STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
P.O. BOX 373
HONOLULU, HAWAII 96809

APR 28 2003

TO: Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control

FROM: for Eric T. Hirano, Chief Engineer Andrew M. Monden

SUBJECT: **Final Environmental Assessment (FEA), Kapaa Homesteads Well No. 3, TMK: 4-5-15: Portion 6, Kapaa, Kauai, Hawaii**

The Department of Land and Natural Resources has reviewed the comments received during the 30-day public comment period, which began on January 8, 2003. The agency has determined that this project will not have significant environmental effects and has issued a Finding of No Significant Impact (FONSI). Please publish this notice in the May 8, 2003, OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form and four (4) copies of the FEA. If you have any questions, please call Andrew Monden at 587-0229.

DI:ek
Enclosure

2003-05-08-KA-FEA-

FINAL ENVIRONMENTAL ASSESSMENT

PROPOSED KAPAA HOMESTEADS WELL NO. 3
Kapaa, Kauai, Hawaii

April 2003

Prepared by:

Engineering Division
Department of Land and Natural Resources
State of Hawaii

I. SUMMARY

PROPOSING AGENCY:	Department of Land and Natural Resources (DLNR), Engineering Division, State of Hawaii
APPROVING AGENCY:	Board of Land and Natural Resources (BLNR), State of Hawaii
GENERAL PROJECT DESCRIPTION:	The DLNR is proposing to drill an exploratory well in Kapaa, Kauai. If the well is successful, it will be outfitted and converted to a permanent production well. Developing this well will provide an additional source of water for State-sponsored projects in Kapaa.
PROJECT LOCATION:	Kapaa, Kauai TMK 4-5-15: Portion 6
DETERMINATION:	Finding of No Significant Impact
CONSULTED AGENCIES AND PRIVATE ORGANIZATIONS:	<u>State Agencies</u> DLNR Commission On Water Resource Management DLNR Land Division DLNR State Historic Preservation Division Office of Environmental Quality Control Office of Hawaiian Affairs Department of Business and Economic Development and Tourism (DBEDT), Housing and Community Development Corporation of Hawaii (HCDCH) <u>County Agency</u> Kauai County, Planning Department <u>Utilities</u> Verizon Hawaii Kauai County, Department of Water (KDW) Kauai Island Utility Cooperative (KIUC)

Private Organization
Kauai Historic Society

Leaseholder of TMK 4-5-15: 28
Mr. Lincoln Ching

Cultural Practioner
Ms. Puanani Rogers

LANDOWNER: DBEDT-HCDCH,
State of Hawaii

II. DESCRIPTION OF PROPOSED ACTION

Project Objective

The Kapaa area of Kauai is experiencing rapid growth. The demand for water is continuing to put pressures on the existing water system serving the area. With the increase in residents and visitors to the region, there is also an increased demand for State-sponsored projects, which include schools, government housing, agricultural subdivisions, and harbor facilities among others. The State wishes to meet its responsibility for providing sources of water for its projects. An exploratory well will be drilled in the region to find the required water source. After this well is drilled and cased, pump tests will be conducted to determine the quantity and quality of the source. If the exploratory well proves successful, it will be outfitted and converted into a production well.

Description of the Proposed Action

Please note that the proposed exploratory well site was relocated from TMK: 4-5-15: 28, the site proposed in the draft environmental assessment, to TMK: 4-5-15: Portion 6, the abandoned sewage treatment plant. The new well site, which is approximately 450 feet from the previous well site, is under the control and management of HCDCH by Executive Order No. 3534, dated February 11, 1992. The well site was relocated due to concerns that different geologic/hydrologic conditions would be encountered by locating the proposed exploratory well approximately 450 feet west from the existing injection well and to eliminate impacts to the pasture land leased to Mr. Lincoln Ching. The site proposed in the draft EA will be included as an alternative site (see Section IX).

The DLNR is proposing to drill an exploratory well in an abandoned sewage treatment plant (see Figures 1 and 2) that is situated within a 1.364-acre parcel under the control and management of HCDCH. A right-of-entry will be sought from

HCDCH to conduct the exploratory drilling operation. The parcel is located mauka of Kuhio Highway, and adjacent to the Moikeha Canal (see Figure 2).

Access to the parcel is via an access and utility easement which extends from County –owned Alenae Street. The unpaved easement begins where Alenae Street ends and continues to the entrance of the abandoned HCDCH sewage treatment plant. Please note that KIUC and Verizon Hawaii have future plans to extend along this easement their overhead lines, which are currently located along Malu Road and Alenae Road.

The proposed exploratory well will be drilled, cased and pump tested at the site. An assessment will be made on the quantity and quality of the water produced from the well. If pump tests are not successful, the well will be abandoned or used as a monitor well. Please note that the exploratory well drilling will be part of the Phase I operation.

If the test results are favorable or acceptable, the well will be outfitted and converted into a production well. The conversion to a production well will be part of a Phase II operation, and a separate Environmental Assessment (EA) or Environmental Impact Statement (EIS) will be prepared, as required, under the provisions of Chapter 343, Hawaii Revised Statutes.

Well Drilling

The new well site (estimated elevation 8.0' above mean sea level (msl)) will involve the installation of an exploratory well and subsequent pump tests. Initial work would require site clearing and minor grading of approximately 8,000 sq. ft. A truck or trailer-mounted drilling rig and other support equipment will be brought to the site to drill an approximately 22-inch minimum diameter hole approximately 150 feet deep. The cased section of the well will then be grouted into the hole, with a 16-inch inner diameter (ID) solid casing depth of approximately 150 feet and 15-inch diameter open hole of approximately 70 feet. The depth of the well will be adjusted based on the actual conditions in the field.

In drilling the hole, either a cable tool or rotary drilling method will be used. The cable tool method employs a repeated raising and dropping of a heavy chisel bit within the hole until the desired depth has been attained. Material from the impact procedure is then bailed from the hole and placed in a disposal pit. The residual material is not expected to contain any contaminants.

The rotary method employs a drill bit that bores a hole while drilling fluid is pumped down the drill stem to the drilling bit. The drilling fluid, comprised of air and a little fluid (water and soap), is then forced back up the hole carrying with it drill cuttings to the surface where the material is then removed from the drilling mud by a screen and placed in on-site disposal pits.

Please note that the open hole section of the well shall be drilled only by the reverse circulation air rotary method (using compressed air) or the cable tool method of drilling.

The cased section of the well may be drilled by the cable tool or rotary method of drilling using only clear water, air, or an approved mixture of air, water, and foam.

The drilling contractor may request electrical power from KIUC to supply power for the drilling rig. Electrical power would be provided by a temporary connection from KIUC's overhead power lines located along Alenae Road and routed through the existing access and utility easement, which also serves as an access to the proposed well site. Electrical power may also be requested to supply power to the pumping apparatus.

Pump Test

After the drilling operation is completed, the pump testing phase will occur. Two (2) tests are involved. The first test, known as the step-drawdown or yield-drawdown test, includes the pumping of water from the well at various pumping rates to estimate the well's specific capacity (quantity withdrawn per foot of drawdown). For each pumping rate, the drawdown is measured.

After the step-drawdown test, a seven (7) to ten day sustained pumping test will be conducted. The well will be continuously pumped 24 hours a day for seven (7) to ten days. The test is designed to determine the sustainable capacity of the well. It will also include tests on water quality as well as monitoring of existing wells downstream of the well field.

Test water shall be properly disposed of into the Moikeha Canal.

After the pump test is completed, the pump will be removed, the well will be capped, and the drilling rig and associated equipment will be taken off the site. The well site (with the exception of the 16-inch diameter casing capped and protruding three (3) feet above the ground) and its surrounding areas will be restored to its condition when first entered by the drilling contractor.

Phase II Production Well

The exploratory well will be outfitted and converted to a production well should tests results be favorable. This phase of the project will be covered under a separate contract and scope of work, and a separate EA or EIS will be prepared.

Access to Project Site

An access and utility easement (part of Executive Order No. 3534 described in Land Tenure on page 7) extends approximately 450' from County–owned Alenae Street to the project site.

The DLNR will use this access for the project site. No improvements are planned for the access. The right-of-way is adequate to accommodate the required vehicles and equipment for the drilling and pump testing operations.

Exploratory Well Drilling Schedule

Installation of the exploratory well is estimated to commence in July 2003. The drilling and subsequent pump tests are expected to be completed approximately nine (9) months after the project begun or about April 2004.

Exploratory Well Drilling Cost

The preliminary cost estimate for the exploratory well drilling and pump test is approximately $246,750. The source of funding for this phase of the project is State Appropriation, Act 287, SLH 1996, Item A-25A. No federal monies are involved.

III. DESCRIPTION OF THE AFFECTED ENVIRONMENT

Existing Land Use

The project site is located at the inland edge of an alluvial coastal plain, approximately 2,400 feet inland from the coast and just inland of Kapaa town. The area is mostly pasture land, with pasture land adjacent to the access road and the abandoned HCDCH sewage treatment plant leased to Mr. Lincoln Ching under General Lease No. S-5245 which expires on June 19, 2007. HCDCH housing units are located further west of the project site. Moikeha Canal lies to the north of the project site and additional pasture land. South of the project site are the New Kapaa Park, Hawaii National Guard Armory, and Kuhio Highway.

Kapaa Sewage Treatment Plant (STP) Injection Well (State Well No. 0519-01) was originally proposed as an injection well for the abandoned sewage treatment plant by HCDCH. Drilling of this well was completed on November 6, 1986, by Roscoe Moss Company. This well was drilled to a depth of 221 feet below the existing ground surface, and has 150 feet of 8-inch diameter steel casing (mid-section perforated) and 71 feet of 8-inch open hole (see Appendix B). It was capped and never used, because it was found to have an artesian head of 12 feet which is approximately four (4) feet above the well's ground elevation of 8.25 feet. The treatment plant was later

abandoned when residents served by this treatment plant connected to the County sewer line.

Subsequently, in September 1997, KDW contacted HCDCH expressing their interest in developing the well into a potable water source. HCDCH agreed to have KDW test the well water for quantity and quality. KDW agreed to submit a request to use the well and negotiate an agreement with the State, only if the tests prove favorable. KDW hired Oasis Water Systems to conduct pump and water quality tests on the well. The pump test was conducted in June 2002, and the water quality analysis was conducted in August 2002. Test results were favorable (see Appendix B for test data), indicating this location suitable for water resources development. However, the well was too small to be developed into a municipal well. As a result, KDW would need to drill a larger diameter well for water resources development.

In September 2002, KDW proposed that DLNR relocate their Kapaa Homesteads No. 3 Exploratory Well to the treatment plant site, after learning that DLNR is unable to obtain a right-of-entry to their proposed site from its landowner, Lihue Plantation. DLNR agreed to relocate their well to this site, which is shown in Figures 1 and 2. Please note that DLNR awarded Oasis Water Systems the contract to drill the exploratory well approximately three (3) miles northwest of this site (see Figure 4).

Other wells in the immediate vicinity include the five (5) Mahelona Hospital Wells, Kapaa Shaft, Kapaa-Wailua Well, Kapaa Cannery Well, and R.W.R Well. The five (5) Mahelona Hospital Wells owned by the Department of Health (see Figure 3). Four (4) of the wells (State Well Nos. 0518-01, 0518-03, 0518-04 and 0518-05) are being used by the hospital for their waste disposal. However, these wells are located down gradient of the proposed well site, and should not impact the proposed well site. One (1) of the wells (State Well No. 0518-02) is used as an observation well. Kapaa Shaft (State Well No. 0419-02) is owned by Lihue Plantation and not in use. Kapaa-Wailua Well (State Well No. 0419-03) is owned by the County and not in use. It was previously used for disposal. Kapaa Cannery Well (State Well No. 0419-01) is owned by Hawaiian Frontier Parks. Please note that no data is available on this well. R.W.R Well (State Well No. 0520-01) is a proposed domestic well, currently being developed by its owner (Ronald W. Russell).

Land Tenure

The project site is owned by the State of Hawaii and under the control and management of HCDCH (see Description of Proposed Action Section on page 3). The parcel containing the treatment plant site (TMK: 4-5-15: 6) was set aside to DBEDT-HCDCH by Executive Order No. 3534 on February 11, 1992. A right of entry will be obtained from HCDCH prior to the commencement of the project.

Physiology

The Island of Kauai is generally circular in shape with an average diametric width of 30 miles. It is what remains of a huge shield volcano known as Mount Waialeale. This shield volcano still dominates the higher central mountainous sector. Except for approximately 10 miles of sea cliffs along the northwesterly Napali Coast, the overall terrain rises gently inland from relatively flat coastal plains to the hinderlands and rugged slopes of Mount Waialeale. The project site is located at the inland edge of an alluvial coastal plain, approximately 2,400 feet inland from the coast and just inland of Kapaa town. Moikeha Canal flows from north of the project site to the coast.

Two basic volcanic rocks dominate the geology of the Island of Kauai, the Waimea and Koloa volcanic series. The Koloa volcanic series is distributed in the eastern section of the island and dominates the geologic formation of the project site. This volcanic series is much younger in age than the Waimea series, and is defined as a series of volcanic rocks laid down on the rocks of the Waimea series after a long period of erosion. Its structure is complex which results from the various constituencies of basalts, cinder and ash bed layers, intermingled with permeable and fractured gravel materials.

Soil

The U.S. Natural Resources Conservation Service (formerly U.S. Soil Conservation Service) classifies the soil on the project site as Mokuleia clay loam, poorly drained variant (Mta). This soil occurs on Kauai. It is nearly level and poorly drained. The surface layer is dark brown to black and is mottled. This soil is suitable for agriculture.

Climate

The mean annual rainfall for the area is 50 to 100 inches. Average monthly temperatures are mild ranging from about 72 degrees F in the winter to about 80 degrees F in the summer. The winds are predominantly from the northeast.

Hydrology

The proposed well will tap a fresh water basal aquifer in Koloa lavas protected from any serious saltwater intrusion by a thick caprock of low permeability clays interspersed with coral layers. The caprock formation is approximately 140 ft. thick at the well, and extends to a depth of at least 480 ft. below sea level seaward of the well site. These deposits were formed as a result of eustatic changes in sea level associated with glacial and inter-glacial periods during Pleistocene Time.

Please note that the proposed well is predicted to have an artesian head of approximately 11 to 12 ft., which is three (3) to four (4) feet above the well's ground elevation of 8.0 ft.

Flora

Plants located within the proposed project site include lantana, paragrass (California grass), koa haole, klu, panini and Natal redtop grass. These plants are exotic species introduced to the island, and not native species.

Fauna

There has been no comprehensive study or field survey performed to assess the Kapaa area as a habitat for wildlife. However, the following animals are likely to be found:

1. Mammals which would include beef cattle, household pets (dogs and cats), rats and field mice.

2. Bird species which would include the house sparrow, spotted dove, and mynah.

Air Quality

The quality of the air in at the project site is good. There are no major sources of air pollution in the immediate vicinity such as agricultural burning, manufacturing plants and incinerators. Auto emissions from vehicular traffic on Kuhio Highway and local streets is not a factor.

Sonic Ambiance

The predominant source of noise in the area is the traffic on Kuhio Highway and local streets.

Archaeological, Historic and Cultural Resources

The project area was previously disturbed by both prior construction activities and natural forces such as Hurricane Iwa. An existing access and utility easement (which extends from County-owned Alenae Street) was cleared to serve as an access to the sewage treatment plant during its construction. This resulted in the project site also being cleared due to its location within the sewage treatment plant. Based on records at the State Historic Preservation Division (SHPD), there is no historic or culturally sensitive sites within the project area. Should any historic artifacts and/or burial sites be found during the installation of the exploratory well, work must be stopped and the SHPD must be contacted for implementation of a proper monitoring and preservation program. After implementation of the monitoring program, construction activities will be allowed to continue.

Cultural Resources Discussion

Under Act 50, 2000 Session Laws of Hawaii, an investigation must be performed in order to determine what inpact, if any, the proposed construction will have on any cultural activities in the area. In an effort to ascertain information regarding the cultural significance of the project site, persons knowledgeable of activities taking place within the project area were contacted. Ms. Lafrance Kanaka-Arbolera of the Office of Hawaiian Affairs in Kauai indicated (via phone conversation) that there were no groups that congregated at or near the project site. Similarly, Ms. Mary Requiman, executive director of the Kauai Historic Society, and Ms. Puanani Rogers, cultural practitioner in the Kapaa Area, stated that there were no groups that congregated at or near the project site. The project site also contains no burials, or native herbs or plants, which relatives of deceased or native plant gatherers would require access to.

Based on the findings of the above mentioned investigation, we determined that a Cultural Impact Assessment is not needed for this project.

Flood Hazards

The project site is not located in a Special Flood Hazard Area inundated by a 100-year flood, it is located in Zone X (shaded), according to the Flood Insurance Rate Map (FIRM) with Community--Panel No. 150002 0135 C. Zone X (shaded) is an area designated as an Other Flood Area, and includes areas of 500-year flooding; areas of 100-year flooding with average depth of less than 1 foot; and areas protected by levees from 100-year flood. The project site is not located in an area protected by a levee.

Because this is an exploratory drilling project, the rules and regulations of the National Flood Insurance Program (NFIP) and the Kauai County Flood Ordinance No. 630 (and any revisions to it) to construct within a flood zone do not apply. However, if the well is determined to be feasible for development the requirements of both programs would be addressed in production well development (Phase II).

Please note that the well site is located on an area of the HCDCH sewage treatment plant that has been filled to comply with NFIP and Kauai County Flood Ordinance No. 630. We understand that this area has been filled to elevation 8-feet, which is the base flood elevation determined by a Flood Insurance Study prepared by the Federal Emergency Management Agency.

Visual

The most visible location of the project site from a public roadway is the Opala Road and Alenae Street Intersection. The view would not be readily apparent since the project site would be virtually lost in the overall scene of HCDCH government

housing along Opala Road and Alenae Street. Also, the view would appear to the motorist or passengers as a short moment in time when passing Opala Road.

IV. SOCIO-ECONOMIC SETTING

Socio-Economic background of Region

The project site is located within an abandoned treatment plant site owned by HCDCH. Located directly east and west of the project site are pasture land. HCDCH housing units are located further west of the project site. Moikeha Canal lies to the north of the project site and additional pasture land. South of the project site are the New Kapaa Park, Hawaii National Guard Armory, and Kuhio Highway. Kapaa Town is located on both sides of Kuhio Highway and is experiencing rapid growth. Retail establishments and residential communities are being developed along this Kuhio Highway.

Economic Impacts Assessment

Successful development of the proposed well will add a new water source to, and improve the infrastructure that serves the planned growth in the Kapaa area. With this growth will be economic benefits such as new jobs and income. As a result, the State will receive increased revenues from income, property and sales taxes.

Community Issues

The proposed action is not considered a land use that will generate social impacts. Its ultimate function is to improve a source for a utility that will serve various land uses. For example: water from the proposed well source would be provided for State-sponsored projects (such as schools, government housing, agricultural subdivisions, and harbor facilities among others). In addition, the proposed well source would serve additional land uses, such as residential, commercial, industrial, public utilities land uses, etc. The proposed action, thus, is not expected to generate public land use issues.

Public concerns would be more on the project's effect on the natural environment. Such concerns would include the impact on the existing water resources of the area and the natural and cultural environment of the project site.

V. PUBLIC FACILITIES AND SERVICES

Circulation and Traffic

Access to the project site is via an access and utility easement which extends from County –owned Alenae Street. The proposed access to the project site will require permission to use the access for the project.

Water, Sewer, Electricity and Telephone

KDW water lines are located within the Alenae Street right-of-way. The proposed project is not expected to require much water from KDW. What little water that is required will be for personnel use by the contractor.

KIUC electrical lines and Verizon Hawaii telephone lines are located within a utility easement above the entrance gate to the HCDCH sewage treatment plant. Electricity may be required to supply power to the pumping apparatus, due to drilling contractor requesting electrical power to supply power for the drilling rig. Cellular phones are expected to provide communications for the construction crew. Portable toilets would be brought to the site to accommodate personal needs.

Solid Waste

The debris from the site preparation stage will be removed from the property and hauled away to a greens recycling station. Very little solid waste is expected to be generated since the site is predominantly by pasture land. There are no residences or commercial facilities.

Solid waste generated during operations will be collected and hauled away to a commercial landfill. Once the pump test is completed, all equipment and generated solid waste will be removed from the site. The well will be capped and left for the next stage if they prove successful during the pump tests.

Public Services

The project site is located within existing police, fire protection, and medical service areas. Access to the property in the event of an emergency will require coordination with the drilling contractor and landowner.

VI. RELATIONSHIP TO PUBLIC LAND USE POLICIES

State Land Use District

The proposed well is located in the Urban District and is a permitted use.

State Environmental Policies

The proposed action is consistent with the State Environmental Policy (Chapter 34, HRS) relating to "safeguarding the State's unique natural environmental characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which humanity and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of the people of Hawaii."

Further, if the exploratory well proves successful and is developed into a production well, it will provide water for State projects and supplement the existing water system in the Kapaa area. This will open up opportunities for economic growth and provide improvements in the quality of life for the residents of Hawaii.

County Land Use Ordinance

The Land Use Ordinance designates the property as Open Zone. The proposed action is a permitted use in this zoning district, and will not require a Use Permit along with a Class IV Zoning Permit from Kauai County, Planning Department.

Special Management Area

The project site is located outside of the Special Management Area (SMA) and, therefore, is not subject to the SMA Rules and Regulations of Kauai County.

Required Permits and Approvals

In addition to this document which is being prepared to comply with the provisions of Chapter 343, Hawaii Revised Statutes, the proposed action will require a Well Construction Permit from the State DLNR - CWRM. Finally, a NPDES Permit will be required from the Department of Health for discharging pump test waters into Moikeha Canal. Applications for these permits will be submitted to the reviewing agencies after EA procedures are completed.

VII. SUMMARY OF MAJOR IMPACTS

Construction Impacts

During site preparation, well drilling, casing and pump testing, the proposed action will generate dust and noise that could affect the neighboring residents, depending on the time of day and condition of the winds. The large open areas surrounding the site and distance to these residential areas would help dissipate the effect. The nearest homes are located approximately 650 feet away.

Construction of the project would not impact traffic except when the drilling rigs and equipment are first brought to the site and later removed and transported back to their baseyard. The transportation of these equipment will involve slow moving vehicles which may affect traffic along their route.

Operational Impacts

Drilling and pump test operations will generate noise during the projected nine (9) month work schedule. The drilling operation may result in a higher noise level than the pump test operations. The overall level of noise, however, will not exceed the State restrictions on maximum levels at residential property lines.

During pump tests, water from the well will be discharged into the nearby Moikeha Canal. As part of the best management practices, the water will be conveyed via a pipeline to avoid soil erosion along its route and turbidity in the receiving waters. The quantity could reach as much as 1,000 gallons per minute, thus resulting in a temporary increase in canal flow. The increase in flow, however, is expected to be within the normal range of peak flows that occur and would not result in any flooding or adverse impact to downstream properties.

The quality of the discharge is expected to be of potable quality. The quality of the canal water is expected to be lower that the quality of the well water. Notably, the canal flows from a drainage basin that includes large areas of agricultural, dairy grazing and residential uses. These uses generate agricultural, livestock and urban runoff, respectively.

It is expected that pumpage from the proposed exploratory well will have minimal or no measureable effect on other wells in the vicinity. However, during pump tests the existing Kapaa STP Injection Well, Kapaa Shaft and Kapaa-Wailua Well will be monitored if practical.

VIII. PROPOSED MITIGATION MEASURES

During the site preparation stage, the contractor will only work during normal daylight hours. This would remove the impact of noise during the night hours and lights that might glare into the adjacent residential neighborhoods.

Fugitive dust is not expected to impact any homes. If winds were to carry fugitive dust to adjacent properties, it would be to existing pasture lands or park land where no nearby residences are present.

Best management practices will be employed, where necessary, to mitigate potential discharge of pollutants into nearby surface waters. Such practices would include the

use of earth berms or other silt containment measures to prevent surface runoff from discharging into Moikeha Canal. Similar measures would also be used to prevent the release of petroleum products or other potential hazardous material from the construction or operational activities from entering the canal. Regular inspection of vehicles and storage areas will occur to confirm there are no leaks that would potentially affect water quality. Absorbent pads or other containment devices will be available and used, as required, at fuel transfer points during fueling operations.

No mitigation measures will be required on traffic, however, slow moving construction vehicles transporting heavy equipment to and from the site will be scheduled to off-peak hours.

The proposed exploratory well will be drilled within an abandoned sewage treatment plant, which is located in an area designated as Zone X (shaded), an area designated as an Other Flood Area. No mitigation measures are required because NFIP and Kauai County Flood Ordinance No. 630 *requirements do* not apply to this exploratory well drilling project, and the site has been presumably filled to the base flood elevation by HCDCH.

After the well has been drilled to the specified depth and cased, a temporary pump will be installed in the well to test the groundwater aquifer for yield and water quality. The pump test will be conducted over a continuous 24 to 150 hour period. The pump motor will generate a droning sound and the noise may, at times, be heard during the night. The Contractor will be required to use mufflers or other sound attenuating devices, as needed to meet applicable noise restriction regulations of the Department of Health.

Water discharged to Moikeha Canal from pump tests will be at potable quality. A NPDES Permit will be obtained from the State Department of Health prior to any discharge into the stream. The permit application will include a Best Management Practices Plan and a Water Quality Monitoring Plan both of which provide information on monitoring and controlling potential pollutants into State waters.

The existing injection well will be properly abandoned prior to development of the exploratory well. During the pump testing of the exploratory well a packer system or sleeve will be installed in the existing injection well to isolate the upper aquifer zone from the lower zone. This will mitigate contamination of the lower aquifer zone, and allow the DLNR to monitor water levels in the lower aquifer zone.

IX. ALTERNATIVES CONSIDERED

No Action

An alternative to the proposed action is to refrain from proceeding with the new well. Although this option was available, it was not considered. The proposed action is necessary to meet the need for additional sources of water for the Kapaa area.

Alternative Sites

The selection of the well site is the result of a review of several sites in the Kapaa area. These sites were assessed for accessibility, availability of supporting infrastructure, access to existing water systems, site characteristics and its potential as a source of water.

Most of the sites were deemed unfeasible due to each site lacking the potential of producing between 0.5 and 1 mgd of potable water. Sites were also deemed unfeasible due to the Department of Health's 1000-foot rule, where potable wells could not be drilled within 1000 feet of a sewage treatment facility (cesspool, septic tank or treatment plant).

A site located approximately three (3) miles northwest of the proposed site (see Figure 4) was deemed unfeasible due to DLNR encountering difficulties in obtaining a Right-of-Entry to this site from its owner, Lihue Plantation Company.

The selected site presented itself as the most feasible option, due to its close proximity to an existing well that was recently pump tested, and found to have sufficient capacity and water quality to justify the drilling of an exploratory well. It is also located on State land, with an existing access, in the vicinity of KDW's existing water transmission system and service area.

Should the geologic/hydrologic conditions be unfavorable at the selected site, the well site will be relocated approximately 450 feet west of the existing treatment plant site and adjacent to an existing access/utility easement (see Figure 5). This site is owned by the State of Hawaii, and leased by DLNR-Land Division to Mr. Lincoln Ching. Mr. Ching currently grazes his beef cattle on this pasture land. This site is located outside Zone X (shaded), an area of 100-year flooding with average depth of less than 1 foot.

X. DETERMINATION

This Draft Environmental Assessment demonstrates that the proposed action will not have significant adverse effects on the environment and that an Environmental Impact

Statement is not warranted. A Finding of No Significant Impact is determined for this project.

XI. FINDINGS AND REASONS SUPPORTING THE DETERMINATION

The following findings and reasons demonstrate that the proposed action will not have significant adverse impacts on the environment and, support the above determination.

-The proposed action will occur on a site that has already been disturbed. Its location would not interfere with any access to traditional gathering sites of important cultural resources. The exploration project would involve the long-term use of water only if pump tests show that an adequate and sustainable supply is available.

-As provided in Section VI of this document, the proposed action is consistent with the State's long-range environmental policies and guidelines (Chapter 344, HRS).

-The proposed action is expected to have a beneficial effect on the economy. Its construction stage will generate work and personal income and stir spending throughout the County and State. Its operational stage would provide water for State-sponsored projects, and benefit the local economy as well as supplement an existing utility in a growing community.

-The equipment used for site preparation, well drilling and pump testing will be using petroleum products that could leak form their engines or hydraulic systems. The construction contractor will be required to maintain his or her equipment in good working order, monitor for leaks and employ safety precautions. If there is a petroleum spill, the contractor will be responsible for all necessary remedial actions and cleanups. The public health would not be jeopardized.

-The proposed action will not involve substantial secondary impacts involving dramatic population increases. If the exploratory well proves successful, the new source will supplement the existing water system that currently serves the Kapaa area.

-The proposed action calls for minor site improvements in a small area and will not change the general character of the area.

-No other plans by the proposing agency are being contemplated for the development of additional wells in the project vicinity.

-The anticipated impacts associated with project construction and operations, such as erosion, sedimentation, fugitive dust and noise, are short-term and temporary. They will be minimized or prevented from occurring by implementation of mitigative

measures in accordance with applicable federal, State, County laws, statutes, ordinances, and rules and regulations.

-The project site is not included in any public document as a scenic resource.

-The proposed action, which is short-term and temporary, will not require substantial energy consumption.

REFERENCES

County of Kauai, Department of Public Works, Final Environmental Assessment for Kapaa Sewerage System, December 1984.

County of Kauai, Department of Water, Hydrogeologic Evaluation of Kapaa Artesian Well, August 2002.

United States, Department of Agriculture, Soil Conservation Service, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, August 1972.

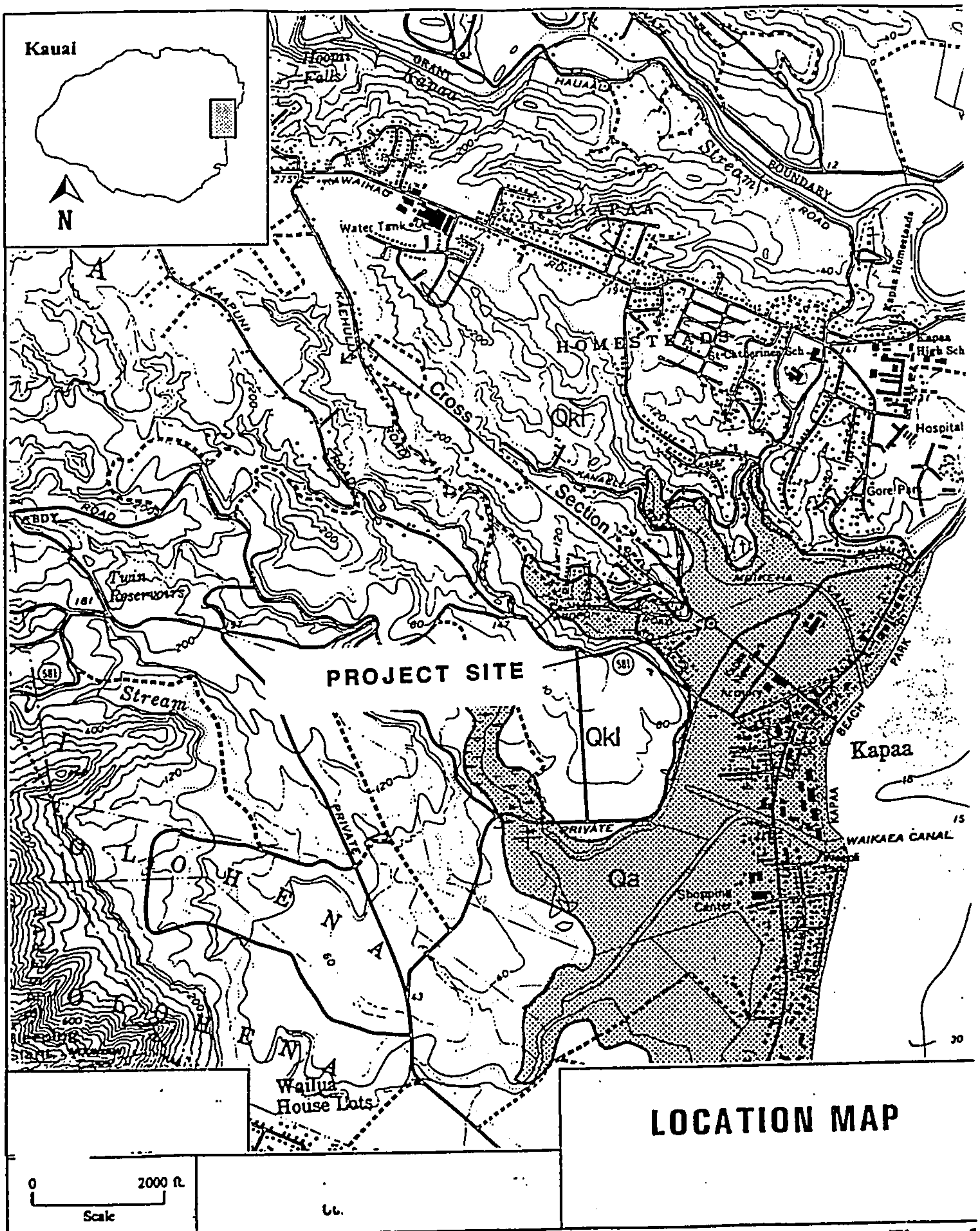

Kauai
N
Hoopii Falls
Kapaa Stream
HAUAALA
BOUNDARY ROAD
WAIHAO
Water Tank
KAPAA
HOMESTEADS
KAAPUNI
KAEHULUA
Cross Section
ROAD
St. Catherines Sch.
Kapaa High Sch
Hospital
Gore Park
Kapaa Homesteads
Qkl
KANAELE
BDY ROAD
Twin Reservoirs
Stream
PROJECT SITE
581
Armory
BEACH PARK
Kapaa
KAPAA
WAIKAEA CANAL
PRIVATE
Qa
Shopping Center
OLOHENA
Wailua House Lots
0
2000 ft
Scale
LOCATION MAP

Figure 1

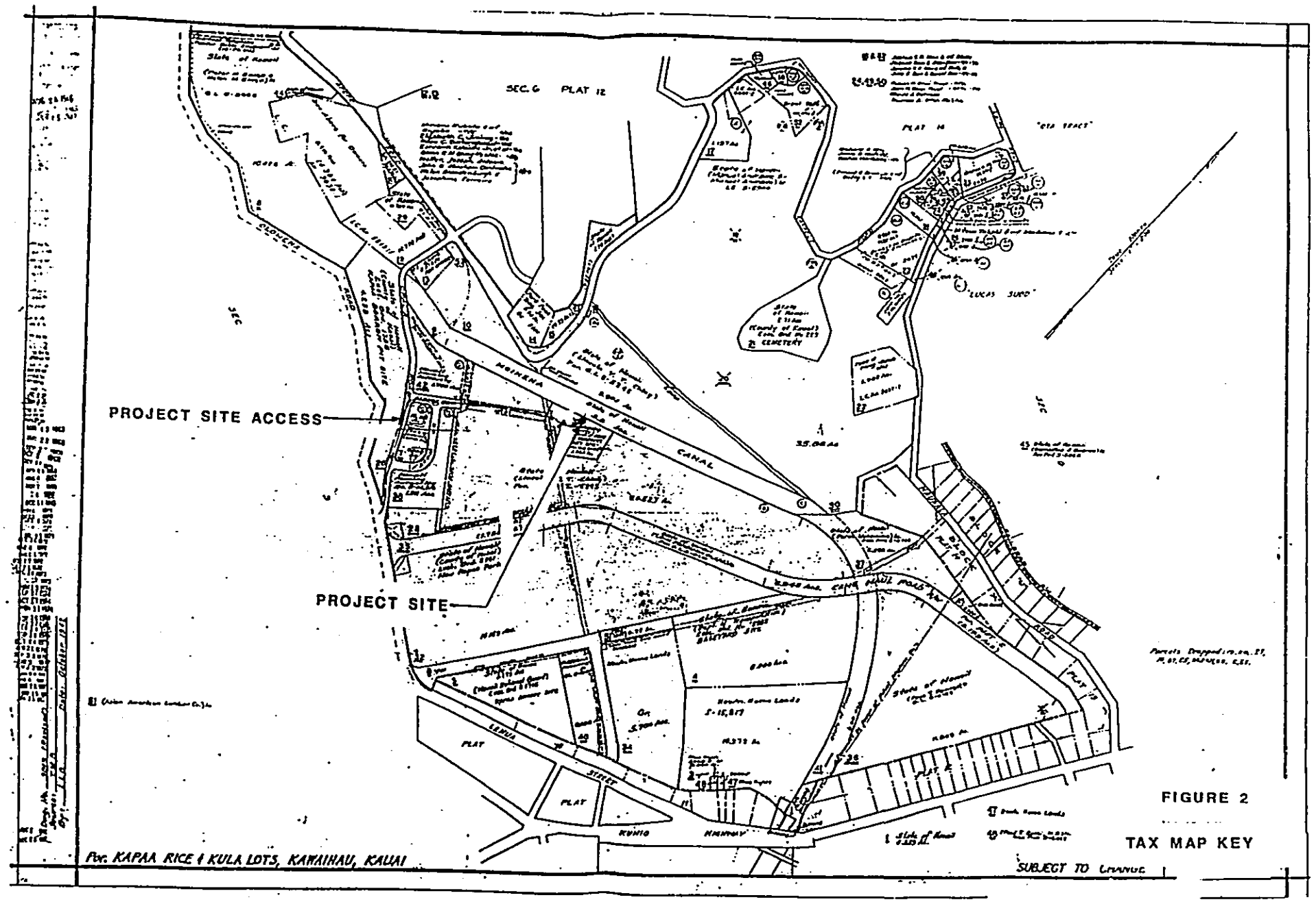


FIGURE 2

TAX MAP KEY

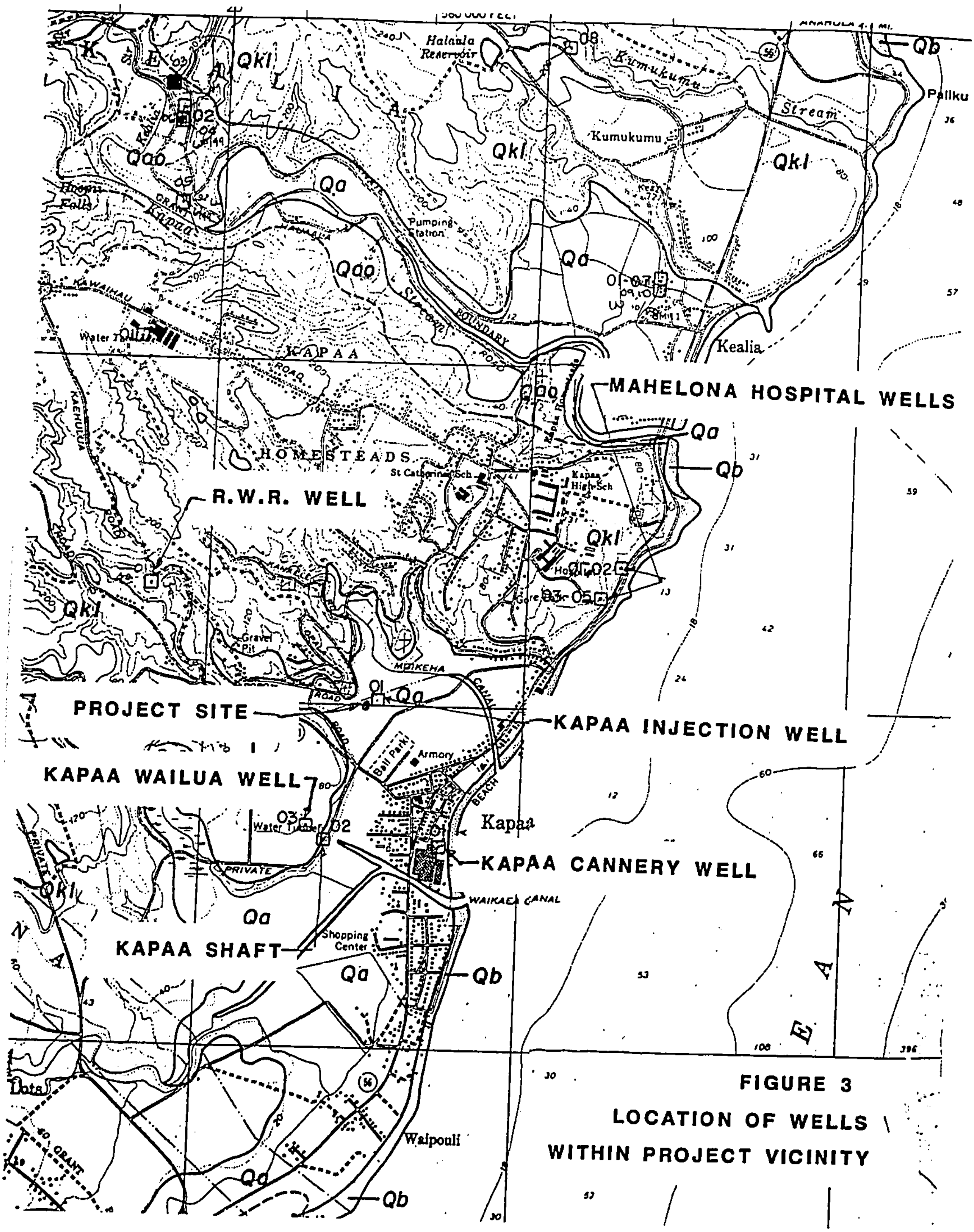


FIGURE 3
LOCATION OF WELLS
WITHIN PROJECT VICINITY

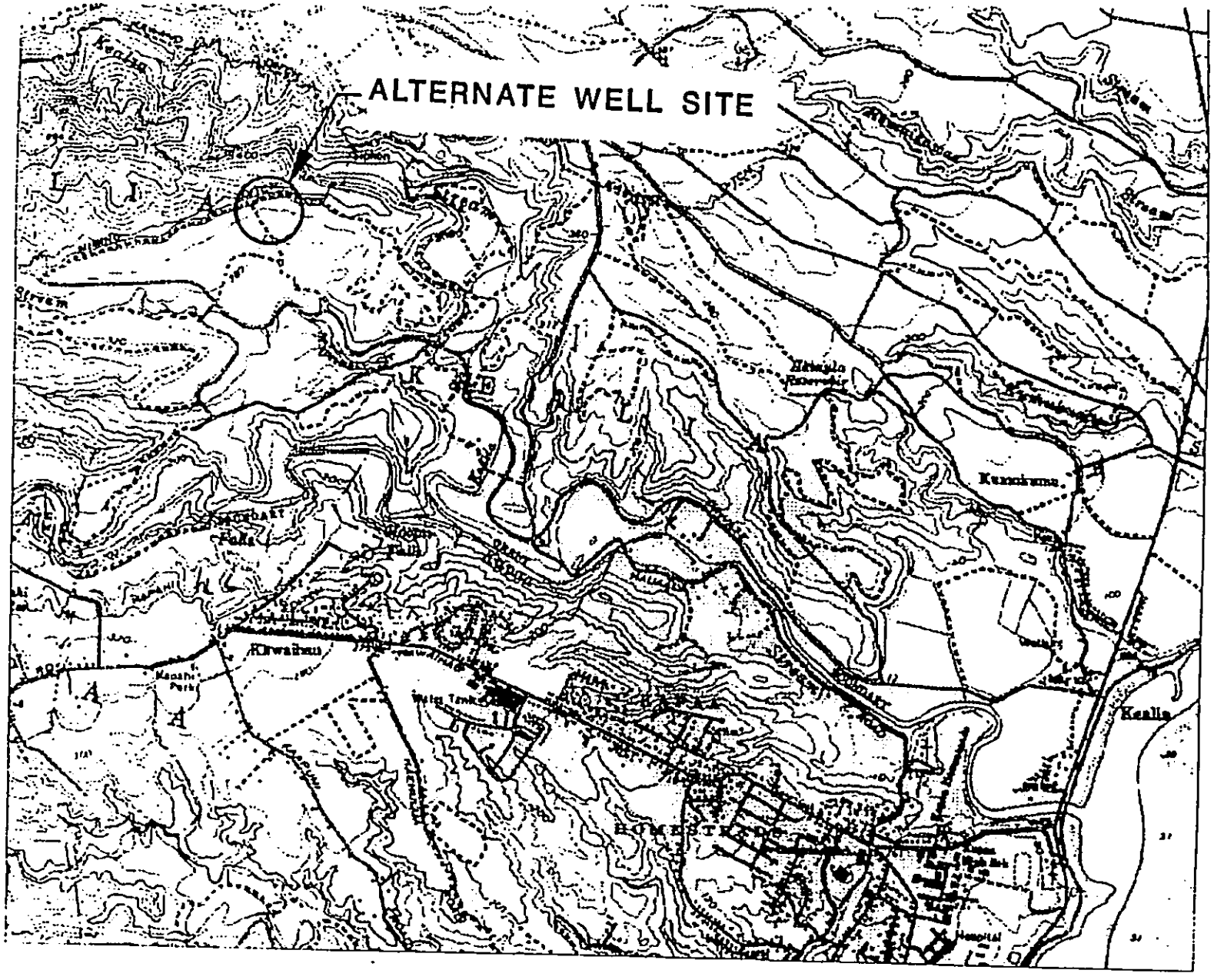


FIGURE 4

ALTERNATIVE WELL SITE

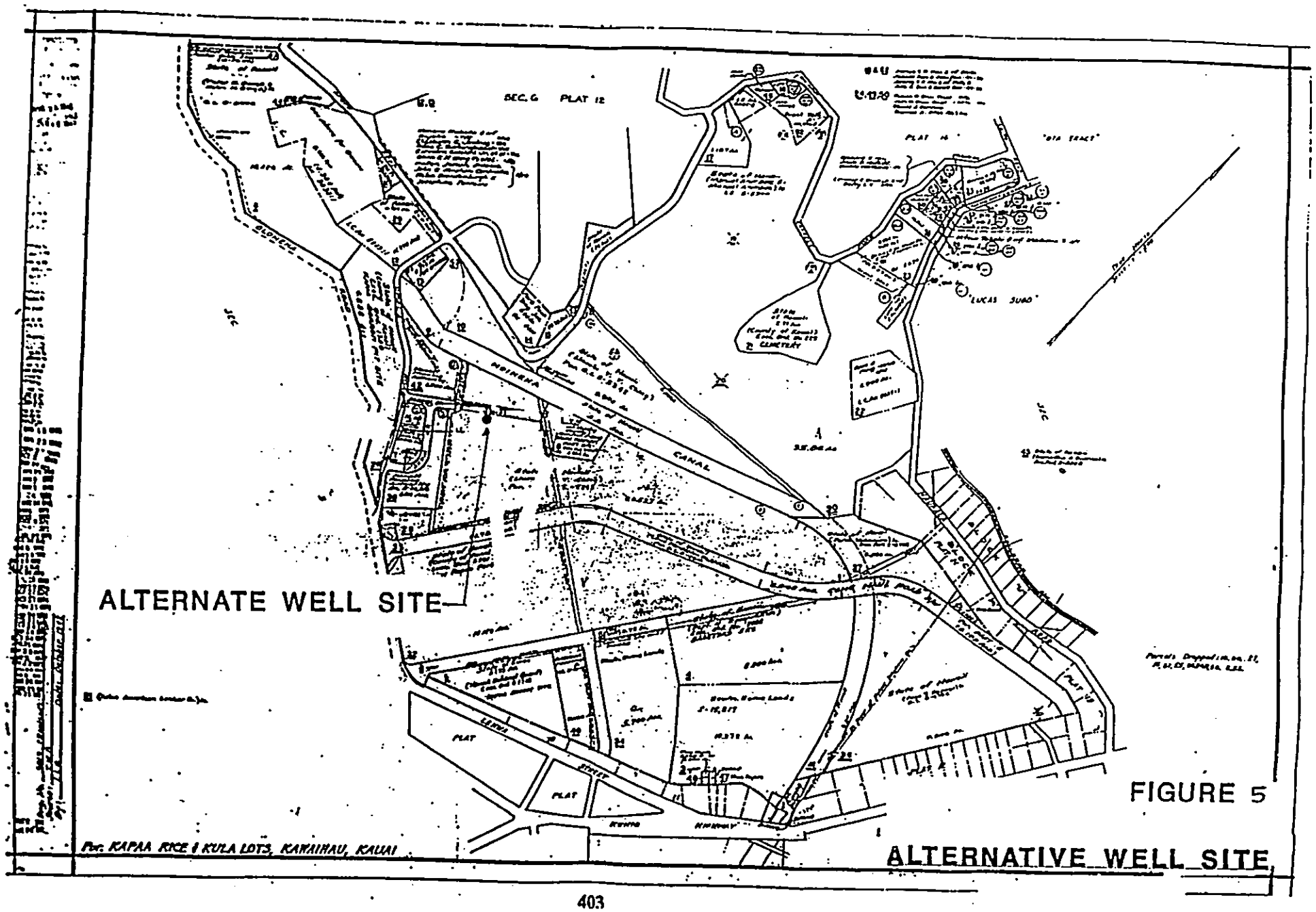


FIGURE 5

Photo 1 – From entrance to abandoned sewage treatment plant looking along unpaved access road toward Drive Gate at Alenae Street.

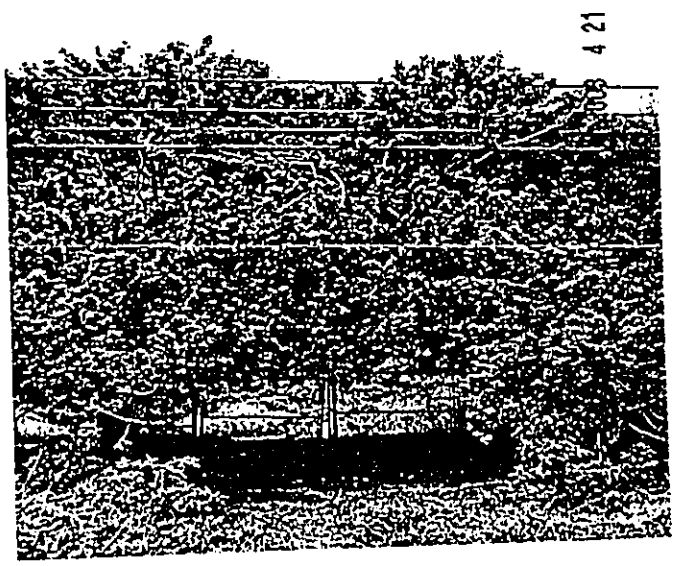


Photo 2 – Entrance to abandoned sewage treatment plant. Please note 14-Foot Drive Gate and overhead electrical lines.

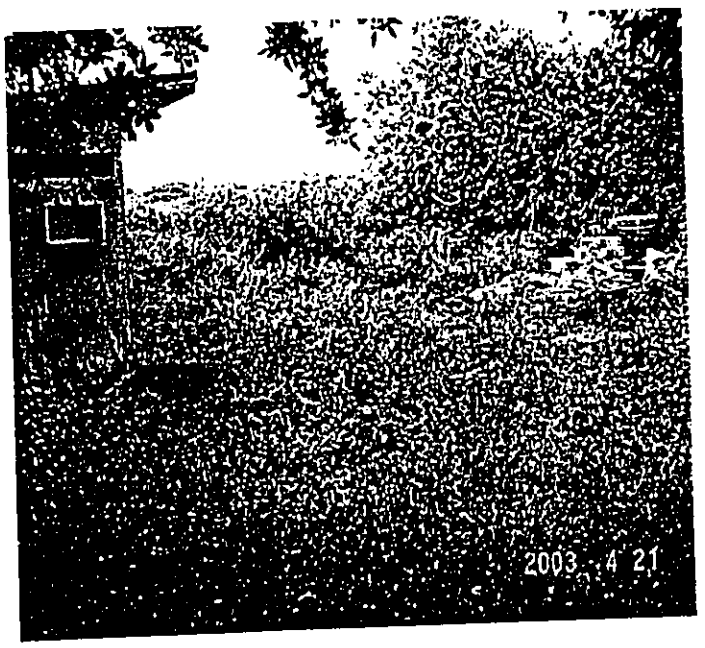


Photo 3 – From entrance looking in direction of fence and Moikeha Canal in background. Please note existing injection well is located near fence, halfway between existing chlorination shed on left and hedges on right.

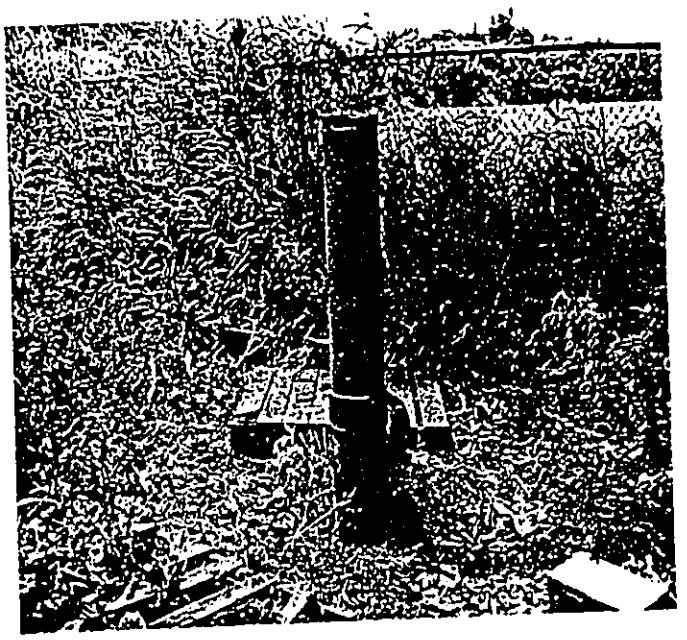


Photo 4 – Existing injection well with fence and Moikeha Canal in background.

APPENDIX A

Correspondence from Agencies and Private Organizations

COMMENTS FROM AND RESPONSES TO AGENCIES AND PRIVATE ORGANIZATIONS

A copy of the Draft Environmental Assessment for this project was transmitted to the following agencies and private organizations for review and comment. The parties that responded are indicated below and a copy of their correspondence with a response from the proposing agency is attached to this section. Comments that were substantive and applicable were incorporated into the Final Environmental Assessment.

Agencies/Private Organizations	Agencies Responded	Agencies Responding w/ No Comment	Agency Letters and Responses Attached in this Section
State Agencies			
DLNR Commission on Water Resource Management	X		
DLNR Land Division	X		X
DLNR State Historic Preservation Division	X		
Office of Environmental Quality Control	X		X
Office of Hawaiian Affairs	X		
DBEDT- HCDCH	X		
County of Kauai			
Planning Department	X		X
Utilities			
Verizon Hawaii	X		X
Kauai County, Deptartment of Water	X		X
Kauai Island Utility Cooperative	X		X
Private Organization			
Kauai Historic Society	X		
Leaseholder of TMK 4-5-15: 28			
Mr. Lincoln Ching	X		
Cultural Practioner			
Ms. Puanani Rogers	X		

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DAN R. DAVIDSON
DEPUTY DIRECTOR FOR LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR FOR
WATER RESOURCE MANAGEMENT

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND RESOURCES
ENFORCEMENT
CONVEYANCES
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
P O BOX 373
HONOLULU, HAWAII 96809

APR -9 2003

Mr. Lincoln Ching
6116 Opaekaa Road
Kapaa, Kauai, Hawaii 96746

Dear Mr. Ching:

**Draft Environmental Assessment (DEA) for Job No. 12-KW-B,
Kapaa Homesteads Well No. 3, TMK: 4-5-15: Portion 28,
Kapaa, Kauai, Hawaii**

Thank you for your comments on the Draft Environmental Assessment for the proposed exploratory well in Kapaa, Kauai.

We recognize your concern that the well drilling operations may uproot grass on your leased pastureland, and acknowledge that the drilling operations will impact grass within the project site. Please understand that impacts to the grass are unavoidable, as the well driller needs to level and clear an area for the drilling operations, and storage of materials and/or equipment. Also, that impacts are temporary and grass should recover quickly after the drilling operations have been completed.

To minimize impacts to your pastureland, we will limit the well driller to an 8,000 sq ft. (approximately 64 by 125 feet) project site and locate the site adjacent to the existing utility/access easement. In addition, we will ask the driller to minimize grass clearing and to utilize the adjacent easement area to store material and equipment.

Upon completion of the project, the contractor will remove all debris and materials from the project site, except for the 16-inch diameter steel casing. The steel casing will extend approximately three (3) feet above the ground and be capped.

The Final EA will incorporate your comment regarding flora within the project site.

Should you have any questions or comments, please contact Mr. Andrew Monden, Chief of the Planning Branch, in Honolulu at (808) 587-0229.

Sincerely,

Andrew M. Monden

For ERIC T. HIRANO
Chief Engineer

February 13, 2003

TO: Files

FROM: Dennis Imada

SUBJECT: Telephone Conversation with Mr. Lincoln Ching, Lessee of Parcel (TMK: 4-5-15:28) where Project Site Located for Job No. 12-KW-B, Kapaa Homesteads Well No. 3, Kapaa, Kauai, Hawaii

Mr. Ching indicated to me that he had reviewed the Draft Environmental Assessment for the subject project, and had the following comments:

1. Exploratory well drilling operations may uproot grass from project site.
2. Only flora found within project area is lantana and paragrass ("California grass").

DI:

LINDA LINGLE
GOVERNOR

PHONE: (808) 274-3492
FAX: (808) 274-3438

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

ERNEST LAU
DEPUTY DIRECTOR

DEAN A. NAKANO
ACTING DEPUTY DIRECTOR FOR
THE COMMISSION ON WATER
RESOURCE MANAGEMENT

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE
MANAGEMENT
CONSERVATION AND RESOURCES
ENFORCEMENT
CONVEYANCES
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE
COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
3060 Eiwa Street, Room 306
Lihue, Hawaii 96766

February 10, 2003

File: GL 5245

Lincoln Ching
6116 Opaekaa Road
Kapaa, Hawaii 96746

Subject: Draft Environmental Assessment for Kapaa Homestead Well No. 3

Dear Lincoln:

Enclosed is a Draft Environmental Assessment for the proposed Kapaa Homestead Well No. 3 as it affects General Lease No. S-5245.

Please direct any comments and recommendations within 2 weeks from the date of this letter to Dennis Imada, Engineering Division, 587-0257.

Sincerely,

MICHAEL L. LAURETA
Kauai Land Agent

Encl
C: Lynn McCrory, Kauai Land Board Member
Central Files
Dennis Imada, Engineering Division
Nick Vaccaro, Central Office

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

JAN 7 2003

TO: Ms. Dierdre S. Mamiya, Administrator
Land Division

FROM: Eric T. Hirano, Chief Engineer

SUBJECT: **Job No. 12-KW-B, Kapaa Homesteads Well No. 3, Kapaa, Kauai,**

We request your review and comment on the attached Draft Environmental Assessment (DEA) for the subject project.

Please note that the DEA proposes the installation and pump testing of the subject well on a parcel located at TMK: 4-5-15: Portion 28. The proposed site is on State land leased to Mr. Lincoln Y.T. Ching for 15 years, and scheduled to expire on June 18, 2007.

On December 23, 2002, the DEA was submitted to the Office of Environmental Quality Control (OEQC) under Chapter 343, HRS requirements. By this submittal, a notice of the DEA's availability will be published in the OEQC's January 8, 2003 Environmental Notice. Publication of the notice will initiate a 30-day public review period. Should you have any concerns or input on this project, we would appreciate receiving your written comments by February 7, 2003.

Should you have any questions, please call Mr. Andrew Monden of the Planning Branch at extension 70229.

DI:ek
Attach.

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
P.O BOX 373
HONOLULU, HAWAII 96809

APR -9 2003

TO: Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control

FROM: For Eric T. Hirano, Chief Engineer

SUBJECT: **Draft Environmental Assessment (DEA) for Job No. 12-KW-B, Kapaa Homesteads Well No. 3, TMK: 4-5-15: Portion 28, Kapaa, Kauai, Hawaii**

Thank you for your letter of February 6, 2003, where you commented on the Draft Environmental Assessment for the proposed exploratory well in Kapaa, Kauai.

In response to your first comment and recommendation, we have contacted the Office of Hawaiian Affairs, the Kauai Historic Society and Hui O Kipa Hula Halau (cultural practitioner in Kapaa, Kauai) for any cultural impacts that may arise with contemporary use of the natural, historic, archaeological and cultural resources on the project site. The information provided to us indicated no cultural impacts arising from contemporary use of these resources. As a result, we will not prepare a cultural impact assessment to comply with your Guidelines For Assessing Cultural Impacts. Instead, a cultural impact discussion stating no cultural impacts arising from the proposed exploratory well drilling will be prepared and included in the Final EA.

We have reviewed the Guidelines For Water Well Development Projects, and have addressed guideline requirements applicable to the exploratory well drilling phase in the Final EA.

Should you have any questions or comments, please contact Mr. Andrew Monden, Chief of the Planning Branch at extension 7-0230.

4423

LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

11:15 PM

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
Telephone (808) 586-4185
Facsimile (808) 586-4186
Email: oeqc@health.state.hi.us

February 6, 2003

Mr. Eric Hirano, Engineering Division
State of Hawai'i - Department of Land and Natural Resources
1151 Punchbowl Street, Room 221
Honolulu, Hawai'i 96813

Honorable Peter Young, Chairperson
State of Hawai'i - Department of Land and Natural Resources
1151 Punchbowl Street, Room 130
Honolulu, Hawai'i 96813

Dear Messrs. Hirano and Young:

Having reviewed the November 2002, draft environmental assessment (DEA) for the proposed Kapa'a Homesteads Well No. 3, Tax Map Key 4-5-15, parcel portion 28, in the district of Kawaihau, the Office of Environmental Quality Control offers the following comments for your consideration and response.

1. **CULTURAL IMPACTS MUST BE ASSESSED IN AN ENVIRONMENTAL ASSESSMENT UNDER STATE LAW**: Page 9 provides a summary of archaeological, historic and cultural resources. Act 50, Session Laws of Hawai'i, Regular Session of 2000, amended State EIS law to require that environmental assessments disclose cultural impacts of a proposed action. Please consult with the Office of Hawaiian Affairs, the Kaua'i Historic Society and Hawaiian civic clubs for any cultural impacts that may arise with contemporary use of natural, historic, archaeological and cultural resources on the project site and within the projects's region. Some things to to consider in assessing such impacts, include, but are not limited to: possible use of the property as a pathway to gathering sites; presence of plants on site having ethnobotanical associations, et cetera. Please review the cultural impact assessment guidance that is available on our website at http://www.state.hi.us/health/oeqc/guidance/cultural.htm, in your preparation of this assessment.
2. **GUIDELINES FOR WATER WELL DEVELOPMENT PROJECTS**: Please review these guidelines, available at our website at http://www.state.hi.us/health/oeqc/guidance/wells.html, and answer pertinent questions.
3. **INDIGENOUS AND POLYNESIAN INTRODUCED PLANTS FOR USE IN PUBLIC LANDSCAPING**: We note that the Air Force Station is essentially devoid of any native vegetation and uses turf grass, a non-native species. We ask that you consider the use of native, indigenous and polynesian introduced plants in your landscaping.

If you have any questions concerning this letter, please call Leslie Segundo, Environmental Health Specialist, at (808) 586-4185; alternatively, you may send electronic mail to him at lsegund@mail.health.state.hi.us. Thank you for the opportunity to comment.

Sincerely,

GENEVIEVE SALMONSON
Director

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Engineering Division

April 17, 2003

TO: Files

FROM: Dennis Imada

SUBJECT: **Job No. 12-KW-B, Kapaa Homesteads Well No. 3**

A meeting was held on April 17, 2003 at the Housing and Community Development Corporation of Hawaii (HCDCH) Conference Room. The meeting was attended by Messrs. Robert Hall and Edmund Morimoto from the HCDCH, and Messrs. Andrew Monden, Eric Yuasa, and Dennis Imada from the Engineering Division (ED).

The meeting was held to discuss the following:
1. Use of the abandoned Kapaa Sewage Treatment Plant site in Kapaa, Kauai to drill the subject exploratory well,
2. Use and abandonment of the existing injection well (State Well No. 2-0519-01).

HCDCH agreed to ED's use of their treatment plant site to drill subject exploratory well, on condition that ED provide them with potable water to meet the future water demands for their projects in the area. ED responded that water would be available for State projects on a first come first served basis.

HCDCH also requested that a Right-of-Entry Agreement be executed.

ED requested HCDCH to provide them with water demand figures for their future projects in the Kapaa area.

ED explained that the subject project involves the drilling and testing of an exploratory well. If the test results are favorable or acceptable, the well will then be developed and turned over to the Kauai County. This would be done with the understanding that part of the water from the well would be used to meet the water demands for State projects requiring water in the Kapaa area. The water demand figures which ED requested from HCDCH for their projects is required to determine the water demand from all State agencies for their projects located in the Kapaa area.

EB also requested from HCDCH a copy of the Right-of-Entry Agreement that they normally use.

HCDCH agreed to provide ED with the following:
1. Water demand figures for their future projects in the Kapaa area,
2. Copy of Right-of-Entry Agreement normally used by them.

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
P.O BOX 373
HONOLULU, HAWAII 96809

APR - 9 2003

Ms. Sheilah N. Miyake
Deputy Planning Director
County of Kauai, Planning Department
4444 Rice Street, Suite A473
Lihue, Kauai, Hawaii 96766-1326

Dear Ms. Miyake:

**Draft Environmental Assessment (DEA) for Job No. 12-KW-B,
Kapaa Homesteads Well No. 3, TMK: 4-5-15: Portion 28,
Kapaa, Kauai, Hawaii**

Thank you for your letter of April 1, 2003, where you commented on the Draft Environmental Assessment for the proposed exploratory well in Kapaa, Kauai.

We acknowledge that the subject well site is designated by your County Land Use Ordinance as Open Zone, and that a Use Permit and a Class IV Zoning Permit are required when the subject well is developed.

Please understand that our well projects are implemented in two (2) phases. The first phase involves the drilling, casing and testing of a well. If the quality and quantity of water are suitable, then we will initiate the well development as the second phase. If the well is not suitable for development then it will be abandoned or converted into a monitor well. A separate environmental assessment or environmental impact statement will be prepared for the second phase. Because the subject project involves the first phase or the exploratory drilling phase, a Use Permit and a Class IV Zoning Permit will not be filed.

Should you have any questions or comments, please contact Mr. Andrew Monden, Chief of the Planning Branch, in Honolulu at (808) 587-0230.

Sincerely,

Andrew M. Monden

For ERIC T. HIRANO
Chief Engineer

...N J. BAPTISTE
Mayor

IAN K. COSTA
Director of Planning

SHEILAH N. MIYAKE
Deputy Director of Plann

COUNTY OF KAUA'I
PLANNING DEPARTMENT
Kapule Building
4444 Rice Street Suite A473
Lihu'e, Hawai'i, 96766-1326
TELEPHONE: 808.241.6677
FAX: 808.241.6699

April 1, 2003

Eric T. Hirano
Department of Land and Natural Resources
Engineering Division
P.O. Box 373
Honolulu, Hawaii 96809

SUBJECT: Draft Environmental Assessment for Job No. 12-KW-B, Well No. 3 at Kapaa, Kauai, Hawaii, TMK: 4-5-15: 28 por.

The subject property is in the Urban State Land Use District and zoned Open District (O). The project site is also not within the Special Management Area (SMA) of the County of Kauai, and is therefore not subject to the County's SMA Regulations.

We have no comments to offer except to notify you of the permitting requirements to develop the well site. Because the project site is within the Open zone, a Use Permit along with a Class IV Zoning Permit will be required. Both permits will be handled concurrently, and will require a Public Hearing before the Planning Commission.

We have enclosed the permit form along with instructions for your information.

Please feel free to contact Keith Nitta of my staff at 241-6677 if you have any questions.

SHEILAH N. MIYAKE
Deputy Planning Director

CORRECTION

THE PRECEDING DOCUMENT(S) HAS
BEEN REPHOTOGRAPHED TO ASSURE
LEGIBILITY
SEE FRAME(S)
IMMEDIATELY FOLLOWING

N J. BAPTISTE
Mayor

IAN K. COSTA
Director of Planning

SHEILAH N. MIYAKE
Deputy Director of Plann

COUNTY OF KAUA'I
PLANNING DEPARTMENT
Kapule Building
4444 Rice Street Suite A473
Lihu'e, Hawai'i, 96766-1326
TELEPHONE: 808.241.6677
FAX: 808.241.6699

April 1, 2003

Eric T. Hirano
Department of Land and Natural Resources
Engineering Division
P.O. Box 373
Honolulu, Hawaii 96809

SUBJECT: Draft Environmental Assessment for Job No. 12-KW-B, Well No. 3 at Kapaa, Kauai, Hawaii, TMK: 4-5-15: 28 por.

The subject property is in the Urban State Land Use District and zoned Open District (O). The project site is also not within the Special Management Area (SMA) of the County of Kauai, and is therefore not subject to the County's SMA Regulations.

We have no comments to offer except to notify you of the permitting requirements to develop the well site. Because the project site is within the Open zone, a Use Permit along with a Class IV Zoning Permit will be required. Both permits will be handled concurrently, and will require a Public Hearing before the Planning Commission.

We have enclosed the permit form along with instructions for your information.

Please feel free to contact Keith Nitta of my staff at 241-6677 if you have any questions.

SHEILAH N. MIYAKE
Deputy Planning Director

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
P.O. BOX 373
HONOLULU, HAWAII 96809

APR - 9 2003

Mr. Gregg Fujikawa, Head
Water Resource and Planning Division
County of Kauai, Department of Water
4398 Pua Loke Street
Lihue, Kauai, Hawaii 96766

Dear Mr. Fujikawa:

**Draft Environmental Assessment (DEA) for Job No. 12-KW-B,
Kapaa Homesteads Well No. 3, TMK: 4-5-15: Portion 28,
Kapaa, Kauai, Hawaii**

Thank you for your letter of February 11, 2003, where you commented on the Draft Environmental Assessment for the proposed exploratory well in Kapaa, Kauai.

We acknowledge that additional source capacity (production well) is much needed for the Kapaa service zone due to increasing water demands experienced in this area.

Also, should the subject well site not have the same geologic formations as the existing injection well site, the subject well will be relocated closer to the existing injection well.

We also thank you for your December 5, 2002 letter, commenting to our November 21, 2002 pre-consultation letter. Our response is as follows:

1. First comment and recommendation:
   The subject well site was located as close as possible to the existing injection well and outside the flood zone that the existing injection well site is located.

2. Second and fourth comment and recommendation:
   Relates to textual changes which will be made as suggested.

3. Third comment and recommendation:
   We have contacted the agency (Housing and Community Development Corporation of Hawaii) that drilled the existing injection well, and asked them if this well was

used prior to connection of the housing area to the County sewer system. The agency informed us that this well was capped and never used, due to the 3 to 4 feet of artesian head in the well. This information will be incorporated in the Final EA.

Should you have any questions or comments, please contact Mr. Andrew Monden, Chief of the Planning Branch, in Honolulu at (808) 587-0230.

Sincerely,

Andrew M. Monden

For ERIC T. HIRANO
Chief Engineer

Department of Water
County of Kaua'i

Post-it® Fax Note 7671	Date 12/5/02	# of pages ▶ 1
To Eric Hirano	From Ed Tschupp	
Co./Dept. DLNR-Eng	Co. DOW	
Phone #	Phone # 245-5409	
Fax # 587-0283	Fax #	

December 5, 2002

Mr. Eric Hirano, Chief Engineer
Department of Land and Natural Resources
Engineering Division
P.O. Box 373
Honolulu, Hawaii 96809

Dear Mr. Hirano:

Subject: Draft Environmental Assessment for Project No. 12-KW-B, Kapaa Homesteads Well No. 3, Kapaa, Kauai, Hawaii.

Thanks for sending a copy of the subject Draft Environmental Assessment (DEA) for our review and comment. The County of Kauai, Department of Water (DOW) has reviewed the DEA, and we offer the following comments:

1) As identified in your cover letter, the proposed well has been situated approximately halfway between the residential area and the former injection well due to flood zone considerations. Because the hydraulic properties of the aquifer have been evaluated at the former injection well and found to be favorable, it would be desirable if the proposed Kapaa Homesteads Well No. 3 could be situated as closely as possible to the former injection well.

2) Page 4, and elsewhere. References to Citizens Electric Company should be changed to reflect the new owner of the electric utility company, Kauai Island Utility Cooperative (KIUC).

3) Page 6, second paragraph. The final sentence of the paragraph may be incorrect; the injection well probably was used prior to connection of the housing area to the County sewer system. Suggest the final sentence of the paragraph be deleted.

4) Page 13, second paragraph. The DOW is not sure whether or not it will be practical or possible to monitor water levels in the Kapaa Shaft or the Kapaa-Wailua Well. We suggest that "if practical" be added to the sentence.

We appreciate the opportunity to provide comments on the DEA, and look forward to the project moving ahead. If you have any questions, or we can provide any assistance, please feel free to call me at (808) 245-5409.

Sincerely,

Edward Tschupp
Deputy Manager
c: Engineering

4398 Pua Loke St., P.O. Box 1706, Lihue, HI 96766 Phone: 808-245-5400
Engineering and Fiscal Fax: 808-245-5813, Operations Fax: 808-245-5402, Administration Fax: 808-246-8628

Department of Water
County of Kaua'i

Water has no substitute.....Conserve it

'03 FEB 12 AM09:02 ENGINEERING

February 11, 2003

Mr. Eric Hirano, Chief Engineer
DLNR, Engineering Division
PO Box 373
Honolulu, HI 96809

Dear Mr. Hirano:

Subject: Draft Environmental Assessment (DEA) for Job No. 12-KW-B, Kapaa Homesteads Well No. 3, TMK: 4-5-15: Por. 028, Kapaa, Kauai.

This is in regards to your letter which we received on January 10, 2003 on the subject matter. We are in favor of this project and concur that additional source capacity (production well) is much needed for the Kapaa service zone due to increasing water demands we are experiencing in this area.

We appreciate all the assistance that can be provided to develop additional water facilities to accommodate increasing water demands on Kauai.

If you have any questions, please contact Mr. Edward Doi of my staff at (808) 245-5417.

Sincerely,

Gregg Fujikawa
Water Resource and Planning Division Head

ED:sss
FS/sss/docs/wrp/eddoi/23-014-KapaaTown-Hirano

4398 Pua Loke St., P.O. Box 1706, Lihue, HI 96766 Phone: 808-245-5400
Engineering and Fiscal Fax: 808-245-5813, Operations Fax: 808-245-5402, Administration Fax: 808-246-8628

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
P.O BOX 373
HONOLULU, HAWAII 96809

APR - 9 2003

Mr. Jimmy Sone, Engineer
Verizon Hawaii Inc.
P.O. Box 591
Lihue, Kauai, Hawaii 96766

Dear Mr. Sone:

**Draft Environmental Assessment (DEA) for Job No. 12-KW-B,
Kapaa Homesteads Well No. 3, TMK: 4-5-15: Portion 28,
Kapaa, Kauai, Hawaii**

Thank you for your letter of January 27, 2003, where you commented on the Draft Environmental Assessment for the proposed exploratory well in Kapaa, Kauai.

Relocation of your existing overhead telephone facilities will not be required during the exploratory well drilling, pump test and water sampling phases of the subject project. Because cellular telephones are expected to provide communications for the construction crews and our personnel, we will not request that you establish telecommunication service at the project site. However, we will contact your office in the event your telephone facilities require relocation or a need for telecommunication service at the project site arises.

Should you have any questions or comments, please contact Mr. Andrew Monden, Chief of the Planning Branch in Honolulu at (808) 587-0230.

Sincerely,

Andrew M. Monden

For ERIC T. HIRANO
Chief Engineer

verizon

Verizon Hawaii Inc.
P.O. Box 591
Lihue, HI. 96766

Phone 808 241-5050

January 27, 2002

Mr. Eric T. Hirano
Chief Engineer
State of Hawaii
DLN&R
Engineering Division
P.O. Box 373
Honolulu, HI 96809

Subject: **Draft Environmental Assessment (DEA) for Job No. 12-KW-B, Kapaa Homesteads Well No. 3, TMK: 4-5-15:Portion 28, Kapaa, Kauai, Hawaii**

Dear Mr. Hirano

Thank you for the opportunity to comment on the subject DEA. We have reviewed the DEA and ask that our office be contacted should our telephone facilities require relocation or if there will be a need for telecommunication service at the site.

Should you have any questions, call me at 808-241-5052.

Sincerely,

Jimmy Sone
Engineer

c: File

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
P.O BOX 373
HONOLULU, HAWAII 96809

APR - 9 2003

Mr. Ferdinand Pascual, Distribution Engineer
Kauai Island Utility Cooperative
4463 Pahe'e Street
Lihue, Kauai, Hawaii 96766

Dear Mr. Pascual:

**Draft Environmental Assessment (DEA) for Job No. 12-KW-B,
Kapaa Homesteads Well No. 3, TMK: 4-5-15: Portion 28,
Kapaa, Kauai, Hawaii**

Thank you for your letter of March 27, 2003, where you commented on the Draft Environmental Assessment for the proposed exploratory well in Kapaa, Kauai.

We acknowledge that the subject project would not immediately impact your facilities, because you do not have any facilities at or near the subject project site.

We also acknowledge that should temporary power be required for the drilling rig, the drilling contractor would be responsible for all cost associated with providing temporary power. The cost would include the all costs associated with the extension and removal of the existing overhead lines from the end of Alenae Road to the subject project site.

Should you have any questions or comments, please contact Mr. Andrew Monden, Chief of the Planning Branch, in Honolulu at (808) 587-0230.

Sincerely,

Andrew M. Monden

For ERIC T. HIRANO
Chief Engineer

Kaua`i Island
Utility Cooperative
4463 Pahe'e Street, Lihue, HI 96766
Telephone: (808) 246-4300
www.kiuc.com

March 27, 2002

State of Hawaii
Department of Land and Natural Resources
Engineering Division
P.O. Box 373
Honolulu, Hawaii 96809

Attention: Mr. Dennis Imada

Subject: **Draft Environmental Assessment (DEA) for Job No. 12-KW-B Kapaa Homesteads Well No. 3 TMK: 4-5-15: Portion 28, Kapaa, Kauai, Hawaii**

Dear Mr. Imada:

This letter is in response to your request for comments for the above subject project. Kauai Island Utility Cooperative does not have any facilities at or near the site of the exploratory well. Therefore, there would not be any immediate impact to our facilities. Further, we do not anticipate any problems with capacity and the ability to service the well site.

As mentioned in the draft assessment, the drilling contractor would be able to obtain temporary power for drilling purposes via the overhead lines located along Malu Road and Alenae Road. The existing electrical utility easement would serve as the route for the temporary service. Should there be a need for temporary power, the drilling contractor would be responsible for all cost associated with providing temporary power, including the cost to extend and remove the line.

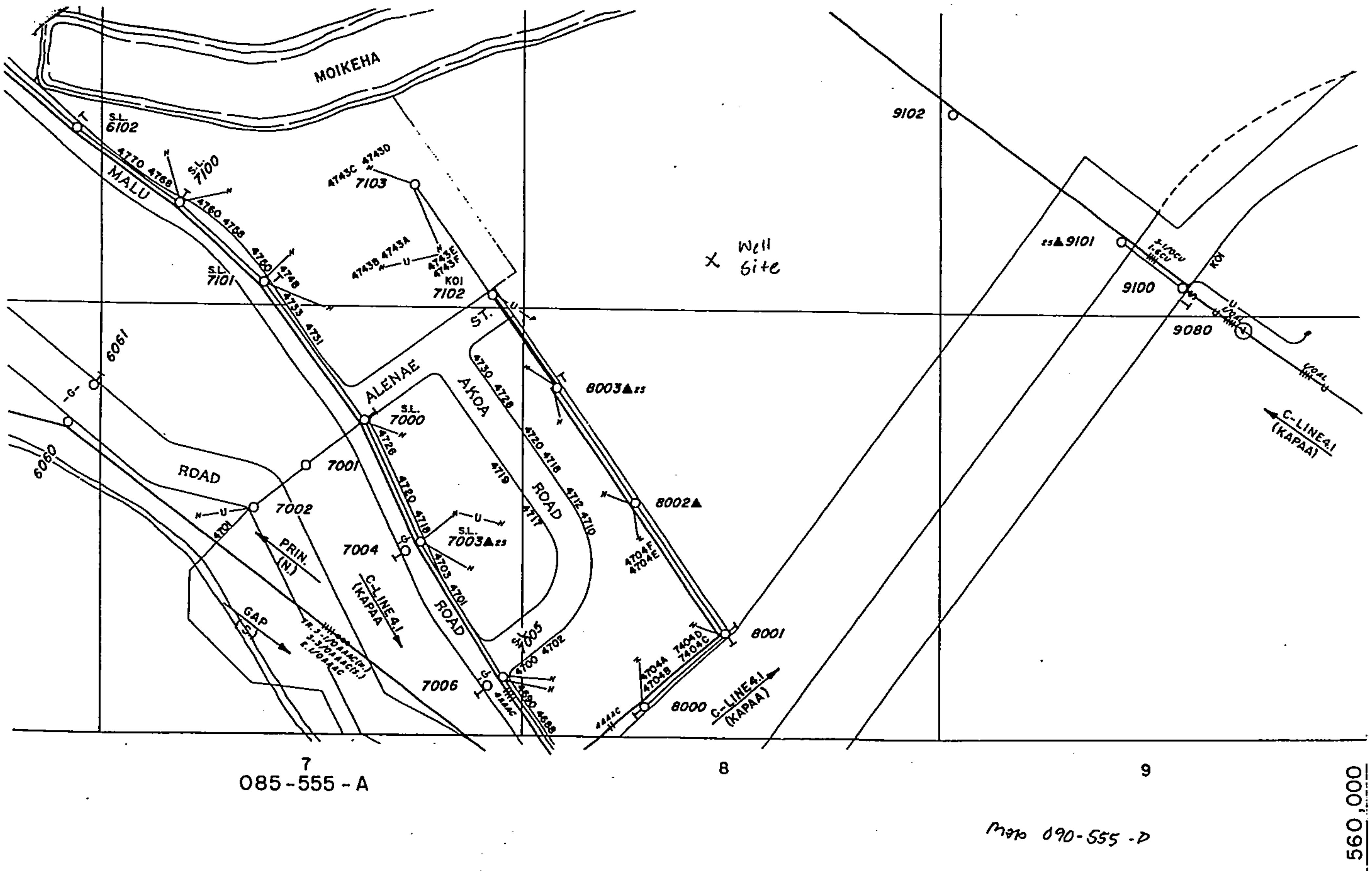
If the well site is favorable, the line can remain in place and be utilized for the permanent service for the well pumps. Enclosed is our facilities map that shows the existing overhead facilities near the project site.

Please call me at (808) 246-2373 should you have any questions.

Very truly yours,

FERDINAND "FRED" PASCUAL
Distribution Engineer

Enclosure: KIUC facilities map



KAPAA

DATE	BY	AP'RD	REVISIONS	DATE	BY	AP'RD	REVISIONS

CITIZENS UTILITIES COMPANY

DETAI

APPENDIX B

Pumping and Water Quality Tests Data

DOWALD Form 71(1)

State of Hawaii
DEPARTMENT OF LAND & NATURAL RESOURCES
DIVISION OF WATER AND LAND DEVELOPMENT

STAT

DRILLER'S REPORT

DESCRIPTION

Date of report Nov. 6, 1986 Person filing report Loran H. Runnells

A. OWNER Hawaii Housing WELL NAME Kapaa Injection Well ISLAND Kauai
B. GENERAL LOCATION Kapaa Sewer Treatment Plant
C. DRILLING COMPANY Roscoe Moss Company
D. TYPE OF RIG 28L DRILLING COMPLETED 10 (month) 86 (year) DRILLER Jerry Bourn
E. ELEVATION, msl: Top of drilling platform 8.25 ft. Bench mark and method used to determine
Height of drilling platform above ground surface 0 ft. elevation:
F. HOLE SIZE: 12 inch dia. to 150 ft. below drilling platform.
____ inch dia. to ____ ft. below drilling platform.
____ inch dia. to ____ ft. below drilling platform.
G. CASING INSTALLED: 8 in. I.D. x .250 in. wall solid section to 40 ft. below drilling platform.
8 in. I.D. x .250 in. wall perforated section to 80 ft. below drilling platform.
Type of perforation 8"x250 solid to 150 below ground level
H. ANNULUS: Grouted 0 ft. to 38 ft. below drilling platform.
Gravel packed 38 ft. to 150 ft. below drilling platform.
I. PERMANENT PUMP INSTALLATION:
Pump type, make, serial no. ____ Capacity ____ g.p.m.
Motor type, H.P., voltage, r.p.m. ____
Depth of pump intake setting ____ ft. below ____ which elevation is ____ ft.
Depth of bottom of airline ____ ft. below ____ which elevation is ____ ft.

HYDROLOGY

J. INITIAL WATER LEVEL ____ ft. below drilling platform. Date of measurement ____
K. INITIAL CHLORIDE: ____ ppm, total depth of well ____ ft. below drilling platform ____
L. PUMPING TESTS: Reference point (R.P.) used: ____ which elevation is ____ ft.

Date ____ (Sampling Date)
Start water level ____ ft. below R. P.
End water level ____ ft. below R. P.
Depth of well ____ ft. below R. P.

Elapsed Time (hours)		Rate (gpm)	Draw-down (ft.)	Cl- (ppm)	Temp. °F
	to				
	to				
	to				
	to				
	to				
	to				

Date ____
Start water level ____ ft. below R. P.
End water level ____ ft. below R. P.
Depth of well ____ ft. below R. P.

Elapsed Time (hours)		Rate (gpm)	Draw-down (ft.)	Cl- (ppm)	Temp. °F
	to				
	to				
	to				
	to				
	to				
	to				

SUBSURFACE FORMATION

M. DRILLER'S LOG:

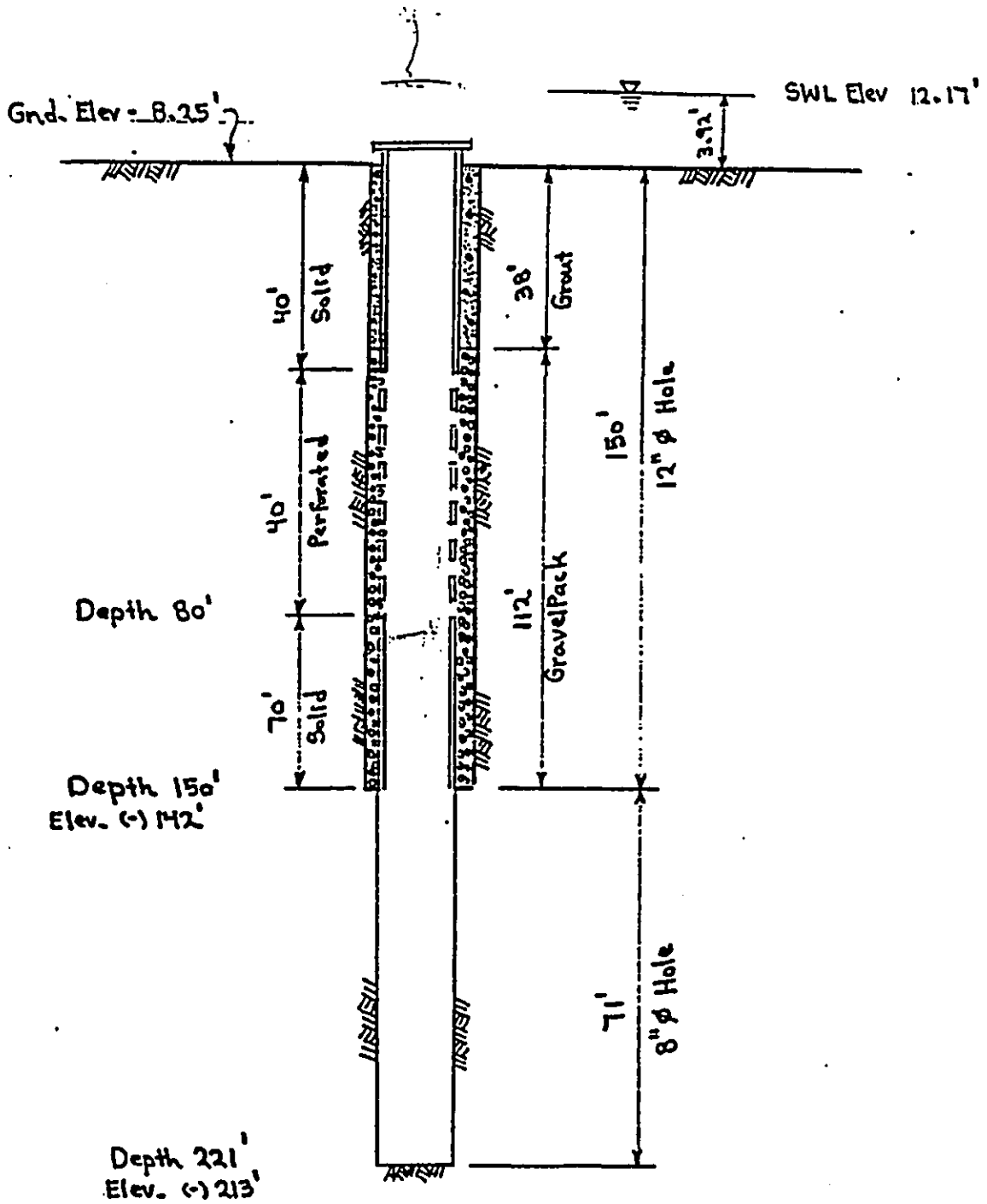
Depth, ft.			Rock Description & Remarks	Water Level ft.
0	to	15	Brown mud	
15	to	25	Coral hard	
25	to	35	Brown mud & sand	
35	to	58	Hard coral	
58	to	64	Hard blue rock	
64	to	82	Hard rock & coral	
82	to	100	Mud	
110	to	110	Brown mud & silt	
110	to	140	Black mud & rock	
140	to	153	Puka rock	
153	to	174	Sandstone material	

Depth, ft.			Rock Description & Remarks	Water Level ft.
174	to	188	Decomposed Pahoehoe	
188	to	194	Sandstone material	
194	to	205	Brown Pahoehoe	
205	to	221	Decomposed Pahoehoe	
	to			
	to			
	to			
	to			
	to			
	to			

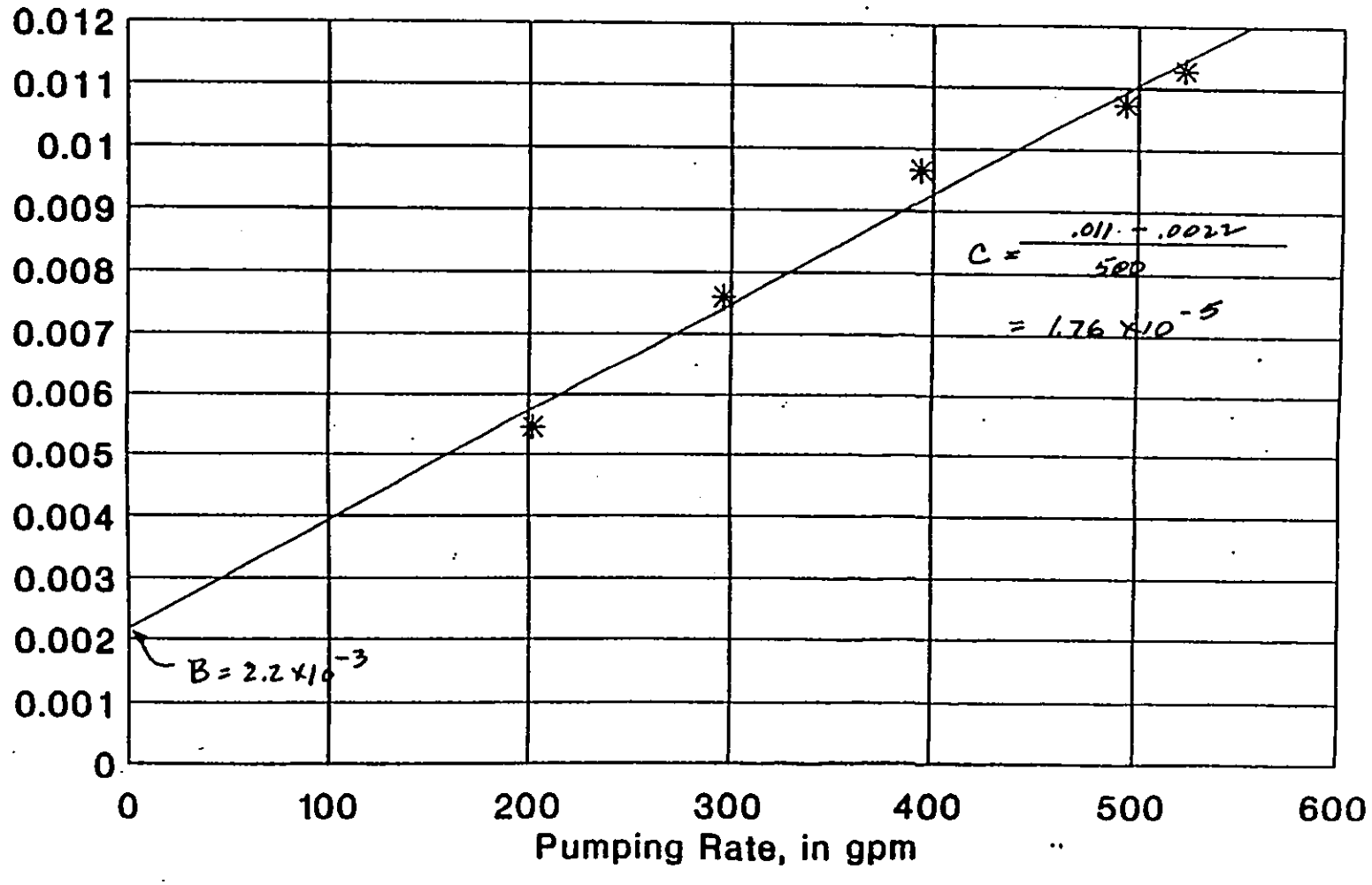
N. REMARKS: Well flowing. +12.17 ft.

KAPAA ARTESIAN WELL (0519-01), KAUAI

As-Built Section
(not to scale)



s/Q Curve
Kapaa Artesian Well (0519-01), Kauai
Date of Test: June 4, 2002



Water Resource Associates
143\sqt

Kapaa Artesian Well - Step Test

TimeStamp	Elaps	Drawdown	DTW	Outter Casing	Difference	Flow (Ultra-Sonic) (gpm)	Cl
		100.485	1.88	2.03	-0.15		
6/4/2002 9:56						Static	
6/4/2002 9:57						Start Pumping?	
6/4/2002 9:58						50.501	
6/4/2002 9:59						93.159	
6/4/2002 10:00		0	1.88	2.03	-0.15	93.031	
6/4/2002 10:01		0	1.88			92.513	
6/4/2002 10:02		0	1.88			91.517	
6/4/2002 10:03		0	1.88			349.577	
6/4/2002 10:04		0	1.88			535.232	
6/4/2002 10:05		0	1.88			533.897	
6/4/2002 10:06		0	1.88			535.097	
6/4/2002 10:07		0	1.88			535.289	
6/4/2002 10:08		0	1.88			533.837	
6/4/2002 10:09		0	1.88			537.088	
6/4/2002 10:10	0	0	1.88			533.488	
6/4/2002 10:11	1	-5.414062	7.294062			535.022	
6/4/2002 10:12	2	-0.794063	2.674063			430.128	
6/4/2002 10:13	3	0	1.88			267.558	
6/4/2002 10:14	4	-1.155	3.035			62.671	
6/4/2002 10:15	5	-1.588125	3.468125			198.165	
6/4/2002 10:16	6	-1.010625	2.890625			198.171	
6/4/2002 10:17	7	-1.371563	3.251563			198.432	
6/4/2002 10:18	8	-1.588125	3.468125	3.04	0.428125	198.522	
6/4/2002 10:19	9	-1.299375	3.179375			198.246	
6/4/2002 10:20	10	-1.010625	2.890625			197.975	
6/4/2002 10:21	11	-1.227188	3.107188			198.905	
6/4/2002 10:22	12	-1.515937	3.395937			202.663	
6/4/2002 10:23	13	-1.7325	3.6125			203.157	
6/4/2002 10:24	14	-1.660312	3.540312			203.083	
6/4/2002 10:25	15	-1.155	3.035			203.997	
6/4/2002 10:26	16	-1.082813	2.962813			203.215	
6/4/2002 10:27	17	-1.44375	3.32375			202.896	
6/4/2002 10:28	18	-1.44375	3.32375			202.789	
6/4/2002 10:29	19	-1.44375	3.32375			202.312	
6/4/2002 10:30	20	-0.649688	2.529688			202.478	
6/4/2002 10:31	21	-1.804687	3.684687			202.636	
6/4/2002 10:32	22	-1.588125	3.468125			202.465	
6/4/2002 10:33	23	-1.227188	3.107188			202.485	
6/4/2002 10:34	24	-1.227188	3.107188			202.331	
6/4/2002 10:35	25	-0.86625	2.74625			202.226	
6/4/2002 10:36	26	-1.371563	3.251563			203.089	
6/4/2002 10:37	27	-1.299375	3.179375			202.766	
6/4/2002 10:38	28	-1.876875	3.756875			203.059	
6/4/2002 10:39	29	-1.010625	2.890625			202.999	
6/4/2002 10:40	30	-1.7325	3.6125			203.018	

Kapaa Artesian Well - Step Test

TimeStamp	Elaps	Drawdown	DTW	Outter Casing	Difference	Flow (Ultra-Sonic) (gpm)	Cl
		100.485	1.88	2.03	-0.15	Static	
6/4/2002 10:41	31	-1.227188	3.107188			203.116	
6/4/2002 10:42	32	-1.515937	3.395937			203.025	
6/4/2002 10:43	33	-1.371563	3.251563			202.558	
6/4/2002 10:44	34	-1.515937	3.395937			202.976	
6/4/2002 10:45	35	-1.804687	3.684687			202.851	
6/4/2002 10:46	36	-1.082813	2.962813			203.015	
6/4/2002 10:47	37	-0.938438	2.818438			202.766	
6/4/2002 10:48	38	-1.660312	3.540312			203.838	
6/4/2002 10:49	39	-1.371563	3.251563			203.002	
6/4/2002 10:50	40	-1.010625	2.890625			201.663	
6/4/2002 10:51	41	-1.660312	3.540312			202.333	
6/4/2002 10:52	42	-1.876875	3.756875			202.592	
6/4/2002 10:53	43	-2.02125	3.90125			202.767	
6/4/2002 10:54	44	-1.44375	3.32375			202.653	
6/4/2002 10:55	45	-1.299375	3.179375			202.329	
6/4/2002 10:56	46	-1.082813	2.962813			202.888	
6/4/2002 10:57	47	-1.44375	3.32375			202.406	
6/4/2002 10:58	48	-0.86625	2.74625			202.712	
6/4/2002 10:59	49	-1.7325	3.6125			202.662	
6/4/2002 11:00	50	-1.876875	3.756875			202.217	
6/4/2002 11:01	51	-1.299375	3.179375			202.451	
6/4/2002 11:02	52	-0.794063	2.674063			202.778	
6/4/2002 11:03	53	-1.876875	3.756875			202.709	
6/4/2002 11:04	54	-1.371563	3.251563			202.93	
6/4/2002 11:05	55	-1.7325	3.6125			202.813	
6/4/2002 11:06	56	-1.515937	3.395937			202.223	
6/4/2002 11:07	57	-1.371563	3.251563			202.721	
6/4/2002 11:08	58	-2.02125	3.90125			202.205	
6/4/2002 11:09	59	-1.082813	2.962813	32		206.948	
6/4/2002 11:10	60	-2.165625	4.045625			291.398	
6/4/2002 11:11	61	-2.31	4.19			295.893	
6/4/2002 11:12	62	-2.093438	3.973438			295.922	
6/4/2002 11:13	63	-2.743125	4.623125			295.782	
6/4/2002 11:14	64	-2.454375	4.334375			296.262	
6/4/2002 11:15	65	-2.526563	4.406563			296.788	
6/4/2002 11:16	66	-2.165625	4.045625			297.128	
6/4/2002 11:17	67	-1.949063	3.829063			297.006	
6/4/2002 11:18	68	-2.8875	4.7675			297.021	
6/4/2002 11:19	69	-2.093438	3.973438			296.32	
6/4/2002 11:20	70	-2.382188	4.262188			296.618	
6/4/2002 11:21	71	-2.237813	4.117813			296.581	
6/4/2002 11:22	72	-2.382188	4.262188			296.682	
6/4/2002 11:23	73	-2.59875	4.47875	3.81	0.66875	295.98	
6/4/2002 11:24	74	-1.804687	3.684687			296.496	
6/4/2002 11:25	75	-2.454375	4.334375			296.151	

Kapaa Artesian Well - Step Test

TimeStamp	Elaps	Drawdown	DTW	Outter Casing	Difference	Flow (Ultra-Sonic) (gpm)		Cl
		100.485	1.88	2.03	-0.15	Static		
6/4/2002 11:26	76	-2.526563	4.406563			296.339		
6/4/2002 11:27	77	-2.02125	3.90125			296.669		
6/4/2002 11:28	78	-2.59875	4.47875			296.294		
6/4/2002 11:29	79	-2.743125	4.623125			296.99		
6/4/2002 11:30	80	-2.02125	3.90125			297.333		
6/4/2002 11:31	81	-2.31	4.19			296.495		
6/4/2002 11:32	82	-2.59875	4.47875			296.246		
6/4/2002 11:33	83	-2.454375	4.334375			296.323		
6/4/2002 11:34	84	-2.670937	4.550937			295.715		
6/4/2002 11:35	85	-1.949063	3.829063			296.471		
6/4/2002 11:36	86	-2.815312	4.695312			296.717		
6/4/2002 11:37	87	-2.526563	4.406563			295.827		
6/4/2002 11:38	88	-2.959687	4.839687			295.845		
6/4/2002 11:39	89	-2.454375	4.334375			296.714		
6/4/2002 11:40	90	-3.031875	4.911875			296.409		
6/4/2002 11:41	91	-2.237813	4.117813			297		
6/4/2002 11:42	92	-2.743125	4.623125			297.067		
6/4/2002 11:43	93	-2.165625	4.045625			296.969		
6/4/2002 11:44	94	-1.949063	3.829063			296.225		
6/4/2002 11:45	95	-2.237813	4.117813			295.66		
6/4/2002 11:46	96	-2.31	4.19			296.136		
6/4/2002 11:47	97	-1.876875	3.756875			296.352		
6/4/2002 11:48	98	-2.670937	4.550937			296.424		
6/4/2002 11:49	99	-2.454375	4.334375			296.786		
6/4/2002 11:50	100	-2.526563	4.406563			296.989		
6/4/2002 11:51	101	-2.59875	4.47875			296.476		
6/4/2002 11:52	102	-2.59875	4.47875			296.601		
6/4/2002 11:53	103	-1.660312	3.540312			297.037		
6/4/2002 11:54	104	-2.59875	4.47875			295.788		
6/4/2002 11:55	105	-2.165625	4.045625			296.871		
6/4/2002 11:56	106	-2.454375	4.334375			296.364		
6/4/2002 11:57	107	-2.526563	4.406563			296.657		
6/4/2002 11:58	108	-2.743125	4.623125			296.096		
6/4/2002 11:59	109	-2.382188	4.262188			295.658		
6/4/2002 12:00	110	-2.165625	4.045625			295.905		
6/4/2002 12:01	111	-2.670937	4.550937			296.663		
6/4/2002 12:02	112	-3.031875	4.911875			296.511		
6/4/2002 12:03	113	-2.382188	4.262188			296.864		
6/4/2002 12:04	114	-2.454375	4.334375			296.724		
6/4/2002 12:05	115	-2.093438	3.973438			297.329		
6/4/2002 12:06	116	-2.743125	4.623125			295.915	Water Sam	84
6/4/2002 12:07	117	-2.093438	3.973438			296.449		
6/4/2002 12:08	118	-2.743125	4.623125	102		296.105		
6/4/2002 12:09	119	-3.104063	4.984063			348.432		
6/4/2002 12:10	120	-3.031875	4.911875			383.346		

Kapaa Artesian Well - Step Test

TimeStamp	Elaps	Drawdown	DTW	Outter Casing	Difference	Flow (Ultra-Sonic) (gpm)		Cl
		100.485	1.88	2.03	-0.15		Static	
6/4/2002 12:11	121	-3.75375	5.63375			394.202		
6/4/2002 12:12	122	-4.0425	5.9225			398.232		
6/4/2002 12:13	123	-3.681563	5.561563			398.723		
6/4/2002 12:14	124	-3.681563	5.561563			398.59		
6/4/2002 12:15	125	-3.681563	5.561563			398.803	Water Sam	86
6/4/2002 12:16	126	-3.681563	5.561563			399.505		
6/4/2002 12:17	127	-3.681563	5.561563			399.032		
6/4/2002 12:18	128	-3.320625	5.200625			398.735		
6/4/2002 12:19	129	-3.75375	5.63375			398.645		
6/4/2002 12:20	130	-4.259063	6.139063			399.229		
6/4/2002 12:21	131	-3.248438	5.128438			399.882		
6/4/2002 12:22	132	-3.537188	5.417188			398.932		
6/4/2002 12:23	133	-3.825937	5.705937			399.166		
6/4/2002 12:24	134	-4.0425	5.9225			399.663		
6/4/2002 12:25	135	-3.537188	5.417188			399.798		
6/4/2002 12:26	136	-3.465	5.345			399.956		
6/4/2002 12:27	137	-3.537188	5.417188			400.132		
6/4/2002 12:28	138	-3.320625	5.200625			399.627		
6/4/2002 12:29	139	-3.898125	5.778125			400.021		
6/4/2002 12:30	140	-3.465	5.345	4.78	0.565	399.366		
6/4/2002 12:31	141	-3.465	5.345			399.921		
6/4/2002 12:32	142	-4.475625	6.355625			400.526		
6/4/2002 12:33	143	-3.537188	5.417188			400.368		
6/4/2002 12:34	144	-3.75375	5.63375			399.678		
6/4/2002 12:35	145	-3.970312	5.850312			400.536		
6/4/2002 12:36	146	-4.33125	6.21125			400.229		
6/4/2002 12:37	147	-3.898125	5.778125			400.322		
6/4/2002 12:38	148	-3.320625	5.200625			399.429		
6/4/2002 12:39	149	-4.0425	5.9225			400.659		
6/4/2002 12:40	150	-3.537188	5.417188			399.867		
6/4/2002 12:41	151	-4.114687	5.994687			400.364		
6/4/2002 12:42	152	-3.609375	5.489375			400.615		
6/4/2002 12:43	153	-3.537188	5.417188			400.726		
6/4/2002 12:44	154	-3.898125	5.778125			400.29		
6/4/2002 12:45	155	-3.898125	5.778125			400.198		
6/4/2002 12:46	156	-3.825937	5.705937			399.91		
6/4/2002 12:47	157	-3.248438	5.128438			400.615		
6/4/2002 12:48	158	-3.609375	5.489375			399.202		
6/4/2002 12:49	159	-3.681563	5.561563			399.365		
6/4/2002 12:50	160	-3.609375	5.489375			400.063		
6/4/2002 12:51	161	-4.0425	5.9225			400.125		
6/4/2002 12:52	162	-3.898125	5.778125			400.401		
6/4/2002 12:53	163	-4.0425	5.9225			400.541		
6/4/2002 12:54	164	-3.465	5.345			400.445		
6/4/2002 12:55	165	-3.609375	5.489375			400.584		

Kapaa Artesian Well - Step Test

TimeStamp	Elaps	Drawdown	DTW	Outter Casing	Difference	Flow (Ultra-Sonic) (gpm)	Cl
		100.485	1.88	2.03	-0.15	Static	
6/4/2002 12:56	166	-3.609375	5.489375			399.589	
6/4/2002 12:57	167	-4.114687	5.994687			400.173	
6/4/2002 12:58	168	-3.537188	5.417188			400.113	
6/4/2002 12:59	169	-4.186875	6.066875			399.931	
6/4/2002 13:00	170	-3.825937	5.705937			399.44	
6/4/2002 13:01	171	-3.970312	5.850312			400.096	
6/4/2002 13:02	172	-4.114687	5.994687			400.364	
6/4/2002 13:03	173	-3.75375	5.63375			400.541	
6/4/2002 13:04	174	-3.248438	5.128438			400.271	
6/4/2002 13:05	175	-3.898125	5.778125			400.2	
6/4/2002 13:06	176	-4.0425	5.9225			400.35	
6/4/2002 13:07	177	-3.609375	5.489375			400.693	
6/4/2002 13:08	178	-3.825937	5.705937			400.32	
6/4/2002 13:09	179	-3.898125	5.778125			449.282	
6/4/2002 13:10	180	-5.414062	7.294062			489.319	
6/4/2002 13:11	181	-5.341875	7.221875			499.539	
6/4/2002 13:12	182	-5.630625	7.510625			499.601	
6/4/2002 13:13	183	-5.48625	7.36625			498.732	
6/4/2002 13:14	184	-5.341875	7.221875			498.731	
6/4/2002 13:15	185	-5.1975	7.0775			499.055	Water Sam
6/4/2002 13:16	186	-5.1975	7.0775			499.393	
6/4/2002 13:17	187	-5.414062	7.294062			499.371	
6/4/2002 13:18	188	-5.125312	7.005312			499.218	
6/4/2002 13:19	189	-5.053125	6.933125			499.593	
6/4/2002 13:20	190	-5.414062	7.294062			500.296	
6/4/2002 13:21	191	-5.125312	7.005312			500.261	
6/4/2002 13:22	192	-5.558438	7.438438			499.275	
6/4/2002 13:23	193	-5.48625	7.36625			499.742	
6/4/2002 13:24	194	-5.702813	7.582813			499.295	
6/4/2002 13:25	195	-5.702813	7.582813			499.713	
6/4/2002 13:26	196	-5.414062	7.294062			499.318	
6/4/2002 13:27	197	-5.341875	7.221875			499.869	
6/4/2002 13:28	198	-5.48625	7.36625			499.738	
6/4/2002 13:29	199	-5.630625	7.510625			500.035	
6/4/2002 13:30	200	-5.341875	7.221875			500.467	
6/4/2002 13:31	201	-4.980938	6.860938			499.839	
6/4/2002 13:32	202	-5.630625	7.510625			499.202	
6/4/2002 13:33	203	-5.48625	7.36625	5.82	1.54625	499.697	
6/4/2002 13:34	204	-5.414062	7.294062			500.148	
6/4/2002 13:35	205	-5.775	7.655			498.695	
6/4/2002 13:36	206	-5.1975	7.0775			500.627	
6/4/2002 13:37	207	-5.269687	7.149687			498.187	
6/4/2002 13:38	208	-5.414062	7.294062			498.707	
6/4/2002 13:39	209	-5.630625	7.510625			500.274	
6/4/2002 13:40	210	-5.125312	7.005312			498.395	

Kapaa Artesian Well - Step Test

TimeStamp	Elaps	Drawdown	DTW	Outter Casing	Difference	Flow (Ultra-Sonic) (gpm)		Cl
		100.485	1.88	2.03	-0.15		Static	
6/4/2002 13:41	211	-5.269687	7.149687			499.585		
6/4/2002 13:42	212	-5.414062	7.294062			498.567		
6/4/2002 13:43	213	-5.053125	6.933125			500.117		
6/4/2002 13:44	214	-5.414062	7.294062			499.027		
6/4/2002 13:45	215	-5.558438	7.438438			498.487		
6/4/2002 13:46	216	-5.414062	7.294062			498.504		
6/4/2002 13:47	217	-5.269687	7.149687			498.565		
6/4/2002 13:48	218	-5.341875	7.221875			499.583		
6/4/2002 13:49	219	-5.053125	6.933125			500.045		
6/4/2002 13:50	220	-5.414062	7.294062			500.505		
6/4/2002 13:51	221	-5.053125	6.933125			500.062		
6/4/2002 13:52	222	-5.48625	7.36625			499.906		
6/4/2002 13:53	223	-5.630625	7.510625			499.413		
6/4/2002 13:54	224	-5.1975	7.0775			499.122		
6/4/2002 13:55	225	-5.630625	7.510625			498.419		
6/4/2002 13:56	226	-5.558438	7.438438	5.82	1.618438	499.164		
6/4/2002 13:57	227	-5.1975	7.0775			498.624		
6/4/2002 13:58	228	-5.558438	7.438438			500.346		
6/4/2002 13:59	229	-5.053125	6.933125			499.547		
6/4/2002 14:00	230	-5.414062	7.294062			498.874		
6/4/2002 14:01	231	-5.558438	7.438438			499.581		
6/4/2002 14:02	232	-5.269687	7.149687			499.287		
6/4/2002 14:03	233	-5.414062	7.294062			499.194		
6/4/2002 14:04	234	-5.1975	7.0775			499.834		
6/4/2002 14:05	235	-5.414062	7.294062			499.366		
6/4/2002 14:06	236	-5.269687	7.149687			498.81		
6/4/2002 14:07	237	-5.125312	7.005312			499.16		
6/4/2002 14:08	238	-5.48625	7.36625			498.982		
6/4/2002 14:09	239	-5.341875	7.221875			499.579		
6/4/2002 14:10	240	-5.269687	7.149687			498.989		
6/4/2002 14:11	241	-5.847188	7.727188			499.113		
6/4/2002 14:12	242	-5.341875	7.221875			499.963		
6/4/2002 14:13	243	-5.341875	7.221875			512.873		
6/4/2002 14:14	244	-5.414062	7.294062			521.657		
6/4/2002 14:15	245	-5.847188	7.727188			523.082		
6/4/2002 14:16	246	-5.919375	7.799375			523.281		
6/4/2002 14:17	247	-5.630625	7.510625	6.1	1.410625	523.589	Water Sam	86
6/4/2002 14:18	248	-5.847188	7.727188			523.703		
6/4/2002 14:19	249	-5.847188	7.727188			523.703		
6/4/2002 14:20	250	-5.991563	7.871563			523.711		
6/4/2002 14:21	251	-5.48625	7.36625			523.664		
6/4/2002 14:22	252	-5.558438	7.438438			523.945		
6/4/2002 14:23	253	-5.630625	7.510625			523.651		
6/4/2002 14:24	254	-5.847188	7.727188	6.12	1.607188	524.719		
6/4/2002 14:25	255	-5.775	7.655			524.407		

Kapaa Artesian Well - Step Test

TimeStamp	Elaps	Drawdown	DTW	Outter Casing	Difference	Flow (Ultra-Sonic) (gpm)	Cl
		100.485	1.88	2.03	-0.15	Static	
6/4/2002 14:26	256	-6.06375	7.94375			523.393	
6/4/2002 14:27	257	-5.919375	7.799375			524.804	
6/4/2002 14:28	258	-5.919375	7.799375			524.377	
6/4/2002 14:29	259	-5.775	7.655			524.208	
6/4/2002 14:30	260	-5.775	7.655			523.547	
6/4/2002 14:31	261	-5.919375	7.799375			524.619	
6/4/2002 14:32	262	-5.558438	7.438438	6.14	1.298438	523.673	
6/4/2002 14:33	263	-5.991563	7.871563			523.94	
6/4/2002 14:34	264	-5.775	7.655			523.973	
6/4/2002 14:35	265	-5.702813	7.582813			524.724	
6/4/2002 14:36	266	-5.775	7.655			523.627	
6/4/2002 14:37	267	-5.630625	7.510625			524.813	
6/4/2002 14:38	268	-5.775	7.655			524.208	
6/4/2002 14:39	269	-5.630625	7.510625			524.215	
6/4/2002 14:40	270	-5.630625	7.510625	6.15	1.360625	523.28	
6/4/2002 14:41	271	-5.702813	7.582813			524.372	
6/4/2002 14:42	272	-5.702813	7.582813			524.158	
6/4/2002 14:43	273	-5.630625	7.510625			523.749	
6/4/2002 14:44	274	-5.558438	7.438438			524.538	
6/4/2002 14:45	275	-5.919375	7.799375			522.935	
6/4/2002 14:46	276	-5.775	7.655			523.931	
6/4/2002 14:47	277	-5.702813	7.582813			524.337	
6/4/2002 14:48	278	-5.702813	7.582813			524.258	
6/4/2002 14:49	279	-5.847188	7.727188			524.288	
6/4/2002 14:50	280	-5.630625	7.510625			522.94	
6/4/2002 14:51	281	-6.135938	8.015938			523.392	
6/4/2002 14:52	282	-6.424687	8.304687			524.278	
6/4/2002 14:53	283	-5.702813	7.582813	6.16	1.422813	524.012	
6/4/2002 14:54	284	-5.919375	7.799375			523.801	
6/4/2002 14:55	285	-6.135938	8.015938			523.771	
6/4/2002 14:56	286	-5.702813	7.582813			523.335	
6/4/2002 14:57	287	-6.06375	7.94375			524.069	
6/4/2002 14:58	288	-6.06375	7.94375			524.269	Water Sample
6/4/2002 14:59	289	-6.135938	8.015938			523.743	
6/4/2002 15:00	290	-6.208125	8.088125			461.148	Shut down Pumping
6/4/2002 15:01	291	-1.44375	3.32375			0	
6/4/2002 15:02	292	-0.28875	2.16875				
6/4/2002 15:03	293	-0.28875	2.16875	2.25	-0.08125		
6/4/2002 15:04	294	-0.28875	2.16875	2.23	-0.06125		
6/4/2002 15:05	295	-0.216562	2.096562				
6/4/2002 15:06	296	-0.216562	2.096562				
6/4/2002 15:07	297	-0.216562	2.096562				
6/4/2002 15:08	298	-0.144375	2.024375				
6/4/2002 15:09	299	-0.144375	2.024375				
6/4/2002 15:10	300	-0.144375	2.024375				

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TimeStamp	Elaps	Drawdown	DTW	Outter Casing	Outter Casing	Difference	Flow (gpm)	
		100.485	1.88	2.03	2.03			Static Readings
6/10/2002 10:00	0	-2.454375	4.334375					Start Pump
6/10/2002 10:01	1	-5.269687	7.149687				500	
6/10/2002 10:02	2	-5.1975	7.0775					
6/10/2002 10:03	3	-4.980938	6.860938				502.795	
6/10/2002 10:04	4	-5.341875	7.221875				502.989	
6/10/2002 10:05	5	-5.125312	7.005312				501.001	
6/10/2002 10:06	6	-5.341875	7.221875				503.189	
6/10/2002 10:07	7	-5.053125	6.933125				498.49	
6/10/2002 10:08	8	-5.1975	7.0775				501.783	
6/10/2002 10:09	9	-5.48625	7.36625				503.409	
6/10/2002 10:10	10	-5.1975	7.0775				503.727	
6/10/2002 10:11	11	-5.269687	7.149687				490.196	
6/10/2002 10:12	12	-5.414062	7.294062				503.142	
6/10/2002 10:13	13	-5.269687	7.149687				502.007	
6/10/2002 10:14	14	-5.341875	7.221875				502.913	
6/10/2002 10:15	15	-5.341875	7.221875				501.791	
6/10/2002 10:16	16	-5.269687	7.149687				503.351	
6/10/2002 10:17	17	-5.414062	7.294062				498.602	
6/10/2002 10:18	18	-5.341875	7.221875				501.012	
6/10/2002 10:19	19	-5.414062	7.294062				502.068	
6/10/2002 10:20	20	-5.341875	7.221875				496.281	
6/10/2002 10:21	21	-5.269687	7.149687				502.024	
6/10/2002 10:22	22	-5.341875	7.221875				501.773	
6/10/2002 10:23	23	-5.48625	7.36625				503.31	
6/10/2002 10:24	24	-5.125312	7.005312				500.294	
6/10/2002 10:25	25	-5.48625	7.36625				497.656	
6/10/2002 10:26	26	-5.1975	7.0775				501.72	
6/10/2002 10:27	27	-5.414062	7.294062				503.839	
6/10/2002 10:28	28	-5.125312	7.005312				502.562	
6/10/2002 10:29	29	-5.48625	7.36625				503.765	
6/10/2002 10:30	30	-5.558438	7.438438				501.778	
6/10/2002 10:31	31	-5.558438	7.438438				501.771	
6/10/2002 10:32	32	-5.414062	7.294062				500.603	
6/10/2002 10:33	33	-5.269687	7.149687				503.629	
6/10/2002 10:34	34	-5.48625	7.36625				501.869	
6/10/2002 10:35	35	-5.269687	7.149687				503.321	
6/10/2002 10:36	36	-4.90875	6.78875				502.85	
6/10/2002 10:37	37	-5.341875	7.221875				502.753	
6/10/2002 10:38	38	-5.1975	7.0775				501.91	
6/10/2002 10:39	39	-5.053125	6.933125				501.565	
6/10/2002 10:40	40	-5.558438	7.438438				501.172	
6/10/2002 10:41	41	-5.1975	7.0775	5.46	5.46	1.6175	500.77	
6/10/2002 10:42	42	-5.702813	7.582813				503.125	
6/10/2002 10:43	43	-5.558438	7.438438				502.035	
6/10/2002 10:44	44	-5.1975	7.0775	5.96	5.96	1.1175	500.247	

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TimeStamp	Elaps	Drawdown	DTW	Outter Casing	Outter Casing	Difference	Flow (gpm)	
		100.485	1.88	2.03	2.03			Static Readings
6/10/2002 10:45	45	-5.125312	7.005312				502.483	
6/10/2002 10:46	46	-5.1975	7.0775				502.01	
6/10/2002 10:47	47	-5.414062	7.294062				501.77	
6/10/2002 10:48	48	-5.414062	7.294062				502.259	
6/10/2002 10:49	49	-5.341875	7.221875				501.251	
6/10/2002 10:50	50	-5.269687	7.149687				502.529	
6/10/2002 10:51	51	-5.341875	7.221875				501.33	
6/10/2002 10:52	52	-5.1975	7.0775				502.117	
6/10/2002 10:53	53	-5.48625	7.36625				497.579	
6/10/2002 10:54	54	-5.414062	7.294062				501.541	
6/10/2002 10:55	55	-5.48625	7.36625				501.27	
6/10/2002 10:56	56	-5.269687	7.149687				503.426	
6/10/2002 10:57	57	-5.341875	7.221875				500.818	
6/10/2002 10:58	58	-5.125312	7.005312	5.97	5.97	1.035312	502.481	
6/10/2002 10:59	59	-5.125312	7.005312				500.064	
6/10/2002 11:00	60	-5.48625	7.36625				501.49	
6/10/2002 11:30	90	-5.341875	7.221875	5.97	5.97	1.251875	499.315	
6/10/2002 12:30	150	-5.414062	7.294062	5.95	5.95	1.344062	499.82	
6/10/2002 12:49	169	-4.980938	6.860938	5.92	5.92	0.940938	501.937	
6/10/2002 13:00	180	-5.1975	7.0775				502.601	
6/10/2002 13:40	220	-5.558438	7.438438	5.78	5.78	1.658438	499.817	
6/10/2002 14:00	240	-4.980938	6.860938	5.82	5.82	1.040938	500.012	
6/10/2002 15:30	330	-4.980938	6.860938	5.67	5.67	1.190938	500.102	
6/10/2002 16:00	360	-4.692188	6.572188				501.035	
6/10/2002 17:00	420	-4.90875	6.78875				500.398	
6/10/2002 18:00	480	-4.980938	6.860938				496.519	
6/10/2002 19:00	540	-5.269687	7.149687				498.258	
6/10/2002 20:00	600	-5.053125	6.933125				500.232	
6/10/2002 21:00	660	-5.1975	7.0775				499.425	
6/10/2002 22:00	720	-5.125312	7.005312				498.752	
6/10/2002 23:00	780	-5.414062	7.294062				494.787	
6/11/2002 0:00	840	-5.48625	7.36625				497.855	
6/11/2002 1:00	900	-5.125312	7.005312				499.302	
6/11/2002 2:00	960	-5.269687	7.149687				499.178	
6/11/2002 3:00	1020	-5.125312	7.005312				498.677	
6/11/2002 4:00	1080	-5.48625	7.36625				499.482	
6/11/2002 5:00	1140	-5.414062	7.294062				499.284	
6/11/2002 6:00	1200	-5.414062	7.294062				500.64	
6/11/2002 7:00	1261	-5.486253	7.366253				500.587	
6/11/2002 8:00	1321	-5.630628	7.510628				499.46	
6/11/2002 9:00	1381	-5.341878	7.221878				499.916	
6/11/2002 10:00	1441	-5.414066	7.294066				500.542	
6/11/2002 11:00	1501	-5.197503	7.077503				500.226	
6/11/2002 12:00	1561	-5.702816	7.582816				499.867	
6/11/2002 13:00	1621	-5.630628	7.510628				496.46	

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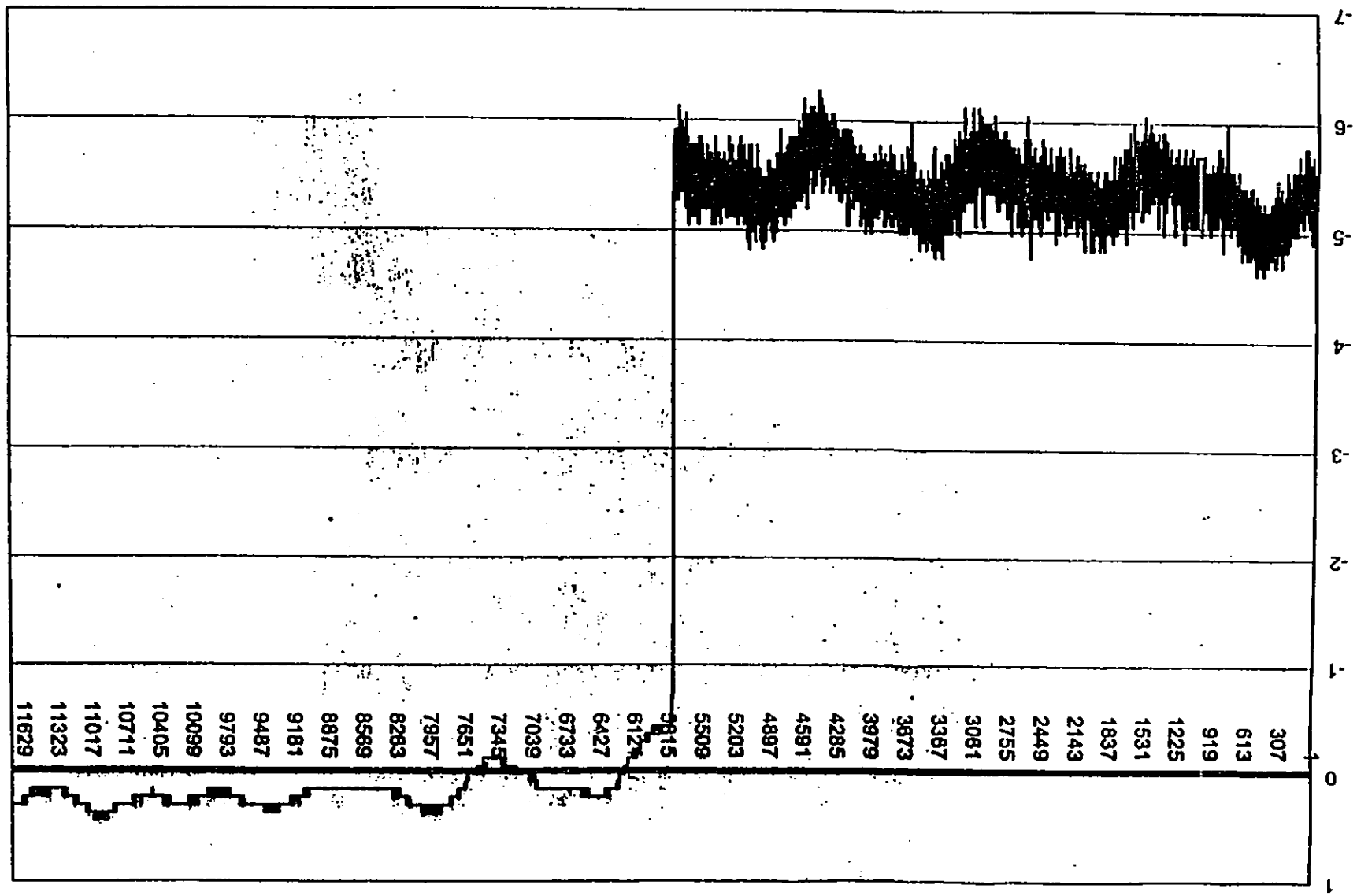
TimeStamp	Elaps	Drawdown	DTW	Outter Casing	Outter Casing	Difference	Flow (gpm)	
		100.485	1.88	2.03	2.03			Static Readings
6/11/2002 14:00	1681	-5.414066	7.294066				498.796	
6/11/2002 15:00	1741	-5.486253	7.366253				497.372	
6/11/2002 16:00	1801	-5.414066	7.294066				497.469	
6/11/2002 17:00	1861	-5.269691	7.149691				499.724	
6/11/2002 18:00	1921	-4.980941	6.860941				497.849	
6/11/2002 19:00	1981	-5.269691	7.149691				496.038	
6/11/2002 20:00	2041	-5.269691	7.149691				489.613	
6/11/2002 21:00	2101	-5.558441	7.438441				499.181	
6/11/2002 22:00	2161	-5.269691	7.149691				500.992	
6/11/2002 23:00	2221	-5.197503	7.077503				498.173	
6/12/2002 0:00	2281	-5.341878	7.221878				498.23	
6/12/2002 1:00	2341	-5.269691	7.149691				499.666	
6/12/2002 2:00	2401	-5.269691	7.149691				496.582	
6/12/2002 3:00	2461	-5.341878	7.221878				495.12	
6/12/2002 4:00	2521	-5.269691	7.149691				498.637	
6/12/2002 5:00	2581	-5.414066	7.294066				499.137	
6/12/2002 6:00	2641	-5.125316	7.005316				496.322	
6/12/2002 7:00	2701	-5.341878	7.221878				498.615	
6/12/2002 8:00	2761	-5.414066	7.294066				500.274	
6/12/2002 9:00	2821	-5.630628	7.510628				496.769	
6/12/2002 10:00	2881	-5.847191	7.727191				500.498	
6/12/2002 11:00	2941	-5.847191	7.727191				499.102	
6/12/2002 12:00	3001	-5.775003	7.655003				497.811	
6/12/2002 13:00	3061	-5.558441	7.438441				498.266	
6/12/2002 13:30	3091	-5.847191	7.727191	6.25	6.25	1.477191	497.243	Water Sample (
6/12/2002 13:36	3097	-5.919378	7.799378	6.22	6.22	1.579378		
6/12/2002 13:49	3110	-5.414066	7.294066					

KAPAA ARTESIAN WELL
Constant Rate Test (continued)

TimeStamp	Elaps	Drawdown	DTW	Outter Casing	Drawdown	Difference	Flow (gpm)
		100.485	1.88	2.03			
6/12/2002 13:49	3110	-5.414056	7.294066				
6/12/2002 14:00	3121	-5.486253	7.366253				499.887
6/12/2002 15:00	3181	-5.486253	7.366253				499.959
6/12/2002 16:00	3241	-5.341878	7.221878				497.35
6/12/2002 17:00	3301	-5.341878	7.221878				497.598
6/12/2002 18:00	3361	-5.053128	6.933128				499.03
6/12/2002 19:00	3421	-5.269691	7.149691				494.661
6/12/2002 20:00	3481	-5.125316	7.005316				499.49
6/12/2002 21:00	3541	-5.197503	7.077503				497.52
6/12/2002 22:00	3601	-5.341878	7.221878				498.013
6/12/2002 23:00	3661	-5.269691	7.149691				495.278
6/13/2002 0:00	3721	-4.980941	6.860941				498.964
6/13/2002 1:00	3781	-5.341878	7.221878				499.338
6/13/2002 2:00	3841	-5.269691	7.149691				499.187
6/13/2002 3:00	3901	-5.414066	7.294066				498.376
6/13/2002 4:00	3961	-5.486253	7.366253				497.051
6/13/2002 5:00	4021	-5.414066	7.294066				493.186
6/13/2002 6:00	4081	-5.630628	7.510628				498.753
5/13/2002 7:00	4141	-5.341878	7.221878				496.36
6/13/2002 8:00	4201	-5.414066	7.294066				498.819
6/13/2002 9:00	4261	-5.702816	7.582816				499.852
6/13/2002 10:00	4321	-5.630628	7.510628				497.72
6/13/2002 11:00	4381	-5.919378	7.799378				499.781
6/13/2002 12:00	4441	-5.775003	7.655003				491.891
6/13/2002 13:00	4501	-5.847191	7.727191				498.534
6/13/2002 14:00	4561	-5.702816	7.582816				498.254
6/13/2002 15:00	4621	-5.847191	7.727191				499.219
6/13/2002 16:00	4681	-5.630628	7.510628				499.055
6/13/2002 17:00	4741	-5.630628	7.510628				498.636
6/13/2002 18:00	4801	-5.269691	7.149691				497.724
6/13/2002 19:00	4861	-5.558441	7.438441				495.845
6/13/2002 20:00	4921	-5.486253	7.366253				495.517
6/13/2002 21:00	4981	-5.414066	7.294066				499.59
6/13/2002 22:00	5041	-4.980941	6.860941				499.641
6/13/2002 23:00	5101	-5.414066	7.294066				499.152
6/14/2002 0:00	5161	-5.630628	7.510628				499.67
6/14/2002 1:00	5221	-5.486253	7.366253				498.397
6/14/2002 2:00	5281	-5.486253	7.366253				495.945
6/14/2002 3:00	5341	-5.197503	7.077503				499.006
6/14/2002 4:00	5401	-5.125316	7.005316				498.241
6/14/2002 5:00	5461	-5.414066	7.294066				499.448
6/14/2002 6:00	5521	-5.486253	7.366253				499.507
6/14/2002 7:00	5581	-5.486253	7.366253				500.14
6/14/2002 8:00	5641	-5.486253	7.366253				497.602
6/14/2002 9:00	5701	-5.991566	7.871566				495.239
6/14/2002 10:00	5761	-5.558441	7.438441				499.398
							497.506

KAPAA ARTESIAN WELL
Constant Rate Test (continued)

TimeStamp	Elaps	Drawdown	DTW	Outter Casing	Drawdown	Difference	Flow (gpm)	
		100.485	1.88	2.03				
6/14/2002 10:01	5762	-2.021253	3.901253				498.735	
6/14/2002 10:02	5763	-0.721879	2.601879	2.57	-0.54	0.031879	44.78	Pump shut
6/14/2002 10:03	5764	-0.721879	2.601879	2.57	-0.54	0.031879	42.373	Siphon flow
6/14/2002 10:04	5765	-0.721879	2.601879	2.57	-0.54	0.031879	43.266	
6/14/2002 10:13	5774	-0.649691	2.529691	2.52	-0.49	0.009691	43.605	
6/14/2002 10:15	5776	-0.505316	2.385316	2.34	-0.31	0.045316	43.472	Break Suct
6/14/2002 10:16	5777	-0.505316	2.385316	2.35	-0.32	0.035316	0	
6/14/2002 10:17	5778	-0.433129	2.313129	2.35	-0.32	-0.036871	0	
6/14/2002 10:18	5779	-0.433129	2.313129				0	
6/14/2002 10:19	5780	-0.433129	2.313129				0	
6/14/2002 10:20	5781	-0.505316	2.385316				0	
6/14/2002 10:21	5782	-0.505316	2.385316				0	
6/14/2002 10:22	5783	-0.433129	2.313129				0	
6/14/2002 10:23	5784	-0.433129	2.313129				0	
6/14/2002 10:24	5785	-0.433129	2.313129				0	
6/14/2002 10:25	5786	-0.433129	2.313129				0	
6/14/2002 10:26	5787	-0.433129	2.313129				0	
6/14/2002 10:27	5788	-0.433129	2.313129				0	
6/14/2002 10:28	5789	-0.433129	2.313129				0	
6/14/2002 10:29	5790	-0.433129	2.313129				0	
6/14/2002 10:30	5791	-0.433129	2.313129				0	
6/14/2002 10:31	5792	-0.433129	2.313129				0	
6/14/2002 10:32	5793	-0.433129	2.313129				0	
6/14/2002 10:33	5794	-0.433129	2.313129				0	
6/14/2002 10:43				2.3	-0.27	-2.3	0	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MONTGOMERY WATSON HARZA

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02 AUG 5 P4:26

KAUAI

High microgr. of bacteria, no coli
pH 7.48
EC 403
turb. 0.35

Laboratory Report

for

Kauai Water Department
P.O. Box 1706
Lihue , HI 96766

Attention: Wayne Hinazumi
Fax: (808) 245-5813

DATE OF ISSUE
JUL 31 2002
MWH LABORATORIES

HDS Hillary Strayer
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac 01114CA

Report#: 97137
PHASEV

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Comments,QC Report,QC Summary,Data Report,Hits Report, totaling 40 page[s].

HED BOTTL

Kauai Dept Water — 9825

SAMPLER PRINTED NAME AND SIGNATURE: Carl Arume / [signature]

SAMPLE DATE	SAMPLE TIME	SITE NAME or LOCATION	IDENTIFIER or STATE ID #	MATRIX *	GRAB	COMP	ANALYSES REQUIRED (mark an 'X' in all tests required for each sample line) — See bottle order	SAMPLER COMMENTS
6/12/02	1330	Kapaa Injection Well			✓		X	

* MATRIX TYPES:

Reported by Volume:
- RSW = Raw Surface Water
- RGW = Raw Ground Water
- FW = Other Finished Water
- CFW = Chlor(am)inated Finished Water
- SW = Storm Water
- WW = Other Waste Water
- CWW = Chlorinated Waste Water

Reported by Weight:
- SO = Soil
- SL = Sludge

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY:	[signature]	Carl Arume	Kauai Dept. of Water / Mgr	6/13/02	1000
RECEIVED BY:	[signature]	T.C.C.	[illegible]	6/19/02	9:20
RELINQUISHED BY:					
RECEIVED BY:					

C-O-C# ______

PAGE ____ OF ____

MWH Laboratories
555 E. Walnut St., Pasadena, CA 91101
PHONE: 626-568-6400/FAX: 626-568-6324

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Kauai Water Department
P.O. Box 1706
Lihue, HI 96766
Attn: Wayne Hinazumi
Phone: (808) 245-5433

Customer Code: KAUAI
Group#: 97137
Project#: PHASEV
Proj Mgr: Hillary Strayer
Phone: (626) 568-6412

The following samples were received from you on **06/14/02**. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

Sample#	Sample Id	Matrix	Sample Date
	Tests Scheduled		
2206140025	KAPAA INJECTION WELL	Water	12-jun-2002 13:30:00
	@DIQUAT @EDB-DBC @ML515.3 @ML525 @ML531 @PESTSDW		
	@VOASDWA ALK AS-MS BA-MS BE-MS CA		
	CD-MS CNDW CR-MS CU-MS EC ENDOTHAL		
	F GLYPHOS HG NI-MS PB-MS SB-MS		
	SE-MS TCDD-DW TL-MS		

Test Acronym Description

Test Acronym	Description
@DIQUAT	Diquat and Paraquat
@EDB-DBC	EDB and DBCP by GC-ECD
@ML515.3	Herbicides by 515.3
@ML525	525 Semivolatiles by GC/MS
@ML531	Aldicarbs
@PESTSDW	SDWA Pesticides
@VOASDWA	Regulated VOCs plus Lists 1&3
ALK	Alkalinity
AS-MS	Arsenic, Total, ICAP/MS
BA-MS	Barium, Total, ICAP/MS
BE-MS	Beryllium, Total, ICAP/MS
CA	Calcium, Total, ICAP
CD-MS	Cadmium, Total, ICAP/MS
CNDW	Cyanide
CR-MS	Chromium, Total, ICAP/MS
CU-MS	Copper, Total, ICAP/MS
EC	Specific Conductance
ENDOTHAL	Endothall
F	Fluoride
GLYPHOS	Glyphosate
HG	Mercury
NI-MS	Nickel, Total, ICAP/MS
PB-MS	Lead, Total, ICAP/MS

Kauai Water Department
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Customer Code: KAUAI
Group#: 97137
Project#: PHASEV
Proj Mgr: Hillary Strayer
Phone: (626) 568-6412

Test Acronym Description

Test Acronym	Description
SB-MS	Antimony, Total, ICAP/MS
SE-MS	Selenium, Total, ICAP/MS
TCDD-DW	2,3,7,8 - TCDD
TL-MS	Thallium, Total, ICAP/MS

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Report
Comments
#97137

02 AUG 5 P4:07

Group Comments

Analytical results for TCDD-DW submitted by Pace Analytical Minn.MN Hawaii#SLD.

(QC Ref#: 175121)
Test: Acifluorfen (qualitative)
QC Type: MS1
Recovery out of limits; LCS and CCV results were within QC acceptance limits. QIR-GC-02-240.
QC Type: MS2
Recovery out of limits; LCS and CCV results were within QC acceptance limits. QIR-GC-02-240.
QC Type: MSD
Recovery out of limits; LCS and CCV results were within QC acceptance limits. QIR-GC-02-240.
Test: Tot DCPA Mono&Diacid Degradate
QC Type: MS1
Recovery out of limits; LCS and CCV results were within QC acceptance limits. QIR-GC-02-240.
QC Type: MS2
Recovery out of limits; LCS and CCV results were within QC acceptance limits. QIR-GC-02-240.
Test: Picloram
QC Type: MS1
Recovery out of limits; LCS and CCV results were within QC acceptance limits. QIR-GC-02-240.
QC Type: MS2
Recovery out of limits; LCS and CCV results were within QC acceptance limits. QIR-GC-02-240.
QC Type: MSD
Recovery out of limits; LCS and CCV results were within QC acceptance limits. QIR-GC-02-240.
Test: 4-Nitrophenol (qualitative)
QC Type: MS1
Recovery out of limits; LCS and CCV results were within QC acceptance limits. QIR-GC-02-240.
QC Type: MS2
Recovery out of limits; LCS and CCV results were within QC

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Comments
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02 AUG 6 P4:07

acceptance limits. QIR-GC-02-240.

QC Type: MSD

Recovery out of limits; LCS and CCV results were within QC acceptance limits. QIR-GC-02-240.

(QC Ref#: 177505)

Test: Aldrin

QC Type: MSD

(525) Report Methoxychlor from method 508. Parameters outsid e QC criteria in LFM/LFMD, default to LFB.

Test: Di(2-Ethylhexyl)phthalate

QC Type: MS

(525) Report Methoxychlor from method 508. Parameters outsid e QC criteria in LFM/LFMD, default to LFB.

QC Type: MSD

(525) Report Methoxychlor from method 508. Parameters outsid e QC criteria in LFM/LFMD, default to LFB.

Test: Methoxychlor

QC Type: LCS1

(525) Report Methoxychlor from method 508. Parameters outsid e QC criteria in LFM/LFMD, default to LFB.

QC Type: MS

(525) Report Methoxychlor from method 508. Parameters outsid e QC criteria in LFM/LFMD, default to LFB.

QC Type: MSD

(525) Report Methoxychlor from method 508. Parameters outsid e QC criteria in LFM/LFMD, default to LFB.

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02 AUG 6 P4:07

Laboratory
Hits Report
#97137

Kauai Water Department
Wayne Hinazumi
P.O. Box 1706
Lihue , HI 96766

Samples Received
14-jun-2002 12:18:16

Analyzed	Sample#	Sample ID	Result	UNITS	MRL
	2206140025	KAPAA INJECTION WELL			
06/19/02		Alkalinity in CaCO3 units	112	mg/l	1.000
06/21/02		Calcium, Total, ICAP	18	mg/l	1.000
06/24/02		Chromium, Total, ICAP/MS	3.9	ug/l	1.000
06/20/02		Fluoride	0.06	mg/l	.050
06/18/02		Specific Conductance	497	umho/c	4.000

SUMMARY OF POSITIVE DATA ONLY.

MWH Laboratories
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02 AUG 6 P4:07

Laboratory
Data Report
#97137

Kauai Water Department
Wayne Hinazumi
P.O. Box 1706
Lihue , HI 96766

Samples Received
06/14/02

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
KAPAA INJECTION WELL (2206140025) Sampled on 06/12/02 13:30								
	06/19/02 00:00	174526	(SM2320B/E310.1)	Alkalinity in CaCO3 units	112	mg/l	1.0	1
	06/24/02 13:01	174700	(EPA/ML 200.8)	Arsenic, Total, ICAP/MS	ND	ug/l	1.0	1
	06/24/02 13:01	174705	(EPA/ML 200.8)	Barium, Total, ICAP/MS	ND	ug/l	1.0	1
	06/24/02 13:01	174709	(EPA/ML 200.8)	Beryllium, Total, ICAP/MS	ND	ug/l	2.0	1
	06/21/02 11:16	174579	(ML/EPA 200.7)	Calcium, Total, ICAP	ND	ug/l	1.0	1
	06/24/02 13:01	174704	(EPA/ML 200.8)	Cadmium, Total, ICAP/MS	18	mg/l	1.0	1
	06/17/02 00:00	174228	(SM4500CN-P)	Cyanide	ND	ug/l	0.50	1
	06/24/02 13:01	174712	(EPA/ML 200.8)	Chromium, Total, ICAP/MS	ND	mg/l	0.025	1
	06/24/02 13:01	174715	(EPA/ML 200.8)	Copper, Total, ICAP/MS	3.9	ug/l	1.0	1
	06/18/02 00:00	174249	(ML/S2510B)	Specific Conductance	ND	ug/l	2.0	1
06/18/02	06/24/02 00:00	174859	(ML/EPA 548.1)	Endothall	497	umho/cm	4.0	1
	06/20/02 00:00	174482	(SM4500F-C)	Fluoride	ND	ug/l	20	4
	06/17/02 00:00	174496	(ML/EPA 547)	Glyphosate	0.06	mg/l	0.050	1
	06/19/02 15:27	174390	(EPA/ML 245.1)	Mercury	ND	ug/l	6.0	1
	06/24/02 13:01	174714	(EPA/ML 200.8)	Nickel, Total, ICAP/MS	ND	ug/l	0.20	1
	06/24/02 13:01	174708	(EPA/ML 200.8)	Lead, Total, ICAP/MS	ND	ug/l	5.0	1
	06/24/02 13:01	174706	(EPA/ML 200.8)	Antimony, Total, ICAP/MS	ND	ug/l	0.50	1
	06/24/02 13:01	174701	(EPA/ML 200.8)	Selenium, Total, ICAP/MS	ND	ug/l	1.0	1
06/18/02	06/21/02 00:00		(EPA 1613)	2,3,7,8 - TCDD	ND	ug/l	5.0	1
	06/24/02 13:01	174707	(EPA/ML 200.8)	Thallium, Total, ICAP/MS	ND	pg/l	5.0	1
					ND	ug/l	1.0	1
525 Semivolatiles by GC/MS								
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	2,4-Dinitrotoluene	ND	ug/l	0.10	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	alpha-Chlordane	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Diazinon	ND	ug/l	0.10	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Acenaphthylene	ND	ug/l	0.10	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Alachlor	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Aldrin	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Anthracene	ND	ug/l	0.020	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Atrazine	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Benz(a)Anthracene	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Benzo(a)pyrene	ND	ug/l	0.020	1

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Laboratory
Data Report
#97137

02 AUG 6 P4:07

Kauai Water Department
(continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Benzo(b)Fluoranthene	ND	ug/l	0.020	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Benzo(g,h,i)Perylene	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Benzo(k)Fluoranthene	ND	ug/l	0.020	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Di(2-Ethylhexyl)phthalate	ND	ug/l	0.60	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Butylbenzylphthalate	ND	ug/l	0.50	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Bromacil	ND	ug/l	0.20	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Butachlor	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Caffeine	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Chrysene	ND	ug/l	0.020	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Dibenz(a,h)Anthracene	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Di-(2-Ethylhexyl)adipate	ND	ug/l	0.60	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Diethylphthalate	ND	ug/l	0.50	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Dieldrin	ND	ug/l	0.20	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Dimethylphthalate	ND	ug/l	0.50	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Dimethoate	ND	ug/l	10	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Di-n-Butylphthalate	ND	ug/l	0.50	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Endrin	ND	ug/l	0.10	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Fluoranthene	ND	ug/l	0.10	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Fluorene	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	gamma-Chlordane	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Hexachlorobenzene	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Hexachlorocyclopentadiene	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Heptachlor	ND	ug/l	0.040	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Heptachlor Epoxide	ND	ug/l	0.020	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Indeno(1,2,3,c,d)Pyrene	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Isophorone	ND	ug/l	0.50	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Lindane	ND	ug/l	0.020	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Methoxychlor	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Metribuzin	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Molinate	ND	ug/l	0.20	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Metolachlor	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	trans-Nonachlor	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Pentachlorophenol	ND	ug/l	1.0	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Phenanthrene	ND	ug/l	0.020	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Prometryn	ND	ug/l	0.50	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Propachlor	ND	ug/l	0.050	1

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Kauai Water Department
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Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Pyrene	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Simazine	ND	ug/l	0.050	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Thiobencarb	ND	ug/l	0.20	1
06/24/02	07/20/02 00:00	177505	(ML/EPA 525.2)	Trifluralin	ND	ug/l	0.10	1
			(Surrogate)	Perylene-d12	88	% Rec		
			Aldicarbs					
	06/26/02 00:00	174900	(ML/EPA 531.1)	3-Hydroxycarbofuran	ND	ug/l	2.0	1
	06/26/02 00:00	174900	(ML/EPA 531.1)	Aldicarb (Temik)	ND	ug/l	0.50	1
	06/26/02 00:00	174900	(ML/EPA 531.1)	Aldicarb sulfone	ND	ug/l	0.70	1
	06/26/02 00:00	174900	(ML/EPA 531.1)	Aldicarb sulfoxide	ND	ug/l	0.50	1
	06/26/02 00:00	174900	(ML/EPA 531.1)	Baygon	ND	ug/l	2.0	1
	06/26/02 00:00	174900	(ML/EPA 531.1)	Carbofuran (Furadan)	ND	ug/l	0.90	1
	06/26/02 00:00	174900	(ML/EPA 531.1)	Carbaryl	ND	ug/l	2.0	1
	06/26/02 00:00	174900	(ML/EPA 531.1)	Methiocarb	ND	ug/l	2.0	1
	06/26/02 00:00	174900	(ML/EPA 531.1)	Methomyl	ND	ug/l	1.0	1
	06/26/02 00:00	174900	(ML/EPA 531.1)	Oxamyl (Vydate)	ND	ug/l	2.0	1
			(Surrogate)	BDMC	90	% Rec		
			Diquat and Paraquat					
06/17/02	06/18/02 00:00	174506	(ML/EPA 549.2)	Diquat	ND	ug/l	0.40	1
06/17/02	06/18/02 00:00	174506	(ML/EPA 549.2)	Paraquat	ND	ug/l	2.0	1
			EDB and DBCP by GC-ECD					
06/26/02	06/26/02 00:00	175502	(ML/EPA 504.1)	Dibromochloropropane (DBCP)	ND	ug/l	0.010	1
06/26/02	06/26/02 00:00	175502	(ML/EPA 504.1)	Ethylene Dibromide (EDB)	ND	ug/l	0.010	1
06/26/02	06/26/02 00:00	175502	(ML/EPA 504.1)	1,2-dibromopropane (surr)	NA	%R	0.0000	1
			(Surrogate)	1,2-dibromopropane	NA	% Rec		
			Herbicides by 515.3					
06/21/02	06/26/02 00:00	175121	(ML/EPA 515.3)	2,4,5-T	ND	ug/l	0.20	1
06/21/02	06/26/02 00:00	175121	(ML/EPA 515.3)	2,4,5-TP (Silvex)	ND	ug/l	0.20	1
06/21/02	06/26/02 00:00	175121	(ML/EPA 515.3)	2,4-D	ND	ug/l	0.10	1
06/21/02	06/26/02 00:00	175121	(ML/EPA 515.3)	2,4-DB	ND	ug/l	2.0	1
06/21/02	06/26/02 00:00	175121	(ML/EPA 515.3)	Dichlorprop	ND	ug/l	0.50	1
06/21/02	06/26/02 00:00	175121	(ML/EPA 515.3)	Acifluorfen (qualitative)	ND	ug/l	0.20	1

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Kauai Water Department
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Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
06/21/02	06/26/02 00:00	175121	(ML/EPA 515.3)	Bentazon	ND	ug/l	0.50	1
06/21/02	06/26/02 00:00	175121	(ML/EPA 515.3)	Dalapon (qualitative)	ND	ug/l	1.0	1
06/21/02	06/26/02 00:00	175121	(ML/EPA 515.3)	3,5-Dichlorobenzoic acid	ND	ug/l	0.50	1
06/21/02	06/26/02 00:00	175121	(ML/EPA 515.3)	Tot DCPA Mono&Diacid Degradate	ND	ug/l	0.20	1
06/21/02	06/26/02 00:00	175121	(ML/EPA 515.3)	Dicamba	ND	ug/l	0.080	1
06/21/02	06/26/02 00:00	175121	(ML/EPA 515.3)	Dinoseb	ND	ug/l	0.20	1
06/21/02	06/26/02 00:00	175121	(ML/EPA 515.3)	Pentachlorophenol	ND	ug/l	0.040	1
06/21/02	06/26/02 00:00	175121	(ML/EPA 515.3)	Picloram	ND	ug/l	0.10	1
06/21/02	06/26/02 00:00	175121	(ML/EPA 515.3)	4-Nitrophenol (qualitative)	ND	ug/l	1.0	1
			(Surrogate)	2,4-Dichlorophenylacetic acid	102	% Rec		
				Regulated VOCs plus Lists 1&3				
	06/21/02 00:00	175064	(ML/EPA 524.2)	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	1,1-Dichloroethane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	1,1-Dichloroethylene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	1,1-Dichloropropene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	1,2-Dichloroethane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	1,2-Dichloropropane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	1,3-Dichloropropane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	2,2-Dichloropropane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	2-Butanone (MEK)	ND	ug/l	5.0	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	o-Chlorotoluene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	p-Chlorotoluene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Benzene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Bromobenzene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1

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Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
	06/21/02 00:00	175064	(ML/EPA 524.2)	Bromoethane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Chlorobenzene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Carbon Tetrachloride	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Bromoform	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Chloroform (Trichloromethane)	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Bromochloromethane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Chloroethane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Chloromethane(Methyl Chloride)	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Chlorodibromomethane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Dibromomethane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Bromodichloromethane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Dichloromethane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Di-isopropyl ether	ND	ug/l	5.0	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Ethyl benzene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Dichlorodifluoromethane	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Hexachlorobutadiene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Isopropylbenzene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	m,p-Xylenes	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Methyl Tert-butyl ether (MTBE)	ND	ug/l	3.0	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Naphthalene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	n-Butylbenzene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	n-Propylbenzene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	o-Xylene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	p-Isopropyltoluene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	sec-Butylbenzene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Styrene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	tert-amyl Methyl Ether	ND	ug/l	3.0	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	tert-Butyl Ethyl Ether	ND	ug/l	3.0	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	tert-Butylbenzene	ND	ug/l	0.50	1

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Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
	06/21/02 00:00	175064	(ML/EPA 524.2)	Trichloroethylene (TCE)	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Trichlorotrifluoroethane(Freon	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Toluene	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Total THM	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Total xylenes	ND	ug/l	0.50	1
	06/21/02 00:00	175064	(ML/EPA 524.2)	Vinyl chloride (VC)	ND	ug/l	0.30	1
			(Surrogate)	1,2-Dichloroethane-d4	90	% Rec		
			(Surrogate)	4-Bromofluorobenzene	91	% Rec		
			(Surrogate)	Toluene-d8	95	% Rec		
				SDWA Pesticides				
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	PCB 1016 Aroclor	ND	ug/l	0.070	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	PCB 1221 Aroclor	ND	ug/l	0.10	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	PCB 1232 Aroclor	ND	ug/l	0.10	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	PCB 1242 Aroclor	ND	ug/l	0.10	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	PCB 1248 Aroclor	ND	ug/l	0.10	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	PCB 1254 Aroclor	ND	ug/l	0.10	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	PCB 1260 Aroclor	ND	ug/l	0.10	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Alpha-BHC	ND	ug/l	0.010	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Alachlor (Alanex)	ND	ug/l	0.050	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Aldrin	ND	ug/l	0.010	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Beta-BHC	ND	ug/l	0.010	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Chlordane	ND	ug/l	0.10	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Chlorthalonil (Draconil,Bravo)	ND	ug/l	0.010	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Delta-BHC	ND	ug/l	0.010	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	p,p' DDD	ND	ug/l	0.010	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	p,p' DDE	ND	ug/l	0.010	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	p,p' DDT	ND	ug/l	0.010	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Dieldrin	ND	ug/l	0.010	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Endrin Aldehyde	ND	ug/l	0.010	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Endrin	ND	ug/l	0.010	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Endosulfan I (alpha)	ND	ug/l	0.010	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Endosulfan II (beta)	ND	ug/l	0.010	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Endosulfan sulfate	ND	ug/l	0.010	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Heptachlor	ND	ug/l	0.010	1

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Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Heptachlor Epoxide	ND	ug/l	0.010	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Lindane (gamma-BHC)	ND	ug/l	0.010	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Methoxychlor	ND	ug/l	0.050	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Tetrachlorometaxylene (surr)	ND	%R	0.0000	1
06/18/02	06/23/02 00:00	175737	(ML/EPA 508)	Dibutyl chlorendate (surr)	ND	%R	0.0000	1
			(ML/EPA 508)	Toxaphene	ND	ug/l	0.50	1
			(Surrogate)	Dibutyl Chlorendate	116	% Rec		
			(Surrogate)	Tetrachlorometaxylene	100	% Rec		

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QC Summary
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Kauai Water Department

QC Ref #174228 - Cyanide **Analysis Date: 06/17/2002**

2206140025 KAPAA INJECTION WELL

QC Ref #174249 - Specific Conductance **Analysis Date: 06/18/2002**

2206140025 KAPAA INJECTION WELL

QC Ref #174390 - Mercury **Analysis Date: 06/19/2002**

2206140025 KAPAA INJECTION WELL

QC Ref #174482 - Fluoride **Analysis Date: 06/20/2002**

2206140025 KAPAA INJECTION WELL

QC Ref #174496 - Glyphosate **Analysis Date: 06/17/2002**

2206140025 KAPAA INJECTION WELL

QC Ref #174506 - Diquat and Paraquat **Analysis Date: 06/18/2002**

2206140025 KAPAA INJECTION WELL

QC Ref #174526 - Alkalinity in CaCO3 units **Analysis Date: 06/19/2002**

2206140025 KAPAA INJECTION WELL

QC Ref #174579 - Calcium, Total, ICAP **Analysis Date: 06/21/2002**

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QC Ref #174700 - Arsenic, Total, ICAP/MS **Analysis Date: 06/24/2002**

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QC Ref #174701 - Selenium, Total, ICAP/MS **Analysis Date: 06/24/2002**

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QC Ref #174704 - Cadmium, Total, ICAP/MS **Analysis Date: 06/24/2002**

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QC Ref #174705 - Barium, Total, ICAP/MS **Analysis Date: 06/24/2002**

2206140025 KAPAA INJECTION WELL

QC Ref #174706 - Antimony, Total, ICAP/MS **Analysis Date: 06/24/2002**

2206140025 KAPAA INJECTION WELL

QC Ref #174707 - Thallium, Total, ICAP/MS **Analysis Date: 06/24/2002**

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QC Ref #174708 - Lead, Total, ICAP/MS **Analysis Date: 06/24/2002**

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QC Ref #174709 - Beryllium, Total, ICAP/MS **Analysis Date: 06/24/2002**

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QC Ref #174712 - Chromium, Total, ICAP/MS **Analysis Date: 06/24/2002**

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QC Ref #174714 - Nickel, Total, ICAP/MS **Analysis Date: 06/24/2002**

2206140025 KAPAA INJECTION WELL

QC Ref #174715 - Copper, Total, ICAP/MS **Analysis Date: 06/24/2002**

2206140025 KAPAA INJECTION WELL

QC Ref #174859 - Endothall **Analysis Date: 06/24/2002**

2206140025 KAPAA INJECTION WELL

QC Ref #174900 - Aldicarbs **Analysis Date: 06/26/2002**

2206140025 KAPAA INJECTION WELL

QC Ref #175064 - Regulated VOCs plus Lists 1&3 **Analysis Date: 06/21/2002**

2206140025 KAPAA INJECTION WELL

QC Ref #175121 - Herbicides by 515.3 **Analysis Date: 06/26/2002**

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QC Ref #175502 - EDB and DBCP by GC-ECD **Analysis Date: 06/26/2002**

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QC Ref #175737 - SDWA Pesticides **Analysis Date: 06/23/2002**

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QC Ref #177505 - 525 Semivolatiles by GC/MS **Analysis Date: 07/20/2002**

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QC Ref #174228 Cyanide

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	06130070		(0.00 - 0.00)	
LCS1	Cyanide	0.10	0.106	106.0	(80.00 - 120.00)	
MBLK	Cyanide	ND				
MS	Cyanide	0.10	0.096	96.0	(80.00 - 120.00)	
MSD	Cyanide	0.10	0.096	96.0	(80.00 - 120.00)	0.00

QC Ref #174249 Specific Conductance

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
DUP	Specific Conductance	858	858		(0.00 - 20.00)	0.0

QC Ref #174390 Mercury

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	06130150		(0.00 - 0.00)	
LCS1	Mercury	1.50	1.42	94.7	(85.00 - 115.00)	
LCS2	Mercury	1.50	1.40	93.3	(85.00 - 115.00)	1.4
MBLK	Mercury	ND				
MS	Mercury	1.50	1.43	95.3	(70.00 - 130.00)	
MSD	Mercury	1.50	1.39	92.7	(70.00 - 130.00)	2.8

QC Ref #174482 Fluoride

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	06130176		(0.00 - 0.00)	
LCS1	Fluoride	1.00	0.968	96.8	(90.00 - 110.00)	
LCS2	Fluoride	1.00	0.988	98.8	(90.00 - 110.00)	2.0
MBLK	Fluoride	ND				
MS	Fluoride	1.00	0.963	96.3	(80.00 - 120.00)	
MSD	Fluoride	1.00	0.968	96.8	(80.00 - 120.00)	0.52

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QC Ref #174496 Glyphosate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	06120012		(0.00 - 0.00)	
LCS1	Glyphosate	10	8.7	87.0	(70.00 - 130.00)	
MBLK	Glyphosate	ND				
MS	Glyphosate	10	8.9	89.0	(70.00 - 130.00)	

QC Ref #174506 Diquat and Paraquat

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	06140034		(0.00 - 0.00)	
LCS1	Diquat	10.0	7.4	74.0	(70.00 - 130.00)	
MBLK	Diquat	ND				
MS	Diquat	10.0	8.6	86.0	(70.00 - 130.00)	
LCS1	Paraquat	10.0	7.8	78.0	(70.00 - 130.00)	
MBLK	Paraquat	ND				
MS	Paraquat	10.0	8.9	89.0	(70.00 - 130.00)	

QC Ref #174526 Alkalinity in CaCO3 units

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	06140176		(0.00 - 0.00)	
LCS1	Alkalinity in CaCO3 units	96.2	99.8	103.7	(90.00 - 110.00)	
LCS2	Alkalinity in CaCO3 units	96.2	99.9	103.8	(90.00 - 110.00)	0.10
MBLK	Alkalinity in CaCO3 units	ND				
MS	Alkalinity in CaCO3 units	96.2	97.6	101.5	(80.00 - 120.00)	
MSD	Alkalinity in CaCO3 units	96.2	97.6	101.5	(80.00 - 120.00)	0.00

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QC Ref #174579 Calcium, Total, ICAP

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Calcium, Total, ICAP	50	52.8	105.6	(85.00 - 115.00)	
LCS2	Calcium, Total, ICAP	50	52.5	105.0	(85.00 - 115.00)	0.57
MBLK	Calcium, Total, ICAP	ND				
MS	Calcium, Total, ICAP	50	52.3	104.6	(70.00 - 130.00)	
MSD	Calcium, Total, ICAP	50	49.4	98.8	(70.00 - 130.00)	5.7

QC Ref #174700 Arsenic, Total, ICAP/MS

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Arsenic, Total, ICAP/MS	20	20.1	100.5	(85.00 - 115.00)	
LCS2	Arsenic, Total, ICAP/MS	20	20.8	104.0	(85.00 - 115.00)	3.4
MBLK	Arsenic, Total, ICAP/MS	ND				
MS	Arsenic, Total, ICAP/MS	20	18.9	94.5	(70.00 - 130.00)	
MSD	Arsenic, Total, ICAP/MS	20	18.7	93.5	(70.00 - 130.00)	1.1

QC Ref #174701 Selenium, Total, ICAP/MS

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Selenium, Total, ICAP/MS	20	19.6	98.0	(85.00 - 115.00)	
LCS2	Selenium, Total, ICAP/MS	20	20.5	102.5	(85.00 - 115.00)	4.5
MBLK	Selenium, Total, ICAP/MS	ND				
MS	Selenium, Total, ICAP/MS	20	19.5	97.5	(70.00 - 130.00)	
MSD	Selenium, Total, ICAP/MS	20	19.4	97.0	(70.00 - 130.00)	0.51

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QC Ref #174704 Cadmium, Total, ICAP/MS

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Cadmium, Total, ICAP/MS	20	21.1	105.5	(85.00 - 115.00)	
LCS2	Cadmium, Total, ICAP/MS	20	21.5	107.5	(85.00 - 115.00)	1.9
MBLK	Cadmium, Total, ICAP/MS	ND				
MS	Cadmium, Total, ICAP/MS	20	20.9	104.5	(70.00 - 130.00)	
MSD	Cadmium, Total, ICAP/MS	20	21	105.0	(70.00 - 130.00)	0.48

QC Ref #174705 Barium, Total, ICAP/MS

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Barium, Total, ICAP/MS	100	102	102.0	(85.00 - 115.00)	
LCS2	Barium, Total, ICAP/MS	100	104	104.0	(85.00 - 115.00)	1.9
MBLK	Barium, Total, ICAP/MS	ND				
MS	Barium, Total, ICAP/MS	100	103	103.0	(70.00 - 130.00)	
MSD	Barium, Total, ICAP/MS	100	103	103.0	(70.00 - 130.00)	0.00

QC Ref #174706 Antimony, Total, ICAP/MS

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Antimony, Total, ICAP/MS	50	51.3	102.6	(85.00 - 115.00)	
LCS2	Antimony, Total, ICAP/MS	50	52.8	105.6	(85.00 - 115.00)	2.9
MBLK	Antimony, Total, ICAP/MS	ND				
MS	Antimony, Total, ICAP/MS	50	51.9	103.8	(70.00 - 130.00)	
MSD	Antimony, Total, ICAP/MS	50	52.2	104.4	(70.00 - 130.00)	0.58

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QC Ref #174707 Thallium, Total, ICAP/MS

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Thallium, Total, ICAP/MS	20.0	20.9	104.5	(85.00 - 115.00)	
LCS2	Thallium, Total, ICAP/MS	20.0	21.4	107.0	(85.00 - 115.00)	2.4
MBLK	Thallium, Total, ICAP/MS	ND				
MS	Thallium, Total, ICAP/MS	20.0	20.8	104.0	(70.00 - 130.00)	
MSD	Thallium, Total, ICAP/MS	20.0	21	105.0	(70.00 - 130.00)	0.96

QC Ref #174708 Lead, Total, ICAP/MS

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Lead, Total, ICAP/MS	20	20.8	104.0	(85.00 - 115.00)	
LCS2	Lead, Total, ICAP/MS	20	21.5	107.5	(85.00 - 115.00)	3.3
MBLK	Lead, Total, ICAP/MS	ND				
MS	Lead, Total, ICAP/MS	20	20.8	104.0	(70.00 - 130.00)	
MSD	Lead, Total, ICAP/MS	20	20.9	104.5	(70.00 - 130.00)	0.48

QC Ref #174709 Beryllium, Total, ICAP/MS

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Beryllium, Total, ICAP/MS	5.00	4.74	94.8	(70.00 - 130.00)	
LCS2	Beryllium, Total, ICAP/MS	5.00	4.85	97.0	(85.00 - 115.00)	2.3
MBLK	Beryllium, Total, ICAP/MS	ND				
MS	Beryllium, Total, ICAP/MS	5.00	4.77	95.4	(70.00 - 130.00)	
MSD	Beryllium, Total, ICAP/MS	5.00	4.87	97.4	(70.00 - 130.00)	2.1

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QC Ref #174712 Chromium, Total, ICAP/MS

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Chromium, Total, ICAP/MS	100	105	105.0	(85.00 - 115.00)	
LCS2	Chromium, Total, ICAP/MS	100	109	109.0	(85.00 - 115.00)	3.7
MBLK	Chromium, Total, ICAP/MS	ND				
MS	Chromium, Total, ICAP/MS	100	104	104.0	(70.00 - 130.00)	
MSD	Chromium, Total, ICAP/MS	100	102	102.0	(70.00 - 130.00)	1.9

QC Ref #174714 Nickel, Total, ICAP/MS

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Nickel, Total, ICAP/MS	50	53.3	106.6	(85.00 - 115.00)	
LCS2	Nickel, Total, ICAP/MS	50	54.1	108.2	(85.00 - 115.00)	1.5
MBLK	Nickel, Total, ICAP/MS	ND				
MS	Nickel, Total, ICAP/MS	50	51.2	102.4	(70.00 - 130.00)	
MSD	Nickel, Total, ICAP/MS	50	50.5	101.0	(70.00 - 130.00)	1.4

QC Ref #174715 Copper, Total, ICAP/MS

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Copper, Total, ICAP/MS	100	106	106.0	(85.00 - 115.00)	
LCS2	Copper, Total, ICAP/MS	100	109	109.0	(85.00 - 115.00)	2.8
MBLK	Copper, Total, ICAP/MS	ND				
MS	Copper, Total, ICAP/MS	100	102	102.0	(70.00 - 130.00)	
MSD	Copper, Total, ICAP/MS	100	100	100.0	(70.00 - 130.00)	2.0

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LCS1	Methiocarb	10.0	9.36	93.6	(80.00 - 120.00)
MBLK	Methiocarb	ND			
MS	Methiocarb	10.0	8.76	87.6	(65.00 - 135.00)
LCS1	Methomyl	10.0	9.25	92.5	(80.00 - 120.00)
MBLK	Methomyl	ND			
MS	Methomyl	10.0	9.00	90.0	(65.00 - 135.00)
LCS1	Oxamyl (Vydate)	10.0	8.99	89.9	(80.00 - 120.00)
MBLK	Oxamyl (Vydate)	ND			
MS	Oxamyl (Vydate)	10.0	8.83	88.3	(65.00 - 135.00)
LCS1	BDMC	100	93.3	93.3	(70.00 - 130.00)
MBLK	BDMC	100	109	109.0	
MS	BDMC	100	86.8	86.8	(70.00 - 130.00)

QC Ref #175064 Regulated VOCs plus Lists 1&3

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	1,1,1,2-Tetrachloroethane	4	3.66	91.5	(70.00 - 130.00)	
MBLK	1,1,1,2-Tetrachloroethane	ND				
MS	1,1,1,2-Tetrachloroethane	10	10.9	109.0	(84.00 - 131.00)	
MSD	1,1,1,2-Tetrachloroethane	10	10.7	107.0	(84.00 - 131.00)	1.9
LCS1	1,1,1-Trichloroethane	4	3.15	78.8	(70.00 - 130.00)	
MBLK	1,1,1-Trichloroethane	ND				
MS	1,1,1-Trichloroethane	10	10.2	102.0	(70.00 - 130.00)	
MSD	1,1,1-Trichloroethane	10	9.94	99.4	(70.00 - 130.00)	2.6
LCS1	1,1,2,2-Tetrachloroethane	4	4.31	107.7	(70.00 - 130.00)	
MBLK	1,1,2,2-Tetrachloroethane	ND				
MS	1,1,2,2-Tetrachloroethane	10	12.1	121.0	(70.00 - 130.00)	
MSD	1,1,2,2-Tetrachloroethane	10	11.9	119.0	(70.00 - 130.00)	1.7
LCS1	1,1,2-Trichloroethane	4	4.19	104.8	(70.00 - 130.00)	
MBLK	1,1,2-Trichloroethane	ND				
MS	1,1,2-Trichloroethane	10	11.9	119.0	(70.00 - 130.00)	
MSD	1,1,2-Trichloroethane	10	11.6	116.0	(70.00 - 130.00)	2.6
LCS1	1,1-Dichloroethane	4	3.76	94.0	(70.00 - 130.00)	
MBLK	1,1-Dichloroethane	ND				
MS	1,1-Dichloroethane	10	12.2	122.0	(70.00 - 130.00)	

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QC Ref #174859 Endothall

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	06140025		(0.00 - 0.00)	
LCS1	Endothall	25	21.4	85.6	(80.00 - 120.00)	
MBLK	Endothall	ND				
MS	Endothall	25	20.1	80.4	(80.00 - 120.00)	

QC Ref #174900 Aldicarbs

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	3-Hydroxycarbofuran	10.0	9.69	96.9	(80.00 - 120.00)	
MBLK	3-Hydroxycarbofuran	ND				
MS	3-Hydroxycarbofuran	10.0	9.08	90.8	(65.00 - 135.00)	
MS	Spiked sample	Lab # 22	06060020		(0.00 - 0.00)	
LCS1	Aldicarb (Temik)	10.0	9.01	90.1	(80.00 - 120.00)	
MBLK	Aldicarb (Temik)	ND				
MS	Aldicarb (Temik)	10.0	9.11	91.1	(65.00 - 135.00)	
LCS1	Aldicarb sulfone	10.0	8.81	88.1	(80.00 - 120.00)	
MBLK	Aldicarb sulfone	ND				
MS	Aldicarb sulfone	10.0	9.20	92.0	(65.00 - 135.00)	
LCS1	Aldicarb sulfoxide	10.0	9.65	96.5	(80.00 - 120.00)	
MBLK	Aldicarb sulfoxide	ND				
MS	Aldicarb sulfoxide	10.0	8.99	89.9	(65.00 - 135.00)	
LCS1	Baygon	10.0	9.07	90.7	(80.00 - 120.00)	
MBLK	Baygon	ND				
MS	Baygon	10.0	8.95	89.5	(65.00 - 135.00)	
LCS1	Carbofuran (Furadan)	10.0	9.29	92.9	(80.00 - 120.00)	
MBLK	Carbofuran (Furadan)	ND				
MS	Carbofuran (Furadan)	10.0	9.02	90.2	(65.00 - 135.00)	
LCS1	Carbaryl	10.0	9.35	93.5	(80.00 - 120.00)	
MBLK	Carbaryl	ND				
MS	Carbaryl	10.0	8.59	85.9	(65.00 - 135.00)	

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MSD	1,3,5-Trimethylbenzene	10	10.7	107.0	(70.00 - 130.00)	1.9
LCS1	1,3-Dichloropropane	4	4.12	103.0	(70.00 - 130.00)	
MBLK	1,3-Dichloropropane	ND				
MS	1,3-Dichloropropane	10	11.8	118.0	(70.00 - 130.00)	
MSD	1,3-Dichloropropane	10	11.6	116.0	(70.00 - 130.00)	1.7
LCS1	p-Dichlorobenzene (1,4-DCB)	4	3.48	87.0	(70.00 - 130.00)	
MBLK	p-Dichlorobenzene (1,4-DCB)	ND				
MS	p-Dichlorobenzene (1,4-DCB)	10	11.1	111.0	(70.00 - 130.00)	
MSD	p-Dichlorobenzene (1,4-DCB)	10	10.9	109.0	(70.00 - 130.00)	1.8
LCS1	2,2-Dichloropropane	4	3.02	75.5	(70.00 - 130.00)	
MBLK	2,2-Dichloropropane	ND				
MS	2,2-Dichloropropane	10	9.12	91.2	(84.00 - 131.00)	
MSD	2,2-Dichloropropane	10	9.08	90.8	(84.00 - 131.00)	0.44
LCS1	2-Butanone (MEK)	40	46.6	116.5	(70.00 - 130.00)	
MBLK	2-Butanone (MEK)	ND				
MS	2-Butanone (MEK)	100	69.4	69.4	(56.00 - 85.00)	
MSD	2-Butanone (MEK)	100	69.8	69.8	(56.00 - 85.00)	0.57
LCS1	o-Chlorotoluene	4	3.52	88.0	(70.00 - 130.00)	
MBLK	o-Chlorotoluene	ND				
MS	o-Chlorotoluene	10	11.3	113.0	(70.00 - 130.00)	
MSD	o-Chlorotoluene	10	11.4	114.0	(70.00 - 130.00)	0.88
LCS1	p-Chlorotoluene	4	3.58	89.5	(70.00 - 130.00)	
MBLK	p-Chlorotoluene	ND				
MS	p-Chlorotoluene	10	11.6	116.0	(70.00 - 130.00)	
MSD	p-Chlorotoluene	10	11.1	111.0	(70.00 - 130.00)	4.4
LCS1	4-Methyl-2-Pentanone (MIBK)	40	45.3	113.2	(70.00 - 130.00)	
MBLK	4-Methyl-2-Pentanone (MIBK)	ND				
MS	4-Methyl-2-Pentanone (MIBK)	100	104	104.0	(70.00 - 130.00)	
MSD	4-Methyl-2-Pentanone (MIBK)	100	101	101.0	(70.00 - 130.00)	2.9
MS	Spiked sample	Lab # 22	06140025		(0.00 - 0.00)	
LCS1	Benzene	4	3.93	98.2	(70.00 - 130.00)	
MBLK	Benzene	ND				
MS	Benzene	10	12.9	129.0	(70.00 - 130.00)	
MSD	Benzene	10	12.5	125.0	(70.00 - 130.00)	3.1
LCS1	Bromobenzene	4	3.48	87.0	(70.00 - 130.00)	
MBLK	Bromobenzene	ND				

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(continued)

MSD	1,1-Dichloroethane	10	11.7	117.0	(70.00 - 130.00)	4.2
LCS1	1,1-Dichloroethylene	4	3.91	97.8	(70.00 - 130.00)	
MBLK	1,1-Dichloroethylene	ND				
MS	1,1-Dichloroethylene	10	11.3	113.0	(70.00 - 130.00)	
MSD	1,1-Dichloroethylene	10	11.8	118.0	(70.00 - 130.00)	4.3
LCS1	1,1-Dichloropropene	4	3.39	84.8	(70.00 - 130.00)	
MBLK	1,1-Dichloropropene	ND				
MS	1,1-Dichloropropene	10	11.6	116.0	(81.00 - 127.00)	
MSD	1,1-Dichloropropene	10	11.7	117.0	(81.00 - 127.00)	0.86
LCS1	1,2,3-Trichlorobenzene	4	4.12	103.0	(70.00 - 130.00)	
MBLK	1,2,3-Trichlorobenzene	ND				
MS	1,2,3-Trichlorobenzene	10	10.2	102.0	(70.00 - 130.00)	
MSD	1,2,3-Trichlorobenzene	10	10.6	106.0	(70.00 - 130.00)	3.8
LCS1	1,2,3-Trichloropropane	4	4.09	102.2	(70.00 - 130.00)	
MBLK	1,2,3-Trichloropropane	ND				
MS	1,2,3-Trichloropropane	10	11.1	111.0	(70.00 - 130.00)	
MSD	1,2,3-Trichloropropane	10	10.7	107.0	(70.00 - 130.00)	3.7
LCS1	1,2,4-Trichlorobenzene	4	3.91	97.8	(70.00 - 130.00)	
MBLK	1,2,4-Trichlorobenzene	ND				
MS	1,2,4-Trichlorobenzene	10	10.1	101.0	(70.00 - 130.00)	
MSD	1,2,4-Trichlorobenzene	10	10.5	105.0	(70.00 - 130.00)	3.9
LCS1	1,2,4-Trimethylbenzene	4	3.25	81.2	(70.00 - 130.00)	
MBLK	1,2,4-Trimethylbenzene	ND				
MS	1,2,4-Trimethylbenzene	10	11.0	110.0	(70.00 - 130.00)	
MSD	1,2,4-Trimethylbenzene	10	10.7	107.0	(70.00 - 130.00)	2.8
LCS1	1,2-Dichloroethane	4	3.25	81.2	(70.00 - 130.00)	
MBLK	1,2-Dichloroethane	ND				
MS	1,2-Dichloroethane	10	9.69	96.9	(80.00 - 140.00)	
MSD	1,2-Dichloroethane	10	9.41	94.1	(80.00 - 140.00)	2.9
LCS1	1,2-Dichloropropane	4	3.87	96.8	(70.00 - 130.00)	
MBLK	1,2-Dichloropropane	ND				
MS	1,2-Dichloropropane	10	12.3	123.0	(70.00 - 130.00)	
MSD	1,2-Dichloropropane	10	12.0	120.0	(70.00 - 130.00)	2.5
LCS1	1,3,5-Trimethylbenzene	4	3.29	82.2	(70.00 - 130.00)	
MBLK	1,3,5-Trimethylbenzene	ND				
MS	1,3,5-Trimethylbenzene	10	10.9	109.0	(70.00 - 130.00)	

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(continued)

MS	Chloroethane	10	11.2	112.0	(69.00 - 151.00)	
MSD	Chloroethane	10	10.9	109.0	(69.00 - 151.00)	2.7
LCS1	Chloromethane(Methyl Chloride)	4	4.03	100.8	(70.00 - 130.00)	
MBLK	Chloromethane(Methyl Chloride)	ND				
MS	Chloromethane(Methyl Chloride)	10	10.9	109.0	(76.00 - 138.00)	
MSD	Chloromethane(Methyl Chloride)	10	10.9	109.0	(76.00 - 138.00)	0.00
LCS1	Chlorodibromomethane	4	3.68	92.0	(70.00 - 130.00)	
MBLK	Chlorodibromomethane	ND				
MS	Chlorodibromomethane	10	11.6	116.0	(70.00 - 130.00)	
MSD	Chlorodibromomethane	10	11.1	111.0	(70.00 - 130.00)	4.4
LCS1	Dibromomethane	4	4.04	101.0	(70.00 - 130.00)	
MBLK	Dibromomethane	ND				
MS	Dibromomethane	10	11.1	111.0	(70.00 - 130.00)	
MSD	Dibromomethane	10	10.9	109.0	(70.00 - 130.00)	1.8
LCS1	Bromodichloromethane	4	3.48	87.0	(70.00 - 130.00)	
MBLK	Bromodichloromethane	ND				
MS	Bromodichloromethane	10	10.8	108.0	(70.00 - 130.00)	
MSD	Bromodichloromethane	10	10.4	104.0	(70.00 - 130.00)	3.8
LCS1	Dichloromethane	4	3.99	99.8	(70.00 - 130.00)	
MBLK	Dichloromethane	ND				
MS	Dichloromethane	10	12.3	123.0	(70.00 - 130.00)	
MSD	Dichloromethane	10	12.5	125.0	(70.00 - 130.00)	1.6
LCS1	Di-isopropyl ether	4	3.90	97.5	(70.00 - 130.00)	
MBLK	Di-isopropyl ether	ND				
MS	Di-isopropyl ether	10	11.3	113.0	(70.00 - 130.00)	
MSD	Di-isopropyl ether	10	11.1	111.0	(70.00 - 130.00)	1.8
LCS1	Ethyl benzene	4	3.47	86.8	(70.00 - 130.00)	
MBLK	Ethyl benzene	ND				
MS	Ethyl benzene	10	11.3	113.0	(70.00 - 130.00)	
MSD	Ethyl benzene	10	11.3	113.0	(70.00 - 130.00)	0.00
LCS1	Dichlorodifluoromethane	4	3.25	81.2	(70.00 - 130.00)	
MBLK	Dichlorodifluoromethane	ND				
MS	Dichlorodifluoromethane	10	9.50	95.0	(53.00 - 168.00)	
MSD	Dichlorodifluoromethane	10	9.29	92.9	(53.00 - 168.00)	2.2
LCS1	Fluorotrichloromethane-Freon11	4	2.91	72.8	(70.00 - 130.00)	
MBLK	Fluorotrichloromethane-Freon11	ND				

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(continued)

MS	Bromobenzene	10	10.9	109.0	(70.00 - 130.00)	
MSD	Bromobenzene	10	10.7	107.0	(70.00 - 130.00)	1.9
LCS1	Bromomethane (Methyl Bromide)	4	4.12	103.0	(70.00 - 130.00)	
MBLK	Bromomethane (Methyl Bromide)	ND				
MS	Bromomethane (Methyl Bromide)	10	9.86	98.6	(74.00 - 137.00)	
MSD	Bromomethane (Methyl Bromide)	10	9.81	98.1	(74.00 - 137.00)	0.51
LCS1	cis-1,2-Dichloroethylene	4	3.90	97.5	(70.00 - 130.00)	
MBLK	cis-1,2-Dichloroethylene	ND				
MS	cis-1,2-Dichloroethylene	10	11.6	116.0	(86.00 - 129.00)	
MSD	cis-1,2-Dichloroethylene	10	11.9	119.0	(86.00 - 129.00)	2.6
LCS1	Chlorobenzene	4	3.81	95.2	(70.00 - 130.00)	
MBLK	Chlorobenzene	ND				
MS	Chlorobenzene	10	11.6	116.0	(70.00 - 130.00)	
MSD	Chlorobenzene	10	11.5	115.0	(70.00 - 130.00)	0.87
LCS1	Carbon Tetrachloride	4	3.11	77.8	(70.00 - 130.00)	
MBLK	Carbon Tetrachloride	ND				
MS	Carbon Tetrachloride	10	10.4	104.0	(70.00 - 130.00)	
MSD	Carbon Tetrachloride	10	10.4	104.0	(70.00 - 130.00)	0.00
LCS1	cis-1,3-Dichloropropene	4	3.55	88.8	(70.00 - 130.00)	
MBLK	cis-1,3-Dichloropropene	ND				
MS	cis-1,3-Dichloropropene	10	10.8	108.0	(85.00 - 120.00)	
MSD	cis-1,3-Dichloropropene	10	10.6	106.0	(85.00 - 120.00)	1.9
LCS1	Bromoform	4	3.53	88.2	(70.00 - 130.00)	
MBLK	Bromoform	ND				
MS	Bromoform	10	11.0	110.0	(70.00 - 130.00)	
MSD	Bromoform	10	10.9	109.0	(70.00 - 130.00)	0.91
LCS1	Chloroform (Trichloromethane)	4	3.50	87.5	(70.00 - 130.00)	
MBLK	Chloroform (Trichloromethane)	ND				
MS	Chloroform (Trichloromethane)	10	10.6	106.0	(70.00 - 130.00)	
MSD	Chloroform (Trichloromethane)	10	10.3	103.0	(70.00 - 130.00)	2.9
LCS1	Bromochloromethane	4	3.83	95.8	(70.00 - 130.00)	
MBLK	Bromochloromethane	ND				
MS	Bromochloromethane	10	11.7	117.0	(70.00 - 130.00)	
MSD	Bromochloromethane	10	11.5	115.0	(70.00 - 130.00)	1.7
LCS1	Chloroethane	4	4.08	102.0	(70.00 - 130.00)	
MBLK	Chloroethane	ND				

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Kauai Water Department
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MS	Fluorotrichloromethane-Freon11	10	9.44	94.4	(70.00 - 130.00)	
MSD	Fluorotrichloromethane-Freon11	10	9.07	90.7	(70.00 - 130.00)	4.0
LCS1	Hexachlorobutadiene	4	3.72	93.0	(70.00 - 130.00)	
MBLK	Hexachlorobutadiene	ND				
MS	Hexachlorobutadiene	10	11.0	110.0	(70.00 - 130.00)	
MSD	Hexachlorobutadiene	10	11.1	111.0	(70.00 - 130.00)	0.90
LCS1	Isopropylbenzene	4	3.29	82.2	(70.00 - 130.00)	
MBLK	Isopropylbenzene	ND				
MS	Isopropylbenzene	10	11.0	110.0	(70.00 - 130.00)	
MSD	Isopropylbenzene	10	11.0	110.0	(70.00 - 130.00)	0.00
LCS1	m-Dichlorobenzene (1,3-DCB)	4	3.53	88.2	(70.00 - 130.00)	
MBLK	m-Dichlorobenzene (1,3-DCB)	ND				
MS	m-Dichlorobenzene (1,3-DCB)	10	11.4	114.0	(70.00 - 130.00)	
MSD	m-Dichlorobenzene (1,3-DCB)	10	11.1	111.0	(70.00 - 130.00)	2.7
LCS1	m,p-Xylenes	8	7.18	89.8	(70.00 - 130.00)	
MBLK	m,p-Xylenes	ND				
MS	m,p-Xylenes	20	24.1	120.5	(70.00 - 130.00)	
MSD	m,p-Xylenes	20	23.6	118.0	(70.00 - 130.00)	2.1
LCS1	Methyl Tert-butyl ether (MTBE)	4	3.77	94.2	(60.00 - 140.00)	
MBLK	Methyl Tert-butyl ether (MTBE)	ND				
MS	Methyl Tert-butyl ether (MTBE)	10	8.00	80.0	(70.00 - 130.00)	
MSD	Methyl Tert-butyl ether (MTBE)	10	7.70	77.0	(70.00 - 130.00)	3.8
LCS1	Naphthalene	4	4.18	104.5	(70.00 - 130.00)	
MBLK	Naphthalene	ND				
MS	Naphthalene	10	9.63	96.3	(70.00 - 130.00)	
MSD	Naphthalene	10	10.0	100.0	(70.00 - 130.00)	3.8
LCS1	n-Butylbenzene	4	3.41	85.2	(70.00 - 130.00)	
MBLK	n-Butylbenzene	ND				
MS	n-Butylbenzene	10	10.9	109.0	(70.00 - 130.00)	
MSD	n-Butylbenzene	10	10.9	109.0	(70.00 - 130.00)	0.00
LCS1	n-Propylbenzene	4	3.37	84.2	(70.00 - 130.00)	
MBLK	n-Propylbenzene	ND				
MS	n-Propylbenzene	10	11.2	112.0	(70.00 - 130.00)	
MSD	n-Propylbenzene	10	11.0	110.0	(70.00 - 130.00)	1.8
LCS1	o-Xylene	4	3.71	92.8	(70.00 - 130.00)	
MBLK	o-Xylene	ND				

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MS	o-Xylene	10	12.2	122.0	(70.00 - 130.00)	
MSD	o-Xylene	10	12.0	120.0	(70.00 - 130.00)	1.7
LCS1	o-Dichlorobenzene (1,2-DCB)	4	3.84	96.0	(70.00 - 130.00)	
MBLK	o-Dichlorobenzene (1,2-DCB)	ND				
MS	o-Dichlorobenzene (1,2-DCB)	10	10.8	108.0	(70.00 - 130.00)	
MSD	o-Dichlorobenzene (1,2-DCB)	10	10.9	109.0	(70.00 - 130.00)	0.92
LCS1	Tetrachloroethylene (PCE)	4	3.62	90.5	(70.00 - 130.00)	
MBLK	Tetrachloroethylene (PCE)	ND				
MS	Tetrachloroethylene (PCE)	10	11.9	119.0	(70.00 - 130.00)	
MSD	Tetrachloroethylene (PCE)	10	11.8	118.0	(70.00 - 130.00)	0.84
LCS1	p-Isopropyltoluene	4	3.00	75.0	(70.00 - 130.00)	
MBLK	p-Isopropyltoluene	ND				
MS	p-Isopropyltoluene	10	11.1	111.0	(70.00 - 130.00)	
MSD	p-Isopropyltoluene	10	10.9	109.0	(70.00 - 130.00)	1.8
LCS1	sec-Butylbenzene	4	3.28	82.0	(70.00 - 130.00)	
MBLK	sec-Butylbenzene	ND				
MS	sec-Butylbenzene	10	11.1	111.0	(70.00 - 130.00)	
MSD	sec-Butylbenzene	10	10.9	109.0	(70.00 - 130.00)	1.8
LCS1	Styrene	4	3.53	88.2	(70.00 - 130.00)	
MBLK	Styrene	ND				
MS	Styrene	10	11.5	115.0	(70.00 - 130.00)	
MSD	Styrene	10	11.4	114.0	(70.00 - 130.00)	0.87
LCS1	trans-1,2-Dichloroethylene	4	3.84	96.0	(70.00 - 130.00)	
MBLK	trans-1,2-Dichloroethylene	ND				
MS	trans-1,2-Dichloroethylene	10	12.4	124.0	(85.00 - 129.00)	
MSD	trans-1,2-Dichloroethylene	10	12.1	121.0	(85.00 - 129.00)	2.4
LCS1	tert-amyl Methyl Ether	4	3.94	98.5	(70.00 - 130.00)	
MBLK	tert-amyl Methyl Ether	ND				
MS	tert-amyl Methyl Ether	10	9.92	99.2	(70.00 - 130.00)	
MSD	tert-amyl Methyl Ether	10	9.70	97.0	(70.00 - 130.00)	2.2
LCS1	tert-Butyl Ethyl Ether	4	3.76	94.0	(70.00 - 130.00)	
MBLK	tert-Butyl Ethyl Ether	ND				
MS	tert-Butyl Ethyl Ether	10	9.87	98.7	(70.00 - 130.00)	
MSD	tert-Butyl Ethyl Ether	10	9.78	97.8	(70.00 - 130.00)	0.92
LCS1	tert-Butylbenzene	4	3.30	82.5	(70.00 - 130.00)	
MBLK	tert-Butylbenzene	ND				

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Kauai Water Department
(continued)

MS	tert-Butylbenzene	10	10.8	108.0	(70.00 - 130.00)
MSD	tert-Butylbenzene	10	10.6	106.0	(70.00 - 130.00) 1.9
LCS1	Trichloroethylene (TCE)	4	3.59	89.8	(70.00 - 130.00)
MBLK	Trichloroethylene (TCE)	ND			
MS	Trichloroethylene (TCE)	10	11.4	114.0	(70.00 - 130.00)
MSD	Trichloroethylene (TCE)	10	11.2	112.0	(70.00 - 130.00) 1.8
LCS1	Trichlorotrifluoroethane(Freon	4	3.53	88.2	(70.00 - 130.00)
MBLK	Trichlorotrifluoroethane(Freon	ND			
MS	Trichlorotrifluoroethane(Freon	10	10.7	107.0	(70.00 - 130.00)
MSD	Trichlorotrifluoroethane(Freon	10	10.2	102.0	(70.00 - 130.00) 4.8
LCS1	trans-1,3-Dichloropropene	4	3.44	86.0	(70.00 - 130.00)
MBLK	trans-1,3-Dichloropropene	ND			
MS	trans-1,3-Dichloropropene	10	10.5	105.0	(80.00 - 131.00)
MSD	trans-1,3-Dichloropropene	10	10.1	101.0	(80.00 - 131.00) 3.9
LCS1	Toluene	4	3.63	90.8	(70.00 - 130.00)
MBLK	Toluene	ND			
MS	Toluene	10	11.9	119.0	(70.00 - 130.00)
MSD	Toluene	10	11.8	118.0	(70.00 - 130.00) 0.84
LCS1	Vinyl chloride (VC)	4	3.81	95.2	(70.00 - 130.00)
MBLK	Vinyl chloride (VC)	ND			
MS	Vinyl chloride (VC)	10	10.9	109.0	(67.00 - 152.00)
MSD	Vinyl chloride (VC)	10	10.9	109.0	(67.00 - 152.00) 0.00

QC Ref #175121 Herbicides by 515.3

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	2,4,5-T	0.75	0.79	105.3	(70.00 - 130.00)	
LCS2	2,4,5-T	3.0	3.05	101.7	(70.00 - 130.00)	
MBLK	2,4,5-T	ND				
MS1	2,4,5-T	0.75	0.94	125.3	(70.00 - 130.00)	
MS2	2,4,5-T	3.0	3.54	118.0	(70.00 - 130.00)	
MSD	2,4,5-T	0.75	0.89	118.7	(70.00 - 130.00)	12
LCS1	2,4,5-TP (Silvex)	0.75	0.73	97.3	(70.00 - 130.00)	
LCS2	2,4,5-TP (Silvex)	3.0	2.76	92.0	(70.00 - 130.00)	
MBLK	2,4,5-TP (Silvex)	ND				

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Kauai Water Department
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MS1	2,4,5-TP (Silvex)	0.75	0.80	106.7	(70.00 - 130.00)	
MS2	2,4,5-TP (Silvex)	3.0	3.13	104.3	(70.00 - 130.00)	
MSD	2,4,5-TP (Silvex)	0.75	0.78	104.0	(70.00 - 130.00)	6.6
LCS1	2,4-D	0.375	0.39	104.0	(70.00 - 130.00)	
LCS2	2,4-D	1.5	1.64	109.3	(70.00 - 130.00)	
MBLK	2,4-D	ND				
MS1	2,4-D	0.375	0.46	122.7	(70.00 - 130.00)	
MS2	2,4-D	1.5	1.90	126.7	(70.00 - 130.00)	
MSD	2,4-D	0.375	0.44	117.3	(70.00 - 130.00)	12
LCS1	2,4-DB	7.5	7.36	98.1	(70.00 - 130.00)	
LCS2	2,4-DB	10.0	28.0	93.3	(70.00 - 130.00)	
MBLK	2,4-DB	ND				
MS1	2,4-DB	7.5	8.75	116.7	(70.00 - 130.00)	
MS2	2,4-DB	10.0	32.9	109.7	(70.00 - 130.00)	
MSD	2,4-DB	7.5	8.03	107.1	(70.00 - 130.00)	8.7
LCS1	Dichlorprop	1.875	1.71	91.2	(70.00 - 130.00)	
LCS2	Dichlorprop	7.5	6.86	91.5	(70.00 - 130.00)	
MBLK	Dichlorprop	ND				
MS1	Dichlorprop	1.875	1.73	92.3	(70.00 - 130.00)	
MS2	Dichlorprop	7.5	6.99	93.2	(70.00 - 130.00)	
MSD	Dichlorprop	1.875	1.75	93.3	(70.00 - 130.00)	2.3
MS1	Spiked sample	Lab # 22	06130016		(0.00 - 0.00)	
MS2	Spiked sample	Lab # 22	06140022		(0.00 - 0.00)	
MSD	Spiked sample	Lab # 22	06130016		(0.00 - 0.00)	
LCS1	Acifluorfen (qualitative)	0.75	0.85	113.3	(70.00 - 130.00)	
LCS2	Acifluorfen (qualitative)	3.0	3.36	112.0	(70.00 - 130.00)	
MBLK	Acifluorfen (qualitative)	ND				
MS1	Acifluorfen (qualitative)	0.75	1.42	<u>189.3</u>	(70.00 - 130.00)	
MS2	Acifluorfen (qualitative)	3.0	4.99	<u>166.3</u>	(70.00 - 130.00)	
MSD	Acifluorfen (qualitative)	0.75	1.16	<u>154.7</u>	(70.00 - 130.00)	31
LCS1	Bentazon	1.875	1.88	100.3	(70.00 - 130.00)	
LCS2	Bentazon	7.5	7.41	98.8	(70.00 - 130.00)	
MBLK	Bentazon	ND				
MS1	Bentazon	1.875	2.20	117.3	(70.00 - 130.00)	
MS2	Bentazon	7.50	9.40	125.3	(70.00 - 130.00)	
MSD	Bentazon	1.875	2.01	107.2	(70.00 - 130.00)	6.7

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Kauai Water Department
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LCS1	Dalapon (qualitative)	3.75	3.80	101.3	(70.00 - 130.00)	
LCS2	Dalapon (qualitative)	15.0	16.0	106.7	(70.00 - 130.00)	
MBLK	Dalapon (qualitative)	ND				
MS1	Dalapon (qualitative)	3.75	3.71	98.9	(70.00 - 130.00)	
MS2	Dalapon (qualitative)	15.0	15.6	104.0	(70.00 - 130.00)	
MSD	Dalapon (qualitative)	3.75	3.97	105.9	(70.00 - 130.00)	4.4
LCS1	3,5-Dichlorobenzoic acid	1.875	1.96	104.5	(70.00 - 130.00)	
LCS2	3,5-Dichlorobenzoic acid	7.5	7.83	104.4	(70.00 - 130.00)	
MBLK	3,5-Dichlorobenzoic acid	ND				
MS1	3,5-Dichlorobenzoic acid	1.875	1.86	99.2	(70.00 - 130.00)	
MS2	3,5-Dichlorobenzoic acid	7.5	7.51	100.1	(70.00 - 130.00)	
MSD	3,5-Dichlorobenzoic acid	1.875	1.94	103.5	(70.00 - 130.00)	1.0
LCS1	Tot DCPA Mono&Diacid Degradate	0.75	0.86	114.7	(70.00 - 130.00)	
LCS2	Tot DCPA Mono&Diacid Degradate	3.0	3.25	108.3	(70.00 - 130.00)	
MBLK	Tot DCPA Mono&Diacid Degradate	ND				
MS1	Tot DCPA Mono&Diacid Degradate	0.75	1.09	145.3	(70.00 - 130.00)	
MS2	Tot DCPA Mono&Diacid Degradate	3.0	4.10	136.7	(70.00 - 130.00)	
MSD	Tot DCPA Mono&Diacid Degradate	0.75	0.94	125.3	(70.00 - 130.00)	8.9
LCS1	Dicamba	0.1875	0.20	106.7	(70.00 - 130.00)	
LCS2	Dicamba	0.75	0.80	106.7	(70.00 - 130.00)	
MBLK	Dicamba	ND				
MS1	Dicamba	0.1875	0.19	101.3	(70.00 - 130.00)	
MS2	Dicamba	0.75	0.79	105.3	(70.00 - 130.00)	
MSD	Dicamba	0.1875	0.20	106.7	(70.00 - 130.00)	0.00
LCS1	Dinoseb	0.75	0.80	106.7	(70.00 - 130.00)	
LCS2	Dinoseb	3.0	3.03	101.0	(70.00 - 130.00)	
MBLK	Dinoseb	ND				
MS1	Dinoseb	0.75	0.88	117.3	(70.00 - 130.00)	
MS2	Dinoseb	3.0	3.33	111.0	(70.00 - 130.00)	
MSD	Dinoseb	0.75	0.83	110.7	(70.00 - 130.00)	3.7
LCS1	Pentachlorophenol	0.15	0.15	100.0	(70.00 - 130.00)	
LCS2	Pentachlorophenol	0.60	0.60	100.0	(70.00 - 130.00)	
MBLK	Pentachlorophenol	ND				
MS1	Pentachlorophenol	0.15	0.15	100.0	(70.00 - 130.00)	
MS2	Pentachlorophenol	0.60	0.61	101.7	(70.00 - 130.00)	
MSD	Pentachlorophenol	0.15	0.15	100.0	(70.00 - 130.00)	0.00

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Kauai Water Department
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LCS1	Picloram	0.375	0.42	112.0	(70.00 - 130.00)	
LCS2	Picloram	1.5	1.65	110.0	(70.00 - 130.00)	
MBLK	Picloram	ND				
MS1	Picloram	0.375	0.68	181.3	(70.00 - 130.00)	
MS2	Picloram	1.5	2.46	164.0	(70.00 - 130.00)	
MSD	Picloram	0.375	0.57	152.0	(70.00 - 130.00)	30
LCS1	4-Nitrophenol (qualitative)	3.75	3.76	100.3	(70.00 - 130.00)	
LCS2	4-Nitrophenol (qualitative)	15.0	14.8	98.7	(70.00 - 130.00)	
MBLK	4-Nitrophenol (qualitative)	ND				
MS1	4-Nitrophenol (qualitative)	3.75	1.86	49.6	(70.00 - 130.00)	
MS2	4-Nitrophenol (qualitative)	15.0	8.31	55.4	(70.00 - 130.00)	
MSD	4-Nitrophenol (qualitative)	3.75	1.71	45.6	(70.00 - 130.00)	75
LCS1	2,4-Dichlorophenylacetic acid	100	100	100.0	(70.00 - 130.00)	
LCS2	2,4-Dichlorophenylacetic acid	100	100	100.0	(70.00 - 130.00)	0.00
MBLK	2,4-Dichlorophenylacetic acid	100	96	96.0		
MS1	2,4-Dichlorophenylacetic acid	100	99	99.0	(70.00 - 130.00)	
MS2	2,4-Dichlorophenylacetic acid	100	99	99.0	(70.00 - 130.00)	
MSD	2,4-Dichlorophenylacetic acid	100	99	99.0	(70.00 - 130.00)	1.0

QC Ref #175502 EDB and DBCP by GC-ECD

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	06210054		(0.00 - 0.00)	
LCS1	Dibromochloropropane (DBCP)	0.01	0.010	100.0	(70.00 - 130.00)	
LCS2	Dibromochloropropane (DBCP)	0.20	0.15	75.0	(70.00 - 130.00)	
MBLK	Dibromochloropropane (DBCP)	ND				
MS	Dibromochloropropane (DBCP)	0.20	0.16	80.0	(65.00 - 135.00)	
MSD	Dibromochloropropane (DBCP)	0.20	0.16	80.0	(65.00 - 135.00)	0.00
LCS1	Ethylene Dibromide (EDB)	0.01	0.011	110.0	(70.00 - 130.00)	
LCS2	Ethylene Dibromide (EDB)	0.20	0.16	80.0	(70.00 - 130.00)	
MBLK	Ethylene Dibromide (EDB)	ND				
MS	Ethylene Dibromide (EDB)	0.20	0.18	90.0	(65.00 - 135.00)	
MSD	Ethylene Dibromide (EDB)	0.20	0.18	90.0	(65.00 - 135.00)	0.00
LCS1	1,2-dibromopropane (surr)	100	92	92.0	(60.00 - 140.00)	
LCS2	1,2-dibromopropane (surr)	100	77	77.0	(60.00 - 140.00)	18

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Kauai Water Department
(continued)

MBLK	1,2-dibromopropane (surr)	100	91	91.0		
MS	1,2-dibromopropane (surr)	100	106	106.0	(60.00 - 140.00)	
MSD	1,2-dibromopropane (surr)	100	105	105.0	(60.00 - 140.00)	0.95

QC Ref #175737 SDWA Pesticides

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MBLK	PCB 1016 Aroclor	ND				
LCS1	PCB 1221 Aroclor	0.500	0.571	114.2	(70.00 - 130.00)	
MBLK	PCB 1221 Aroclor	ND				
MS	PCB 1221 Aroclor	0.500	0.555	111.0	(65.00 - 135.00)	
MSD	PCB 1221 Aroclor	0.500	0.614	122.8	(65.00 - 135.00)	10
MBLK	PCB 1232 Aroclor	ND				
MBLK	PCB 1242 Aroclor	ND				
MBLK	PCB 1248 Aroclor	ND				
MBLK	PCB 1254 Aroclor	ND				
MBLK	PCB 1260 Aroclor	ND				
LCS1	Alpha-BHC	0.050	0.058	116.0	(62.00 - 122.00)	
MBLK	Alpha-BHC	ND				
MS	Alpha-BHC	0.050	0.057	114.0	(57.00 - 127.00)	
MSD	Alpha-BHC	0.050	0.054	108.0	(57.00 - 127.00)	5.4
MS	Spiked sample	Lab # 22	06140025		(0.00 - 0.00)	
LCS1	Alachlor (Alanex)	0.100	0.115	115.0	(70.00 - 130.00)	
MBLK	Alachlor (Alanex)	ND				
MS	Alachlor (Alanex)	0.100	0.128	128.0	(65.00 - 135.00)	
MSD	Alachlor (Alanex)	0.100	0.130	130.0	(65.00 - 135.00)	1.6
LCS1	Aldrin	0.050	0.052	104.0	(56.00 - 116.00)	
MBLK	Aldrin	ND				
MS	Aldrin	0.050	0.056	112.0	(51.00 - 121.00)	
MSD	Aldrin	0.050	0.052	104.0	(51.00 - 121.00)	7.4
LCS1	Beta-BHC	0.050	0.057	114.0	(65.00 - 125.00)	
MBLK	Beta-BHC	ND				
MS	Beta-BHC	0.050	0.060	120.0	(60.00 - 130.00)	
MSD	Beta-BHC	0.050	0.057	114.0	(60.00 - 130.00)	5.1
MBLK	Chlordane	ND				

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Kauai Water Department
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LCS1	Chlorthalonil (Draconil,Bravo)	0.100	0.112	112.0	(61.00 - 121.00)	
MBLK	Chlorthalonil (Draconil,Bravo)	ND				
MS	Chlorthalonil (Draconil,Bravo)	0.100	0.111	111.0	(56.00 - 126.00)	
MSD	Chlorthalonil (Draconil,Bravo)	0.100	0.118	118.0	(56.00 - 126.00)	6.1
LCS1	Delta-BHC	0.050	0.061	122.0	(72.00 - 132.00)	
MBLK	Delta-BHC	ND				
MS	Delta-BHC	0.050	0.061	122.0	(67.00 - 137.00)	
MSD	Delta-BHC	0.050	0.057	114.0	(67.00 - 137.00)	6.8
LCS1	p,p' DDD	0.100	0.118	118.0	(77.00 - 137.00)	
MBLK	p,p' DDD	ND				
MS	p,p' DDD	0.100	0.117	117.0	(72.00 - 142.00)	
MSD	p,p' DDD	0.100	0.109	109.0	(72.00 - 142.00)	7.1
LCS1	p,p' DDE	0.100	0.116	116.0	(69.00 - 129.00)	
MBLK	p,p' DDE	ND				
MS	p,p' DDE	0.100	0.115	115.0	(64.00 - 134.00)	
MSD	p,p' DDE	0.100	0.107	107.0	(64.00 - 134.00)	7.2
LCS1	p,p' DDT	0.100	0.123	123.0	(82.00 - 142.00)	
MBLK	p,p' DDT	ND				
MS	p,p' DDT	0.100	0.125	125.0	(77.00 - 147.00)	
MSD	p,p' DDT	0.100	0.121	121.0	(77.00 - 147.00)	3.3
LCS1	Dieldrin	0.100	0.116	116.0	(57.00 - 117.00)	
MBLK	Dieldrin	ND				
MS	Dieldrin	0.100	0.116	116.0	(52.00 - 122.00)	
MSD	Dieldrin	0.100	0.109	109.0	(52.00 - 122.00)	6.2
LCS1	Endrin Aldehyde	0.100	0.089	89.0	(58.00 - 118.00)	
MBLK	Endrin Aldehyde	ND				
MS	Endrin Aldehyde	0.100	0.092	92.0	(53.00 - 123.00)	
MSD	Endrin Aldehyde	0.100	0.082	82.0	(53.00 - 123.00)	11
LCS1	Endrin	0.100	0.113	113.0	(58.00 - 118.00)	
MBLK	Endrin	ND				
MS	Endrin	0.100	0.113	113.0	(53.00 - 123.00)	
MSD	Endrin	0.100	0.106	106.0	(53.00 - 123.00)	6.4
LCS1	Endosulfan I (alpha)	0.050	0.057	114.0	(57.00 - 117.00)	
MBLK	Endosulfan I (alpha)	ND				
MS	Endosulfan I (alpha)	0.050	0.059	118.0	(52.00 - 122.00)	
MSD	Endosulfan I (alpha)	0.050	0.060	120.0	(52.00 - 122.00)	1.7

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LCS1	Endosulfan II (beta)	0.100	0.116	116.0	(62.00 - 122.00)	
MBLK	Endosulfan II (beta)	ND				
MS	Endosulfan II (beta)	0.100	0.116	116.0	(57.00 - 127.00)	
MSD	Endosulfan II (beta)	0.100	0.109	109.0	(57.00 - 127.00)	6.2
LCS1	Endosulfan sulfate	0.100	0.120	120.0	(72.00 - 132.00)	
MBLK	Endosulfan sulfate	ND				
MS	Endosulfan sulfate	0.100	0.120	120.0	(67.00 - 137.00)	
MSD	Endosulfan sulfate	0.100	0.117	117.0	(67.00 - 137.00)	2.5
LCS1	Heptachlor	0.050	0.057	114.0	(68.00 - 128.00)	
MBLK	Heptachlor	ND				
MS	Heptachlor	0.050	0.060	120.0	(63.00 - 133.00)	
MSD	Heptachlor	0.050	0.060	120.0	(63.00 - 133.00)	0.00
LCS1	Heptachlor Epoxide	0.050	0.056	112.0	(57.00 - 117.00)	
MBLK	Heptachlor Epoxide	ND				
MS	Heptachlor Epoxide	0.050	0.061	122.0	(52.00 - 122.00)	
MSD	Heptachlor Epoxide	0.050	0.056	112.0	(52.00 - 122.00)	8.5
LCS1	Lindane (gamma-BHC)	0.050	0.059	118.0	(59.00 - 119.00)	
MBLK	Lindane (gamma-BHC)	ND				
MS	Lindane (gamma-BHC)	0.050	0.061	122.0	(54.00 - 124.00)	
MSD	Lindane (gamma-BHC)	0.050	0.057	114.0	(54.00 - 124.00)	6.8
LCS1	Methoxychlor	0.500	0.614	122.8	(75.00 - 135.00)	
MBLK	Methoxychlor	ND				
MS	Methoxychlor	0.500	0.617	123.4	(70.00 - 140.00)	
MSD	Methoxychlor	0.500	0.583	116.6	(70.00 - 140.00)	5.7
LCS1	Tetrachlorometaxylene (surr)	100	93	93.0	(70.00 - 130.00)	
MBLK	Tetrachlorometaxylene (surr)	100	92	92.0		
MS	Tetrachlorometaxylene (surr)	100	94	94.0	(70.00 - 130.00)	
MSD	Tetrachlorometaxylene (surr)	100	99	99.0	(70.00 - 130.00)	5.2
LCS1	Dibutyl chlorendate (surr)	100	115	115.0	(70.00 - 130.00)	
MBLK	Dibutyl chlorendate (surr)	100	113	113.0		
MS	Dibutyl chlorendate (surr)	100	113	113.0	(70.00 - 130.00)	
MSD	Dibutyl chlorendate (surr)	100	108	108.0	(70.00 - 130.00)	4.5
MBLK	Toxaphene	ND				

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Kauai Water Department
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QC Ref #177505 525 Semivolatiles by GC/MS

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	alpha-Chlordane	2	2.20	110.0	(70.00 - 130.00)	
MBLK	alpha-Chlordane	ND				
MS	alpha-Chlordane	5	4.72	94.4	(70.00 - 130.00)	
MSD	alpha-Chlordane	5	4.61	92.2	(70.00 - 130.00)	2.4
MBLK	Diazinon	ND				
MS	Spiked sample	Lab # 22	06190094		(0.00 - 0.00)	
MSD	Spiked sample	Lab # 22	06190094		(0.00 - 0.00)	0.00
LCS1	Acenaphthylene	2	2.23	111.5	(70.00 - 130.00)	
MBLK	Acenaphthylene	ND				
MS	Acenaphthylene	5	5.45	109.0	(70.00 - 130.00)	
MSD	Acenaphthylene	5	5.31	106.2	(70.00 - 130.00)	2.6
LCS1	Alachlor	2	2.18	109.0	(70.00 - 130.00)	
MBLK	Alachlor	ND				
MS	Alachlor	5	5.24	104.8	(70.00 - 130.00)	
MSD	Alachlor	5	5.11	102.2	(70.00 - 130.00)	2.5
LCS1	Aldrin	2	1.65	82.5	(70.00 - 130.00)	
MBLK	Aldrin	ND				
MS	Aldrin	5	3.65	73.0	(70.00 - 130.00)	
MSD	Aldrin	5	3.40	68.0	(70.00 - 130.00)	7.1
LCS1	Anthracene	2	2.00	100.0	(70.00 - 130.00)	
MBLK	Anthracene	ND				
MS	Anthracene	5	5.12	102.4	(70.00 - 130.00)	
MSD	Anthracene	5	5.04	100.8	(70.00 - 130.00)	1.6
LCS1	Atrazine	2	2.02	101.0	(70.00 - 130.00)	
MBLK	Atrazine	ND				
MS	Atrazine	5	4.93	98.6	(70.00 - 130.00)	
MSD	Atrazine	5	4.98	99.6	(70.00 - 130.00)	1.0
LCS1	Benz(a)Anthracene	2	2.32	116.0	(70.00 - 130.00)	
MBLK	Benz(a)Anthracene	ND				
MS	Benz(a)Anthracene	5	5.91	118.2	(70.00 - 130.00)	
MSD	Benz(a)Anthracene	5	5.88	117.6	(70.00 - 130.00)	0.51

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

MWH Laboratories
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Kauai Water Department
(continued)

LCS1	Benzo(a)pyrene	2	2.24	112.0	(70.00 - 130.00)	
MBLK	Benzo(a)pyrene	ND				
MS	Benzo(a)pyrene	5	4.76	95.2	(70.00 - 130.00)	
MSD	Benzo(a)pyrene	5	5.25	105.0	(70.00 - 130.00)	9.8
LCS1	Benzo(b)Fluoranthene	2	2.45	122.5	(70.00 - 130.00)	
MBLK	Benzo(b)Fluoranthene	ND				
MS	Benzo(b)Fluoranthene	5	5.31	106.2	(70.00 - 130.00)	
MSD	Benzo(b)Fluoranthene	5	5.43	108.6	(70.00 - 130.00)	2.2
LCS1	Benzo(g,h,i)Perylene	2	2.50	125.0	(70.00 - 130.00)	
MBLK	Benzo(g,h,i)Perylene	ND				
MS	Benzo(g,h,i)Perylene	5	4.82	96.4	(70.00 - 130.00)	
MSD	Benzo(g,h,i)Perylene	5	5.24	104.8	(70.00 - 130.00)	8.3
LCS1	Benzo(k)Fluoranthene	2	2.55	127.5	(70.00 - 130.00)	
MBLK	Benzo(k)Fluoranthene	ND				
MS	Benzo(k)Fluoranthene	5	5.24	104.8	(70.00 - 130.00)	
MSD	Benzo(k)Fluoranthene	5	5.31	106.2	(70.00 - 130.00)	1.3
LCS1	Di(2-Ethylhexyl)phthalate	2	1.99	99.5	(70.00 - 130.00)	
MBLK	Di(2-Ethylhexyl)phthalate	ND				
MS	Di(2-Ethylhexyl)phthalate	5	3.14	<u>62.8</u>	(70.00 - 130.00)	
MSD	Di(2-Ethylhexyl)phthalate	5	3.28	<u>65.6</u>	(70.00 - 130.00)	4.4
LCS1	Butylbenzylphthalate	2	2.46	123.0	(70.00 - 130.00)	
MBLK	Butylbenzylphthalate	ND				
MS	Butylbenzylphthalate	5	6.01	120.2	(70.00 - 130.00)	
MSD	Butylbenzylphthalate	5	6.23	124.6	(70.00 - 130.00)	3.6
MBLK	Bromacil	ND				
MBLK	Butachlor	ND				
LCS1	Caffeine	2	1.49	74.5	(70.00 - 130.00)	
MBLK	Caffeine	ND				
MS	Caffeine	5	3.88	77.6	(70.00 - 130.00)	
MSD	Caffeine	5	3.59	71.8	(70.00 - 130.00)	7.8
LCS1	Chrysene	2	2.44	122.0	(70.00 - 130.00)	
MBLK	Chrysene	ND				
MS	Chrysene	5	5.08	101.6	(70.00 - 130.00)	
MSD	Chrysene	5	5.21	104.2	(70.00 - 130.00)	2.5
LCS1	Dibenz(a,h)Anthracene	2	1.87	93.5	(70.00 - 130.00)	
MBLK	Dibenz(a,h)Anthracene	ND				

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Kauai Water Department
(continued)

MS	Dibenz(a,h)Anthracene	5	3.98	79.6	(70.00 - 130.00)	
MSD	Dibenz(a,h)Anthracene	5	4.24	84.8	(70.00 - 130.00)	6.3
LCS1	Di-(2-Ethylhexyl)adipate	2	2.06	103.0	(70.00 - 130.00)	
MBLK	Di-(2-Ethylhexyl)adipate	ND				
MS	Di-(2-Ethylhexyl)adipate	5	6.13	122.6	(70.00 - 130.00)	
MSD	Di-(2-Ethylhexyl)adipate	5	6.13	122.6	(70.00 - 130.00)	0.00
LCS1	Diethylphthalate	2	2.48	124.0	(70.00 - 130.00)	
MBLK	Diethylphthalate	ND				
MS	Diethylphthalate	5	6.29	125.8	(70.00 - 130.00)	
MSD	Diethylphthalate	5	5.93	118.6	(70.00 - 130.00)	5.9
MBLK	Dieldrin	ND				
LCS1	Dimethylphthalate	2	2.30	115.0	(70.00 - 130.00)	
MBLK	Dimethylphthalate	ND				
MS	Dimethylphthalate	5	5.72	114.4	(70.00 - 130.00)	
MSD	Dimethylphthalate	5	5.46	109.2	(70.00 - 130.00)	4.7
MBLK	Dimethoate	ND				
LCS1	Di-n-Butylphthalate	2	2.52	126.0	(70.00 - 130.00)	
MBLK	Di-n-Butylphthalate	ND				
MS	Di-n-Butylphthalate	5	6.37	127.4	(70.00 - 130.00)	
MSD	Di-n-Butylphthalate	5	6.22	124.4	(70.00 - 130.00)	2.4
LCS1	Endrin	2	2.06	103.0	(70.00 - 130.00)	
MBLK	Endrin	ND				
MS	Endrin	5	5.08	101.6	(70.00 - 130.00)	
MSD	Endrin	5	5.02	100.4	(70.00 - 130.00)	1.2
LCS1	Fluoranthene	2	2.13	106.5	(70.00 - 130.00)	
MBLK	Fluoranthene	ND				
MS	Fluoranthene	5	4.83	96.6	(70.00 - 130.00)	
MSD	Fluoranthene	5	4.95	99.0	(70.00 - 130.00)	2.5
LCS1	Fluorene	2	2.36	118.0	(70.00 - 130.00)	
MBLK	Fluorene	ND				
MS	Fluorene	5	5.70	114.0	(70.00 - 130.00)	
MSD	Fluorene	5	5.21	104.2	(70.00 - 130.00)	9.0
LCS1	gamma-Chlordane	2	1.83	91.5	(70.00 - 130.00)	
MBLK	gamma-Chlordane	ND				
MS	gamma-Chlordane	5	3.72	74.4	(70.00 - 130.00)	
MSD	gamma-Chlordane	5	3.73	74.6	(70.00 - 130.00)	0.27

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Kauai Water Department
(continued)

LCS1	Hexachlorobenzene	2	2.45	122.5	(70.00 - 130.00)
MBLK	Hexachlorobenzene	ND			
MS	Hexachlorobenzene	5	5.06	101.2	(70.00 - 130.00)
MSD	Hexachlorobenzene	5	4.86	97.2	(70.00 - 130.00) 4.0
LCS1	Hexachlorocyclopentadiene	2	2.00	100.0	(70.00 - 130.00)
MBLK	Hexachlorocyclopentadiene	ND			
MS	Hexachlorocyclopentadiene	5	4.66	93.2	(70.00 - 130.00)
MSD	Hexachlorocyclopentadiene	5	4.60	92.0	(70.00 - 130.00) 1.3
LCS1	Heptachlor	2	2.32	116.0	(70.00 - 130.00)
MBLK	Heptachlor	ND			
MS	Heptachlor	5	5.37	107.4	(70.00 - 130.00)
MSD	Heptachlor	5	4.99	99.8	(70.00 - 130.00) 7.3
LCS1	Heptachlor Epoxide	2	2.01	100.5	(70.00 - 130.00)
MBLK	Heptachlor Epoxide	ND			
MS	Heptachlor Epoxide	5	4.60	92.0	(70.00 - 130.00)
MSD	Heptachlor Epoxide	5	4.52	90.4	(70.00 - 130.00) 1.8
LCS1	Indeno(1,2,3,c,d)Pyrene	2	2.29	114.5	(70.00 - 130.00)
MBLK	Indeno(1,2,3,c,d)Pyrene	ND			
MS	Indeno(1,2,3,c,d)Pyrene	5	4.75	95.0	(70.00 - 130.00)
MSD	Indeno(1,2,3,c,d)Pyrene	5	5.10	102.0	(70.00 - 130.00) 7.1
MBLK	Isophorone	ND			
LCS1	Lindane	2	2.05	102.5	(70.00 - 130.00)
MBLK	Lindane	ND			
MS	Lindane	5	4.87	97.4	(70.00 - 130.00)
MSD	Lindane	5	4.57	91.4	(70.00 - 130.00) 6.4
LCS1	Methoxychlor	2	2.66	133.0	(70.00 - 130.00)
MBLK	Methoxychlor	ND			
MS	Methoxychlor	5	8.70	174.0	(70.00 - 130.00)
MSD	Methoxychlor	5	8.83	176.6	(70.00 - 130.00) 1.5
MBLK	Metribuzin	ND			
LCS1	Molinate	2	2.40	120.0	(70.00 - 130.00)
MBLK	Molinate	ND			
MS	Molinate	5	5.50	110.0	(70.00 - 130.00)
MSD	Molinate	5	5.34	106.8	(70.00 - 130.00) 3.0
MBLK	Metolachlor	ND			
LCS1	trans-Nonachlor	2	2.33	116.5	(70.00 - 130.00)

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
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#97137

Kauai Water Department
(continued)

MBLK	trans-Nonachlor	ND				
MS	trans-Nonachlor	5	4.75	95.0	(70.00 - 130.00)	
MSD	trans-Nonachlor	5	4.57	91.4	(70.00 - 130.00)	3.9
LCS1	Pentachlorophenol	8	8.25	103.1	(70.00 - 130.00)	
MBLK	Pentachlorophenol	ND				
MS	Pentachlorophenol	20	18.1	90.5	(70.00 - 130.00)	
MSD	Pentachlorophenol	20	18.2	91.0	(70.00 - 130.00)	0.55
LCS1	Phenanthrene	2	2.25	112.5	(70.00 - 130.00)	
MBLK	Phenanthrene	ND				
MS	Phenanthrene	5	5.45	109.0	(70.00 - 130.00)	
MSD	Phenanthrene	5	5.36	107.2	(70.00 - 130.00)	1.7
MBLK	Prometryn	ND				
MBLK	Propachlor	ND				
LCS1	Pyrene	2	2.19	109.5	(70.00 - 130.00)	
MBLK	Pyrene	ND				
MS	Pyrene	5	4.96	99.2	(70.00 - 130.00)	
MSD	Pyrene	5	5.00	100.0	(70.00 - 130.00)	0.80
LCS1	Simazine	2	1.87	93.5	(70.00 - 130.00)	
MBLK	Simazine	ND				
MS	Simazine	5	4.82	96.4	(70.00 - 130.00)	
MSD	Simazine	5	5.02	100.4	(70.00 - 130.00)	4.1
LCS1	Perylene-d12	100	94	94.0	(70.00 - 130.00)	
MBLK	Perylene-d12	100	85	85.0		
MS	Perylene-d12	100	103	103.0	(70.00 - 130.00)	
MSD	Perylene-d12	100	108	108.0	(70.00 - 130.00)	4.7
LCS1	Thiobencarb	2	1.86	93.0	(70.00 - 130.00)	
MBLK	Thiobencarb	ND				
MS	Thiobencarb	5	4.50	90.0	(70.00 - 130.00)	
MSD	Thiobencarb	5	4.37	87.4	(70.00 - 130.00)	2.9
MBLK	Trifluralin	ND				

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

Pace Analytical™
www.pacelabs.com

5 6/28

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

KAUAI
97137

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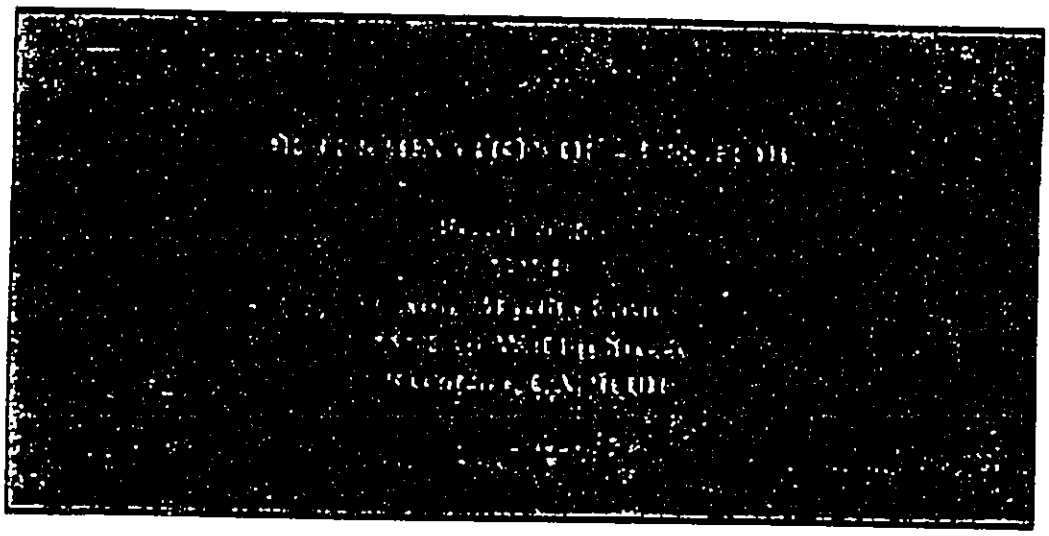

ACCREDITED IN ACCORDANCE WITH nelac

This report contains 4 pages.

The results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

REPORT OF LABORATORY ANALYSIS

nelac

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

02 AUG 6 P4:08

June 27, 2002

Attn: Martha Frost
MWH
555 East Walnut Street
Pasadena, CA 91101

MWL Project # 97137
MWL Sub PO # 99-8133
Pace Project # 1058929
HI State Cert. #: SLD
Expiration Date: 6/30/02

Dear Ms. Frost:

Enclosed are analytical results of one water sample analyzed for 2,3,7,8-TCDD content. This sample was analyzed according to Method 1613B by High Resolution Gas Chromatography/High Resolution Mass Spectrometry.

MWL Sample ID	Pace Sample ID	Date Collected	Date Received
2206140025	3628368	06/12/02	06/18/02

The results reported for this sample and the associated quality control samples were all within the criteria described in Method 1613B. If you have any questions or concerns regarding these results, please contact me at (612) 607-6331, by facsimile at (612) 607-6444 or by e-mail at Dan.Hoseck@pacelabs.com.

Sincerely,

Dan Hoseck, Project Manager
High Resolution Mass Spectrometry

Enclosure

REPORT OF LABORATORY ANALYSIS

MWH Laboratories
555 East Walnut Street
Pasadena, CA 91101
Ph (626) 568-6400 Fax (626) 568-6324

Date 06/17/02

Submittal Form & Purchase Order 99-8133

*REPORTING REQUIREMENTS: One report for this MWH Project Number: 97137
Do Not Combine Report with any other samples submitted under different MWH project numbers!
Report & Invoice must have the MWH Project Number and Sub PO#: 97137 99-8133
Report all quality control data according to Method. Include dates analyzed, date extracted (if extracted) and Method reference on the report. Email by .pdf to martha.e.frost@mwhglobal.com or Fax results to 626-568-6324
Results must have Complete data & QC with Approval Signature.
See reverse side for List of Terms and Conditions

Reports & Invoices to: Martha Frost, Sub-contracting Administrator
EMAIL TO: martha.e.frost@mwhglobal.com
MWH Laboratories 555 East Walnut Street Pasadena, CA 91101
Phone (626) 568-6437 Fax (626) 568-6324

Provide in each Report the Specified State Certification # & Exp DAte for requested tests + matrix

Hawaii DW

EDT ☐ Yes

To Dan Hosek
ce Analytical

0 Elm Street SE Suite 200
neapolis, Minnesota 55414

Recipient FedEx Acct:1797-5692-7

2) 607-6331 Fax (612) 607-6444

1058929

MWH Project #	Report Due:	Sub PO#
97137	07/02/02	99-8133

MAF

Use MWH Lab # for ID	Client Sample ID for reference only	Analysis Requested	Sample Date & Time	Matrix	Container
2206140025	KAPAA INJECTION WELL	2,3,7,8-Todd Dioxin in drinking water 1613b	06/12/02 1330	dw	1 1L amber [was / no preservative [7day HT for NJ NY UT]

10362836

Relinquished by: Sample Control Date 06/17/02 Time

Pace AnalyticalServices, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612-607-6444

Drinking Water Analysis Results
2,3,7,8-TCDD -- USEPA Method 1613B
MWH Laboratories

Sample ID.....2206140025
Project #.....97137
Sub PO #.....99-8133
Lab Sample ID.....103628368

Source ID.....Kapaa Injection Well
Date Collected.....06/12/2002
Date Received.....06/18/2002
Date Extracted.....06/21/2002

Spike..... 200 pg
IS Spike.....2000 pg
CS Spike..... 200 pg

	Sample 2206140025	Method Blank	Lab Spike	Lab Spike Dup
[2,3,7,8-TCDD]	ND	ND	--	--
RL	5 pg/L	5 pg/L	--	--
2,3,7,8-TCDD Recovery	--	--	110%	121%
Spike Recovery Limit	--	--	73-146%	73-146%
RPD				9.8%
IS Recovery	88%	84%	81%	84%
IS Recovery Limits	31-137%	31-137%	25-141%	25-141%
CS Recovery	96%	89%	102%	93%
CS Recovery Limits	42-164%	42-164%	37-158%	37-158%
Filename	A20625C_8	A20624C_25	A20624C_23	A20624C_24
Analysis Date	06/26/2002	06/25/2002	06/25/2002	06/25/2002
Analysis Time	02:06	09:59	08:47	09:23
Analyst	JAS	JAS	JAS	JAS
Volume	1.024L	0.979L	1.016L	0.998L
Dilution	NA	NA	NA	NA
ICAL Date	05/01/2002	05/01/2002	05/01/2002	05/01/2002
CCAL Filename	A20625C_1	A20624C_22	A20624C_22	A20624C_22

! = Outside the Control Limits
ND = Not Detected
RL = Reporting Limit
Limits = Control Limits from Method 1613 (10/94 Revision), Tables 6A and 7A
RPD = Relative Percent Difference of Lab Spike Recoveries
IS = Internal Standard [2,3,7,8-TCDD-$^{13}C_{12}$]
CS = Cleanup Standard [2,3,7,8-TCDD-$^{37}Cl_4$]

Analyst: _____

Project No.....02-1058929