Following documentation of the fire-pit on the surface, the fire-pit was bisected twice to determine its size and stratigraphic position (fig. 14).

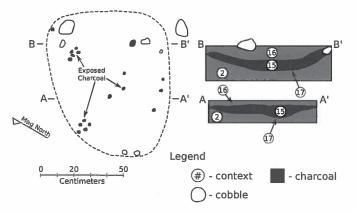


Figure 14: Sketch map and cross section drawing of a subsurface fire-pit recorded as Site 50-40-98-1980.

The first bisection point, A to A', cut the fire-pit in half to expose the stratigraphic section. Following bisection, a 15 cm deep profile was exposed. Context 16, a loose red silty clay loam sediment, was present from the current ground surface to a depth of 3 cm. It appears that the sediment has been deposited over the fire-pit due to water eroon along the drainage. The fire-pit, Context 15, is a band of charcoal that extends from 3 cm below surface to a depth of 12 cm. The fire-pit at this location is approximately 60 cm wide and is basin shaped. The interface between the Context 15 fire-pit and the material it had been dug into, the Context 2 dark reddish brown silty clay loam hard pan soil, was recorded as Context 17. The Context 2 soil was present to the base of excavation at 15 cm below surface.

The second bisection point, B to B', was cut just in front of the two rocks that were exposed on the surface. Following bisection, a 20 cm deep profile was exposed. Context 16, a loose red silty clay loam sediment, was present from the current ground surface to a depth of 6 cm. The sediment has been deposited over the fire-pit due to water erosion along the drainage. The fire-pit, Context 15, is a curved band of charcoal that extends from 6 cm below surface to a maximum depth of 15 cm. The fire-pit at this location is approximately 75 cm wide and is basin shaped. The interface between the Context 15 fire-pit and the material it had been dug into, the Context 2 dark reddish brown silty clay

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loam hard pan soil, was recorded as Context 17. The Context 2 soil was present to the base of excavation at 20 cm below surface. A charcoal sample was collected from each profile after bisection for wood taxa identification and ¹⁴C analysis.

In addition to the pedestrian survey, 31 backhoe trenches were excavated within the project area (fig. 15). The purpose of the backhoe trenches was to search for subsurface cultural deposits and to record the soils and depth of the plow zone within the parcel. A single historic property, a subsurface fire-pit, was identified in Backhoe Trench 21 during trenching and was recorded as Site 50-40-98-1981. No artifacts were collected from any of the trenches excavated.

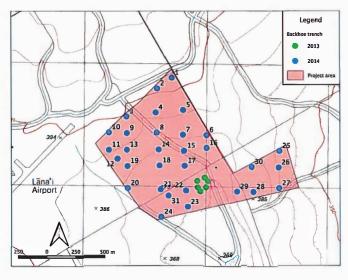


Figure 15: The proposed Miki Basin 200 Acre Industrial Development project area showing the locations of Backhoe Trenches 1–31. The trench locations from the DiVito and Dye [7] investigation are also shown. No trenches were placed in the developed area where the existing Maui Electric Company (MECO) facility lies.

Backhoe Trenches 1-5 were excavated in the northeasternmost portion of the project area and had similar soils (fig. 16, table 7). They contained the plow zone soil, Context 1, to depths ranging from 35 to 45 cm below surface. Context 1 overlay Context 2, a

dark reddish brown silty clay loam hardpan soil present to depths ranging from 65 to 105 cm below surface. Context 2 overlay Context 9, a dark brown silty clay loam present to depths ranging from 100 to 130 cm below surface. It overlay Context 8, a dark reddish brown silty clay loam with gray and red degrading rock fragments present to the base of excavation in each trench.

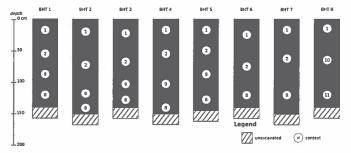


Figure 16: Stratigraphic profiles for Backhoe Trenches 1-8.

Table 7: Sediment descriptions for Backhoe Trenches 1-8

Context	Phase	Depth*	Description	Interpretation
Backhoe 7	French 1		<u> </u>	
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	35-75	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	75-100	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; <i>clear</i> , <i>wavy</i> lower boundary	Natural deposition process
8	1	100- 140+	Dark reddish brown (5YR 3/2) ter- restrial very gravelly silty clay loam; moderately sticky, moderately plas- tic: base of excavation	Natural deposition process

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Backhoe Tr	ench 2			
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	40-105	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	105-130	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; clear, wavy lower boundary	Natural deposition process
8	1	130- 150+	Dark reddish brown (5YR 3/2) ter- restrial very gravelly silty clay loam; moderately sticky, moderately plas- tic; base of excavation	Natural deposition process
Backhoe Tr	ench 3			
1	3	0-45	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	45-90	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	90-115	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; clear, wavy lower boundary	Natural deposition process
8	1	115- 14 0+	Dark reddish brown (5YR 3/2) ter- restrial very gravelly silty clay loam; moderately sticky, moderately plas- tic; base of excavation	Natural deposition process
Backhoe Tr	rench 4			

Dark reddish brown (2.5YR 3/4)

sticky, moderately plastic; abrupt, smooth lower boundary Dark reddish brown (2.5YR 3/4)

silty clay loam; moderately sticky,

moderately plastic; clear, wavy lower

terrestrial silty clay loam; moderately

terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary Dark brown (7.5YR 3/4) terrestrial Natural of

Description

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Context Phase Depth

boundary

3 0-35

1 35-75

* Centimeters below surface.

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Secondary deposi-

Natural deposition

Natural deposition

tion event

process

Interpretation

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Context	Phase	Depth*	Description	Interpretation
8	1	130- 150+	Dark reddish brown (SYR 3/2) ter- restrial very gravelly silty clay loam; moderately sticky, moderately plas- tic; base of excavation	Natural deposition process
Backhoe 7	rench 5			
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	35-65	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	65-110	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; clear, wavy lower boundary	Natural deposition process
8	1	110- 145+	Dark reddish brown (5YR 3/2) ter- restrial very gravelly silty clay loam; moderately sticky, moderately plas- tic; base of excavation	Natural deposition process
Backhoe 7				
1	3	0-50	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	50-100	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
8	1	100 - 140+	Dark reddish brown (5YR 3/2) ter- restrial very gravelly silty clay loam; moderately sticky, moderately plas- tic; base of excavation	Natural deposition process
Backhoe T	rench 7			
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	35-90	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	90-150+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excava- tion	Natural deposition process

* Centimeters below surface.

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Context	Phase	Depth'	Description	Interpretation
Backhoe 1	Trench 8			
1	3	0-30	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
10	3	30-100	Dark reddish brown (2.5YR 2.5/4) terrestrial silty clay loam; moderately sticky, moderately plastic; diffuse, wavy lower boundary	Natural deposition event
11	1	100- 140+	Red (2.5YR 4/8) terrestrial gravelly silty clay loam; moderately sticky, moderately plastic; base of excava- tion	Natural deposition process

^{*} Centimeters below surface.

Backhoe Trenches 7, 10, 12-15, 17-21, and 31 were all excavated in the same general area and had similar soils (fig. 17, table 8). They contained the plow zone soil, Context 1, to depths ranging from 35 to 50 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam hardpan soil present to depths ranging from 80 to 130 cm below surface. Context 2 overlay Context 9, a dark brown silty clay loam present to the base of excavation in each trench. This was the most commonly observed profile within the project parcel.

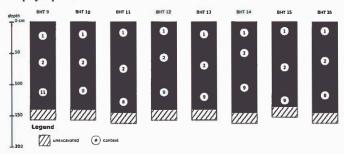


Figure 17: Stratigraphic profiles for Backhoe Trenches 9-16.

Table 8: Sediment descriptions for Backhoe Trenches 9-16

Context	Phase	Depth'	Description	Interpretation
Backhoe 1	rench 10			.99
1	3	0-50	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	50-80	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	80-140+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excava- tion	Natural deposition process
Backhoe 1	rench 11			
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	35-115	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual,	Natural deposition process
8	1	115- 145+	smooth lower boundary Dark reddish brown (5YR 3/2) ter- restrial very gravelly silty clay loam; moderately sticky, moderately plas- tic; base of excavation	Natural deposition process
Backhoe 1	rench 12			
1	3	0-30	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	30-85	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	85-140+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excava- tion	Natural deposition process
Backhoe 1	rench 13			
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event

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Context	Phase	Depth*	Description	Interpretation
2	2 I 40-100 Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary		Natural deposition process	
9	1	100- 140+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excava- tion	Natural deposition process
Backhoe 1	Trench 14	1		
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	35-65	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	65-145+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excava- tion	Natural deposition process
Backhoe '	Trench 13	5		
1	3	0-30	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	30-115	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	115- 135+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excava- tion	Natural deposition process
Backhoe '	Trench 16	3		
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	35-90	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
8	1	90-145+	Dark reddish brown (5YR 3/2) ter- restrial very gravelly silty clay loam; moderately sticky, moderately plas- tic: base of excavation	Natural deposition process

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Context	Phase	Depth*	Description	Interpretation
Backhoe 1	French 9			
1	3	0-45	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	45-85	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
11	1	85-140+	Red (2.5YR 4/8) terrestrial gravelly silty clay loam; moderately sticky, moderately plastic; base of excava- tion	Natural deposition process

^{*} Centimeters below surface.

Backhoe Trench 21 contained a subsurface cultural deposit recorded as Site 50-40-98-1981 (see fig. 9, p. 77). The deposit, documented as Context 12, was a truncated fire-pit remnant exposed in the southern profile of the trench (fig. 18). The fire-pit has been truncated by the plow zone layer, Context 1, present to a depth of 35 cm below surface. It appears to have been hit by a plow moving east to west as the charcoal from the fire-pit is scattered an additional 65 cm to the west along the bottom of the Context 1 plow zone layer. The fire-pit is approximately 65 cm in width, approximately 10 cm thick, basin shaped, and is present between 35 and 45 cm below surface. A single rounded volcanic cobble was observed within the feature. The fire-pit has been excavated into Context 2, a dark reddish brown silty clay hardpan soil present to a depth of 100 cm below surface. The interface between the fire-pit and the Context 2 soil it had been excavated into was recorded as Context 13. Context 2 overlay Context 9, a dark brown silty clay loam present to the base of excavation at 150 cm below surface. A charcoal sample was collected from the Context 12 fire-pit for wood taxa and ¹⁴C analysis.

Backhoe Trench 31 was excavated near Backhoe Trench 21 to search for any additional fire-pit features or associated cultural materials. Backhoe Trench 31 contained the same stratigraphic profile as documented in Backhoe Trench 21. A water line excavation trench with an associated 6 in. PVC pipe was observed in the eastern profile of the backhoe trench. It was recorded as Context 14 and was approximately 25 cm in width and extended to a depth of 140 cm below surface. No additional cultural deposits were documented and no cultural materials were collected from the trench.

Backhoe Trenches 6, 11, 16, and 24 also had similar soils (fig. 19, table 9). They contained the plow zone soil, Context 1, to depths ranging from 35 to 50 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam hardpan soil present to depths ranging from 70 to 115 cm below surface. Context 2 overlay Context 8, a dark reddish brown silty clay loam with gray and red degrading rock fragments to the base of excavation in each trench.

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Figure 18: Stratigraphic profile for the Context 12 fire-pit located in Backhoe Trench 21. The feature was later designated Site 50-40-98-1981.

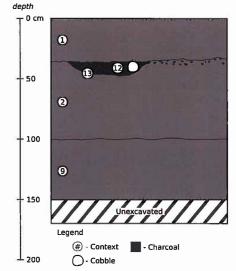


Table 9: Sediment descriptions for Backhoe Trenches 17-24

Context	Phase	Depth*	Description	Interpretation
Backhoe 1	Trench 17	•		
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	40-85	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	85-135+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

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Context	Phase	Depth*	Description	Interpretation
Backhoe 7	rench 18			
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	40-75	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	75-150+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excava- tion	Natural deposition process
Backhoe 7	rench 19			
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	40-130	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	130- 150+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excava- tion	Natural deposition process
Backhoe 7	rench 20			
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	35-110	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	110- 140+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excava- tion	Natural deposition process
Backhoe T	rench 21			
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
12	2	35-45	Black (5YR 2.5/1); very abrupt, irreg- ular lower boundary	Cultural deposition event

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Context	Phase	Depth*	Description	Interpretation
2	1	45-100	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	100÷ 150÷	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excava- tion	Natural deposition process
Rackhoe 1	French 22			
1	3	0-55	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	55-140+	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe T	French 23			
1	3	0-45	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	45-120	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
7	1	120- 145+	Dark reddish brown (5YR 3/4) ter- restrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe 1	French 24	l		
1	3	0-50	Dark reddish brown (2.5YR 3/4) terrestrial slity clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	50-70	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
8	1	70-150+	Dark reddish brown (5YR 3/2) ter- restrial very gravelly silty clay loam; moderately sticky, moderately plas- tic; base of excavation	Natural deposition process

^{*} Centimeters below surface.

Backhoe Trenches 23 and 29 were excavated along the southernmost portion of the project area. They contained the plow zone soil, Context 1, to depths ranging from 40 to 45 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam

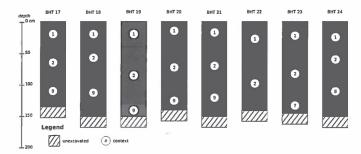


Figure 19: Stratigraphic profiles for Backhoe Trenches 17-24. Note that Backhoe Trench 21 contained the Context 12 fire-pit. See figure 18.

hardpan soil present to depths ranging from 115 to 120 cm below surface. Context 2 overlay Context 7, a dark reddish brown silty clay loam present to the base of excavation in each trench.

Backhoe Trenches 25 and 30 were excavated within the northernmost portion of the parcel located on the east side of Mikl Road. They contained the plow zone soil, Context 1, to depths ranging from 35 to 40 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam hardpan soil present to depths ranging from 65 to 70 cm below surface. Context 2 overlay Context 3, a brown silty clay loam present to the base of excavation in each trench.

Backhoe Trenches 26 and 27 were excavated within the easternmost portion of the parcel located on the east side of Miki Road (fig. 20, table 10). They contained the plow zone soil, Context 1, to depths ranging from 35 to 40 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam hardpan soil present to depths ranging from 75 to 110 cm below surface. Context 2 overlay Context 6, a very dark gray silty clay loam with degrading rock fragments present to the base of excavation in each trench.

Table 10: Sediment descriptions for Backhoe Trenches 25-31

Context	Phase	Depth*	Description	Interpretation
Backhoe 7	French 25			
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
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Context	Phase	Depth*	Description	Interpretation
2	1	40-70	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
3	1	70-140+	Strong brown (7.5YR 4/6) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe 7	French 26	i		
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	40-110	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
6	1	110- 150+	Very dark gray (5YR 3/1) terrestrial very stony silty clay loam; moder- ately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe 1	French 27	,		
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
2	1	35-75	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
6	1	75-145+	Very dark gray (5YR 3/1) terrestrial very stony silty clay loam; moder- ately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe 7	French 28	1		
1	3	0-30	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event
4	1	30-60	Dark reddish brown (2.5YR 3/4) ter- restrial gravelly silty clay loam; mod- erately sticky, moderately plastic; diffuse, irregular lower boundary	Natural deposition process
5	1	60-145+	Dark reddish brown (2.5YR 2.5/4) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

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* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation		
Backhoe 1	rench 29					
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately	Secondary deposi- tion event		
			sticky, moderately plastic; abrupt, smooth lower boundary			
2	1	40-115	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual,	Natural deposition process		
_			smooth lower boundary			
7	1	115- 135+	Dark reddish brown (5YR 3/4) ter- restrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process		
Backhoe 7						
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event		
2	1	35-65	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process		
3	1	65-150+	Strong brown (7.5YR 4/6) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excava- tion	Natural deposition process		
Backhoe 7	rench 31					
1	3	0-25	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposi- tion event		
2	1	25-85	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process		
9	1	85-150+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excava- tion	Natural deposition process		

^{*} Centimeters below surface.

Four of the backhoe trenches contained unique or anomalous profiles. The first, Backhoe Trench 8, contained the plow zone soil, Context 1, to a depth of 30 cm below surface. Context 1 overlay Context 10, a dark reddish brown secondarily deposited plow zone soil with plastic fragments and tubing present to a depth of 100 cm below surface. Context 10 overlay Context 11, a red gravelly silty clay loam with degrading rock present to the base of excavation at 140 cm below surface.

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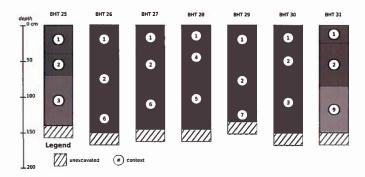


Figure 20: Stratigraphic profiles for Backhoe Trenches 25-31.

Backhoe Trench 9 contained the plow zone soil, Context 1, to a depth of 45 cm below surface. Context 1 overlay Context 2, a dark reddish brown red silty clay hardpan soil present to a depth of 85 cm below surface. Context 2 overlay Context 11, a red gravelly silty clay loam present to the base of excavation at 140 cm below surface.

Backhoe Trench 22 contained the plow zone soil, Context 1, to a depth of 55 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam hardpan soil present to the base of excavation at 140 cm below surface.

Backhoe Trench 28 contained the plow zone soil, Context 1, to a depth of 30 cm below surface. Context 1 overlay Context 4, a dark reddish brown sitty clay loam with degrading rock fragments present to a depth of 60 cm below surface. Context 4 overlay Context 5, a dark reddish brown silty clay loam with red and black degrading rock fragments present to the base of excavation at 145 cm below surface.

5 Summary and Conclusions

At the request of Pulama Lāna'i, T. S. Dye & Colleagues, Archaeologists has completed an archaeological inventory survey for the Miki Basin 200 Acre Industrial Development. Pedestrian survey and subsurface testing were conducted to determine the presence or absence of historic properties and cultural materials within the Miki Basin 200 Acre Industrial Development. During the project, a 100 percent pedestrian survey of the area was conducted and 31 backhoe trenches were excavated. Black plastic fragments, indicative of pineapple cultivation, were observed within the surface layer of soil over the entire project area.

The pedestrian survey resulted in the identification and documentation of a secondarily deposited historic artifact scatter, a secondarily deposited lithic scatter, and an historic

property, Site 50-40-98-1980. Because the two secondary artifact scatters lack integrity of setting, location, and association with other sites and features, they do not represent historic properties and no further investigations of the scatters are warranted.

Subsurface testing included the excavation of 31 backhoe trenches. A truncated fire-pit feature, designated Site 50-40-98-1981, was documented in one of the backhoe trenches. All of the backhoe trenches contained plow zone soils overlying natural hardpan and natural silty clay loam, some of which had degrading rock fragments. No artifacts were collected from any of the trenches excavated.

Both historic properties are evaluated as significant for the important information on Hawaiian history and prehistory that they have yielded. The Miki Basin 200 Acre Industrial Development will have an adverse effect on both historic properties and it is recommended that a data recovery plan be developed for Sites 50-40-98-1980 and 50-40-98-1981, and that this plan be implemented prior to proposed construction activities within the parcel.

It is further recommended that the data recovery plan develop research questions that can be addressed with data yielded by the following laboratory tasks.

Site 50-40-98-1980 Analysis of the wood charcoal collected from the Context 15 fire-pit for taxa identification and ¹⁴C dating. Analysis of artifacts collected from the Context 18 lithic scatter to further investigate the tool-making reduction sequence utilized on the island [32].

Site 50-40-98-1981 Analysis of the wood charcoal collected from the Context 12 fire-pit for taxa identification and ^{14}C dating.

A Stratigraphic Contexts

Context	Description
	C. C Col C
0	Surface of the project area.
1	Dark reddish brown silty clay loam plow zone soil with black plastic fragments and tubing throughout.
2	Dark reddish brown silty clay loam hardpan soil.
3	Brown silty clay loam.
4	Dark reddish brown silty clay loam with degrading rock frag- ments throughout.
5	Dark reddish brown silty clay loam with red and black degrading rock fragments throughout.
6	Very dark gray silty clay loam with degrading rock fragments throughout.
7	Dark reddish brown silty clay loam.
8	Dark reddish brown silty clay loam with gray and red degrading rock fragments.
9	Dark brown silty clay loam.
10	Secondarily deposited plow zone soils with plastic fragments and tubing.
11	Orange brown silty clay loam with degrading rock throughout.
12	Fire-pit located in Backhoe Trench 21.
13	Interface between the Context 12 fire-pit and the material it had been excavated into, Context 2.

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Context	Description			
14	Excavation trench for a 6 in. PVC waterline.			
15	Fire-pit remnant exposed on the surface of the Context 2 soil.			
16	Secondarily deposited silty clay loam sediment covering the Context 15 deposit.			
17	Interface between the Context 15 fire-pit and the soil it had been excavated into, Context 2.			
18	Surface scatter of flakes, coral, a cowry shell fragment, two adze rejects, and two possible hammerstones located near the Context 15 fire-pit.			
19	Surface scatter of flakes and a single hammerstone.			
20	Historic artifact scatter located on the ground surface.			

B Field Catalog

Catalog	Site	Unit	Context	Contents
1	No site number	Backhoe Trench 30	1	Sediment
2	No site number	Backhoe Trench 30	2	Sediment
3	No site number	Backhoe Trench 30	3	Sediment
4	No site number	Backhoe Trench 28	4	Sediment
5	No site number	Backhoe Trench 28	S	Sediment
6	No site number	Backhoe Trench 27	6	Sediment
7	No site number	Backhoe Trench 29	7	Sediment
8	No site number	Backhoe Trench 16	8	Sediment
9	No site number	Backhoe Trench 5	9	Sediment
10	No site number	Backhoe Trench 8	10	Sediment
11	No site number	Backhoe Trench 8	11	Sediment
12	No site number	Backhoe Trench 21	12	Charcoal sample
13	No site number	Ground surface	15	Charcoal sample
14	No site number	Ground surface	20	Artifacts
15	No site number	Isolated Find 1	0	Adze reject
16	No site number	No unit	19	Artifacts
17	No site number	No unit	18	Artifacts
18	No site number	No unit	18	Artifacts
19	No site number	Isolated Find 2	0	Adze reject

C Artifact List

Bag	Mate- rial	Class	Period*	#	Wt. [†]	Whole	Notes
15	stone	adze reject	trad.	1	86.1		Discarded due to a transverse fracture sustained during flaking; length 6.7 cm; width 3.7 cm; thickness 1.9 cm
* trad. = Traditional, hist. = Historic; † Weight in grams.							Continued on next page

Cantinuad	france.	memdane	20000

Bag	Mate- rial	Class	Period*	#	Wt.†	Whole	Notes
19	stone	adze reject	trad,	1	242.5		Adze reject proximal end. Sustained a transverse fracture while attempting i reove flakes across the dorsal side; length 6.0 cm width 3.4 cm; thickness 2.2 cm
Conte	ext 18						
17	coral	manuport	trad.	1	30.7		Length 5.4 cm; width 3.4 cm; thickness 2.1 cm
17	stone	adze reject	trad.	1	126.8		Proximal end of an adze reject discarded due to ar end shock fracture; length 7.8 cm; width 4.2 co thickness 2.7 cm
17	stone	adze reject	trad.	1	76.4		Distal end of an adze reje likely broken off due to at end shock fracture. The artifact has cortex on its dorsal side and shows evidence of problems thinning the cross section of the artifact during flaking; length 6.0 cm; width 3.9 cm:
17	stone	adze reject	trad.	1	110.5		thickness 1.9 cm Distal portion of a large flake with signs of heavy step fracturing along one edge. It is likely to have been discarded due to a transverse fracture sustained during flaking along the edge in addition
18	stone	hammerstone	trad.	1	144.5		to trouble removing flakes across the artifact. Made dark gray fine-grained basalt; length 8.5 cm; width 4.6 cm; thickness 2.3 cm Large waterworn pebble manuport with battering at least one edge from use a hammerstone; length 5.8 cm; width 5.2 cm; thickness 3.6 cm

* trad. = Traditional, hist. = Historic; † Weight in grams.

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Bag	Mate- rial	Class	Period*	#	Wt.†	Whole	Notes
18	stone	waterworn pebble	trad.	1	53.8		Waterworn pebble manuport, possibly a sling stone; length 3.9 cm; width 3.3 cm; thickness 2.8 cm
Cont	ext 19						
16	stone	adze reject	trad.	1	20.6		The distal end of an adze reject broken due to an en shock fracture during flaking; length 4.8 cm; width 2.6 cm; thickness 1.2 cm
16	stone	waterworn cobble	trad.	1	142.2		Small waterworn cobble manuport; length 8.7 cm; width 4.6 cm; thickness 2.8 cm
Conte	ext 20						
14	ceramic	semi-porcelain	hist.	2	26.7		Undecorated base sherd with footring and partial cobalt blue maker's mark that reads "TRADEMARK/MADE IN JAPAN" with a rising sun logo between the lettering "Made in Japan" maker's marks on ceramics were required starting in 1921 and continued to 1941. Par of the same vessel as the hand-painted fragment; length 5.7 cm; width 5.3 cn thickness 0.6 cm
14	ceramic	semi-porcelain	hist.	1	12.6		Body sherd with footring and a hand-painted cobalt blue design with crisscrossing lines. Part of the same vessel as the sherd with the maker's mark; length 5.1 cm; width 3.0 cm; thickness 0.6 cm
14	ceramic	semi-porcelain al. hist. = Historic: † We	hist.	1	0.9		RIm sherd that is undecorated on the inside and has a green glaze on the outside; length 2.4 cm; width 0.8 cm; thickness 0.2 cm

* trad. = Traditional, hist. = Historic; † Weight in grams.

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Bag	Mate- rial	Class	Period*	#	Wt.¹	Whole	Notes
14	ceramic	semi-porcelain	hist.	1	0.4		Undecorated body sherd; length 1.3 cm; width 1.2 cm; thickness 0.3 cm
14	ceramic	white earthenware	hist.	1	6.7		Undecorated rim sherd; length 4.0 cm; width 2.5 cm; thickness 0.6 cm
14	ceramic	white earthenware	hist.	1	6.7		Undecorated body sherd with footring; length 3.1 cm; width 2.9 cm; thickness 0.6 cm
14	glass	bottle	hist.	1	19.0		Clear glass bottle shoulder shard; length 5.4 cm; width 3.6 cm; thickness 0.6 cm

^{*} trad. = Traditional, hist. = Historic; † Weight in grams.

Glossary

abrupt A transition between *horizon*s that is 0.5 cm or greater but still less than 2 cm.

caldera A caldera is a cauldron-like volcanic feature usually formed by the collapse of land following a volcanic eruption. They are sometimes confused with volcanic contract.

Christmas berry The ornamental tree, Schinus terebinthifolius, known for its bright red berry-like fruits.

clay Fine earth particles less than 0.002 mm.

clear A transition between horizons that is 2 cm or greater but still less than 5 cm. See also horizon.

cobble Rock fragment ranging from 76 mm to less than 250 mm.

Contact A period in Hawaiian history marked by the arrival of Captain James Cook in 1778 and characterized by the social changes that eventually brought about the end of traditional Hawaii

context A unit of stratification associated with a natural or cultural process or event.

cortex The weathered outer rind that covers the unweathered inner material of a piece of tool stone.

diffuse A transition between horizons that is 15 cm or greater. See also horizon.

fee simple An estate of inheritance, held without limitation to a particular class of heirs; unconditional inheritance.

fire-pit A pit of varying depth, often bowl shaped at the base, usually identified by a concentration of charcoal and/or burned material in the fill, especially at the feature interface

gradual A transition between horizons that is 5 cm or greater but still less than 15 cm. See also horizon.

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- guava The historically introduced tree or shrub, Psidium guajava, common in Hawai'i today.
- historic property According to Hawai'i Administrative Rules §13-198-2, an "historic property" is any building, structure, object, district, area, or site, including underwater site, that is significant in the history, architecture, archaeology, or culture of the state of Hawai'i, its communities, or the nation.
- irregular A soil boundary in which the depth of undulation is greater than its width.
- manuport A natural object found in an unnatural position, having been carried there by
- material culture In rock art recording, a category which includes images that are cultural objects, e.g., spears, paddles, gourds, cape, etc.
- midden A heap or stratum of refuse normally found on the site of an ancient settlement. In Hawai'i, the term generally refers to food remains, whether or not they appear as a heap or stratum.
- moderately plastic A 4 mm diameter roll of soil will support itself if held on end, but a 2 mm diameter roll of soil will not.
- **moderately sticky** Soil adheres to both fingers, after release of pressure and stretches some on separation of fingers.
- **phase** A grouping between an individual unit of stratification and a *period*: several units of stratification make up a phase and several phases compose a period.
- phasing Arrangement of the stratification into a stratigraphic sequence, and the division of the sequence into phases and periods. See also periodization.
- project The archaeological investigation, including laboratory analyses and report preparation. See also undertaking.
- significance A quality of a historic property that possesses integrity of location, design, setting, materials, workmanship, feeling, and association. The qualities are set out in SHPD administrative rule §13-275-6, Evaluations of Significance.
- site The fundamental unit of archaeological investigation, a location that exhibits material evidence of past human activity.
- smooth A soil boundary which is planar with few or no irregularities.
- stone Rock fragment ranging from 250 mm to less than 600 mm.
- stratigraphic relationships These are either of a superpositional nature, where one deposit lies above another, or they are made up of correlations, where strata or features have been cut into isolated parts by later digging.
- ${\bf sugarcane} \ \ {\bf A} \ {\bf grass}, \ {\it Saccharum} \ of {\it ficinarum}, \ {\bf widely} \ {\bf grown} \ {\bf in} \ {\it warm} \ {\bf regions} \ {\bf as} \ {\bf a} \ {\bf source} \ {\bf of} \ {\bf sugar}. \ {\bf See} \ {\bf also} \ {\it k\"o}.$
- unit of stratification number A number assigned to each natural and man-made layer, upstanding stratum, and vertical and horizontal feature interface. Once numbered, each unit will automatically have a set of stratigraphic relationships which must be defined and recorded.
- wavy A soil boundary in which the width of undulation is greater than its depth.

Hawaiian Terms

ahu Heap, pile; altar, shrine, cairn.

ahupua'a Traditional Hawaiian land division, usually extending from the uplands to the sea.

'āina Land, earth.

akua God, goddess, spirit, ghost, devil, image, corpse,

'alae A bird, Fulica americana alae, the mudhen or Hawaiian gallinule. See also 'alae kea.
ali'i Chief, chiefess, officer, ruler, monarch, peer, head man, noble, aristocrat, king, queen, commander.

aloha Love, affection, compassion, mercy, sympathy, etc.

'apapane A honeycreeper, Himatione sanguinea with crimson body and black wings and tail, found on all the main Hawaiian Islands. Its feathers occasionally were used for featherwork.

'aumakua Family or personal gods, deified ancestors who might assume the shape of animals, rocks, clouds, or plants.

'awa A shrub, Piper methysticum, the root of which is the source of a narcotic drink of the same name used in ceremonies, prepared formerly by chewing, later by pounding.

hale House, building, station, hall.

he'e Octopus.

heiau Traditional Hawaiian place of worship.

helu To count, number, compute, take a census, figure enumerate, list, include, impute; to assess, as taxes; to chant a list of names, as of genealogy; including, counting, enumeration, census, list, rate, number, figure, total, inventory; statistics.

'ili A land section, next in importance to ahupua'a, and usually a subdivision of an ahupua'a.

'iliahi Native trees and shrubs belonging to the genus Santalum, or sandalwood. Traditionally, it was powdered and mixed with coconut oil to make perfume for kapa.

imu Underground oven.

ipu The gourd, Lagenaria siceraria.

Kahiki Tahiti, foreign land.

kahuna Priest, sorcerer, magician, wizard, minister, expert in any profession.

kala A generic name for fish in the Unicornfish genus Naso. It is generally caught in nets or with a spear. The flesh has a strong odor and is rarely eaten raw; it is often broiled or partially dried and broiled.

kalo The taro, Colocasia esculenta, was a staple food in traditional Hawai'i and all parts of the plant were used. The rootstock was baked or steamed, then eaten sliced or pounded to make poi, raw taro was also grated and mixed with coconut milk to make desserts, the leaves, leaf stems and flowers were also used in cooking. Medicinally the leaves and rootstock were used to treat many ailments. The plant was also used ritually, as bait for fish, glue, and to make dye.

kama'āina Native-born, one born in a place, host.

kapa Tapa cloth, as made from wauke or māmaki bark.

 ${\it kapu}\,$ Taboo, prohibition; special privilege or exemption from ordinary taboo; sacredness;

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prohibited, forbidden; sacred, holy, consecrated; no trespassing, keep out.

kāula Prophet, seer, magician.

kawakawa Bonito, little tunny (Euthynnus vaito).

kīhāpai Small land division, smaller than a paukū; cultivated patch, garden, orchard, field. small farm.

kö Sugarcane, Saccharum officinarum, was introduced to Hawai'i by Polynesian settlers, who cultivated it widely. The stalk was chewed between meals for its sweetness, brought on long journeys to ease hunger, and eaten in times of famine; juice from the stalk was fed to nursing babies, and used as a sweetening agent in medicinal herbal concoctions; the leaves were used as thatching for houses; the leaf midrib was used for plaiting braids that were made into hats; the stem of the flower was used to make darts for a child's game.

ko'a Shrine, often consisting of circular piles of coral or stone, built along the shore or by ponds or streams, used in ceremonies as to make fish multiply; also built on bird islands, and used in ceremonies to make birds multiply.

koa haole A historically introduced small tree, Leucaena glauca.

Kona Leeward sides of the Hawaiian Islands. Name of a leeward wind.

konohiki Head man of an ahupua'a land division under the chief; land or fishing rights under control of the konohiki. See also ahupua'a.

Koʻolau Windward sides of the Hawaiian Islands.

kūkini Runner, swift messenger, as employed by old chiefs, with a premium on their speed.

kukui. The candlenut tree, Aleurites moluccana, introduced to Hawai'i by Polynesian settlers. The outer husk of the fruit or nut was used to make a black dye for tapa and tattooing; sap from the fruit was used as medicine to treat thrush, and used as a purgative; the hard shell of the nut was used in lei making; the kernel of the nut was the source of an oil that was burned for illumination and also used as a wood varnish for surfboards and canoes; the kernel was also chewed and spit on rough seas to calm the ocean and baked kernels were mixed with salt and chili pepper to make a relish ('inamona); the trunk was used to make canoes and floats for fishing nets; a reddish dye was made from the bark and/or root; a gum exuded from wounded bark was used to treat tapa; the flower was mixed with sweet potato to treat thrush; the leaves were used in a poultice for swelling and infection.

kula 1. Plain, field, open country, pasture; land with no water rights. 2. School.

kuleana Right, title, property, portion, responsibility, jurisdiction, authority, interest, claim, ownership.

lawai'a Fisherman; to catch fish.

lehua The flower of the 'ōhi'a tree, Metrosideros polymorpha; also the tree itself. See also 'ōhi'a lehua.

lei Garland, wreath.

mahalo Thanks, gratitude.

Māhele The mid-nineteenth century land division responsible for the introduction of fee simple land title in Hawai'i.

mai'a All kinds of bananas and plantains.

- maika Ancient Hawaiian game suggesting bowling.
- maile A native twining shrub, Alyxia olivaeformis, used in traditional Hawaiian religion to evoke Laka, the goddess of hula. Maile sticks gummed with lime were used as part of a rig to catch birds.
- māla Garden, plantation, patch, cultivated field.
- māmane A native tree, Sophora chrysophylla, that thrives at high altitudes. Traditionally the wood was used for a variety of wood implements, and also in hōlua sleds. The flower was used medicinally as an astringent.
- manō Shark. In Hawaiian culture, there are two classes of sharks. Manō kānaka are sharks with human affiliations, and manō i'a are wild sharks. Manō kānaka were revered and cared for, and were akua or 'aumakua.
- $m\bar{o}'\bar{i}$ King, queen, sovereign, monarch, or a rank of chiefs who could succeed to the government but who were of lower rank than chiefs descended from the god Kāne.
- mo'o 1. Narrow strip of land, smaller than an 'ill; 2. Lizard, reptile of any kind, dragon, serpent; water spirit.
- naio A native tree, Myoporum sandwicense, with hard, dark, yellow-green wood. The wood was used traditionally for the main timbers of houses.
- pala A native fern (Marattia douglasii), with a short trunk and large, long-stemmed, much divided, dark green fronds. In time of famine, the thick, starchy, hoof-shaped bases of the frond stems, which cover the short trunk, were eaten after being baked in an imu overnight. The mucilaginous water resulting from slicing and soaking the raw stems in water was used medicinally. Pieces of the fronds mixed with maile lei enhanced their fragrance. The fern was also used in heiau ceremonies.
- pānini A cactus, Opuntia megacantha, introduced to Hawai'i in the 1800s. The Hawaiian name means "unfriendly wall." Hawaiians made a fermented drink from the fruits and also ate them raw.
- paukū A land section smaller than a mo'o.
- \emph{pili} A native grass, $\emph{Heteropogon contortus}$, whose leaves were used traditionally as house thatch.
- pipi 1. Hawaiian pearl oyster, Pinctada radiata. In songs this is known as the i'a hāmau leo o 'Ewa, 'Ewa's silent sea creature—it was believed that talking would cause a breeze to ripple the water and frighten the pipi. 2. Cattle.
- poi The Hawaiian staff of life, made from cooked taro corms, or rarely breadfruit, pounded and thinned with water.
- pua kala A native perennial herb, Argemone glauca, whose seeds mixed with a yellow sap from the stalk were used as a narcotic for pain relief; the sap was also used to treat warts.
- pūhi Any eel.
- pule Prayer, magic spell, incantation, blessing.
- 'uala The sweet potato, Ipomoea batatas, introduced to Hawai'i by Polynesian settlers, was a staple food. The tuber was cooked whole and eaten or it was made into poi and mixed with coconut milk to make a dessert; it was used as bait for mackerel fishing; and to make a fermented drink called 'uala 'awa'awa. The vine made a lei which was worn by nursing mothers to ensure a good flow of milk; when dried, the

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- vine was also used as padding underneath floor mats. All parts of the plant were used as food for pigs. Kamapua'a was the god of the sweet potato.
- uhu An adult fish in the family Scaridae.
- 'ulu 1. Discoidal, smooth stone as used in 'ulu maika game; 2. Breadfruit, Artocarpus altilis.
- wahine Woman, lady, wife; sister-in-law, female cousin-in-law of a man.
- wauke A small tree or shrub, Broussonetia papyrifera, whose bark was made into kapa cloth. The inner bark was used to make cordage, and the shoots were used to treat childhood diseases. The leaves, along with banana and taro leaves, were used ceremonially to wrap the bodies of ali'i after death.
- weke Certain species of Mullidae, surmullets, or goatfish, which have large scales and are usually found in reefs. Red and light-colored weke were popular as offering to the gods.

Abbreviations

- ac. A unit of land area equal to 4,840 square yards (0.405 hectare).
- AD *Anno Domini*, the Christian era in the Gregorian calendar, starting from the year AD 1 as the calculated year in which Christ was born.
- cm The centimeter, a derived unit of length in the International System of Units, equal to 10^{-2} m. See also m.
- GPS Global Positioning System, operated by the government of the United States. The term is often used for the unit used to communicate with the GPS.
- in. A unit of linear measure equal to one twelfth of a foot (2.54 cm).
- LCA Awards issued by the Board of Commissioners to Quiet Land Titles between 1846 and 1855 to persons who filed claims to land between 1846 and 1848.
- m The meter, a base unit of length in the International System of Units, equal to the length of the path traveled by light in vacuum during a time interval of 1/299,792,458 of a second.
- USGS A federal agency that provides reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect the quality of life.

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STATE HISTORIC
PRESERVATION DIVISION
ARCHAEOLOGICAL
INVENTORY SURVEY
ACCEPTANCE LETTER

APPENDIX

D-2

DAVID Y. IGE GOVERNOR OF HAWAII





STATE OF HAWAII

STATE HISTORIC PRESERVATION DIVISION KAKUHIHEWA BUILDING 601 KAMOKILA BLVD., STE 555 KAPOLEI, HI 96707

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION LAND STATE PARKS

SUZANNE D. CASE CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA

M. KALEO MANUEL DEPUTY DIRECTOR - WATE AOUATIC RESOURCES BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT CONSERVATION AND COASTAL LANDS CONSERVATION AND RESOURCES ENFORCEMENT

ENGINEERING FORESTRY AND WILDLIFE

August 4, 2020

Glen Ueno, Administrator County of Maui Department of Public Works **Development Services Administration Division** 250 South High Street Wailuku, Maui, Hawai'i 96793

Dear Glen Ueno:

SUBJECT: Chapter 6E-42 Historic Preservation Review -

> Miki Basin Industrial Park Project **Archaeological Inventory Survey**

Kamoku Ahupua'a, Lāhaina District, Lāna'i Island

TMK: (2) 4-9-002:061 por.

IN REPLY REFER TO: Log No.: 2020.01586 Doc. No.: 2008AM02 Archaeology

This letter provides the State Historic Preservation Division's (SHPD) review of the draft report titled, Archaeological Inventory Survey for the Miki Basin 200 Acre Industrial Development (DiVito et al., May 2018), produced by T.S. Dye and Colleagues, Archaeologist, Inc. (TSD) for the Pūlama Lāna'i, Miki Basin Industrial Park project. SHPD received a draft environmental assessment (EA) report (Ho'okuleana LLC, June 2020) for the project on December 5, 2019 (Log No. 2019.02674) and a final EA report on July 8, 2020 along with a cover letter prepared on behalf of Pūlama Lāna'i, an HRS 6E Submittal Form, the subject archaeological inventory survey (AIS) report (Log No. 2020.01586).

The Miki Basin Industrial Park project is a 200-acre master-planned light and heavy industrial development on land adjoining the Lāna'i Airport, the Maui Electric Company (MECO) 5-acre power plant and the existing 20-acre Miki Basin Industrial Condominium. The current submittal does not include a permit set, however Pūlama Lāna'i indicates the proposed 200-acre Miki Basin Industrial Park is planned to be developed incrementally over a 30-year period.

TSD initially completed the subject AIS in 2016 (Log No. 2016.02655) and the report was subsequently withdrawn by Pūlama Lāna'i. TSD conducted additional archaeological work in the project area and presented the findings from both survey efforts in the current AIS report (DiVito et al., May 2018). The report indicates the AIS was conducted to identify historic properties and cultural materials in the project area to support a proposed zoning change and construction activities associated with the Miki Basin Industrial Park project.

The subject AIS report includes a detailed analysis of historic land use, cultural practices in the area, an artifact analysis section, a summary of previous archaeological investigations, and the results of the archaeological testing. The survey included a 100 percent coverage pedestrian survey of the project area conducted using transects spaced at 10-meter (m) intervals. Subsurface testing of the project area included the excavation of 31 backhoe trenches. The test trenches were excavated to 145 cm below ground surface, measured 3 to 4 m in length, and were each 1 m wide. The GPS data for the locations of each trench excavation was recorded and the locations are depicted on a map of the project area. The report includes soil descriptions using Munsell colors and USDA descriptions and attributes.

TSD identified two historic properties during AIS testing (Table 1). SIHP # 50–40–98–1980 is comprised of two features including a lithic scatter and an eroded exposed fire-pit. SIHP # 50-40-98-1981 is a subsurface truncated fire-pit feature. TSD assessed SIHP # 50–40–98–1980 and 50–40–98–1981 as significant for the information on Hawaiian history and prehistory that they have yielded. The report indicates the Miki Basin Industrial Park project will adversely impact both historic properties and it is recommended that data recovery excavation be conducted as mitigation for SIHP #s 50-40-98-1980 and 50-40-98-1981.

Table 1: Historic properties identified within the current project area.

SIHP # 50-40-98-	Formal Type	Significance Assessment	Description	Mitigation
1980	artifact scatter and fire-pit	d	Surface lithic scatter and exposed fire-pit	Data recovery
1981	fire-pit	d	Subsurface fire-pit (Backhoe Trench 21)	Data recovery (tested)

The report meets the minimum requirements of HAR §13-275-6. It is accepted. Please send two hard copies of the document, clearly marked FINAL, along with a copy of this acceptance letter and text-searchable PDF version of the report to the Kapolei SHPD office, attention SHPD Library. Additionally, please send a digital copy of the final AIS report (DiVito et al., May 2018) to lehua.k.soares@hawaii.gov.

The current submittal includes a cover letter from Pūlama Lāna'i dated July 5, 2020 that requests an HRS 6E-42 project effect determination of "effect, with proposed mitigation commitments," with mitigation in the form of data recovery. Honua Consulting recommends that a data recovery plan be developed for SIHP #s 50–40–98–1980 and 50–40–98–1981 and a program of archaeological monitoring for the Miki Basin Industrial Park project.

SHPD concurs with the significance assessments and mitigation recommendations for SIHP #s 50–40–98–1980 and 50–40–98–1981. However, the **SHPD notifies the County of Maui** that our office has not yet received a County permit submittal triggering an HRS 6E-42 review. Therefore, our division cannot make a project effect determination at this time.

SHPD requests to be consulted prior to the issuance of any permits associated with the Miki Basin Industrial Park project on the subject property, allowing our division the opportunity to review the proposed project and to make an HRS 6E project effect determination in accordance with HAR §13-284-3 and, if necessary, any appropriate mitigation.

Please contact Andrew McCallister, Historic Preservation Archaeologist IV, at Andrew.McCallister@hawaii.gov or at (808) 692-8010 for matters regarding archaeological resources or this letter.

Aloha,

Alan Downer

Alan S. Downer, PhD Administrator, State Historic Preservation Division Deputy State Historic Preservation Officer

cc: Keiki-Pua S. Dancil, Pūlama Lānaʻi, <u>kdancil@pulamalanai.com</u>
Trisha Kehaulani Watson, Honua Consulting, <u>watson@honuaconsulting.com</u>
Kurt Matsumoto, Pūlama Lānaʻi, <u>kmatsumoto@pulamalanai.com</u>
Daniel E. Orodenker, Land Use Commission, <u>daniel.e.orodenker@hawaii.gov</u>

CULTURAL IMPACT ASSESSMENT AND DETERMINATION AND SUPPORTING MATERIALS

APPENDIX

D-3

Ka Pa'akai Analysis and Determination



4348 Wai`alae Ave #254•Honolulu Hawai`i 96816•T: (808) 392-1617•F: (888) 392-4941•E-Mail: admin@honuaconsulting.com

MEMORANDUM

To: Keiki-Pua S. Dancil, Ph.D.

Fr: Trisha Kehaulani Watson, J.D., Ph.D. Re: Ka Pa'akai Analysis and Determination

Date: September 17, 2021

Ka Pa'akai Analysis

Article XII, Section 7 of the Hawai'i Constitution obligates the State Land Use Commission ("LUC") to protect the reasonable exercise of customarily and traditionally exercised rights of native Hawaiians to the extent feasible when granting a petition for reclassification of district boundaries. In order to effectuate the State's obligation to protect native Hawaiian customary and traditional practices while reasonably accommodating competing private interests, the Hawai'i Supreme Court provided the following analytical framework as an outcome of Ka Pa'akai O ka 'aina v. Land Use Commission (94 Hawai'i 31, 7 P.3d 1068, September 11, 2000). The framework is referred to as Ka Pa'akai Analysis and consists of three parts:

- Identify the scope of "valued cultural, historical and natural resources" in the petition area, including to the extent to which traditional and customary rights and practices are exercised in the affected area;
- 2. Determine the extent to which those resources, including traditional and customary native Hawaiian rights, will be affected or impaired by the proposed action; and
- 3. Identify feasible actions, if any, that should be taken by the LUC to reasonably protect Native Hawaiian rights and practices if they are found to exist.

Pūlama Lāna'i is processing an application to reclassify 200 acres from the State Land Use ("SLU") Agricultural District into the SLU Urban District for an industrial area on the island of Lāna'i. The proposed boundary amendment is on a portion of TMK (2) 4-9-002:061. The land is adjacent to other industrial parcels such as the Lāna'i Airport, Hawaiian Electric Fossil Fuel Power Plant, and Miki 20-acre industrial park (see Figure 1). The existing condition of the land is former pineapple fields that have lain fallow for over 30 years.





Figure 1: Miki Basin Industrial Park Project Area Map, provided by Munekiyo Hiraga.

Although Honua Consulting did not complete the Archaeological Inventory Survey ("AIS") for the Miki Basin 200 Acre Industrial Development (DiVito, Maly, and Dye 2018), we have reviewed the survey and have worked on multiple projects on Lāna'i for Pūlama Lāna'i as the archaeological consultant. In addition, Nathan DiVito is currently employed by Honua Consulting, and Thomas Dye, Ph.D. (Principal of T.S. Dye & Collegues, Archaeologist, Inc.) has provided Honua Consulting with archives of studies performed by his firm for Pūlama Lāna'i since closing his business upon retirement.

Honua Consulting has reviewed the archaeological materials in the Draft Environmental Assessment ("Draft EA") for the District Boundary Amendment Application. These materials included the following:

 Archaeological Inventory Survey ("AIS") for the Miki Basin 200 Acre Industrial Development (DiVito, Maly, and Dye 2018)



- State Historic Preservation Division ("SHPD") Archaeological Inventory Survey Acceptance Letter (August 2020)
- Supporting Documentation on Cultural Impact Assessment Requirement
 - o Letter from Kepā Maly to Kurt Matsumoto dated September 24, 2019
 - o Letter from Kepā Maly to Kurt Matsumoto dated June 26, 2020
 - o Interview with La'ikealoha Hanog by Honua Consulting on August 21, 2021
 - o Interview with Kumu Hula Pualani Kauila by Honua Consulting on August 19, 2021

Ka Pa'akai Analysis and Recommended Determination

Based on the guidelines set forth in *Ka Pa'akai*, the Hawai'i Supreme Court provided government agencies an analytical framework to ensure the protection and preservation of traditional and customary Native Hawaiian rights while reasonably accommodating competing private development interests. This is accomplished through:

- The identification of valued cultural, historical, or natural resources in the project area, including
 the extent to which traditional and customary Native Hawaiian rights are exercised in the project
 area.
- 2) The extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the proposed action; and
- The feasible action, if any, to be taken to reasonably protect Native Hawaiian rights if they are found to exist.

This assessment was completed throughout numerous documents, which are identified in this memo. These various documents thoroughly identified valued cultural, historical, and natural resources in the project area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project area.

The following is based on the information provided in the archaeological materials in the Draft EA, which included interviews, letters, the AIS and SHPD's acceptance letter of the AIS.

Cultural Resources and Traditional Cultural Practices

Kepā Maly recently retired from Pūlama Lāna'i as the Cultural Advisor. He is also one of the co-authors of the SHPD accepted AIS and author of two letters attesting to the extensive outreach and research of the project area in regard to a cultural impact assessment. In his letter, he stated the following:

Based on the detailed ethno-historical research conducted for the ahupua'a in which the "Miki Basin Industrial Park" project is situated and on my personal knowledge and experience, having lived on Lāna'i and worked with elder Hawaiian residents of Lāna'i from the 1960s to present day, no traditional or customary practices will be impacted by the proposed Miki Basin Industrial Park.

Honua Consulting reached out to three native Hawaiian community members (Solomon Pili Kahoʻohalahala, Laʻikealoha Hanog, and Kumu Hula Pualani Kauila) recently to conduct telephone interviews, Solomon Pili Kahoʻohalahala did not respond to the interview request.



There were references to gathering of 'a'alii and 'uhaloa in the project area for adornments and la'au lapa'au by one of the interviewees. Therefore, per the Ka Pa'akai analysis, the first test identified cultural resources and traditional practices in the project area.

The second test considers potential impacts to these resources and practices resulting from the proposed project. Both 'a'alii and 'uhaloa are common throughout the Pālāwai-Miki Region of Lāna'i and prevalent in the surrounding areas of the project, which is also noted by Kepā in his letter dated September 24, 2019. The project is not anticipated to affect the availability of these cultural resources and the project will not affect access to these resources in the region. Therefore, the project is not anticipated to have an impact on this practice in the ahupua'a.

Both interviewees also mentioned deer hunting for subsistence. Although not a traditional cultural practice due to the lack of deer present in pre-contact Hawai'i, it should be noted that Pūlama Lāna'i manages hunting in the area and deer is abundant in the vicinity of the project area. The project will not affect access to deer for subsistence hunting.

One of the interviewees mentioned a cave in the project area and the use as a lookout for canoes. In the AIS, the extensive research did not reveal either a cave or the use of the area as a lookout for canoes.

Due to the project's lack of impact to traditional or customary practices, feasible action to be taken to reasonably protect Native Hawaiian rights is not required.

Recommended Determination

Based on the review of the archaeological materials provided and the additional interviews conducted, the proposed 200-acre project area is not anticipated to affect the rights customarily and traditionally exercised and does not affect or impair any Hawai'i State Constitution, Article XII, Section 7 uses, or the feasibility of protection of those uses. We recommend that the LUC make a consistent finding of fact(s) and/or conclusion(s) of law.

Confirmation Letters for Cultural Impact Assessment and Determination

September 24, 2019

Kurt Matsumoto, COO Pulama Lāna'i 733 Bishop Street Suite 2000 Honolulu, HI 96813

Re: Archaeological Inventory Survey for the Miki Basin 200 Acre Industrial Development TMK (2) 4-9-002:061 (portion)

Dye, DiVito and Maly (May 9, 2018)

Mr. Matsumoto:

This letter confirms that, although not titled as such, the Archaeological Inventory Survey cited above included research compliant with guidelines for development of a cultural impact assessment study (CIA), required by the Hawai'i Supreme Court's holding in Ka Paakai O Ka Aina v. Land Use Commission, State of Hawai'i, 7 P.3d 1068, 94 Hawai'i 31 (2000).

The study includes descriptions of traditional knowledge of place, and traditional and customary practices as documented in Hawaiian language accounts from Lāna'i. There also cited important historical accounts penned by foreign residents and visitors, documenting the changes in land use, access and residency from the 1840s to the 1950s. As a result of the rapid decline of the native Hawaiian population on Lāna'i, and early control of nearly all the land on the island by non-native business interests, little documentation pertaining to the extent to which traditional and customary native Hawaiian rights might be exercised in the petition area survived the passing of time. No native tenant kuleana (property rights) or Royal Patent Grants were issued for lands within the petition area. By the 1870s control of the petition area lands was held under one individual, who also posted notices advising against trespass. By the 1920s, the entire area was dedicated to cultivation of pineapple (see Figure 1). Through the 1930s, the petition area included a residential field camp for Japanese employees of the plantation and their families.

Cultivation of pineapple and maintenance of support infrastructure such as road ways, water lines and stockpile sites was the only land use in the area until the close of the plantation in 1992. The Petition Area was completely cleared and cultivated in pineapple for nearly 70 years. The land was bulldozed, plowed, graded, and planted with pineapples multiple times during that period. Because of the heavy use of pesticides and growth hormones, it would have been highly unlikely that plants of medicinal or other cultural uses would have been gathered across these fields. Since the close of the pineapple plantation in 1992, a few native plant species have volunteered across the nearly 20,000 acres of former pineapple fields. Most notable are the indigenous 'a'ali'i (Dodonaea viscosa), 'ilima (Sida fallax), naio (Myoporum sandwicense), and the 'uhaloa (Waltheria indica). While each of the plants have cultural value and uses, none are rare, and all grow throughout the Pālāwai-Miki Region of Lāna'i.

September 25, 2019 Mr. Kurt Matsumoto (Page 2.)



Figure 1. Pineapple Field Harvest in Miki Basin Fields – Miki Camp in Background (left). HAPCo Photo No. 525, August 31, 1928 (Lāna'i Culture & Heritage Center Collection).

There was no evidence of any protected cultural practices occurring on the site. Therefore, the project will not have any significant negative impact on traditional and customary practices.

Should you have any further questions, please let me know.

'O wau no me ka ha'aha'a,

Kepā Maly P.O. Box 631500

Lāna'i City, Hawai'i 96720

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June 26, 2020

Kurt Matsumoto, COO Pūlama Lāna'i 733 Bishop Street Suite 1500 Honolulu, HI 96813

Re: Cultural Impact Assessment for the Miki Basin 200 Acre Industrial Development TMK (2) 4-9-002:061 (portion) Dye, DiVito and Maly (May 9, 2018)

Mr. Matsumoto:

This letter confirms that a cultural impact assessment study (CIA) was prepared for the Miki Basin Industrial project consistent with the requirements by the Hawai'i Supreme Court's holding in Ka Paakai O Ka Aina v. Land Use Commission, State of Hawai'i, 7 P.3d 1068, 94 Hawai'i 31 (2000)

Based on the detailed ethno-historical research conducted for the ahupua'a in which the "Miki Basin Industrial Park" project is situated and on my personal knowledge and experience, having lived on Lāna'i and worked with elder Hawaiian residents of Lāna'i from the 1960's to present day, no traditional or customary practices will be impacted by the proposed Miki Basin Industrial Park.

In fact, over the last twenty plus years, native Hawaiian and non-Hawaiian residents of Lāna'i have provided testimony and support for development of the industrial area project as a means of promoting community sustainability and entrepreneurial opportunities.¹

Over the last 50 years I have been involved in many consultation interviews with elder kama'āina from Lāna'i who have broad knowledge of the history and issues on the island. In addition, I have interviewed several elder residents of Miki Camp, which was in the immediate vicinity.

I have interviewed people, with both traditional and historical knowledge of Kalulu and Kaunolū ahupua'a where the proposed Miki Basin Industrial Park is situated.

I have reviewed earlier cultural resource management studies of the area and included native resident testimonies from records of the Māhele 'Āina, Royal Patent Grants and Boundary Commission proceedings (1848-1876), as cited in the Miki Basin report.

In the late 1980s, the community engaged in planning discussions on a wide range of topics. They sought to address concerns about protection of Lāna'i City, land use, zoning, adaptive new uses, including shifting the industrial use of the former Machine Shop Fleet and Labor Yard, from the heart of town. The vision was to relocate heavy and light industrial uses to the area of Miki Basin, and adaptively reuse the town site as a community heritage and educational center, and also enhance small business initiatives.

Page 1 of 8

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The Lāna'i Community Plan, which provides "...strategic planning goals, policies, and actions, to guide decision-making and implementation through 2030" includes, "[T]he Airport Area conceptual plan's goals are to improve the experience of flying into Lāna'i by improving transportation facilities, and to consolidate industrial uses." The plan outlines:

"The existing industrial uses on Miki Road will be expanded in a proposed industrial area of approximately 200 acres, divided into approximately 100 acres each of light and heavy industrial. Light industrial uses in Lāna`i City will also be moved and consolidated in this area. It will also serve as a staging area for shipments from the harbor to be distributed closer to town."

"To update the Lāna`i Community Plan, the Department of Planning's Long Range Planning Division worked with the Lāna`i community, stakeholders, agencies, the Lāna`i CPAC, the Lāna`i Planning Commission, and the County Council between 2010 and 2015." 5

The Community Plan Advisory Committee members included native Hawaiian residents and a crosssection of community members including: Christine Costales, Deborah de la Cruz, Joseph Felipe, Reynold "Butch" Gima (Chair), Ernest Magaoay, Matt Mano, Ron McOmber, Stanley Ruidas (Vice Chair), Alberta DeJetley, Charles Kaukeano, Jarrod Barfield, Jeofrey Baltero, and Caron Green.⁶

There were twenty three CPAC (Community Plan Advisory Committee) meetings held from January – September 2013, where the community could attend and provide testimony to shape the Community Plan. Furthermore, there were two Public Workshops held on April 4 and April 6 2013 where the community could express their opinions and hear from their neighbors regarding Island-wide, and Lanai City specific issues and ideas. There were sixty two community members in attendance. 9

No one stated any concerns about the use of the Miki Basin site for industrial use and on one stated that there were any traditional or customary practices in this area. There was support for the industrial use in this area.

On October 22, 2018, Pūlama Lāna'i held a Community Meeting to discuss the Miki Basin Light & Heavy Industrial Project. There were thirty seven community members in attendance.

Page 2 of 8

¹ Maui County General Plan 2030 Lāna'i Community Plan. Process on plan update can be found in various versions of the process at this website http://mauicounty.us/lanaicommunityplan/

² Ordinance 4343 Bill No. 67 (2016) Draft 1 "A Bill for an Ordinance Amending Section 2.80B.070, Maui County Code, to adopt the updated Lanai Community Plan, page 13 of 198 in pdf, downloaded from this website link: https://www.mauicounty.gov/DocumentCenter/View/105983/2016-Lanai-Community-Plan-?bidld=

³ Ordinance 4343 Bill No. 67 (2016) Draft 1 "A Bill for an Ordinance Amending Section 2.80B.070, Maui County Code, to adopt the updated Lanai Community Plan, page 110 of 198 in pdf, downloaded from this website link: https://www.mauicounty.gov/DocumentCenter/View/105983/2016-Lanai-Community-Plan-?bidld=

⁴ Ordinance 4343 Bill No. 67 (2016) Draft 1 "A Bill for an Ordinance Amending Section 2.80B.070, Maui County Code, to adopt the updated Lanai Community Plan, page 110 of 198 in pdf, downloaded from this website link: <a href="https://www.mauicounty.gov/DocumentCenter/View/105983/2016-Lanai-Community-Plan-?bidId="https://www.mauicounty.gov/DocumentCenter/View/105983/2016-Lanai-Community-Plan-?bidId="https://www.mauicounty.gov/DocumentCenter/View/105983/2016-Lanai-Community-Plan-?bidId="https://www.mauicounty.gov/DocumentCenter/View/105983/2016-Lanai-Community-Plan-?bidId="https://www.mauicounty.gov/DocumentCenter/View/105983/2016-Lanai-Community-Plan-?bidId="https://www.mauicounty.gov/DocumentCenter/View/105983/2016-Lanai-Community-Plan-?bidId="https://www.mauicounty.gov/DocumentCenter/View/105983/2016-Lanai-Community-Plan-?bidId="https://www.mauicounty.gov/DocumentCenter/View/105983/2016-Lanai-Community-Plan-?bidId="https://www.mauicounty.gov/DocumentCenter/View/105983/2016-Lanai-Community-Plan-?bidId="https://www.mauicounty.gov/DocumentCenter/View/105983/2016-Lanai-Community-Plan-?bidId="https://www.mauicounty.gov/DocumentCenter/View/105983/2016-Lanai-Community-Plan-?bidId="https://www.mauicounty.gov/DocumentCenter/View/105983/2016-Lanai-Community-Plan-?bidId="https://www.mauicounty.gov/DocumentCenter/View/105983/2016-Lanai-Community-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Plan-?bidId="https://www.mauicounty-Pla

⁵ Ibid at page 17 of 198.

⁶ Document can be downloaded here: http://mauicounty.us/wp-content/uploads/2015/01/011abill01-Exhibit-1-May-28.pdf, See section 1.1 page 12, section 1.2 page 97, and section 1.3 page 16.

https://www.mauicounty.gov/DocumentCenter/View/83364/CPAC-2013-Meeting-Schedule?bidId=

⁸ https://www.mauicounty.gov/ArchiveCenter/ViewFile/Item/17757

⁹ https://www.mauicounty.gov/ArchiveCenter/ViewFile/Item/17962

DocuSign Envelope ID: B5E4A525-47E6-41A8-BE66-2570DAF7F414 Community members were encouraged to provide input, concerns, anticipated impacts at and following this meeting and no one stated any concerns or knowledge of any traditional and customary practices in this area. There was support for industrial use in this area. No evidence of any protected cultural sites or practices was found in these various forms of ethnohistorical documentation. Therefore, the project will not have any significant negative impact on traditional and customary practices. Should you have any further questions, please let me know. 'O wau no me ka ha'aha'a, -- DocuSigned by: tepa Maly Kepa 1907C3D=87174C4 P.O. Box 631500 Lāna'i City, Hawai'i 96720 Page 3 of 8 The table below provides additional detail about the meetings described above, including specific comments from the attendees describing their support of a consolidated industrial area in the Miki area.

Please note that the County's minutes reflected some incorrect spelling of names, Pūlama Lāna'i has made the correction (highlighted) for record keeping. For your reference, we have also underlined individuals with Hawaiian ancestry. Only Matt Mano and Stacie Koanui Nefelar and Kaulana Kaho'ohalahala are representative of multi-generational Hawaiian families of Lāna'i.

Meeting Name	Date	Attendees	Notes	Link
Lāna`i CPAC Mtg. 1	1/9/2013	Community Plan Advisory Committee Chris Costales, Deborah Yooko de la Cruz, Joe Felipe, Butch Gima, Ernest Magaoay, Matt Mano, Ron McOmber, Stan Ruidas, Alberta DeJetley, Charles Kaukeano, Jarrod Barfield, Caron Green County of Maui - Planning Department Will Spence, Director, Kathleen Kern, Long-Range Planning, Mary Jorgensen, Long-Range Planning, David Yamashita, Long-Range Planning County of Maui - Corp Counsel Mike Hopper Consultants Jen Maydan, Chris Hart & Partners Public Carolyn and Walter Triber, John Ornellas, Christie Costales, Robin Kaye, Kurt Matsumoto, Sally Kaye, Chet Zoll, Joseph Felipe, Donovan Kealoha, Stacie Koanui Nefalar, Chris Lovvorn, Pat Drennan, Ed Jensen, Andrea de la Cruz, Bradford Oshiro, Pat Reilly	"Kathleen Kern asked each member to identify the top issues/problems facing Lāna`i." (Page 5 of 8) "Alberta: • Lack of light industrial space, including storage space for small businesses" (Page 6 of 8)	https://www.mauicoun ty.gov/ArchiveCenter/V iewFile/Item/17640

Mtg. 3 Chris Costales, Deborah Yooko de la Cruz, Joe Felipe, Butch Gima, Caron Green, Matt Mano, Ron McOmber, Stan Ruidas, Alberta DeJetley, Charles Kaukeano. County of Maui - Planning Department David Yamashita, Long-Range Planning Mary Jorgensen, Long-Range Planning Mary Jorgensen, Long-Range Planning Consultants Jen Maydan, Chris Hart & Partners Public Lisa Kaniho, David Green, David Tanoue, Kurt Matsumoto, Pat Reilly, Carolyn & Walter Triber, Steven Lullit, David Embrey, Pam Alconcel, Nancy Rajaei, Michelle Fujie, Jason Gill, David Gardner, Sue Murray, Henry Clay Richardson, Sally & Jim Clemens, Kathy & Stu Marlow, Ron Gingerich, John Stubbart, Doug Williams, Natasha Inaba, Don Jackson, Judith Stilgenbauer, Mark Sacco, Chris Andrus, Jessica Smith, Anthony Pacheco, Sherri Williams, Simon Seisho Tajiri	Lāna`i CPAC	1/23/2013	Community Plan Advisory Committee	"Joe supports the idea of moving the industrial are to	https://www.mauicoun
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Lāna`i CPAC	6-Feb-13	Community Plan Advisory Committee	"He noted that if the community is going to have	https://www.mauicoun
Mtg. 4		Chris Costales, Deborah de la Cruz, Ernest	opportunities to have businesses then they will need	ty.gov/ArchiveCenter/V
		Magaoay, Butch Gima, Caron Green, Matt Mano,	land. All the community got is hotels and they didn't	iewFile/Item/17660
		Ron McOmber, Stan Ruidas, Alberta DeJetley,	get the light industrial land." (Page 4 or 8)	
		<u>Charles Kaukeano</u>		
		County of Maui - Planning Department		
		David Yamashita, Long-Range Planning		
		Kathleen Kern, Long-Range Planning		
		Mary Jorgensen, Long-Range Planning		
		Doug Miller, Long-Range Planning		
		Consultants		
		Jen Maydan, Chris Hart & Partners		
		Public		
		Pat Reilly, Sue Murray, Wallace Stalker, <u>Diane</u>		
		Preza, Roselani Kaho'ohalahala, Kaulana		
		Kaho'ohalahala, Simon Tajiri, Charlotte Menze,		
		Michael Hurte, Nicholas E. Palumbo II, Mark		
		Sacco, Henry Clay Richarson, Elaine Londreur,		
		Robin Kaye, Keoki Kerr, Chester Koga		
Lāna`i	April 4 & 6,	62 People (see notes for Lanai CPAC Mtg. 10)		https://www.mauicoun
Community	2013			ty.gov/DocumentCente
Plan Update				<u>r/View/84254/040413-</u>
Public				Public-Workshops-
Workshops				<u>Flyer?bidId=</u>

Lāna`i CPAC	24-Apr-13	Community Plan Advisory Committee	"Mary presented a brief summary of the April 4th	https://www.mauicoun
Mtg. 10		Attendees	Island-wide Public Workshop that was attended by 62	ty.gov/ArchiveCenter/V
		Chris Costales, Deborah de la Cruz, Butch Gima,	people. A summary table for housing types and	iewFile/Item/17962
		Caron Green, Ron McOmber, Alberta DeJetley,	density per acre showed the highest preference was	
		Stan Ruidas	for 2-4 unit buildings such as single family with ohana,	
			duplex, multi-generational (more than one kitchen),	
		County of Maui - Planning Department	or four-plex. A summary table for recreational	
		Attendees	references by location showed high scores for forest	
		Kathleen Kern, Long-Range Planning	restoration, historical site visits and restoration.	
		Mary Jorgensen, Long-Range Planning	Finally Mary reviewed three maps from the April 4th	
		Doug Miller, Long-Range Planning	Public Workshop that the public drew locations for,	
			and commented on, preferred future development	
		Public Attendees	alternatives. Ron asked when the CPAC will see a	
		Winnie Basques, Dave Green, Kepa Maly, Lynn	complete summary of the workshop results. Mary re-	
		McCrory, <u>Meilani Aki</u> , Howard MacNair, Donna	plied that a summary will be posted on the website	
		MacNair, Alan Chun, <mark>Tom Hoen</mark> , Chester Koga,	once it is completed." (Page 2 of 4)	
		David Tanoe, John Stubbart, Charlie Palumbo,		
		Ron Gingerich, Judi Riley, Bridgette Beatty, Linda	"Mary encouraged the CPAC members to draw on the	
		Morgan, Natasha Inaba, <u>Joelle Aoke</u> , Kanish	base map the locations of new growth areas and	
		Tulbera, Bryan Jacalne, <u>Sadie Schilling</u> , Alicia	note what type of development they would like to see	
		Ebding, Michelle Fujiie	in these areas." (Page 3 of 4)	
			"Alberta said that the State does not want to see any	
			farms within a one mile radius around the airport."	
			(Page 3 of 4)	

Lāna`i CPAC	22-May-13	"The CPAC also requested to see the proposed	https://www.mauicoun
Mtg. 12		footprint of the 200 acres of light and heavy	ty.gov/ArchiveCenter/V
		industrial lands." (Page 2 of 2)	iewFile/Item/18022
		"Motion: Support the concept of adding 100 acres of light industrial and 100 acres of heavy industrial land in the Miki Basin. Passed -All were in favor." (Page 2 of 2)	

Interview with La'ikealoha Hanog



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Interview with La'ikealoha Hanog

Interviewer: Matthew Sproat **Interviewee:** La'ikealoha Hanog

Date: August 21, 2021 **Location:** via phone

Biography

Ms. Hanog works in food and beverage service for Hale o Manele (Trilogy Wedding and Event) on the island of Lāna'i. She was born on the island of Maui and raised on Lāna'i, where she still lives

Overview

As a seventh-generation family of Lāna'i, Ms. Hanog possesses a robust knowledge base of the project area's environment and relevance to traditions and customs. She recounted the various plants and animals known to the project area as well as associated traditions and customs. Ms. Hanog expressed her concerns regarding the myriad impacts to access and habitat that the project would create.

General Discussion

Ms. Hanog is associated with the project area through collecting and harvesting. She uses some of the plants that are known to be in the project area's region. Most recently, she and other practitioners go to the area to collect native Hawaiian plants. The plants are used for medicinal purposes, adornments, and gifts.

When asked about freshwater aquifers in the project area, Ms. Hanog explained that there are aquifers at various places across the island, but that the wells are located further mauka of the project area.

Ms. Hanog could not recount any cultural stories associated with the project area. However, in her personal narrative, she recounted that she and her family would use the area for traditional gathering.

Cultural Resources

Ms. Hanog explained the various flora that are in the project area and their uses. 'A'ali'i is used for adornments. 'Uhaloa is found here and used for medicinal purposes. There is also ilima and lantana. Regarding fauna, Ms. Hanog mentioned she had seen pueo recently, and noted that it has been a long time since she had seen them. She also noted that there are deer, pheasants, and quail in the area. She mentioned that during her grandparents' time, pheasants were abundant. Unfortunately, now they are more scarce.



Traditions and Customs

Ms. Hanog uses the project area to gather plants for traditional medicine and adornments. She made special mention that she uses the area to gather plants primarily because of access. It is easier to gather plants in this area as opposed to the eastern shoreline or Manele bay. Ms. Hanog also noted that her husband is a hunter, and harvests deer in the area to feed her family and other members of the community. Due to the remote geography of Lāna'i, gathering and hunting are inextricably tied to livelihood and subsistence.

Impacts

First, Ms. Hanog explained that the project could impact access to the area to collect cuturally important plants. The buildings and footprint of the project may impact plant life, as well as the associated traffic the project would create. The project could also affect the deer population in the area, which her husband harvests via archery. Ms. Hanog also noted that the project would disrupt the habitat and nesting grounds of birds such as pueo and pheasant.

Second, Ms. Hanog noted that more broadly, there are concerns about projects which are designed to bring more people to Lāna'i. With no free-flowing surface water on Lāna'i, there are real concerns of how further development will affect water resources and the environment more broadly.

Ms. Hanog is not aware of any iwi in the area, however she did mention that there are burials (including her 'ohana) mauka of the project area.

Mitigation Meaures & Recommendations

Ms. Hanog said that she would prefer the project not go through. If the project does proceed, she hopes that there is something in writing to ensure protection and health of native plants. Regarding the native fauna, she hopes the project would be mindful of their habitat (including deer). The deer are already stressed due to the dry weather.

Ms. Hanog recommended that resources of Lāna'i be made a priority, and to focus on the projects and developments that are already underway and causing impacts. She noted that the population of Lāna'i has increased and raised concerns that the resources cannot sustain a growing population.

Interview with Kumu Hula Pualani Kauila



Interview with Kumu Hula Pualani Kauila

Interviewer: Matthew Sproat Interviewee: Pua Kauila Date: August 19, 2021 Location: via phone

Biography

Ms. Kauila is a retired educator of Hawaiian Studies at the University of Hawaii, Mānoa. She was born and raised on the island of Lānaii, at Kō'ele Ranch. When she was born, her grandfather was the head wrangler for Kō'ele Ranch. Her father and uncles were also workers on the ranch. At the age of 6, she left Lānaii and moved to Maui, but spent her summers working on Lānaii. She currently lives in Honolulu. She is a Kumu Hula and cultural practitioner.

Overview

Ms. Kauila is associated with the project area through her personal narrative. She possesses a robust knowledge about Lāna'i, its history, and its people. Overarchingly, she is concerned that the project will further develop Lāna'i at the expense of its long-time residents who have called Lāna'i home for generations.

General Discussion

Ms. Kauila explained the modern history of Lāna'i, which was used as cattle ranchland for the people of Maui, Moloka'i, and Lāna'i, before the pineapple industry purchased 90% of the island. During ranch times, the project area near the airport was known as the "piggery".

Ms. Kauila noted that Hawaiians lived on ocean land, which is why those areas today are not developed; these lands were passed down through inheritence or were old kuleana lands. She also explained that because the island is so small, and given its history, the people of Lāna'i are very closed to new things happening.

Cultural Resources

Ms. Kauila explained that, according to the oral traditions of when Lāna'i was inhabited by ghosts, there was a cave in the project area (facing the ocean side). This was where Kaulula'au stayed. In this cave, which opens and closes to certain people, are remnants of cultural artifacts including canoes, ipu, and capes.

Regarding flora and fauna, Ms. Kauila noted that pueo are very well known in the area. She sees them often when she returns home. She could not identify any native plants in the area but noted that she would have to refer the interviewer to another individual.

Traditions and Customs

Ms. Kauila explained that hunters use the area to hunt axis deer for their own subsistence. Historically, she noted that the area was used as a look-out to see when other canoes were approaching the island.

Impacts



Ms. Kauila explained that the people of Lāna'i will be opposed to any industrial or commercial areas built on the land. She noted the negative impact of visitors on the island. Because the island is so small, any further development will negatively impact the island itself. She raised questions such as: would the development deface the island? Would it impact the people coming in to hunt? She firmly believes an industrial area will limit what that side of the island can access, whether for hunting or agricultural purposes.

Mitigation Meaures & Recommendations

Ms. Kauila said that there must be community engagement. Everyone must be able to voice their opinions. Her recommendation is to have the local community drive the process.