

graduate school entities dedicated to forwarding Hawaiian language, culture, and 'āina (land) based education (though this testimony is provided solely in my personal capacity, separate from my formal employment).

6. From 1994 to 2000, I served as the 'Ewa regional representative on the O'ahu Island Burial Council and was involved in the determining the cultural appropriate treatment of previously identified Hawaiian burials and advising the State of Hawai'i Historic Preservation Division regarding inadvertently discovered Hawaiian burials.
7. From 2006 to 2012, I served as Kamehameha Schools' representative on the O'ahu Island Burial Council.
8. I have prepared burial treatment plans and served as a cultural and archaeological monitor on behalf of the Queen Emma Foundation (John Young burial restoration) and Kamehameha Schools (Keanakamanō restoration). Kēhaunani Abad, PhD 10.10.16 Exhibit B.08a 3
9. I have served as an expert witness in cases involving Hawaiian burials as well as other sites of Hawaiian religious and cultural significance including the case of the City and County of Honolulu vs. Paulette Kaleikini (related to the Honolulu Rail project, 2011), Joseph A. Brescia vs. Ka'iulani Edens-Huff, et al (related to the Nāue, Kaua'i Brescia property burial treatment plan, 2008), State of Hawai'i vs. Paulette Kaleikini (related to the Ward Villages project, 2008), the 'Īlio'ulaokalani Coalition, et al. vs. the United States Army (related to the Stryker Brigade, 2006).
10. I was qualified as an expert witness in archeology and Hawaiian cultural burial practices by Judge Ronald Ibarra during the trial of Kelly, et al., v. 1250 Oceanside Partners, et al. concerning burial protection issues involving the Hōkūli'a subdivision development in South Kona (2001).

WDT of Kehaunani Abad, PhD, Ex. B.08a.

496. Dr. Abad contends that the TMT CDUA failed to: (1) identify existing natural resources within the surrounding area, community or region for inclusion in its analysis; and (2) adequately address the highly significant nature of sites in the region. She also argues that the TMT CDUA is significantly flawed in its discussion of project impacts.

497. The TMT Project is consistent with the objectives of the Resource subzone.

C. CRITERION THREE, HAR § 13-5-30(C)(3): "THE PROPOSED LAND USE COMPLIES WITH PROVISIONS AND GUIDELINES CONTAINED IN CHAPTER 205A, HRS, ENTITLED 'COASTAL ZONE MANAGEMENT', WHERE APPLICABLE[.]"

498. HRS § 205A-1 defines Hawaii's Coastal Zone Management Area ("CZMA") as consisting of "all lands of the State and the area extending seaward from the

shoreline to the limit of the State's police power and management authority, including the United States territorial sea." It establishes guidelines for the use of these lands. Many of the objectives of the Coastal Zone Management program parallel the purpose and objectives of the Conservation District under HAR § 13-5 *et seq.* HRS § 205A; (White) Tr. 10/24/16 at 18:16-19:13.

499. HRS § 205A-22 provides: "'Special management area' means the land extending inland from the shoreline as delineated on the maps filed with the authority as of June 8, 1977, or as amended pursuant to section 205A-23."
500. The TMT Project is not in the special management area.
501. Part II of Chapter 205A, HRS §§ 205A-21 through 205A-33, which applies only to special management areas, is not applicable to the TMT Project.
502. The evidence presented demonstrates that the TMT Project complies with the purpose and objectives of the Conservation District and also complies with the objectives of Chapter 205A of the Hawai'i Revised Statutes, specifically including those objectives that do not overlap with the objectives of the Conservation District, but are unique to Chapter 205A. Ex. A-1/R-1 at 2-4 to 2-6; Ex. A-7/R-7 at 48-49; WDT White at 6; (White) Tr. 10/24/16 at 18:16-19:13. The objectives of Chapter 205A that do not overlap with the Conservation District's objectives relate specifically to the protection of water quality.
503. As set forth in more detail below, the TMT Project will have no significant or adverse impacts on water resources, including no significant impacts upon Lake Waiau and ground water, and no significant effects upon the area surrounding the project through surface water runoff or through wastewater (which will be collected and transported off the summit for treatment and disposal).
504. The TMT Project proposal is to conservatively treat all chemical waste as if it were hazardous waste for purposes of handling and disposal. (Dr. Sanders) Tr. 1/3/17 at 97:11-18, 196:12- 197:8. The TMT Observatory will use a zero-discharge wastewater system. Ex. A-1/R1, App. D at D-2; Ex. A-3/R-3 at 3-120. The TMT Project will not release wastewater into the surrounding environment. Ex. A-3/R-3 at 3-120. All wastewater, including mirror washing wastewater (which is not a hazardous waste), will be collected and transported off of Mauna Kea for proper disposal. Ex. A-3/R-3 at 3-120 to 3-121.
505. While construction of the TMT Project will create some new impermeable surfaces at the five-acre TMT Project site, due to the high permeability of the surrounding area, surface rainwater will percolate into the ground whether or not the TMT Project is built. The TMT Project will not create any additional adverse impact on existing water resources. WDT Hayes at 24; *see generally* WDT Nance; Ex. A-3/R-3 at 3-127 to 3-130; Ex. A-9 at 6-6 to 6-8; Tr. 10/25/16 at 36:11-14, 202:15-205:11; Tr. 11/15/16 at 25:23-27:20.
506. It is impossible to completely eliminate the possibility of an accidental spill. (White) Tr. 10/24/16 at 205:5-8. However, the TMT Project will implement measures to mitigate the

risk of an accident spill to the extent logically and reasonably practicable based on best means and methods available to mitigate against such events.

507. To minimize the potential for an accidental spill while waste materials are in transit down the mountain to a proper disposal site, no tanks or containers being transported will be filled to the top. To further ensure the safe transport and disposal of hazardous waste, the TMT Observatory will utilize only Environmental Protection Agency – permitted and licensed contractors to transport hazardous wastes. WDT Hayes at 23-25; Ex. A-3/R-3 at 3-127 to 3-131.
508. No mercury will be used at the TMT Observatory. WDT Hayes at 23; Ex. A-1/R-1 at 2-30 and 4-32; Ex. A-3/R-3 at 3-234. Further, the TMT Observatory will utilize a secondary containment area to store all hazardous materials or wastes. That containment area will be inspected daily for leaks. Fuel storage and piping will also be double-walled and will be equipped with leak monitors. Based on these measures, the chance of a spill entering the surrounding environment is negligible. WDT Hayes at 23-25; Ex. A-1/R-1 at 3-127 to 3-131 and App. D at D-2.
509. No fracking or liquid dynamite use has been planned as part of the TMT Project. Tr. 10/25/16 at 38:11-14; (White) Tr. 10/24/16 at 206:4-7.
510. Storage and waste management include a Spill Prevention and Response Plan ("**SPRP**") and a Materials Storage/Waste Management Plan. The SPRP provides for inspections to ensure that systems are working properly, no leaks are occurring, and any necessary maintenance measures are taken. The SPRP also requires protocols for proper handling, storage, use, and disposal of liquid and solid materials and wastes. WDT Hayes at 25; Ex. A-3/R-3 at 3-128 to 3-130.
511. The TMT Project site is 12 miles from the nearest wells that extract groundwater. The groundwater beneath the summit of Mauna Kea is impounded and compartmentalized by subsurface geologic structures. Because the TMT Observatory will use a zero-discharge wastewater system, wastewater will not be released from the TMT Project so no percolation of wastewater will reach the aquifer. Moreover, Mauna Kea is comprised of very porous lavas that naturally treat and filter water percolating downward. A discharge on the summit area would be naturally treated and filtered through thousands of feet of the porous lavas, which would remove any contamination from that discharge before reaching any groundwater. *See* Ex. A-44. Contamination of groundwater is extremely remote and very unlikely from the TMT Project. Ex. A-3/R-3 at 3-116; WDT Nance at 4.
512. There is no reasonable prospect of an adverse impact on either drinking or coastal waters from the TMT Project. Accordingly, the TMT Project complies with the applicable objectives, provisions and guidelines in Haw. Rev. Stat. Chapter 205A. WDT Hayes at 26.