NIPOMO COMMUNITY SERVICES DISTRICT

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148 SOUTH WILSON STREET POST OFFICE BOX 326 NIPOMO, CA 93444 - 0326
(805) 929-1133 FAX (805) 929-1932 Website address: NCSD.CA.GOV

November 28, 2007

Mr. Harold Snyder
P. O. Box 926
Nipomo, CA 93444

SUBJECT: NOVEMBER 19, 2007 PUBLIC RECORDS REQUEST RE SENTINEL WELL

Dear Mr. Snyder,

Attached is a copy of the April 2007 and the September 2007 sentinel well sampling results per your request. These two reports constitute the only public records available to NCSD regarding the well sampling results for this well.

If you have any questions, please don't hesitate to call me.

Sincerely,

NIPOMO COMMUNITY SERVICES DISTRICT

Bruce Buel
General Manager

CC: Public Records Request File
Chronological File

T:\DOCUMENTS\STAFF FOLDERS\BRUCE\LETTERS\071128Snyder.DOC

TECHNICAL MEMORANDUM

TO: Bruce Buel, General Manager, Nipomo Community Services District

FROM: Joel Degner, Brad Newton, Robert G. Beeby

RE: Nipomo Mesa Potential for Seawater Intrusion, 01-0236-00-9100

DATE: April 26, 2007

INTRODUCTION

The Nipomo Community Service District (NCSD) previously requested SAIC to comment on the various interpretations of how many years Nipomo has until there is a seawater intrusion problem (Technical Memorandum #2, dated October 24, 2007). After a review of the previous analyses, SAIC determined that water quality data had not been taken from the coastal monitoring wells since 1996 and any projection would be overly speculative without current water quality data. As part of establishing the groundwater monitoring program for the NMMA, Conoco Phillips worked with the County of San Luis Obispo and California Department of Water Resources (DWR) to provide for an independent consultant (Secor International Incorporated) to collect groundwater samples and measure the groundwater surface elevations at each of the three nested wells 12C01S (screened interval 280'-290'), 12C02S (screened interval 450'-460'), and 12C03S (screened interval 720'-730') at the coastal monitoring location, 11N36W12C. The samples were sent to a certified laboratory (BC Laboratories, Inc.) to analyze water quality (Attachment). Water samples were collected on February 28, 2007. (Figure 1: Water Quality at Coastal Monitoring Location 11N36W12C).

SUMMARY OF FINDINGS

- The amount of chloride measured in water samples collected from the three wells, 12C01S, 12C02S, and 12C03S (nested at location 11N36W12C) has been stable over time (See Figure 1).
  - ➢ The chloride measurements in the well 12C03S (screened interval 720'-730') screened in the Careaga Formation are nearly double the concentrations of wells 12C01S (screened interval 280'-290') and 12C02S (screened interval 450'-460'), that are screened in the Paso Robles Formation. It is possible the difference in chloride concentration is due to the different geologic formations.
- Preliminary reports from Steve Bachman (pers. comm.) describe all three wells as having had a potentiometric surface above ground level and were flowing artesian.
  - ➢ This indicates:
    1. that there is a confining layer, and
    2. that the flow of fresh water from the Nipomo Mesa is likely toward the ocean.

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- Furthermore the potentiometric water elevations measured in all wells at the coastal monitoring location have historically been above sea level and all wells often flow artesian (as they were on February 28, 2007).
- Based on the laboratory analysis of the water samples taken on February 28, 2007 and the elevation of the groundwater potentiometric surface, there is no evidence of seawater intrusion in the coastal zone of the Nipomo Mesa.
- Additional information is needed to determine the stratigraphic interface of the coastal fresh water aquifer with the seawater.
- Previous water balance analyses by DWR (2002) and SAIC (2003), and evaluations of groundwater in storage (TM #1) indicate a decrease in the groundwater volume over time due to a shortfall of supplies as compared to demands on the Nipomo Mesa. It is currently unknown whether or not the current volume of groundwater flow to the ocean is over the long term sufficient to hold at bay the seawater from entering the freshwater aquifer under the NMMA.
- A three-dimensional model of the NMMA hydrogeology would be needed to improve the understanding of the dynamics of the seawater intrusion and to temporally estimate the threat to the Nipomo Mesa groundwater resource.

METHODOLOGY

An indicator of seawater intrusion is the increased chloride concentration in the freshwater aquifer. Seawater contains approximately 35,000 milligrams per liter (mg/L) of dissolved solids, which includes about 19,000 mg/L of chloride. Fresh ground water in nearby wells typically contains 40-50 mg/L of chloride. Water samples containing a chloride concentration of 100 mg/L or more are likely an indicator for seawater intrusion. Additionally, groundwater surface elevations above sea level typically indicate a freshwater flow to the ocean likely sufficient to keep the seawater from intruding the fresh water aquifer.

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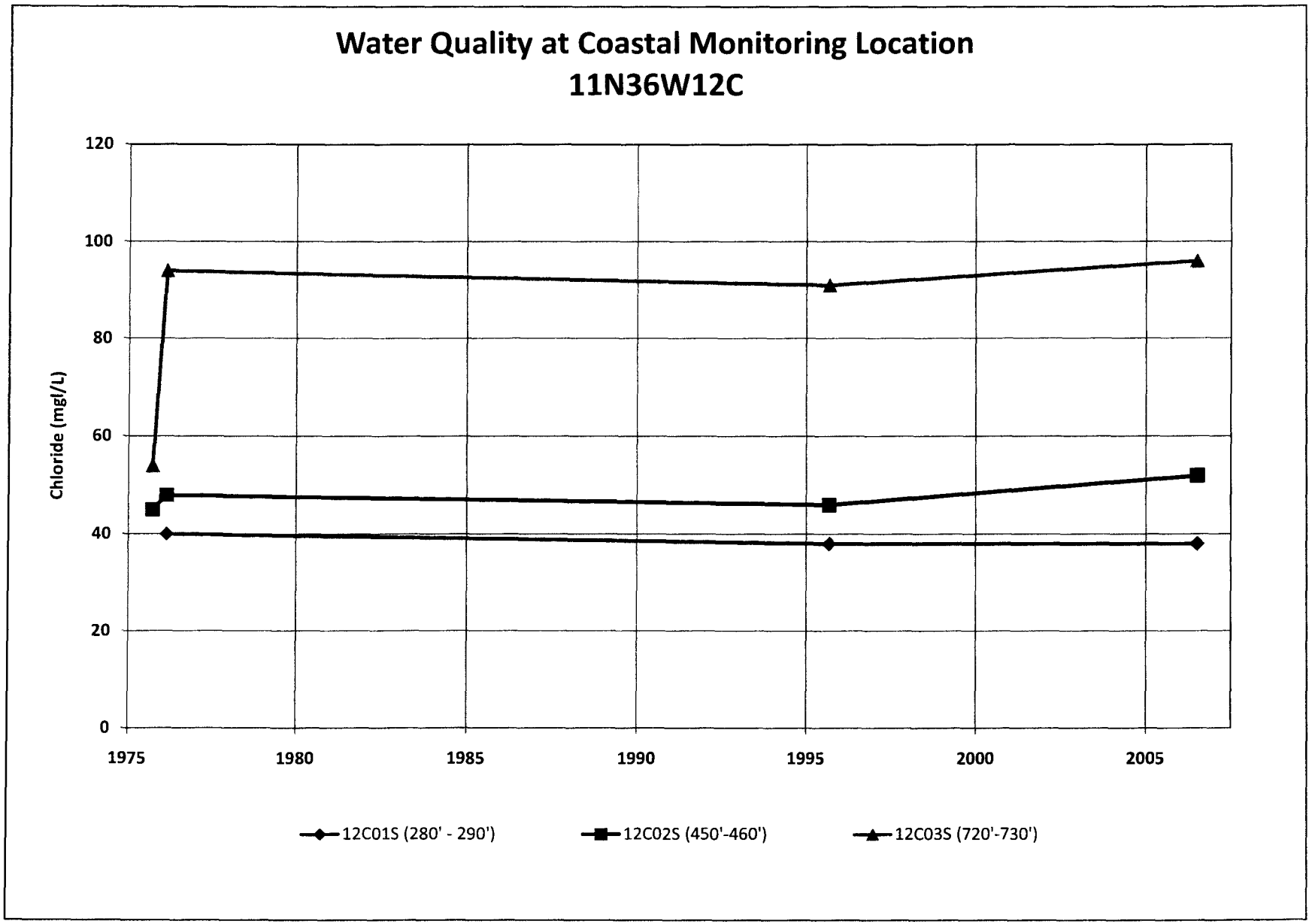

W:\NCSD (9100 9228)\General Consultation - 9100\Activities\TM3 Seawater Intrusion Update\
2007-04-24 Chloride Concentrations 12C.xlsChart1

DRAFT
Subject to Revision

Figure 1
SAIC WRE
Created: 4/26/2007

BC LABORATORIES, INC.

Date of Report: 03/12/2007

Chris Prevost

Secor
3437 Empressa Drive
Suite A
San Luis Obispo, CA 93412

RE: Dune Wells
BC Work Order: 0702559

Enclosed are the results of analyses for samples received by the laboratory on 03/01/2007 20:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Molly Meyers
Contact Person: Molly Meyers
Client Service Rep

Steven Bennett
Authorized Signature

BC Laboratories, Inc.

Chain of Custody Form

25025

PLEASE COMPLETE: BCL QUOTE ID:

Page ___ of ___

Report To:
Client: ~~Tom Mathias~~ SECOR
Attn: Chris Prevost
Street Address: 3437 Empresa Ste A
City, State, Zip: San Luis Obispo, CA
Phone: ~~805.546.0335~~ Fax: 805.546.0583
Email Address:
Submittal #: 07-02559

Project #:
Project Name: Dune wells
Project Code:
Sampler(s): Kirk Henning

Analysis Requested

Comments:

Sample #	Description	Date Sampled	Time Sampled	General Minerals (Na, Cl, SO4 only per Kirk) MM 3/2	Sample Matrix: Soil	Sludge	Drinking Water	Ground Water	Waste Water	Other	Turnaround # of work days*
-1	C-1	2/28/07	1520	X				X			
-2	C-2	2/28/07	1510	X				X			
-3	C-3	2/28/07	1730	X				X			

Are there any tests with holding times less than or equal to 48 hours? ☐ Yes ☐ No

* Standard Turnaround = 15 work days

Notes

SHORT HOLDING TIME
Cr^{+6} NO_2 NO_3 OP SS
DO Cl_2 BOD MBAS COT

CHK BY: Ma
DISTRIBUTION: MA COPY ☐ SUB-OUT ☐

Billing
Client: SECOR ☒ Same as above
Address:
City: ___ State ___ Zip ___
Attn:
PO#:

Report Drinking Waters on State Form? ☐ Yes ☐ No

Send Copy to State of CA? ☐ Yes ☐ No

Sample Disposal: ☐ Return to Client ☐ Disposal by lab ☐ Archive: Months ___

Special Reporting: ☐ QC ☐ WIP ☐ Raw Data

	Relinquished By	Date	Time	Received By	Date	Time
1.		3/1/07	1450		3/1/07	1450
2.	Jerry Mora	3-1-07	2010	Terri Obatemi	3/1/07	2010
3.						

BC LABORATORIES INC. **SAMPLE RECEIPT FORM** Rev. No. 10 01/21/04 Page ___ Of ___

Submission #: 07-02559 | Project Code: | TB Batch #

SHIPPING INFORMATION

Federal Express ☐ UPS ☐ Hand Delivery ☐
BC Lab Field Service ☑ Other ☐ (Specify)_____

SHIPPING CONTAINER

Ice Chest ☑ None ☐
Box ☐ Other ☐ (Specify)_____

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ | Containers ☐ Intact? Yes ☐ No ☐ | None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Ice Chest ID RLW Emissivity 1.00
Temperature: 1.2 °C Container ptpe
Thermometer ID: #418

Date/Time 3/1/07
Analyst Init OTO

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED	A,B	A,B	A,B							
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
100ml TOTAL ORGANIC CARBON										
QT TOX										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT QA/QC										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										

Comments:_____

Sample Numbering Completed By: OTO Date/Time: 3/1/07 2130

{H:\DOCS\WP80\LAB_DOCS\FORMS\SAMREC2.WPD}

BC LABORATORIES, INC.

Secor 3437 Empressa Drive Suite A San Luis Obispo, CA 93412	Project: Dune Wells Project Number: [none] Project Manager: Chris Prevost	**Reported:** 03/12/2007 11:37

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
0702559-01	**COC Number:**	---	**Receive Date:**	03/01/2007 20:10
	Project Number:	---	**Sampling Date:**	02/28/2007 15:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	C-1	**Sample Matrix:**	Water
	Sampled By:	Kirk Henning		
0702559-02	**COC Number:**	---	**Receive Date:**	03/01/2007 20:10
	Project Number:	---	**Sampling Date:**	02/28/2007 15:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	C-2	**Sample Matrix:**	Water
	Sampled By:	Kirk Henning		
0702559-03	**COC Number:**	---	**Receive Date:**	03/01/2007 20:10
	Project Number:	---	**Sampling Date:**	02/28/2007 17:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	C-3	**Sample Matrix:**	Water
	Sampled By:	Kirk Henning		

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Secor 3437 Empressa Drive Suite A San Luis Obispo, CA 93412	Project: Dune Wells Project Number: [none] Project Manager: Chris Prevost	**Reported:** 03/12/2007 11:37

Water Analysis (General Chemistry)

BCL Sample ID: 0702559-01 | **Client Sample Name:** C-1, 2/28/2007 3:20:00PM, Kirk Henning

Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instrument ID	Dilution	QC Batch ID	MB Bias	Lab Quals
Sodium	75	mg/L	0.50	0.022	EPA-6010B	03/07/07	03/07/07 15:59	ARD	PE-OP1	1	BQC0342	ND	
Chloride	38	mg/L	0.50	0.037	EPA-300.0	02/28/07	03/02/07 01:07	EDA	IC1	1	BQC0004	ND	
Sulfate	440	mg/L	2.0	0.22	EPA-300.0	02/28/07	03/02/07 10:52	EDA	IC1	2	BQC0004	ND	A01

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Secor 3437 Empressa Drive Suite A San Luis Obispo, CA 93412	Project: Dune Wells Project Number: [none] Project Manager: Chris Prevost	**Reported:** 03/12/2007 11:37

Water Analysis (General Chemistry)

BCL Sample ID: 0702559-02 | **Client Sample Name:** C-2, 2/28/2007 3:10:00PM, Kirk Henning

Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instrument ID	Dilution	QC Batch ID	MB Bias	Lab Quals
Sodium	88	mg/L	0.50	0.022	EPA-6010B	03/07/07	03/07/07 15:41	ARD	PE-OP1	1	BQC0342	ND	
Chloride	52	mg/L	0.50	0.037	EPA-300.0	02/28/07	03/02/07 01:26	EDA	IC1	1	BQC0004	ND	
Sulfate	510	mg/L	2.0	0.22	EPA-300.0	02/28/07	03/02/07 11:11	EDA	IC1	2	BQC0004	ND	A01

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BC LABORATORIES, INC.

Secor 3437 Empressa Drive Suite A San Luis Obispo, CA 93412	Project: Dune Wells Project Number: [none] Project Manager: Chris Prevost	**Reported:** 03/12/2007 11:37

Water Analysis (General Chemistry)

BCL Sample ID: 0702559-03 | **Client Sample Name:** C-3, 2/28/2007 5:30:00PM, Kirk Henning

Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instrument ID	Dilution	QC Batch ID	MB Bias	Lab Quals
Sodium	98	mg/L	0.50	0.022	EPA-6010B	03/07/07	03/07/07 15:46	ARD	PE-OP1	1	BQC0342	ND	
Chloride	96	mg/L	0.50	0.037	EPA-300.0	02/28/07	03/02/07 01:45	EDA	IC1	1	BQC0004	ND	
Sulfate	230	mg/L	1.0	0.11	EPA-300.0	02/28/07	03/02/07 01:45	EDA	IC1	1	BQC0004	ND	

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Secor
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Suite A
San Luis Obispo, CA 93412

Project: Dune Wells
Project Number: [none]
Project Manager: Chris Prevost

Reported: 03/12/2007 11:37

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Batch ID	QC Sample Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
Chloride	BQC0004	Duplicate	0702482-04	158.56	160.99		mg/L	1.5		10		A01
		Matrix Spike	0702482-04	158.56	715.92	505.05	mg/L		110		80 - 120	A01
		Matrix Spike Duplicate	0702482-04	158.56	715.13	505.05	mg/L	0	110	10	80 - 120	A01
Sulfate	BQC0004	Duplicate	0702482-04	523.36	531.84		mg/L	1.6		10		A01
		Matrix Spike	0702482-04	523.36	1057.2	505.05	mg/L		106		80 - 120	A01
		Matrix Spike Duplicate	0702482-04	523.36	1054.2	505.05	mg/L	0.9	105	10	80 - 120	A01
Sodium	BQC0342	Duplicate	0702559-01	74.697	76.217		mg/L	2.0		20		
		Matrix Spike	0702559-01	74.697	88.091	10.204	mg/L		131		75 - 125	A03
		Matrix Spike Duplicate	0702559-01	74.697	83.351	10.204	mg/L	42.8	84.8	20	75 - 125	A03,Q02

Secor
3437 Empressa Drive
Suite A
San Luis Obispo, CA 93412

Project: Dune Wells
Project Number: [none]
Project Manager: Chris Prevost

Reported: 03/12/2007 11:37

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	Batch ID	QC Sample ID	QC Type	Result	Spike Level	PQL	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
Chloride	BQC0004	BQC0004-BS1	LCS	105.31	100.00	0.50	mg/L	105		90 - 110		
Sulfate	BQC0004	BQC0004-BS1	LCS	99.730	100.00	1.0	mg/L	99.7		90 - 110		
Sodium	BQC0342	BQC0342-BS1	LCS	10.116	10.000	0.50	mg/L	101		85 - 115		

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Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	Batch ID	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
Chloride	BQC0004	BQC0004-BLK1	ND	mg/L	0.50	0.037	
Sulfate	BQC0004	BQC0004-BLK1	ND	mg/L	1.0	0.11	
Sodium	BQC0342	BQC0342-BLK1	ND	mg/L	0.50	0.022	

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Secor 3437 Empressa Drive Suite A San Luis Obispo, CA 93412	Project: Dune Wells Project Number: [none] Project Manager: Chris Prevost	**Reported:** 03/12/2007 11:37

Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected at or above the reporting limit
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
A01	PQL's and MDL's are raised due to sample dilution.
A03	The sample concentration is more than 4 times the spike level.
Q02	Matrix spike precision is not within the control limits.

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Bruce Buel

From: Steve Bachman [steven.bachman@verizon.net]
Sent: Wednesday, October 03, 2007 11:05 PM
To: Parton, Craig; Newton, Bradley; Bruce Buel; Anderson, Jim:; Brown, Norm; Beeby, Bob
Subject: Results of September Nipomo Coastal Monitoring
Attachments: Results of Sept-07 Coastal Monitoring.doc

Attached are graphs indicating the latest monitoring results from the coastal monitoring well. Groundwater levels have dropped to their early 1990s level, as expected during this dry spell, but are still above sea level. It is a trend that we clearly need to keep our eye on. Water quality is pretty stable, with the C-1 chloride reversing its slight upward movement of the last monitoring run. We still don't have water levels from the C-1 well -- the obstruction will be fixed once the plover season is over.
Steve