

APPENDIX B – SUPPLEMENTAL REPORTS

1. OPERATING AGREEMENT AMENDMENT
2. BIOLOGICAL MEMORANDUM, RACHEL TIERNEY CONSULTING
3. BIOLOGICAL RESOURCES REPORT, VJS CONSULTING
4. WETLAND DELINEATION REPORT, RINCON CONSULTANTS
5. WATER SAMPLE ANALYSIS, FGL ENVIRONMENTAL
6. BIOSWALE REPORT, PENFIELD & SMITH
7. EXTENDED PHASE 1 ARCHAEOLOGICAL REPORT, DUDEK
8. ARCHAEOLOGICAL “LETTER REPORT”, WESTERN POINTS ARCHAEOLOGY
9. UNION PACIFIC RAILROAD PHASE I SITE ASSESSMENT, GEOMATRIX
10. UNION PACIFIC RAILROAD PHASE II SITE ASSESSMENT, GEOMATRIX



ANALYTICAL CHEMISTS

January 9, 2008

City of Carpinteria
5775 Carpinteria Ave.
Carpinteria, CA 93013

Lab ID : SP 0714125
Customer : 2-16066

Laboratory Report

Introduction: This report package contains total of 9 pages divided into 3 sections:

Case Narrative (2 Pages) : An overview of the work performed at FGL.
Sample Results (2 pages) : Results for each sample submitted.
Quality Control (5 pages) : Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
Linden Trail Project	12/18/2007	12/19/2007	SP 0714125-001	SW

Sampling and Receipt Information: The sample was received, prepared and analyzed within the method specified holding except those as listed in the table below. The holding time for pH is listed as immediate. Logistically this is very difficult to obtain. FGL policy is to analyze all samples requiring pH on the same day of receipt at the laboratory. If this presents any problem please call.

Lab ID	Analyte/Method	Required Holding Time	Actual Holding Time
SP 0714125-001	pH	15	1648.2 Minutes
	TPH-Gas	14	15 Days

All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	12/28/2007:213402	All analysis quality controls are within established criteria.
	12/27/2007:213304	All analysis quality controls are within established criteria.
245.1	12/26/2007:213248	All analysis quality controls are within established criteria.

Inorganic - Metals QC

3010	12/24/2007:212380 All preparation quality controls are within established criteria.
7470	12/24/2007:212377 All preparation quality controls are within established criteria.

Organic QC

8015G	01/02/2008:212605 All preparation quality controls are within established criteria.
8015M	01/02/2008:200103 All analysis quality controls are within established criteria.
	01/04/2008:200110 All analysis quality controls are within established criteria.
	12/24/2007:212567 All preparation quality controls are within established criteria.

Inorganic - Wet Chemistry QC

1664	12/26/2007:212435 All preparation quality controls are within established criteria.
2510B	12/26/2007:213194 All analysis quality controls are within established criteria.
2540D	12/21/2007:212326 All preparation quality controls are within established criteria.
4500HB	12/19/2007:213025 All analysis quality controls are within established criteria.

Certification: I certify that this data package is in compliance with NELAC standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:EHB

Approved By **Kelly A. Dunnahoo, B.S.**



Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2008-01-09



ANALYTICAL CHEMISTS

January 9, 2008

Lab ID : SP 0714125-001

Customer ID : 2-16066

City of Carpinteria
5775 Carpinteria Ave.
Carpinteria, CA 93013

Sampled On : December 18, 2007-15:05

Sampled By : Todd Railey

Received On : December 19, 2007-15:50

Matrix : Surface Water

Description : Linden Trail Project

Project : Linden Trail Project

Sample Results - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total ^{P:15}								
Antimony	ND	0.01	mg/L		3010	12/24/07:212380	200.7	12/27/07:213304
Arsenic	ND	0.01	mg/L		3010	12/24/07:212380	200.7	12/27/07:213304
Barium	0.024	0.005	mg/L		3010	12/24/07:212380	200.7	12/27/07:213304
Beryllium	ND	0.005	mg/L		3010	12/24/07:212380	200.7	12/27/07:213304
Cadmium	ND	0.005	mg/L		3010	12/24/07:212380	200.7	12/27/07:213304
Chromium	ND	0.01	mg/L		3010	12/24/07:212380	200.7	12/27/07:213304
Cobalt	ND	0.01	mg/L		3010	12/24/07:212380	200.7	12/27/07:213304
Copper	0.03	0.01	mg/L		3010	12/24/07:212380	200.7	12/27/07:213304
Lead	ND	0.01	mg/L		3010	12/24/07:212380	200.7	12/27/07:213304
Mercury	ND	0.00002	mg/L		7470	12/24/07:212377	245.1	12/26/07:213248
Molybdenum	ND	0.01	mg/L		3010	12/24/07:212380	200.7	12/27/07:213304
Nickel	ND	0.01	mg/L		3010	12/24/07:212380	200.7	12/27/07:213304
Selenium	ND	0.01	mg/L		3010	12/24/07:212380	200.7	12/28/07:213402
Silver	ND	0.01	mg/L		3010	12/24/07:212380	200.7	12/27/07:213304
Thallium	ND	0.01	mg/L		3010	12/24/07:212380	200.7	12/27/07:213304
Vanadium	ND	0.01	mg/L		3010	12/24/07:212380	200.7	12/27/07:213304
Zinc	0.08	0.02	mg/L		3010	12/24/07:212380	200.7	12/27/07:213304
Wet Chemistry ^{P:1}								
Conductivity	73	1	umhos/cm		2510B	12/24/07:212368	2510B	12/26/07:213194
Oil and Grease	ND	3	mg/L		1664	12/26/07:212435	1664	12/27/07:213272
pH	7.9	--	units		4500-H B	12/19/07:212236	4500HB	12/19/07:213025
Solids, Total Suspended (TSS)	64	5	mg/L		2540D	12/21/07:212326	2540D	12/24/07:213166

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGJ) Amber Glass Jar, (P) Plastic, (VOA) VOA Preservatives: H2SO4 pH < 2, HNO3 pH < 2, HCl pH < 2, HCl pH < 2



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Sampled On : December 18, 2007-15:05

Sampled By : Todd Railey

Received On : December 19, 2007-15:50

Matrix : Surface Water

Description : Linden Trail Project

Project : Linden Trail Project

Sample Results - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
EPA 8015M Gas ^{VOA:13} TPH-Gas	ND	0.05	mg/L		8015G	01/02/08:212605	8015M	01/02/08:200103
EPA 8015M TPH ^{VOA:13} Diesel	ND	0.5	mg/L		8015M	12/24/07:212567	8015M	01/04/08:200110
Crude Oil	ND	0.5	mg/L		8015M	12/24/07:212567	8015M	01/04/08:200110
Jet Fuel	ND	0.5	mg/L		8015M	12/24/07:212567	8015M	01/04/08:200110
Mineral Spirits	ND	0.5	mg/L		8015M	12/24/07:212567	8015M	01/04/08:200110
Waste Oil	ND	2	mg/L		8015M	12/24/07:212567	8015M	01/04/08:200110

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGJ) Amber Glass Jar, (P) Plastic, (VOA) VOA Preservatives: H2SO4 pH < 2, HNO3 pH < 2, HCl pH < 2, HCl pH < 2



ANALYTICAL CHEMISTS

January 9, 2008
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Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals Antimony	200.7	12/27/2007:213304	CCV	ppm	1.000	95.1 %	90-110	
			CCB	ppm		0.0001	0.01	
			CCV	ppm	1.000	97.8 %	90-110	
			CCB	ppm		-0.0020	0.01	
	3010	12/24/2007:212380	Blank	mg/L		ND	<0.01	
			LCS	mg/L	0.5000	97.8 %	85-115	
			MS	mg/L	0.5000	92.3 %	75-125	
			MSD	mg/L	0.5000	93.3 %	75-125	
			MSRPD	mg/L	0.8000	1.0 %	≤20.0	
			PDS	mg/L	0.5000	95.2 %	75-125	
Arsenic	200.7	12/27/2007:213304	CCV	ppm	1.000	95.5 %	90-110	
			CCB	ppm		0.0023	0.01	
			CCV	ppm	1.000	98.3 %	90-110	
			CCB	ppm		0.0039	0.01	
	3010	12/24/2007:212380	Blank	mg/L		ND	<0.01	
			LCS	mg/L	0.8000	100 %	85-115	
			MS	mg/L	0.8000	96.1 %	75-125	
			MSD	mg/L	0.8000	96.7 %	75-125	
			MSRPD	mg/L	0.8000	0.6 %	≤20	
			PDS	mg/L	0.8000	95.5 %	75-125	
Barium	200.7	12/27/2007:213304	CCV	ppm	1.000	98.7 %	90-110	
			CCB	ppm		-0.00018	0.005	
			CCV	ppm	1.000	101 %	90-110	
			CCB	ppm		-0.00055	0.005	
	3010	12/24/2007:212380	Blank	mg/L		ND	<0.005	
			LCS	mg/L	0.8000	105 %	85-115	
			MS	mg/L	0.8000	102 %	75-125	
			MSD	mg/L	0.8000	102 %	75-125	
			MSRPD	mg/L	0.8000	0.3 %	≤20.0	
			PDS	mg/L	0.8000	100 %	75-125	
Beryllium	200.7	12/27/2007:213304	CCV	ppm	1.000	97.5 %	90-110	
			CCB	ppm		-0.00005	0.005	
			CCV	ppm	1.000	100 %	90-110	
			CCB	ppm		-0.00003	0.005	
	3010	12/24/2007:212380	Blank	mg/L		ND	<0.005	
			LCS	mg/L	0.8000	101 %	85-115	
			MS	mg/L	0.8000	96.8 %	75-125	
			MSD	mg/L	0.8000	97.7 %	75-125	
			MSRPD	mg/L	0.8000	0.9 %	≤20.0	
			PDS	mg/L	0.8000	97.0 %	75-125	
Cadmium	200.7	12/27/2007:213304	CCV	ppm	1.000	95.9 %	90-110	
			CCB	ppm		0.00016	0.005	
			CCV	ppm	1.000	99.0 %	90-110	
			CCB	ppm		0.00033	0.005	
	3010	12/24/2007:212380	Blank	mg/L		ND	<0.005	
			LCS	mg/L	0.8000	98.5 %	85-115	
			MS	mg/L	0.8000	95.5 %	75-125	
			MSD	mg/L	0.8000	95.6 %	75-125	
			MSRPD	mg/L	0.8000	0.07 %	≤20	
			PDS	mg/L	0.8000	94.7 %	75-125	
Chromium	200.7	12/27/2007:213304	CCV	ppm	1.000	96.7 %	90-110	
			CCB	ppm		-0.0002	0.01	
			CCV	ppm	1.000	98.9 %	90-110	
			CCB	ppm		0.0003	0.01	
	3010	12/24/2007:212380	Blank	mg/L		ND	<0.01	

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals Chromium	3010	12/24/2007:212380	LCS	mg/L	0.8000	101 %	85-115	
			MS	mg/L	0.8000	98.7 %	75-125	
			MSD	mg/L	0.8000	99.7 %	75-125	
			MSRPD	mg/L	0.8000	1.0%	≤20	
			PDS	mg/L	0.8000	97.7 %	75-125	
Cobalt	200.7	12/27/2007:213304	CCV	ppm	1.000	97.3 %	90-110	
			CCB	ppm		0.0003	0.01	
			CCV	ppm	1.000	100 %	90-110	
			CCB	ppm		-0.0024	0.01	
	3010	12/24/2007:212380	Blank	mg/L		ND	<0.01	
			LCS	mg/L	0.8000	102 %	85-115	
			MS	mg/L	0.8000	98.3 %	75-125	
			MSD	mg/L	0.8000	98.9 %	75-125	
			MSRPD	mg/L	0.8000	0.6%	≤20.0	
			PDS	mg/L	0.8000	98.0 %	75-125	
Copper	200.7	12/27/2007:213304	CCV	ppm	1.000	96.6 %	90-110	
			CCB	ppm		0.0001	0.01	
			CCV	ppm	1.000	99.1 %	90-110	
			CCB	ppm		0.00008	0.01	
	3010	12/24/2007:212380	Blank	mg/L		ND	<0.01	
			LCS	mg/L	0.8000	102 %	85-115	
			MS	mg/L	0.8000	98.8 %	75-125	
			MSD	mg/L	0.8000	98.6 %	75-125	
			MSRPD	mg/L	0.8000	0.2%	≤20.0	
			PDS	mg/L	0.8000	97.6 %	75-125	
Lead	200.7	12/27/2007:213304	CCV	ppm	1.000	96.9 %	90-110	
			CCB	ppm		0.0007	0.01	
			CCV	ppm	1.000	99.5 %	90-110	
			CCB	ppm		0.0003	0.01	
	3010	12/24/2007:212380	Blank	mg/L		ND	<0.01	
			LCS	mg/L	0.8000	102 %	85-115	
			MS	mg/L	0.8000	97.5 %	75-125	
			MSD	mg/L	0.8000	97.8 %	75-125	
			MSRPD	mg/L	0.8000	0.4%	≤20.0	
			PDS	mg/L	0.8000	96.8 %	75-125	
Mercury	245.1	12/26/2007:213248	CCV	ppt	200.0	96.1 %	90-110	
			CCB	ppt		-2.5	20	
			CCV	ppt	200.0	97.8 %	90-110	
			CCB	ppt		-3.2	20	
	7470	12/24/2007:212377	Blank	ug/L		ND	<0.02	
			LCS	ug/L	0.2000	93.7 %	85-115	
			MS	ug/L	0.2000	92.8 %	75-125	
			MSD	ug/L	0.2000	92.8 %	75-125	
			MSRPD	ug/L	0.2000	0.0%	≤20	
			PDS	ug/L	0.2000			
Molybdenum	200.7	12/27/2007:213304	CCV	ppm	1.000	95.0 %	90-110	
			CCB	ppm		0.0005	0.01	
			CCV	ppm	1.000	97.6 %	90-110	
			CCB	ppm		0.0002	0.01	
	3010	12/24/2007:212380	Blank	mg/L		ND	<0.01	
			LCS	mg/L	0.5000	99.7 %	85-115	
			MS	mg/L	0.5000	95.6 %	75-125	
			MSD	mg/L	0.5000	96.3 %	75-125	
			MSRPD	mg/L	0.8000	0.7%	≤20	
			PDS	mg/L	0.5000	95.7 %	75-125	
Nickel	200.7	12/27/2007:213304	CCV	ppm	1.000	97.9 %	90-110	
			CCB	ppm		-0.001	0.01	
			CCV	ppm	1.000	101 %	90-110	
			CCB	ppm		0.0013	0.01	

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note			
Metals Nickel	3010	12/24/2007:212380	Blank	mg/L		ND	<0.01				
			LCS	mg/L	0.8000	102 %	85-115				
			MS	mg/L	0.8000	99.3 %	75-125				
			MSD	mg/L	0.8000	100 %	75-125				
			MSRPD	mg/L	0.8000	1.1%	≤20				
			PDS	mg/L	0.8000	98.9 %	75-125				
Selenium	200.7	12/28/2007:213402	CCV	ppm	1.000	96.5 %	90-110				
			CCB	ppm		0.0012	0.01				
			CCV	ppm	1.000	95.4 %	90-110				
			CCB	ppm		-0.00006	0.01				
	3010	12/24/2007:212380	Blank	mg/L		ND	<0.01				
			LCS	mg/L	0.8000	98.4 %	80-120				
			MS	mg/L	0.8000	93.6 %	75-125				
			MSD	mg/L	0.8000	95.4 %	75-125				
			MSRPD	mg/L	0.8000	1.8%	≤20				
			PDS	mg/L	0.8000	92.9 %	75-125				
			Silver	200.7	12/27/2007:213304	CCV	ppm	1.000	96.6 %	90-110	
						CCB	ppm		-0.00001	0.01	
CCV	ppm	1.000				99.0 %	90-110				
CCB	ppm					0.0001	0.01				
3010	12/24/2007:212380	Blank	mg/L		ND	<0.01					
		LCS	mg/L	0.8000	98.8 %	85-115					
		MS	mg/L	0.8000	95.4 %	75-125					
		MSD	mg/L	0.8000	95.7 %	75-125					
		MSRPD	mg/L	0.8000	0.4%	≤20.0					
		PDS	mg/L	0.8000	89.6 %	75-125					
		Thallium	200.7	12/27/2007:213304	CCV	ppm	1.000	96.3 %	90-110		
					CCB	ppm		0.0064	0.01		
CCV	ppm				1.000	99.3 %	90-110				
CCB	ppm					0.0045	0.01				
3010	12/24/2007:212380		Blank	mg/L		ND	<0.01				
			LCS	mg/L	0.8000	99.2 %	85-115				
			MS	mg/L	0.8000	95.7 %	75-125				
			MSD	mg/L	0.8000	95.6 %	75-125				
3010	12/24/2007:212380	MSRPD	mg/L	0.8000	0.09%	≤20.0					
		PDS	mg/L	0.8000	96.7 %	75-125					
		Vanadium	200.7	12/27/2007:213304	CCV	ppm	1.000	97.5 %	90-110		
					CCB	ppm		-0.0002	0.01		
CCV	ppm				1.000	100 %	90-110				
CCB	ppm					-0.00002	0.01				
3010	12/24/2007:212380	Blank	mg/L		ND	<0.01					
		LCS	mg/L	0.8000	102 %	85-115					
		MS	mg/L	0.8000	99.5 %	75-125					
		MSD	mg/L	0.8000	100 %	75-125					
		MSRPD	mg/L	0.8000	0.7%	≤20.0					
		PDS	mg/L	0.8000	98.8 %	75-125					
		Zinc	200.7	12/27/2007:213304	CCV	ppm	1.000	97.5 %	90-110		
					CCB	ppm		0.0005	0.02		
CCV	ppm				1.000	101 %	90-110				
CCB	ppm					-0.0002	0.02				
3010	12/24/2007:212380		Blank	mg/L		ND	<0.02				
			LCS	mg/L	2.000	103 %	85-115				
			MS	mg/L	2.000	99.5 %	75-125				
			MSD	mg/L	2.000	100 %	75-125				
3010	12/24/2007:212380	MSRPD	mg/L	0.8000	0.7%	≤20.0					
		PDS	mg/L	2.000	99.5 %	75-125					
Wet Chem											

January 9, 2008
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Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem Conductivity	2510B	12/26/2007:213194	ICB	umhos/cm		0.1	1	
			ICV	umhos/cm	996.0	99.4 %	95-105	
			CCV	umhos/cm	996.0	99.3 %	95-105	
Oil and Grease	1664	12/26/2007:212435	Blank	mg/L		ND	<3	
			LCS	mg/L	40.40	90.7 %	63-121	
			LCS	mg/L	40.40	91.7 %	63-121	
			BS	mg/L	40.40	94.2 %	63-121	
			BSD	mg/L	40.40	94.6 %	63-121	
			BSRPD	mg/L	40.40	0.4%	<48.9	
pH	4500HB	12/19/2007:213025	CCV	units	8.000	100 %	95-105	
			CCV	units	8.000	101 %	95-105	
Solids, Suspended	2540D	12/21/2007:212326	Blank	mg/L		ND	<1	
			LCS	mg/L	50.00	84.0 %	38-138	
			LCS	mg/L	50.00	101 %	38-138	
			Dup	mg/L		1.6%	28.7	
Definition								
ICV : Initial Calibration Verification - Analyzed to verify the instrument calibration is within criteria.								
ICB : Initial Calibration Blank - Analyzed to verify the instrument baseline is within criteria.								
CCV : Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.								
CCB : Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.								
Blank : Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.								
LCS : Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.								
MS : Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.								
MSD : Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.								
BS : Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.								
BSD : Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.								
Dup : Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.								
MSRPD : MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.								
BSRPD : BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.								
ND : Non-detect - Result was below the DQO listed for the analyte.								
DQO : Data Quality Objective - This is the criteria against which the quality control data is compared.								



ANALYTICAL CHEMISTS

January 9, 2008
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 Customer : 2-16066

Quality Control - Organic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Organic Crude Oil	8015M	01/04/2008:200110	CCV	mg/L	0.000	N/A	85-115	
			CCV	mg/L	0.000	N/A	85-115	
	8015M	12/24/2007:212567	Blank LCS BS BSD	mg/L Sample Extra Extra	0.000 0.000 0.000	ND N/A N/A N/A	<0.5 67-124	
DIESEL#2	8015M	01/04/2008:200110	CCV	mg/L	1000	102 %	85-115	
			CCV	mg/L	1000	112 %	85-115	
Gasoline	8015M	01/02/2008:200103	CCV	mg/L	2.000	98.0 %	85-115	
			CCV	mg/L	1.500	109 %	85-115	
Jet Fuel	8015M	01/04/2008:200110	CCV	mg/L	0.000	N/A	85-115	
			CCV	mg/L	0.000	N/A	85-115	
	8015M	12/24/2007:212567	Blank LCS BS BSD	mg/L mg/L mg/L mg/L	0.000 0.000 0.000	ND N/A N/A N/A	<0.5 67-124	
Mineral Spirits	8015M	01/04/2008:200110	CCV	mg/L	0.000	N/A	85-115	
			CCV	mg/L	0.000	N/A	85-115	
	8015M	12/24/2007:212567	Blank LCS BS BSD	mg/L mg/L mg/L mg/L	0.000 0.000 0.000	ND N/A N/A N/A	<0.5 67-124	
TPH-Diesel			Blank	mg/L		ND	<0.5	
			LCS	mg/L	26.32	85.6 %	64-124	
			BS	mg/L	26.32	93.0 %	68-130	
			BSD	mg/L	26.32	90.5 %	68-130	
			BSRPD	mg/L	0.000	2.7%	≤16.7	
TPH-Gas	8015G	01/02/2008:212605	Blank	mg/L		ND	<0.05	
			MS	mg/L	2.000	99.0 %	77-124	
			MSD	mg/L	2.000	93.5 %	77-124	
			MSRPD	mg/L	2.000	5.7%	≤25.5	
Waste Oil	8015M	01/04/2008:200110	CCV	mg/L	0.000	N/A	85-115	
			CCV	mg/L	0.000	N/A	85-115	
	8015M	12/24/2007:212567	Blank LCS BS BSD	mg/L mg/L mg/L mg/L	0.000 0.000 0.000	ND N/A N/A N/A	<2 67-124	

Definition

CCV : Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
 Blank : Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
 LCS : Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
 MS : Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
 MSD : Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
 BS : Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
 BSD : Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
 MSRPD : MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
 BSRPD : BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
 ND : Non-detect - Result was below the DQO listed for the analyte.
 DQO : Data Quality Objective - This is the criteria against which the quality control data is compared.



CLIENT DETAILS

SECTION I

Client: City of Carpinteria
 Address: 5775 Carpinteria Ave
 Phone: 805-684-5405 FAX: 805-684-3853
 E-Mail: matr@ci.carpinteria.ca.us
 Project name: Linden Trail Project
 Contact person: Matt Roberts
 Billing Information (if different from above)
 Name: Same as Above
 Address: _____
 Phone: _____ FAX: _____
 E-Mail: _____
 Contact person: _____
 Purchase order/contract/FGL quote number: _____
 Pre Log Required: yes _____ Monthly Weekly Quarterly
 Frequency: Other

SAMPLING

SECTION II

Sampler (s): Todd Bailey
 Comp Sampler Set up Date: _____ Time: _____
 Mileage: _____
 Shipping Charge: _____ Pickup Charge: _____

REPORT INFORMATION

SECTION III

Rush Analysis (surcharge will apply):
 5 Day 4 Day 3 Day
 2 Day 24 hour
 Rush pre-approval by lab: _____ Initial _____
 Electronic Data Transfer: yes _____ no _____
 If yes, To: State _____ Client _____ Other _____
 Lab number: 14770

SAMPLE INFORMATION

SECTION IV

Sample Number	Location/Description	Date Sampled	Time Sampled
1	Linden Trail Project	12/6	2:58
2	" "	12/6	2:59
3	" "	12/14	3:00
4	" "	12/18	3:01
5	" "	12/18	3:02
6	" "	12/18	3:03
7	" "	12/18	3:04
8	" "	12/18	3:05

Type of Sampling: Composite(C) Grab(G)
 Number of Containers: _____
 Type of Containers: (G) Glass (P) Plastic (V) VOA (MT) Metal Tube
 (P) Potable (NP) Non-Potable
 (SW) Surface Water (MW) Monitoring Well
 (GW) Ground Water (TB) Travel Blank
 (WW) Wastewater (DW) Drinking Water
 (S) Soil (SLG) Sludge (SLD) Solid (O) Oil
 BacT: (Sys) System (SRC) Source (W) Waste
 BacT: Routine (ROUT) Repeat (RPT) Other (OTH) Replace (RPL)
 (LT) Leaf Tissue (PET) Petiole Tissue (PRD) Produce
 Preservative: (1) NaOH + ZnAc, (2) NaOH, (3) HCl, (4) H2SO4, (5) HNO3, (6) Na2S2O3, (7) Other _____

ANALYSES REQUESTED
oil 3.6 use
TSS
EC, PH
CDM 17
8015 mTPH fuel

To Lab D/I:

REMARKS

SECTION V

REMARKS

CUSTODY

Requisitioned by and subject to the terms and conditions on the reverse of this document:

Received by: [Signature] Date: 12/10 Time: _____
 Relinquished by: [Signature] Date: _____ Time: _____

SECTION VI

Received by: _____ Date: _____ Time: _____
 Relinquished by: _____ Date: _____ Time: _____

CORPORATE OFFICE & LABORATORY
 P.O. Box 27853 Corporation Street
 Santa Paula, CA 93061-0272
 Tel: (805) 392-2000
 FAX: (805) 325-4172

OFFICE & LABORATORY
 2500 Stagecoach Road
 Stockton, CA 95215
 Tel: (209) 942-0182
 FAX: (209) 942-0423

OFFICE & LABORATORY
 365 E. Lindo Avenue
 Chico, CA 95926
 Tel: (530) 343-5818
 FAX: (530) 343-5807

FIELD OFFICE
 Visalia, California
 Tel: (559) 734-2773
 Mobile: (559) 734-2939
 FAX: (559) 734-8435

Santa Paula - Condition Upon Receipt (Attach to COC)

Sample Receipt:

- Number of ice chests/packages received: 1
Note as OTC if received over the counter unpackaged.
- Were samples received in a chilled condition? Temps: Per / / / /
Acceptable is 2° to 6° C. Also acceptable is received on ice (ROI) for the same day of sampling or received at room temperature (RRT) if sampled within one hour of receipt. Client contact for temperature failures must be documented below. If many packages are received at one time check for tests/H.T.'s/rushes/Bacti's to prioritize further review. Please notify Microbiology personnel immediately of bacti samples received.
- Do the number of bottles received agree with the COC? Yes No N/A
- Were samples received intact? (i.e. no broken bottles, leaks etc.) Yes No
- Were sample custody seals intact? N/A Yes No

Sign and date the COC, obtain LIMS sample numbers, select methods/tests and print labels.

Sample Verification, Labeling and Distribution:

- Were all requested analyses understood and acceptable? Yes No
- Did bottle labels correspond with the client's ID's? Yes No
- Were all bottles requiring sample preservation properly preserved? Yes No N/A FGL
- VOAs checked for Headspace? Yes No N/A
- Were all analyses within holding times at time of receipt? Yes No
- Have rush or project due dates been checked and accepted? N/A Yes No

Attach labels to the containers and include a copy of the COC for lab delivery.

Sample Receipt, Login and Verification completed by (initials):

Discrepancy Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

- Person Contacted: _____ Phone Number: _____
Initiated By: _____ Date: _____
Problem: _____

Resolution: _____

- Person Contacted: _____ Phone Number: _____
Initiated By: _____ Date: _____
Problem: _____

Resolution: _____

(2-16066)
City of Carpinteria
SP 0714125



Penfield & Smith

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Santa Barbara, CA 93101

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fax 805-966-9801

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Civil Engineering

Land Surveying

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Construction
Management & Inspection

Traffic & Transportation
Engineering

Transportation Planning

W.O. 17202.01

January 30, 2008

Matthew Roberts
City of Carpinteria
5775 Carpinteria Ave.
Carpinteria, CA 93013

Subject: Carpinteria Palm to Linden Trail, Bioswale Report

Dear Matthew:

At your request, I have reviewed the information that you have provided me regarding the proposed bioswale on the State Parks lands. I have reviewed the site and surrounding watershed and observed the flow patterns during rainfall. In addition, I have received a copy of the water quality sampling taken during one of the first rainfalls of the year.

The purpose of this report is to verify that the bioswale concept, as proposed by the City of Carpinteria:

- meets standard design criteria accepted by the State of California, and
- the incoming waters are appropriate for this type of facility.

The watershed tributary to the proposed bioswale is comprised of commercial development, institutional development (church) and a small amount of residential development. Although there is a auto towing yard near by, it does not drain to this watershed. See Exhibit A. All waters to be treated in the bioswale already drain to State lands. No additional flows will be added.

Based on preliminary design concepts and rough estimations of slope and channel configuration, the bioswale meets all the design criteria for effective functioning and pollutant removal as indicated in the California Stormwater Quality Associations Stormwater Best Management Practice Handbook for New Development and Redevelopment. See the attached calculations.

In addition to a visual review of the tributary watershed, a water sample was taken and analyzed. The sample was taken during the first significant rainfall of the year. All constituents were noted as ND (non-detected) with the following exceptions:

Constituent	Unit	Measured Result	MCL*
Barium	mg/l	0.024	2
Copper	mg/l	0.03	1.3
Zinc	mg/l	0.02	5**
Conductivity	Umhos/cm	73	na
pH	units	7.9	6.5-8.5**
Total Suspended Solids	mg/l	64	na

Notes:

*MCL = maximum contaminant level as recommended by the EPA for drinking water.

**Secondary drinking water standards. No MCL set.

Therefore, I make the following findings:

- The bioswale concept is based on acceptable design standards
- Incoming water appears to be free of toxic pollutants
- The bioswale will provide adequate treatment of the storm waters.

If you have any further questions, please call me at (805) 963-9538 ext 124.

Very truly yours,
PENFIELD & SMITH

Craig A. Steward, P.E., CFM
Principal Engineer
RCE 37,253



WATER QUALITY ANALYSIS

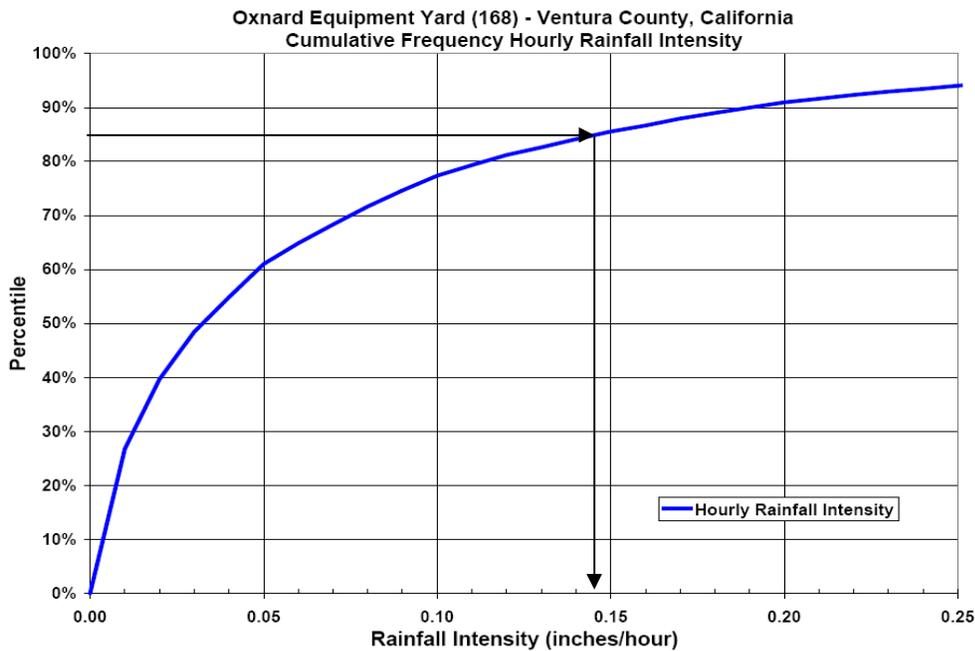
Santa Barbara County Method

$$WQFR = (0.05 + 0.9 \times IMP) \times 0.3 \times A$$

WQFR = water quality flow rate, cfs
 IMP = total impervious area (as a fraction)
 A = site area, acres

A = 24.5 acres
 IMP = 11.6 acres x 0.1 impervious
 12.9 acres x 0.9 impervious
 IMP = 0.52
 WQFR = 3.8 cfs

CASQA Method



Note: Oxnard is the closest location with the best match in climatic conditions to Carpinteria.

$$BMP \text{ design flow} = C \times I \times A$$

C = 0.52 conservatively using the percent impervious
 I = 0.14 from the chart above
 A = 24.5 acres

$$BMP \text{ design flow} = 1.79 \text{ cfs (representing the 85\% capture)}$$

Conclusion: Use the Santa Barbara County Method

CASQA Criteria for Bioswale Design

Design Guidelines (per CASQA Manual):

Minimum residence time =	10 minutes
Maximum bottom width =	10 ft
Maximum depth of flow =	4 inches
Maximum channel slope =	0.025 ft/ft
Recommended design grass height =	6 inches
Minimum length of swale =	100 ft
Manning's roughness coefficient =	0.25
Steepest side slopes	3 :1
May be used in-line	

Approximate Analysis:

Swale Length =	550 ft	
Swale Slope	0.001 ft/ft	
Bottom Width =	10 ft	
Depth of Flow =	1.7 ft	
Calculated Velocity =	0.22 fps	
Calculated Residence Time (swale only) =		42 minutes

Additional residence time will be added through the enhanced wetlands

TRAPEZOIDAL CHANNEL ANALYSIS
NORMAL DEPTH COMPUTATION

January 30, 2008

```
=====
```

DESCRIPTION	VALUE
Flow Rate (cfs).....	3.8
Channel Bottom Slope (ft/ft).....	0.001
Manning's Roughness Coefficient (n-value).....	0.25
Channel Left Side Slope (horizontal/vertical).....	0.1
Channel Right Side Slope (horizontal/vertical).....	0.1
Channel Bottom Width (ft).....	10.0

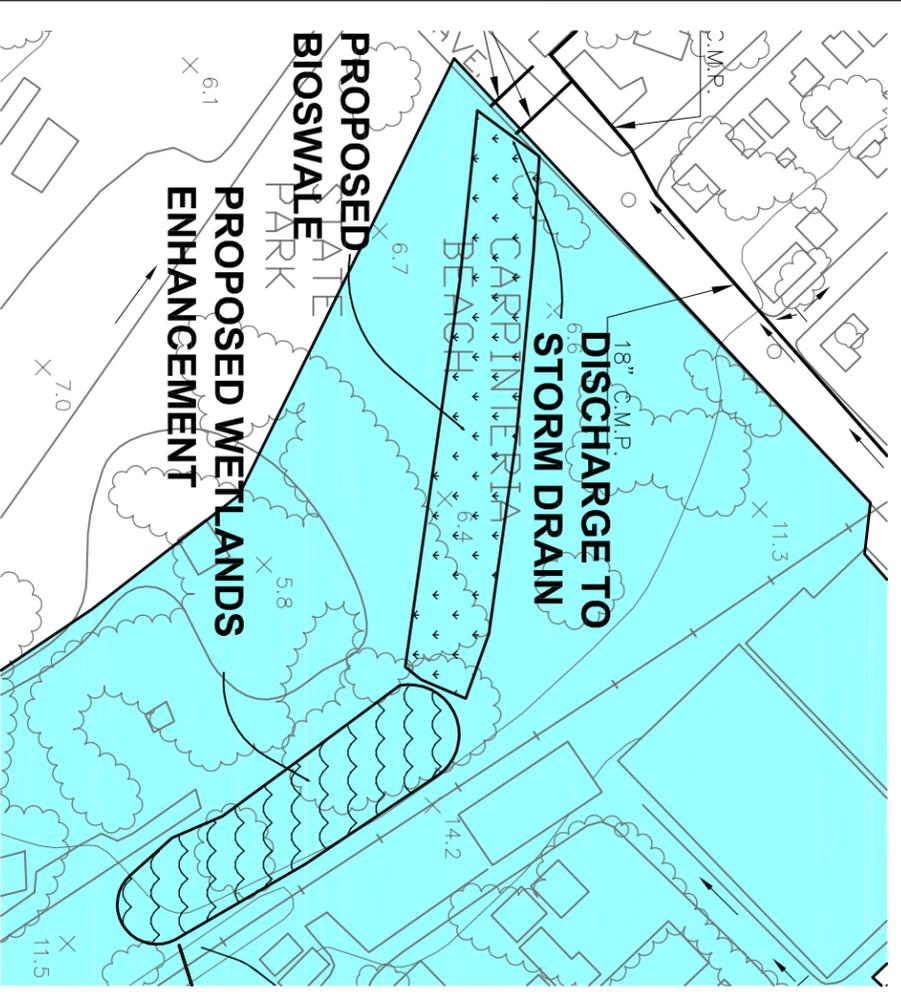
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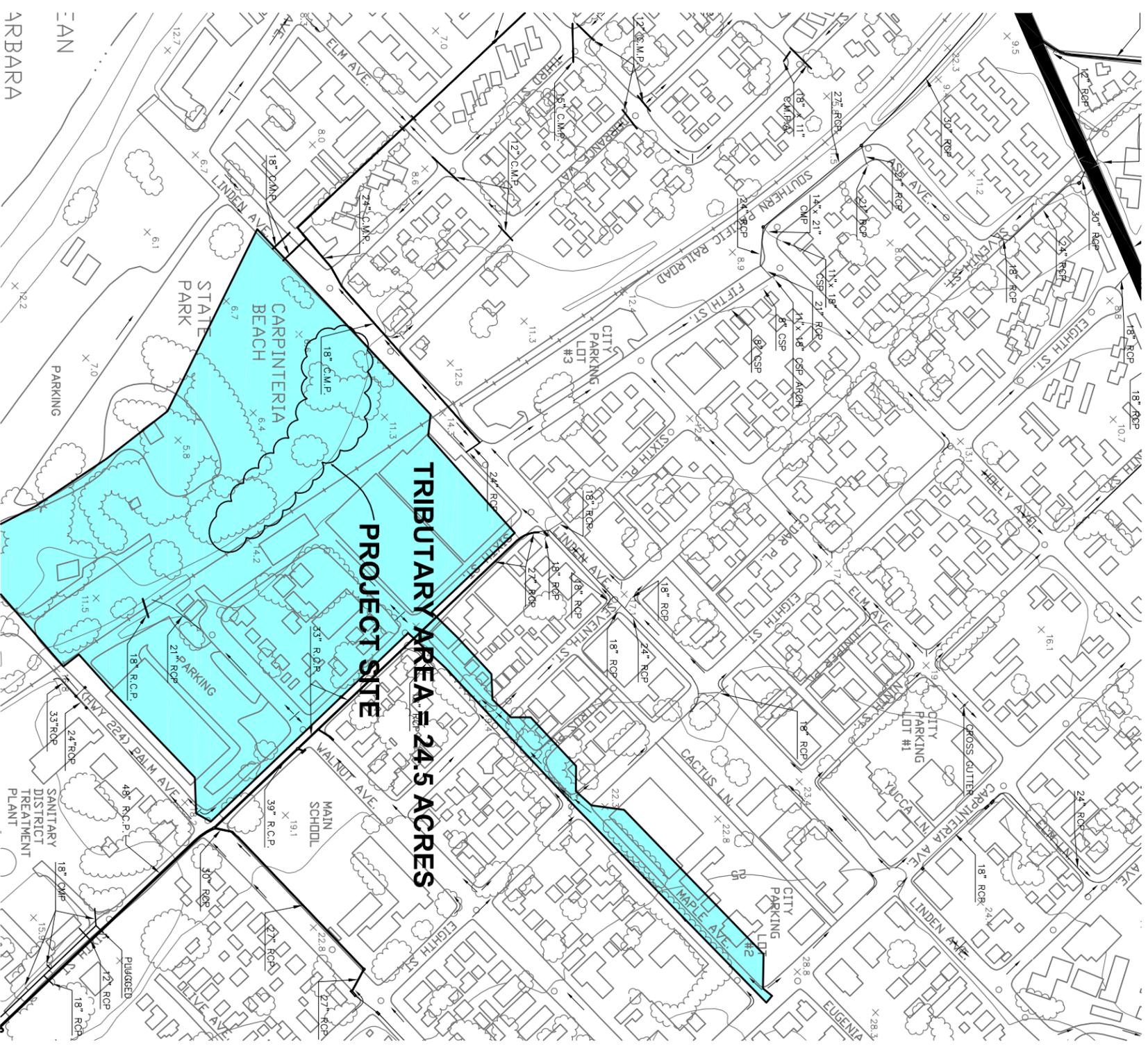
DESCRIPTION	VALUE
Normal Depth (ft).....	1.69
Flow Velocity (fps).....	0.22
Froude Number.....	0.03
Velocity Head (ft).....	0.0
Energy Head (ft).....	1.69
Cross-Sectional Area of Flow (sq ft).....	17.15
Top Width of Flow (ft).....	10.34

```
=====
```

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Phone: (281) 440-3787, Fax: (281) 440-4742, Email: software@dodson-hydro.com
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SITE LAYOUT
SCALE: NIS



TRIBUTARY AREA
SCALE: NIS

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PROGRAM FILE: CARPENTARIA STATE PARK
PROJECT FILE: CARPENTARIA STATE PARK
DATE: 11/20/2011

NO.	DATE	REVISIONS	PREP.

DESIGN: _____
CHECKED: _____
DATE: _____

DESIGNED BY: _____
DATE: _____

PROJECT: CARPENTARIA STATE PARK
PROJECT FILE: CARPENTARIA STATE PARK
DATE: 11/20/2011

SCALE: 1" = 200'

EXHIBIT A

EXTENDED PHASE 1 CULTURAL RESOURCES INVESTIGATION

PALM TO LINDEN TRAIL, CARPINTERIA

Prepared for:

Mr. Matt Roberts
Parks and Recreation
City of Carpinteria
5775 Carpinteria Avenue
Carpinteria, CA 93013

MARCH 2008

Prepared by:

David Stone, M.A., RPA
Ken Victorino, M.A., RPA

DUDEK

621 Chapala Street
Santa Barbara, CA 93101
Tel. (805) 963-0651

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1.0 INTRODUCTION

This report summarizes the results of an Extended Phase 1 archaeological investigation conducted by Dudek for the Palm to Linden Trail in Carpinteria, California. The Extended Phase 1 archaeological investigation was conducted to determine the presence or absence of intact (undisturbed) prehistoric archaeological materials based on the conclusions of a Phase 1 survey report prepared for the project. Auger excavations were conducted in accordance with California State Department of Parks and Recreation standards.

The results of 16 auger excavations recovered only very limited densities of subsurface shell fragments within the top 20 centimeters (8 inches) from the ground surface. Shellfish fragments were recovered in very low densities from only three of the 16 augers. Modern trash (i.e., glass, Styrofoam, metal, plastic) was recovered from 14 of the 16 augers, from the same depths as, and even deeper than, the shellfish fragments. Even though modern trash was confined within the top 20 centimeters (8 inches) in seven of the augers, modern trash was recovered to a depth of 60 centimeters (24 inches) in two augers and even 80 centimeters (31 inches) in another auger. No other cultural material that may be associated with prehistoric occupation such as chipped and ground stone tools or bone was recovered. The low density shellfish remains were recovered from surface, or near-surface, deposits in just 3 of the 16 augers and consisted mainly of California Venus (*Chione* sp.). The shell fragments were not recovered in sufficient density or diversity of species to provide information about occupational activities that may have occurred within the proposed project area, and they are not associated with any other artifacts or materials that suggest a specific prehistoric activity occurred there. The presence of modern trash in 14 of the 16 augers, often times deeper than the shellfish remains, indicates that the soil has been subjected to previous disturbances probably associated with railroad grading and ancillary structures. Therefore, the shellfish pieces do not provide the potential for yielding information important in prehistory, and therefore are not considered a potentially significant archaeological resource. As a result, future grading would not have a significant impact on cultural resources. Thus, no further investigations or construction monitoring is necessary. In the unlikely event that potentially intact prehistoric materials are encountered during grading, grading should be temporarily suspended until a qualified archaeologist can evaluate the significance of the find.

2.0 PROJECT DESCRIPTION AND ENVIRONMENTAL SETTING

The proposed project would construct an approximately 1,100-foot-long by 10-foot-wide pedestrian/cyclist trail, install a children's interpretative play area, and enhance and restore a bioswale.

The proposed project area lies within Carpinteria State Beach, within a 75-foot-wide strip of land between Palm Avenue and Linden Avenue. The Union Pacific Railroad tracks are to the north; a large turf area and the Anacapa Campground are to the south; Palm Avenue is to the east; and Linden Avenue is to the west (Figure 1). Vegetation consists of annual grasses, shrubs, and trees.

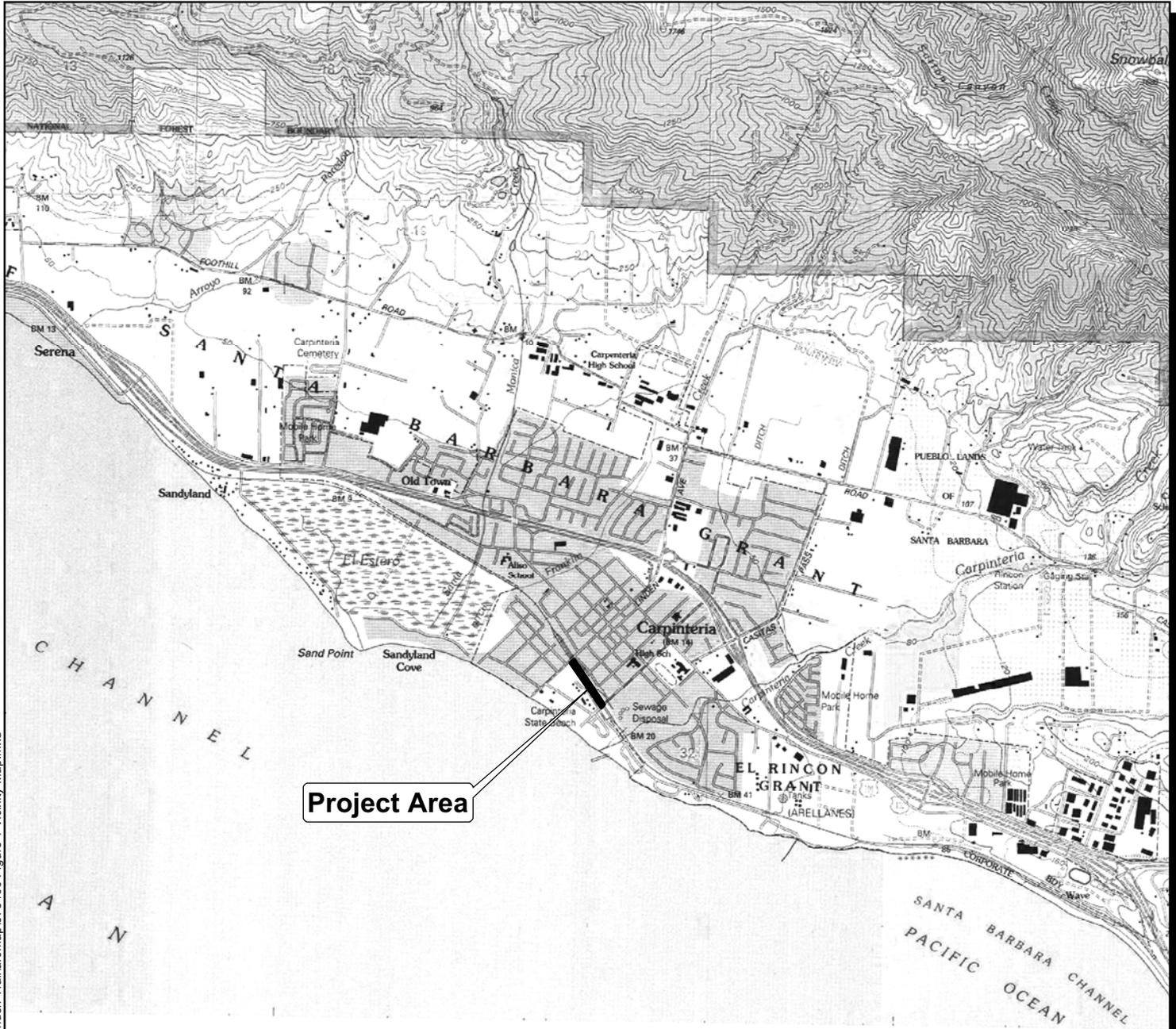
Soil in the proposed project area is characterized as Camarillo Variant fine sandy loams (USDA 1981). The surface layer is brown sandy loam to a depth of about 18 centimeters (7 inches). The underlying layer is stratified brown, grayish brown, and light reddish brown, mottled, sandy loam and sandy clay loam to a depth of 89 centimeters (35 inches). Below this is brown clay to a depth of 152 centimeters (60 inches) or more.

3.0 BACKGROUND RESEARCH

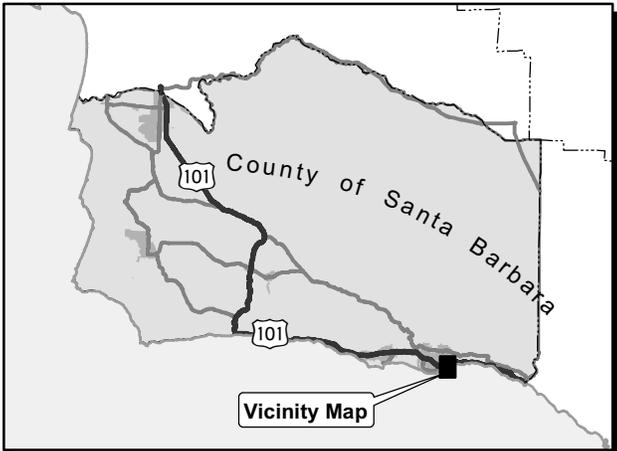
3.1 Prehistoric Setting

The local prehistoric chronology is divided into four major periods – Paleoindian, Early Period, Middle Period, and Late Period. It is generally accepted that humans entered the New World during the latter part of the Wisconsin glaciation between 40,000 and 20,000 years before present (B.P.). The earliest unquestioned evidence of human occupation in southern Santa Barbara County is dated to between 10,000 to 8,000 B.P. (Erlandson and Colten 1991). Paleoindian groups during this time focused on hunting Pleistocene megafauna, including mammoth and bison. Plants and smaller animals were undoubtedly part of the Paleoindian diet as well, and when the availability of large game was reduced by climatic shifts near the end of the Pleistocene, the subsistence strategy changed to a greater reliance on these resources.

Post-Pleistocene changes in climate and environment are reflected in the local archaeological record by approximately 8,000 B.P., the beginning of the Early Period, as defined by Chester King (1981, 1979, 1974). The Early Period of the Santa Barbara Channel mainland was originally defined by Rogers (1929), who called it the “Oak Grove” Period. The diagnostic feature of this period is the mano and metate milling stones, which were used to grind hard seeds such as sage for consumption. Toward the end of the Early Period, sea mammal hunting appears to have supplemented subsistence strategies (Glassow et al. 1990).



Project Area



Vicinity Map



Source: USGS 1:24K Topo - Carpinteria Quadrangle

Z:\Projects\5734 - Carpinteria As Needed Services\573406 - Palm to Linden Trail\arcmap\573406 Figure 1 Vicinity Map.mxd

DUDEK

**Palm to Linden Trail
Project Vicinity Map**

**FIGURE
I**

The Middle Period (3,350 to 800 B.P.) is characterized by larger and more permanent settlements, related to a generally wetter environment. Materials from Middle Period sites reflect a greater reliance on marine resources and include marine shells, fish remains, and fishhooks. A major shift in vegetable food exploitation occurred, as the mano and metate milling stones were replaced by stone mortars and pestles. This indicates a transition from seed gathering to oak tree acorn gathering and processing, a result of cooler temperatures and more expansive oak woodland habitats. Toward the end of this period, the plank canoe was developed, making ocean fishing and trade with the Channel Islands safer and more efficient (Arnold 1987). Terrestrial resources continued to be exploited as evidenced by the presence of contracting-stemmed and corner-notched projectile points from Middle Period sites (Bamforth 1984).

The Late Period (800 to 150 B.P. or approximately A.D. 1150 to 1800) was a time of increased social and economic complexity. The increased number of permanent and semi-permanent villages clustered along the Santa Barbara Channel and on the Channel Islands, and the diversity of environmental site settings in which sites have been identified, indicates a substantial increase in prehistoric population. Intensification of terrestrial as well as marine resources occurred. Acorns continued to be processed, and land mammals were hunted with the bow and arrow, rather than exclusively by spear. Trade networks, probably controlled by village chiefs, expanded and played an important part in local Chumash culture, reinforcing status differences and encouraging craft specialization. Shell beads, found throughout the Early and Middle Periods, increased in number and variety, related to status and social value.

The protohistoric culture of the Chumash was terminated by the arrival of a Spanish expedition led by Gaspar de Portola in 1769. Chumash culture changed dramatically with the establishment of the Missions of Santa Barbara, Santa Ynez, and La Purísima.

3.2 Historic Setting

The historic occupation of the project vicinity can be divided into three settlement periods: the Mission Period (A.D. 1769 – 1830), the Rancho Period (ca. A.D. 1830 -1865), and the American Period (ca. A.D. 1865 – 1915). Construction of Mission Santa Barbara in 1786,

Mission la Purísima Concepción in 1787, and Mission Santa Ynez in 1804, altered both the physical and cultural landscape of the region. The missions were the center of Spanish influence in the region and affected native patterns of settlement, culture, trade, industry, and agriculture. Following the secularization of the Missions by the Mexican Government in 1821, California became part of the Republic of Mexico.

Secularization of lands and a focus on cattle raising marked the Rancho Period, where large land grants of Mission lands were ceded to wealthy, prominent Spanish families. Native Americans continued to work as laborers on ranchos during this period. With California statehood in 1850 and the advent of the American Period, farming and more intensive land uses steadily replaced cattle stock raising. Cattle ranching was substantially curtailed by a prolonged drought in the 1860s.

Since statehood, major forces of regional change during the last 150 years have been railroads, maritime shipping, agribusiness concerns, the oil industry, and the college institutions.

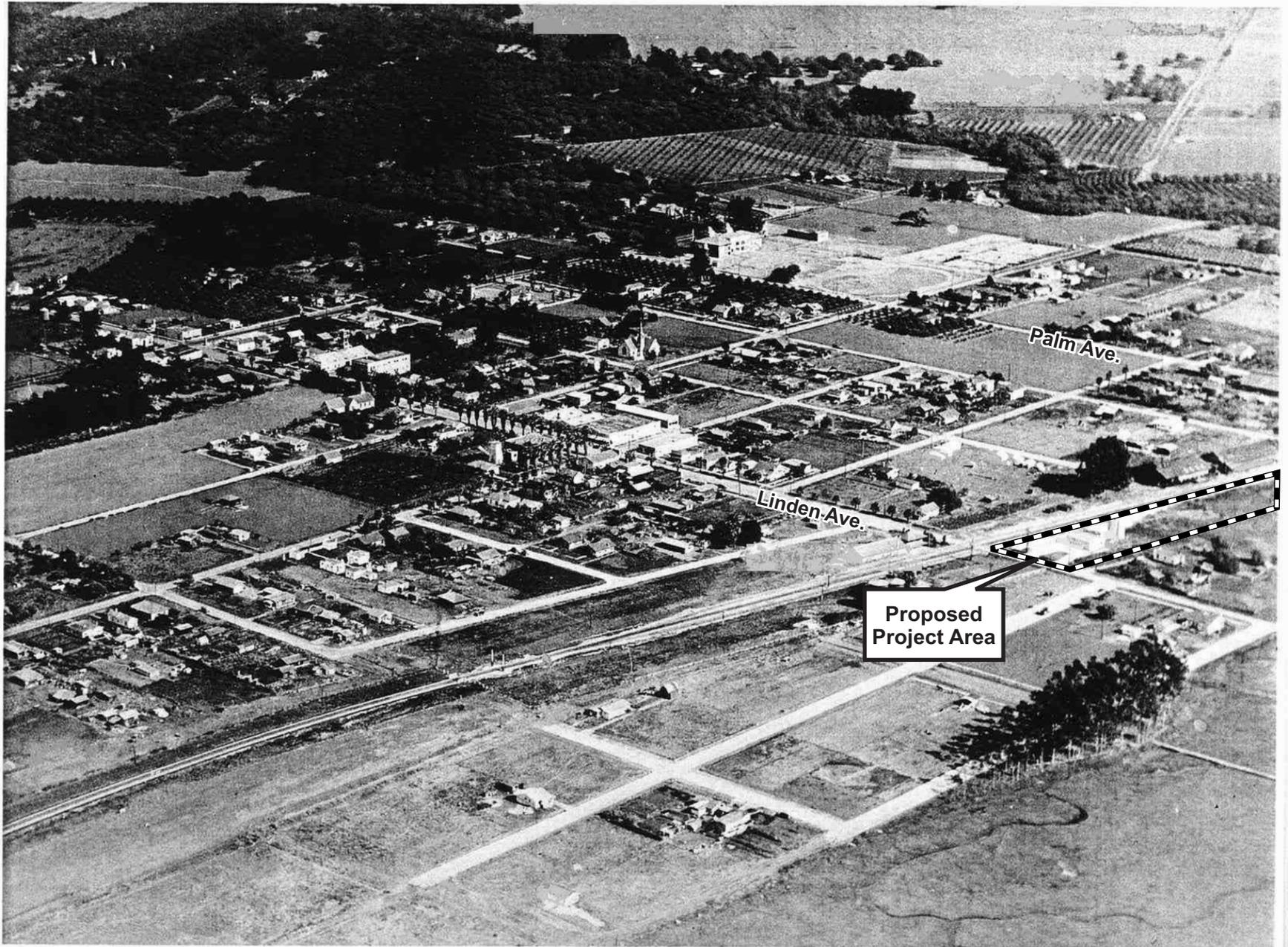
3.3 Historic Archival Research

David Griggs, Director/Curator, provided access to the historic archives at the Carpinteria Valley Museum of History. A structure and two above-ground storage tanks are portrayed within the western portion of the proposed project area, adjacent to Linden Avenue, in a 1924 aerial photograph (Figure 2). The 1929 Sanborn Fire Insurance Map indicates Standard Oil Company of California "oil storage," a pump, and an underground gasoline tank, all accessed by a railroad siding, in the same general area (Figure 3). However, no standing structures within the proposed project area are included in a 1959 aerial photograph.

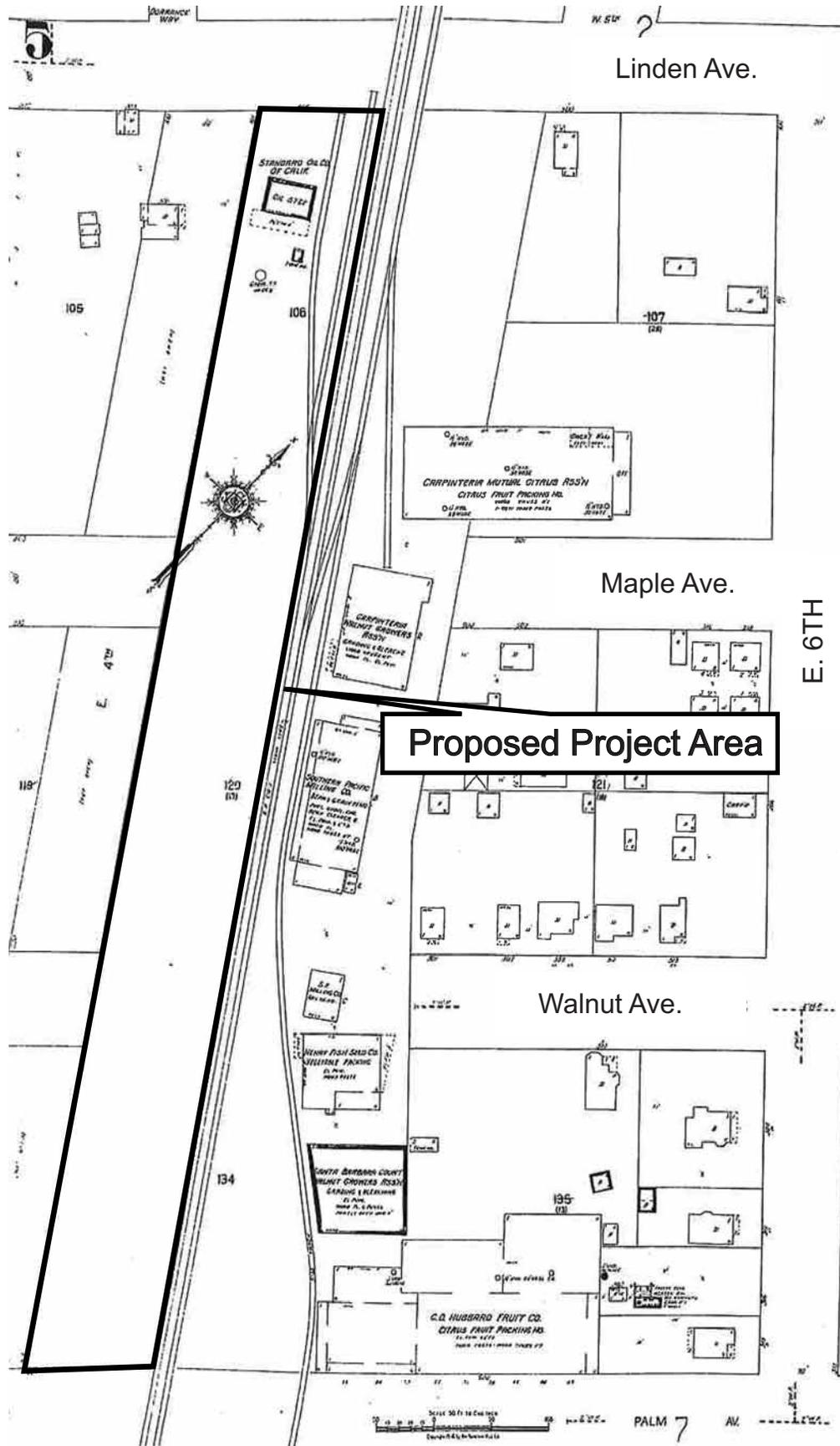
3.4 Previous Archaeological Research

CA-SBA-7, the Chumash village of *Mishopshnow*, was originally recorded by D.B Rogers in 1925 (Rogers 1929). The village is located [REDACTED] [REDACTED] Rogers spent several weeks investigating "the largest

Z:\Projects\5734 - Carpinteria As Needed Services\573406 - Palm to Linden Trail\Core\573406 Figure 2 1924 Aerial Photo.cdr



Carpinteria Valley Museum of History 2008



Source: 1929 Sanborn Fire Insurance Map



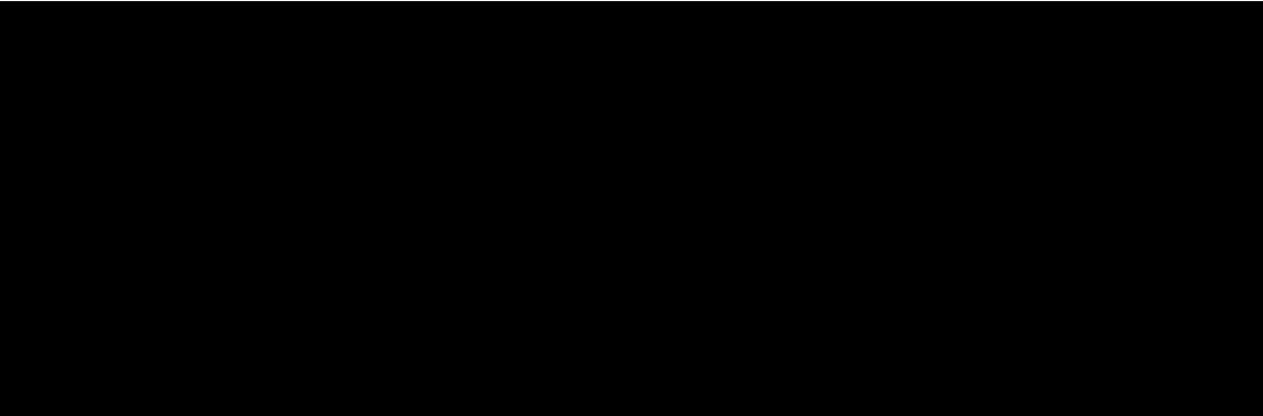
Palm to Linden Trail
1929 Sanborn Fire Insurance Map

FIGURE
3

mainland village between the mouth of Gaviota Creek and the Rincon” that “extended from



beach.” Villages of this size typically contain an abundant and diverse range of cultural material with high densities of both invertebrate and vertebrate remains. The Department of Parks and Recreation archaeological site record for CA-SBA-7 documents artifact and shell densities around 45 pieces/square meter east of Carpinteria Creek. The site record also notes that shell consisted of Venus clam (*Chione* sp.), Washington clam (*Saxidomus nuttalli*), California oyster (*Ostrea lurida*), California mussel (*Mytilus californianus*), Pismo clam (*Tivela stultorum*), and scallops (Pectinidae). These shellfish species originate from a variety of habitats including bays/estuaries, exposed rocky shores, and exposed non-rocky shores.



4.0 FIELD INVESTIGATIONS

4.1 Methods

As directed by Marla Mealey, California State Parks and Recreation Department Associate State Archaeologist, the Extended Phase 1 archaeological investigation consisted of 16 hand-excavated augers (one auger was not excavated due to its location in standing water) to determine the presence or absence of intact prehistoric archaeological materials (Figure 4). The augers measured 10 centimeters (4 inches) in diameter. Excavated material was dry-screened through 1/8-inch mesh screen and soil/sediment descriptions were recorded. All augers were backfilled.

Z:\Projects\5734 - Carpintera As Needed Services\573406 - Palm to Linden Trail\arcmap\573406 Figure 4 Auger Locations.mxd



DUDEK

Palm to Linden Trail
Extended Phase 1 Auger Locations

FIGURE 4

Auger excavations were conducted on Thursday and Friday, March 6 and 7, 2008, and managed by Dudek Senior Archaeologist Ken Victorino. Auger excavations were monitored by Chumash observer Gilbert Unzueta.

4.2 Results

The hand excavation of 16 augers resulted in the recovery of very limited subsurface shell fragments (Table 1). Fourteen pieces of weathered fragments were recovered from three of the 16 augers (Augers 4, 5, and 11). The shellfish fragments were recovered in very low densities and were typically confined to the top 20 centimeters (8 inches). The shellfish, mainly California Venus (*Chione* sp.), are associated with bay/estuary habitats. This shellfish assemblage contrasts with the wide range of species and habitats exploited by the inhabitants of CA-SBA-7. No other cultural material that may be associated with prehistoric occupation such as chipped and ground stone tools or bone was recovered.

In general, auger excavations encountered brown sandy loam that graded into brown sandy clay. Although the color and texture of the soil is generally consistent with the native soil profile discussed earlier, the presence of modern trash (i.e., glass, Styrofoam, metal, plastic) at the same depths as, and even deeper than, the shellfish fragments indicates that the soil has been subjected to previous disturbances. Modern trash was recovered from 14 of the 16 augers (Augers 1 through 5, 7, and 10 through 17), from the same depths as, and even deeper than, the shellfish fragments. Even though modern trash was confined to the top 20 centimeters (8 inches) in seven augers, modern trash was recovered to a depth of 60 centimeters (24 inches) in two augers (Augers 10 and 13) and even 80 centimeters (31 inches) in another auger (Auger 11), well below the shellfish fragments.

Table 1. Palm to Linden Trail Auger Excavations

<i>Auger</i>	<i>Depth (cm)</i>	<i>Shellfish (count)</i>	<i>Modern Trash</i>
1	0-20	-	yes
	20-40	-	-
	40-60	-	-
2	0-20	-	yes
	20-40	-	yes
3	0-20	-	yes
	20-40	-	-
4	0-20	8	yes
	20-40	3	yes
5	0-20	2	yes
	20-30	-	-
6*	0-20	-	-
	20-40	-	-
	40-60	-	-
	60-80	-	-
7	0-20	-	yes
8†			
9*	0-20	-	-
10*	0-20	-	yes
	20-40	-	yes
	40-60	-	yes
11	0-20	1	yes
	20-40	-	yes
	40-60	-	yes
	60-80	-	yes
	80-90	-	-
12	0-20	-	yes
	20-40	-	yes
13	0-20	-	yes
	20-40	-	yes
	40-60	-	yes
	60-80	-	-
	80-90	-	-

Table 1. Palm to Linden Trail Auger Excavations (continued)

<i>Auger</i>	<i>Depth (cm)</i>	<i>Shellfish (count)</i>	<i>Modern Trash</i>
14	0-20	-	yes
	20-40	-	-
15	0-20	-	yes
	20-40	-	-
	40-60	-	-
	60-80	-	-
	80-90	-	yes
16	0-20	-	yes
	20-40	-	-
	40-60	-	-
	60-80	-	-
	80-90	-	-
17	0-20	-	yes
	20-25	-	-
<i>Total</i>		<i>14</i>	

*=auger excavation terminated due to ground water

†=auger not excavated due to location in standing water

5.0 CONCLUSIONS

Even though Extended Phase 1 auger excavations are not specifically designed to evaluate significance, the results from the auger excavations are capable of characterizing the integrity, depth, and variety of artifact classes present. The quality of information from archaeological site deposits is related to the intactness or integrity of the soil in which the materials are found. Therefore, integrity is a critical factor in establishing the significance of archaeological deposits. Assuming an archaeological deposit is found to have intact soil integrity, the following factors are used to determine qualitatively the relative significance of deposits. The California Environmental Quality Act (CEQA) Guidelines Section 15064.5.a3 criteria states:

Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or

cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4852) including the following:

- a. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- b. is associated with the lives of persons important in our past;
- c. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work on an important creative individual, or possesses high artistic values; or
- d. has yielded, or may be likely to yield, information important in prehistory or history.

Criterion "d" is most often used to evaluate the significance of prehistoric cultural remains. The ability of an archaeological site deposit to yield information important in prehistory is framed in terms of the data available to address research questions about the past. The goal of collecting information from one archaeological site is to be able to contribute to our understanding of regional cultural adaptations that may have changed through time due to environmental (i.e., increased or decreases temperatures, rainfall, etc.) and/or social (i.e., increased population, competition for food resources, status, warfare, etc.) pressures. Therefore, the remains that are recovered from a particular archaeological site are compared to the existing information available from neighboring sites to determine if they can help explain patterns of behavior over a larger area.

The current Extended Phase 1 archaeological investigation recovered 14 pieces of weathered shellfish during the excavation of 16 augers within the proposed project area. The recovered shellfish, mainly California Venus (*Chione* sp.), lacked the density and diversity documented at CA-SBA-7. The shellfish was confined to the top 20 centimeters (8 inches) and no other cultural material associated with prehistoric occupation including stone tools, animal bone, or ground stone implements were identified. Since the shellfish pieces were recovered from

near the ground surface, their location is considered to be the result of modern activities and soil movement and not the discard by prehistoric peoples. Additionally, although the color and texture of the soil is generally consistent with the native soil profile, the presence of modern trash (i.e., glass, Styrofoam, metal, plastic) at the same depths as, and even deeper than, the shellfish fragments indicates that the soil has been subjected to previous disturbances. Previous disturbances are most likely associated with construction of the following: the Union Pacific Railroad; the Standard Oil Company of California "oil storage," pump, and underground gasoline tanks shown in a 1924 aerial photograph and 1929 Sanborn Fire Insurance Map, and; the Carpinteria State Beach Campground. Even if the shellfish were associated with prehistoric activity and *in situ* (i.e., in its original depositional location), the shell is not of sufficient density or diversity to provide important information to explain and understand the prehistoric occupation of coastal Carpinteria areas, particularly when compared to the substantial deposits associated with CA-SBA-7 approximately 152 meters (500 feet) to the east. Therefore, the 14 pieces of shellfish recovered during the excavation of 16 augers within the proposed project area are not considered a potentially significant archaeological resource under CEQA Guidelines Section 15064.5.a.3.

As a result, no potentially important archaeological resources are located within the proposed project area. Therefore, future ground disturbing construction activities within the proposed project area would not have the potential to significantly impact cultural resources.

6.0 RECOMMENDATIONS

As no potentially significant cultural resources were identified within the proposed project area, the proposed project would not have the potential for a significant impact on cultural resources. Therefore, no further measures such as construction monitoring are necessary. The following is recommended in the unlikely event that potentially significant cultural remains are encountered during construction, consistent with guidance provided in CEQA Guidelines Section 15064.5:

1. In the unlikely event that potentially significant cultural materials are encountered during construction, grading should be temporarily redirected and/or suspended until a

qualified archaeologist and local Chumash representative are retained to evaluate the find, including mapping and collecting any diagnostic (time-sensitive) artifacts, consistent with California State Park standards.

Though considered unlikely, the following measure is recommended to address the potential for isolated artifacts to be encountered and improperly collected during construction:

2. A pre-construction workshop conducted by a qualified archaeologist is recommended to address the potential to encounter isolated prehistoric artifacts. Attendees should include construction supervisors and equipment operators. The workshop should:
 - Review the types of archaeological artifacts that may be found in the vicinity of the proposed project,
 - Provide examples of common archaeological artifacts to examine, and
 - Discuss prohibited activities, including unauthorized collecting of artifacts.

The above recommended measures would ensure that the low potential for impacts to unknown cultural resources to occur during project construction activities would be addressed consistent with California State Park standards.

7.0 REFERENCES

- Arnold, J.E. 1987. Craft Specialization in the Prehistoric Channel Islands, California. *University of California Publications in Anthropology*, No. 18. Berkeley.
- Bamforth, D.B. 1984. Analysis of Chipped Stone Artifacts. In *Archaeological Investigations on the San Antonio Terrace, Vandenberg Air Force Base, California, in Connection with MX Facilities Construction*. Chambers Consultants and Planners. Submitted to U.S. Army Corps of Engineers, Los Angeles District.
- Erlandson, Jon M., and Roger Colten. 1991. Hunter-Gatherers of Early Holocene Coastal California. *Perspectives in California Archaeology, Volume I*. Edited by Jon M. Erlandson and Roger Colten. Institute of Archaeology, University of California, Los Angeles.
- Glassow, M.A., with contributions by Jeanne E. Arnold, G.A. Batchelder, D.T. Fitzgerald, B. Glenn, D.A. Guthrie, D.L. Johnson, and P.L. Walker. 1990. *Archaeological Investigations on Vandenberg Air Force Base in Connection with the Development of Space Transportation System Facilities, Volume I*.
- King, Chester. 1981. *The Evolution of Chumash Society: A Comparative Study of Artifacts Used in Social System Maintenance in the Santa Barbara Channel Region before A.D. 1804*. Ph.D. dissertation, Department of Anthropology, University of California, Davis.
- _____. 1979. Beads and Selected Ornaments. In *Final Report: Archaeological Studies at Oro Grande, Mojave Desert, California*. Edited by C. Rector, J. Swenson, and P. Wilke. Archaeological Research Unit, University of California, Riverside.
- _____. 1974. The Explanation of Differences and Similarities Among Beads Used in Prehistoric and Early Historic California. In *Antap, California Indian Political and Economic Organization*. Edited by L.J. Bean and T.F. King. *Ballena Press Anthropological Papers 2*: 75-92.
- Rogers, David Banks. 1929. *Prehistoric Man of the Santa Barbara Coast*. Santa Barbara Museum of Natural History.
- United States Department of Agriculture (USDA). 1981. Soil Survey of Santa Barbara County, California (South Coastal Part).
- WPA (Western Points Archaeology). 2005. A Modified Phase 1 Archaeological "Letter Report"

and Assessment for a Proposed Old Town Trail and Play Structure, City of Carpinteria, California.

WESTERN POINTS ARCHAEOLOGY
4735 8th Street, Suite B
Carpinteria, CA 93013
(805) 566-0170, fax to same

March 28, 2005

City of Carpinteria
Department of Parks & Recreation
5775 Carpinteria Avenue
Carpinteria, CA 93013

Attention: Mr. Matt Roberts, Director

Re: Modified Phase 1 Archaeological "Letter Report"
Archaeological Survey and Cultural Resource Assessment for
Proposed Biking Trail Section and Play Structure within City Property

Dear Mr. Roberts;

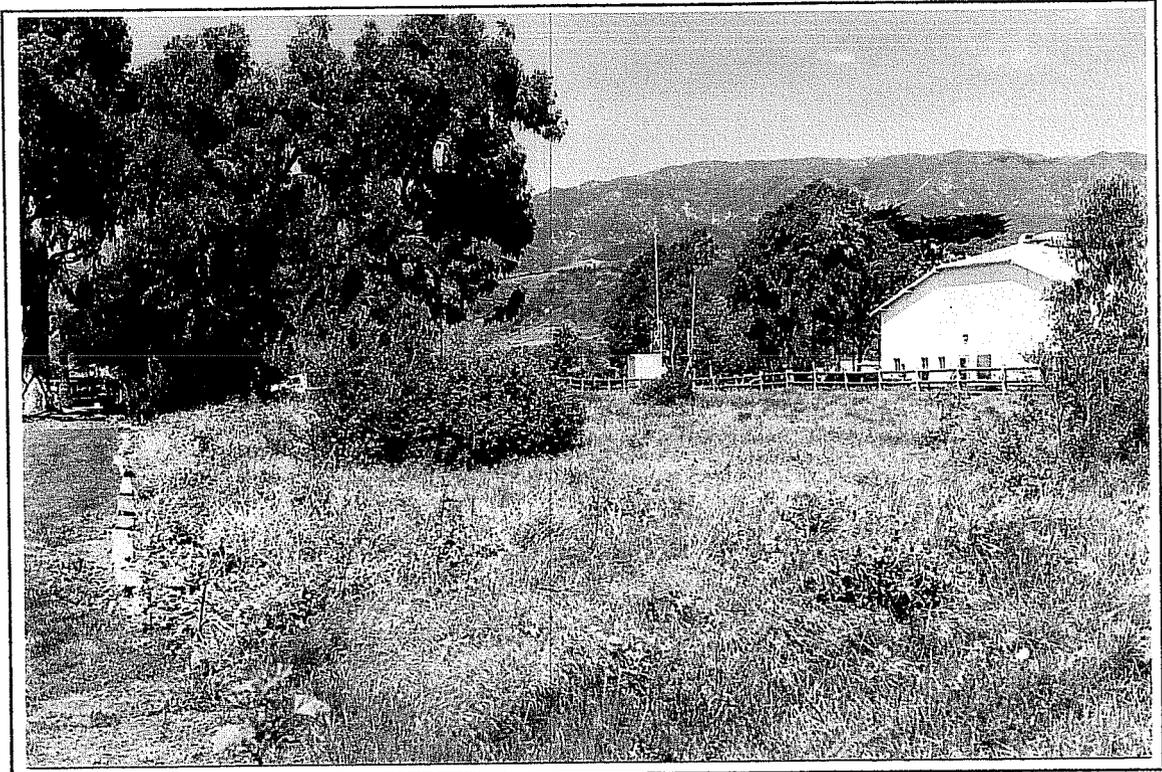
As requested, we have completed a Modified Phase 1 archaeological report and cultural resource assessment for the proposed construction of an Old Town Trail segment and Play Structure within the City of Carpinteria. In lieu of a full Phase 1 study, due to the small-scale nature of the project this Letter Report was prepared to suffice for a City Planning & Development cultural resources review.

The study proved positive, as remains of marine shell that is a component of a prehistoric Native American site were found abutting the site area. Enclosed is a report copy. If you have any inquiries concerning the archaeological study, please contact us for clarification.

Sincerely,



Larry A. Carbone, M.A., RPA
Manager, Cultural Resources



**A MODIFIED PHASE 1 ARCHAEOLOGICAL 'LETTER REPORT' AND
ASSESSMENT FOR A PROPOSED OLD TOWN TRAIL AND PLAY
STRUCTURE, CITY OF CARPINTERIA, CALIFORNIA
(Assessor's Parcel Number 004-105-014)**

Prepared for:

**CITY OF CARPINTERIA
DEPT. OF PARKS & RECREATION
5775 Carpinteria Avenue
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Prepared by:

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Author:

**Larry A. Carbone, M.A., RPA
March 2005; Job Number WP-245-205**

1.0 Introduction

This Modified Phase 1 archaeological 'Letter Report' was prepared for the Carpinteria Department of Parks & Recreation per proposed construction within a rectangular property area in the limits of the City of Carpinteria. The subject property is identified by Assessor's Parcel Number 004-105-014 and is situated between Linden and Palm Avenues. An archaeological field survey and cultural resource assessment were completed as related to impacts that would occur if the project work was undertaken as proposed.

The report presents the methods, observations, and recommendations that resulted from the project investigation conducted by Western Points, Carpinteria, CA. The work was necessary to determine the presence or absence of surface archaeological materials and estimate the potential for buried cultural resource deposits to exist within the subject property. The archaeological work was designed and conducted in compliance with Carpinteria Planning Division cultural resource management provisions as set forth in the City's California Environmental Quality Act (CEQA) Threshold Guidelines.

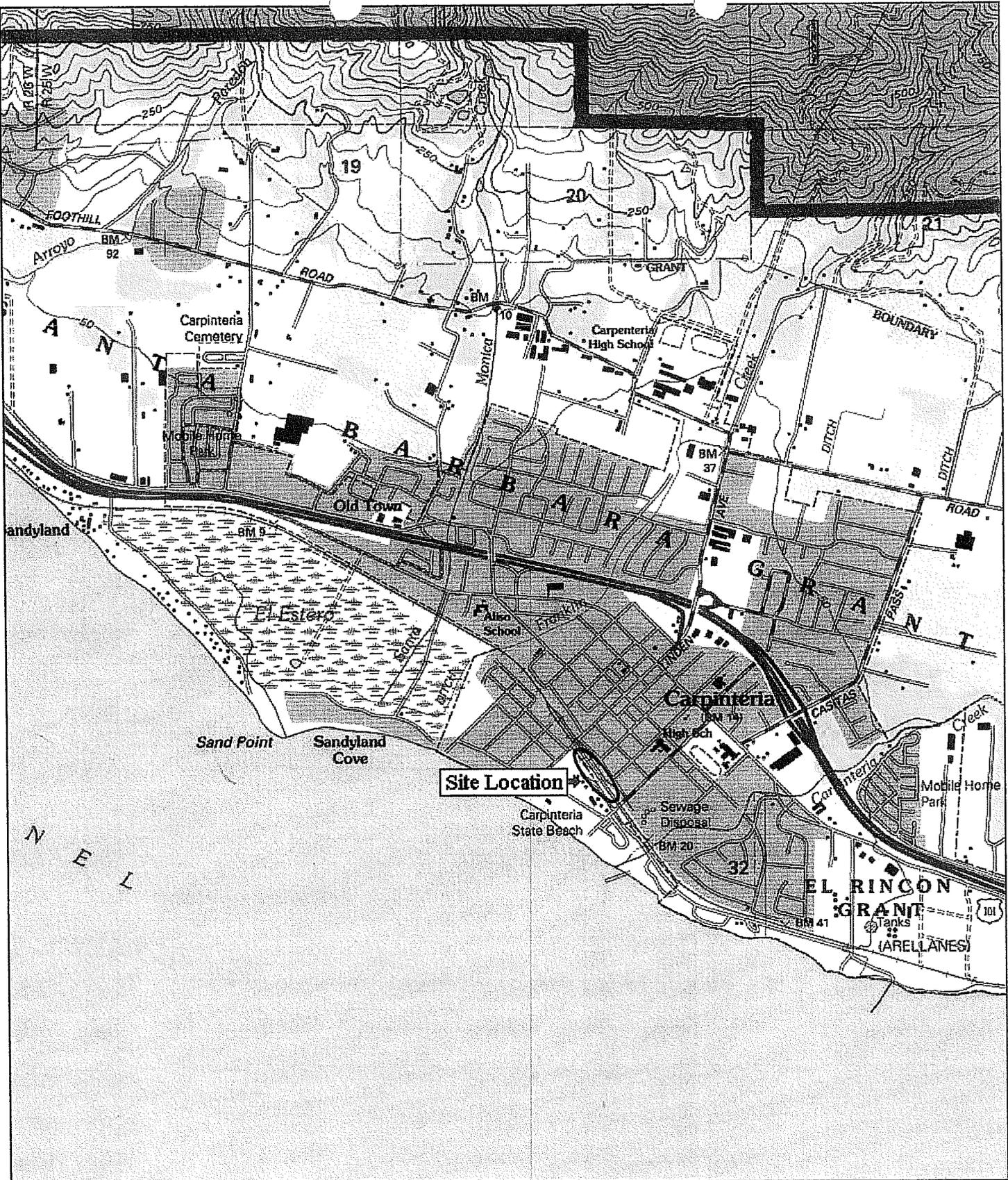
The project investigation consisted of three stages of work including: 1) a background records search regarding the past history of the property, and review of documents and reports pertaining to archaeological resources in the vicinity, 2) an intensive pedestrian field survey of the project property area, and 3) 'Letter Report' production. Mr. Larry A. Carbone, M.A., a County-qualified archaeological consultant certified by the national Register of Professional Archaeologists, conducted all necessary phases of research for the project. The affected project acreage is considered as an Area of Potential Effect (APE).

2.0 Project Location

The subject property is located in the south-central, coastal portion of Carpinteria having Linden and Palm Avenues as the west and east boundary limitations, respectively. The project area abuts the Union Pacific railroad right-of-way to the north and Carpinteria State Beach Park on the south. The property was purchased by the State from Union Pacific in 2002 and is currently leased to the City of Carpinteria. The US Geological Survey (USGS) **Carpinteria** 7.5' Series Quadrangle Map shows the project property being located within Township 4 North and Range 25 West as illustrated in Figure 1.

3.0 Project Description

A project is proposed whereby a 750 feet extension of walking trail would be added from Palm to Linden Avenues, and a 'Play Structure' with a Native American Chumash theme would be constructed along this pathway. The playground area, under the auspices of the local Rotary Club, would be 160 feet by 75 feet in dimension and parallel the railroad track beginning 40 feet east of Linden Avenue heading eastward. The report cover photograph shows the area proposed for the Play Structure. The Figure 1 map also shows the extent that would experience ground disturbances for both the trail and play structure.

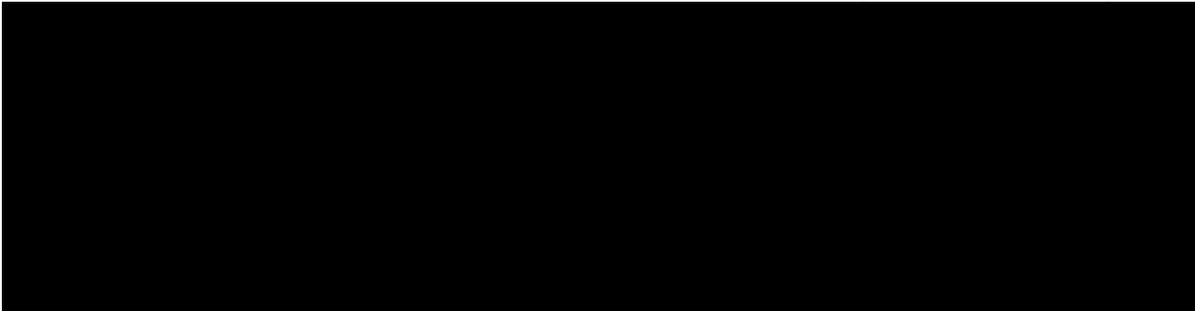


TN* / MN
14°

Figure 1. Project Site Location
USGS Carpinteria 7.5' Series Quadrangle Map
Scale: 1 inch = 2,000 feet

4.0 Previous Archaeological Investigations, Record and Document Reviews

The general coastal region of Carpinteria is situated in what is considered to be a very sensitive archaeological resource area. Western Points has conducted four Phase 1 archaeological surveys and three successive seasonal years of cultural resource monitoring within property areas adjacent to and east of Carpinteria State Beach Park and the present project site location. These included investigations from 1999 to 2003 for Tar Pits Park, Union Pacific property, the Carpinteria Bluffs, and the Concha Loma, Carpinteria Water District Pipeline Relocation Program (see References Cited: Carbone 1999 through 2003).



5.0 Field Methods

The archaeological field survey aspect of this project study was conducted to ascertain the presence or absence of surface cultural resource materials in the pathway of proposed construction activities. The maps documenting the archaeological sites known to exist in the vicinity of the study area were examined to determine boundary extents for an estimate of the potential for adverse impacts to occur within archaeological deposits during any construction work. The background research undertaken in conjunction with the pedestrian field survey afforded an assessment of future development impacts.

On March 14, 2005, Mr. Carbone met with Mr. Matt Roberts, Parks & Recreation Director, who described the scope of work for the proposed construction project. Details of the archaeological investigation as required by City Planning & Development were then explained by Mr. Carbone. A site plan map for proposed limits of the construction design was also shown by Mr. Roberts. After all background research was completed for the investigation, the field survey stage was conducted on March 25.

A systematic method of surface survey was implemented within the boundary of the proposed Carpinteria Old Town Trail and Play Structure areas, that when combined equal a distance of 1,050 feet east-west in length and ~110 feet north-south in width. This technique allowed examination of all exposed surface soils, which were rarely visible due to dense vegetation. The plant types identified during the survey were predominantly represented by grasses including both introduced and indigenous species. Other vegetation identified within and around the site periphery were sparse and assorted small tree/bush types, willows, ice plant, eucalyptus, wildflowers, plus low and high weed plants.

8.0 References Cited

Carbone, Larry A.

- 1999 *Phase 1 Archaeological Investigation for Carpinteria Valley Water District, Concha Loma Water Main Project, County of Santa Barbara, California.* Report Prepared for Padre Associates, Inc., Ventura, CA.
- 1999 *Phase 1 Archaeological Investigation for Proposed Construction of New Railroad Siding, Carpinteria, County of Santa Barbara, California.* Report Prepared for the Union Pacific Railroad Company, Corporate Office, Omaha, Nebraska.
- 2000 *Archaeological Monitoring During Phase 1 Concha Loma Water Line Relocation Project Excavations, Carpinteria, Santa Barbara County, California.* Report Prepared for the Carpinteria Valley Water District Corporate Office, Carpinteria, CA.
- 2001 *Archaeological Monitoring During Phase 2 Concha Loma Water Line Relocation Project Excavations, Carpinteria, Santa Barbara County, California.* Report Prepared for the Carpinteria Valley Water District Corporate Office, Carpinteria, CA.
- 2001 *A Phase 1 Archaeological Study and Evaluation for Proposed Development in the Carpinteria Bluffs Region, City of Carpinteria, California.* Report Prepared for the Department of Parks & Recreation, Carpinteria, CA.
- 2002 *Archaeological Monitoring During Phase 3 Concha Loma Water Line Relocation Project Excavations, Carpinteria, Santa Barbara County, California.* Report Prepared for the Carpinteria Valley Water District Corporate Office, Carpinteria, CA.
- 2003 *A Property Survey and Archaeological Resource Assessment for the Carpinteria Bluffs Reserve and Tar Pits Park, Carpinteria City, Santa Barbara County, California.* Report Prepared for Van Atta Associates, Santa Barbara, CA.

Rogers, David Banks

- 1929 *Prehistoric Man of the Santa Barbara Coast.* Santa Barbara Museum of Natural History.