

Appendix I
Cultural Study



Appendices

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Appendix J *Geotechnical Study*

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8 March 2013

Cogstone Resource Management, Inc.
1518 Taft Avenue
Orange, CA 92865-4157

Attn: Sherri Gust

re: Vertebrate Paleontology Records Check for paleontological resources for the proposed 24 acres at 24120 Pacific Coast Highway Project, in the City of Malibu, Los Angeles County, project area

Dear Sherri:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for the proposed 24 acres at 24120 Pacific Coast Highway Project, in the City of Malibu, Los Angeles County, project area as outlined on the portion of the Malibu Beach USGS topographic quadrangle map that you sent to me via e-mail on 7 March 2013. We do not have any vertebrate fossil localities that lie within the project boundaries, but we do have localities nearby from the same sedimentary units that occur in the proposed project area.

In most of the proposed project area, on top of the bluff, the surface deposits consist of older Quaternary Alluvium. Towards the base of the bluff, on the eastern and southern sides of the proposed project area, there are exposures of the marine late Miocene Monterey Formation and that rock unit almost certainly underlies the older Quaternary Alluvium in the rest of the proposed project area. Our closest vertebrate fossil localities from the older Quaternary Alluvium and from the Monterey Formation respectively are LACM 1754 and 7396, both localities just south of due west of the proposed project area in Malibu Riviera around the Pacific Coast Highway (Highway 1). Locality LACM 1754 produced an extensive fossil fauna of late Pleistocene vertebrates (see appendix). Of particular note, two fossil specimens from locality LACM 1754 have been published in the scientific literature: J.H. Hutchison (1987. Moles of the *Scapanus latimanus* group (Talpidae, Insectivora) from the Pliocene and Pleistocene of

California. LACM Contributions in Science, 386:1-15) published on the mole, *Scapanus latimanus*, and G.T. Jefferson (1989. Late Cenozoic Tapirs (Mammalia: Perissodactyla) of Western North America. LACM Contributions in Science, 406:1-21) published on the tapir, *Tapirus californicus*. Fossil specimens of herrings, Clupeidae, and mackerels or tuna, Scombridae, along with other as yet unidentified fish, were collected from locality LACM 7396.

Even relative shallow excavations in the older Quaternary alluvial sediments exposed on top of the bluff in most of the proposed project area may uncover significant fossil vertebrate remains. Any Monterey Formation deposits, either at depth in most of the proposed project area or exposed toward the base of the bluff, also may well encounter significant vertebrate fossils. Any substantial excavations in the proposed project area, therefore, should be closely monitored to quickly and professionally collect any specimens without impeding development. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

A handwritten signature in cursive script that reads "Samuel A. McLeod".

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosures: appendix, invoice

Late Pleistocene fauna from locality LACM 1754

Aves			Mammalia	
Accipitriformes		- hawks & falcons	Artiodactyla	
Anseriformes			Cervidae	- deer
Anatidae		- ducks & geese	Insectivora	
<i>Anas</i>	<i>americana</i>		Talpidae	- moles
<i>Aythya</i>	<i>affinis</i>		<i>Scapanus</i>	<i>latimanus</i>
<i>Aythya</i>	<i>marila</i>		Lagomorpha	- rabbits
<i>Bucephala</i>	<i>albeola</i>		Perissodactyla	
<i>Chendytes</i>	<i>lawi</i>		Equidae	- horses
<i>Melanitta</i>	<i>perspicillata</i>		<i>Equus</i>	
<i>Oxyura</i>	<i>jamaicensis</i>		Tapiridae	- tapirs
Ardeiformes			<i>Tapirus</i>	<i>californicus</i>
Ardeidae		- egrets & herons	Rodentia	
<i>Ardea</i>	<i>herodias</i>		Cricetidae	- deer mice
Charadriiformes			Geomysidae	- pocket gophers
Alcidae		- murre & murrelets		
<i>Synthliboramphus</i>	<i>antiquus</i>			
<i>Uria</i>	<i>aalge</i>			
Laridae		- gulls		
<i>Larus</i>	<i>canus</i>			
<i>Larus</i>	<i>occidentalis</i>			
Galliformes				
Meleagridae		- turkeys		
<i>Parapavo</i>	<i>californicus</i>			
Phasianidae		- quail		
<i>Lophortyx</i>	<i>californica</i>			
Gaviiformes				
Gaviidae		- loons		
<i>Gavia</i>	<i>stellata</i>			
Gruiformes				
Rallidae		- rails		
<i>Fulica</i>	<i>americana</i>			
Passeriformes				
Corvidae		- crows		
<i>Corvus</i>	<i>corax</i>			
Pelecaniformes				
Phalacrocoracidae		- cormorants		
<i>Phalacrocorax</i>	<i>penicillatus</i>			
Sulidae		- boobies		
Podicipediformes				
Podicipedidae		- grebes		
<i>Podiceps</i>	<i>caspicus</i>			
Procellariidae		- fulmars & shearwaters		
<i>Fulmarus</i>	<i>glacialis</i>			
<i>Puffinus</i>	<i>griseus</i>			
<i>Puffinus</i>	<i>puffinus</i>			
Strigiformes		- owls		