gilbert S. Coloma-Agaran, Chairperson

GENTLEMEN:

WE ARE SENDING YOU ☑ Attached ☐ Under separate cover via _____ the following items:

☐ Shop Drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
	12/17/01	1	Original, fully executed Well Construction Permit

RECEIVED
DEC 20 P 2:29

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit ____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit ____ copies for distribution
☑ As requested ☐ Returned for corrections ☐ Return ____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS

COPY TO WRII Honolulu

SIGNED Blaise Clay
Blaise Clay,
Vice President - Drilling Operations

If enclosures are not as noted, kindly notify us.

7/97

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

NOV 23 2001

5418-01.wcp

Mr. David Craddick
Maui Department of Water Supply
200 South High Street
Wailuku, Maui, HI 96793

Dear Mr. Craddick:

Well Construction Permit
EMWDP Monitor Well (Well No. 5418-01)

Enclosed are two (2) copies of your approved Well Construction Permit for the captioned well(s) that authorize well construction activities but excludes installation work for your permanent pump. As part of the Chairperson's approval, the following special conditions were added and are part of your permit under Permit Condition 13:

Special Conditions

1. **Attached for your information is a copy of the Department of Health's (DOH) review comments. Please note DOH's requirements related to discharge of effluent from well drilling and testing activities.**
2. **Well depth shall not exceed one-fourth the theoretical aquifer thickness.**
3. **The well casing shall meet the minimum thickness required in the Hawaii Well Construction and Pump Installation Standards (HWCPIS, January 1997).**
4. **Upon applying for a pump installation permit for this well, the permittee shall submit step-drawdown and constant-rate pumping tests, documentation of compliance with HRS Chapter 343, and of a Governor's Executive Order setting aside the site for this purpose.**

This permit **does not** authorize work for your permanent pump installation. Approval and issuance of your pump installation permit is contingent upon completed application and information provided to and accepted by Commission staff as required in the Well Construction & Pump Installation Standards (1/23/97) and any special conditions performed under this permit. However, a permanent pump may be installed prior to the permanent pump installation permit issuance in accordance with the Commission's April 15, 1998 Declaratory Ruling No. DEC-ADM98-G5, which states that:

> *"Permanent pump installation for capacities between 0-70 gpm and where the proposed use is for private individual needs in non-ground-water management areas may be allowed prior to the final pump installation permit issuance. When required as a condition of the well construction permit, subsequent pumping tests shall validate the acceptability of the permanent pump. The permanent pump installed prior to final pump installation permit issuance is subject to removal if the testing shows that a smaller pump is required to reduce the potential of affecting neighboring wells and localized upconing at the applicant's well."*

If you qualify and wish to take advantage of this ruling, please include a written request to install the permanent pump prior to final pump installation permit issuance when you return to us your signed well construction permit.

Please sign and have the contractor sign both permit originals and return **one** for our files. Also, copies of the aquifer pump test worksheet and the well completion report form are enclosed for your use.

IMPORTANT - Drilling work shall not commence until a fully signed permit is returned to the Commission. Please provide all the information in this packet to your well drilling contractor. The permittee, well operator, and/or well owner are responsible for all conditions of the permit. This includes ensuring that the well construction contractor, or other party who constructs the well(s), submits a completed Part I of the Well Completion Report form (enclosed) within sixty (60) days after the well construction work is completed. Be advised that you may be subject to fines of up to $1000 per day for any violations of your permit conditions starting from the permit approval date.

If you have any questions, please call Charley Ice of the Commission staff at 587-0251 or toll-free at 984-2400 extension 70251.

Aloha,

GILBERT S. COLOMA-AGARAN
Chairperson

Enclosures
c. Water Resources International, Inc.

WELL CONSTRUCTION PERMIT

EMWDP Monitor Well, Well No. 5418-01

Note: This permit shall be prominently displayed at the site until the work is completed

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the construction and testing of EMWDP Monitor Well (Well No. 5418-01) at Pauwela Gulch @ 600 ft el, Pauwela Homesteads, Maui, TMK 2-7-8:8, subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97) which include but are not limited to the following conditions:

1. The Chairperson of the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work authorized by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules.

2. The well construction permit shall be for construction and testing of the well only. A minimum 1¼-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels. The permittee, well operator, and/or well owner shall coordinate with the Chairperson and conduct a pumping test in accordance with the Standards (**a pump testing worksheet is attached**). The permittee, well operator, and/or well owner shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump and withdraw water for use. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson.

3. In basal ground water, the depth of the well may not exceed one-fourth (1/4) of the theoretical thickness (41 times initial head) of the basal ground water unless otherwise authorized by the Chairperson.

4. The permittee, well operator, and/or well owner shall incorporate mitigation measures to prevent construction debris from entering the aquatic environment, to schedule work to avoid periods of high rainfall, and to revegetate any cleared areas as soon as possible.

5. In the event that subsurface cultural remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee, well operator, and/or well owner shall stop work and contact the Department's Historic Preservation immediately.

6. The proposed well construction shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct the well shall not constitute a determination of correlative water rights.

7. The following shall be submitted to the Chairperson within sixty (60) days after completion of work:
   a. Well completion report, **(attached - Part I, Well Construction Report)**.
   b. Elevation (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
   d. Plot plan and map showing the exact location of the well.
   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other data.

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances; non-compliance may be grounds for revocation of this permit.

9. The well construction permit application is incorporated into this permit by reference and is subject to the Hawaii Well Construction & Pump Installation Standards (January 23, 1997; HWCPIS). If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a **lien on the property may result**.

10. The permit may be revoked by the Commission if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The work proposed in the well construction permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than three (3) months prior to the date the permit expires. If the commencement date is not met, the Commission may revoke the permit after giving the permittee, well operator, and/or well owner notice of the proposed action and an opportunity to be heard.

11. If the well is not to be used it must be properly capped. If the well is to be abandoned then the permittee, well operator, and/or well owner must apply for a well abandonment permit in accordance with §13-168-12(f) prior to any well sealing or plugging work.

12. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

13. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

GILBERT S. COLOMA-AGARAN, Chairperson
Commission on Water Resource Management

Date of Approval: **October 29, 2001**
Expiration Date: **October 29, 2003**

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the driller have signed, dated, and returned the permit to the Commission. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day starting from the permit date of approval.

Permittee's Signature: _____ Date: _____

Printed Name: _____ Firm or Title: _____

Driller's Signature: _____ C-57 License # : _____ Date: _____

Printed Name: _____ Firm or Title: _____

Please sign both copies of this permit, return one to the Chairperson, and retain the other for your records.

Attachment

c: USGS
Department of Health/ Safe Drinking Water, Wastewater, and Clean Water Branches
Maui Department of Water Supply
Water Resources International, Inc.

WELL CONSTRUCTION PERMIT

EMWDP Monitor Well, Well No. 5418-01

12/20/01

Note: This permit shall be prominently displayed at the site until the work is completed

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the construction and testing of EMWDP Monitor Well (Well No. 5418-01) at Pauwela Gulch @ 600 ft el, Pauwela Homesteads, Maui, TMK 2-7-8:8, subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97) which include but are not limited to the following conditions:

1. The Chairperson of the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work authorized by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules.

2. The well construction permit shall be for construction and testing of the well only. A minimum 1¼-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels. The permittee, well operator, and/or well owner shall coordinate with the Chairperson and conduct a pumping test in accordance with the Standards **(a pump testing worksheet is attached)**. The permittee, well operator, and/or well owner shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump and withdraw water for use. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson.

3. In basal ground water, the depth of the well may not exceed one-fourth (1/4) of the theoretical thickness (41 times initial head) of the basal ground water unless otherwise authorized by the Chairperson.

4. The permittee, well operator, and/or well owner shall incorporate mitigation measures to prevent construction debris from entering the aquatic environment, to schedule work to avoid periods of high rainfall, and to revegetate any cleared areas as soon as possible.

5. In the event that subsurface cultural remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee, well operator, and/or well owner shall stop work and contact the Department's Historic Preservation immediately.

6. The proposed well construction shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct the well shall not constitute a determination of correlative water rights.

7. The following shall be submitted to the Chairperson within sixty (60) days after completion of work:
   a. Well completion report, **(attached - Part I, Well Construction Report)**.
   b. Elevation (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
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   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other data.

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9. The well construction permit application is incorporated into this permit by reference and is subject to the Hawaii Well Construction & Pump Installation Standards (January 23, 1997; HWCPIS). If the HWCPIS are not followed and as a consequence water is wasted or contaminated, **a lien on the property may result**.

10. The permit may be revoked by the Commission if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The work proposed in the well construction permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than three (3) months prior to the date the permit expires. If the commencement date is not met, the Commission may revoke the permit after giving the permittee, well operator, and/or well owner notice of the proposed action and an opportunity to be heard.

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Commission on Water Resource Management

Date of Approval: **October 29, 2001**
Expiration Date: **October 29, 2003**

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Permittee's Signature: _____ Date: 12.07.01

Printed Name: David Craddick Firm or Title: Director | Water Supply

Driller's Signature: _____ C-57 License # : AC 05058 Date: 12/17/01

Printed Name: Blaise Clay Firm or Title: Vice President
Water Resources Intl. Inc.

Please sign both copies of this permit, return one to the Chairperson, and retain the other for your records.

Attachment
c: USGS
Department of Health/ Safe Drinking Water, Wastewater, and Clean Water Branches
Maui Department of Water Supply
Water Resources International, Inc.

FYI

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

NOV 23 2001

5418-01.wcp

Mr. David Craddick
Maui Department of Water Supply
200 South High Street
Wailuku, Maui, HI 96793

Dear Mr. Craddick:

Well Construction Permit
EMWDP Monitor Well (Well No. 5418-01)

Enclosed are two (2) copies of your approved Well Construction Permit for the captioned well(s) that authorize well construction activities but excludes installation work for your permanent pump. As part of the Chairperson's approval, the following special conditions were added and are part of your permit under Permit Condition 13:

Special Conditions

1. **Attached for your information is a copy of the Department of Health's (DOH) review comments. Please note DOH's requirements related to discharge of effluent from well drilling and testing activities.**
2. **Well depth shall not exceed one-fourth the theoretical aquifer thickness.**
3. **The well casing shall meet the minimum thickness required in the Hawaii Well Construction and Pump Installation Standards (HWCPIS, January 1997).**
4. **Upon applying for a pump installation permit for this well, the permittee shall submit step-drawdown and constant-rate pumping tests, documentation of compliance with HRS Chapter 343, and of a Governor's Executive Order setting aside the site for this purpose.**

This permit **does not** authorize work for your permanent pump installation. Approval and issuance of your pump installation permit is contingent upon completed application and information provided to and accepted by Commission staff as required in the Well Construction & Pump Installation Standards (1/23/97) and any special conditions performed under this permit. However, a permanent pump may be installed prior to the permanent pump installation permit issuance in accordance with the Commission's April 15, 1998 Declaratory Ruling No. DEC-ADM98-G5, which states that:

> *"Permanent pump installation for capacities between 0-70 gpm and where the proposed use is for private individual needs in non-ground-water management areas may be allowed prior to the final pump installation permit issuance. When required as a condition of the well construction permit, subsequent pumping tests shall validate the acceptability of the permanent pump. The permanent pump installed prior to final pump installation permit issuance is subject to removal if the testing shows that a smaller pump is required to reduce the potential of affecting neighboring wells and localized upconing at the applicant's well."*

If you qualify and wish to take advantage of this ruling, please include a written request to install the permanent pump prior to final pump installation permit issuance when you return to us your signed well construction permit.

Please sign and have the contractor sign both permit originals and return **one** for our files. Also, copies of the aquifer pump test worksheet and the well completion report form are enclosed for your use.

IMPORTANT - Drilling work shall not commence until a fully signed permit is returned to the Commission. Please provide all the information in this packet to your well drilling contractor. The permittee, well operator, and/or well owner are responsible for all conditions of the permit. This includes ensuring that the well construction contractor, or other party who constructs the well(s), submits a completed Part I of the Well Completion Report form (enclosed) within sixty (60) days after the well construction work is completed. Be advised that you may be subject to fines of up to $1000 per day for any violations of your permit conditions starting from the permit approval date.

If you have any questions, please call Charley Ice of the Commission staff at 587-0251 or toll-free at 984-2400 extension 70251.

Aloha,

GILBERT S. COLOMA-AGARAN
Chairperson

Enclosures
c. Water Resources International, Inc.

PUBLIC RECORD DATA

Taxkey	Subdiv/Condo	Tnr	Property Address	Owner/Lessee	Beds	Baths	Land area	Living area
2-2-7-8-8	Haiku	G		STATE OF HAWAII			3.90 ac	

This information has been supplied by third parties and has not been independently verified by Hawaii Information Service and is, therefore, not guaranteed.

data

Well No.	5418-01	**Date of Review**	11/20/01
Well Name	EMWDP Monitor Well	**Reviewer**	RRI
Applicant	MBWS		

SECTION 1: WELL LOCATION INFORMATION

Island	MAUI	**Proposed Use**	Other
Aquifer System	KOOLAU	**Proposed Withdrawal**	0
Aquifer Sector	HAIKU	**System Sustainable Yield**	31

SECTION 2: WELL SECTION DATA *(enter data in grey cells only)*

Elevation at top of casing	664	ft., m.s.l.	**Solid Casing**		
Ground Elevation	662	ft., m.s.l.	Material	Steel	
Cement Grout	559	ft.	Designation	ASTM	A53
Rock Packing	0	ft.	Length	665	ft.
Hole Diameter	24	in.	Diameter	24	in.
Total Depth	733	ft.	Wall Thickness	0.375	in.
			Casing		
Estimated Head	0	ft., m.s.l.	Material	Steel	
Calculated Aquifer Thickness	0	ft.	Designation	ASTM	A139
			Length	50	ft.
County Water Supply (Y/N ?)	YES		Diameter	6	in.
			Wall Thickness	0	in.
			Openings	0	sq.in./l.f.
			Open Hole		
			Length	0	ft.
			Diameter	0	in.

733 wcr 1
4.68 meas.
187.2
.375 wcr 1

SECTION 3: CHECKLIST *(values to check are shaded)*

Well Depth				
Theoretical Thickness of Aquifer	0	ft.		
1/4 Aquifer Thickness	0	ft.		
Depth of Well below Sea Level	52	*ft.*	too deep	*(refer to HWCPIS Section 2.2)*
Well Casing	-66	ok	(disregard if the well is not basal)	
Minimum Wall Thickness				
Material	Steel			
County or Non-County	county			
Minimum Thickness per standards	0.375	in.		
Wall Thickness Provided	0.000	*in.*	too small	*(refer to HWCPIS Section 2.4 c)*
Minimum Length of Solid Casing		ok	(disregard this if this is a non-county well)	
90% of ground to top of aquifer	595.8	ft.		
Length of solid casing Provided	665	*ft.*	okay	*(refer to HWCPIS Section 2.4 d)*
Casing Material	ASTM A53		okay	*(refer to HWCPIS Section 2.4 e)*
Annular Space			*If the cell above reads #N/A, reference HWCPIS)*	
Depth of Grouting				
Calculated Depth of Grouting	463.4	ft.		
Depth of Grouting provided	559	*ft.*	okay	*(refer to HWCPIS Section 2.6 c)*
Thickness of Annular Space	5	*in.*	okay	*(refer to HWCPIS Section 2.6 d)*

COMMISSION ON WATER RESOURCE MANAGEMENT
ROUTE SLIP FOR PERMIT ISSUANCE

FROM: CHARLEY DATE: 13 Nov 01 SUSPENSE DATE: _____

TO:	INIT.	TO:	INIT.	FOR:	PLEASE:
____ BAUER, G.	____	____ LUM, A.	____	3 Approval	____ See Me
____ CHING, F.	____	____ NAKAMA, L.	____	3 Signature	1 Review & Comment
____ FUJII, N.	____	____ **NAKANO, D.**	____	4 Information	____ Take Action
1 **HARDY, R.**	____	3 **NISHIOKA, L.**	____		____ Type Draft
____ HIGA, D.	____	4 OHYE, M.	____		2 Type Final
____ **HIRANO, E.**	____	____ **SAKODA, E.**	____		5 File
5 ICE, C.	____	2 SUBIA, S.	____		____ Xerox ____ copies
____ IMATA, R.	____	____ SWANSON, S.	____		
____ JINNAI, R.	____	____ UYENO, D.	____		
____ KUNIMURA, I.	____	____ YODA, K.	____		

WELL NUMBER 5418-01 WELL NAME EMWDP Monitor Well

☐ WELL CONSTRUCTION

ATTACHMENTS FOR WELL CONSTRUCTION PERMIT:

1 COVER LETTER	✓
2 PERMIT (2x)	✓
3 PUMP TEST	✓
4 DOH COMMENTS	✓
5 LAND DIV. COMMENTS	✓
6 WCR FORM	✓

TO BE SENT TO APPLICANT

[redacted]

FOR OFFICE USE ONLY

☐ PUMP INSTALLATION

ATTACHMENTS FOR PUMP INSTALLATION PERMIT:

1 COVER LETTER	____
2 PERMIT (2x)	____
3 DOH COMMENTS	____
4 LAND DIV. COMMENTS	____
5 WCR FORM	____
6 WUR FORM	____

TO BE SENT TO APPLICANT

[redacted]

FOR OFFICE USE ONLY

[redacted]

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION

2001 SEP 28 P 3:48

DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

10/29/01

GILBERT S. COLOMA-AGARAN
CHAIRPERSON

BRUCE S. ANDERSON
ROBERT G. GIRALD
BRIAN C. NISHIDA
DAVID A. NOBRIGA
HERBERT M. RICHARDS, JR.

LINNEL T. NISHIOKA
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

SEP 28 2001

TO: Harry Yada, Acting Administrator
Land Division

FROM: Linnel T. Nishioka, Deputy Director
Commission on Water Resource Management

SUBJECT: Well Construction Permit Application
EMWDP Monitor Well (Well No. 5418-01)

Transmitted for your review and comment is a copy of the captioned well application which includes a request for a pump installation permit.

We would appreciate your comments on the captioned application with regard to the programs, plans, and objectives specific to your division. **Please respond by returning this cover memo form by October 12, 2001.** If we do not receive comments or a request for additional review time by this date, we will assume you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Charley Ice of the Commission staff at 587-0251.

CI:ky
Attachment(s)

RESPONSE:

[ ] A water lease/permit is required of this applicant and an application for such will be requested by our division.

[ ] A water lease/permit is **not** required of this applicant.

[ ] A water lease/permit has been obtained by the applicant through lease no. _____.

[ ] Other relevant Land Division rules/regulations, information, or recommendations are attached.

[ ] No objections

xkx Other comments: On July 13, 2001 (D-28), the Land Board approved a right-of-entry to County of Maui Board of Water Supply, to drill and utilize this monitor well for data collection and sampling purposes. If the results are favorable, BWS might pursue conversion of the monitor well into a production well. This would require further action by the Land Board for set aside by Governor's Executive Order and anything else deemed necessary. If BWS does not pursue conversion of the well into production, BWS shall seal the well in accordance with all applicable rules and regulations.

Contact Person: Eric Leong Phone: 587-0386

Signed: Eric Leong Date: OCT 25 2001

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

10/15/01

BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:
EMD / WB

STATE MESSENGER

Date: ~~10-01~~ 10-10-01

To: Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii

Attention: Charley Ice
Commission Staff Member

From: Wastewater Branch
Department of Health
State of Hawaii

Attention: Lori Kajiwara
Planner, Planning/Design Section
Phone (808) 586-4294 Fax (808) 586-4300
Email: lkajiwara@eha.health.state.hi.us

Subject: Well Construction/Pump Installation Permit Application Response

STATE MESSENGER

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

GILBERT S. COLOMA-AGARAN
CHAIRPERSON

BRUCE S. ANDERSON
ROBERT G. GIRALD
BRIAN C. NISHIDA
DAVID A. NOBRIGA
HERBERT M. RICHARDS, JR.

LINNEL T. NISHIOKA
DEPUTY DIRECTOR

OCT 2

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

SEP 28 2001

TO: Honorable Bruce S. Anderson, Director
Department of Health
Attention: Dennis Tulang, Wastewater Branch
William Wong, Safe Drinking Water Branch
Dr. Keith Kawaoka, Hazardous Evaluation and Emergency Response
Alec Wong, Clean Water Branch

FROM: Gilbert S. Coloma-Agaran, Chairperson
Commission on Water Resource Management

SUBJECT: Well Construction Permit Application
EMWDP Monitor Well (Well No. 5418-01)

Transmitted for your review and comment is a copy of the captioned well application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. **Please respond by returning this cover memo form by October 12, 2001**. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments.

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CI:ky
Attachment(s)

RESPONSE:

[ ] This well qualifies as a source which will serve as a source of potable water to a public water system (defined as serving 25 or more people at least 60 days per year or has 15 or more service connections) and **must** receive Director of Health approval **prior** to its use to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, Rules Relating to Potable Water Systems, §11-20-29.

[ ] This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connections) and if the well water is used for drinking, the private owner **should** test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required **prior** to implementation.

[ ] If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

[ ] It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

[ ] For the applicant's information, a source of possible wastewater contamination **[ ]is [ ] is not** located near the proposed well site (information attached).

[ ] An NPDES permit is required.

[ ] Other relevant DOH rules/regulations, information, or recommendations are attached.

[X] No comments/objections No Record.

Contact Person: Lori N. Kajimura Phone: 586-4294

Signed: Lori N. Kajimura Date: 10-10-01

01 OCT 15 P3:47

OCT 2 2001

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

GILBERT S. COLOMA-AGARAN
CHAIRPERSON

BRUCE S. ANDERSON
ROBERT G. GIRALD
BRIAN C. NISHIDA
DAVID A. NOBRIGA
HERBERT M. RICHARDS, JR.
LINNEL T. NISHIOKA
DEPUTY DIRECTOR

2001 OCT -9 AM 8:58

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

SEP 28 2001

TO: Honorable Bruce S. Anderson, Director
Department of Health
Attention: Dennis Tulang, Wastewater Branch
William Wong, Safe Drinking Water Branch
Dr. Keith Kawaoka, Hazardous Evaluation and Emergency Response
Alec Wong, Clean Water Branch

FROM: Gilbert S. Coloma-Agaran, Chairperson
Commission on Water Resource Management

SUBJECT: Well Construction Permit Application
EMWDP Monitor Well (Well No. 5418-01)

Transmitted for your review and comment is a copy of the captioned well application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. **Please respond by returning this cover memo form by October 12, 2001**. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Charley Ice of the Commission staff at 587-0251.

Cl:ky
Attachment(s)

Post-it® Fax Note 7671	Date 10 10 01	# of pages ▶ 2
To Charley Ice	From Alec Wong	
Co./Dept. DLNR/CWRM	Co. DOH/CWB	
Phone # 587-0251	Phone # 586-4309	
Fax # 587-0219	Fax # 586-4352	

RESPONSE:

[ ] This well qualifies as a source which will serve as a source of at least 60 days per year or has 15 or more service connectio with Hawaii Administrative Rules (HAR), Title 11, Chapter 20,

[ ] This well does not qualify as a source serving a public water s or 15 service connections) and if the well water is used for dri presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

[ ] If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

[ ] It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

[ ] For the applicant's information, a source of possible wastewater contamination [ ]is [ ] is not located near the proposed well site (information attached).

[ ] An NPDES permit is required.

[X] Other relevant DOH rules/regulations, information, or recommendations are attached.

[ ] No comments/objections

Contact Person: Alec Wong Phone: 5864309

Signed: Alec Wong Date: 10/10/01

01D529

The Department of Health, Clean Water Branch has the following comments:

1. For Well-Drilling Activities

Any discharge to State waters of treated process wastewater effluent associated with well drilling activities is regulated by Hawaii Administrative Rules, Title 11, Chapter 55, Appendix I, effective September 22, 1997. Treated process wastewater effluent covered by this general permit includes well drilling slurries, lubricating fluids wastewaters, and well purge wastewaters. This general permit does not cover well pump testing. The applicable Notice of Intent Forms and filing fee shall be submitted at least thirty (30) days before the start of discharge to the Department of Health, Clean Water Branch at 919 Ala Moana Boulevard, Room 301, Honolulu, Hawaii 96814-4920 or P.O. Box 3378, Honolulu, Hawaii 96801-3378. Inquiries may be directed to the Clean Water Branch at (808) 586-4309 or by fax at (808) 586-4352.

2. For Well Pump Testing

The discharger shall take all measures necessary to prevent the discharge of pollutants from entering State waters. Such measures shall include, if necessary, containment of the initial discharge until the discharge is essentially free of pollutants. If the discharge is entering a stream or river bed, best management practices shall be implemented to prevent the discharge from disturbing the clarity of the receiving water. If the discharge is entering a storm drain, the discharger must obtain written permission from the owner of that storm drain prior to discharge. Furthermore, best management practices shall be implemented to prevent the discharge from collecting sediments and other pollutants prior to entering the storm drain.

JS/cr

Post-it® Fax Note 7671	Date 10/10	pages 2
To Charley Ice	From Sharon Nekoba	
Co./Dept. CWRM	Co. SDWB	
Phone # 587-0251	Phone # 586-4268	
Fax # 587-0219	Fax # 586-4370	

RECEIVED
SAFE DRINKING WATER BRANCH
OCT 2 2001

OCT 9 2001

GILBERT S. COLOMA-AGARAN
CHAIRPERSON
BRUCE S. ANDERSON
ROBERT G. GIRALD
BRIAN C. NISHIDA
DAVID A. NOBRIGA
HERBERT M. RICHARDS, JR.

LINNEL T. NISHIOKA
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

SEP 28 2001

TO: Honorable Bruce S. Anderson, Director
Department of Health
Attention: Dennis Tulang, Wastewater Branch
William Wong, Safe Drinking Water Branch
Dr. Keith Kawaoka, Hazardous Evaluation and Emergency Response
Alec Wong, Clean Water Branch

FROM: Gilbert S. Coloma-Agaran, Chairperson
Commission on Water Resource Management

SUBJECT: Well Construction Permit Application
EMWDP Monitor Well (Well No. 5418-01)

Transmitted for your review and comment is a copy of the captioned well application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. **Please respond by returning this cover memo form by October 12, 2001**. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Charley Ice of the Commission staff at 587-0251.

Cl:ky
Attachment(s)

RESPONSE:
Given the size of this well, it would appear that

[X] This well qualifies as a source which will serve as a source of potable water to a public water system (defined as serving 25 or more people at least 60 days per year or has 15 or more service connections) and must receive Director of Health approval prior to its use to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, Rules Relating to Potable Water Systems, §11-20-29

[ ] This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connections) and if the well water is used for drinking, the private owner should test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

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[ ] It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

[ ] For the applicant's information, a source of possible wastewater contamination [ ]is [ ] is not located near the proposed well site (information attached).

[ ] An NPDES permit is required.

[X] Other relevant DOH rules/regulations, information, or recommendations are attached.

[ ] No comments/objections

Contact Person: Stuart Yamada Phone: 586-4258

Signed: S. Yamada Date: 10/10/01

6-5418-01 Maui

The Department of Health, Clean Water Branch has the following additional comments for the Well Construction Permit Application for the EWWDP Monitor Well (Well No. 6-5418-01 Maui):

For Well-Drilling Activities:

Any discharge to State waters of treated process wastewater effluent associated with well drilling activities is regulated by Hawaii Administrative Rules, Title 11, Chapter 55, Appendix I, effective September 1997. Treated process wastewater effluent covered by this general permit includes well drilling slurries, lubricating fluids wastewaters, and well purge wastewaters. This general permit does not cover well pump testing. The applicable Notice of Intent Forms and filing fee shall be submitted at least thirty (30) days before the start of discharge to the Department of Health, Clean Water Branch at 919 Ala Moana Boulevard, Room 301, Honolulu, Hawaii 96814-4290 or P.O. Box 3378, Honolulu, Hawaii 96801-3378. Inquiries may be directed to the Clean Water Branch at (808) 586-4309 or by fax at (808) 586-4352.

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

SEP 28 2001

5418-01.ack

Mr. David Craddick
Maui Department of Water Supply
200 South High Street
Wailuku, Maui, HI 96793

Dear Mr. Craddick:

Well Construction Permit Application for Well No. 5418-01

We acknowledge receipt, on September 12, 2001, of your completed Well Construction permit application and filing fee for the EMWDP Monitor Well (Well No. 5418-01). You can expect your application to be processed within ninety (90) days from this date.

We understand that the well will be constructed with a 24-inch borehole and possibly later converted to a production well. At that time, an environmental assessment and pump tests will be required.

For your information, the process of constructing a well is normally regulated and permitted in two (2) steps. First, a well construction permit is issued for drilling and testing purposes only. Based upon information provided by you through a Well Completion Report Part 1 (Well Construction), a pump installation permit (upon completed application) may then be issued to authorize pump work. If a pump is installed then a Well Completion Report Part 2 (Pump Installation) is required.

If you have any questions about your permit application, please contact Charley Ice of the Commission staff at 587-0251 or toll-free at 984-2400 extension 70251.

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

CI:ky

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

GILBERT S. COLOMA-AGARAN
CHAIRPERSON

BRUCE S. ANDERSON
ROBERT G. GIRALD
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LINNEL T. NISHIOKA
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

SEP 28 2001

TO: Honorable Bruce S. Anderson, Director
Department of Health
Attention: Dennis Tulang, Wastewater Branch
William Wong, Safe Drinking Water Branch
Dr. Keith Kawaoka, Hazardous Evaluation and Emergency Response
Alec Wong, Clean Water Branch

FROM: Gilbert S. Coloma-Agaran, Chairperson
Commission on Water Resource Management

SUBJECT: Well Construction Permit Application
EMWDP Monitor Well (Well No. 5418-01)

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CI:ky
Attachment(s)

RESPONSE:

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[ ] This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connections) and if the well water is used for drinking, the private owner **should** test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required **prior** to implementation.

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[ ] An NPDES permit is required.

[ ] Other relevant DOH rules/regulations, information, or recommendations are attached.

[ ] No comments/objections

Contact Person: _____ Phone: _____

Signed: _____ Date: _____

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

SEP 28 2001

TO: Harry Yada, Acting Administrator
Land Division

FROM: Linnel T. Nishioka, Deputy Director
Commission on Water Resource Management

SUBJECT: Well Construction Permit Application
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CI:ky
Attachment(s)

RESPONSE:

[ ] A water lease/permit is required of this applicant and an application for such will be requested by our division.

[ ] A water lease/permit is **not** required of this applicant.

[ ] A water lease/permit has been obtained by the applicant through lease no. _____.

[ ] Other relevant Land Division rules/regulations, information, or recommendations are attached.

[ ] No objections

[ ] Other comments:

Contact Person: _____ Phone: _____

Signed: _____ Date: _____

Well Background Check

Approved	Well No.	Well Name	Applicant	Driller	Type	Well Construction Issued	Signed	WCR1	Accept	Pump Installation Issued	Signed	WCR2	Accept
	5118-02	Pookela Explorat	Maui DWS		WELL								
	5731-03	Kupaa 1	Maui DWS [02]		PUMP								
	5330-11	Mokuhao 3	Maui DWS [01]		PUMP							1/20/1998	1/20/1998
	5418-01	EMWDP Monitor	Maui DWS	AC-05058	WELL								
10/14/1981	5431-04	Waihee 3	Maui DWS [01]		WELL	10/14/1981		12/23/1981					
9/8/1983	5108-01	Keanae	Maui DWS [01]		WELL	9/8/1983		5/1/1984					
6/11/1984	4300-02	Hamoa	Maui DWS [01]		WELL	6/11/1984		12/13/1985					
8/18/1986	5938-01	Honokahua B	Maui DWS [01]		WELL	8/18/1986		1/15/1993					
4/14/1987	0801-03	Kualapuu Mauka	Maui DWS [01]		WELL	4/14/1987							
10/2/1990	5430-02	Waiehu Hts 2	Maui DWS [01]		PUMP					10/2/1990			
10/2/1990	5938-01	Honokahua B	Maui DWS [02]		PUMP					10/2/1990		1/15/1993	
7/29/1991	5420-02	Hamakuapoko I	Maui DWS [02]		WELL	7/29/1991		7/2/1992	7/2/1992				
7/29/1991	5320-01	Hamakuapoko 2	Maui DWS [02]		WELL	7/29/1991		6/10/1993	6/10/1993				
11/21/1991	4600-02	Wakiu A	Maui DWS [01]		PUMP					11/21/1991			
1/5/1993	5228-07	Reynolds 2	Maui DWS [01]		PUMP					1/5/1993		1/25/1993	
3/17/1993	5330-10	Mokuhau 2	Maui DWS [01]		PUMP					4/6/1993			
3/25/1993	5631-03	Waihee Valley 2	Maui DWS [01]		PUMP					3/25/1993		5/22/1997	5/22/1997
3/25/1993	5631-02	Waihee Valley 1	Maui DWS [01]		PUMP					3/25/1993		5/22/1997	5/22/1997
4/6/1993	5339-02	Waipuka 2	Maui DWS [01]		PUMP					4/6/1993		11/3/1999	11/3/1999
5/19/1993	5419-01	Haiku	Maui DWS [01]		PUMP							12/2/1996	12/2/1996
2/10/1994	5838-03	Honokahua A	Maui DWS [01]		PUMP					2/10/1994			
2/10/1994	5431-02	Waihee 1	Maui DWS [01]		PUMP					2/10/1994		2/10/1994	
5/3/1994	0801-03	Kualapuu Mauka	Maui DWS [01]		PUMP					5/3/1994		3/23/1994	
1/20/1995	5339-01	Waipuka 1	Maui DWS [01]	AC-16437	PUMP					1/20/1995		5/17/1995	
12/6/1995	2902-02	Wahiawa II-2	Honolulu BWS [01]	AC-05058	BOTH	2/8/1996	2/20/1996	1/30/1997	1/30/1997	6/8/2000	8/7/2000	6/6/2001	6/6/2001
2/21/1996	4950-02	Big Island C C 2	Big Island C.C. Estates	AC-05058	PUMP					2/21/1996	[illegible]	6/16/1999	6/16/1999
2/18/1997	5332-05	Kepaniwai	Maui DWS [01]		PUMP					4/4/1997	4/16/1997	3/14/1997	3/14/1997

10/24/01

Please follow-up w/ Ryan.

no ltr of accept in file

Approved	Well No.	Well Name	Applicant	Driller	Type	Well Construction Issued	Signed	WCR1	Accept	Pump Installation Issued	Signed	WCR2	Accept
5/7/1997	4110-01	Saddle Road A	Hawaii DWS [01]	AC-05058	BOTH	5/9/1997	4/23/2001	6/25/1999	6/25/1999	9/5/2001	9/13/2001		
8/4/1997	2301-46	Waipahu IV-1	Honolulu BWS [01]	AC-05058	WELL	8/6/1997	1/21/1998	8/20/1998	8/20/1998				
8/4/1997	2301-44	Waipahu IV-2	Honolulu BWS [01]	AC-05058	WELL	8/6/1997	1/21/1998	8/20/1998	8/20/1998				
8/4/1997	2301-45	Waipahu IV-3	Honolulu BWS [01]	AC-05058	WELL	8/6/1997	1/21/1998	8/20/1998	8/20/1998				
9/19/1997	5131-01	Waikapu Mauka	Maui DWS [01]	AC-05058	BOTH	9/22/1997	8/10/1998	5/26/2000	9/26/2000	11/20/2000			
9/22/1997	5731-02	Kanoa 1	Maui DWS [02]	C-20115	WELL	9/24/1997	7/16/1998	7/6/1999	7/6/1999				
9/22/1997	5731-03	Kupaa 1	Maui DWS [02]	C-20115	WELL	9/24/1997	7/16/1998	6/23/1999	6/23/1999				
11/19/1997	2052-15	Kalihi Shaft Deep	Honolulu BWS [01]	AC-05058	WELL	11/20/1997	5/22/1998	11/29/1999	11/29/1999				
12/4/1997	4657-01	Kaupulehu 3	Hualalai Development Co.	AC-05058	BOTH	12/17/1997	7/10/1998	6/8/1999	1/28/2000	2/23/2000	3/1/2000		
7/15/1998	5108-02	Keanae 2	Maui DWS [02]	AC-22214	BOTH	7/16/1998	11/28/2000	12/26/2000	12/26/2000	1/16/2001			
2/12/1999	3857-04	Waiaha-DWS	Hawaii DWS	AC-05058	WELL	2/19/1999	3/6/2000	5/22/2001	6/18/2001				
5/21/1999	5419-01	Haiku	Maui DWS [01]		PUMP					5/26/1999	6/18/1999	7/8/1999	7/8/1999
7/20/1999	2987-01	Keonepoko Iki	Hawaii DWS	AC-05058	WELL	7/23/1999	3/1/2000	9/25/2000	7/9/2001				
8/26/1999	5731-04	Kanoa 2	Maui DWS [02]	C-20115	WELL	9/8/1999	2/22/2000	6/13/2000	7/19/2000				
9/27/1999	5731-02	Kanoa 1	Maui DWS [02]	AC-22214	PUMP					10/21/1999	4/19/2000	5/9/2001	5/9/2001
10/29/1999	5320-01	Hamakuapoko 2	Maui DWS [02]	C-21896	PUMP					11/26/1999	12/29/1999	8/22/1997	8/22/1997
10/29/1999	5420-02	Hamakuapoko I	Maui DWS [02]	C-21896	PUMP					11/26/1999	12/29/1999	8/22/1997	8/22/1997
9/20/2000	4856-02	Kaupulehu Irr 6	Hualalai Development Company	AC-05058	BOTH	10/18/2000	10/26/2000						
10/11/2000	2355-15	Kaamilo Deep Mo	Honolulu BWS [01]	AC-05058	WELL	10/17/2000	1/9/2001	7/19/2001	7/19/2001				
10/18/2000	5731-04	Kanoa 2	Maui DWS [2]	AC-22214	PUMP					11/8/2000	12/12/2000		
5/21/2001	1805-14	Kalaeloa Desalt 2	Honolulu BWS [01]	AC-05058	WELL	5/24/2001	6/1/2001						
5/21/2001	1805-13	Kalaeloa Desalt 1	Honolulu BWS [01]	AC-05058	WELL	5/24/2001	6/1/2001						
6/1/2001	1647-04	Kaimuki Explorat	State DLNR - Land Division	AC-05058	WELL	6/5/2001	6/8/2001						
6/1/2001	1647-05	Kaimuki Explorat	State DLNR - Land Division	AC-05058	WELL	6/5/2001	6/8/2001						

COMMISSION ON WATER RESOURCE MANAGEMENT
ROUTE SLIP FOR NEW APPLICATIONS

FROM: **CHARLEY** DATE: **13-Aug-01** SUSPENSE DATE: _____

TO:	INIT.	TO:	INIT.	FOR:	PLEASE:
_____ BAUER, G.	_____	_____ LUM, A.	_____	3 Approval	_____ See Me
_____ CHING, F.	_____	_____ NAKAMA, L.	_____	3 Signature	1 Review & Comment
_____ FUJII, N.	_____	_____ **NAKANO, D.**	_____	4 Information	_____ Take Action
1 **HARDY, R.**	RG	3 **NISHIOKA, L.**	_____		5 Type Draft acknow letter
_____ HIGA, D.	_____	4 OHYE, M.	_____		2 Type Final, label new file folder
_____ **HIRANO, E.**	_____	_____ **SAKODA, E.**	_____		5 File
5 ICE, C.	_____	2 SUBIA, S.	_____		_____ Xerox _____ copies
_____ IMATA, R.	_____	_____ SWANSON, S.	_____		
_____ JINNAI, R.	_____	_____ UYENO, D.	_____		
_____ KUNIMURA, I.	_____	_____ YODA, K.	_____		

WELL NUMBER 5418-01 WELL NAME **EMWDP Monitor**

☒ WELL CONSTRUCTION ☐ PUMP INSTALLATION ☐ BOTH

ATTACHMENTS FOR APPLICATION PROCESSING - Both applicant & staff generated

1 TRANS. LETTER	_____	
2 CWRM MAP	_____	
3 APPL. FORM (3X)	_____	
4 USGS MAPS (3X)	_____	
5 TAX MAPS (3X)	_____	
6 PARCEL OWNER VERIF.	_____	MLS PRINTOUT ?
7 CONTRACTOR VERIF.	_____	DCCA LICENSE SCREEN PRINTOUT ?
8 ALL INFO FILLED IN	✓	
9 BACKGOUND CHECK	✓	

FOLDER:
☒ ☐ MADE NEW FILE FOLDER, ATTACHED
☐ FILE FOLDER ALREADY MADE, IN FILE CABINET

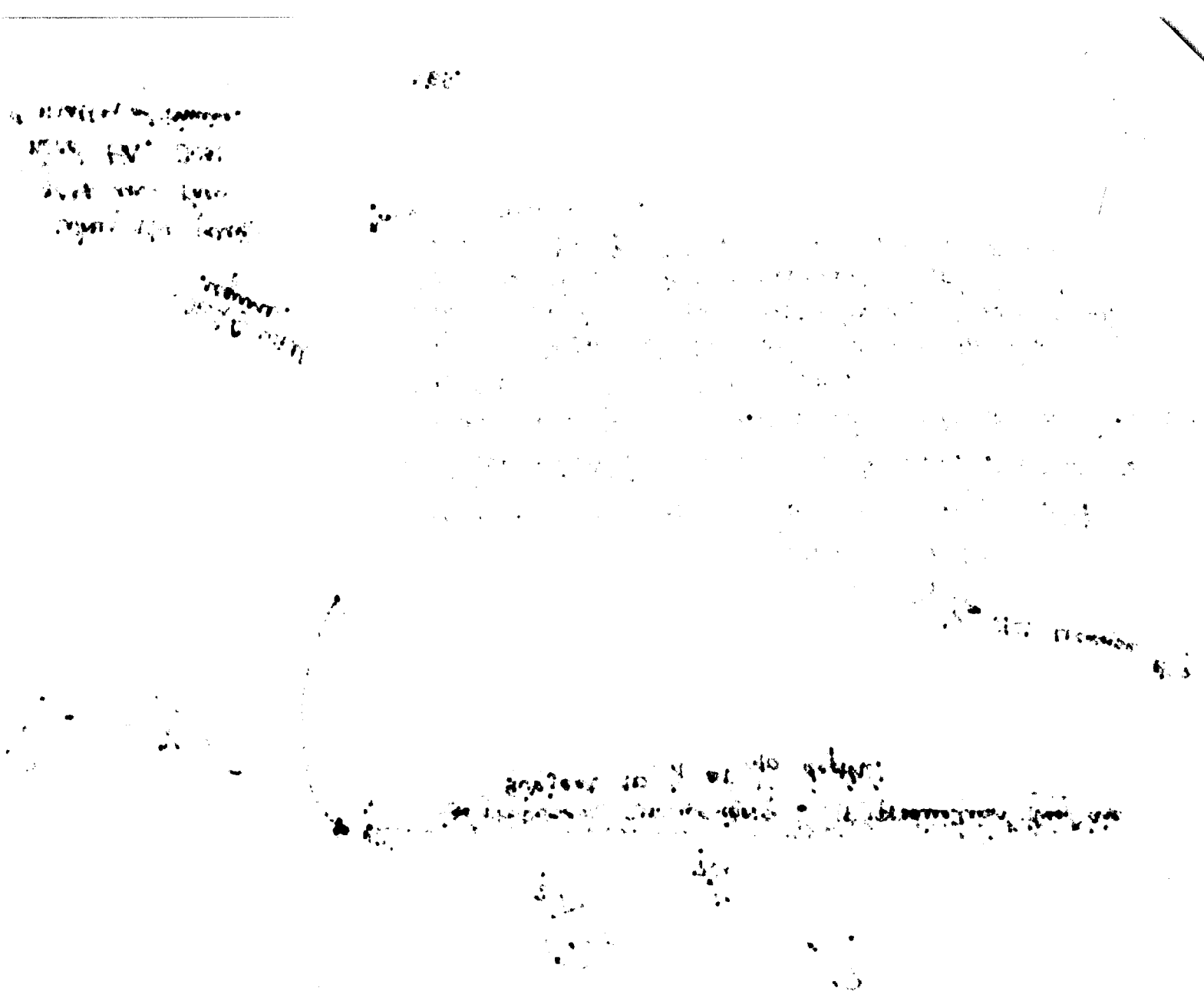
INCOMPLETE ACTION DATES:

DATE	ACTION
_____	Who is the contracted driller? Is this the water **use** & development plan?
_____	Legal requirements - left unanswered on application.

telcon 12 Sep 01:
#1 this project serves preparation of the Supplemental EIS for EMWDP — so is a Catch-22. OEQC will call back.
See attached printout from OEQC website (Guidelines on Exemptions
Class 5: basic data collection, etc.
But well is 24", will be converted to production well, may be monitoring in short-term. I don't think this qualifies. If it's "exploratory" doesn't it still require an EA? If they claim exemption, it needs to be documented.
#2 Lenore & Ryan suggest we accept, as presented, with a review by DoH and special note in memo to require EA at time of conversion to production (plus pump tests)
yes.

? WRI license #? AC 5058

OEQC will require.
when the pump goes in — they need EA. Just a matter of timing.



DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-6109
TELEPHONE (808) 270-7816 • FAX (808) 270-7833 • www.mauiwater.org

July 26, 2001

Ms. Linnel T. Nishioka, Deputy Director
Commission on Water Resource Management
Department of Land & Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Nishioka:

Subject: Monitor Well for SEIS for the East Maui Water Development Plan
TMK: (2) 2-7-008:008
Pauwela, Makawao, Maui

The Department desires to drill a monitor for the SEIS for the East Maui Water Development Plan on State owned land identified as TMK: (2) 2-7-008:008. A contract has been awarded to Water Resources International, Inc. to perform construction services.

We have enclosed two originals of the Well Construction permit for your approval. We understand that the filing fees are not required of our Department.

Should you have any questions, please feel free to call our Engineering Division at (808) 270-7835.

Sincerely,

David R. Craddick
Director

WKT
Enclosure

State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
APPLICATION FOR PERMIT

☒ Well Construction and/or ☐ Pump Installation

For Official Use Only:
RECEIVED
01 JUL 27 P3:41
COMMISSION ON WATER RESOURCE MANAGEMENT

Instructions: Please print in ink or type and send completed application with attachments to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. Application must be accompanied by 3 copies and a non-refundable filing fee of **$25.00** payable to the Dept. of Land and Natural Resources. The Commission may not accept incomplete applications. For assistance, call the Regulation Branch at **587-0225**. For further information and updates to this application form, visit http://www.state.hi.us/dlnr/cwrm.

APPLICANT INFORMATION: (Fill out all three, if applicable, and place a check next to the primary contact)

1. (a) ☐ **WELL OWNER:** Maui County Dept. of Water Supply Contact Person: David Craddick Phone: 808-270-7816
Mailing Address: 200 S. High St, Wailuku, Maui HI 96793
Fax: _____ E-mail: _____

(b) ☐ **LAND OWNER:** State of Hawaii Contact Person: Jason K. Koga Phone: 984-8100
Mailing Address: Dept. of Land & Natural Resources, Land Division
Fax: 54 S. High Street, Room 101, Wailuku, HI 96793
984-8111 E-mail: _____

(c) ☐ **CONTRACTOR:** Water Resources Int'l, Inc. Contact Person: _____ Phone: _____
Mailing Address: _____
Fax: _____ E-mail: _____ Lic #: AC05058 (circle one: C-57, C-57a, or A) telcon 17 Sep 01

WELL & PUMP INFORMATION: (Please fill in the diagram on the back of this form.)

2. WELL NAME: East Maui Water Development Plan Monitor Well Island: Maui
Address _____ Tax Map Key: 2 (Zone) - 7 (Sec) - 08 (Plat) : 08 (Parcel)

Attach the relevant portion of (a) a 7.5-Minute Series USGS topographic map (scale 1:24,000) and include the name of the quad map, and (b) a property tax map, showing well location referenced to established property boundaries.

3. PROPOSED WORK: *(check all that apply)*
☒ Construct New Well ☐ Install New Pump*
☐ Modify Existing Well* ☐ Modify Pump*
☐ Abandon/Seal*
*State Well No.: _____ (if unknown, please call Commission at 587-0225)

4. CONSTRUCTION: ☒ Drilled ☐ Dug ☐ Shaft ☐ Tunnel
Is this well part of a battery of wells? ☐Yes ☐No (Please describe)

5. PROPOSED PUMP INFORMATION: Rated Pump Capacity: NA gallons per minute
Pump Type (*Check one*):
☐ Deep Well Turbine ☐ Rotary ☐ Propeller
☐ Submersible ☐ Rotary-Displacement ☐ Reciprocating
☐ Centrifugal ☐ Rotary-Gear ☐ Impulse

6. PROPOSED USE: *(check all that apply)*
☐ Municipal (including hotels, stores, etc.) ☐ Industrial
☐ Domestic (individual, noncommercial water system)
Does this well serve 25 or more people at least 60 days per year or have 15 or more service connections? ☐ Yes ☐ No
☐ Irrigation (crop) _____ ☐ No. of Acres: _____
☐ Military ☒ Other (explain): Monitor Well

7. (a) PROPOSED AMOUNT OF WITHDRAWAL: _____ gallons per day
(b) METHOD OF FLOW MEASUREMENT: ☐ Flowmeter ☐ Open-pipe ☐ Weir ☐ Orifice ☐ Other(explain)

OTHER IMPORTANT INFORMATION:

8. LEGAL REQUIREMENTS: ☐ CDUP ☐ SMAP ☐ EIS ☐ EA ☐ None ☐ Other (explain)

9. REMARKS, EXPLANATIONS: _____
(if more space is needed, please attach additional sheet)

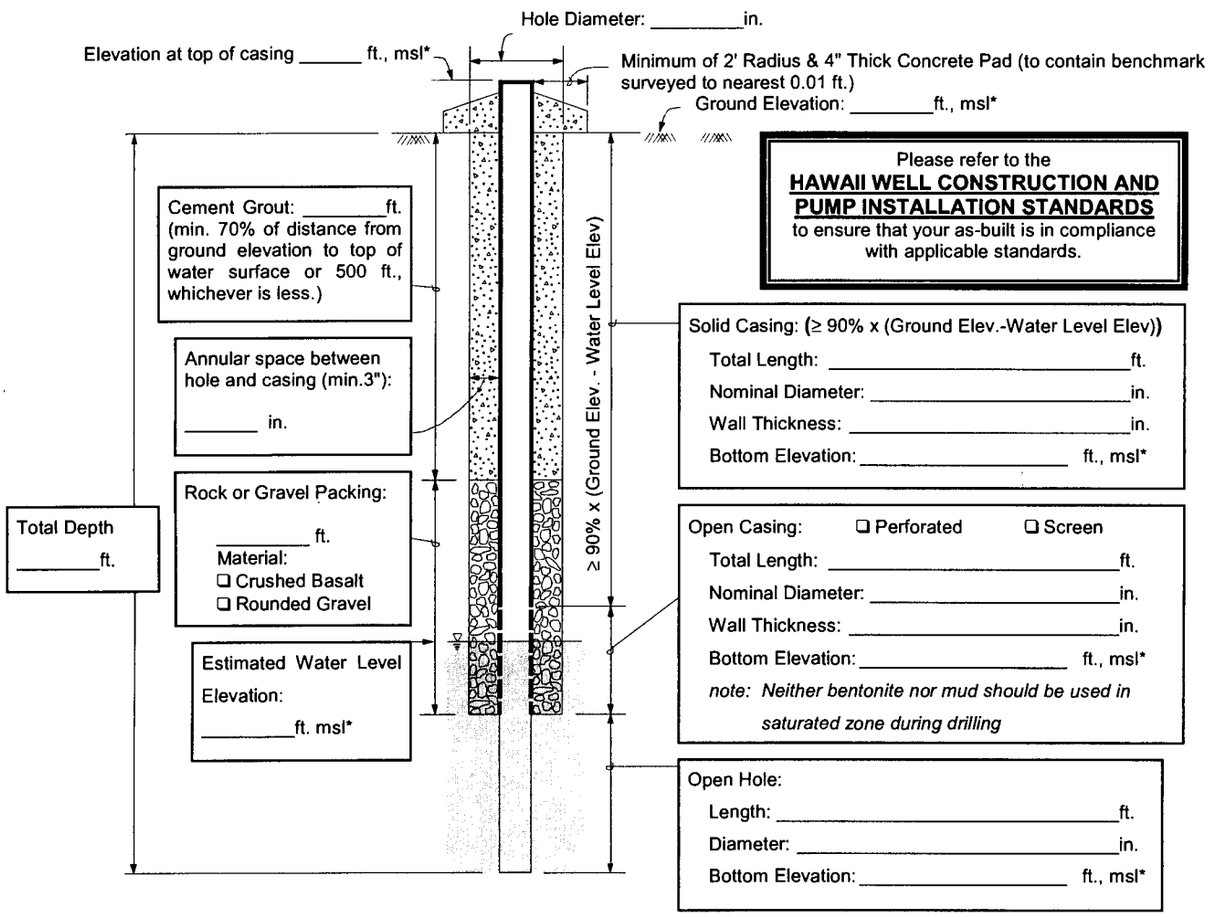
I understand that approval of this application attaches the following standard conditions: 1) the proposed work is to be completed within two (2) years of the approval date; 2) the contractor shall submit to the Commission a well completion/abandonment report within **60** days after the completion date of the permitted work; 3) monthly water use data shall be submitted to the Commission; 4) such approval shall not constitute a determination of correlative water rights and shall not guarantee the pump capacity or future use up to the permitted pump capacity.

Well Owner (print legibly)	Landowner (print legibly)	Contractor (print legibly)
Maui Dept of Water Supply	State of Hawaii	Water Resources International, Inc.
Signature	Signature	Signature
Date 6/21/01	Date 7/16/01	Date 7/30/01

For official use only
Latitude _____ Aquifer System No. _____
Longitude _____ State Well No. 5418-01

WCPIPA Form 10/25/00

10. PROPOSED WELL SECTION *(Please attach schematic if different from diagram provided below)*
See attached Well Section



see following page "Alternate Well Cross-section"

* The approximate elevation must be referenced to mean sea level (msl) at the time of application filing. Final elevations of well components shall be submitted in the Well Completion/Well Abandonment reports and referenced to a benchmark which has been established by a surveyor licensed by the State.

For non-salt water Basal Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or,

$$\text{Bottom Elevation of Well Limit} = \left(\text{Water Elevation} - \frac{41 \times \text{Water Level Elevation}}{4}\right)$$

Example: Estimated + 2 ft. Water Level Elev. → Bottom Elevation of Well Limit = $\left(2 - \frac{41 \times (2)}{4}\right) = -18.5$ ft.

Solid Casing Material:

Carbon Steel: compliant with (*check one or more*): ❑ ANSI/AWWA C200 ❑ API Spec. 5L ☒ ASTM A53 ❑ ASTM A139
And compliant with (*check one or more*): ❑ ASTM A242 ❑ Type E ❑ Type S ❑ Grade B ❑ Other
Stainless Steel: (*check one*): ❑ ASTM A409 (production wells) ❑ ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F480 and ASTM D1527: (*check one*) ❑ Schedule 40 ❑ Schedule 80
PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (*check one*): ❑ Schedule 40 ❑ Schedule 80 ❑ Schedule 120
Thermoset Plastic: (*check one*)
❑ Filament Wound Resin Pipe conforming to ASTM D2996
❑ Centrifugally Cast Resin Pipe conforming to ASTM D2997
❑ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
❑ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
❑ PTFE Fluorocarbon Tubing conforming to ASTM D3296
❑ FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:

Carbon Steel: compliant with (*check one or more*): ❑ ANSI/AWWA C200 ❑ API Spec. 5L ❑ ASTM A53 ☒ ASTM A139
And compliant with (*check one or more*): ❑ ASTM A242 ❑ Type E ❑ Type S ❑ Grade B ❑ Other
Stainless Steel: (*check one*): ❑ ASTM A409 (production wells) ❑ ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F480 and ASTM D1527: (*check one*) ❑ Schedule 40 ❑ Schedule 80
PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (*check one*): ❑ Schedule 40 ❑ Schedule 80 ❑ Schedule 120
Thermoset Plastic: (*check one*)
❑ Filament Wound Resin Pipe conforming to ASTM D2996
❑ Centrifugally Cast Resin Pipe conforming to ASTM D2997
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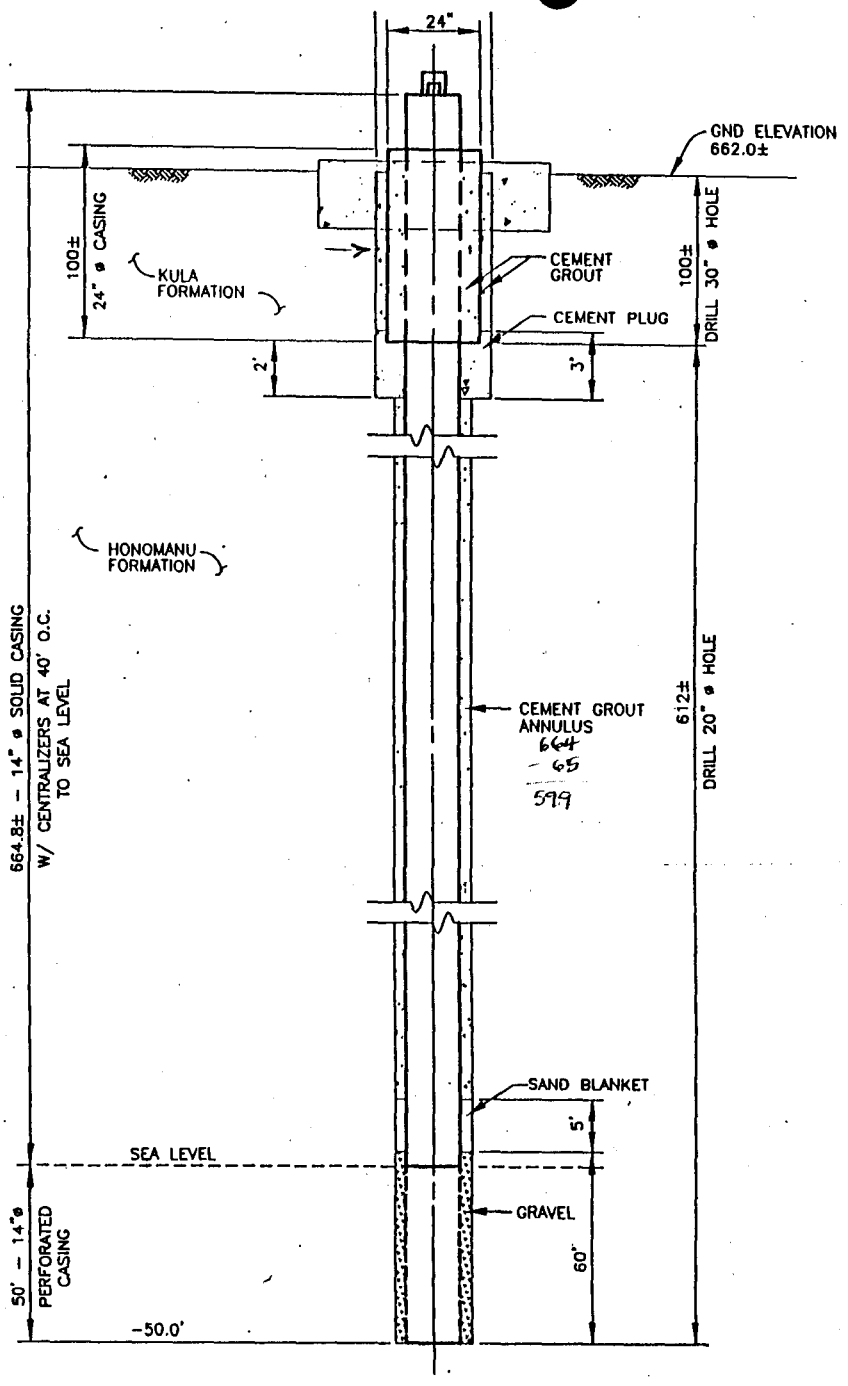
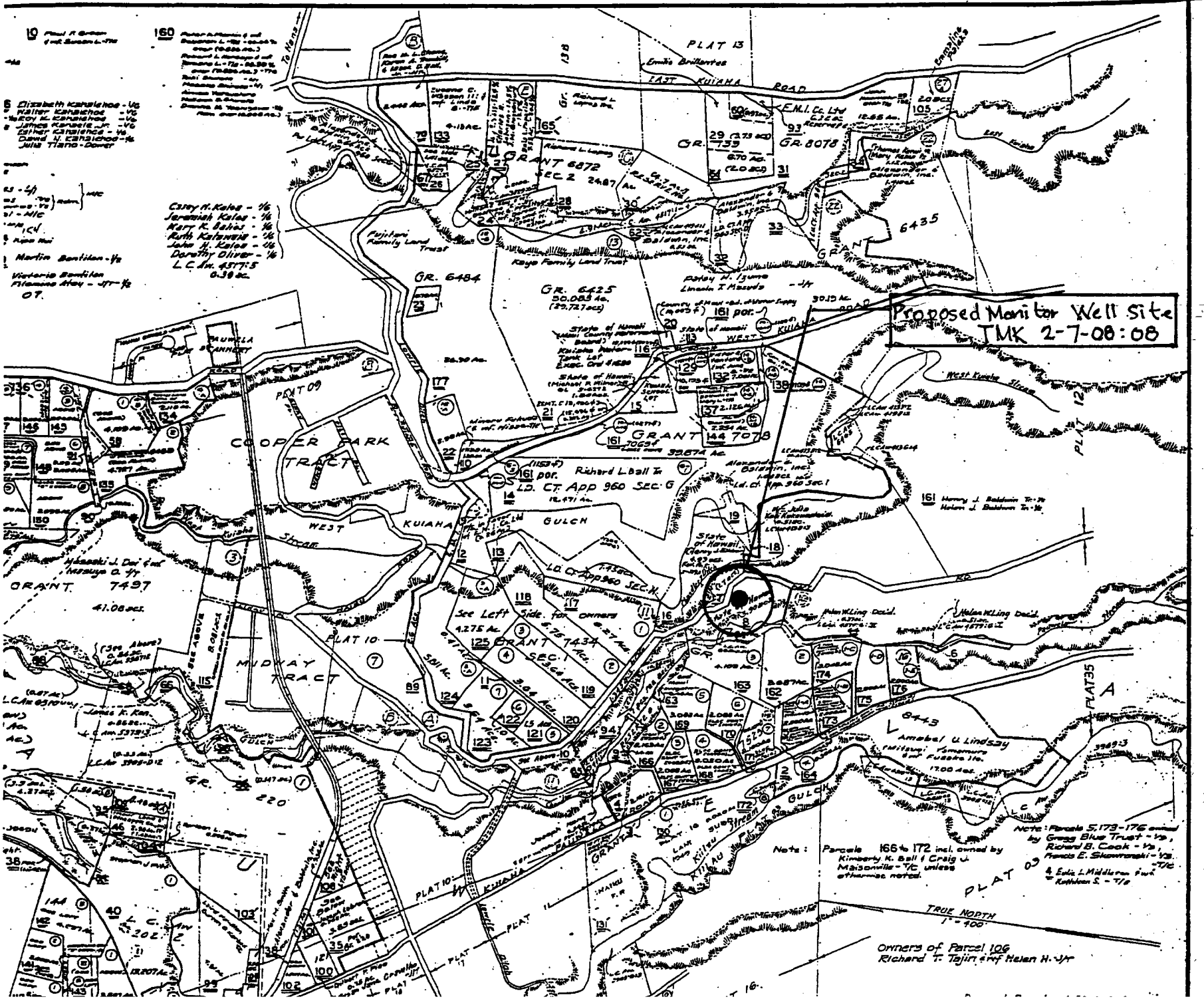
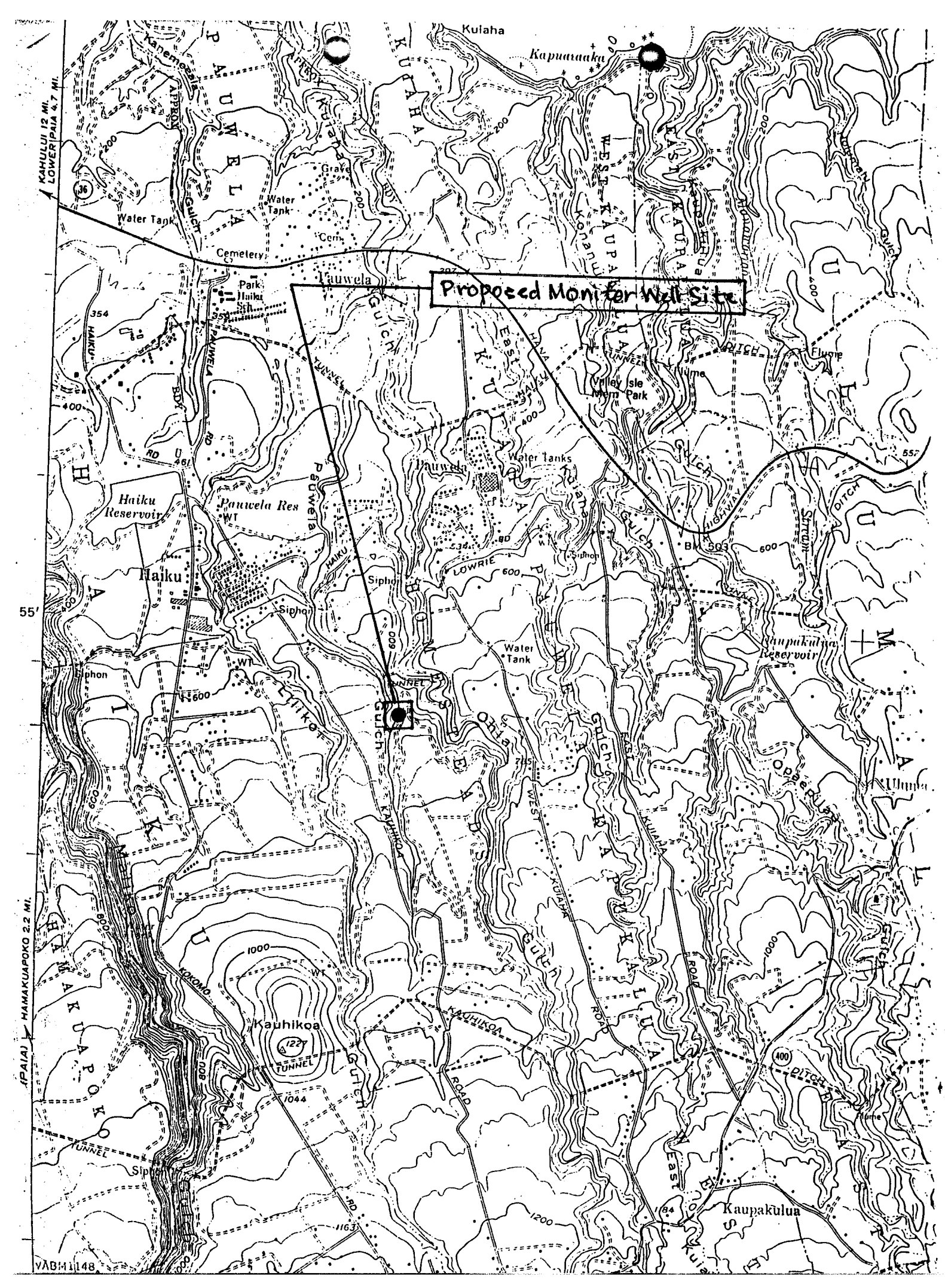
❑ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
❑ PTFE Fluorocarbon Tubing conforming to ASTM D3296
❑ FEP Fluorocarbon Tubing conforming to ASTM D3296



ALTERNATE WELL CROSS SECTION OF
PROPOSED MONITOR WELL
EAST MAUI SE13

2 7 08


Proposed Monitor Well Site
TMK 2-7-08:08
EAST KUIAHA ROAD
PLAT 13
COOPER PARK TRACT
MUDHAY TRACT
WEST KUIAHA GULCH
GRANT 6872
GRANT 7078
GRANT 7497
GRANT 7434
GR. 6484
GR. 6425
GR. 8078
GR. 220
6435
6443
Richard L Ball Tr.
LD. CT. App 960 Sec G
LD. CT. App 960 Sec H
Amabel U Lindsay
Note: Parcels 166 to 172 incl. owned by Kimberly K. Ball & Craig J. Maisonville - T/C unless otherwise noted.
Note: Parcels 5, 173-176 owned by Gregg Blue Trust - Tr., Richard B. Cook - Tr., Francis E. Skowronski - Tr.
TRUE NORTH
1" = 400'
Owners of Parcel 106
Richard T. Tajiri & wf Helen H. J/T


Proposed Monitor Well Site
Kulaha
Kapuaiaka
Kanemesia
Kulaha Gulch
Grave
Water Tank
Cemetery
Pauwela
Park
Haiku Sch.
Pauwela Gulch
East Kuiaha Gulch
Kuiaha Ditch
Flume
Valley Isle Mem. Park
Water Tanks
Haiku Reservoir
Pauwela Res
WT
Haiku
Siphon
Lowrie Ditch
Highway
Stream
BM 503
Kaupakulua Reservoir
Tunnel
Kauhikoa Gulch
West Kuiaha Gulch
Kuiaha Road
Kokomo
Kauhikoa
Kaupakulua
East Kuiaha Gulch
KAHULUI 12 MI.
LOWER PAIA 4.7 MI.
PAIA
HAMAKUAPOKO 2.2 MI.
55'

State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
APPLICATION FOR PERMIT

☒ **Well Construction and/or** ☐ **Pump Installation**

For Official Use Only:
RECEIVED
01 JUL 27 P3:41
COMMISSION ON WATER RESOURCE MANAGEMENT

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APPLICANT INFORMATION: (Fill out all three, if applicable, and place a check next to the primary contact)

1. (a) ☐ **WELL OWNER**: Maui County Dept. of Water Supply Contact Person: David Craddick Phone: 808-270-7816
Mailing Address: 200 S. High St, Wailuku, Maui HI 96793
Fax: _____ E-mail: _____

(b) ☐ **LAND OWNER**: State of Hawaii Contact Person: Jason K. Koga Phone: 984-8100
Mailing Address: Dept. of Land & Natural Resources, Land Division
Fax: 984-8111 E-mail: 54 S. High Street, Room 101, Wailuku, HI 96793

(c) ☐ **CONTRACTOR**: _____ Contact Person: _____ Phone: _____
Mailing Address: _____
Fax: _____ E-mail: _____ Lic #: _____
(circle one: C-57, C-57a, or A)

WELL & PUMP INFORMATION: (Please fill in the diagram on the back of this form.)

2. WELL NAME: East Maui Water Development Plan Monitor Well Island: Maui
Address _____ Tax Map Key: 2 (Zone) - 7 (Sec) - 08 (Plat) : 08 (Parcel)

Attach the relevant portion of (a) a 7.5-Minute Series USGS topographic map (scale 1:24,000) and include the name of the quad map, and (b) a property tax map, showing well location referenced to established property boundaries.

3. PROPOSED WORK: *(check all that apply)*
☒ Construct New Well ☐ Install New Pump*
☐ Modify Existing Well* ☐ Modify Pump*
☐ Abandon/Seal*
*State Well No.: _____ (if unknown, please call Commission at 587-0225)

4. CONSTRUCTION: ☒ Drilled ☐ Dug ☐ Shaft ☐ Tunnel
Is this well part of a battery of wells? ☐Yes ☐No (Please describe)

5. PROPOSED PUMP INFORMATION: Rated Pump Capacity: NA gallons per minute
Pump Type (*Check one*):
☐ Deep Well Turbine ☐ Rotary ☐ Propeller
☐ Submersible ☐ Rotary-Displacement ☐ Reciprocating
☐ Centrifugal ☐ Rotary-Gear ☐ Impulse

6. PROPOSED USE: *(check all that apply)*
☐ Municipal (including hotels, stores, etc.) ☐ Industrial
☐ Domestic (individual, noncommercial water system)
Does this well serve 25 or more people at least 60 days per year or have 15 or more service connections? ☐ Yes ☐ No
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☐ Military ☒ Other (explain): Monitor Well

7. (a) PROPOSED AMOUNT OF WITHDRAWAL: _____ gallons per day
(b) METHOD OF FLOW MEASUREMENT: ☐ Flowmeter ☐ Open-pipe ☐ Weir ☐ Orifice ☐ Other(explain)

OTHER IMPORTANT INFORMATION:

8. LEGAL REQUIREMENTS: ☐ CDUP ☐ SMAP ☐ EIS ☐ EA ☐ None ☐ Other (explain)

9. REMARKS, EXPLANATIONS: _____
(if more space is needed, please attach additional sheet)

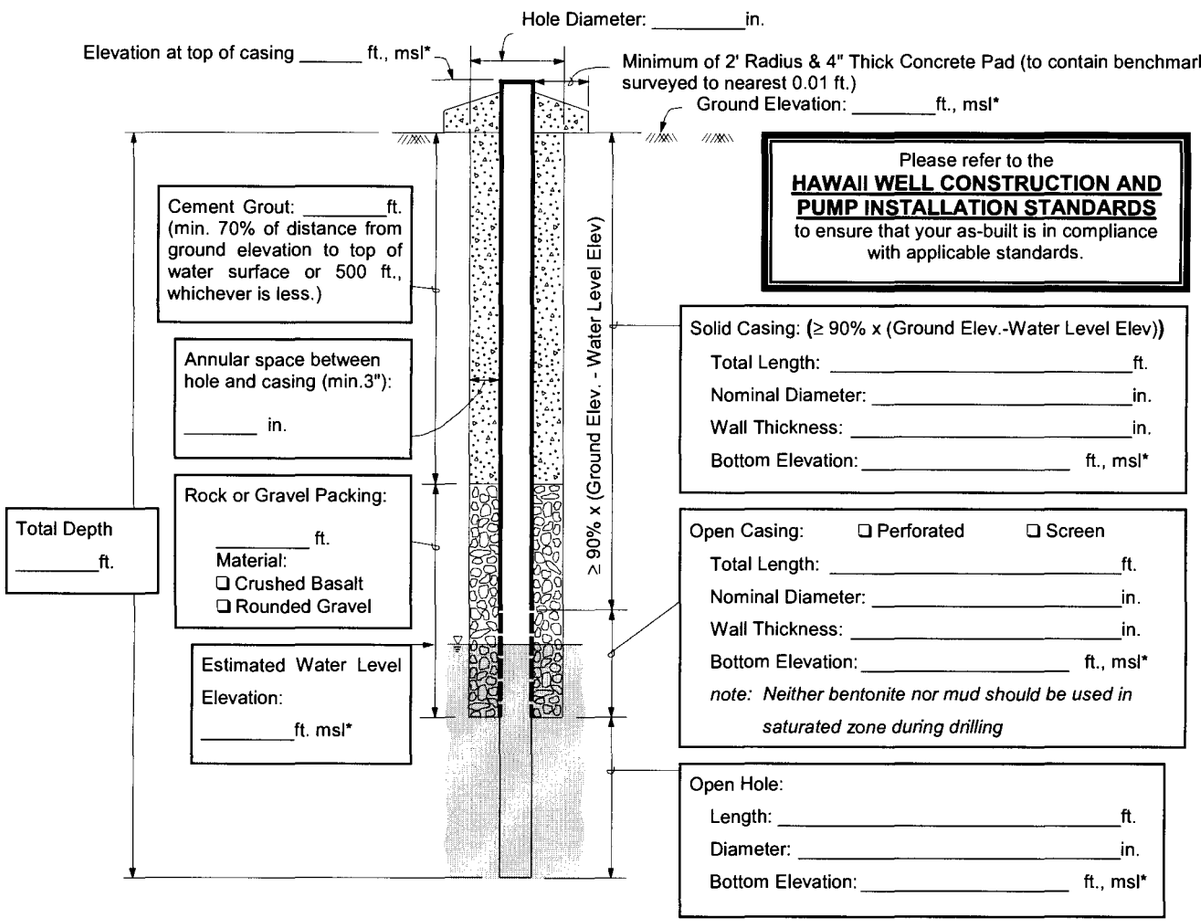
I understand that approval of this application attaches the following standard conditions: 1) the proposed work is to be completed within two (2) years of the approval date; 2) the contractor shall submit to the Commission a well completion/abandonment report within **60** days after the completion date of the permitted work; 3) monthly water use data shall be submitted to the Commission; 4) such approval shall not constitute a determination of correlative water rights and shall not guarantee the pump capacity or future use up to the permitted pump capacity.

Well Owner (print legibly)	Landowner (print legibly)	Contractor (print legibly)
Maui Dept of Water Supply	State of Hawaii	Water Resources International, Inc.
Signature	Signature	Signature
Date 6/25/01	Date 7/16/01	Date 7/23/01

For official use only
Latitude _____ Aquifer System No. _____
Longitude _____ State Well No. 5418-01

WCPIPA Form 10/25/00

10. PROPOSED WELL SECTION *(Please attach schematic if different from diagram provided below)*
See attached Well Section



* The approximate elevation must be referenced to mean sea level (msl) at the time of application filing. Final elevations of well components shall be submitted in the Well Completion/Well Abandonment reports and referenced to a benchmark which has been established by a surveyor licensed by the State.

For non-salt water Basal Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or,

$$\text{Bottom Elevation of Well Limit} = \left(\text{Water Elevation} - \frac{41 \times \text{Water Level Elevation}}{4}\right)$$

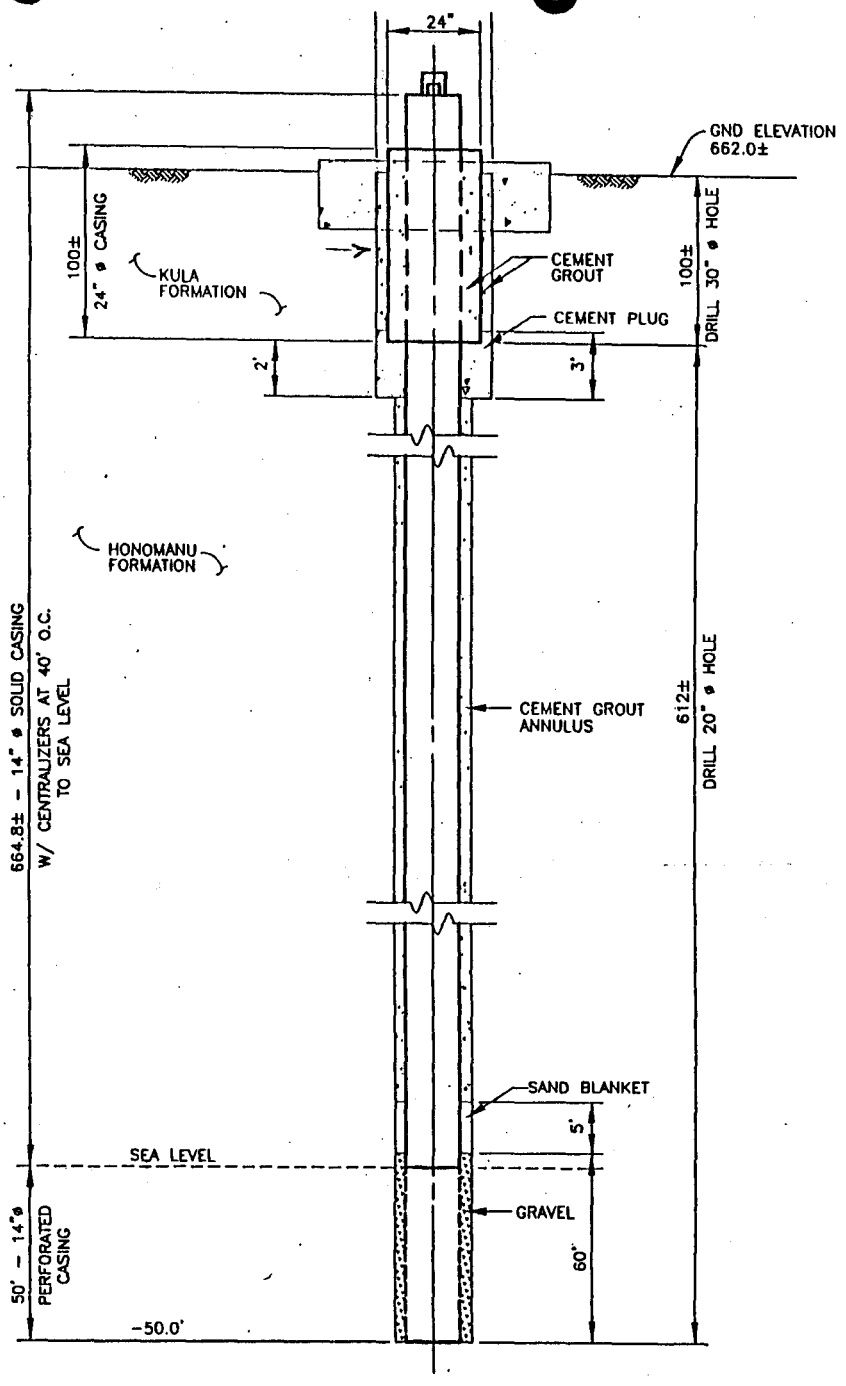
Example: Estimated + 2 ft. Water Level Elev. → Bottom Elevation of Well Limit = $\left(2 - \frac{41 \times (2)}{4}\right) = -18.5$ ft.

Solid Casing Material:

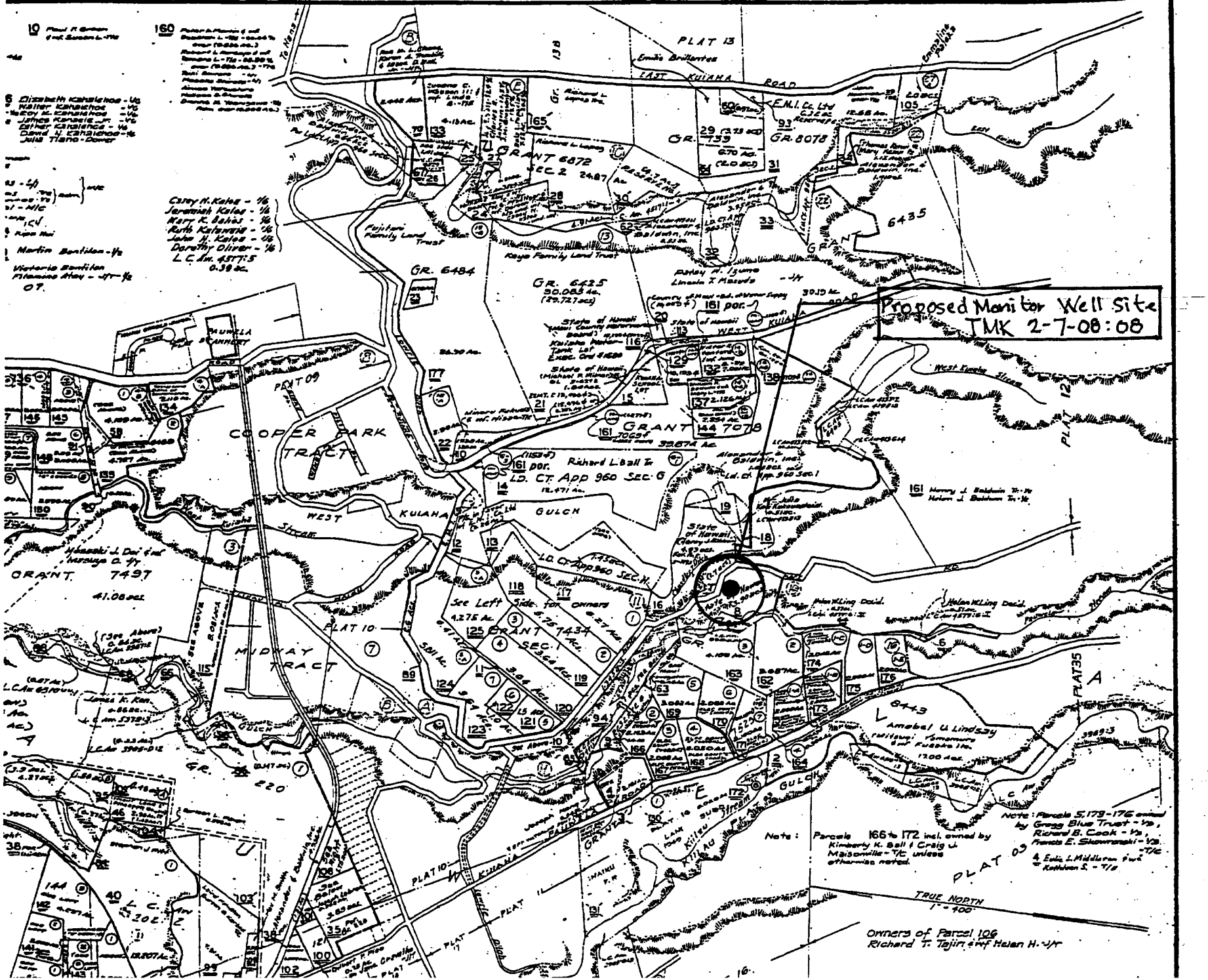
Carbon Steel: compliant with (*check one or more*): ❑ ANSI/AWWA C200 ❑ API Spec. 5L ☒ ASTM A53 ❑ ASTM A139
And compliant with (*check one or more*): ❑ ASTM A242 ❑ Type E ❑ Type S ❑ Grade B ❑ Other
Stainless Steel: (*check one*): ❑ ASTM A409 (production wells) ❑ ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F480 and ASTM D1527: (*check one*) ❑ Schedule 40 ❑ Schedule 80
PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (*check one*): ❑ Schedule 40 ❑ Schedule 80 ❑ Schedule 120
Thermoset Plastic: (*check one*)
❑ Filament Wound Resin Pipe conforming to ASTM D2996
❑ Centrifugally Cast Resin Pipe conforming to ASTM D2997
❑ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
❑ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
❑ PTFE Fluorocarbon Tubing conforming to ASTM D3296
❑ FEP Fluorocarbon Tubing conforming to ASTM D3296

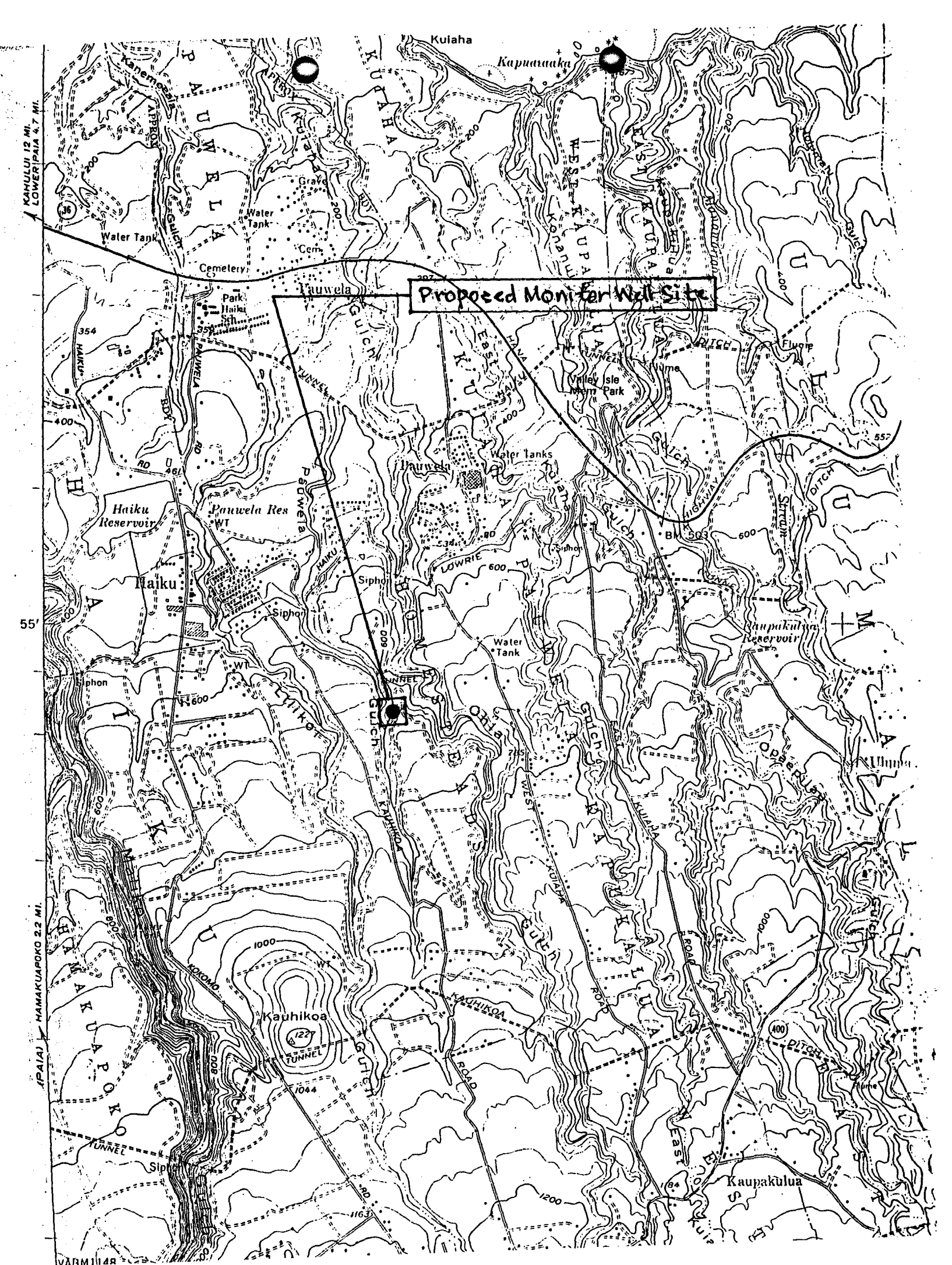
Open Casing Material:

Carbon Steel: compliant with (*check one or more*): ❑ ANSI/AWWA C200 ❑ API Spec. 5L ❑ ASTM A53 ☒ ASTM A139
And compliant with (*check one or more*): ❑ ASTM A242 ❑ Type E ❑ Type S ❑ Grade B ❑ Other
Stainless Steel: (*check one*): ❑ ASTM A409 (production wells) ❑ ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F480 and ASTM D1527: (*check one*) ❑ Schedule 40 ❑ Schedule 80
PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (*check one*): ❑ Schedule 40 ❑ Schedule 80 ❑ Schedule 120
Thermoset Plastic: (*check one*)
❑ Filament Wound Resin Pipe conforming to ASTM D2996
❑ Centrifugally Cast Resin Pipe conforming to ASTM D2997
❑ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
❑ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
❑ PTFE Fluorocarbon Tubing conforming to ASTM D3296
❑ FEP Fluorocarbon Tubing conforming to ASTM D3296



ALTERNATE WELL CROSS SECTION OF PROPOSED MONITOR WELL EAST MAUI SE13


Proposed Monitor Well Site
TMK 2-7-08:08
PLAT 13
LAST KULAMA ROAD
GRANT 6872
SEC 2
GR. 6484
GR. 6425
50.085 ac.
(29.727 acs)
GRANT 7078
GRANT 7497
41.08 acs.
COOPER RANCH TRACT
MIDWAY TRACT
WEST KULAMA GULCH
PLAT 09
PLAT 10
PLAT 12
PLAT 03
PLAT 35
LD. CT. App 960 Sec. G
LD. CT. App 960 Sec. H
LD. CT. App 960 Sec. I
GRANT 7434
SEC. 1
Amabel U. Lindsay
Note: Parcels 166 to 172 incl. owned by Kimberly K. Ball & Craig J. Maisonville - T/C unless otherwise noted.
Note: Parcels 5, 173-176 owned by Gregg Blue Trust - 1/2, Richard B. Cook - 1/2, Francis E. Slowinski - 1/2.
TRUE NORTH
1" = 400'
Owners of Parcel 106
Richard T. Tajiri & wf Helen H. J/T


Proposed Monitor Well Site
Kulaha
Kapunaaka
Kanemealii
Pauwela
Haiku
Haiku Reservoir
Pauwela Res
Kauhikoa
Kaupakulua
Kaupakulua Reservoir
Water Tank
Water Tanks
Cemetery
Valley Isle Memorial Park
Siphon
Tunnel
Flume
Ditch
Gulch
Road
Highway
BM 503
KAHULUI 12 MI.
LOWER PAIA 4.7 MI.
HAMAKUAPOKO 2.2 MI.
55'

Well Background Check

Approved	Well No.	Well Name	Applicant	Driller	Type	Well Construction Issued	Signed	WCR1	Accept	Pump Installation Issued	Signed	WCR2	Accept
STATUS?	5118-02	Pookela Explorat	Maui DWS		WELL								
	5731-03	Kupaa 1	Maui DWS [02]		PUMP								
	5418-01	EMWDP Monitor	Maui DWS		WELL								
	5330-11	Mokuhao 3	Maui DWS [01]		PUMP							1/20/1998	1/20/1998
10/14/1981	5431-04	Waihee 3	Maui DWS [01]		WELL	10/14/1981		12/23/1981					
9/8/1983	5108-01	Keanae	Maui DWS [01]		WELL	9/8/1983		5/1/1984					
6/11/1984	4300-02	Hamoa	Maui DWS [01]		WELL	6/11/1984		12/13/1985					
8/18/1986	5938-01	Honokahua B	Maui DWS [01]		WELL	8/18/1986		1/15/1993					
4/14/1987	0801-03	Kualapuu Mauka	Maui DWS [01]		WELL	4/14/1987							
10/2/1990	5430-02	Waiehu Hts 2	Maui DWS [01]		PUMP					10/2/1990			
10/2/1990	5938-01	Honokahua B	Maui DWS [02]		PUMP					10/2/1990		1/15/1993	
7/29/1991	5320-01	Hamakuapoko 2	Maui DWS [02]		WELL	7/29/1991		6/10/1993	6/10/1993				
7/29/1991	5420-02	Hamakuapoko I	Maui DWS [02]		WELL	7/29/1991		7/2/1992	7/2/1992				
11/21/1991	4600-02	Wakiu A	Maui DWS [01]		PUMP					11/21/1991			
1/5/1993	5228-07	Reynolds 2	Maui DWS [01]		PUMP					1/5/1993		1/25/1993	
3/17/1993	5330-10	Mokuhau 2	Maui DWS [01]		PUMP					4/6/1993			
3/25/1993	5631-02	Waihee Valley 1	Maui DWS [01]		PUMP					3/25/1993		5/22/1997	5/22/1997
3/25/1993	5631-03	Waihee Valley 2	Maui DWS [01]		PUMP					3/25/1993		5/22/1997	5/22/1997
4/6/1993	5339-02	Waipuka 2	Maui DWS [01]		PUMP					4/6/1993		11/3/1999	11/3/1999
5/19/1993	5419-01	Haiku	Maui DWS [01]		PUMP							12/2/1996	12/2/1996
2/10/1994	5838-03	Honokahua A	Maui DWS [01]		PUMP					2/10/1994			
2/10/1994	5431-02	Waihee 1	Maui DWS [01]		PUMP					2/10/1994		2/10/1994	
5/3/1994	0801-03	Kualapuu Mauka	Maui DWS [01]		PUMP					5/3/1994		3/23/1994	
1/20/1995	5339-01	Waipuka 1	Maui DWS [01]	AC-16437	PUMP					1/20/1995		5/17/1995	
2/18/1997	5332-05	Kepaniwai	Maui DWS [01]		PUMP					4/4/1997	4/16/1997	3/14/1997	3/14/1997
9/19/1997	5131-01	Waikapu Mauka	Maui DWS [01]	WRI	BOTH	9/22/1997	8/10/1998	5/26/2000	9/26/2000	11/20/2000			
9/22/1997	5731-03	Kupaa 1	Maui DWS [02]	C-20115	WELL	9/24/1997	7/16/1998	6/23/1999	6/23/1999				

Anything more if not I can

						Well Construction				Pump Installation			
Approved	Well No.	Well Name	Applicant	Driller	Type	Issued	Signed	WCR1	Accept	Issued	Signed	WCR2	Accept
9/22/1997	5731-02	Kanoa 1	Maui DWS [02]	C-20115	WELL	9/24/1997	7/16/1998	7/6/1999	7/6/1999				
7/15/1998	5108-02	Keanae 2	Maui DWS [02]	AC-22214	BOTH	7/16/1998	11/28/2000	12/26/2000	12/26/2000	1/16/2001			
5/21/1999	5419-01	Haiku	Maui DWS [01]		PUMP					5/26/1999	6/18/1999	7/8/1999	7/8/1999
8/26/1999	5731-04	Kanoa 2	Maui DWS [02]	C-20115	WELL	9/8/1999	2/22/2000	6/13/2000	7/19/2000				
9/27/1999	5731-02	Kanoa 1	Maui DWS [02]	AC-22214	PUMP					10/21/1999	4/19/2000	5/9/2001	5/9/2001
10/29/1999	5320-01	Hamakuapoko 2	Maui DWS [02]	C-21896	PUMP					11/26/1999	12/29/1999	8/22/1997	8/22/1997
10/29/1999	5420-02	Hamakuapoko I	Maui DWS [02]	C-21896	PUMP					11/26/1999	12/29/1999	8/22/1997	8/22/1997
10/18/2000	5731-04	Kanoa 2	Maui DWS [2]	AC-22214	PUMP					11/8/2000	12/12/2000		

(7)

Mink & Yuen, Inc.

1670 Kalakaua Avenue • Suite 605 • Honolulu, Hawaii 96826 • Telephone: (808) 943-1822 • Fax: (808) 943-1821

March 6, 2001

Elmer F. Cravalho
Chairman, Board of Water Supply
County of Maui
PO Box 1109
Wailuku HI 96793-6109

Subject: EMWDP SEIS Monitor well.

Dear Chairman Cravalho:

The Court Order of September, 2000, stipulates that a monitor well must be located in the Haiku region at one of the sites which had been suggested by W. Meyer, now retired but formerly District Chief WRD USGS, Hawaii. The site has been selected on State property adjacent to Hogback Road between Ohia and Pauwela Gulches.

The diameter of the casing that will reach into the Honomanu aquifer, the principal groundwater resource in the region, has yet to be decided. Either an eight or fourteen inch diameter casing has been recommended. Both casing sizes will allow collection of basic data such as lithology, water level measurements, and water quality. However, if the yield of the aquifer is to be tested, the smaller diameter casing will limit pump capacity to about 350 gpm, but the larger diameter will allow testing to about 1200 gpm. The higher pump rate will provide more accurate estimates of aquifer parameters and will more likely satisfy the proposal to test for pumping effects on potential stream flow.

Please let us know the casing size for which the specifications need to be drafted.

Sincerely,

John F. Mink
Vice President

East Maui Haiku 92-05

11/20/99

WELL NUMBER: ~~5418-05~~

6-5418-01 EMWDP MONITOR

DRILLER'S LOG (7/26/99 DL Form)

Depths (ft.)	Rock Description, Water Level, etc.	Dates
8 to 90	very soft	10/3
90 to 93	med Hard	10-4
93 to 100	very soft	10-5
100 to 132	med Hard	10-8
132 to 139	Soft	10-8
139 to 143	med Hard	10-9
143 to 150	Hard	10-10
150 to 166	Soft	10-30
166 to 164	med hard	10-30
164 to 172	Hard	10-30
172 to 175	med Hard	10-30
175 to 179	Hard	10-30
179 to 181	med Hard	10-30
181 to 187	Very hard	10-30
187 to 189	med hard	10-31
189 to 214	soft	10-31
214 to 240	med	10-31
240 to 250	Hard	10-31
250 to 336	med	11-7
336 to 339	Puka	11-7
339 to 343	med	11-7
343 to 355	Soft	11-7
355 to 360	med	11-7
360 to 369	Fractured	11-8
369 to 428	Hard	11-8
428 to 434	soft	11/9
434 to 470	Hard	11-9
470 to 476	Soft	11-13
476 to 570	Hard	11-13
570 to 578	Very hard	11-15
578 to 624	med	11-15
624 to 626	Fractured soft.	11-16
626 to 658	med	11-16
658 to 684	Hard	11-19
684 to 690	Fractured Soft	11-20
690 to 715	Hard	11-20

Remarks: Sea Level @ 667' G.L.

Run Solinst @ 674' No Fluids Rotary Depth

WELL NUMBER: 5418-01

6-5418-01 EMWDP Monitor

DRILLER'S LOG (7/26/99 DL Form)

Depths (ft.)	Rock Description, Water Level, etc.	Dates	Depths (ft.)	Rock Description, Water Level, etc.	Dates
715 to 717	Puka or very soft	11-20	___ to ___		
717 to 721	Hard	11-20	___ to ___		
721 to 728	med Fractured		___ to ___		
728 to 748	Hard Frac		___ to ___		
___ to ___			___ to ___		
___ to ___			___ to ___		
___ to ___			___ to ___		
___ to ___			___ to ___		
___ to ___			___ to ___		
___ to ___			___ to ___		
___ to ___			___ to ___		
___ to ___			___ to ___		
___ to ___			___ to ___		
___ to ___			___ to ___		
___ to ___			___ to ___		
___ to ___			___ to ___		
___ to ___			___ to ___		

Remarks: