TO: BOARD OF DIRECTORS

FROM: MICHAEL S. LEBRUN MSL
GENERAL MANAGER

DATE: JUNE 20, 2014

AGENDA ITEM C
JUNE 25, 2014

PRESENTATIONS AND REPORTS

The following presentations and reports are scheduled:

C-1) PRESENT RESOLUTION OF APPRECIATION (POSTHUMOUSLY) AND DEDICATION OF JON S. SEITZ BOARD ROOM

C-2) REPORT ON JUNE 11, 2014 REGULAR MEETING CLOSED SESSION
Announcement of actions, if any, taken in Closed Session

C-3) DIRECTOR OF ENGINEERING AND OPERATIONS
Summary of recent activities

The following presentation, Item C-4, will be made at 11AM

C-4) PRESENT AWARDS FOR 2014 WATER CONSERVATION POSTER CONTEST
Present awards

The following presentation, Item C-5, will be made at 1PM

C-5) PRESENTATION OF SPRING 2014 GROUNDWATER INDEX [RECOMMEND RECEIVE PRESENTATION]

C-6) DIRECTORS' ANNOUNCEMENTS OF DISTRICT & COMMUNITY INTEREST AND REPORTS ON ATTENDANCE AT PUBLIC MEETINGS, TRAINING PROGRAMS, CONFERENCES, AND SEMINARS.
Receive Announcements and Reports from Directors

C-7) RECEIVE PUBLIC COMMENT ON PRESENTATIONS AND REPORTS PRESENTED UNDER ITEM C AND BY MOTION RECEIVE AND FILE PRESENTATIONS AND REPORTS

TO: BOARD OF DIRECTORS

FROM: MICHAEL S. LEBRUN
GENERAL MANAGER

DATE: JUNE 20, 2014

AGENDA ITEM
C-1
JUNE 25, 2014

PRESENT RESOLUTION OF APPRECIATION (POSTHUMOUSLY) AND DEDICATION OF JON S. SEITZ BOARD ROOM

ITEM

Present a Resolution of Appreciation, posthumously, and dedicate the Jon S. Seitz Board Room [RECOMMEND MAKE PRESENTATION AND DEDICATION]

BACKGROUND

Jon S. Seitz served as District General Counsel from November 1993 until his untimely death in May 2013.

Jon Seitz led the District to its current position of outstanding legal and policy standing. Jon served the District with great dedication for more than twenty years and will be honored by naming the District Board Room in his memory.

ATTACHMENT

A. Resolution 2014-1345

JUNE 25, 2014

ITEM C-1

ATTACHMENT A

NIPOMO COMMUNITY SERVICES DISTRICT
RESOLUTION NO. 2014-1345

A RESOLUTION EXPRESSING APPRECIATION AND GRATITUDE POSTHUMOUSLY TO JON S. SEITZ FOR HIS CONTRIBUTIONS TO NIPOMO COMMUNITY SERVICES DISTRICT AND DEDICATING THE DISTRICT BOARD ROOM IN HIS HONOR

WHEREAS, the Board of Directors of Nipomo Community Services District sadly notes the passing of Jon S. Seitz, of Shipsey & Seitz on May 4, 2013; and

WHEREAS, Jon S. Seitz was retained by the Board of Directors of Nipomo Community Services District on November 3, 1993 to serve as District Legal Counsel and diligently served in that capacity for more than twenty years until his life ended all too soon and he was taken away from us and called to greater duty; and

WHEREAS, Jon S. Seitz set a high standard of legal excellence at Nipomo Community Services District resulting in many special districts in San Luis Obipso and Santa Barbara County using our District as a model to be followed; and

WHEREAS, Jon S. Seitz, showed an exemplary dedication to his work and understood well the importance of his work to the current and future customers of the District and community of Nipomo; and

WHEREAS, Jon S. Seitz worked tirelessly to guide the Board through significant legal obstacles always providing astute and balanced counsel; and

WHEREAS, Jon S. Seitz was a cherished friend to many, and a devoted son, brother, uncle, husband, father, and grandfather to his family.

NOW, THEREFORE, BE IT RESOLVED DETERMINED AND ORDERED by the Board of Directors of the Nipomo Community Services District as follows:

1. We recognize, appreciate, and commend Jon S. Seitz, *in memoriam*, for his service to Nipomo Community Services District; and
2. We hereby dedicate in Jon's memory the District Board room to be hereafter referred to as the "Jon S. Seitz Board Room"; and
3. We proclaim that in the memory of Jon S. Seitz, all those who conduct the public's business in the *Jon S. Seitz Board Room* will do so with the highest regard for public service, professionalism and transparency – as did Jon Steven Seitz.

The Board unanimously adopted the foregoing resolution on May 28, 2014.

Craig Armstrong, President

James Harrison, Vice President

Larry Vierheilig

Dan A. Gaddis

TO: BOARD OF DIRECTORS

FROM: MICHAEL S. LEBRUN
GENERAL MANAGER

DATE: JUNE 20, 2014

AGENDA ITEM
C-2
JUNE 25, 2014

JUNE 11, 2014 REGULAR MEETING
CLOSED SESSION REPORT

ITEM

Announcement of actions, if any, taken during Closed Session at previous Board Meeting [NO ACTION REQUESTED]

BACKGROUND

The June 11, 2014 Regular Meeting Closed Session included:

1. CONFERENCE WITH DISTRICT LEGAL COUNSEL RE: PENDING LITIGATION PURSUANT TO GC §54956.9
   a) SMVWCD VS. NCSD (SANTA CLARA COUNTY CASE NO. CV 770214, SIXTH APPELLATE COURT CASE NO. H032750 AND ALL CONSOLIDATED CASES).
   b) NCSD v Troesh et. al. SLOCSC# CV130175

2. CONFERENCE WITH LEGAL COUNSEL: LIABILITY CLAIM PURSUANT TO SECTION 54956.95:
   Claimant: Specialty Construction
   Agency: NCSD

3. ANNUAL PERFORMANCE REVIEW OF DISTRICT LEGAL COUNSEL PURSUANT TO GOVERNMENT CODE SECTION 54957

Staff will report on closed session action taken, if any.

TO: BOARD OF DIRECTORS

FROM: MICHAEL S. LEBRUN MSL
GENERAL MANAGER

DATE: JUNE 20, 2014

AGENDA ITEM
C-3
JUNE 25, 2014

DISTRICT DIRECTOR OF ENGINEERING AND OPERATIONS SUMMARY OF ACTIVITIES

ITEM

Report on recent engineering and operations activities [NO ACTION REQUESTED].

BACKGROUND

Director of Engineering and Operations, Peter Sevcik's will summarize his written report on District capital projects and operations.

RECOMMENDATION

Staff recommends that your Honorable Board receive the update.

ATTACHMENTS

A. Engineering and Operations Update

T:\BOARD MATTERS\BOARD MEETINGS\BOARD LETTER\2014\PRESENTATIONS\DIRECTOR E&O.DOCX

JUNE 25, 2014

ITEM C-3

ATTACHMENT A

NIPOMO COMMUNITY SERVICES DISTRICT

148 SOUTH WILSON STREET
POST OFFICE BOX 326
NIPOMO, CA 93444 - 0326
(805) 929-1133 FAX (805) 929-1932
Web site address www.ncsd.ca.gov

MEMORANDUM

TO: MICHAEL S. LEBRUN, P.E., GENERAL MANAGER

FROM: PETER V. SEVCIK, P.E., DIRECTOR OF ENGINEERING & OPERATIONS

DATE: JUNE 19, 2014

RE: ENGINEERING AND OPERATIONS UPDATE FOR MAY 2014

PROJECTS IN CONSTRUCTION

- **Southland WWTF Phase 1 Improvement Project**
  - STATUS
    - Scheduled Contract Completion – July 5, 2014
    - Time Elapsed to Date – 94% (664 of 705 days)
    - Work Completed to Date – 99% (Based on approved pay requests)
    - New plant on-line as of March 5, 2014
    - Correction of punch list items in progress

Construction Contract Cost Summary	
Original Contract Amount – Cushman Construction Co.	$10,224,900
Change Order for Alternate Y, Additional Disposal Ponds	$867,900
Other Change Orders to Date	$420,725
Revised Contract Amount	$11,513,525
Completed to Date	**$11,509,525**

Aerial View May 8, 2014

- **Supplemental Water Project Phase 1 Bid Package 4 – Joshua Road Pump Station**

  - SCOPE OF WORK – 1930 lineal feet of 24-inch diameter waterline, 400 gpm pump station with back-up power, controls, and instrumentation systems, a pressure reducing station and chloramination systems at 4 existing District wells.

  - STATUS
    - Scheduled Contract Completion – May 22, 2015
    - Time Elapsed to Date – 30% (157 of 519 days)
    - Work Completed to Date – 5% (Based on approved pay requests)

SWP Bid Package 4 Construction Contract Cost Summary	
Contract Amount – Spiess Construction Co. Inc.	$4,364,030
Change Orders	$529,670
Revised Contract Amount	$4,893,700
Completed to Date	**$253,435**

Joshua Road Pump Station Suction Piping
June 16, 2014

- **Standpipe Tank Rehabilitation and Inlet Modification Project**

  - SCOPE OF WORK - Piping for new inlet and new inlet connection, modification of existing tank inlet/outlet piping, removal and replacement of existing drain/overflow valves, new cathodic protection system, and interior tank coating.

  - STATUS
    - Scheduled completion July 27, 2014
    - Construction in progress

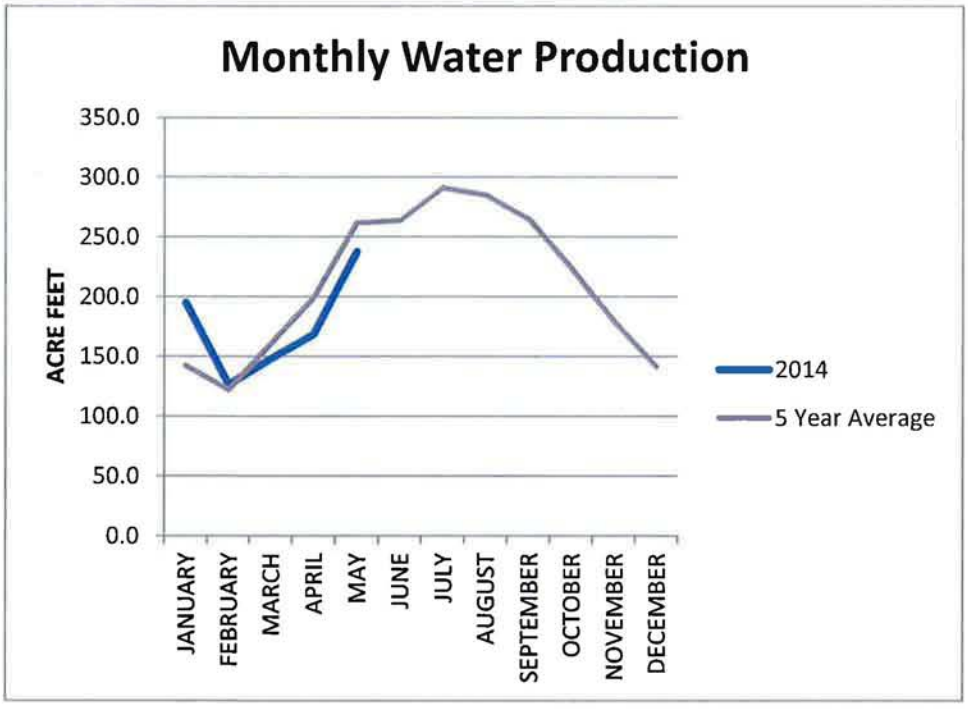
Construction Contract Cost Summary	
Contract Amount – Crosno Construction, Inc.	$263,350
Change Orders	$17,717
Revised Contract Amount	$281,067
Completed to Date	**$123,562**

OPERATIONS

- **Wells and Water Distribution System – May 2014**

YEAR	TOTAL MONTHLY PRODUCTION	AVERAGE DAILY PRODUCTION
2014	237.5 Acre Feet	7.6 Acre Feet Per Day
5 Year Average	261.6 Acre Feet	8.4 Acre Feet Per Day

  - Daily maintenance and operation of 8 wells
  - 20 distribution system routine coliform monitoring samples
  - 30 distribution system disinfectant residual monitoring samples
  - Eureka Well out of service for repairs
    - Post cleaning video inspection shows deteriorated casing
    - Well needs to be replaced



- **Southland Wastewater Treatment Facility and Collection System – May 2014**

TOTAL EFFLUENT TREATED	AVERAGE DAILY FLOW TREATED	BOD_5	TSS
18.4 Million Gallons	.594 Million Gallons Per Day	3 mg/l Monthly Average	6 mg/l Monthly Average
53.7 Acre Feet	1.8 Acre Feet Per Day	5 mg/l Daily Maximum	13 mg/l Daily Maximum

  - Daily maintenance and operation of upgraded .9 MGD treatment plant and 10 lift stations
  - No sewer system overflows
  - Effluent biochemical oxygen demand (BOD) requirement for monthly average of 60mg/L met and daily maximum of 100 mg/L requirement met
  - Effluent total suspended solids (TSS) requirement for monthly average of 60mg/L met and daily maximum of 100 mg/L requirement met
  - 8 Each Influent BOD, TSS samples
  - 8 Each Effluent BOD, TSS samples
  - 31 Effluent Settleable Solids samples
  - 31 Each Effluent pH, dissolved oxygen samples

- **Blacklake Wastewater Reclamation Facility and Collection System – May 2014**

TOTAL EFFLUENT TREATED	AVERAGE DAILY FLOW TREATED	BOD_5	TSS
1.2 Million Gallons	.039 Million Gallons Per Day	37 mg/l Monthly Average	26 mg/l Monthly Average
4.7 Acre Feet	.16 Acre Feet Per Day	49 mg/l Daily Maximum	28 mg/l Daily Maximum

  - Daily maintenance and operation of .2 MGD treatment plant and 3 lift stations
  - Effluent biochemical oxygen demand (BOD) requirement for monthly average of 40 mg/L met and daily maximum 100 mg/L requirement met
  - Effluent total suspended solids (TSS) requirement for monthly average of 30 mg/L met and daily maximum of 100 mg/L requirement met
  - No sewer system overflows
  - 4 Each Effluent BOD, TSS samples
  - 21 Each Effluent total coliform, settleable solids, pH, Chlorine residual, dissolved oxygen samples

- **Compliance Reporting**

  - May Monthly Distribution System Coliform Monitoring Summary to California Department of Public Health
  - April Wastewater Monitoring Report for the Blacklake Wastewater Reclamation Facility to Central Coast Regional Water Quality Control Board
  - April Monthly Wastewater Monitoring Report for the Southland Wastewater Treatment Facility to Central Coast Regional Water Quality Control Board
  - April Monthly 'No-Spill' Certification for California Integrated Water Quality System (CIWQS) for both Southland and Blacklake Sewer Collection Systems

PROJECTS IN DESIGN AND PLANNING STAGES

- **Supplemental Water Project Phase 1 – Blosser Road Water Main**
    - SCOPE OF WORK – 5970 lineal feet of 24-inch diameter waterline including 300 lineal feet levee crossing jack and bore
    - STATUS
        - Bid document revision in progress
        - Tentative schedule
            - Authorization to Bid – June 2014
            - Advertise for Bid – July 2014
            - Contract Award – August 2014
            - Construction September 2014 – December 2014
- **Blacklake Wastewater Master Plan**
    - Technical evaluation of existing wastewater plant and sewer collection system in progress
    - Treatment plant operations and maintenance manual update in progress

OTHER PROJECTS AND PROGRAMS

- **Safety Program**
    - Weekly operations tailgate safety meeting for Operations staff
    - On-line safety training for all District employees
- **Development Review**
    - Intent to Serve Application Received – 1
    - Will Serve Letter Issued – 1

ATTACHMENTS

A. May 2014 Southland WWTF Improvements Phase 1 Project Monthly Construction Progress Report
B. May 2014 Supplemental Water Project Phase 1 Bid Package 4 Monthly Construction Progress Report

Nipomo Community Services District

Southland WWTF Improvements
Phase 1 Project
Monthly Progress Report

Prepared By:
MNS Engineers, Inc.

May 2014

Schedule and Budget Summary

Schedule Summary

Notice to Proceed	July 30, 2012
Original Contract Days	645
Contract Days Added	60
Revised Contract Days	705
Elapsed Time (Days)	(664)
Remaining Time (Days)	41
Contract Completion Date	July 5, 2014
Time Elapsed to Date	94%
Work Completed to Date	99%
Approved Change Orders (Days)	60 days

Budget Summary

Original Contract Amount	$10,224,900.47
Approved Change Orders (Cost)	$1,288,624.61
Revised Contract Amount	$11,513,525.08
Previous Payments	$11,123,444.70
Current Month Pay Request	$386,080.38
Total Work Completed	$11,509,525.08
Work Remaining	$4,000.00

Progress Summary

General Site Work

Summary of Work:

Cushman completed the Alternative Y work. Subcontractor Mark Switzer Excavating finished grading of the new Ponds 9 & 10, and finished filling in the old ponds, as well as completing the new site roads. Bergelectric completed work on the six remaining street lights, cleaned out electrical vaults and installed remaining exterior lighting. Cushman installed the final segments of the 24-inch SE pipe to new Ponds 9 & 10, including concrete discharge pads. They also poured remaining concrete collars for valves and manholes, spread ¾-inch rock around the Aeration Basin #1, the Emergency Holding Basin, the Headworks, the Electrical/Blower Building and the Clarifiers. Cushman is demobilizing from the site, removing the office trailers and their storage containers, while cleaning up the staging area and performing punch list items. Cushman's subcontractor Valley Fencing completed fencing around Area F, and installed the new sliding gate and operator at the site entrance. KCI Landscaping completed landscaping and the irrigation system.

Pictures:

Cushman installing 18-inch plug valve off 24-inch SE line at Pond 9.

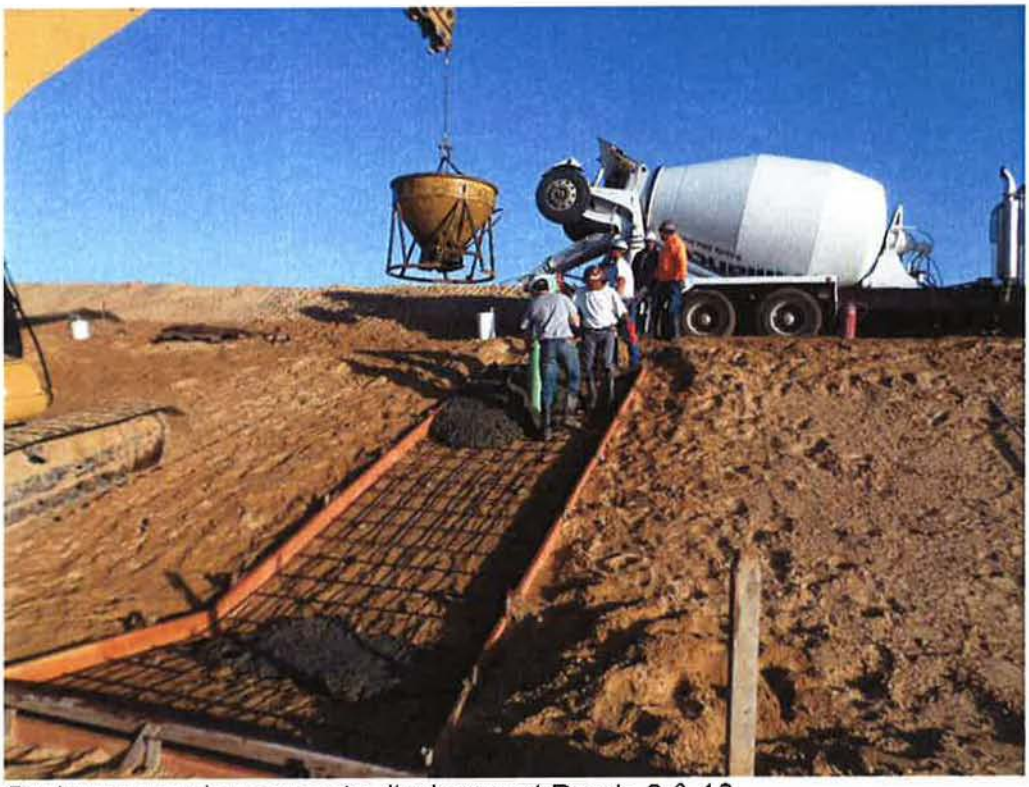
Cushman installing 24-inch SE pipe at new ponds.

Cushman applying wax tape to bolts on valve of new 18-inch line.

Forming thrust block at cleanout.

Cushman forming splash pads at new Ponds 9 & 10.

CMC tying reinforcing at concrete discharge pads in Ponds 9 & 10.



Cushman pouring concrete discharge at Ponds 9 & 10.

Cushman finishing concrete discharge pads at Ponds 9 & 10.

Completed concrete discharge pad after forms are removed.

Cushman and Switzer finalizing work at Ponds 9 & 10.

Effluent being discharged into new Pond 10.

Cushman's fencing subcontractor, Valley Fencing, completing new fencing around Ponds 9 & 10.

Mark Switzer Excavating cutting new site roads to subgrade.

Switzer cutting new road between Ponds 9 & 10 to subgrade.

Aggregate base being delivered to road between Ponds 9 & 10.

Switzer watering down aggregate base on road between Ponds 9 & 10.

Switzer Excavating compacting aggregate base material for new site roads.

Mark Switzer Excavating completing new site roads with placement of aggregate base.

Valley Fencing installing new sliding and automated gate to site entry.

Switzer placing aggregate base for new road at site entry.

Cushman removing 4-inches of native material around Aeration Basin #1 to place ¾-inch rock.

Placing ¾-inch rock around Aeration Basin #1 and the Emergency Holding Basin.

¾-inch rock placed around Aeration Basin #1.

Cushman spreading ¾-inch rock around the Headworks.

Spreading ¾-inch rock around the clarifiers.

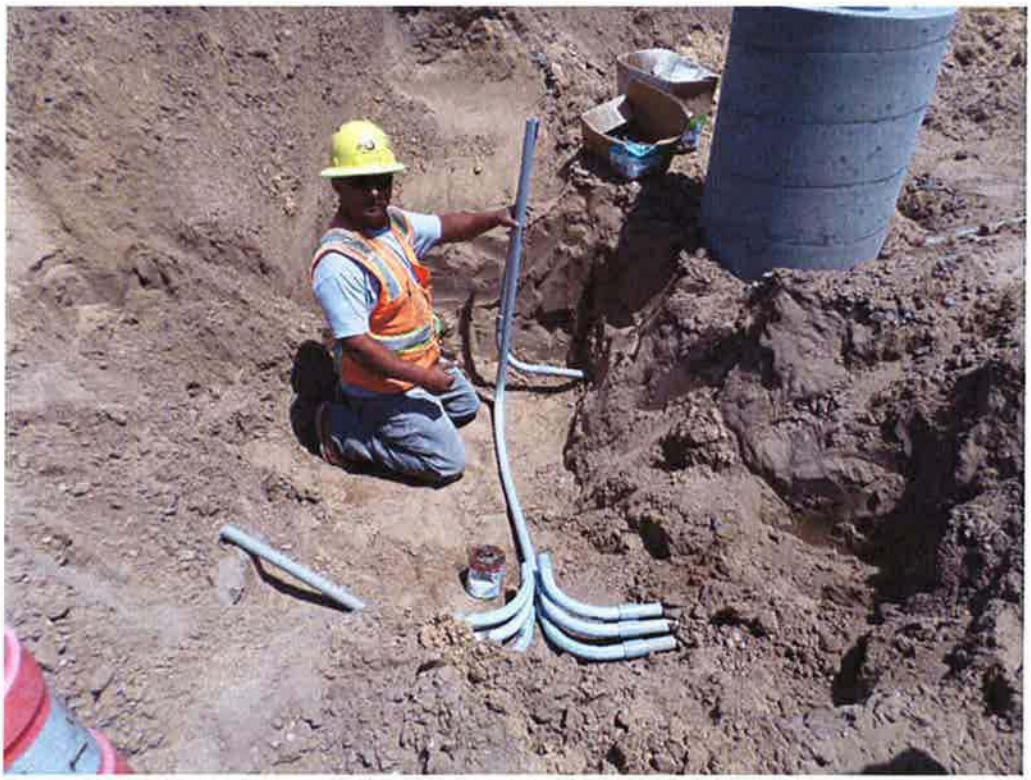
¾-inch rock around the clarifiers.

Cushman demolishing existing MCC panel and concrete slab at site entrance.

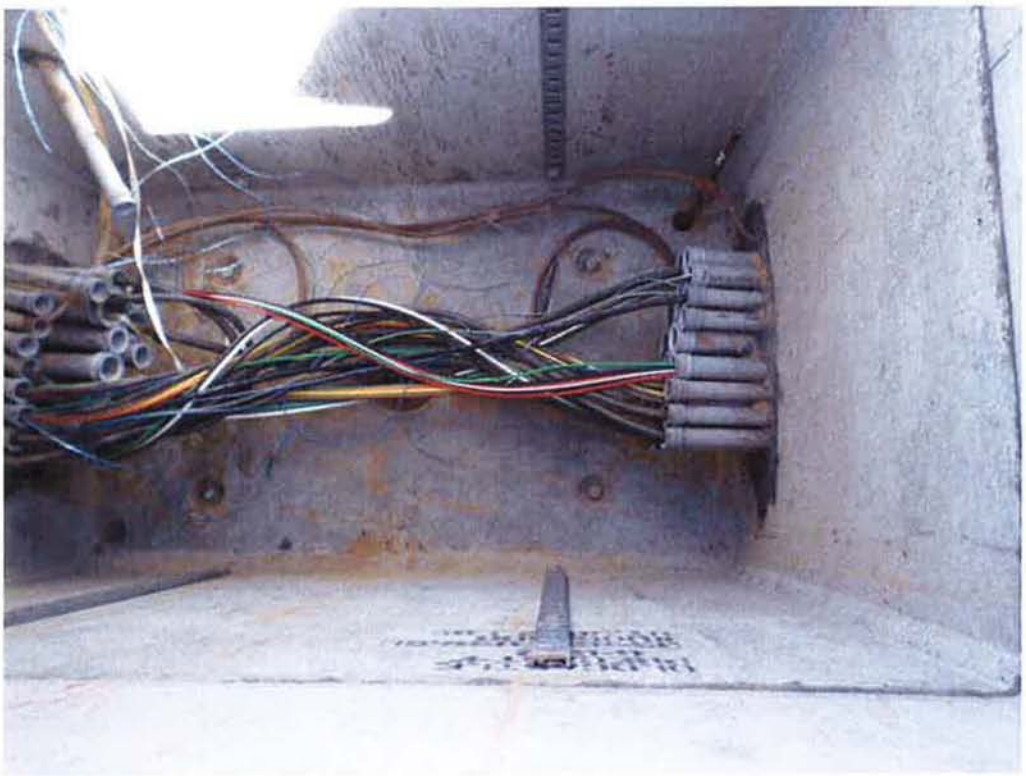
Cushman removing existing barbed wire fencing along DWR easement.

Cushman dry-packing electric stand at motorized valves for Aeration Basin #1.

Cushman and Bergelectric setting light posts.


Bergelectric installing conduit to remaining street lights.

Bergelectric installing lights at clarifier stairs.



Bergelectric cleaning out electrical vaults.

Cushman installing 2-inch meter on the treated water line for the site.

Cushman pouring manhole collars.

Cushman forming the base for the new SCADA tower.

Cushman pouring the new SCADA tower base.

KCI Environmental installing conduit to landscaping controller.

KCI Environmental installing cover over landscaping irrigation manifold.

KIC Environmental installing new valve boxes on berm along Hwy 101.

Nipomo Community Services District

Supplemental Water Project
Bid Package 4

Monthly Progress Report

Prepared By:
MNS Engineers, Inc.

May 2014

Schedule and Budget Summary

Schedule Summary

Notice to Proceed	December 19, 2013
Original Contract Days	519
Contract Days Added	0
Revised Contract Days	0
Elapsed Time (Days)	(157)
Remaining Time (Days)	362
Contract Completion Date	May 22, 2015
Time Elapsed to Date	30%
Work Completed to Date	5%
Approved Change Orders (Days)	0 days

Budget Summary

Original Contract Amount	$4,364,030.00
Approved Change Orders (Cost)	$529,670.00
Revised Contract Amount	$4,893,700.00
Previous Payments	$91,375.00
Current Month Pay Request	$162,060.00
Total Work Completed	$253,435.00
Work Remaining	$4,640,265.00

Progress Summary

Joshua Pump Station Site

Summary of Work:

Spiess installed shoring and excavated for installation of the pump cans. When excavation was completed, they poured a concrete slab to set the pump cans on and stabilized the bases of the cans by installing epoxy dowels into the slab, and stabilized the tops of the cans by bolting them to a steel structure they installed. Next their subcontractor, Valley Steel, installed reinforcing for the encasements around the pump cans, and Spiess installed forms and poured 4,000 psi concrete. Spiess also mobilized the job site trailers, and their subcontractor St. Dennis Electric connected internet and power to them.

Pictures:

Layout for pump can excavation and shoring staged.

Spiess excavating and installing shoring for pump cans.

Spiess excavating and installing shoring for pump cans.

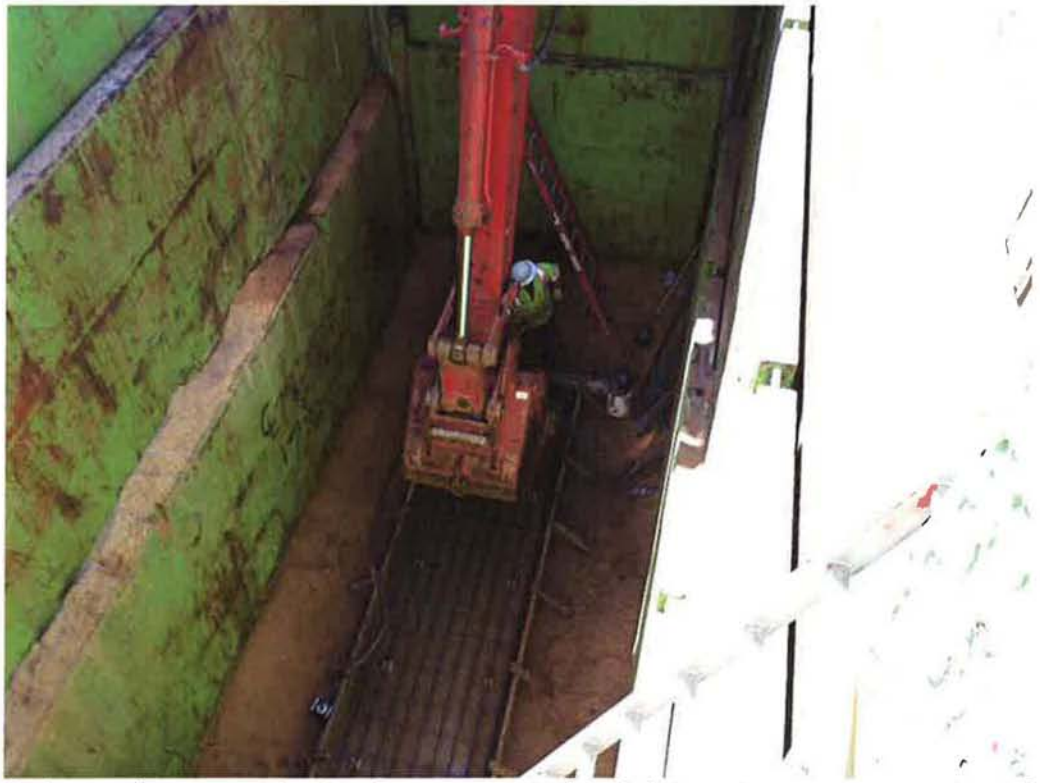
Spiess excavating inside shoring for pump can installation.

Spiess continuing excavation for pump cans and installing vertical shoring with shoring representative on site from Shoring Tech.

Spiess compacting the bottom of the excavation for the pump cans approximately 23 feet below grade.

Spiess grading around excavation to prepare for installing supports to stabilize the pump cans when they are set.

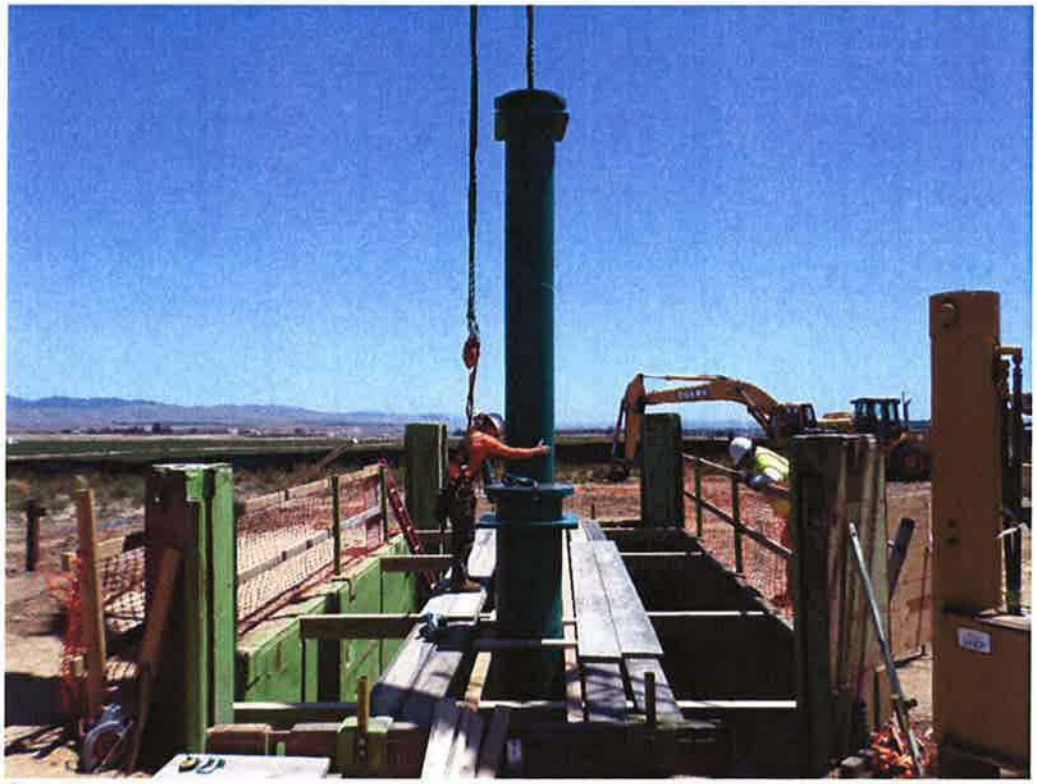
Pump cans delivered to site and coating inspected for thickness and any damage.



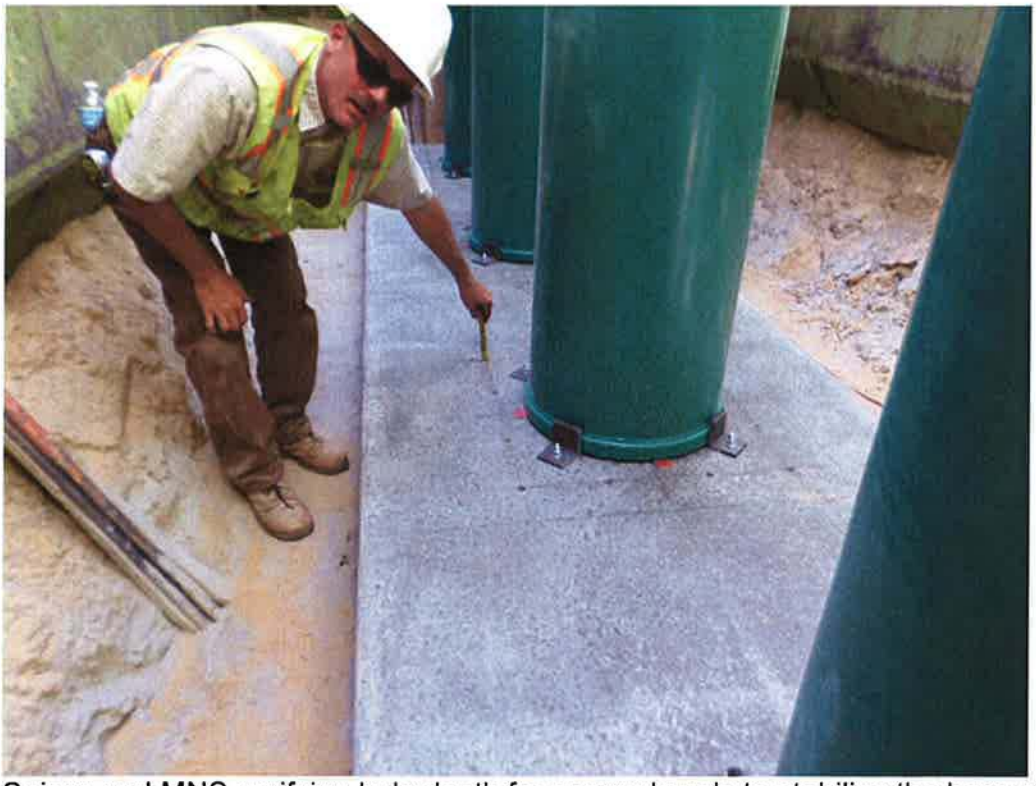
Spiess using excavator to place concrete for slab to set pump cans on top of.

Spiess pouring concrete slab to set pump cans on top of.

Spiess setting pump cans.



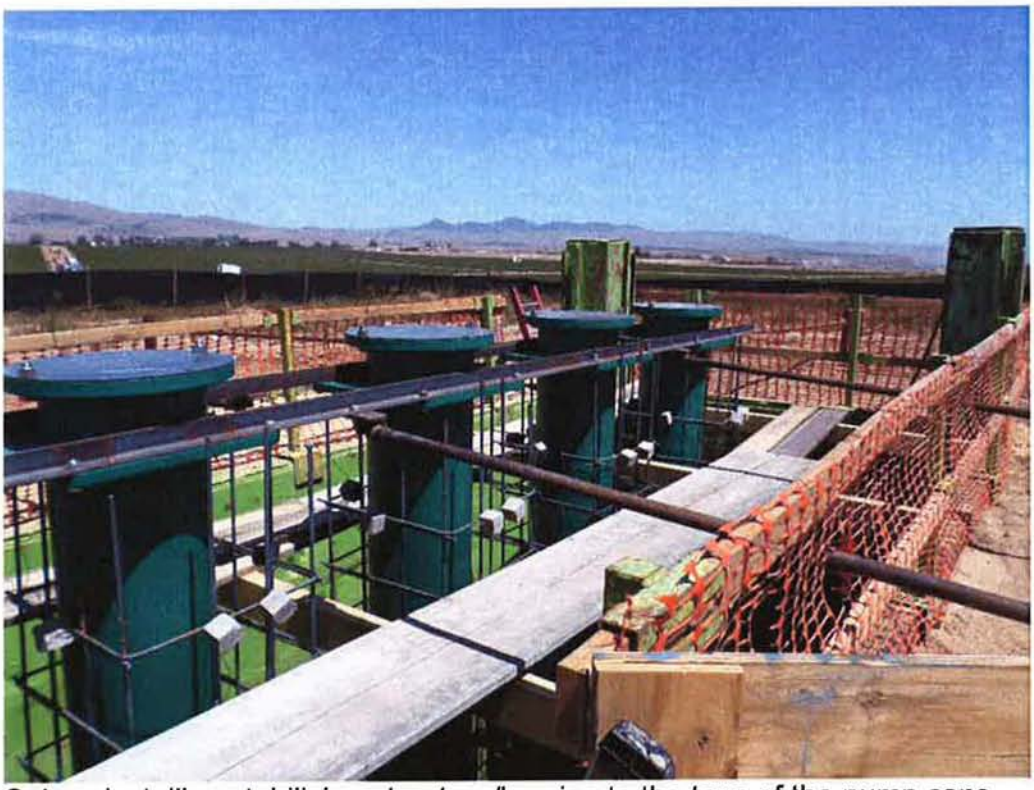
Spiess setting pump cans.



Spiess and MNS verifying hole depth for epoxy dowels to stabilize the base of the pump cans.

Spiess using steel angle iron to secure spacing of the pump can tops.

Reinforcing being installed for pump can encasements by Spiess subcontractor Valley Steel.



Spiess installing stabilizing structure/bracing to the tops of the pump cans.

Spiess constructing forms for pump can encasements.

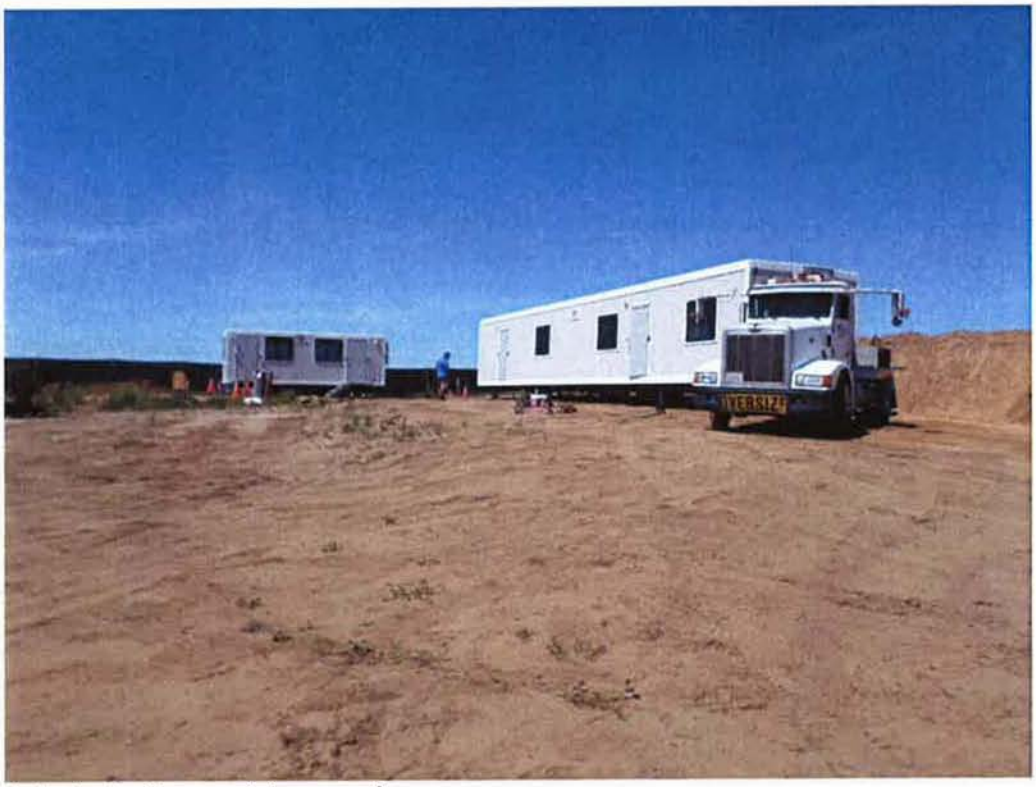
Spiess installing pump can encasement forms.

MNS verifying rebar and form spacing prior to Spiess pouring pump can encasements.

Spiess pouring pump can encasements.

Spiess monitoring and vibrating concrete placement during pour of pump can encasements.

Concrete pour for first two pump can encasements completed.



Jobsite trailers arriving on site.

Sundale Well Site

Summary of Work:

Spiess began work at Sundale excavating for the chemical building slab and laying out pipeline trenches. Their electrical subcontractor, St. Dennis Electric, was on site to begin installing underslab conduit for the chemical building.

Pictures:

Spiess excavating for slab under the chemical building.

Spiess over excavating and compacting for slab under the chemical building.

Laying out pipe trenches.

St. Dennis Electric starting underslab conduit installation.

TO: BOARD OF DIRECTORS

FROM: MICHAEL S. LEBRUN
GENERAL MANAGER

DATE: JUNE 20, 2014

AGENDA ITEM
C-4
JUNE 25, 2014

PRESENT AWARDS FOR 2014 WATER CONSERVATION POSTER CONTEST

ITEM

Present Awards

BACKGROUND

The District contracts with Science Discovery to provide water conservation education to local elementary school classrooms. Through the Science Discovery program, the District held a water conservation poster contest during the past school year.

Contest winners will be presented certificates and awards.

TO: BOARD OF DIRECTORS

FROM: MICHAEL S. LEBRUN
GENERAL MANAGER

DATE: JUNE 20, 2014

AGENDA ITEM
C-5

JUNE 25, 2014

RECEIVE GROUNDWATER INDEX PRESENTATION BY BRAD NEWTON, Ph.D, PG OF NEWTON GEO-HYDROLOGY CONSULTING SERVICES, LLC

ITEM

Presentation of the spring groundwater index for the Nipomo Mesa area. [RECOMMEND RECEIVE PRESENTATION]

BACKGROUND

Doctor Brad Newton will present the spring 2014 Ground Water Index.

Doctor Newton's report and the Ground Water Index is an independent work product of the District and is not reviewed or recognized by the Nipomo Mesa Management Area Technical group.

FISCAL IMPACT

Funds for preparation of this report are included in the FY 2013-14 Budget.

STRATEGIC PLAN

Goal 1. WATER SUPPLIES. Actively plan to provide reliable water supply of sufficient quality and quantity to serve both current customers and those in the long-term future.

RECOMMENDATION

Staff recommends that the Board receive the Report and give direction to staff.

ATTACHMENTS

A. Technical Memo #29 Spring 2014 Groundwater Index

t:\board matters\board meetings\board letter\2014\140625 ground water index.docx

JUNE 25, 2014

ITEM C-5

ATTACHMENT A

NEWTON GEO-HYDROLOGY CONSULTING SERVICES
420 E CARRILLO STREET
SANTA BARBARA, CALIFORNIA
93101

TECHNICAL MEMORANDUM

TO: Michael LeBrun, General Manager NCSD

FROM: Brad Newton, Ph.D., P.G.

RE: Technical Memorandum #29 - Spring 2014 Ground Water Index

DATE: June 17, 2014

INTRODUCTION

Groundwater surface elevations (GSE) underlying the Nipomo Mesa are regularly measured at many places (wells) across the mesa. The Spring 2014 Ground Water Index (GWI) has been computed from GSE and presented herein along with historical GWI from 1975 to present based on these groundwater surface elevation measurements collected during spring and fall across the Nipomo Mesa. Limited measurements of GSE were available for the years 1982, 1983, 1984, 1994 and 1997, thus precluding a reliable calculation of GWI for those years.

The Nipomo Mesa Management Area (NMMA) Technical Group (TG) has not reviewed this technical memorandum, its findings, or any presentation of this evaluation.

RESULTS

The Spring 2014 GWI is -0.0163, and is now the lowest Spring value on record (Table 1, Figure 1). The Spring 2013 Key Well Index (KWI) has also declined to its lowest value on record and generally follows the same historical trends as the GWI (Figure 1). The 2013 Water Year (WY) rainfall (8.07 inches) was approximately 50 percent of the long-term average (16.55 inches), and the 2014 WY rainfall (5.75 inches) to-date is approximately 35 percent of the long-term average. With the current drought conditions and ongoing groundwater pumping, there is great cause for concern given that the fall and spring groundwater elevations have declined significantly across the Nipomo Mesa.

METHODOLOGY

The calculation of spring and fall GWI are based on GSE measurements regularly made by San Luis Obispo County Department of Public Works (SLO DPW), NCSD, USGS, and Woodlands. The integration of GSE data is accomplished by using computer software to interpolate between measurements and calculate GWI within the principal production aquifer assuming an unconfined aquifer and a specific yield of 11.7 percent. Limited measurements of GSE were available for the years 1982, 1983, 1984, 1994 and 1997, precluding a reliable calculation of GWI for those years.

Groundwater Surface Elevation Measurements

Groundwater surface elevation data were obtained from SLO DPW, NCSD, USGS, and Woodlands. SLO DPW measures GSE in monitoring wells during the spring (April) and the fall (October) of each year. Woodlands and NCSD measures GSE in their monitoring wells monthly. For the years 1975 to 1999, available representative GSE data were used to compute GWI. For the years 2000 to 2011, only GSE data from the same 45 wells were used to compute GWI.

The GSE data was reviewed in combination with well completion reports and historical hydrographic records in order to exclude measurements that likely do not accurately represent static water levels within the principal production aquifer. Wells that do not access the principal production aquifer or were otherwise determined to not accurately represent static water levels within the aquifer were not included in analysis.

Groundwater Surface Interpolation

The individual GSE measurements from each year were used to produce a GSE field by interpolation using the inverse distance weighting (IDW) method.

Ground Water Index

The GWI is defined as the annually normalized value of the saturated volume above sea level and bedrock multiplied by the specific yield of 11.7 percent. The GWI is comprised from approximately 45 ground water elevation measurements made by the County of San Luis Obispo each April and October. The value of the Ground Water Index was computed for an area approximately similar to the NMMA Boundary. The base of the saturated volume is mean sea level surface (elevation equals zero) or the bedrock above sea level, whichever is higher. The bedrock surface elevation is based on Figure 11: Base of Potential Water-Bearing Sediments, presented in the report, Water Resources of the Arroyo Grande - Nipomo Mesa Area (DWR 2002). The bedrock surface elevation was preliminarily verified by reviewing driller reports obtained from DWR. The specific yield is based on the average weighted specific yield measurement made at wells within the Nipomo Mesa Hydrologic Sub-Area (DWR 2002, pg. 86). The GWI is similar to the Key Well Index presented in the Nipomo Mesa Management Area Technical Group annual report to the Court, but is not directly comparable.

Key Well Index

The Key Well Index (KWI) was developed by the NMMA Technical Group from eight inland wells representing the whole of the groundwater basin within the NMMA. The Key Well Index was defined for each year from 1975 to present as the average of the normalized spring groundwater data from each well. The lowest value of the Key Well Index could be considered the "historical low" within the NMMA.

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REFERENCES

Department of Water Resources (DWR). 2002. Water Resources of the Arroyo Grande – Nipomo Mesa Area, Southern District Report. 2002.

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Spring and Fall Groundwater Index (GWI, Unitless)

Year	Rainfall (inches)	Spring GWI	Number of Wells	Fall GWI	Number of Wells	Spring to Fall Difference
1975	17.29	0.3252	54	0.2602	54	0.0650
1976	13.45	0.1870	45	0.1382	65	0.0488
1977	10.23	0.0407	59	(0.0407)	63	0.0813
1978	30.66	0.2033	62		35	--
1979	15.80	0.1057	57	0.1463	63	(0.0407)
1980	16.57	0.2358	55	0.2439	46	(0.0081)
1981	13.39	0.3089	46	0.1301	47	0.1789
1982	18.58	0.5203	42		31	--
1983	33.21		35	0.2927	42	--
1984	11.22		14	0.1382	37	--
1985	12.20	0.3821	37	0.1870	41	0.1951
1986	16.85	0.3171	51	0.0650	51	0.2520
1987	11.29	0.1951	48	0.0976	52	0.0976
1988	12.66	0.1707	51	0.0569	49	0.1138
1989	12.22	0.0000	47	(0.0976)	57	0.0976
1990	7.12	0.0244	55	(0.0813)	53	0.1057
1991	13.18	0.0244	52	(0.0325)	54	0.0569
1992	15.66	0.0163	52	(0.1951)	48	0.2114
1993	20.17	0.1057	54	(0.0569)	61	0.1626
1994	12.15	0.0081	54		36	--
1995	25.87	0.2276	35	0.1220	52	0.1057
1996	16.54	0.1382	45	0.0244	57	0.1138
1997	20.50		20	0.2602	48	--
1998	33.67	0.3740	41	0.2764	44	0.0976
1999	12.98	0.3821	56	0.2358	49	0.1463
2000	21.62*	0.3984	44	0.2033	41	0.1951
2001	10.25*	0.4797	43	0.2114	35	0.2683
2002	14.47	0.3008	29	0.1626	41	0.1382
2003	11.39	0.2846	37	0.0569	42	0.2276
2004	12.57	0.2439	42	0.1789	35	0.0650
2005	22.23	0.3171	38	0.1626	39	0.1545
2006	20.83	0.3902	44	0.1545	41	0.2358
2007	7.11	0.2764	44	0.0569	42	0.2195
2008	15.18	0.1951	43	0.0488	42	0.1463
2009	10.31	0.1382	44	0.0488	43	0.0894
2010	20.07	0.1707	45	0.0650	42	0.1057
2011	34.05	0.2276	43	0.1789	43	0.0488
2012	15.35	0.2439	45	0.0488	44	0.1951
2013	8.07*	0.0650	45	(0.1382)	42	0.2033
2014	5.75	(0.0163)	45			

—: Insufficient for evaluation
*: Preliminary value

Table 1: Unitless GWI computed from Spring 1975 to Fall 2013.

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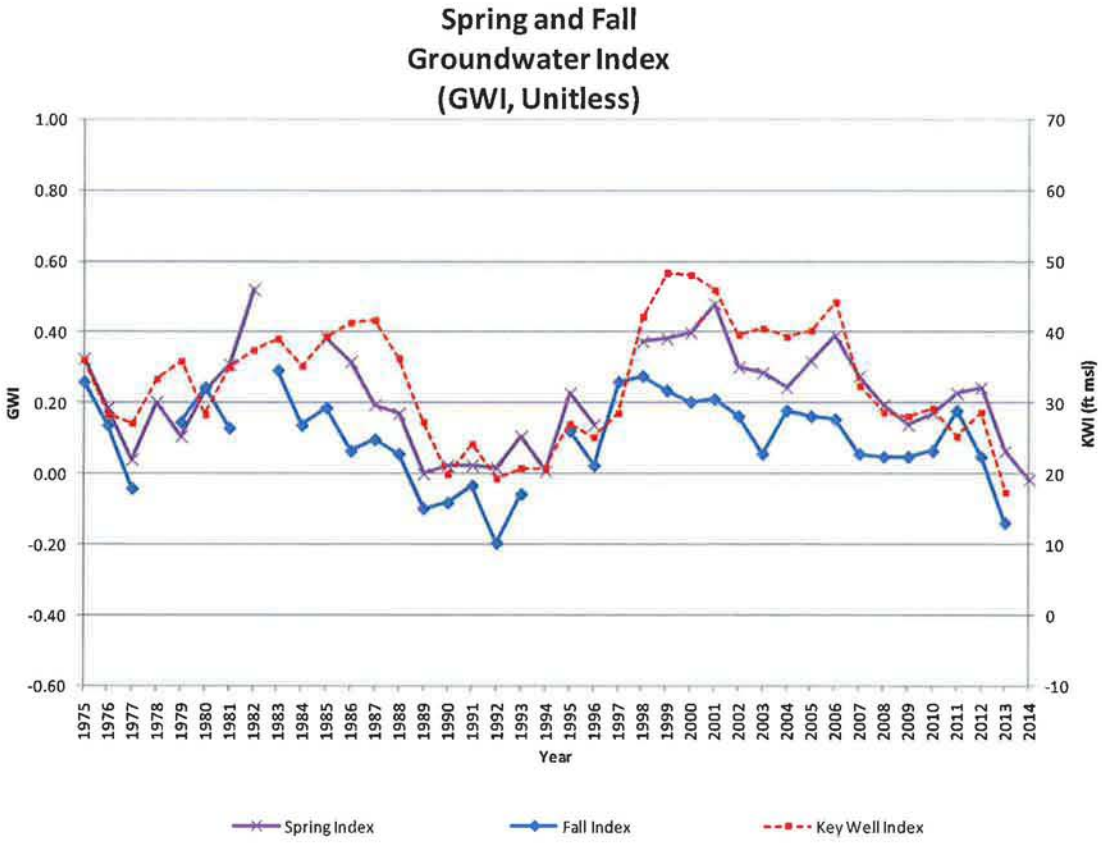

1
2 **Figure 1: GWI and KWI from 1975 to present.**

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