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| 1974 | Legislature Created Natural Energy Laboratory of Hawaii, 322 acres at Keahole Point |
| 1976 | **EIS** - Environmental Impact Statement (Phase 1)* Identified OTEC as the principle project with phased research and development
* Envisioned a 1 – 5 MW OTEC plant with ammonia as working fluid
* Discussed potential environmental impacts
* Mostly addressed infrastructure: Roads, Potable Water and Power

http://oeqc.doh.hawaii.gov/Shared%20Documents/EA\_and\_EIS\_Online\_Library/Hawaii/1970s/1976-08-HA-DEIS-NATURAL-ENERGY-LAB-KEAHOLE-PT-PHASE-I.pdf |
| 1977 | **Permit – CDUA: HA-879** Allowed governmental use of conservation land areas at Keahole Point TMK’s 7-3-43:3, 4, 5 and adjacent coastal water and submerged lands. The Land Use Commission approved reclassifying NELH land from Conservation to Urban on February 17, 1978. |
| 1978 | **Permit** – SMA 77* Condition #9: All other applicable rules, regulations and requirements, including those of the HDOH and Department of Water Supply, shall be complied with.

Z:\! Historical\NELHA Permits, Etc |
| 1980 | **Draft EA** – Construction and operation of stage I of the seacoast test facility *(Can’t find document)***Planning Study** - for an Aquaculture Laboratory at the Natural Energy Laboratory of Hawaii for the Research Corporation of the University of Hawaii - Prepared by the Oceanic Institute, Waimanalo, Hawaii 96795, July 23, 1980 |
| 1982 | **Permit –** NPDES HI 002 0893 * Research Campus outfall
* Quarterly Sampling
* Terminated 1999

**Z:\! Historical\NELHA Permits, Etc\** **Outfall\_NPDES\_95-98.pdf****Monitoring*** Surface Seawater Monitoring of 12 in. pipeline (1982 – 1988)
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| 1985 | **EIS** - Development Plan for Hawaii Ocean Science and Technology Park & Expansion* Assessed OTEC pumping 42,000 gpm
* Assessed Aquaculture pumping 100,000 gpm
* Considered various return seawater management methods
	+ Preferred method – Discharge Trenches
	+ Alternative method – Mixed seawater return pipeline
		- Environmentally feasible – not cost effective

http://oeqc.doh.hawaii.gov/Shared%20Documents/EA\_and\_EIS\_Online\_Library/Hawaii/1980s/1985-09-08-HA-FEIS-National-Energy-Laboratory-of-Hawaii.pdf |
| 1986 | **Permit – SMA 239** – Issued by the County of Hawaii, Planning Commission and the approval of change of zone for TMK 7-3-09:Por. of 5 and 7-3-43:Por. of 3. The condition that is pertinent to the CEMP is Condition #8. SMA Use Permit No. 239 was amended on September 22, 1994 to include parcel 23 for which same types of projects are allowable on the rest of the NELH and HOST Park properties. This changed Condition #8 to Condition #10.* **Condition #10:** Offshore water quality monitoring data shall be submitted annually to the Planning Department prior to the anniversary date (June 4, 1986) of granting of the SMA Use Permit

Z:\! Historical\NELHA Permits, Etc**Permit – CDUA: HA-1862** This Conservation District use application allowed for the use of approximately 2,940 acres of ocean waters and submerged lands in the vicinity of Keahole Point, Hawaii for temporary and permanent ocean research, alternative energy and mariculture research and commercial mariculture and energy activities and facilities. Immediate construction and development of three ocean water pipelines and use of portions of two parcels of land for pipeline and utility easements, pump stations and road improvement and maintenance activities on and offshore of Keahole Point, Hawaii was approved.* **Condition #5:** The applicant shall comply with all applicable Public Health Regulations
* **Condition #15:** The monitoring program includes anchialine ponds at NELH/HOST park site. Monitoring program should describe the existing conditions at these sites in terms of water quality and endemic aquatic fauna, and the program should last a minimum of 10 years. This program should be coordinated with this Dept. and the appropriate Fed., State and County Agencies
* **Condition #16:** Should the long term studies indicate that the anchialine ponds at NELH/HOST Park are being adversely affected by seawater plume, the NELH and HOST Park shall take necessary mitigative measures to alleviate these effects which may include the installation of an ocean outfall for the disposal of return seawater.
* **Condition #19:** A long term monitoring/sampling program to determine the impacts of impingement and entrainment on fish eggs, larvae, and juveniles be conducted. These studies should be coordinated with the National Marine Fisheries Service, The Division of Aquatic Resources, and the U.S. Fish and Wildlife Service.

Z:\! Historical\NELHA Permits, Etc |

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| 1987 | Development Plan - Hawaii Ocean Science & Technology Park and Expansion of the Natural Energy Laboratory of Hawaii - January 1987**EIS** – **Draft Supplemental Environmental Impact Statement****Modification of Proposed Action to Permit Alternative Methods of Seawater Return Flow****Disposal at the Natural Energy Laboratory of Hawaii**Prepared by MCM Planning, Honolulu HawaiiInitial draft discussion, study and proposal that led to the following Final SEIS – Alternate Methods of Seawater Flow Disposal**FSEIS** – Final Supplemental Environmental Impact Statement - March 1987 - Prepared by MCM Planning, Honolulu HawaiiAlternative Methods of Seawater Return Flow Disposal* Discussed
	+ Deep Injection Wells
		- Environmentally benign with 3-4 months’ residence time and no net movement of groundwater, High capital and operational Costs
	+ Direct Surface Discharge Through Holding Ponds into Coastal Waters
		- Most cost effective, Large ponds needed, Potential eutrophication and thermal issues
	+ Shallow Trench Disposal
		- Considered thermal and nutrient changes to be NOT significant, Cost effective, Developed Comprehensive Environmental Monitoring Plan

http://oeqc.doh.hawaii.gov/Shared%20Documents/EA\_and\_EIS\_Online\_Library/Hawaii/1980s/1987-03-HA-FSEIS-KEAHOLE-NAT-ENERGY-LAB-Seawater-Return.pdf |
| 1988 | **Monitoring*** Deep Seawater Monitoring of 40” Pipeline (1988 – present)
* Surface Seawater Monitoring of 28” Pipeline (1988 – present)
* Established Groundwater Monitoring (Well 1 -6)
* Established Biota Monitoring

<http://nelha.hawaii.gov/resources/library/nelha-lab-reports/> |
| 1989 | **Monitoring*** Established Comprehensive Environmental Monitoring Plan (GK & Associates)
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| 1991 | **Project Planning and Environmental Review****Modification of Existing Approvals for NELH and HOST Park****April 1991**Prepared by MCM Planning, Honolulu Hawaii |

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| 1992 | **EIS** – Supplemental Environmental Impact Statement* Assess ammonia based closed cycle 1 MW OTEC power plant
	+ OTEC plant would supply water for an Ocean Science Center and aquaculture activities
	+ Seawater return flow would be directed to 2 shallow trenches

http://oeqc.doh.hawaii.gov/Shared%20Documents/EA\_and\_EIS\_Online\_Library/Hawaii/1990s/1992-09-HA-FSEIS-KEAHOLE-DEVELOPMENT-OF-LAND-EXCHANGE-PARCEL.pdf**Studies** - West Hawaii Coastal Monitoring Program – Community Guidelines |
| 1993 | **Monitoring*** Ocean Transects (6 ocean transects, 5 stations)

<http://nelha.hawaii.gov/resources/library/nelha-lab-reports/> |
| 1994 | **Permit – CDUA: HA-1862A** - This Conservation District Use Application allowed for the use of approximately 350 acres of ocean waters and submerged lands in the vicinity of Keahole Point, Hawaii for temporary and permanent ocean research, alternative energy and mariculture research and commercial mariculture and energy activities and facilities; and for the pipeline and utility easements, construction and maintenance of pumps, and other related maintenance activities on and offshore of Keahole Point, Hawaii; use of one parcel of land, TMK: 7-3-09: 23 for establishment of aqua cultural activities and its related facilities and uses* **Condition #1:** The applicant shall comply with all applicable statutes, ordinances, rules and regulations of the Federal, State and County governments and applicable parts of Section 13-2-21, Administrative Rules, as amended
* **Condition #4:** The applicant shall comply with all applicable Department of Health Administrative Rules
* **Condition #8:** That the applicant shall comply with all applicable conditions to Conservation District Permit HA-1862 and its previous amendments
 |
| 1996 | **Plan –** NELHA Shoreline Management PlanZ:\! Environmental and regulatory\Environmental Resource Library\Shoreline Management Plan |
| 2001 | **Study –** NELHA Seawater Return System – Marine Research Consultants* Management Recommendations
* Review of Comprehensive Environmental Monitoring Program
* Hydraulics of Seawater Disposal at NELHA

Most recommendation have been implemented.Z:\! Environmental and regulatory\EA, EIS and Studies |

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| 2006 | **Study -** A Review of Coastal Monitoring Data for Developments in West Hawai`iZ:\! Environmental and regulatory\Environmental Resource Library\UH Hio Water Quality Report(Note: NELHA and other leading scientist believe this report interpreted the data incorrectly by not accounting for differences in nutrient concentrations to salinity concentrations. See NELHA Critique in same folder) |
| 2007 | **Monitoring*** Modified transect sampling to conform with HAR Title 11 Chapter 54

<http://nelha.hawaii.gov/resources/library/nelha-lab-reports/> |
| 2008 | **Permit –** SAA 08-000368: Construction of 13 Environmental Monitoring WellsZ:\! Environmental and regulatory\EA, EIS and Studies\Permit\SMA 08-000368 Monitoring Well Construction |
| 2010 | **Monitoring*** Implemented return seawater sampling to conform with HAR Title 11 Chapter 62,

54 discharge trenches currently sampled.<http://nelha.hawaii.gov/resources/library/nelha-lab-reports/> |
| 2012 | **EA** – OTEC Research, Development and Demonstration Facility * Discussion of the implementation of a 1 MW OTEC demonstration plant
* Discussion of return seawater
	+ Injection wells - recommended
	+ Leach fields – alternative

http://oeqc.doh.hawaii.gov/Shared%20Documents/EA\_and\_EIS\_Online\_Library/Hawaii/2010s/2012-07-23-DEA-Ocean-Thermal-Energy-Conversion-Research-Development.pdf |
| 2015 | **HR 90** – Support NELHA and HDOH to Develop Guidelines for the Disposal of Seawater* House Resolution is Dead

Z:\! Legislative\Legislative 2015\House ResolutionZ:\! Environmental and regulatory\Seawater Disposal\Working Docs |