California Regional Water Quality Control Board
Santa Ana Region

January 17, 2003

ITEM: 7

SUBJECT: Waste Discharge Requirements for the SE Corporation, Inc., Dos Lagos Project, Temescal Canyon Road south of Cajalco Road, Riverside County – Order No. R8-2003-0015

DISCUSSION:

The SE Corporation, Inc. (hereinafter, discharger) will develop the proposed Dos Lagos Project. The proposed Dos Lagos Project is a mixed-use development encompassing approximately 542 acres on both sides of Temescal Creek, Reach 2 and both sides of Temescal Canyon Road, south of Cajalco Road near Corona, Riverside County (N 33.8^{o}, W 117.5^{o}) (Attachment A). A golf course, driving range, clubhouse, and hotel complex will be built on an estimated 181 acres in the eastern portion of the development, along with residences (21 acres), a business park/office complex (14 acres), and an industrial research and development area (12.5 acres).

In the western portion of the site, the discharger proposes to fill two former silica sand mining pits that now support wetland/riparian habitat, fed largely by groundwater (Attachment B). No dredging will occur. The discharger proposes to place clean native soil in the pit bottoms in order to raise the bottom grade approximately 40 feet. This will entail a one-time placement of approximately 200,000 cubic yards of fill. At this grade, liners for the lakes will be constructed of either earthen or geosynthetic material. The liners are intended to minimize infiltration to the water table and maintain stable water levels in the lakes. The new grade level will constitute the foundation of two artificial lakes (Dos Lagos) to be constructed as the focal point of a "Lakeside Commercial Village."

The discharger filed a Notice of Intent for coverage of the project under the State Board's General Permit for Storm Water Discharges Associated with Construction Activities, Order No. 99-08-DWQ. In November 2001, Board staff issued a Clean Water Act Section 401 water quality standards certification for this project. However, pursuant to a court decision, the fill of the sand mining pits is no longer subject to the 401 certification. The proposed waste discharge requirements address the fill of the former silica sand

mining pits[1]. The discharger has proposed an extensive program of mitigation measures to address the potential water quality and beneficial use impacts of the project, including the fill of the silica sand mining pits (see Attachment A to the proposed Order). The proposed Order requires the discharger to implement this program.

The U.S. Fish and Wildlife Service issued a Biological Opinion regarding threatened or endangered species specific to the area of the silica sand pits on October 23, 2001. No sensitive species were found.

The discharge of fill to the silica sand mining pits overlies the Upper Temescal I Groundwater Subbasin, the beneficial uses of which include: municipal and domestic supply; agricultural supply; industrial process supply; and industrial service supply.

These requirements should be adequate to protect these beneficial uses.

RECOMMENDATION:

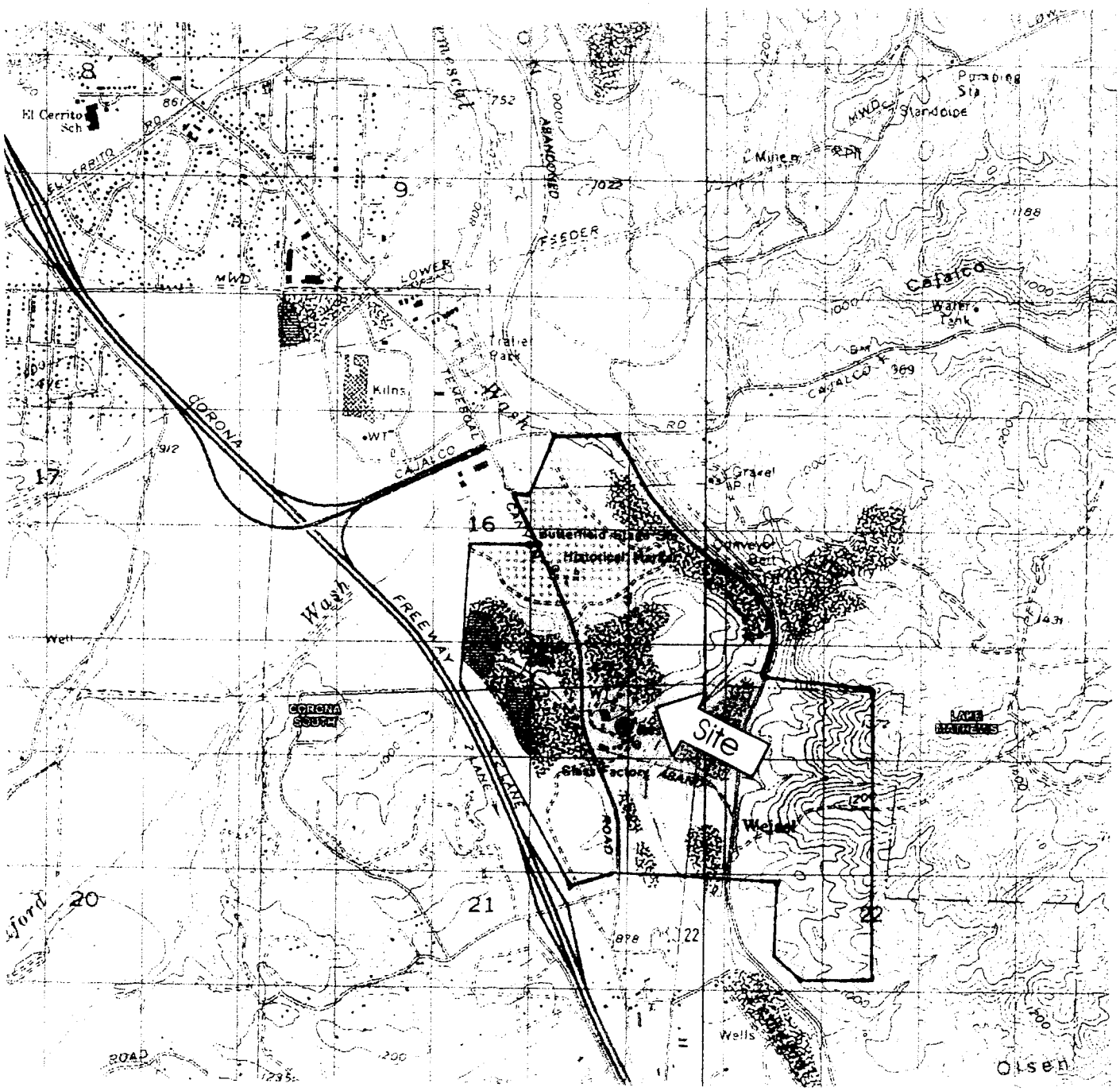
Adopt Order No. R8-2003-0015 as presented.

Comments were solicited from the following agencies and parties:

U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch – Robert Smith
U.S. Fish and Wildlife Service, Carlsbad – Loren Hays
State Water Resources Control Board, Office of the Chief Counsel – Jorge Leon
State Water Resources Control Board, Division of Water Quality – Jim Maughan
State Water Resources Control Board, Watershed Projects Support Section – William R. Campbell
State Department of Health Services, San Diego – Steve Williams
State Department of Water Resources - Glendale
State Department of Fish and Game, Los Alamitos – Juan Hernandez
Riverside County Flood Control – Mark Wills
Riverside County Environmental Health Services – Sam Martinez
City of Corona Planning Department
Santa Ana Watershed Project Authority – Joseph Grindstaff
Santa Ana River Dischargers Association – Joseph Zoba
Orange County Coastkeeper – Garry Brown
Lawyers for Clean Water C/c San Francisco Baykeeper

[1] The previously issued 401 certification remains in full force and effect, except it no longer applies to the waste discharge activity addressed by these WDRs.

Attachment A – Index Map
Staff Report, Order No. R8-2003-0015
Waste Discharge Requirements, Dos Lagos Development
Temescal Canyon, Riverside County



REFERENCE: USGS 7.5-MINUTE SERIES (TOPOGRAPHIC)
CORONA SOUTH, CALIFORNIA QUADRANGLE MAP
PHOTOREVISED 1988

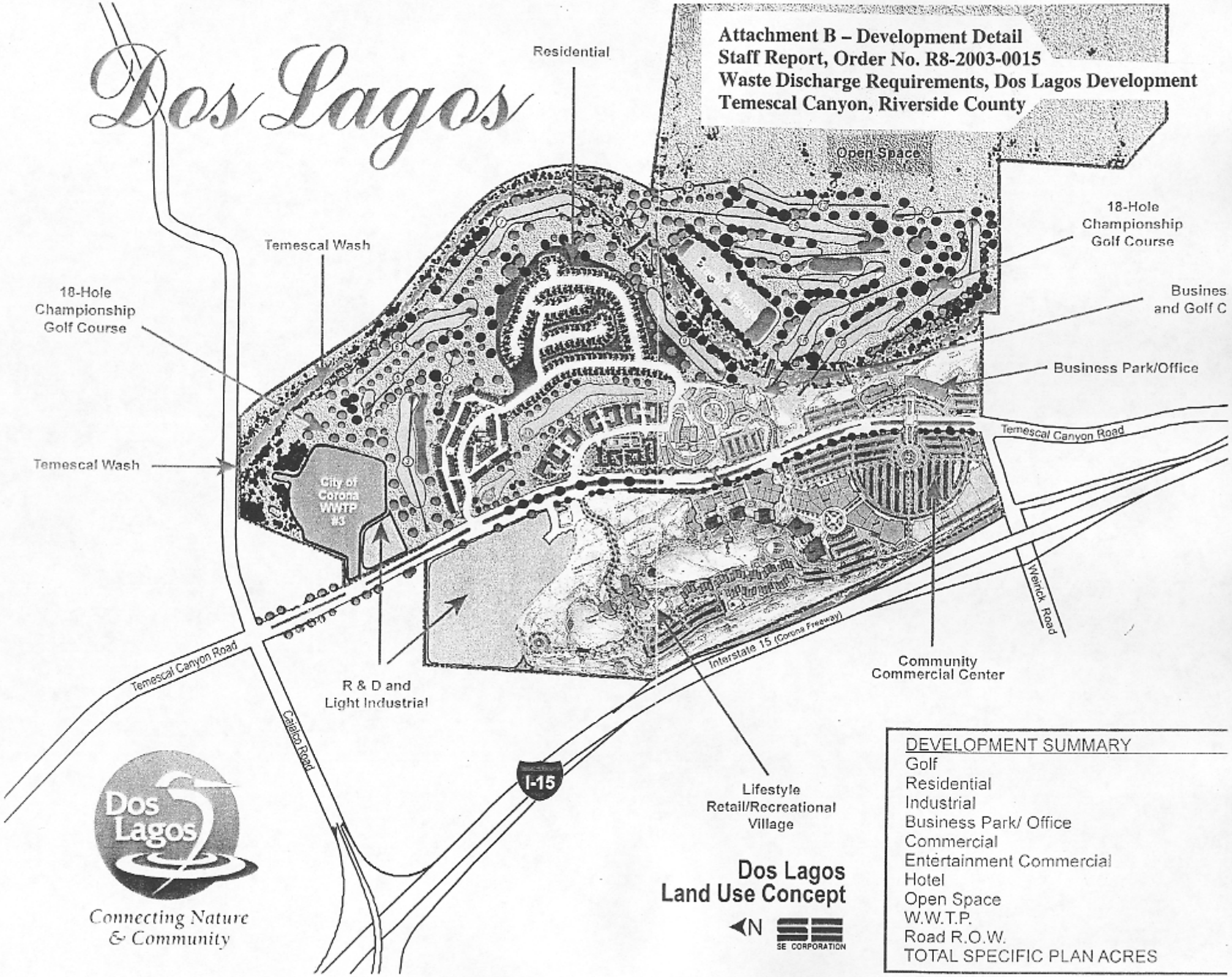
SCALE:
1 INCH = 2000 FEET

ZEISER KLING Consultants, Inc.

Site Index Map
PROPOSED DOS LAGOS
8560 Weirick Road
Corona, California

FIGURE 1
SITE VICINITY and LOCATION MAP
December 2002

Attachment B – Development Detail
Staff Report, Order No. R8-2003-0015
Waste Discharge Requirements, Dos Lagos Development
Temescal Canyon, Riverside County



DEVELOPMENT SUMMARY
Golf
Residential
Industrial
Business Park/ Office
Commercial
Entertainment Commercial
Hotel
Open Space
W.W.T.P.
Road R.O.W.
TOTAL SPECIFIC PLAN ACRES

California Regional Water Quality Control Board
Santa Ana Region

Order No. R8-2003-0015

Waste Discharge Requirements

for

SE Corporation, Inc.
Dos Lagos Project

Temescal Canyon Road at Cajalco Road, Riverside County

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter Board), finds that:

1. The SE Corporation, Inc. (hereinafter, discharger) proposed to develop the Dos Lagos Project. The proposed Dos Lagos Project is a mixed-use development encompassing approximately 542 acres on both sides of Temescal Creek, Reach 2 and both sides of Temescal Canyon Road, south of Cajalco Road near Corona, Riverside County (N 33.8^{o}, W 117.5^{o}). A golf course, driving range, clubhouse, and hotel complex will be built on an estimated 181 acres in the eastern portion of the development, along with residences (21 acres), a business park/office complex (14 acres), and an industrial research and development area (12.5 acres). The site of the City of Corona Wastewater Treatment Plant No. 3 (10.7 acres) is within the project development area.

2. In the western portion of the site, the discharger proposes to fill two former silica sand mining pits that now support wetland/riparian habitat, fed largely by groundwater. No dredging will occur. The discharger proposes to place clean native soil in the pit bottoms in order to raise the bottom grade approximately 40 feet. This will entail the one-time placement of approximately 200,000 cubic yards of fill. At this grade, liners for the lakes will be constructed of either earthen or geosynthetic material. The liners are intended to minimize infiltration to the water table and maintain stable water levels in the lakes. The new grade level will constitute the foundation of two artificial lakes (Dos Lagos) to be constructed as the focal point of a "Lakeside Commercial Village."

TENTATIVE

3. In compliance with the California Environmental Quality Act, an environmental impact report (EIR) for the Dos Lagos Specific Plan, with accompanying mitigation measures, was certified by the City of Corona Planning Department on June 21, 2002. The proposed waste discharge requirements address the fill of the former silica sand pits. The discharger has proposed an extensive program of mitigation measures to address the potential water quality and beneficial use impacts of the project, including the fill of the silica sand pits (see Attachment "A" [Ponds (Open water) and immediate area] to this proposed Order). The proposed Order requires the discharger to implement this program.

4. A CWA Section 401 water quality certification was issued for this project. The waste discharge at the project site that is the subject of these WDRs is no longer subject to the previously issued 401 certification. The previously issued 401 certification remains in full force and effect, except it no longer applies to the waste discharge activity addressed by these WDRs.

5. The U.S. Fish and Wildlife Service issued a Biological Opinion regarding threatened or endangered species specific to the area of the silica sand pits on October 23, 2001. No sensitive species were found.

6. A Water Quality Control Plan (Basin Plan) became effective on January 24, 1995. The Basin Plan identifies water quality objectives and beneficial uses of waters in the Santa Ana Region. The requirements contained in this Order are necessary to implement the Basin Plan.

7. The silica sand pits overlie the Upper Temescal I Groundwater Subbasin, the beneficial uses of which include:

   a. Municipal and domestic supply,
   b. Agricultural supply,
   c. Industrial process supply, and
   d. Industrial service supply.

8. This Order regulates the discharge of fill material to waters of the State. The discharger filed a Notice of Intent for coverage of the project as a whole under the State Board's General Permit for Storm Water Discharges Associated with Construction Activities, Order No. 99-08-DWQ.

9. Waste Discharge Requirements (WDRs) are necessary to address impacts of the fill of waters of the State and to meet the objectives of the State Wetlands Conservation Policy (Executive Order W-59-93).

10. The goals of the California Wetlands Conservation Policy (Executive Order W-59-93, signed August 23, 1993) include ensuring "no overall loss" and achieving a "…long-term net gain in the quantity, quality, and permanence of wetland acreage and values…." Senate Concurrent Resolution No. 28 states that "[i]t is the intent of the legislature to preserve, protect, restore, and enhance California's wetlands and the multiple resources which depend on them for benefit of the people of the State." Section 13142.5 of the CWC requires that the "[h]ighest priority shall be given to improving or eliminating discharges that adversely affect…wetlands, estuaries, and other biologically sensitive areas."

11. The Regional Board has considered antidegradation pursuant to State Board Resolution No. 68-16 and finds that the discharge is consistent with those provisions.

12. The Board has notified the discharger and other interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity for public hearing and opportunity to submit their written views and recommendations.

13. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. DISCHARGE SPECIFICATIONS:

1. No activities associated with the project shall cause or threaten to cause a nuisance or pollution as defined in Section 13050 of the California Water Code.

2. The discharge of any substance in concentrations toxic to animal or plant life is prohibited.

3. The groundwater in the vicinity of the project shall not be degraded as a result of the project activities or placement of fill for the project.

4. The discharge of fill materials shall be limited to inert materials, as defined in Section 20230, Division 2, Title 27. The discharge of fill material other than native soil shall be only with the prior approval of the Executive Officer.

B. DISCHARGE PROHIBITIONS:

1. The direct discharge of wastes, including rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plains, is prohibited.

2. The discharge of floating oil or other floating materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.

3. The discharge of silt, sand, clay, or other earthen materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.

4. Discharges to surface waters of wastes or pollutants which are not otherwise regulated by a separate National Pollutant Elimination System (NPDES) permit, is prohibited.

C. PROVISIONS:

1. The discharger shall comply with M&RP No. R8-2003-0015. This monitoring and reporting program may be modified by the Executive Officer at any time during the term of this Order to include an increase in the number of parameters to be monitored, the frequency of the monitoring or the number and size of samples to be collected. Any such modifications may be reduced back to the levels specified in the original monitoring and reporting program at the discretion of the Executive Officer.

2. The discharger shall implement the mitigation plan (see Attachment "A" [Ponds (Open water) and immediate area] of this Order). Any changes to the mitigation plan shall be implemented with prior approval from the Executive Officer of the Regional Board.

3. The discharger shall maintain a copy of this Order at the site so that it is available to site operating personnel at all times. Key operating personnel shall be familiar with its content.

4. The discharger shall remove from the site any waste or fill material found to contain substances that may have a deleterious effect on water quality, and dispose of unacceptable wastes in a manner acceptable to the Executive Officer.

5. The discharger must comply with all of the requirements of this Order. Any violation of this Order constitutes a violation of the California Water Code and may constitute a violation of the CWA and its regulations, and is grounds for enforcement action, termination of this Order, revocation and re-issuance of this Order, denial of an application for re-issuance of this Order; or a combination thereof.

6. The discharger shall take all reasonable steps to minimize or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment.

7. The provisions of this Order are severable, and if any provision of this Order, or the application of any provisions of this Order to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Order shall not be affected thereby.

8. The filing of a request by the discharger for modification, revocation and re-issuance, or termination of this Order or a notification of planned changes or anticipated noncompliance does not stay any requirements of this Order.

9. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from liabilities under federal, state, or local laws, nor guarantee the discharger a capacity right in the receiving waters.

10. This Order does not convey any property rights of any sort, or any exclusive privilege.

11. This Order is not transferable to any person except after notice to, and approval by the Executive Officer. The Regional Board may require modification or revocation and re-issuance of this Order to change the name of the discharger.

12. In the event of any change in control or ownership of land or waste discharge facility presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to the Regional Board.

13. The Regional Board and other authorized representatives shall be allowed:

    a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the requirements of this Order;

    b. Access to copy any records that are kept under the requirements of this Order;

c. To inspect any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and

d. To photograph, sample and monitor for the purpose of assuring compliance with this Order.

I, Gerard J. Thibeault, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on January 17, 2003.

_____
Gerard J. Thibeault
Executive Officer

DRAFT IMPACT/MITIGATION MATRIX

Area	Corps* Existing	Corps Impacts	CDFG Existing	CDFG Impacts	New Water Board Impacts	Impacts to be Mitigated	Description of Impact Mitigation
Temescal Wash, Segment 1	2.0	0.0	7.1	0.3	0.0	0.3	(1) Restoration, Temescal Wash
Temescal Wash, Segment 2	0.7	0.2	1.3	0.2	0.0	0.2	(1) Restoration, Temescal Wash
Temescal Wash, Segment 3	2.5	0.3	8.5	1.0	0.0	1.0	(1) Restoration, Temescal Wash
Ephemeral Drainage 1	0.2	0.0	0.3	0.0	0.0	0.0	No Impacts
Ephemeral Drainage 2	0.4	0.0	0.5	0.0	0.0	0.0	No Impacts
Ephemeral Drainage 3	0.1	0.1	0.1	0.1	0.0	1.0	(1) Restoration, Temescal Wash
Ephemeral Drainage 4	0.1	0.1	0.1	0.1	0.0	0.1	(1) Restoration, Temescal Wash
Ponds (Open water) and immediate area *Note: water levels at historical high following exceptional rain event 11.2 acres; existing conditions 2.7 acres.*	11.8*	4.2*	0.0	0.0	7.6	11.8	(1) Restoration, Temescal Wash (4.2) (2) Wetland Creation, Temescal (1.7) (3) New Lake Creation (6.0 ac) (4) Restored OS Drainage (0.5 ac) (5) Creation of Golf Ponds (2.0 ac) (5) Riparian Planting (1.0 ac) (6) Other: a. Creation of 4.8 acre Flood Control Delta for Bedford Wash with Riparian Planting. b. Use of Irrigation Controls for golf irrigation. c. BMP Wet Basins d. Groundwater benefit
Fringe Wetland (around ponds)	1.0	1.0	0.0	0.0	0.0	1.0	(1) Restoration, Temescal Wash
Adjacent Wetland 1	0.1	0.1	0.0	0.0	0.0	0.1	(1) Restoration, Temescal Wash
Adjacent Wetland 2	0.1	0.1	0.0	0.0	0.0	0.1	(1) Restoration, Temescal Wash
Adjacent Wetland 3	1.2	1.2	0.0	0.0	0.0	1.2	(1) Restoration, Temescal Wash
Total Jurisdictional	***20.2***	***7.3***	***17.9***	***1.7***	***7.6***	***15.8***	***28.8 ac of total proposed mitigation.***

* Note: Since the issuance of 404 and 401 Permits, these bodies no longer fall under U.S. Army Corps or USFWS jurisdiction. Original area estimates for ponds were in error (conservatively) but retained herein for consistency.

DRAFT IMPACT/MITIGATION MATRIX

(1) **Restoration, Temescal Wash (12.8ac)** – To mitigate for impacts to wetlands and waters of the U.S. lost as a result of project development, wetland and riparian restoration will include the removal of the extensive stands of arundo on the entire reach within the property limits in Temescal Wash ***(approximately 12.8 acres)*** and a moderate amount of replanting in those area. Arundo and other exotic removal will particularly be focused in the southern part of the wash.

In addition, the slopes of the banks will be recontoured when necessary for bank stabilization and to accommodate development. The banks will be re-planted and seeded with native vegetation forming a natural buffer between the golf course and the wash. Restoration activities will commence following the end of the rainy season. A brown-headed cowbird trapping program will be established and will continue for 5 years on-site to increase the likelihood of vireo and flycatcher returning to use this habitat. A bull-frog eradication program will be initiated within the wash and will continue for 5 years. Active planting of riparian vegetation will be required in order to promote rapid establishment of vegetation for use by these two species, as well as to provide competitive exclusion of arundo remnants.

(2) **Wetland Creation, Temescal (1.7ac)** – 1.7 acres of wetland area will be created within the 12.8 acre area of Temescal Wash.

(3) **New Lake Creation (6.0 ac)** – Two new lakes approximately 2 to 4 acres each will be created as mitigation for the ponds (open water) area. Currently, the existing daylighted groundwater features (one of which has dried up) have negative effects on the quality of the aquifer. The proposed development includes substantially raising the elevations and constructing new water features along with landscaping and irrigation that will contribute to groundwater recharge and restore the integrity of the aquifer.

(4) **Restored OS Drainage (0.5 ac)** – Approximately .5 acres of open space drainage will be restored to conduct drainage from the 135-acre Open Space hillside to Temescal Canyon Wash. In its current configuration it results in the transport of sediments to Temescal Canyon Wash. The restoration process will result in a "polishing" of the drainage water by use of vegetative swales prior to its entrance to Temescal Canyon Wash.

(5) **Creation of Golf Ponds (2.0 ac) and Riparian Planting (1.0 ac)** – Two golf ponds (detention facilities) approximately 1 acres each, will be created on the golf course in proximity to Temescal Wash and Open Space Hillside area. Fifty percent of the perimeter of each golf lake will include riparian planting.

DRAFT IMPACT/MITIGATION MATRIX

(6) **Other:**

a. **Creation of Flood Control Delta for Bedford Wash with Riparian Planting (4.8ac)** – this is part of an effort currently underway to address flooding, siltation and habitat issues along Bedford Canyon Wash. Bedford Canyon runs west to east cutting across Temescal Canyon Road, then, conjuncts with Temescal Canyon Wash to the east. This Wash has been relocated twice previously, its original location was north of Cajalco Road. Restoration efforts will be conducted by SE Corporation in partnership with the Riverside–Corona Resource Conservation District (RCRCD), SAWPA and the City of Corona. Restoration efforts will include a bridge over Bedford Canyon (currently the Wash closes Temescal Canyon Road during major storm events), and the creation of a Delta and Riparian creation area near the confluence of Temescal Canyon Wash and Bedford Canyon Wash.

b. **Use of irrigation controls for golf course** – Design and operation of the irrigation systems for the golf courses will implement the use of intelligent systems to control water application to suit measured soil moisture requirements. Typically these control systems include either weather or soil moisture measurements to determine irrigation needs. Sophisticated weather stations that continuously measure solar radiation, temperature and rainfall can be automated to calculate water needs. Direct methods of measuring moisture levels directly in soil, including tensiometers, time domain reflectometry, or other similar soil moisture sensors, may be utilized. Either system, or both, will be employed to limit over-watering that leads to non-storm water run off.

c. **BMP Wet Basins –** to address water quality impacts due to run off of storm water in the completed project, approximately 16 wet basins are proposed. Wet basins include an unvegetated forebay and a pond with rooted wetland vegetation along the perimeter. The forebay provides a pretreatment system for collection of sediment. The forebay is typically not planted to allow mechanical removal of accumulated sediment. The pond attenuates dissolved pollutants such as nutrients or metals. These pollutants are removed by physical adsorption to suspended or fine bottom sediments and uptake by aquatic plants. These basins provide additional passive recreational and aesthetic value to the area. Most of the wet basins are planned as final treatment within the major drainage conveyance swales prior to discharge into Temescal Wash.

d. **Groundwater benefit** – The current pit area is typically in a loss condition with respect to groundwater – primarily by daylighting or exposing the groundwater surface to evapotranspirative effects present in the pit by the excavation configuration and vegetation interacting with the climate. These losses are, on average based on the study, substantially greater than the gains from even exceptional events. The lakes and groundwater of the Silverado Pit Basin are also being strongly affected by the ongoing withdrawals to the adjacent "Orchards/Flats" basin associated with the City Waste Water Treatment Plant. This has caused an additional significant drop in groundwater of the Silverado Pit basin and is believed

DRAFT IMPACT/MITIGATION MATRIX

responsible for the loss of North Lake. The losses are over an order of magnitude greater than the gains from normal seasonal events and runoff (sourced primarily from the adjacent I-15 Freeway).

Under the proposed future conditions, a positive net influx to groundwater will occur, once the pit area is final graded and developed, and landscaping and irrigation is established. The proposed development will include new lined lakes of similar surficial character to that existing, and of 2 to 5 acres in area each. The amount of influx potential is a positive factor that when combined with the losses prevented by isolating and protecting the groundwater from exposure and attack through the proposed grading, a clear improvement of groundwater character and quantity is achieved. The proposed development of the pit area will result in a significantly improved condition over that existing, from a hydrogeologic and overall water quality perspective.

California Regional Water Quality Control Board
Santa Ana Region

Monitoring and Reporting Program No. R8-2003-0015

for
Dos Lagos Project
SE Corporation, Inc.
Riverside County

A. GENERAL MONITORING REQUIREMENTS:

1. The location(s) of where fill materials were obtained/taken shall be recorded in a permanent log.

2. The volumes of fill material shall be estimated and recorded on a weekly basis.

B. REPORTING:

1. A monitoring report shall be submitted on the 30th day of each month and shall include all information collected in accordance with this monitoring and reporting program for the previous month, including:

   a. The estimated volume of fill material, in cubic yards, during the previous month. The volume hauled away for disposal shall also be reported. If no fill material is used during the reporting period, a report to that effect shall be submitted in lieu of a monitoring report.

   b. For every item where the requirements of the Order and this monitoring and reporting program are not met, the discharger shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time and submit a timetable for correction.

2. By September 30 of each year, an annual report discussing the following shall be submitted:

   a. Description of project components completed within the year.

   b. Mitigation measures that were completed during the previous year, including as built plans; schedule for initiation/completion of remaining mitigation measures.

TENTATIVE

c. Documentation of the success of all (20.2 acres) mitigation annually (including, but not limited to percent coverage of vegetation, are target functions and values being met, species diversity and abundance, whether supplemental irrigation was needed, etc.), for a minimum of 5 years or until target functions and values are met.

d. Description of any maintenance activities occurring within any mitigation areas.

e. Project Mitigation and Monitoring Management Plan changes that were made during the year.

3. Quarterly (January, April, July and September) status reports of the project shall be submitted.

4. All reports shall be signed by a responsible officer or duly authorized representative of the discharger and shall be submitted under penalty of perjury.

Ordered by _____
Gerard J. Thibeault
Executive Officer

January 17, 2003

ITEM NO. 7

January 17, 2003

ERRATA SHEET

CHANGES TO ORDER NO. R8-2003-0015

(Language added is shaded)
(Language deleted is ~~struck out~~)

1. Order No. R8-2003-0015, Page 3 of 6, Finding No. 10, make the following changes:

   10. The goals of the California Wetlands Conservation Policy (Executive Order W-59-93, signed August 23, 1993) include ensuring "no overall loss" and achieving a "…long-term net gain in the quantity, quality, and permanence of wetland acreage and values…." Senate Concurrent Resolution No. 28 states that "[i]t is the intent of the legislature to preserve, protect, restore, and enhance California's wetlands and the multiple resources which depend on them for benefit of the people of the State." ~~Section 13142.5 of the CWC requires that the "[h]ighest priority shall be given to improving or eliminating discharges that adversely affect…wetlands, estuaries, and other biologically sensitive areas."~~

2. Order No. R8-2003-0015, Attachment "A", make changes shown in the Attachment "A" as attached herein:

DRAFT IMPACT/MITIGATION MATRIX

Area	Corps* Existing	Corps Impacts	CDFG Existing	CDFG Impacts	New Water Board Impacts	Impacts to be Mitigated	Description of Impact Mitigation
Temescal Wash, Segment 1	2.0	0.0	7.1	0.3	0.0	0.3	(1) Restoration, Temescal Wash
Temescal Wash, Segment 2	0.7	0.2	1.3	0.2	0.0	0.2	(1) Restoration, Temescal Wash
Temescal Wash, Segment 3	2.5	0.3	8.5	1.0	0.0	1.0	(1) Restoration, Temescal Wash
Ephemeral Drainage 1	0.2	0.0	0.3	0.0	0.0	0.0	No Impacts
Ephemeral Drainage 2	0.4	0.0	0.5	0.0	0.0	0.0	No Impacts
Ephemeral Drainage 3	0.1	0.1	0.1	0.1	0.0	1.0	(1) Restoration, Temescal Wash
Ephemeral Drainage 4	0.1	0.1	0.1	0.1	0.0	0.1	(1) Restoration, Temescal Wash
Ponds (Open water) and immediate area ~~*Note: water levels at historical high following exceptional rain event 11.2 acres; existing conditions 2.7 acres.*~~	11.8*	4.2*	0.0	0.0	7.6	11.8	(1) Restoration, Temescal Wash ~~(4.2)~~ **[4.2 acres per existing 401/404 permit plus 4.5 acres towards mitigating new impacts]** (2) Wetland Creation, Temescal (1.7) (3) New Lake Creation ~~(6.0 ac)~~ **4.0 ac]** (4) Restored OS Drainage (0.5 ac) (5) Creation of Golf Ponds (2.0 ac) (5) Riparian Planting (1.0 ac) (6) Other: a. Creation of **1.3 acre** ~~4.8 acre~~ Flood Control Delta for Bedford Wash ~~with Riparian Planting~~. b. Use of Irrigation Controls for golf irrigation. c. BMP Wet Basins d. Groundwater benefit
Fringe Wetland (around ponds)	1.0	1.0	0.0	0.0	0.0	1.0	(1) Restoration, Temescal Wash
Adjacent Wetland 1	0.1	0.1	0.0	0.0	0.0	0.1	(1) Restoration, Temescal Wash
Adjacent Wetland 2	0.1	0.1	0.0	0.0	0.0	0.1	(1) Restoration, Temescal Wash
Adjacent Wetland 3	1.2	1.2	0.0	0.0	0.0	1.2	(1) Restoration, Temescal Wash
Total Jurisdictional	***20.2***	***7.3***	***17.9***	***1.7***	***7.6***	***15.8~~9~~***	***~~28.8~~ 23.3 ac of total proposed mitigation.***

* Note: Since the issuance of 404 and 401 Permits, these bodies no longer fall under U.S. Army Corps or USFWS jurisdiction. Original area estimates for ponds were in error (conservatively) but retained herein for consistency.

DRAFT IMPACT/MITIGATION MATRIX

(1) **Restoration, Temescal Wash (12.8ac)** – To mitigate for impacts to wetlands and waters of the U.S. lost as a result of project development, wetland and riparian restoration will include the removal of the extensive stands of arundo on the entire reach within the property limits in Temescal Wash ***(approximately 12.8 acres)*** and a moderate amount of replanting in those area. Arundo and other exotic removal will particularly be focused in the southern part of the wash.

In addition, the slopes of the banks will be recontoured when necessary for bank stabilization and to accommodate development. The banks will be re-planted and seeded with native vegetation forming a natural buffer between the golf course and the wash. Restoration activities will commence following the end of the rainy season. A brown-headed cowbird trapping program will be established and will continue for 5 years on-site to increase the likelihood of vireo and flycatcher returning to use this habitat. A bull-frog eradication program will be initiated within the wash and will continue for 5 years. Active planting of riparian vegetation will be required in order to promote rapid establishment of vegetation for use by these two species, as well as to provide competitive exclusion of arundo remnants.

(2) **Wetland Creation, Temescal (1.7ac)** – 1.7 acres of wetland area will be created within the 12.8 acre area of Temescal Wash.

(3) **New Lake Creation (~~6.0~~ 4.0 ac)** – Two new lakes approximately **two** ~~2 to 4~~ acres each will be created as mitigation for the ponds (open water) area. Currently, the existing daylighted groundwater features (one of which has dried up) have negative effects on the quality of the aquifer. The proposed development includes substantially raising the elevations and constructing new water features along with landscaping and irrigation that will contribute to groundwater recharge and restore the integrity of the aquifer. **The final designs for these lakes are not available, and reduced lake acreage may be required. If the new lakes are reduced in size, the Golf Ponds (Item 5, below) will be increased in size by the same acreage, subject to the approval of the Executive Officer.**

(4) **Restored OS Drainage (0.5 ac)** – Approximately .5 acres of open space drainage will be restored to conduct drainage from the 135-acre Open Space hillside to Temescal Canyon Wash. In its current configuration it results in the transport of sediments to Temescal Canyon Wash. The restoration process will result in a "polishing" of the drainage water by use of vegetative swales prior to its entrance to Temescal Canyon Wash. **Restoration within the OS drainage will utilize geomorphic principles, and bio-engineering to return the drainage to pre-disturbed conditions. The restoration shall not be impacted by either the design of the golf course, or the operation of the golf course, which will be located on both sides of the OS drainage.**

(5) **Creation of Golf Ponds (2.0 ac) and Riparian Planting (1.0 ac)** – Two golf ponds (detention facilities) approximately 1 acres each, will be created on the golf course in proximity to Temescal Wash and Open Space Hillside area. Fifty percent of the perimeter of each golf lake will include riparian planting.

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(6) **Other:**

a. **Creation of Flood Control Delta for Bedford Wash with Riparian Planting (~~4.8~~ 1.3 ac)** – This is part of an effort currently underway to address flooding, siltation and habitat issues along Bedford Canyon Wash. Bedford Canyon runs west to east cutting across Temescal Canyon Road, then, conjuncts with Temescal Canyon Wash to the east. This Wash has been relocated twice previously, its original location was north of Cajalco Road. Restoration efforts will be conducted by SE Corporation in partnership with the Riverside–Corona Resource Conservation District (RCRCD), SAWPA and the City of Corona. ~~Restoration efforts will include a bridge over Bedford Canyon (currently the Wash closes Temescal Canyon Road during major storm events), and the creation of a Delta and Riparian creation area near the confluence of Temescal Canyon Wash and Bedford Canyon Wash.~~ **Restoration concepts are being developed at the time of the issuance of the Waste Discharge Requirements. SE Corporation will attempt to incorporate appropriate flood plain creation as mitigation for the lakes. As the project design is still conceptual, alternative mitigation areas, subject to the approval of the Executive Officer, may need to be identified in the future if mitigation credit as part of the flood plain creation is not possible.**

b. **Use of irrigation controls for golf course** – Design and operation of the irrigation systems for the golf courses will implement the use of intelligent systems to control water application to suit measured soil moisture requirements. Typically these control systems include either weather or soil moisture measurements to determine irrigation needs. Sophisticated weather stations that continuously measure solar radiation, temperature and rainfall can be automated to calculate water needs. Direct methods of measuring moisture levels directly in soil, including tensiometers, time domain reflectometry, or other similar soil moisture sensors, may be utilized. Either system, or both, will be employed to limit over-watering that leads to non-storm water run off.

c. **BMP Wet Basins –** to address water quality impacts due to run off of storm water in the completed project, approximately 16 wet basins are proposed. Wet basins include an unvegetated forebay and a pond with rooted wetland vegetation along the perimeter. The forebay provides a pretreatment system for collection of sediment. The forebay is typically not planted to allow mechanical removal of accumulated sediment. The pond attenuates dissolved pollutants such as nutrients or metals. These pollutants are removed by physical adsorption to suspended or fine bottom sediments and uptake by aquatic plants. These basins provide additional passive recreational and aesthetic value to the area. Most of the wet basins are planned as final treatment within the major drainage conveyance swales prior to discharge into Temescal Wash.

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d. **Groundwater benefit** – The current pit area is typically in a loss condition with respect to groundwater – primarily by daylighting or exposing the groundwater surface to evapotranspirative effects present in the pit by the excavation configuration and vegetation interacting with the climate. These losses are, on average based on the study, substantially greater than the gains from even exceptional events. The lakes and groundwater of the Silverado Pit Basin are also being strongly affected by the ongoing withdrawals to the adjacent "Orchards/Flats" basin associated with the City Waste Water Treatment Plant. This has caused an additional significant drop in groundwater of the Silverado Pit basin and is believed responsible for the loss of North Lake. The losses are over an order of magnitude greater than the gains from normal seasonal events and runoff (sourced primarily from the adjacent I-15 Freeway).

Under the proposed future conditions, a positive net influx to groundwater will occur, once the pit area is final graded and developed, and landscaping and irrigation is established. The proposed development will include new lined lakes of similar surficial character to that existing, and of 2 to 5 acres in area each. The amount of influx potential is a positive factor that when combined with the losses prevented by isolating and protecting the groundwater from exposure and attack through the proposed grading, a clear improvement of groundwater character and quantity is achieved. The proposed development of the pit area will result in a significantly improved condition over that existing, from a hydrogeologic and overall water quality perspective.