

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

STAFF REPORT FOR REGULAR MEETING OF DECEMBER 5-6, 2013

Prepared on November 8, 2013

ITEM NUMBER: 24

**SUBJECT: STATUS OF THE LOS OSOS WATER RECYCLING FACILITY
CONSTRUCTION PROJECT, SAN LUIS OBISPO COUNTY**

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SUMMARY

The purpose of this staff report is to provide the Central Coast Water Board and the public a status update on the current Los Osos Water Recycling Facility (LOWRF) construction activities. In addition, staff provides an update to the recent activities related to the Los Osos Groundwater Basin Plan. San Luis Obispo County Public Works staff has been invited to participate in the December 5-6, 2013 Water Board meeting.

DISCUSSION

Background

The Los Osos/Baywood Park area of San Luis Obispo County is located on the southern edge of Morro Bay National Estuary, approximately ten miles west of the City of San Luis Obispo. The community has a population of approximately 15,000 people, and contains about 5,000 individual lots. Throughout the community, on-site septic systems are used for treatment and disposal of wastewater.

The Central Coast Water Board adopted Resolution No. 83-13 in 1983, which amended the Water Quality Control Plan for the Central Coastal Basin (Basin Plan) and prohibited, effective November 1, 1988, discharges of waste from individual and community sewage systems within portions of the Los Osos/Baywood Park area. Constructing a community wastewater collection and treatment system is the most practical manner to comply with this prohibition. Over the past 30 years, there have been several unsuccessful attempts to design and construct a community wastewater treatment system. More recently, the County made efforts necessary to design and construct a community wastewater treatment facility for the Los Osos/Baywood Park prohibition area. The County certified a final EIR and adopted a coastal development permit on September 29, 2009. After appeal of the County permit, the Coastal Commission issued a final coastal development permit (CDP) on June 11, 2010.

Waste Discharge Requirements: On May 5, 2011, the Central Coast Water Board adopted Waste Discharge Requirements Order No. R3-2011-0001 (WDR) for discharges related to the Los Osos Water Recycling Facility (LOWRF). The LOWRF is designed to discharge tertiary treated

wastewater to the Broderson and Bayridge Estates leach fields as well as supply recycled water for irrigation to urban and agricultural areas. A copy of the WDR and associated Monitoring and Reporting Program (MRP) can be found at the following internet links:

WDR:

http://www.waterboards.ca.gov/centralcoast/board_decisions/adopted_orders/2011/2011_0001_wdr_order.pdf

MRP:

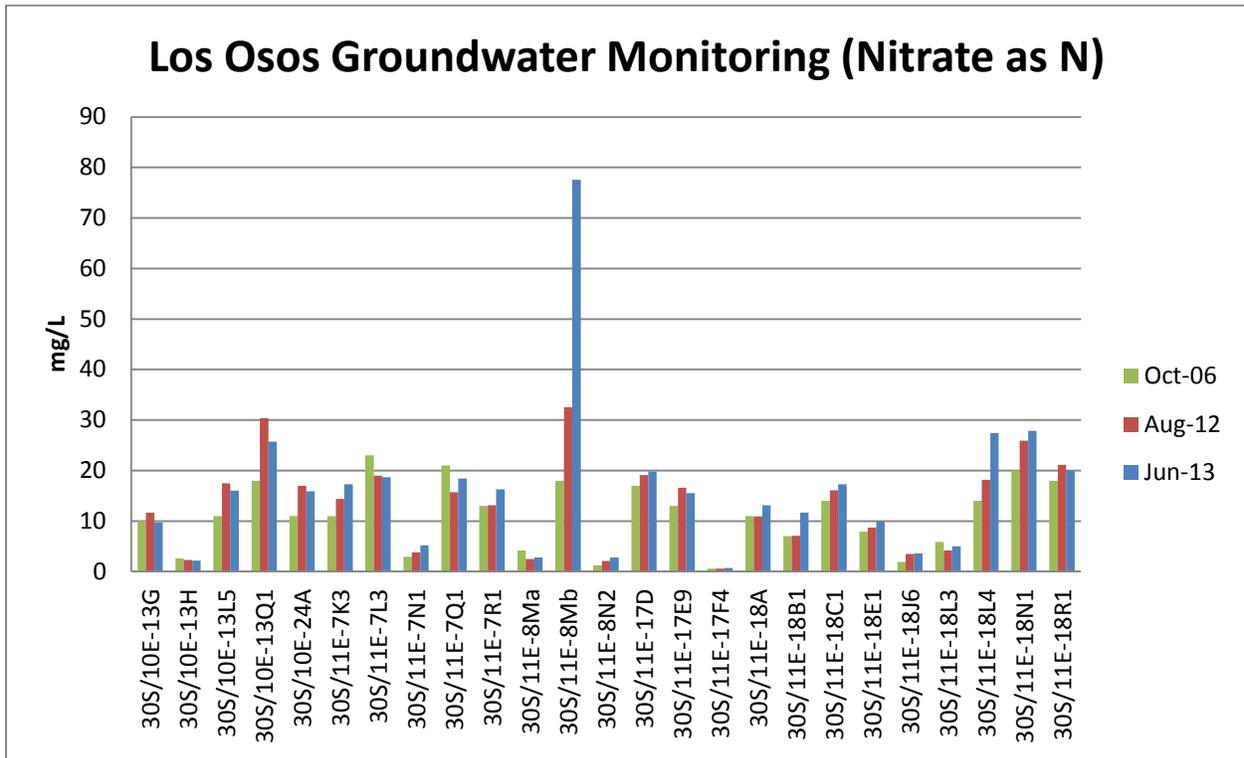
http://www.waterboards.ca.gov/centralcoast/board_decisions/adopted_orders/2011/2011_0001_mrp_order.pdf

Section 13267, Baseline Groundwater Analysis: In a letter dated April 27, 2012, the Water Board required the County to provide baseline groundwater quality sampling and reporting for 26 groundwater monitoring wells throughout Los Osos. The letter required semiannual monitoring reports that include the following:

- Representative groundwater data from 26 monitoring sites identified in Section D.1. and Section D.3 of the County's MRP.
- Depth to water at each well site and representative samples for total dissolved solids, pH, total nitrogen as N (all forms), sodium, chloride, sulfate, and boron.
- The groundwater samples are to be collected and analyzed semiannually and samples collected within a period of time short enough to avoid hydraulic temporal variations.

Groundwater Monitoring Reports: The County submitted its first groundwater monitoring report on October 26, 2012 (August 2012 sampling), and its second groundwater monitoring report on July 30, 2013 (June 2013 sampling). More than half of the wells monitored exceed the maximum contaminant level (MCL) for nitrate (as N). According to Figure 1, 16 of the 25¹ wells contained concentrations above the MCL for both sampling events. Individual fluctuations in nitrate concentrations occur across the monitoring well network. When averaged, nitrate concentrations increased 2.6 milligrams per liter (mg/L) between August 2012 and June 2013. The figure below includes data from the October 2006 nitrate sampling event to provide historical perspective and demonstrate changes over time.

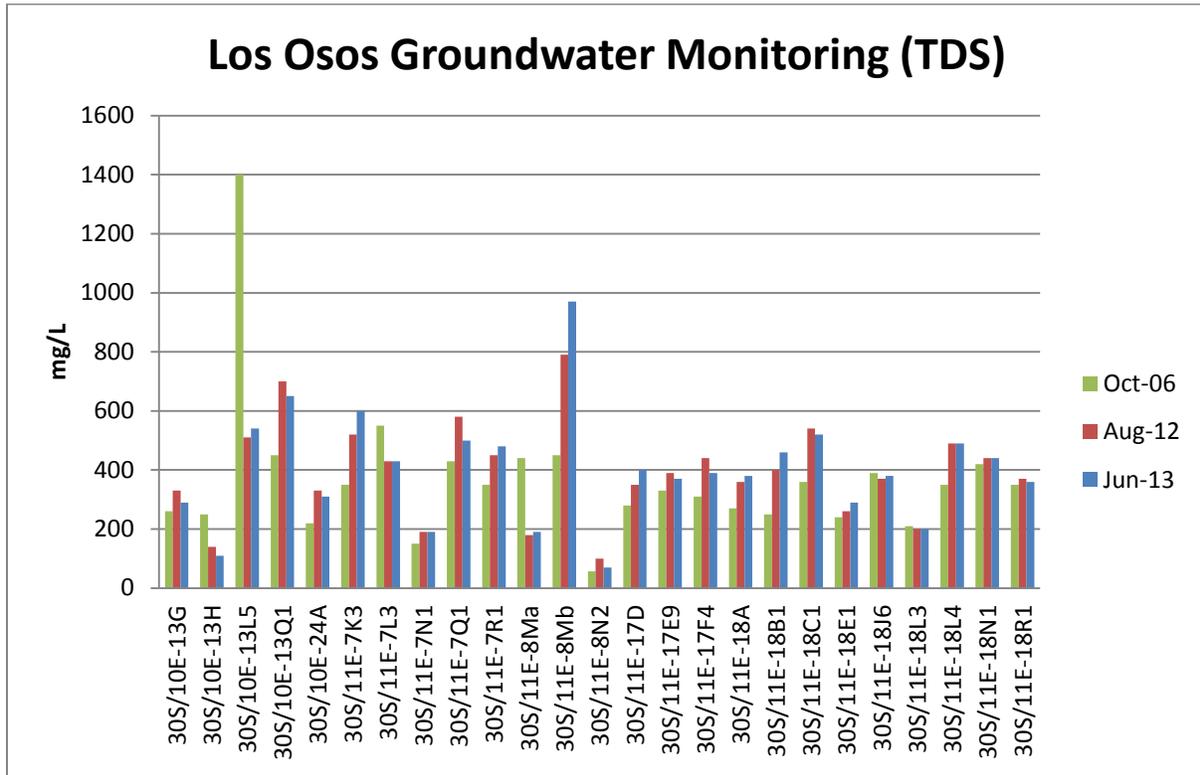
Figure 1 – Los Osos Groundwater Nitrate Concentrations



According to groundwater data from the August 2012 and June 2013 reports, total dissolved solids (TDS) concentrations have fluctuated at individual well sites. However, when averaged together, TDS has increased by an average of 5.6 mg/L between August and June 2013. Figure 2 shows the fluctuations of TDS concentrations at each well site. Staff included data from the October 2006 sampling event to provide historical perspective and demonstrate changes over time.

¹ One of the wells was a private well and was not sampled as a result of pending permission from owner.

Figure 2: Los Osos Groundwater TDS Concentrations

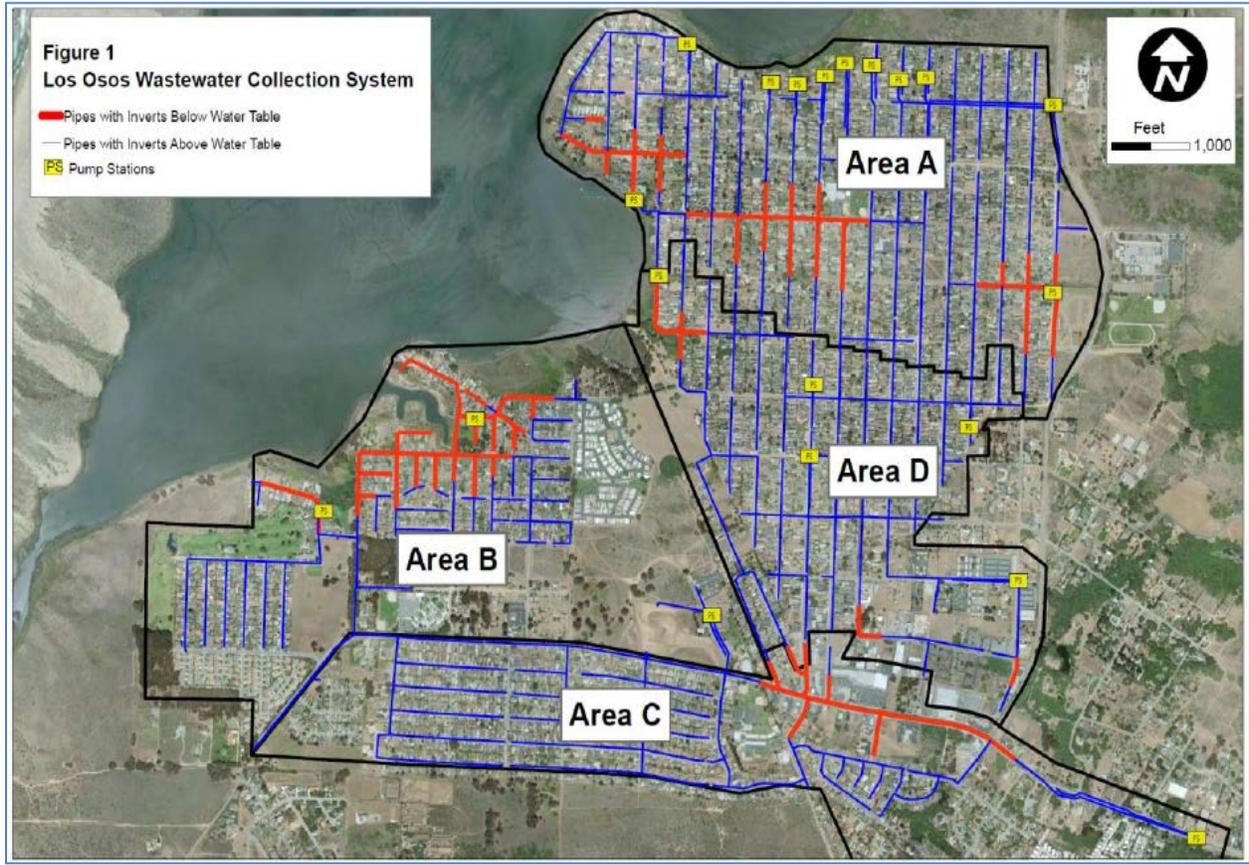


Water Recycling Facility Construction Update

The LOWRF consists of three main components: wastewater collection; wastewater treatment, which includes biosolids processing and disposal; as well as effluent disposal and reuse. The County began construction in May 2012 and continues to make progress on each component of the community wastewater treatment and recycled water system.

Collection System Construction: In May 2012, the County broke ground on the community system, which marked the beginning of collection system pipe installation. The County hired two construction contractors to install collection system piping in four separate construction areas (refer to Figure 3). The construction contract for pipe installation in Areas A & D was awarded to ARB, Inc. and the construction contract for pipe installation for Areas B & C was awarded to W.A. Rasic. The County awarded the construction contract pump station installation to Mountain Cascade. The pump station contract allows for 30 months of construction in order to allow for final installation after the pipeline area contracts are completed.

Figure 3: Los Osos Collection System Construction Areas



Since January 2013, the County has provided monthly construction updates. The updates include a summary, notable milestones, budget snapshots, activities completed within the previous month, activities proposed to be completed in the following month, and budget considerations for future actions. According to the August 2013 update, the County is proposing the following activities:

Table 1: ARB Proposed Activities

Proposed activities for ARB ¹
Continue pipeline installation progress through Area A.
Continue trench dewatering pipeline installation on 3 rd Street and El Moro.
Continue installing pump station as various locations.

1 – August 2013 Monthly Update

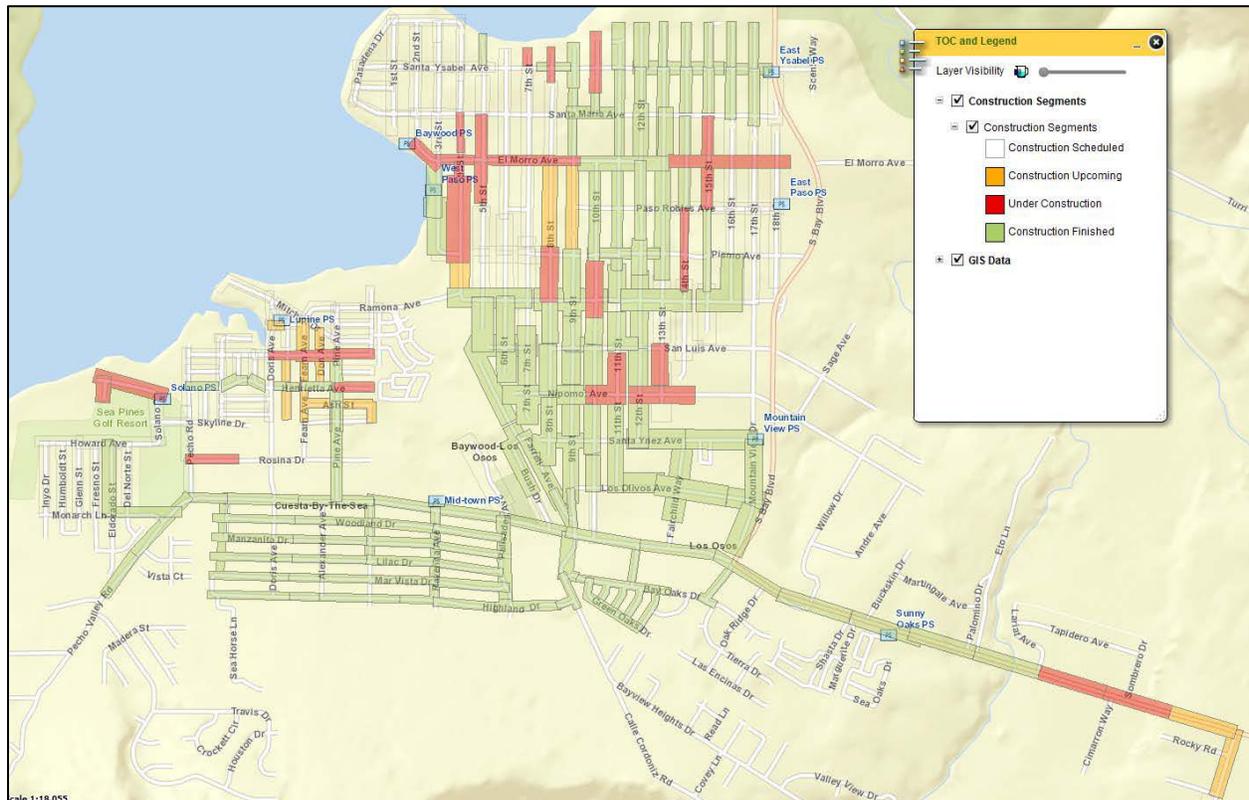
Table 2: W.A. Rasic Proposed Activities

Proposed activities for W.A. Rasic¹
Install sewer mains on Los Osos Valley Road continuing east from South Bay Boulevard to the planned water recycling facility.
Complete pavement restoration on Pine Avenue.
Install sewer main and laterals in the Cuesta-by-the-Sea area, including Henrietta Street and Binscarth.
Complete all pump station work at various locations

1 – August 2013 Monthly Update

The monthly updates can be found under “Recent News and Events” at the County Public Works Website [<http://www.slocounty.ca.gov/PW/LOWWP.htm>] and can also be found at the project website, Dig Los Osos [<http://www.diglososos.com/Home/>]. According to the August 2013 update, the project has reached the 50 percent completion point as a result of longer work hours. According to the construction schedule, both contractors are on target to complete the collection system project by July 2014. Figure 4 identifies the areas of the collection system that are either completed, under construction, or considered for future construction.

Figure 4: Collection System Areas of Work



Construction Dewatering – Collection system construction requires some dewatering of areas with high groundwater. In anticipation of dewatering activities, the County enrolled in the General Waiver for Specific Types of Discharges (Resolution No. R3-2008-0010 or General Waiver) for discharges to land as well as the General Construction Storm Water NPDES Permit (Construction Stormwater Permit) for discharges to surface water. In addition, the County developed a dewatering plan in March 2012 based on groundwater studies, the dewatering plan estimated shallow groundwater volumes, identified existing water quality, and established potential disposal options. The County's March 2012 dewatering plan can be found at the following internet link.

<http://www.slocounty.ca.gov/Assets/PW/Design+Division/300448.08.01.BC+-+Appendix+D.pdf>

Since the beginning of the project, dewatering discharges have averaged approximately 750,000 gallons per day. The total volume can be further broken down into two categories: discharges to land and discharges to surface water. The amount that has been discharged to land averages approximately 400,000 gallons per day at the Mid-Town site and approximately 150,000 gallons per day for construction use (i.e., dust suppression and compaction). An average of approximately 200,000 gallons per day have been discharged to surface waters (i.e., Solano Street and Lupine Street). The encountered dewatering volumes are significantly less than what was originally estimated in the March 2012 dewatering plan. This is mainly due to the low precipitation during the previous year. The following table presents dewatering volumes associated with the project to date.

Table 3: Dewatering Volumes

Dewatering Disposal Description	Gallons per day
Estimated dewatering flows in March 2012 Plan	Up to 7,100,000
Actual average flows since July 2012	750,000
Actual land disposal volumes since July 2012	550,000
Actual surface water disposal volumes since July 2012	200,000

See attachment 1, a letter from the County discussing dewatering, for more detail.

Land Disposal - The dewatering plan outlines four basic land disposal scenarios: 1) use for construction activities (e.g., dust suppression, soil compaction), 2) discharges of accumulated water to the Mid-Town Site, 3) dewatering disposal to the Broderson Leach Field in combination with construction uses and discharges to Mid-Town Site, and 4) discharges to agricultural areas located along Clack Avenue. However, the last land disposal option is to be used only if discharges exceed a specific volume. It should be noted that disposal options identified above are only used if the disposal locations are available and connected with necessary infrastructure. In anticipation for dewatering discharges to land, staff enrolled the County in the General Waiver on May 20, 2013 (refer to attachment 2). The letter allows discharges to land from dewatering activities provided that the County complies with the following conditions:

1. The project will be completed as described in the County's January 25, 2013 application for coverage.

2. The County shall submit copies of the detailed construction dewatering plans developed by the individual contractors to the Central Coast Water Board prior to any major dewatering activities.
3. The County shall coordinate with the contractors and develop a phased schedule of construction with the purpose of reducing the daily flow to the discharge locations.
4. Discharges to land shall not cause salinity or total dissolved solids (TDS) concentrations in underlying groundwater to exceed background conditions, as determined by representative water quality sampling at the discharge location.
5. The County shall comply with the prohibitions, recommendations, and specifications identified in Attachment A, Section A of the General Waiver.
6. Significant changes to the discharge volume, location, and/or quality shall be reported in writing to the Executive Officer immediately.
7. Water Board staff shall be allowed to visit the County's construction site to ensure continued compliance with these conditions.

Surface Water Disposal - During the course of the project, the County encountered situations where dewatering to land was not feasible. According to the May 27, 2011 Water Board letter to the County, the County must dispose of construction dewatering to land whenever feasible. Discharges to surface water are only acceptable after the Central Coast Water Board agrees that land disposal options are not feasible. In addition to the County's existing enrollment in the Construction Stormwater Permit, which allows dewatering discharges to surface water provided that the discharger develop best management practices, the County provided a letter on August 21, 2013 (refer to attachment 3) explaining that water would be discharged to surface water at certain areas as land disposal was not feasible at the time. In response, Water Board staff agreed that certain situations would create difficulty for land disposal discharges and that surface water discharges would be necessary. Staff issued a letter on October 7, 2013, which provided additional guidance for surface water discharges (refer to attachment 4). The letter also highlighted that the County continue its efforts to evaluate land disposal options (e.g., Broderson leach field discharges) and minimize discharges to surface water. According to the County, dewatering operations from the Solano Street lift station area ceased on October 14, 2013.

Water Quality - In compliance with both the General Waiver and the Construction Stormwater Permit, the County is monitoring water quality to better characterize the discharge and develop best management practices to address surface water or land discharges. Table 6 provides water quality analysis data ranges for areas specific to the discharges of accumulated groundwater.

Table 4: Water Quality Data Ranges

Parameter	Water Quality Objective	Data Range
Fecal Coliform	14 MPN/100ml median	0 – 4.5 MPN/100ml
Bacteria	No more than 10% exceed 43 MPN/100ml	

Turbidity	250 NTU (NAL)	0 – 60.6 NTU
	500 NTU (NEL)	
pH	6.5 to 8.5 (NAL) ¹	6.51 – 8.0 s.u.
	6.0 to 9.0 (NEL) ¹	
Ammonia	24 mg/L (as N) ¹	ND
Un-ionized Ammonia	0.025 mg/L (as N)	ND
Temperature	35 degrees C	17.50 – 22.50 degrees C
Salinity	20 g/kg	366 – 383 mg/L
Total Dissolved Solids	900 mg/L (Basin Plan)	270 – 554 mg/L

1 - If monitoring indicates a pH value above 7, then more stringent ammonia criteria may apply.

MPN/100ml – most probable number per 100 milliliters

NTUs - Nephelometric Turbidity Units

NAL – Numeric Action Level pursuant to the Construction Stormwater Permit

NEL – Numeric Effluent Limitation pursuant to the Construction Stormwater Permit

mg/L – milligrams per liter

g/kg – grams per kilogram

ND – non-detect

Collection System Schedule – According to County staff, both contractors are progressing through each construction area more quickly than anticipated as the contractors are not encountering as much shallow groundwater as initially anticipated. Table 7 identifies the estimated schedule for project completion:

Table 5: Estimated Schedule for Collection System

Anticipated Milestone	Estimated Time frame
Areas A & D Project Completion (ARB)	July 2014
Areas B & C Project Completion (W.A. Rasic)	July 2014
Lift Station Completion	February 2015

In addition, the County maintains a website to provide information regarding project status, answer frequently asked questions, provide monthly construction reports, identify traffic alerts, provide and interactive project GIS map, and other important information to the public. This information can be found at the following website:

<http://www.diglosos.com/Home/>

Water Recycling Facility Construction: As indicated in the adopted WDRs, the LOWRF will include bar screens, secondary treatment (parallel oxidation ditches), secondary clarification, tertiary filtration, and ultraviolet disinfection. The LOWRF will also include a septage receiving holding tank, which will only receive septage from existing septic systems in the service area. On October 8, 2013, the County advertised the request for proposals for the construction of the Los Osos Water Recycling Facility. Bids are due by November 21, 2013. A copy of the bid advertisement can be found at the following website:

http://www.slocounty.ca.gov/PW/Design_Division/Projects_Out_To_Bid/300448_08_02_-_OTB.htm

Table 6 identifies the estimated schedule for project completion:

Table 6: Estimated Schedule for LOWRF Construction

Anticipated Milestone	Estimated Time frame
Construction Bid Advertisement	October 2013
End of Construction Bid Submittals	November 21, 2013
Award Construction Contract	Later 2013
Begin Construction	Early 2014
Complete Construction	February 2016

Recycled Water Management Plan and Permitting

The County developed the Recycled Water Management Plan for the Los Osos Wastewater Project on November 11, 2011. The Recycled Water Management Plan identifies four schools, the Los Osos Community Park, six areas of irrigated agriculture, the Sea Pines Golf Course, and the Los Osos Valley Cemetery for seasonal recycled water irrigation. The County currently has an agreement with the school district for reuse at the four schools and will provide recycled water to its own facilities at the community park. The County has formalized participation agreements with owners of six agricultural parcels and has established delivery agreements for three of the six parcels. The County is continuing to pursue reuse agreements with the golf course and the cemetery. As other potential users of recycled water in the basin are identified, the County has additional capacity to serve those demands.

The County submitted a draft Title 22 Engineering Report to the California Department of Public Health on May 16, 2012. To date, the engineering report remains draft pending the final round of edits. Once the engineering report is finalized, the County will pursue enrollment in the General Waste Discharge Requirements for Landscape Irrigation Uses of Municipal Recycled Water (General Permit). Enrollment in the General Permit will require the submission of a Notice of Intent form, Title 22 Engineering Report, Operations and Maintenance Plan, and appropriate application fee. The General Permit is administered through the State Board and, therefore, application review, public noticing, and enrollment will be by State Water Board staff.

Los Osos Groundwater Basin Management

Domestic water for the Los Osos community is produced by three main water purveyors: Golden State Water Company (GSWC), Los Osos Community Services District (LOCS), and S and T Mutual Water Company (S&T). A smaller quantity of drinking and irrigation water comes from individual private wells, mostly in outlying rural areas. Under supervision of San Luis Obispo County Superior Court, the three main water purveyors and the county entered into an Interlocutory Stipulated Judgment (ISJ) on August 5, 2008. The ISJ requires the parties to cooperatively assess, develop, and implement a plan to address water rights and use in the Los Osos Basin. The County's participation in the ISJ working group allows coordinated efforts between the construction of the wastewater project and water management in Los Osos.

The ISJ requires the parties to collaboratively develop a groundwater basin management plan (Los Osos Basin Plan). The Los Osos Groundwater Basin Management Plan (or Los Osos

Basin Plan or LOBP) was publicly released on August 1, 2013. A copy of the LOBP can be found at the following website:

<http://www.slocountywater.org/site/Water%20Resources/Reports/pdf/Basin%20Plan%20Public%20Review%20Draft%208.1.2013.pdf>

The LOBP includes immediate and continuing goals to manage the basin; more specifically, to halt seawater intrusion and provide sustainable water supplies for existing and future water demand in the Los Osos community. In addition, the LOBP describes current baseline groundwater conditions (i.e., water quantity and quality); describes the legal and regulatory framework surrounding management of the basin (i.e., ISJ); and identifies current challenges facing the purveyors to cooperatively manage the basin. The LOBP further identifies various management programs for implementation, such as the Urban Water Use Efficiency Program, Basin Infrastructure program, the Water Reinvestment Program and Supplemental Water Program, Well Head Protection Program, and a myriad of other programs that are intended to achieve long-term sustainable groundwater basin management.

In order to better understand the efficacy of these programs or combinations of these programs, the LOBP identifies basin metrics to assess the status of nitrate concentrations and seawater intrusion in the Basin over time. The LOBP further breaks the basin metrics into four basic categories: 1) nitrate metrics – measure nitrate concentrations in the upper basin over time, 2) water level metrics – measure basin levels to evaluate freshwater pressure gradients, 3) chloride metrics – measure chloride concentrations in the lower basin over time, and 4) basin management metrics – measure the overall basin yield over time. The LOBP also provides discussions of programs recommended for immediate implementation and continued implementation as well as program funding.

Central Coast Water Board staff reviewed the Los Osos Basin Plan and provided comments to the ISJ Parties on October 22, 2013 (refer to attachment 5).

ATTACHMENTS:

1. November 7, 2013 Dewatering Update
2. May 20, 2013 General Waiver Enrollment Letter
3. August 21, 2013 SLO County Response Letter
4. October 7, 2013 Central Coast Water Board Dewatering Evaluation Letter
5. October 22, 2013 Los Osos Basin Plan Comments

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