Legislation Details (With Text)

File #:	2015-027	**Version:** 1	**Name:**		
Type:	Report		**Status:**	Agenda Ready	
File created:	1/13/2015		**In control:**	City Council	
On agenda:	1/20/2015		**Final action:**		
Title:	CONSIDER STATUS REPORT ON THE REGIONAL WATER QUALITY CONTROL BOARD ENVIRONMENTAL INVESTIGATION AND CARSON DECLARATION OF THE EXISTENCE OF A LOCAL EMERGENCY WITHIN THE CAROUSEL TRACT				
Sponsors:	Elito Santarina				
Indexes:					
Code sections:					
Attachments:	1. Exhibit No. 1 - Regional Board Letter to Dole dated 12/8/14, 2. Exhibit No. 2 - Dole letter to the Regional Board dated 12/24/14, 3. Exhibit No. 3 -Dole letter to Regional Board dated 1/6/15, 4. Exhibit No. 4 - Shell letter to the Regional Board dated 1/6/15, 5. Exhibit No. 5 - IRM letter to the Regional Board dated 1/7/15, 6. Exhibit No. 6 - Carousel Tract Environmental Investigation Timeline				

Date	Ver.	Action By	Action	Result

Report to Mayor and City Council

Tuesday, January 20, 2015

Unfinished Business

SUBJECT:

CONSIDER STATUS REPORT ON THE REGIONAL WATER QUALITY CONTROL BOARD ENVIRONMENTAL INVESTIGATION AND CARSON DECLARATION OF THE EXISTENCE OF A LOCAL EMERGENCY WITHIN THE CAROUSEL TRACT

I. SUMMARY

I. This item is on the agenda at the request of Mayor Pro Tem Santarina to provide updates at all regularly scheduled City Council meetings related to the environmental investigation of the Carousel Tract.

II. RECOMMENDATION

CONSIDER and DISCUSS.

III. ALTERNATIVES

TAKE such other action the City Council deems appropriate that is consistent with the requirements of law.

IV. BACKGROUND

On December 8, 2014, the Los Angeles Water Quality Control Board (Regional Board) notified Dole Food Company, Inc. (Dole) of its intention to recommend that the Chief Deputy Executive Officer of the Regional Board issue a Tentative Revised Cleanup and Abatement Order No. R4-2011-0046 (CAO) naming the developer of the Carousel Tract, Barclay Hollander Corporation (Barclay), a wholly-owned subsidiary of Dole, and Dole as responsible parties to the CAO (Exhibit No.1).

On December 24, 2014, Barclay submitted a request to submit additional written evidence, and schedule a formal evidentiary hearing before the Regional Board's determination whether to adopt the revised CAO (Exhibit No. 2). On January 6, 2015, Barclay sent a second letter following up on the December 24, 2014 letter, which describes and attaches copies of some of the additional documentary evidence requested to be submitted to the Regional Board (Exhibit No. 3). Subsequently, on January 6, 2015, Shell Oil (Shell) responded to Barclay's December 24, 2014 letter opposing Barclay's requests to submit additional evidence and for a formal evidentiary hearing (Exhibit No. 4).

On January 7, 2015, Integrated Resource Management, Inc. (IRM) responded to Barclay's December 24, 2014 Letter (Exhibit No. 5). IRM does not oppose the request to submit additional evidence or the request for a formal evidentiary hearing as long as IRM's client (represented Carousel Tract residents) is provided appropriate notice and opportunity to be heard. In addition, IRM commented on the substance of the revised CAO and attached documentary evidence to its letter in support of his comments. The Regional Board therefore considers IRM's letter as a request to submit the additional substantive comments and the attached reported by L. Everett & Associates dated January 7, 2015.

The Regional Board is considering these pending procedural requests in light of the factual, legal, and policy matters at issue. The Regional Board will consider additional comments on these pending procedural requests that are received by the Regional Board by 5 p.m. on Friday, January 16, 2015.

Testing of property in the Carousel Tract is continuing and the latest reports are posted on the Regional Board's website at:

<http://geotracker.waterboards.ca.gov/profile_report.asp?

As of December 5, 2014, the completed Residential Sampling Activity is as follows:

- 271 homes have been screened for Methane. (95%)

- 272 homes have had soils sampled and vapor probes installed. (95%)
- 272 homes have had vapor probes sampled. (95%)
- 260 homes have had indoor air sampled. (91%)
- 244 of 260 homes have had their 2nd round of indoor air sampling. (94%)

Timeline of Activities

A general timeline that tracks past and current activities of the Carousel Tract environmental investigation is included as (Exhibit No.6).

V. FISCAL IMPACT

None.

VI. EXHIBITS

1. The Regional Board Letter to Dole dated December 8, 2014. (pgs. 4-26)
2. Dole Letter to the Regional Board dated December 24, 2014. (pgs. 27-33)
3. Dole Letter to the Regional Board dated January 6, 2015. (pgs. 34-53)
4. Shell Letter to the Regional Board dated January 6, 2015. (pgs. 54-57)
5. IRM Letter to the Regional Board dated January 7, 2015. (pgs. 58-81)
6. Carousel Tract Environmental Investigation Timeline. (pgs.82-88)

Prepared by: Ky H. Truong, Public Safety and Community Services Manager

December 8, 2014

Michael Carter, President
Dole Food Company, Inc.
c/o Patrick W. Dennis
Gibson, Dunn & Crutcher LLP
333 South Grand Avenue
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Douglas J. Weimer, Project Manager
Shell Oil Products US
20945 S. Wilmington Avenue
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SUBJECT: **TENTATIVE REVISED CLEANUP AND ABATEMENT ORDER PURSUANT TO CALIFORNIA WATER CODE SECTION 13304 CLEANUP AND ABATEMENT ORDER NO. R4-2011-0046**

SITE: **FORMER KAST PROPERTY TANK FARM LOCATED SOUTHEAST OF THE INTERSECTION OF MARBELLA AVENUE AND EAST 244TH STREET, CARSON, CALIFORNIA (SCP NO. 1230, SITE ID NO. 2040330, CAO NO. R4-2011-0046)**

Dear Mr. Carter and Mr. Weimer:

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is the state regulatory agency responsible for overseeing the investigation and cleanup of sites in Los Angeles and Ventura Counties pursuant to the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) and other applicable laws and regulations.

Pursuant to its authority, Deborah Smith, Chief Deputy Executive Officer of the Regional Board, issued Cleanup and Abatement Order R4-2011-0046 (2011 CAO) to Shell Oil Company (Shell). The 2011 CAO required, among other tasks, that Shell continue its investigation of the Site, conduct pilot tests, conduct a human health risk assessment, and prepare and submit for Regional Board approval a proposed remedial action plan (RAP), including a feasibility study regarding methods of remediation. Prior to issuance of the 2011 CAO, Shell requested that the Regional Board add the developers of the Site as responsible parties to the CAO, including Barclay Hollander Corporation (Barclay) and Dole Food Company, Inc. (Dole). The Regional Board declined to add the developers to the draft CAO at that time and issued the CAO to Shell only on March 11, 2011, but the CAO included a finding that the Regional Board would continue to investigate the need to name additional responsible parties.

On October 31, 2013, Paula Rasmussen, Assistant Executive Officer of the Regional Board, who supervises the Site Cleanup Program, issued a public notice providing the opportunity for interested persons to comment on proposed revisions to the 2011 CAO (Proposed Draft Revised CAO). The proposed revisions would add Barclay as a responsible party to the 2011 CAO. Ms. Rasmussen issued a subsequent public notice providing the opportunity for additional comments on the proposed revisions. Written comments outside the scope of the revisions were not accepted nor responded to. The law firm of Gibson Dunn on behalf of Barclay and Dole and the law firm of Morgan Lewis on behalf of Shell submitted timely comments.

EXHIBIT NO. 1

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Michael Carter, President
Dole Food Company, Inc.

December 8, 2014

The Regional Board Site Cleanup Program staff has considered the comments received regarding the Proposed Draft Revised CAO. In response to those comments, the Regional Board Site Cleanup Program staff continues to propose to add Barclay as a responsible party to the 2011 CAO and has modified the Proposed Draft Revised CAO. The modified document is referred to as the Tentative Revised CAO. See Attachment.

The Regional Board Site Cleanup Program staff has prepared a Memorandum to Deborah Smith, Chief Deputy Executive Officer of the Regional Board, with numerous attachments, recommending that she issue the Tentative Revised CAO naming Barclay Hollander Corporation. A copy of the Memorandum is enclosed for your information. These documents and other data and reports for the Site are also available for your review at the Regional Board office and are also posted on the GeoTracker database: https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000000228.

If you have any questions, please contact the project manager, Dr. Teklewold Ayalew at (213) 576-6739 (tayalew@waterboards.ca.gov), or Ms. Thizar Tintut-Williams, Site Cleanup Unit III Chief, at (213) 576-6723 (twilliams@waterboards.ca.gov).

Sincerely,

Paula Rasmussen
Assistant Executive Officer

Attachment: Draft Tentative Revised Order

Enclosure: Memorandum to Deborah Smith from Samuel Unger dated December 8, 2014

cc: [With Attachment and Enclosure]

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Michael Carter, President
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December 8, 2014

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cc: [Without Enclosure]

Janice Hahn, Honorable Congresswoman, US House of Representatives, California's 44th District
Mark Ridley-Thomas, Supervisor, Second District County of Los Angeles
Isadore Hall, III, Assembly member, 64th Assembly District
Jim Dear, Mayor of Carson
Nelson Hernandez, Carson City Manager
Ky Truong, City of Carson
James Carlisle, Office of Environmental Health Hazard Assessment
Bill Jones, Los Angeles County Fire Department
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Hoang Ly, Los Angeles County Fire Department
Cyrus Rangan, Los Angeles County Department of Health
Angelo Bellomo, Los Angeles County Department of Health
Karen A. Lyons, Shell Oil Products US
Thomas V. Girardi, Girardi and Keese Lawyers
Robert W. Bowcock, Integrated Resources Management, LLC

ATTACHMENT 1C
DRAFT TENTATIVE REVISED CAO

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

CLEANUP AND ABATEMENT ORDER NO. R4-2011-0046
REQUIRING

SHELL OIL COMPANY
AND
BARCLAY HOLLANDER CORPORATION

TO CLEANUP AND ABATE WASTE
DISCHARGED TO WATERS OF THE STATE
PURSUANT TO CALIFORNIA WATER CODE SECTION 13304[1]
AT THE FORMER KAST PROPERTY TANK FARM,
CARSON, CALIFORNIA
REVISED
[DATE]
(FILE NO. 97-043)

Cleanup and Abatement Order No. R4-2011-0046 (Order) requires Shell Oil Company and Barclay Hollander Corporation, (hereinafter "Discharger") to assess, monitor, and cleanup and abate the effects of petroleum hydrocarbon compounds and other contaminants of concern discharged to soil and groundwater at the former Kast Property Tank Farm facility (hereinafter, the "Site") located southeast of the intersection of Marbella Avenue and East 244th Street, in Carson, California.

On March 11, 2011, the Regional Water Quality Control Board, Los Angeles Region (Regional Board) issued the Order requiring Shell Oil Company (Shell) to investigate and cleanup the Site. On July 28, 2010 in comments on the draft Order, the law firm of Morgan Lewis on behalf of Shell, requested that the Regional Board name Dole Food Company, Inc. (Dole) and its wholly-owned subsidiary Barclay Hollander Corporation (BHC) as responsible parties in the Order ("Morgan Lewis 2010 Letter"). At that time, the Regional Board declined to add Dole and BHC to the draft Order and issued the Order to Shell only. Subsequently, on April 22, 2011 the Regional Board issued an order pursuant to California Water Code section 13267 (13267 Order) requiring Dole to provide technical information about the Site. On September 15, 2011, the law firm of Gibson Dunn on behalf of Dole provided a detailed letter and attachments in response to the 13267 Order disputing that it and/or BHC should be named as responsible parties in the Order ("Gibson Dunn 2011 Letter"). On October 31, 2013, the Regional Board's Assistant Executive Officer proposed adding BHC as a responsible party to the Order and provided

[1] Water Code section 13304 (a) states, in part: Any person who has discharged or discharges waste into the waters of this state in violation of any waste discharge requirement or other order or prohibition issued by a regional board or the state board, or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board, clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including, but not limited to, overseeing cleanup and abatement efforts.

opportunities to submit comments on October 31, 2013 and June 3, 2014, Gibson Dunn and Morgan Lewis submitted comments. For the reasons discussed below, the Order is hereby revised to add BHC, a wholly-owned subsidiary of Dole, as a responsible party in the Order based on information provided by Shell and Dole and in the files of the Regional Board.

As of the date of this revised Order, Shell has completed many of the tasks required by the Order since its issuance on March 11, 2011. This Order is not being revised to delete tasks already completed by Shell but is being revised to add BHC as a responsible party and to make appropriate findings based on the information provided by Dole and Shell since issuance of the Order and to clarify that the Discharger is responsible for preparing draft environmental documentation. The Regional Board's files include records documenting the activities associated with this Order.

The Regional Board herein finds:

BACKGROUND

1. **Discharger:** ~~Shell Oil Company~~ Shell, previously Shell Company of California, is a Responsible Party due to its: (a) ownership of the former Kast Property Tank Farm, and (b) former operation of a petroleum hydrocarbon tank farm at the Site resulting in discharges of waste at the Site. Barclay Hollander Corporation (BHC) is a responsible party due to its (a) past ownership and/or as a successor to past owners of the Site, and (b) development of the property resulting in discharges of waste at the Site. Shell and BHC are hereafter referred to collectively as "Discharger". The actions of the Discharger have caused or permitted waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and have created a condition of pollution or nuisance.

2. **Location:** The Site is located southeast of the intersection of Marbella Avenue and East 244th Street in the City of Carson, California. The Site occupies approximately 44 acres of land and is bordered by the Los Angeles County Metropolitan Transportation Authority railroad right-of-way on the north, Lomita Boulevard on the south, Marbella Avenue on the west, and Panama Avenue on the east (Figure 1). The Site was previously owned by ~~the Discharger~~ Shell, who operated three oil storage reservoirs from the 1920s to the mid-1960s. The central and southern reservoirs each had a capacity of 750,000 barrels of oil and the northernmost reservoir had a capacity of 2,000,000 barrels of oil. The Site presently consists of the Carousel residential neighborhood and city streets.

3. **Groundwater Basin:** The Site is located on the Torrance Plain of the West Coast Groundwater Basin (Basin), in the southwestern part of the Coastal Plain of Los Angeles County. Beneath the Site, the first encountered groundwater is estimated at 54 feet below ground surface (bgs). The Basin is underlain by a series of aquifers, the deeper of which are used for drinking water production. These aquifers are with increasing depth, the Gage aquifer, Lynwood aquifer, and Silverado aquifer. The nearest municipal water supply well is located approximately 400 feet west of the Site. As set forth in the *Water Quality Control Plan for the Los Angeles Region* (the Basin Plan), adopted on June 13, 1994, the Regional Board has designated beneficial uses for groundwater (among which include municipal and domestic drinking water supplies) in the West Coast Basin and has established water quality objectives for the protection of these beneficial uses.

4. As detailed in the findings below, the Discharger's activities at the Site have caused or permitted the discharge of waste resulting in soil, soil vapor, and groundwater pollution, including discharges of waste to the waters of the state, and nuisance.

SITE HISTORY

5. **Property Ownership and Leasehold Information:** Based on information submitted to the Regional Board by the Discharger, the Site has the following property ownership and leasehold history:

   a. According to the Sanborn maps dated 1924 and 1925, the Site was owned and operated by "Shell Company of California (Kast Property)" beginning in approximately 1924 until the mid-1960s. The Site was used as a tank farm, which included three crude oil storage reservoirs, Reservoir Nos. 5, 6 and 7. Reservoir No.5, the center reservoir, had a capacity of 750,000 barrels of oil and was under lease to General Petroleum Corporation. Reservoir No. 6, the southernmost reservoir, had a capacity of 750,000 barrels of oil; and Reservoir No. 7, the northernmost reservoir, had a capacity of 2,000,000 barrels of oil. According to Sanborn map notations, the reservoirs had concrete-lined earth-slopes with frame roofs on wood posts, surrounded by earth levees averaging 20 feet in height with 7 foot wide walks on top. One oil pump house was depicted on the 1925 Sanborn map within the southern portion of the Site. Since construction, the Site was used as a crude oil storage reservoir.

   ~~b. In 1966, SOC sold the Site to Lomita Development Company, an affiliate of Richard Barclay and Barclay Hollander Curci (BHC), with the reservoirs in place. The Pacific Soils Engineering Reports dated January 7, 1966; March 11, 1966; July 31, 1967; and June 11, 1968 documented that: 1) Lomita Development Company emptied and demolished the reservoirs, and graded the Site prior to it developing the Site as residential housing; 2) part of the concrete floor of the central reservoir was removed by Lomita Development Company from the Site; and 3) where the reservoir bottoms were left in place, Lomita Development Company made 8 inch wide circular trenches in concentric circles approximately 15 feet apart to permit water drainage to allow the percolation of water and sludge present in the reservoirs into the subsurface.~~

   ~~c. In phases between 1967 and 1969, Lomita Development Company developed the Site into one and two story single family residential parcels and sold the developed lots to individual homeowners.~~

   d. In 1965, Richard Barclay and Shell executed a Purchase Option Agreement, wherein Richard Barclay (or his nominee) agreed to purchase the Property, subject to a favorable engineering report and other restrictions. Richard Barclay was a principal in an entity known as Barclay-Hollander-Curei. In 1966, Lomita Development Company (Lomita), a California partnership, was designated as Mr. Barclay's "nominee" and purchased the Property from Shell with the reservoirs in place. Lomita explicitly agreed in writing to complete decommissioning of the reservoirs. In phases between 1967 and

1969, Lomita developed the Site into one- and two-story single family residential parcels and sold the developed lots to individual homeowners. In 1969, a group of companies, including Lomita, merged into a company known as Barclay Hollander Curci, Inc., which was then acquired by Castle & Cooke, Inc. and it became a wholly-owned subsidiary of Castle & Cooke, Inc. Barclay Hollander Curci, Inc. continued to sell parcels to residential owners. Barclay Hollander Curci, Inc. was later renamed Barclay Hollander Corporation, Inc. (BHC). Castle & Cooke, Inc. merged with Flexi-Van Corporation in 1985, which in 1991, changed its name to Dole Food Company, Inc. BHC agreed to be responsible for the liabilities of Lomita and the other entities. BHC is currently a wholly-owned subsidiary of Dole, ~~but has no assets.~~[2]

6. **Site Description and Activities:** According to information in the Regional Board's file on this Site, oil related operations at the Site began in 1923 and ended by the early 1960s. The Site was previously owned and operated by Shell Company of California, which was subsequently renamed Shell Oil Company, as a crude oil storage facility. The facility included equipment that pumped the oil to the nearby ~~SOC's~~ Shell refinery for processing from three concrete-lined oil storage reservoirs with a total capacity of 3.5 million barrels. In 1966, ~~SOC~~ Shell closed the Site and ~~SOC~~ sold the Site to Lomita ~~Development Company~~, an affiliate of Richard Barclay and Barclay-Hollander-Curci. Subsequently, Lomita ~~Development Company~~ developed the Site into the Carousel residential neighborhood, which contains 285 single-family homes.

In 1965, prior to the purchase of the property from Shell, Richard Barclay and/or Barclay Hollander Curci requested permission from Shell to remove the liquid waste and petroleum residue from the property and to begin to grade the property for development. Shell agreed to allow the activities with some conditions, including that "all work done by or for [Barclay Hollander Curci] be done in a good, lawful and workmanlike manner." After purchasing the property in 1966, Lomita, as the owner of the property, actively participated in the decommissioning and grading activities. Lomita conducted the waste removal and grading activities and obtained the required permits from the County. Available information indicates that by August 15, 1966 all three reservoirs had been fully cleaned out. The Pacific Soils Engineering Reports dated January 7, 1966; March 11, 1966; July 31, 1967; and June 11, 1968[3] documented that: (1) Lomita emptied and demolished the reservoirs, and graded the Site prior to it developing the Site as residential housing; (2) part of the concrete floor of the central reservoir was removed by Lomita from the Site; and (3) where the reservoir bottoms were left in place, Lomita made 8-inch wide circular trenches in concentric circles approximately 15 feet apart to permit water drainage to allow the percolation of water and sludge present in the reservoirs into the subsurface. Various documents from the soil engineer describe the process of removing water and sludge in the reservoirs, burying concrete and compacting the concrete and soil, and drilling holes in the concrete to allow for percolation into the groundwater. The County's grading permit required that concrete fill must be at least seven feet below grade. Boring logs indicated that soils beneath the concrete slab in Reservoir 7 were "highly oil stained" and that soils in the borings had a

[2] See Exhibit 76 to Gibson Dunn 2011 Letter.
[3] See Exhibits 31, 78, 36, and 42 to Gibson Dunn 2011 Letter.

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"petroleum odor, however the amount of actual oil contained in the soil is unknown."[4] One of the soil engineering reports also indicated that soil used to fill in the reservoirs and return the Property to its natural grade came from the berms surrounding each reservoir and surrounding the perimeter of the Property.[5] In 1967, Lomita began transferring title of individual parcels. In 1969, title to remaining parcels was granted by grant deed from Lomita to BHC. Then BHC began transferring title to the rest of the parcels.

6. **Chemical Usage:** Based on the Phase I Environmental Site Assessment (ESA) dated July 14, 2008 conducted by Shell Oil Products[6] (SOPUS) consultant, URS Corporation, the Site was used for the storage of crude oil in all three reservoirs on the property from at least 1924 to 1966. Subsequent records indicate that in the 1960s the reservoirs may also have been used for storage of bunker oil. Ongoing investigations indicate petroleum hydrocarbon compounds including volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) are impacted in the subsurface soil, soil vapor, and groundwater underlying the Site.

EVIDENCE OF DISCHARGES OF WASTE AND BASIS FOR ORDER

7. **Waste Discharges:** The following summarizes assessment activities associated with the Site:

   a. In 2007, under the regulatory oversight of the California Department of Toxic Substances Control (DTSC), an environmental investigation was initiated at the former Turco Products Facility (TPF). Soil vapor and groundwater were investigated in areas directly west of the Site and at locations in the northwestern portion of the Site. The DTSC-required investigation detected petroleum hydrocarbons, benzene, toluene, and chlorinated solvents in soil and soil vapor. A multi-depth soil vapor survey, which included soil vapor sampling on the Site at locations coincident with the former Kast Site footprints, detected benzene at concentrations up to 150 micrograms per liter (µg/l). Benzene was detected at TPF groundwater monitoring well MW-8, which has a northeast flow direction, at a concentration of 1,800 µg/l. Therefore, groundwater monitoring well MW-8 is located upgradient of the Kast Site. Chlorinated solvents were also detected at the Kast Site groundwater monitoring well MW-5.

   b. The *Final Phase I Site Characterization Report* dated October 15, 2009, which was prepared by URS Corporation on behalf of SOPUS showed that soil impacts consisted primarily of petroleum hydrocarbons spanning a wide range of carbon chains and including Total Petroleum Hydrocarbons (TPH) as gasoline (g), TPH as diesel (TPHd), TPH as motor oil (TPHmo), benzene, and naphthalene (See Tables 1, 2A, 2B, and 3).

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[4] See Exhibit 78 to Gibson Dunn 2011 Letter, March 11, 1966 Report by Pacific Soils Engineering Inc.

[5] See Exhibit 31 and Declaration of Lee Volmer, attached to Gibson Dunn 2011 Letter.

[6] Shell Oil Products US is the d/b/a for Equilon Enterprises LLC, which is wholly owned by Shell Oil Company.

I. In June 2009, a subsurface investigation of public streets in the Carousel neighborhood consisting of ten cone penetrometer/rapid optical screening tools (CPT/ROST) was performed. The CPT/ROST logs indicated several locations within the Site with elevated hydrocarbon concentrations. The CPT/ROST logs also showed that the highest apparent soil impacts occurred at depths of 12 feet bgs, 36 feet bgs, and 40 feet bgs.

II. A total of 228 soil samples were collected during the Phase I Site Characterization. The analytical data for soil samples collected from soil borings advanced on public streets across the Site (Figure 2) were as follows:

i. The highest detected concentration of TPH was 22,000 milligrams per kilogram (mg/kg) and TPHg, TPHd, and TPHmo were 8,800, 22,000, and 21,000 mg/kg, respectively;

ii. Benzene, ethylbenzene, toluene, and xylenes were detected in concentrations as high as 21,000 micrograms per kilogram (µg/kg), 32,000 µg/kg, 12,000 µg/kg, and 140,000 µg/kg, respectively;

iii. SVOCs were detected in concentrations as high as 47 mg/kg of naphthalene, 38 mg/kg of 1-methylnaphthalene, 63 mg/kg of 2-methylnaphthalne, 12 mg/kg phenanthrene, and 9.0 mg/kg pyrene; and

iv. Arsenic and lead were detected in concentrations as high as 53.2 mg/kg and 52.5 mg/kg, respectively.

III. Soil vapor samples collected from a 5-foot depth and greater below the public streets in the Carousel neighborhood indicated elevated benzene and methane (Figures 3 and 4). Benzene was detected at a maximum concentration of 3,800µg/l, which exceeds the California Human Health Screening Level (CHHSL) value of 0.036 µg/l for benzene set for shallow soil vapor in a residential area. Methane was also detected in concentrations as high as 59.7 % (by volume) that significantly exceed its lower explosive limit of 5% (by volume), posing a potential safety hazard.

c. Between September 2009 and February 2010, residential soil and sub-slab soil vapor sampling was conducted at 41 parcels (Figure 5 a – f; Tables 1 and 2) and the results were as follows:

I. Surface and subsurface soil (0 to 10 feet bgs) detected concentrations of chemicals of concern that significantly exceeded soil screening levels as follows:

i. VOCs - Benzene (14,000 µg/kg), tetrachloroethylene (PCE) (22,000 µg/kg), 1,2,4-trimethylbenzene (34,000 µg/kg), and 1,3,5-trimethylbenzene (14,000 µg/kg);

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ii. SVOCs - Naphthalene (18 mg/kg), Benzo(a)pyrene (2.9 mg/kg), benzo(a)anthracene (0.1 mg/kg), chrysene (0.27 mg/kg), phenanthrene (0.28 mg/kg), and pyrene (0.19 mg/kg); and

iii. Lead was also detected at a maximum concentration of 307 mg/kg.

II. The highest detected concentration of TPHg was 5,000 mg/kg, TPHd was 33,000 mg/kg, and TPHmo was 41,000 mg/kg;

III. As of September 27, 2010, sub-slab soil vapor samples have been collected from 172 homes in the Carousel neighborhood. Additional data continues to be collected as part of the Phase II Site Characterization. The validated data from the first 41 homes detected benzene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, ethylbenzene, p/m-xylenes, toluene, and acetone, at a maximum concentration of 4,500 micrograms per cubic meter ($\mu g/m^3$), 2,200 $\mu g/m^3$, 1,000 $\mu g/m^3$, 1,100 $\mu g/m^3$, 5,200 $\mu g/m^3$, 700 $\mu g/m^3$, 270 $\mu g/m^3$, respectively.

d. Between November 19, 2009 and February 15, 2010, additional step-out soil and soil vapor sampling at the elevated soil vapor sampling locations were conducted in selected locations beneath the public streets at the Site. The measured concentrations for petroleum hydrocarbons in soil were as follows:

I. The highest detected concentrations of TPHg was 9,800 mg/kg, TPHd was 22,000 mg/kg, and TPHmo was 21,100 mg/kg;

II. The highest detected concentrations of benzene was 33,000 µg/kg, Ethylbenzene was 42,000 µg/kg, toluene was 11,000 µg/kg, and xylenes were 140,000 µg/kg, respectively;

III. SVOCs were detected in concentrations as high as 47 mg/kg of naphthalene, 33 mg/kg of 1-methylnaphthalene, 53 mg/kg of 2-methylnaphthalne, 6.1 mg/kg phenanthrene, and 3.9 mg/kg pyrene; and

IV. Arsenic and lead were detected in concentrations as high as 28.2 mg/kg and 13.6 mg/kg, respectively.

e. In July 2009, the installation of six on-site groundwater monitoring wells (Figure 6) were completed and quarterly groundwater monitoring was initiated. Groundwater was encountered at 53 feet bgs. Groundwater samples from five of the six wells contained concentrations of benzene at a maximum concentration of 140 µg/L and trichloroethylene (TCE) at a maximum concentration of 290 µg/L. One of the monitoring wells (MW-3) contains a free product or a light non-aqueous phase liquid (LNAPL) with a maximum measured thickness of 9.01 foot as of May 27, 2010.

8. **Source Elimination and Remediation Status at the Site**

a. The results of the initial soil and soil vapor investigation indicate the presence of elevated methane and benzene at concentrations exceeding the Lower Explosive Limit and the CHHSL for shallow soil vapor, at several locations beneath the public streets at the Site. On October 15, 2009, the Regional Board directed the Discharger to expeditiously design and implement an interim remedial action.

b. On May 12, 2010 the Regional Board approved SOPUS's proposed Soil Vapor Extraction (SVE) pilot test in order to evaluate the use of this technology as a remedial option for VOCs at the Site.

9. **Summary of Findings from Subsurface Investigations**

a. Regional Board staff have reviewed and evaluated numerous technical reports and records pertaining to the release, detection, and distribution of wastes on the Site and its vicinity. The Discharger has stored, used, and/or discharged petroleum hydrocarbon compounds at the Site. Elevated levels of TPH and other wastes have been detected in soil, soil vapor and groundwater beneath the Site.

b. The sources for the evidence summarized above include, but are not limited to:

I. Various technical reports and documents submitted by the Discharger or its representatives to Regional Board staff.

II. Site inspections conducted by Regional Board staff, as well as meetings, letters, electronic mails, and telephone communications between Regional Board staff and the Discharger and/or its representatives.

III. Subsurface drainage study for the Site reservoirs submitted by Girardi and Keese, the law firm retained by some of the residents of the Carousel neighborhood.

10. **Summary of Current Conditions Requiring Cleanup and Abatement**

a. Based on the Phase I ESA for the Site dated July 14, 2008 (prepared by URS Corporation) and the most recent information provided to the Regional Board by SOPUS: 1) SOC sold the Kast Site to Lomita ~~Development Company~~, an affiliate of Richard Barclay and Barclay-Hollander-Curci, in 1966 with the reservoirs in place; 2) the Pacific Soils Engineering Reports from 1966 to 1968 indicate that Lomita ~~Development Company~~ emptied and demolished the reservoirs, and constructed residential housing; 3) part of the concrete floor of the central reservoir was removed by Lomita ~~Development Company~~ from the Site; and 4) where the reservoir bottoms were left in place, Lomita ~~Development Company~~ made 8-inch wide circular trenches in concentric circles approximately 15 feet apart to permit water drainage to allow percolation of water and sludge present in the reservoirs into the subsurface.

b. There is no consistent trend in the vertical distribution of detected concentrations of petroleum hydrocarbon compounds that can be discerned from soil boring data to date. Although, the majority of the aforementioned highest detected TPH concentrations were obtained from the 2.5-foot depth samples, there were

multiple locations where the highest concentrations were in the 5-foot or 10-foot samples. This may be due to the nature of previous development activities by Lomita ~~Development Company~~ at the Site (i.e., the construction and demolition of the former reservoirs and site grading in preparation for development of the residential tract).

c. On May 11, 2010, Environmental Engineering and Contracting, consultants hired by Girardi and Keese, conducted exploratory trenching in order to locate and identify the obstructions that have been frequently encountered during the advancement of shallow soil borings at many of the residential homes investigated to date. Regional Board staff observed the encountering of an approximately 8-inch thick concrete slab extending at the trench excavation termination depth of 9 feet, 2 inches. The Pacific Soils Engineering Report dated January 7, 1966 states that the reservoirs were lined with a "four inch blanket of reinforced concrete". These obstructions are presumed to be remnants of the concrete liners of the former reservoir.

d. Results from the 169 Interim Residential Sampling Reports submitted to the Regional Board through November 17, 2010 indicate that for surface and subsurface soil sampling (0 to 10 feet bgs), the cancer risk index estimate is between 0 and 10 for 107 residential parcels, between 10 and 100 for 60 parcels, and exceeded 100 for 2 parcels. In the area where the highest cancer index is documented, SVOCs (i.e. Benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene and chrysene), benzene, and ethylbenzene were the primary chemicals of potential concern (COPCs) contributing to the cancer risk index.

   For the Carousel neighborhood investigation, the Regional Board is using the most protective cancer risk screening levels recommended by the State and federal governments, which is one in one million (1×10^{-6}) additional risks. For screening purposes, the Regional Board routinely uses the most conservative (health-protective assumptions) risk based screening levels of 1×10^{-6} for the target chemical. This screening level is based on a target risk level at the lower end of the US Environmental Protection Agency (USEPA) risk management range of one-in-a-million risk (1×10^{-6}) for cancer risk and a hazard quotient of 1.

   The presence of a chemical at concentrations in excess of a CHHSL does not indicate that adverse impacts to human health are occurring or will occur, but suggests that further evaluation of potential human health concerns is warranted (Cal-EPA, 2005). It should also be noted that CHHSLs are not intended to "set ... final cleanup or action levels to be applied at contaminated sites" (Cal-EPA, 2005).

e. Results from the 169 Interim Residential Sampling Reports submitted to the Regional Board through November 17, 2010 also indicate that for the sub-slab soil vapor data collected from the residential parcels, the cancer risk index estimate was between 0 and 10 for 147 parcels, between 10 and 100 for 20 parcels, and greater than 100 for 2 parcels. The two highest cancer risk index

were estimated as 550 and 120. In most cases, benzene was the primary contributor to the cancer risk index estimate.

f. The Office of Environmental Health Hazard Assessment (OEHHA) performed a quantitative risk evaluation of TPH using surface and subsurface (0 to 10 feet bgs) soil TPH fractionation data for the 41 residential parcels (Table 3). Based on the risk calculation, OEHHA estimated maximum exposures for a child and compared the resulting exposure estimates of reference dosages with that provided by DTSC interim guidance dated June 16, 2009. OEHHA concluded that aromatic hydrocarbons in the C-9 to C-32 range at five parcels exceeded their reference values for children (Exhibit 1).

g. The San Francisco Bay Regional Water Quality Control Board developed the Environmental Screening Level (ESL) as guidance for determining when concentration of TPH may present a nuisance and detectable odor. The ESL, based on calculated odor indexes, for residential land-use, is 100 mg/kg for TPHg and TPHd. The soil TPHg and TPHd data obtained from the Site were detected up to 9,800 mg/kg and 85,000 mg/kg, respectively, which exceed the ESL.

11. **Pollution of Waters of the State:** The Discharger has caused or permitted waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance. As described in this Order and the record of the Regional Board, the Discharger owned and/or operated the site in a manner that resulted in the discharges of waste. The constituents found at the site as described in Finding 8 constitute "waste" as defined in Water Code section 13050(d). The discharge of waste has resulted in pollution, as defined in Water Code section 13050(l). The concentration of waste constituents in soil and groundwater exceed water quality objectives contained in the Water Quality Control Plan for the Los Angeles Region (Basin Plan), including state-promulgated maximum contaminant levels. The presence of waste at the Site constitutes a "nuisance" as defined in Water Code section 13050(m). The waste is present at concentrations and locations that *"is injurious to health, or is indecent, or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property . . . and [a]ffects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal."*

12. **Need for Technical Reports:** This Order requires the submittal of technical or monitoring reports pursuant to Water Code section 13267[7]. The Discharger is required to submit the reports because, as described in the Findings in this Order, the Discharger is responsible for the discharge of waste that has caused pollution and nuisance. The reports are necessary to evaluate the extent of the impacts on water quality and public health and to determine the scope of the remedy.

[7] Water Code section 13267 authorizes the Regional Board to require any person who has discharged, discharges, or is suspect of having discharged or discharging, waste to submit technical or monitoring program reports.

13. ~~Although requested by the Discharger, the Regional Board is declining to name additional potentially responsible parties (PRPs) to this Order at this time.~~ Substantial evidence indicates that the Discharger caused or permitted waste to be discharged into waters of state and is therefore appropriately named as a responsible party in this Order. Shell owned and operated the Site, then sold the property to the developers, leaving in place three reservoirs and residual petroleum hydrocarbons in at least one tank and in soil underneath and surrounding the reservoir. The residual petroleum hydrocarbons are still present at the Site and continue to cause pollution and nuisance as documented in this Order and the Regional Board files. ~~However, the~~ The Regional Board ~~will continue to~~ has investigated ~~whether~~ additional potentially responsible parties (including, but not limited to, Lomita Development Company, Richard Barclay, Barclay-Hollander-Curci, Dole Foods, Inc., Barclay Hollander Corporation and/or any of its successors) and has determined that Barclay Hollander Corporation caused or permitted the discharge of waste at the Site ~~and whether these or other parties should be named as additional responsible parties to this Order or a separate Order. The Regional Board may amend this Order or issue a separate Order in the future as a result of this investigation. Although investigation concerning additional PRPs is ongoing, the Regional Board desires to issue this Order as waiting will only delay remediation of the Site.~~ BHC and/or its predecessor purchased the Site with explicit knowledge of the presence of the petroleum reservoirs and the presence of residual petroleum hydrocarbons and conducted various activities, including partially dismantling the concrete in the reservoirs and grading the onsite materials, thereby spreading the waste. The residual petroleum hydrocarbons are still present at the Site and continue to cause pollution and nuisance as documented in this Order and the Regional Board files. BHC is a wholly-owned subsidiary of Dole. Including BHC as a responsible party in this Order is consistent with orders of the State Water Resources Control Board construing Water Code section 13304 naming former owners who had knowledge of the activities that resulted in the discharge and the legal ability to control the continuing discharge.[8] Including BHC as a responsible party is consistent with Water Code section 13304(i) because BHC's actions that resulted in creating pollution and nuisance were unlawful since at least 1949.[9] If the Regional Board becomes aware of any other responsible parties it will consider naming such persons in this Order.

14. ~~The Discharger~~ Shell, in a letter to the Regional Board dated May 5, 2010 (Exhibit 2), stated that it is considering a variety of potential alternatives that can be applied at specific

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[8] See, e.g., State Water Board Order No. WQ 92-13 (Westwest, Inc.); State Water Board Order WQ 89-8 (Arthur Spitzer); State Water Board Order WQ 86-16 (Stinnes-Western Chemical Corporation); and State Water Board Order WQ 86-2 (Zoecon Corporation). See also State Water Board Order No. WQ 89-13 (The BOC Group, Inc.)(holding prior owner responsible for discharges associated with an abandoned underground storage tank). Also see State Water Board Order No. WQ 96-2 (County of San Diego, City of National City, and City of National City Community Development Commission) (holding County of San Diego responsible for pollution caused by landfill it operated, holding City of National City responsible for actions that contributed to the pollution, and holding City of National City Community Development Commission responsible even though it owned the property for a relatively short period of time).

[9] See Health and Saf. Code § 5411. In *Newhall Land & Farming Co. v. Superior Court*, 19 Cal.App.4th 334 (1993), the court interpreted the term "nuisance" quoting *Mangini v. Aerojet-General Corp.*, 230 Cal.App.3d 1125 (1991). (the court rejected the argument that one cannot be guilty of a nuisance unless one is in the position to abate it. The court held "Nor is it material that defendant allegedly created the nuisance at some time in the past but does not currently have a possessory interest in the property. '[N]ot only is the party who maintains the nuisance liable but also the party or parties who create or assist in its creation are responsible for the ensuing damage.' " 230 Cal.App.3d at p. 1137.

parcels and in the public streets in order to avoid environmental impacts and avoid any significant risks to human health at this Site. ~~The Discharger~~ Shell also indicated that if it becomes necessary for residents to relocate temporarily to perform this work, ~~the Discharger~~ Shell will take appropriate steps to minimize any inconvenience and compensate them for any resulting expenses.

15. Issuance of this Order is being taken for the protection of the environment and as such is exempt from provisions of the California Environmental Quality Act (CEQA) (Pubic Resources Code section 21000 et seq.) in accordance with California Code of Regulations, title 14, sections 15061(b)(3), 15306, 15307, 15308, and 15321. This Order generally requires the Discharger to submit plans for approval prior to implementation of cleanup activities at the Site. Mere submittal of plans is exempt from CEQA as submittal will not cause a direct or indirect physical change in the environment and/or is an activity that cannot possibly have a significant effect on the environment. CEQA review at this time would be premature and speculative, as there is simply not enough information concerning the Discharger's proposed remedial activities and possible associated environmental impacts. If the Regional Board determines that implementation of any plan required by this Order will have a significant effect on the environment, the Regional Board will conduct the necessary and appropriate environmental review prior to Executive Officer approval of the applicable plan.

16. Shell submitted a proposed Remedial Action Plan (RAP) on June 30, 2014. After review of the proposed RAP, the Regional Board determined that implementation of the RAP could have a significant impact on the environment and that preparation of an environmental impact report is necessary.

17. Pursuant to section 13304 of the California Water Code, the Regional Board may seek reimbursement for all reasonable costs to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action.

THEREFORE, IT IS HEREBY ORDERED, pursuant to California Water Code section 13304 and 13267, that the Discharger shall cleanup the waste and abate the effects of the discharge, including, but not limited to, total petroleum hydrocarbons (TPH) and other TPH-related wastes discharged to soil and groundwater at the Site in accordance with the following requirements:

1. **Complete Delineation of On- and Off-Site Waste Discharges:** Completely delineate the extent of waste in soil, soil vapor, and groundwater caused by the discharge of wastes including, but not limited to, TPH and other TPH-related waste constituents at the Site into the saturated and unsaturated zones. Assessment has been ongoing under Regional Board oversight, but assessment is not yet complete. If ongoing reinterpretation of new data derived from the tasks performed suggests that modification or expansion of the tasks approved by the Regional Board is necessary for complete assessment, the Discharger is required to submit a work plan addendum(a).

2. **Continue to Conduct Groundwater Monitoring and Reporting:**

   a. Continue the existing quarterly groundwater monitoring and reporting program previously required by the Regional Board, and

b. As new wells are installed, they are to be incorporated into the existing groundwater monitoring and reporting program

3. **Conduct Remedial Action:** Initiate a phased cleanup and abatement program for the cleanup of waste in soil, soil vapor, and groundwater and abatement of the effects of the discharges, but not limited to, petroleum and petroleum-related contaminated shallow soils and pollution sources as highest priority.

Shallow soils in this Order are defined as soils found to a nominal depth of 10 feet, where potential exposure for residents and/or construction and utility maintenance workers is considered likely (Ref. Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities – CalEPA 1996).

Specifically, the Discharger shall:

a. Develop a pilot testing work plan, which includes 1) evaluation of the feasibility of removing impacted soils to 10 feet and removal of contaminated shallow soils and reservoir concrete slabs encountered within the uppermost 10 feet, including areas beneath residential houses; and 2) remedial options that can be carried out where site characterization (including indoor air testing) is completed; 3) plans for relocation of residents during soil removal activities, plans for management of excavated soil on-site, and plans to minimize odors and noise during soil removal. The Discharger is required to submit this Pilot Test Work Plan to the Regional Board for review and approval by the Executive Officer no later than 60 days after the date of issuance of this Order. Upon approval of the Pilot Test Work Plan by the Executive Officer, the Discharger shall implement the Pilot Test Work Plan submit the Pilot Test Report that includes the findings, conclusions, and recommendations within 120 days of the issuance of the approval of the Pilot Test Work Plan.

b. Conduct an assessment of any potential environmental impacts of the residual concrete slabs of the former reservoir that includes: (1) the impact of the remaining concrete floors on waste migration where the concrete floors might still be present; (2) whether there is a need for the removal of the concrete; and (3) the feasibility of removing the concrete floors beneath (i) unpaved areas at the Site, (ii) paved areas at the Site, and (iii) homes at the Site. The Discharger is required to submit this environmental impact assessment of the residual concrete slabs to the Regional Board no later than 30 days after the completion of the Pilot Test.

c. Prepare a full-scale impacted soil Remedial Action Plan (RAP) for the Site. The Discharger is required to submit the RAP to the Regional Board for review and approval by the Executive Officer no later than 60 days after the date of the Executive Officer's approval of the Pilot Test Report.

i. The RAP shall include, at a minimum, but is not limited to:

i. A detailed plan for remediation of wastes in shallow soil that will incorporate the results from the Soil Vapor Extraction Pilot Test currently being performed.

ii. A plan to address any impacted area beneath any existing paved areas and concrete foundations of the homes, if warranted;

iii. A detailed surface containment and soil management plan;

iv. An evaluation of all available options including proposed selected methods for remediation of shallow soil and soil vapor; and

v. Continuation of interim measures for mitigation according to the Regional Board approved Interim Remediation Action Plan (IRAP).

vi. A schedule of actions to implement the RAP.

II. The RAP, at a minimum, shall apply the following guidelines and Policies to cleanup wastes in soil and groundwater. The cleanup goals shall include:

i. Soil cleanup goals set forth in the Regional Board's *Interim Site Assessment and Cleanup Guidebook, May 1996,* waste concentrations, depth to the water table, the nature of the chemicals, soil conditions and texture, and attenuation trends, human health protection levels set forth in *USEPA Regional Screening Levels (Formerly Preliminary Remediation Goals),* for evaluation of the potential intrusion of subsurface vapors (soil vapor) into buildings and subsequent impact to indoor air quality, California Environmental Protection Agency's *Use of Human Heath Screening Levels (CHHSLS) in Evaluation of Contaminated Properties*, dated January 2005, or its latest version, and Total Petroleum Hydrocarbon Criteria Working Group, Volumes 1 through 5, 1997, 1998, 1999; Commonwealth of Massachusetts, Department of Environmental Protection, *Characterizing Risks Posed by Petroleum Contaminated Sites: Implementation of MADEP VPH/EPH approach*; MADEP 2002; Commonwealth of Massachusetts, Department of Environmental Protection, *Updated Petroleum Hydrocarbon Fraction Toxicity Values for the VPH/EPH/APH Methodology*; MADEP 2003; Commonwealth of Massachusetts, Department of Environmental Protection, Method for the Determination of *Air-Phase Petroleum Hydrocarbons (APH) Final*, MADEP 2008, Soil vapor sampling requirements are stated in the *DTSC Interim Guidance* and the Regional Board's *Advisory*

– *Active Soil Gas Investigations*, dated January 28, 2003, or its latest version, DTSC's *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air*, revised February 7, 2005, or its latest version, USEPA Risk Assessment Guidance for Superfund, Parts A through E; USEPA User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings, 2003; USEPA Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites, 2002; USEPA Supplemental Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites, 2002; CalEPA Selecting Inorganic Constituents as Chemicals of Potential Concern at Risk Assessments at Hazardous Waste Sites and Permitted Facilities, CalEPA DTSC, February 1997; CalEPA Use of the Northern and Southern California Polynuclear Aromatic Hydrocarbons (PAH) Studies in the Manufactured Gas Plant Site Cleanup Process, CalEPA DTSC, July 2009. Cleanup goals for all contaminant of concerns shall be based on residential (i.e., unrestricted) land use.

ii. Groundwater cleanup goals shall at a minimum achieve applicable Basin Plan water quality objectives, including California's Maximum Contaminant Levels or Action Levels for drinking water as established by the California Department of Public Health, and the State Water Resources Control Board's "Antidegradation Policy" (State Board Resolution No. 68-16), at a point of compliance approved by the Regional Board, and comply with other applicable implementation programs in the Basin Plan.

iii. The State Water Resources Control Board's "Antidegradation Policy",which requires attainment of background levels of water quality, or the highest level of water quality that is reasonable in the event that background levels cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of water, and not result in exceedence of water quality objectives in the Regional Board's *Basin Plan*.

iv. The State Water Resources Control Board's "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304" (State Board Resolution No. 92-49), requires cleanup to background or the best water quality which is reasonable if background levels cannot be achieved and sets forth criteria to consider where cleanup to background water quality may not be reasonable.

III. The Discharger shall submit site-specific cleanup goals for residential (i.e., unrestricted) land use for the Executive Officer's approval concurrent with the submittal date of the Pilot Test Report. The proposed site-specific cleanup goals shall include detailed technical rationale and assumptions underlying each goal.

IV. Upon approval of the RAP by the Executive Officer, the Discharger shall implement the RAP within 60 days of the issuance of the approval of the RAP.

d. Continue to conduct residential surface and subsurface soil and sub-slab soil vapor sampling under the current Regional Board approved work plan dated September 24, 2009. If the ongoing reinterpretation of new assessment data derived from the tasks described in the work plan suggests that modification or expansion of the tasks proposed in the RAP is necessary for complete cleanup, then the Discharger shall submit addenda to the September 24, 2009 work plan to the Regional Board for review and approval by the Executive Officer no later than 60 days of the date of issuance of this Order.

e. If the ongoing groundwater monitoring and investigation warrants, the Discharger shall:

I. Install new wells in order to complete the groundwater monitoring well network and to fully delineate the impacted groundwater plume, and

II. Prepare a detailed impacted groundwater RAP. The Regional Board will set forth the due date of the groundwater RAP at a later date.

4. **Public Review and Involvement:**

a. Cleanup proposals and RAP submitted to the Regional Board for approval in compliance with the terms of this Order shall be made available to the public for a minimum 30-day period to allow for public review and comment. The Regional Board will consider any comments received before taking final action on a cleanup proposal and RAP.

b. The Discharger shall encourage public participation. The Discharger is required to prepare and submit a Public Participation Plan for review and approval by the Executive Officer, with the goal of having the Regional Board provide the stakeholders and other interested persons with:

I. Information, appropriately targeted to the literacy and translational needs of the community, about the investigation and remedial activities concerning the discharges of waste at the Site; and

II. Periodic, meaningful opportunities to review, comment upon, and to influence investigation and cleanup activities at the Site.

c. Public participation activities shall coincide with key decision making points throughout the process as specified or as directed by the Executive Officer of the Regional Board.

d. The Discharger shall prepare draft environmental documentation evaluating the potential environmental impacts associated with the implementation of the RAP and submit to the Regional Board as directed by the Executive Officer.

5. **Time Schedule:** The Discharger shall submit all required technical work plans and reports by the deadlines stated in this Order, which are summarized in Table 4. As field activities at this Site are in progress, additional technical documents may be required and/or new or revised deadlines for the technical documents may be issued. Therefore, Table 4 may be updated as necessary. The Discharger shall continue any remediation or monitoring activities until such time as the Executive Officer determines that sufficient cleanup has been accomplished to fully comply with this Order..

6. The Regional Board's authorized representative(s) shall be allowed:

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

   b. Access to copy any records that are stored under the conditions of this Order;

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

   d. The right to photograph, sample, and monitor the Site for the purpose of ensuring compliance with this Order, or as otherwise authorized by the California Water Code.

7. **Contractor/Consultant Qualification:** A California licensed professional civil engineer or geologist, or a certified engineering geologist or hydrogeologist shall conduct or direct the subsurface investigation and cleanup program. All technical documents required by this Order shall be signed by and stamped with the seal of the above-mentioned qualified professionals.

8. This Order is not intended to permit or allow the Discharger to cease any work required by any other Order issued by this Regional Board, nor shall it be used as a reason to stop or redirect any investigation or cleanup or remediation programs ordered by this Regional Board or any other agency. Furthermore, this Order does not exempt the Discharger from compliance with any other laws, regulations, or ordinances which may be applicable, nor does it legalize these waste treatment and disposal facilities, and it leaves unaffected any further restrictions on those facilities which may be contained in other statues or required by other agencies.

9. The Discharger shall submit 30-day advance notice to the Regional Board of any planned changes in name, ownership, or control of the facility; and shall provide 30-

day advance notice of any planned physical changes to the Site that may affect compliance with this Order. In the event of a change in ownership or operator, the Discharger also shall provide 30-day advance notice, by letter, to the succeeding owner/operator of the existence of this Order, and shall submit a copy of this advance notice to the Regional Board.

10. Abandonment of any groundwater well(s) at the Site must be approved by and reported to the Executive Officer of the Regional Board at least 14 days in advance. Any groundwater wells removed must be replaced within a reasonable time, at a location approved by the Executive Officer. With written justification, the Executive Officer may approve of the abandonment of groundwater wells without replacement. When a well is removed, all work shall be completed in accordance with California Department of Water Resources Bulletin 74-90, "California Well Standards," Monitoring Well Standards Chapter, Part III, Sections 16-19..

11. The Regional Board, through its Executive Officer or other delegate, may revise this Order as additional information becomes available. Upon request by the Discharger, and for good cause shown, the Executive Officer may defer, delete or extend the date of compliance for any action required of the Discharger under this Order. The authority of the Regional Board, as contained in the California Water Code, to order investigation and cleanup, in addition to that described herein, is in no way limited by this Order.

12. Any person aggrieved by this action of the Regional Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

    http://www.waterboards.ca.gov/public_notices/petitions/water_quality

    or will be provided upon request.

13. Failure to comply with the terms or conditions of this Order may result in imposition of civil liabilities, imposed either administratively by the Regional Board or judicially by the Superior Court in accordance with Sections 13268, 13308, and/or 13350, of the California Water Code, and/or referral to the Attorney General of the State of California.

14. None of the obligations imposed by this Order on the Discharger are intended to constitute a debt, damage claim, penalty or other civil action which should be limited or discharged in a bankruptcy proceeding. All obligations are imposed pursuant to the police powers of the State of California intended to protect the public health, safety, welfare, and environment.

Ordered by: _____ Date: _____

Deborah Smith
Chief Deputy Executive Officer

ATTACHMENTS

FIGURES

Figure 1: Site Vicinity Map
Figure 2: Previous Exploration Location
Figure 3: Proposed Soil Vapor Sampling Locations
Figure 4: Benzene and Methane Concentrations in Soil Vapor
Figure 5a: Carousel Houses Tested as of March 15, 2010
Figure 5b: Residential Methane Screening Results as of March 15, 2010
Figure 5c: Summary of Results of Testing for Benzene Concentrations in Soil Vapor as of March 15, 2010
Figure 5d: Summary of Results of Testing for Non-Benzene Concentrations in Soil Vapor as of March 15, 2010
Figure 5e: Summary of Soil Sampling Results (0-10' Below Surface) as of March 15, 2010
Figure 5f: Methane Concentrations in Soil Vapor at 5 Feet Below Surface as of March 15, 2010
Figure 6: Proposed Groundwater Monitoring Well Locations

TABLES

Table 1: Data Summary from Phase I and Phase II Site Characterization for Soil and Soil Vapor
Table 2A: Summary of Soil Samples Analytical Results -VOCs, SVOCs, and TPH
Table 2B: Summary of Soil Vapor Analytical Results -VOCS and Fixed Gases
Table 3: Maximum Concentration of Aliphatic and Aromatic Hydrocarbons by Hydrocarbon Fractionations at Individual Properties
Table 4: Deadlines for Technical Work Plans and Reports

EXHIBITS

Exhibit 1: OEHHA's Memorandum dated May 19, 2010
Exhibit 2: Shell Oil Company Letter to the Regional Board dated May 5, 2010

Note: All Figures and Tables, except Table 4, were taken from technical reports prepared by SOPUS's consultant, URS Corporation

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December 24, 2014

VIA FIRST CLASS AND ELECTRONIC MAIL

Deborah Smith
Chief Deputy Executive Officer
Los Angeles Regional Water Board
320 West 4th Street, Suite 200
Los Angeles, California 90013

Re: **TENTATIVE REVISED CLEANUP AND ABATEMENT ORDER PURSUANT TO CALIFORNIA WATER CODE SECTION 13304 CLEANUP AND ABATEMENT ORDER NO. R4-2011-0046**

SITE: FORMER KAST PROPERTY TANK FARM LOCATED SOUTHEAST OF THE INTERSECTION OF MARBELLA AVENUE AND EAST 244TH STREET, CARSON, CALIFORNIA (SCP NO. 1230, SITE ID NO. 2040330, CAO NO. R-2011-0046)

Dear Ms. Smith:

We represent Barclay Hollander Corporation ("Barclay") with respect to the foregoing matter and this letter responds, in part, to the December 8, 2014 letter from Paula Rasmussen to C. Michael Carter.

We were first notified by a phone call from Sam Unger on December 8, that he would be recommending that you name Barclay on the existing Cleanup and Abatement Order No. R4-2011-0046 ("CAO"). Subsequently, we received Ms. Rasmussen's letter and various attachments, one being a 98-page chart purporting to contain the Regional Board staff's responses to comments, including those of Barclay, from previous submissions to the Regional Board on the topic of naming Barclay on the CAO.

Obviously, we were disappointed when we read these materials and we continue to believe that Barclay does not meet the definition of "discharger" under the California Water Code. I spoke with your counsel, Ms. Kuenzi, on December 16 and she suggested that I raise some of my questions in writing with you so that is the purpose of this letter.

EXHIBIT NO. 2

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Barclay's last correspondence with the Regional Board on this topic was back in June 2014, nearly six months ago, and at that time it was on a relatively limited topic at the Regional Board staff's request -- namely to respond to certain technical comments submitted by Shell. Since then, we have not been told by anyone at the Regional Board whether they were considering naming Barclay, or not, on the CAO. Now, with the information provided by Ms. Rasmussen and Mr. Unger, Barclay seeks to (1) submit additional critical evidence, that was previously unavailable, and that must be considered by you before making any decision on this issue; and (2) schedule a formal hearing before you in order to give Barclay an opportunity to present the key evidence directly to you and to explain why Barclay is not a "discharger" under the Water Code. These requests are made without any intention to waive any and all defenses Barclay may have to being named on the CAO. We further explain these two requests next.

1. **Substantial additional and critical evidence has been developed since Barclay last submitted comprehensive comments in January 2014, nearly a year ago and it must be considered by you before making any decision.**

As you may know, there is ongoing civil litigation between certain residents of the Carousel Tract and Shell, Dole and Barclay with respect to the homeowners' claims of property damage and personal injury (the homeowners are herein referred to as "Plaintiffs"). That litigation has been very active, especially this past year since Barclay last submitted comprehensive comments and evidence to the Regional Board staff on January 21, 2014. Depositions of fact and expert witnesses have been taken, substantial expert reports have been exchanged, and additional documents have been produced – some of which bear directly upon the decision you are being asked to make.

By way of one example, Dr. Dagdigian's opinion regarding upward migration of historic contamination left by Shell at the site has been further developed since our submissions to the Regional Board and it now includes a three dimensional model which has been presented to Shell and the Plaintiffs, but never seen by the Regional Board staff. As you should be aware, the Regional Board staff supporting the prosecutor in this action reviewed Dr. Dagdigian's earlier work on this topic, but concluded that while upward migration through capillary action might explain some of the contaminant distribution at the site it did not explain all of it. Now, with the completion of Dr. Dagdigian's 3-D modeling report, you will see that there is overwhelming evidence to support Dr. Dagdigian's opinion concerning upward migration as the explanation for the contaminant distribution at the site today. And, Dr. Dagdigian's opinion is further supported by another expert report (never sent to the

Regional Board but served on Shell and the Plaintiffs) from a pre-eminent hydrogeologist, Dr. Charles Faust.[1] In that 40-page report, Dr. Faust confirms that capillary action caused the upward migration of the petroleum contamination left at the site by Shell and that well-known principle explains the current distribution of contaminants.

Another example of crucial evidence that has not been made available to the Regional Board, is the third day of deposition of George Bach. Mr. Bach was deposed in November 2014 in the civil litigation at the request of Plaintiffs and Shell and the transcript from that deposition is now available. As you are probably aware, the Regional Board staff supporting the prosecutor in this action repeatedly cites to a 2011 unsworn statement of Mr. Bach, even though he signed a later declaration under penalty of perjury in 2013. In our June 2014 comments to the Regional Board we explained why no one should rely on Mr. Bach's 2011 statement but the prosecutorial staff apparently disregarded that recommendation. In the November 2014 deposition Shell and Plaintiffs cross-examined Mr. Bach under oath, and he confirmed the veracity of the 2013 declaration and explained the 2011 unsworn statement, making even clearer that all known petroleum hydrocarbon contamination at the site was disposed of offsite. Mr. Bach also directly refuted any contention that there was evidence of petroleum contamination in the berms, or that any petroleum contamination was brought up from below the reservoir bottoms as a result of the ripping of the concrete floors -- two additional points that the Regional Board's staff claims are supported solely by Mr. Bach's 2011 unsworn statement, but that now certainly cannot be attributed to Mr. Bach (nor anyone else) given his recent deposition[2].

As for this last example, under the most basic rules of evidence, Mr. Bach's 2014 deposition testimony (along with his other deposition testimony) is the most credible evidence of his recollections of the events surrounding the redevelopment of the site in the mid-1960s and it would be an error to arbitrarily apply greater weight to a 2011 unsworn statement made at a time when Mr. Bach was not subject to cross-examination under oath by all parties, and in which he relies on inaccurate information supplied to him by Plaintiffs' counsel (as the November 2014 deposition evidence makes plain). In short, the Regional Board staff has no

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[1] We submitted a very short 6-page declaration from Dr. Faust to the Regional Board in connection with Barclay's comments in June 2014. The 40-page report mentioned here was prepared after that submission and was served in the litigation but never provided to the Regional Board because the comment period had concluded.

[2] No other eyewitness to the redevelopment activities of Barclay testified that there was evidence of any petroleum contamination in the berms, or that any petroleum contamination was brought up from below the reservoir bottoms.

basis to rely upon Mr. Bach's 2011 unsworn statement when the November 2014 deposition transcript is now available and makes clear that no one should interpret his 2011 unsworn statement to suggest that any petroleum compounds were known to have been left onsite by Barclay.

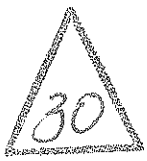
As you can see from these two examples, some of the evidence developed in the litigation this past year bears directly upon the decision you are being asked to make and was not available when Barclay's previous comments were submitted to the Regional Board. We have begun the process of collecting that information but it will take a few weeks to compile it and submit it to the Regional Board.

2. **Barclay seeks a hearing in order to present its case that it is not a "discharger" under California Water Code Section 13304.**

Barclay seeks a hearing before you in order to directly address the question whether Barclay is a "discharger" under the California Water Code, including the presentation of new evidence previously unavailable to submit to the Regional Board, as well as to respond to the comments of the prosecutor's staff with respect to Barclay's prior submissions. This is a necessary step, especially here where there is a contested amendment to a CAO in a highly charged, politicized, and contemporaneously-litigated matter and where Barclay is highly likely to appeal any amendment naming it in the order.

Further, at the hearing Barclay must have an opportunity to cross examine the witnesses that the prosecutor is relying upon and who have provided their views on the evidence in their effort to persuade you to name Barclay Hollander on the order. This includes those on the Regional Board staff who claim to have read the technical reports and declarations of Waterstone and disagree with those conclusions, as well as those who have read the George Bach materials and decided to rely on his 2011 unsworn statement, and not his sworn testimony under cross examination, in order to form the bases for their recommendation to you to name Barclay on the CAO. At a minimum, Barclay must have this opportunity to question the witnesses who offer these views and to test their credibility and their credentials to offer these conclusions in support of the prosecutor's recommendation.

Scheduling that hearing and giving Barclay a reasonable opportunity to prepare will take a few weeks, as well.



Given that Mr. Unger asked that you make a decision on the recommendation to include Barclay in the CAO by January 9, 2015, we ask that you respond to this letter as soon as possible, especially in light of the year-end holiday season, and our need to plan how to provide information to you as quickly as possible.

Very truly yours,

Patrick W. Dennis

PWD/hhk

cc: Nicole Kuenzi (*Via First Class and Electronic Mail*)
See Attached for Additional Recipients

101853441.1

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Janice Hahn, Honorable Congresswoman, US House of Representatives,
California's 44th District *(Via U.S. Mail)*

Mark Ridley-Thomas, Supervisor, Second District County of Los Angeles *(Via U.S. Mail)*

Isadore Hall, III, Assembly Member, 64th Assembly District *(Via U.S. Mail)*

Jim Dear, Mayor of Carson *(Via U.S. Mail)*

Nelson Hernandez, Carson City Manager *(Via U.S. Mail)*

Ky Truong, City of Carson *(Via U.S. Mail)*

James Carlisle, Office of Environmental Health Hazard Assessment *(Via U.S. Mail)*

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January 6, 2015

VIA HAND DELIVERY AND ELECTRONIC MAIL

Deborah Smith
Chief Deputy Executive Officer
Los Angeles Regional Water Quality Control Board
320 West 4th Street, Suite 200
Los Angeles CA 90013

Re: TENTATIVE REVISED CLEANUP AND ABATEMENT ORDER PURSUANT TO CALIFORNIA WATER CODE SECTION 13304 CLEANUP AND ABATEMENT ORDER NO. R4-2011-0046

SITE: FORMER KAST PROPERTY TANK FARM LOCATED SOUTHEAST OF THE INTERSECTION OF MARBELLA AVENUE AND EAST 244TH STREET, CARSON, CALIFORNIA (SCP NO. 1230, SITE ID NO. 2040330 CAO NO. R-2011-0046)

Dear Deborah:

We represent Barclay Hollander Corporation ("Barclay") with respect to the foregoing matter. This letter follows up on my letter to you dated December 24, 2014, which responded in part to the December 8, 2014 correspondence from Paula Rasmussen to C. Michael Carter on the topic of naming Barclay to the existing Cleanup and Abatement Order No. R4-2011-0046 ("CAO").

In my December 24 letter, we described certain previously unavailable and highly relevant evidence that has been developed in the ongoing civil litigation between certain residents of the Carousel Tract and Shell, Dole and Barclay that bears directly upon the decision that you have been asked to make as to whether Barclay should be named to the CAO. We have now collected some of that evidence, enclosed with this letter, and below we describe a few of the more important documents that require your attention before any decision is made in response to the December 8 recommendation from the prosecutor:

- November 19, 2014 deposition of George Bach ("2014 Bach Deposition," transcript attached hereto as "Attachment A");

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EXHIBIT NO. 3

- Expert Report of Jeffrey V. Dagdigian, Ph.D., dated November 14, 2014 ("Dr. Dagdigian's Report," attached hereto as "Attachment B");
- Rebuttal Report of Jeffrey V. Dagdigian, Ph.D. in Response to the Plaintiffs' Expert Reports, dated December 22, 2104 ("Dr. Dagdigian's Rebuttal Report," attached hereto as "Attachment C");
- Expert Report of Charles R. Faust, Ph.D., P.G., dated November 14, 2014 ("Dr. Faust's Report," attached hereto as "Attachment D");
- July 7, 2014 deposition of F. Edward Reynolds, Jr., RCE ("Reynolds Deposition," transcript attached hereto as "Attachment E");
- Expert Report of Charles R. Faust, Ph.D., P.G., dated March 7, 2014 ("Dr. Faust's Rebuttal Conduct Report," attached hereto as "Attachment F");
- Expert Report of Mark Armbruster, dated March 7, 2014 ("Mr. Armbruster's Rebuttal Conduct Report," attached hereto as "Attachment G");
- Supplemental Report of William R. Brasher, dated March 7, 2014 ("Mr. Brasher's Rebuttal Conduct Report," attached hereto as "Attachment H");
- Various County of Los Angeles Regional Planning Commission ("Regional Planning Commission") documents, dated January 25, 1966, February 10, 1966, August 9, 1966 (two), September 20, 1966 and September 21, 1966 (collectively attached hereto as "Attachment I"); and
- County of Los Angeles Board of Supervisors ("Board of Supervisors") meeting minutes dated March 17, 1966 and October 20, 1966 (collectively attached hereto as "Attachment J").

The Regional Board's staff did not previously have this evidence and therefore it was not considered by the prosecutor when it made its recommendation to name Barclay on the CAO. Moreover, after our June 2014 submission to the Regional Board until the December 8 phone call from Mr. Unger, we did not have any reason to gather this additional evidence and submit it to the Regional Board because we received no response from Regional Board staff and we were never told whether or not the prosecutor was considering naming Barclay to the CAO. In the meantime, the related civil litigation generated additional evidence. Now that we have the Regional Board prosecutor's response, it is clear that this newly generated evidence must be considered before any decision is made to name Barclay to the CAO.

Therefore, this letter and all attachments listed above and references and information cited therein should be included in the public record in this matter and be given full consideration before making any decision. We explain the significance of this additional evidence next.

1. **A Third Day of the Deposition of George Bach Taken by Counsel for the Plaintiffs and Shell Confirms That All Significant Petroleum Hydrocarbon Impacts Known to Barclay Were Disposed Offsite, And Makes Plain That The Regional Board Has No Basis For Relying on Mr. Bach's 2011 Unsworn Statement to Support An Opposite Finding.**

We provide the transcript of the third day of deposition of George Bach, dated November 19, 2014, which had not been reviewed by the Regional Board prosecutor when it issued its recommendation to name Barclay to the CAO. As you may be aware, Mr. Bach personally supervised the dismantling of the reservoirs and grading efforts to prepare the Kast property for construction of the Carousel Tract in 1965-66. The transcript of this third day of testimony contains additional testimony regarding his first-hand knowledge of the presence and treatment of oil-impacted soils that were encountered during those efforts, which is absolutely critical to any evaluation of Barclay's potential liability as a "discharger" under the California Water Code.

The prosecutor's conclusion that the "contamination pattern presently on site likely resulted from site development activities of fill and grading with site soils"[1] is based in substantial part on its belief that during redevelopment there was evidence of petroleum hydrocarbon odors in the berm soils and observable impacts to soil directly beneath the reservoir floors.[2] Yet the only evidence cited by the prosecutor for these two propositions is an unsworn statement signed on May 13, 2011 by Mr. Bach ("2011 Statement"). In order to reach this conclusion based solely on the 2011 Statement, it was necessary for the prosecutor to (i) disregard the sworn deposition testimony of multiple witnesses, including that of Mr. Bach, that does not support the prosecutor's conclusions; (ii) interpret ambiguous language in the 2011 Statement in ways that are not appropriate in the circumstances; (iii) ignore the inherent lack of evidentiary value in the inadmissible hearsay presented by the entire 2011 Statement taken while the witness was working with the lawyers for only one side in the litigation, which side had not given him access to documents to refresh his recollection except notes made by the lawyers who were advocates for only one point of view; and (iv) disregard the declaration submitted by Mr. Bach in June 2014 ("2014 Declaration"), which explained and

[1] Regional Board Site Cleanup Program Response to Comments on the Draft Revised Cleanup and Abatement Order, Former Kast Property Tank Farm ("Comment Chart") at 17.

[2] Comment Chart at 44.

clarified the circumstances in which the 2011 Statement was made and stated that his 2013 deposition better represented his first-hand knowledge of what occurred at the Subject Property after he had been given an opportunity to refresh his recollection with historical documents.

After Barclay's June, 2014 submission to the Regional Board, the deposition of Mr. Bach was reopened at the request of Shell and Plaintiffs for the specific purpose of asking him about the 2011 Statement. That deposition, which marked the third day of Mr. Bach's sworn testimony in the litigation, was taken in November, 2014. All of the questions were asked by counsel for Shell and Plaintiffs.

That deposition testimony confirms that the prosecutor's reliance on the 2011 Statement is misplaced. Even before Mr. Bach's deposition was reopened, there were four eye-witnesses still living who had given depositions on the subject of spreading the berm soils and ripping the concrete floors during the 1965-66 redevelopment activities. These eye-witnesses are George Bach, Lee Vollmer, Lowell Anderson, and Al Vollmer. In their depositions, which are admissible evidence, each testified that they did not observe any petroleum hydrocarbons in the berm soil.[3] Those who were asked about odors testified that there were no petroleum odors in the berm soil.[4] Thus, all of the admissible evidence contradicts the prosecutor's conclusion on that point. The same is true for observations of soil beneath the reservoir bottoms seen when the concrete floors were being ripped. All of the eye-witnesses who observed the soil beneath the slabs on the reservoir bottoms observed no petroleum hydrocarbons beneath the ripped concrete.[5] Al Vollmer in particular was cross-examined closely about this.[6] Once again, all of the admissible evidence contradicts the prosecutor's conclusions on this subject.

As noted in my December 24 letter, the Regional Board prosecutor relied exclusively on its interpretation of Mr. Bach's 2011 unsworn statement despite the fact that Mr. Bach's subsequent June 26, 2014 declaration[7] signed under penalty of perjury, explained that the

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[3] Bach Deposition, March 7, 2013 at 143:23-144:4; L. Vollmer Deposition, March 15, 2013 at 86:2-87:1; Anderson Deposition, December 18, 2013 at 35:9-36:8; A. Vollmer Deposition, January 14, 2014 at 44:3-15.

[4] Anderson Deposition, December 18, 2013 at 36:9-12; A. Vollmer Deposition, January 14, 2014 at 60:4-6; 110:19-111:2.

[5] Bach Deposition, March 13, 2013 at 188:15-189:1; L. Vollmer Deposition, March 15, 2013 at 97:18-98:3; Anderson Deposition, December 18, 2013 at 42:4-12; A. Vollmer Deposition, January 14, 2014 at 61:18-62:7; 62:19-22; 109:14-110:11.

[6] A. Vollmer Deposition, January 14, 2014 at 61:18-62:7.

[7] In my December 24, 2014 letter, I erroneously referred to this as a "2013" declaration.

2011 unsworn statement should not be relied upon, and that the 2014 declaration and his March 7, 2013 and March 13, 2013 depositions provided the most reliable account of his first-hand memory of the events surrounding redevelopment of the Kast Site in the 1960s up to that point. Much of the 2011 Statement is similar to the testimony given by Mr. Bach during his 2013 deposition, but as Mr. Bach explains in his 2014 declaration, by the time of his deposition, he had been given an opportunity to refresh his recollection with documents, something the Plaintiffs' lawyers did not give him a chance to do before he signed the 2011 Statement while working exclusively with them. Inexplicably, the Regional Board staff focused on a few differences between the 2011 Statement and the 2013 deposition and, without explanation disregarded the admissible evidence (the deposition) in favor of the inadmissible evidence (the 2011 Statement) based upon an interpretation that the person who signed the Statement clearly refuted.

In his November 2014 deposition, Mr. Bach, testifying under oath and subject to cross examination by lawyers for Shell and the Plaintiffs, directly refutes the "factual" assertions made by the Regional Board staff in its document attached to the December 8 recommendation entitled, Site Cleanup Program Response to Comments on the Draft Revised Cleanup and Abatement Order, Former Kast Property Tank Form ("Comment Chart"), and which they claim are supported solely by Mr. Bach's unsworn statement in 2011. Mr. Bach is unequivocal in his deposition testimony that he did not see or smell oil in the berm soil that was used as fill or in other soils on the property,[8] he did not observe oil in the soil below reservoir floors,[9] and he saw no ponding of oil onsite.[10] He also clarifies that, contrary to the way in which his 2011 unsworn statement has been misinterpreted, petroleum-impacted sand used to clean oil residue was not blended with clean fill and left onsite.[11] Mr. Bach's 2014 deposition testimony, considered in conjunction with his 2013 depositions and 2014 sworn declaration, provides the most comprehensive, competent evidence of his first-hand knowledge of events at the Site and provides no support for the prosecutor's reliance on the 2011 unsworn, and inadmissible, statement.

What is particularly noteworthy about this third day of deposition—and what we ask you to pay specific consideration to now— is Mr. Bach's testimony regarding his 2011 unsworn statement. Like his 2014 declaration and earlier depositions, Mr. Bach's deposition contains testimony that convincingly negates any basis for relying on the 2011 Statement to conclude that any petroleum hydrocarbons were left onsite by Barclay.

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[8] Bach Deposition, November 19, 2014 at 126:16-127:1; 127:19-129:6; 130:4-132:11.
[9] Bach Deposition, November 19, 2014 at 130:4-132:11.
[10] Bach Deposition November 19, 2014 at 135:4-136:10.
[11] Bach Deposition, November 9, 2014 at 120:4-124:20.

The Regional Board prosecutor purports to glean facts from the 2011 Statement that are necessary for the conclusions it draws regarding Barclay's liability; however, the 2011 Statement would not be admissible under the most basic rules of evidence and it has been long established that no California court would permit reliance on it to support a finding of fact. *See, e.g., Fishbaugh v. Fishbaugh*, 15 Cal. 2d 445, 457 (1940) (basing conclusions upon inadmissible evidence may constitute sufficient ground for a reversal of judgment); *Estate of Pierce*, 32 Cal. 2d 265, 277 (1948) (noting that once "the inadmissibility of the evidence came to light…it was the duty of the trial court to disregard the inadmissible portion of the evidence").

The 2011 Statement is not competent evidence under the Evidence Code because it is hearsay and not subject to any recognized hearsay exception. Evid. Code § 1200 Furthermore, it was not signed under penalty of perjury (Evid. Code § 710), Mr. Bach does not have personal, first-hand knowledge about much of the contents of the statement (Evid. Code § 702(a)), and information in the statement is a product of speculation rather than Mr. Bach's memory (Evid. Code §§ 702, 800). Each of these reasons is clear from the face of the document and from the 2014 declaration, but if there were ever a doubt in anyone's mind, a reading of Mr. Bach's 2014 deposition transcript would remove it.

Mr. Bach explained in the November 2014 deposition that the 2011 Statement represented his best recollection at the time it was written and signed, but that it was written without the benefit of looking at documents generated at the time the Kast Site was developed. He stated, "The statements in here are what I believed to be true after 25 – 40 years of not looking at it. It's what I could recall at that time with no reference material, just out of my head."[12] Once he had the opportunity to review documents, his recollection was refreshed and he could offer an accurate account of his first-hand knowledge.

In his most recent deposition, Mr. Bach also offered clear and unequivocal testimony that many purported "facts" detailed in the 2011 Statement did not reflect his own first-hand knowledge. For example, he testified that he did not detect petroleum hydrocarbon odors in the soil, and that he included an account in the 2011 Statement of odor in the soil only because he thought he remembered it being in a soils report:

> Q. Okay. Now when you were meeting with Mr. Mitchell in order to prepare -- and subsequently prepared your [2011 statement], you spoke with him about some – some of the soil having odors. Do you recall that discussion?
>
> (Objections)

[12] Bach Deposition, November 9, 2014 at 117:17-21.

Mr. Bach: We discussed that there was a soils report that indicated that there was some odor. I didn't - - myself, I didn't recall smelling or having the odor there, but it was in a report."[13]

Likewise, Mr. Bach explained that he did not personally observe petroleum hydrocarbons in soil under the reservoir floors, but that he saw a description of the presence of petroleum hydrocarbons contained in the boring logs in a soils report:

Q. You wrote in your [2011 statement] that you did find that the soil immediately under the concrete was oil stained and had an odor, correct?
(Objections)
Mr. Bach: No. What I said was we did find it, but that was based on the comments from the boring logs that were – that I did look at at that time. So I'm –
Q. And you didn't –
Mr. Bach: -- quoting from somebody else.[14]
***
Mr. Bach: It's from [a soils] report and it's what the observer saw and the way he classified the material. And I took the information from that.

The prosecutor is well aware of the soils report Mr. Bach references in the above passage; it is a drainage study dated March 11, 1966 and referred to repeatedly by the prosecutor in its comments. It is the only document in the record that refers to boring logs that mention oil odors. It is a single piece of evidence. One item of evidence cannot be expanded into more than it is by lawyers who persuade a witness in his eighties, without the benefit of documents, counsel, or cross-examination, to sign a document that refers to the fact without referring to its source.

Finally, the 2011 unsworn statement must be disregarded because Mr. Bach testified that the statement is riddled with speculation that was included at the request of plaintiffs' counsel in the civil litigation:

Mr. Bach: [Areas identified in the 2011 Statement as those that "might have higher levels of contamination"] were written because I was asked to speculate about where things might be found. In the notes that Adam [an attorney at Girardi-Keese] sent me, that was one of the requests.
(Motion to strike, Objection)

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[13] Bach Deposition, November 9, 2014 at 126:16-127:1.
[14] Bach Deposition, November 9, 2014 at 130:4-17, 132:9-11.

Mr. Bach: That's what he asked me to do.
***
Q. That's a good question. Mr. Bach, were you referring to [plaintiffs' counsel] or [Barclay's counsel] when you said you were doing what he instructed you to do?
Mr. Bach: [Plaintiffs' counsel's] people.[15]

Mr. Bach's testimony makes clear that the prosecutor's reliance on the 2011 unsworn statement is arbitrary and without basis, especially in light of the already robust compilation of admissible evidence in the Regional Board's possession related to Mr. Bach and the subjects he addresses. *See Houghtaling v. Super. Ct.*, 17 Cal. App. 4th 1128, 1141 (1993) ("recognizing the "centuries old evidentiary doctrine that only trustworthy and reliable evidence should be considered…"); *Ojala v. Bohlin*, 178 Cal. App. 2d 292, 304 (1960) ("Resort must be had to the best evidence that is available…").

In making findings of fact upon which a determination is made to name a party to a CAO, the Regional Board is duty-bound to consider all competent, admissible evidence. *See, e.g., Cnty. of San Diego v. Assessment Appeals Bd. No. 2*, 148 Cal. App. 3d 548, 558 (1983) (upholding trial court's finding of abuse of discretion where board chose to disregard important competent evidence); *Marshall v. Dept. of Water & Power*, 219 Cal. App. 3d 1124, 1147 (1990) ("the only evidence which the [fact finder] is not free to disregard is competent evidence"); *Gilbert v. Gilbert*, 98 Cal. App. 2d 444 (1950) (abuse of discretion for failing to consider competent evidence). The decision by the Regional Board prosecutor to prefer the incompetent and inadmissible 2011 statement over a mountain of credible and admissible evidence violates due process protections, which are spelled out in the California Administrative Procedure Act ("APA") and the State Water Board's own regulations. Under both the APA and the State Water Board regulations, hearsay evidence, such as that contained in the 2011 unsworn statement which is not the product of Mr. Bach's personal knowledge, may be used for the purpose of supplementing or explaining other evidence *but shall not be sufficient in itself to support a finding unless it would be admissible over objection in civil actions*." Gov. Code § 1153(c), (d) (emphasis added); Cal. Code Regs. tit. 23, § 648.5.1 (incorporating Gov. Code section 11513 by reference); *see also, e.g., Molenda v. Dept. of Motor Vehicles*, 172 Cal. App. 4th 974, 996 (2009) ("The mere admissibility of evidence at an administrative hearing does not confer the status of 'sufficiency' to support a finding absent other competent evidence" (citation omitted).); *Daniels v. Dept. of Motor Vehicles*, 33 Cal. 3d 532 (1983) (noting that Gov. Code. section 11515 "render[s] hearsay

[15] Bach Deposition, November 9, 2014 at 137:22-139:11.

evidence insufficient in itself to support a finding"); *see also* Evid. Code § 1200 (defining hearsay evidence).

"While administrative bodies are not expected to observe meticulously all of the rules of evidence applicable to a court trial, common sense and fair play dictate certain requirements for the conduct of any [proceeding] at which facts are to be determined. Among these [is]...hearsay evidence standing alone can have no weight." *Desert Turf Club v. Bd. of Supervisors*, 141 Cal. App. 2d 446, 455 (1956) (ordering the board to annul an order and reconsider an application "wholly excluding each and every instance of hearsay testimony unless supported by properly admissible testimony"); *accord Ashford v. Culver City Unified School Dist.*, 130 Cal. App. 4th 344, 349 (2005) (finding that the board's reliance on hearsay evidence alone to support its findings violated Gov. Code section 11513 and concluding that "no responsible person would rely solely on the [unauthenticated hearsay evidence]," which precluded the board's consideration of it).

The law does not permit the Regional Board to simply point to its relaxed evidence standard as justification for ignoring superior evidence in its possession in favor of making a finding based on incompetent evidence; nor does it permit the Regional Board now to ignore highly relevant evidence that was previously unavailable before making its final determination. As such, Mr. Bach's 2011 Statement must be disregarded and Mr. Bach's 2014 deposition must be considered before you make the decision to accept or reject the prosecutor's recommendation. If you follow that procedure as required by the law cited above, you will not be able to make the determinations recommended by the prosecutor that rely on Mr. Bach's 2011 unsworn statement.

2. **Further Developed Expert Opinions Regarding Fate and Transport of Petroleum Hydrocarbons Provide Overwhelming Support for Dr. Dagdigian's Opinion That Upward Migration Explains The Contaminant Distribution at The Carousel Tract Today.**

Barclay's last comprehensive submission to the Regional Board staff on January 21, 2014 contained an opinion by Dr. Jeffrey V. Dagdigian that the distribution of petroleum hydrocarbons seen in the fill soil above the former reservoir bottoms and associated lower berms at the Carousel Tract today is explained by the upward migration of historic discharges left by Shell at the Site, which is caused by capillary action and other factors such as buoyancy. The Regional Board staff reviewed Dr. Dagdigian's opinion and—while it agreed that capillary action is responsible for some upward movement of petroleum hydrocarbons at the Site—it nevertheless concluded that such upward migration "cannot

account for the larger portion of the petroleum hydrocarbons found in shallow surface soils across the Site."[16] This conclusion disregards Dr. Dagdigian's June 30, 2014 submission to the Regional Board in which he expanded on his opinion concerning the role of buoyancy in the upward movement of contaminants as well as pressure and fluid saturation. Since the prosecutor did not respond to these latter points, we request clarification whether the prosecutor ever fully considered and weighed Dr. Dagdigian's June 2014 submission. As discussed below, because the prosecutor relies on data taken both inside and outside the former reservoir footprint, we also request clarification whether the prosecutor's analysis mistakenly applies the top-down patterns of petroleum hydrocarbons found in specific areas outside the footprint that Dr. Dagdigian has said should demonstrate such top-down patterns to areas inside the footprint that in fact do not demonstrate top-down patterns.

In any event, since the time of Barclay's January 21, 2014 submission, substantial additional expert work has been completed and is reflected in expert reports prepared for the litigation regarding the fate and transport of petroleum hydrocarbons at the Site, including two by Dr. Dagdigian where he has further developed his opinion concerning upward migration as the explanation for the contaminant distribution at the Site today. Dr. Dagdigian's additional opinions are also supported by another expert report developed in the litigation and never before sent to the Regional Board, prepared by Dr. Charles Faust, a pre-eminent hydrogeologist with significant expertise in fate and transport of contaminants in the vadose zone—the very subject at issue here regarding the migration of petroleum hydrocarbons left at the Site by Shell.

Dr. Dagdigian's Report and Rebuttal Report and Dr. Faust's Report must be reviewed by the Regional Board before a decision is made to name Barclay to the CAO because they provide even more clarity of concepts that the Regional Board staff may not have understood.

Most notably, Dr. Dagdigian's Report now contains the results of a three-dimensional ("3-D") model that Dr. Dagdigian developed using three million lines of data from the Site.[17] This model provides additional clarity of the patterns of petroleum hydrocarbons in the relevant areas, yielding compelling evidence consistent with the theory of upward migration. Dr. Dagdigian also took steps since the January 21, 2014 submission to generate a more complete database to serve as the basis for his 3-D model, and so the analysis contained in his Report is based on the most complete, up-to-date data available at the time the report was written. The scientific methodology with which he generated the database, evaluated the data, and created this model is outlined in Appendix C to Dr. Dagdigian's Report.

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[16] Comment Chart at 4.
[17] Dr. Dagdigian Report at 36.

Previous analyses of the distribution of petroleum hydrocarbons at the Site that were reviewed by the Regional Board were based on a two-dimensional ("2-D") model generated by Shell's consultant, Geosyntec, using a less complete dataset than that employed by Dr. Dagdigian.[18] Dr. Dagdigian's 3-D model demonstrates the limitations of this 2-D model and brings to light significant information not previously available to the Regional Board. As Dr. Dagdigian explains in Appendix C to his Report, the benefit of the 3-D model over the 2-D model is that it interpolates concentrations of TPHd between all sample depths in all directions, providing a more accurate representation of the lateral and vertical extent of impacted soil. The 3-D model confirms Dr. Dagdigian's opinion regarding upward migration because it shows a pattern of highest petroleum hydrocarbon concentrations close to the original release locations at or beneath the former reservoir floors and near the intersections of the floors and sidewalls and lower concentrations at shallower depths; the contaminant concentration pattern follows vertical and lateral pathways that, combined, confirm an overall upward migration pathway within the former reservoir footprints and also into the directly adjacent surrounding soil that once constituted the lower portions of the berms.[19]

Dr. Dagdigian's Report and Rebuttal Report also refute the alternative explanation provided by the prosecutor for the current distribution of petroleum hydrocarbons at the Site. To provide justification for its recommendation to name Barclay to the CAO, the prosecutor rejects Dr. Dagdigian's upward migration theory in favor of an alternative explanation that attributes the distribution of petroleum hydrocarbons to the actions of Barclay. The prosecutor concludes that "the current contamination pattern in the Site soil is explained by the procedure Barclay used to backfill and compact berm soil into the former reservoirs which resulted in a random pattern which characterizes the present hydrocarbons onsite."[20] However, the prosecutor's characterization of the true, current distribution of petroleum hydrocarbons at the Site as random is inaccurate. Dr. Dagdigian's Report and 3-D model shows that the pattern of hydrocarbons onsite is not "random," and so could not have been created by Barclay's backfilling procedures. Dr. Dagdigian demonstrates that the pattern of petroleum hydrocarbons requiring abatement today is instead correlated with releases that occurred during Shell's operations.[21] 3-D representation of lateral and vertical petroleum hydrocarbon impacts to soil reveals that in many cases what looks to be what the Regional

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[18] Geosyntec, Transmittal of Concentration Contour Maps Former Kast Property, Carson California, Site Cleanup No. 1230, Site I.D. 2040330. Figures 4-9 (Apr. 29, 2011).
[19] Dr. Dagdigian Report at 36-37.
[20] Comment Letter at 43.
[21] Dr. Dagdigian Report at 27, 29-30.

Board staff calls "highly variable" patterns of distribution in Geosyntec's 2-D modeling[22] is not variable at all, but is fully explained by a more accurate picture of the contaminant migration pathways due to forces including capillary action, buoyancy, and pressure. "

Dr. Dagdigian's Rebuttal Report also provides additional analysis beyond what has been presented to the Regional Board previously on this topic. In that report, Dr. Dagdigian explains that the procedure used by Barclay would have resulted in homogenized soils and randomly distributed hydrocarbons, which is definitely not the pattern seen on the Site today or reflected in the 10,000 soil sample analyses of TPHd and three million lines of data that support Dr. Dagdigian's theory. Dr. Dagdigian's 3-D model requires a fresh look at the patterns of petroleum hydrocarbons. Based on that fresh look, we anticipate you and the Regional Board will agree with Dr. Dagdigian and disagree with the prosecutor's conclusion.

In addition, if we are allowed the requested hearing where we can cross-examine the prosecutorial staff claiming to have opinions about the patterns, we anticipate that you will agree with Dr. Dagdigian and disagree with the prosecutor's staff on this critical issue.

Dr. Dagdigian's Report must be reviewed and considered before determining if Barclay should be named to the CAO for the additional reason that it directly refutes the prosecutor's rejection of his upward migration theory. The prosecutor relies solely on its analysis that capillary action could only account for "limited" upward migration of petroleum hydrocarbons at the Site.[23] This was the very same position taken by Dr. Johnson, an expert retained by Shell, who submitted a letter to the Regional Board in June, 2014. Dr. Dagdigian responded to Dr. Johnson's letter by pointing out that while he was correct that capillary action could only account for vertical movement of a certain amount, the remainder of the distance of upward migration was accounted for by buoyancy and other forces. Dr. Johnson understood this because he was careful to limit his letter to a comment only on capillary action and he did not comment on the entirety of Dr. Dagdigian's theory of upward migration. However, giving everyone the benefit of the doubt, Dr. Dagdigian explained in detail in his June 30, 2014 report how buoyancy worked in the specific environment of the Carousel site, where sometimes petroleum hydrocarbons would wick upward through capillary action and come to rest; then rain or irrigation would cause an area to become flooded thereby causing the petroleum hydrocarbons to move further upward in the saturated ground. Over the ensuing 40 years since the redevelopment, those combined forces explain the additional vertical migration seen in the contaminant distribution today.

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[22] Comment Chart at 54.
[23] See, e.g., Comment Chart at 46-48.

Because of the importance of this subject, we asked Dr. Charles Faust, a highly regarded hydrogeologist with expertise in the movement of liquids in the vadose zone, to provide a further explanation of how the vertical and lateral movement of petroleum hydrocarbons worked in this case. That short declaration by Dr. Faust was submitted to the Regional Board on the same day as Dr. Dagdigian's June submission. The prosecutor makes no mention of buoyancy or pressure when it rejects Dr. Dagdigian's upward migration theory. Nor does the prosecutor explain why it rejects the points made in the June reports of Dr. Dagdigian or Dr. Faust.

In furtherance of its rejection of upward capillary migration, the prosecutor states that data attached to a June 16, 2014 comment letter from Shell's project manager, Douglas J. Weimer, which included several examples of purported top-down patterns of migration in shallow soils, supports the conclusion that "site demolition and grading activities [rather than upward capillary migration] account for the occurrence of petroleum hydrocarbons *in shallow soils in Reservoirs 5, 6, and 7* formerly at the Site" (emphasis added).[24] But, as Dr. Dagdigian explains in his June submission, more than two-thirds of the samples provided in Mr. Weimer's submissions were taken from *outside of the reservoir footprints*. The data provided by Mr. Weimer makes no distinction in location between the areas within the former reservoirs footprints and other areas outside the reservoirs where one would expect top-down patterns of concentrations in certain areas due to Shell's operations. Indeed, as Dr. Dagdigian explained in his June 2014 submission, data provided by Mr. Weimer shows an overall upward migration pattern of petroleum hydrocarbons within the reservoir footprints, and it shows top-down patterns precisely in the areas specified in Dr. Dagdigian's January 21, 2014 report as those where discharges to surface soils took place during Shell's operations (i.e. the former sump area east of Reservoir 5 and the pump house area). The prosecutor provides no response to Dr. Dagdigian's important evaluation of information provided by Mr. Weimer; nor does it explain how it can rely on Mr. Weimer in light of Dr. Dagdigian's critique. The prosecutor simply ignores the logical problems with Mr. Weimer's evidence, side-steps his failure to distinguish between the sample locations, and treats the Weimer evidence as though it shows patterns in the former reservoirs even if it does not. This appears to be one of the bases for the prosecutor's finding that grading activities account for petroleum hydrocarbons in shallow soils in the reservoir footprints.

We do not understand why the prosecutor would limit its criticism to capillary action without addressing the other factors that contribute to upward migration, and why it would disregard Dr. Dagdigian's expert analysis of data unless it simply never read the June submissions of

[24] Comment Chart at 85-86.

Dr. Dagdigian and Dr. Faust. We understand that those submissions were received by the Regional Board based on their inclusion on the Comment Chart; but the prosecutor failed to respond to or otherwise acknowledge these important components to Dr. Dagdigian's theory of upward migration when it responded to the January 21, 2014 submission.[25] At a minimum they demonstrate strong reasons for a public hearing with a right to cross-examine the prosecutorial staff to have them explain their reasoning. And the absence of any analysis by the prosecutor on this subject certainly justifies consideration of the latest scientific analyses by Dr. Dagdigian and Dr. Faust in the attached submission.

Like Dr. Dagdigian's January 21, 2014 and June 30, 2014 reports to the Regional Board, Dr. Dagdigian's Report in the litigation explains how other forces—buoyancy and, to a lesser extent pressure—also effect upward migration and how those forces have worked in conjunction with capillary action to move petroleum hydrocarbons to their present location.[26] Dr. Dagdigian has analyzed additional data and has developed the discussion of buoyancy and pressure further since those submissions, and these elements of his theory warrant the Regional Board's consideration now.

We have also included and urge you to review Dr. Faust's Report filed in the litigation, which confirms Dr. Dagdigian's theory of upward migration. Dr. Faust, who has 34 years of experience in subsurface fate and transport of non-aqueous phase liquids ("NAPLs") and has authored guidance documents for USEPA on topics relevant to his opinions in this matter, concluded that upward migration of petroleum hydrocarbons has occurred at the Site and is the most likely explanation of the current Site conditions.[27] To reach his conclusion, Dr. Faust conducted an analysis, not previously presented to the Regional Board, of the sand composition at the Site[28] and of site-specific data related to phase saturation (on rainfall, water content of soil samples, and water saturation), a critical condition that influences the mobility and migration of petroleum in the subsurface under Dr. Dagdigian's theories.[29] Like Dr. Dagdigian, Dr. Faust finds that the Site data is inconsistent with the prosecutor's theory that the pattern of petroleum hydrocarbons within the reservoir footprints can be explained by contamination in the berms during Shell's operations and subsequent redistribution of former berm soil during grading operations.[30] Dr. Faust explains that the prosecutor's conclusion that Barclay's backfilling of the interior of the reservoirs could create the current

[25] See Comment Chart at 95.
[26] Dr. Dagdigian Report at 39-41.
[27] Dr. Faust Report at 39.
[28] Dr. Faust Report at 12 and Figure 3.
[29] Dr. Faust Report at 39.
[30] Dr. Faust Report at 24.

pattern of petroleum hydrocarbons is completely implausible because the top of the berms would have had to have been more contaminated than the deeper sections of the berms and there is no evidence to suggest that this was the case.[31]

3. **New Evidence Continues to Support That County and State Regulators Had The Same Knowledge That Barclay Had About Petroleum Hydrocarbons and Approved The Project, Demonstrating What The Standards Were At The Time.**

The remaining documents which have been generated in the civil litigation since January 21, 2014 and here submitted for your review provide additional evidence from the time period during which Barclay's development activities were conducted. They show, among other things, that Barclay met the standard of care and standard of practice at the time and complied with all applicable laws and regulations. The following also provides further evidence that regulators approved development of the Carousel Tract with full knowledge of the Site's prior use as an oil storage facility, and that no one expressed concern that development on the Site would pose a risk to human health or the environment. We have noted the remarks by the prosecutor on the Comment Chart to the effect that evidence of this nature is not relevant. However, based on the case law cited in our January 21, 2014 letter, we believe that the prosecutor is wrong about that. Barclay wishes to make its record on the issues identified in that letter and therefore submits this evidence to further support its case on those issues.

In conjunction with our January 21, 2014 submission, we presented a report by Donald Shepardson, a soils engineering standard of care expert. Since that submission, F. Edward Reynolds, an expert designated by the Plaintiffs in the civil litigation to rebut Mr. Shepardson, has been deposed and it is necessary that the transcript be reviewed before a decision is made by the Regional Board. Mr. Reynolds testified that he agrees with Mr. Shepardson that Barclay met the standard of care at the time when it left in place the petroleum hydrocarbons (below the reservoir floors) which are noted in the March 11, 1966 Pacific Soils Report.[32]

We also enclose a second report by Dr. Faust, his Rebuttal Conduct Report, in which he concludes that Barclay conducted development activities consistent with the standards of the time. Dr. Faust opines that Barclay's reliance on visibility to determine the suitability of soils was reasonable, especially because analytical tools available today for testing the non-

[31] Dr. Faust Report at 24.
[32] Reynold's Deposition at 115:19-29.

observable composition of soil were not yet developed back then. Dr. Faust further explains that the fate and transport of hydrocarbons in the subsurface was not well understood in the 1960s and concludes therefore that Barclay had no basis for knowing that hydrocarbons below the reservoir floors would impact soil above the reservoir floors.

Mr. Armbruster's Rebuttal Conduct Report explains that there is ample evidence of Barclay's interaction with County regulators and disclosure to those regulators of all facts known to Barclay about the Kast Site. Mr. Armbruster notes that during the process of applying for a zoning change that would permit Barclay to construct homes on the Kast Site, Barclay was required to comply with conditions of approval supplied by several County departments and divisions. According to a document cited by Mr. Armbruster, these included the Flood Control District, the Health Department, the Road Department, and the following divisions of the Department of the County Engineer: Design, Sanitation, Waterworks & Utilities, Building & Safety, and Parks & Recreation. During that process, none of these departments or divisions presented Barclay with a condition that Barclay conduct environmental remediation of the Site before a zone change would be approved. Mr. Armbruster opines that at the time, it was not the standard of practice for developers to have plans and conditions for environmental remediation in relation to seeking a zone change.

Similarly, Mr. Brasher's Rebuttal Conduct Report determined that when Barclay was applying for the zone change that would permit development of the Kast Site, no one interested in the Carousel project expressed concern with regard to hazardous substances, toxic pollution, health risks to humans, or a failure by Barclay to assess the negative impacts of its work at Carousel. Mr. Brasher states that what Barclay knew about the subsurface conditions of the Kast Site before development is contained in the March 11, 1966 Pacific Soils Engineering Report, which was disclosed to the County engineer.

Mr. Armbruster and Mr. Brasher both base their opinions in part on various Regional Planning Commission documents and Board of Supervisors meeting minutes, which we also enclose for your reference. Among these documents is an August 9, 1966 Regional Planning Commission memorandum that was provided to the Board of Supervisors and which notes the Kast Site's prior use as a petroleum tank farm. This is just one example of evidence of the Regional Planning Commission's and Board of Supervisors' awareness of the Site's use as an oil storage facility but which fact did not raise cause for alarm on the part of regulators at the time.

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We urge you to review and weigh all of the foregoing evidence before making your determination regarding naming Barclay to the CAO. This evidence, which was not

available to the Regional Board prosecutor staff when it was making its recommendation to name Barclay, does not support the conclusions that the prosecutor recommends that you draw. For that reason, this evidence must be carefully considered by you now and before making any decision.

Finally, I reiterate Barclay's requests from my December 24 letter that you allow for a public hearing before making any decision in order to address the question whether Barclay is a "discharger" under the California Water Code. That hearing would allow Barclay to present its evidence, including this new evidence, allow for cross-examination of key witnesses, and respond to the comments of the Regional Board's prosecutor's staff with respect to Barclay's prior submissions, among other things. The State Water Board itself recognizes that the issuance of cleanup and abatement orders is an action that is "of an adjudicative nature" and therefore governed by the California Administrative Procedure Act[33] and by regulations adopted by the State Water Board.[34] [35] Both the Administrative Procedure Act and the State Water Board regulations provide for a hearing and the opportunity to cross examine witnesses, under oath, as Barclay has specifically requested.[36]

We understand that Mr. Unger has asked that you make a decision on the prosecutor staff's recommendation to include Barclay in the CAO by January 9, 2015. However, there is nothing in the recommendation that supports the need for a determination of Barclay's liability by the January 9 requested deadline—nor are we aware of any reason especially given the long delay in that recommendation coming forth. In light of the fact that the Regional Board has been aware of Barclay's connection to the Carousel Tract since at least 2010 and that it has had months—and in some respects, years—to evaluate evidence of Barclay's potential liability, there is simply no reason why you should not both consider the foregoing recently developed evidence and provide Barclay the full hearing that the law requires.

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[33] Cal. Gov. Code § 11400 et seq.

[34] Cal. Code Regs. tit. 23, §§ 648-648.8

[35] State Water Resources Control Board, Office of Chief Counsel, M. A.M. Lauffer Chief Counsel Memorandum (Aug. 2, 2006).

[36] Cal. Gov. Code § 11513; Cal. Code Regs. tit. 23, § 648.5(a)(6). See also *Desert Turf Club v. Bd. of Supervisors*, 141 Cal. App. 2d 446, 455 (1956) ("common sense and fair play" dictates that cross-examination of witnesses should be permitted at administrative hearings).

We look forward to your response to this letter and the crucial information contained herein.

Sincerely,

Patrick W. Dennis

PWD/hhk

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See Attached for Additional Recipients

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Janice Hahn, Honorable Congresswoman, US House of Representatives, California's 44th District *(Via U.S. Mail)*

Mark Ridley-Thomas, Supervisor, Second District County of Los Angeles *(Via U.S. Mail)*

Isadore Hall, III, Assembly Member, 64th Assembly District *(Via U.S. Mail)*

Jim Dear, Mayor of Carson *(Via U.S. Mail)*

Nelson Hernandez, Carson City Manager *(Via U.S. Mail)*

Ky Truong, City of Carson *(Via US. Mail)*

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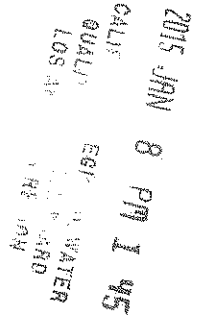

January 7, 2015

VIA FIRST CLASS AND ELECTRONIC MAIL

Ms. Deborah Smith
Chief Deputy Executive Officer
Los Angeles Regional Water Quality Control Board
320 West 4th Street, Suite 200
Los Angeles, California 90013

Re: TENTATIVE REVISED CLEANUP AND ABATEMENT ORDER PURSUANT TO CALIFORNIA WATER CODE SECTION 13304 CLEANUP AND ABATEMENT ORDER NO. R4-2011-0046

SITE: FORMER KAST PROPERTY TANK FARM LOCATED SOUTHEAST OF THE INTERSECTION OF MARBELLA AVENUE AND EAST 244TH STREET, CARSON, CALIFORNIA (SCP NO. 1230, SITE ID NO. 2040330, CAO NO. R4-2011-0046

Dear Ms. Smith:

We represent Shell Oil Company ("Shell") with respect to the above-referenced matter. This letter responds to the December 24, 2014 letter addressed to you from Patrick W. Dennis of Gibson Dunn & Crutcher, LLP ("Gibson Dunn"), counsel for Dole Food Company, Inc. and Barclay Hollander Corporation (the "Developer").

As you know, Shell has been cooperating with the Carousel neighborhood investigation since 2008 and performing under Cleanup and Abatement Order No. R4-2011-0046 ("CAO") since it was issued on March 11, 2011. Shell has undertaken exhaustive efforts at tremendous expense to comply. Shell has been and continues to be committed to the investigation and remediation process and to implementing its revised Remedial Action Plan ("RAP") in the Carousel neighborhood upon its approval.

There is substantial evidence that the Developer is a responsible party and discharger under the California Water Code and applicable law. To date, however, the Developer has failed and

EXHIBIT NO. 4

refused to participate in the investigation and remediation process and has not contributed a penny to the cost thereof. Accordingly, Shell urges the Regional Board to promptly issue the Tentative Revised Cleanup and Abatement Order ("Revised CAO") based on the substantial evidence in the record, including all of the site investigation and sampling data and reports, the comments and submissions by Shell, the Developer and others, and also based on the December 8, 2014 Memorandum from Samuel Unger, Executive Officer, the December 8, 2014 correspondence from Paula Rasmussen, Assistant Executive Officer, as well as the Regional Board Site Cleanup Program staff's Response to Comments Received Regarding the Revised CAO.

It is disappointing that the Developer continues its efforts to delay the Regional Board's issuance of the Revised CAO. Mr. Dennis misleadingly suggests that the Developer has not had sufficient opportunity to present comments to the Revised CAO.[1] In fact, the Developer has had a full and fair opportunity to provide comments, and has provided extensive comments, on multiple occasions, over the course of more than three years.

The December 8, 2014 Memorandum correctly summarizes the CAO Revision Process, the multiple opportunities for comments, and the voluminous comments submitted by the Developer through its legal counsel at Gibson Dunn. *See* Memorandum by S. Unger, at pp. 3-5. Specifically, Gibson Dunn submitted comments to the Regional Board regarding their view of the role of the Developer on at least the following occasions:

- On September 15, 2011, in response to the Regional Board's 13267 Order;
- On January 21, 2014, in response to the Proposed Draft Revised CAO, after Gibson Dunn obtained two extensions of time to submit comments; and,
- On June 30, 2014, in response to the Regional Board's Notice of Opportunity for Additional Comments on the Proposed Draft Revised CAO.

As the Regional Board Site Cleanup Program staff is well aware, and as the 98-page response to comments ("RTC") reflects, the Developer's comments were voluminous and appear to have

[1] Mr. Dennis goes so far as to state that since Gibson Dunn last submitted comments, "we have not been told by anyone at the Regional Board whether they were considering naming Barclay, or not, on the CAO." Such a comment is disingenuous, at best, given that Gibson Dunn and the Developer have been well aware that the Board has been considering naming the Developer a responsible party and discharger since the Revised CAO was first issued on October 31, 2013.

been carefully considered and ultimately rejected by the Regional Board staff.[2] Mr. Dennis proposes to submit additional information from the exact same witnesses whose theories and testimony have already been carefully considered. There is nothing new, and there most certainly is not "substantial additional and critical evidence" not yet considered by the Regional Board staff as Mr. Dennis suggests.

Indeed, the Regional Board staff have already received and considered the comments, technical opinions and testimony of each of the witnesses Mr. Dennis seeks to proffer yet again in some sort of repackaged form: Jeffrey Dagdigian of Waterstone Environmental (who already provided his technical theory for the Regional Board's consideration); Mr. George Bach (whose conflicting testimony was previously submitted by Gibson Dunn for the Regional Board's consideration); and Dr. Charles Faust (whose declaration was also previously submitted by Gibson Dunn for the Regional Board's consideration).

Tellingly, Mr. Dennis chose not to submit with his letter the supposedly "substantial additional and critical evidence" from these individuals and contends that it will "take a few weeks" to compile – a tactic which further demonstrates his clients' goal of merely delaying a final resolution of this important issue.

Mr. Dennis cites to various alleged developments in the litigation involving his clients and the Carousel residents. That litigation, however, will likely go on for years. The first trial is not scheduled to being until August 2015. The regulatory process should not be postponed based on alleged developments in that litigation.

Finally, Mr. Dennis now requests a hearing for the first time in this multiple-year process. However, the Developer has already had more than sufficient opportunity to "persuade you not to name Barclay Hollander on the order" and, simply, has failed. A hearing at this late juncture is not necessary, appropriate or mandated, and is designed to continue to delay issuance of the Revised CAO.[3]

For years, Shell has been incurring all of the costs associated with the investigation and remediation process. It is long past time for the Developers to contribute. Neither the Developer's delay tactics nor the Developer's continued efforts to shirk their responsibility

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[2] Mr. Dennis accusatorily refers to Regional Board staff who "claim to have read" the technical reports and declarations; yet, the Memorandum and RTC demonstrate the Regional Board staff's thorough review of the comments submitted by Gibson Dunn.

[3] Mr. Dennis also seeks to harass Regional Board staff, noting in his letter without citation to any supporting authority, that the Developer purportedly "must" have an opportunity to question those on the Regional Board staff who "claim to have read" the technical reports and declarations of Waterstone and disagree with those conclusions, as well as those who relied on George Bach's 2011 testimony, and to "test their credibility and their credentials to offer these conclusions in support of the prosecutor's recommendation." *See* Dennis letter, p. 4.

should be further condoned. Shell encourages the Regional Board to issue the Revised CAO as recommended by the Regional Board Site Cleanup Program staff, Regional Board Executive Officer Sam Unger and Assistant Executive Officer Paula Rasmussen.

Sincerely,

Deanne L. Miller

DLM/mmb

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Integrated Resource Management, Inc.

January 7, 2015

Deborah Smith
Chief Deputy Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West Fourth Street; Suite 200
Los Angles, California 90013

RE: Dole Food Company, Inc.
Tentative Revised CAO No. R4-2011-0046; SCP No. 1230, Site ID No. 2040330

Dear Ms. Smith,

I have reviewed the work performed by the Los Angeles Regional Water Quality Control Board and State Board teams resulting in the reissuance of the Tentative Revised Cleanup and Abatement Order (CAO) No. R4-2011-0046 on December 8, 2014. Your team's effort, often criticized by me for taking so long, demonstrates the thoroughness and dedication of your staff and resulted in a CAO incomprehensibly near perfection. I seriously doubt anyone will ever fully appreciate the hours devoted to this monumental task.

Faithfull once more, I was pleased to be sharing with the community this great accomplishment and just in time for the holiday season, when on December 24, 2014, I was advised of a visit by that tortuous demon Ghost of Christmas Past, Dole Food Company's counsel, Patrick Dennis. The events of the past "are but shadows," according to the Ghost of Christmas Past; confronting the shadows of their past is agonizing for Dole Food Company. "Show me no more! Why do you delight to torture me?" cries Counsel.

While the cries of foul are many, contrary facts are few; the awkward and divergent citations are mere attempts to divert our attention as if there really was substantial additional and critical evidence which has been developed since Dole Food Company's comments from January 2014.

There is no new evidence to be presented in this matter; this is clearly a stall tactic. Dr. Jeffrey Dagdigian's opinion is based on a cleverly crafted concept with the singular purpose of replacing fact with fantasy. Dr. Charles Faust does not confirm Dr. Dagdigian's work in anyway; it is a ridiculous attempt to perpetuate Dole Food Company's desire to fashion an excuse for their abhorrent behavior of concealing dangerous pollution for profit and then later procuring science to tell a fictional story. Even if the Los Angeles Regional Water Quality Control Board were to consider all of the science fiction concerning the petroleum contamination capillary migration presented by Drs. Dagdigian and Faust, as suggested by Mr. Dennis, it wouldn't change a thing. Dole Food Company, Inc. and its wholly owned subsidiaries Barclay Hollander Corporation and Oceanic Properties, Inc. are collectively known polluters subject to the laws of the State of California.

As for the rhetoric concerning Mr. George Bach's veracity, I offer that it is indeed in question. I have personally met with Mr. Bach, been present at his depositions, and read his declarations and documents. Mr. Bach is very proud of his clever, cost-saving approaches throughout his career. By his own telling (under oath) he brags how he was hired on the spot by Barclay Hollander Corporation for his cunning ability to 'violate every ordinance that you could think of relative to a plot plan". Mr. Bach has quite an imagination for storytelling and prides himself on being a real rule breaker. Mr. Bach sought me out to tell his story and offered his written Declaration as proof of his recollection of events. Whether or not we accept his clarification of events he remembers isn't really important either, although the locations he describes as to where higher concentrations of contaminants are found have proven to be remarkably accurate.

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EXHIBIT NO. 5

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Dole Food Company, Inc. and its wholly owned subsidiaries Barclay Hollander Corporation and Oceanic Properties, Inc. purchased the polluted, contaminated, and distressed property from Shell Oil Company at a significant discount; promising to cleanup the property. Shell Oil Company was not only concerned about their image in the community after the drowning death of the young boy on site but, also with the general appearance of the property once it was under the control of Dole Food Company, Inc. and its wholly owned subsidiaries Barclay Hollander Corporation and Oceanic Properties, Inc. We hear tales of immigrant workers wading through waist deep oil and of the multiple illicitly set fires burning throughout the night televised by helicopter news crews.

Bottom line, the issuance of the Cleanup and Abatement Order No. R4-2011-0046 on December 8, 2014 adding Dole Food Company, Inc. as a Responsible Party is more than appropriate. I would request that you review any and all additional documents Mr. Dennis provides, now and throughout the cleanup process. Ongoing investigation, data collection, and new evidence can and should always be presented and reviewed…but as for naming Dole Food Company, Inc. and its wholly owned subsidiaries Barclay Hollander Corporation and Oceanic Properties, Inc. as responsible Parties, that is long over due.

Whether or not you feel compelled to grant a hearing so that this Responsible Party might present a case that it is not a "discharger" is entirely within your discretion; I only request that we are provided notice and an opportunity to be equally heard. The idea that Dole Food Company, Inc. would want to have a public evidentiary hearing disputing facts concerning how its subsidiaries knowingly concealed dangerous pollution from hard working families is their business…I find it rather newsworthy.

I am also including with this correspondence a brief report from a pre-eminent geologist, Dr. James Wells, which is presented to help your team better separate fact from fiction.

Sincerely,

Mr. Robert W. Bowcock
Integrated Resource Management, Inc.

cc: Nicole Kuenzi, Esq. RWQCB
Sam Unger – RWQCB
Tekewold Ayalew – RWQCB
Thizar Tintut-Williams – RWQCB
Arthur Heath – RWQCB
Frances McChesney, Esq. – State Board
Jennifer Fordyce, Esq. – State Board

L. EVERETT & ASSOCIATES
ENVIRONMENTAL CONSULTANTS

January 7, 2015

Deborah Smith, Chief Deputy Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West Fourth Street; Suite 200
Los Angles, California 90013

Subject: Former Kast Tank Farm Environmental Program
Comments on Tentative Revised Cleanup and Abatement Order Naming Barclay Hollander and Dole Foods as Responsible Parties

Dear Ms. Smith,

We applaud the RWQCB in its determination (December 8, 2014 letter from Samuel Unger to Shell and Dole) that the developers of the Carousel Tract, including Barclay Hollander Corporation and Dole Foods Company should be named as responsible parties in the revised Cleanup and Abatement Order (CAO) for this site. As you know, our firm has been retained by Girardi | Keese to advise them on matters related to the environmental site investigation, contaminant fate and transport and remediation plans for this site. Girardi | Keese represents most of the homeowners of the Carousel Tract and the City of Carson. The RWQCB noted: "BHC [Barclay Hollander Corporation] and/or its predecessor purchased the Site with explicit knowledge of the presence of the petroleum reservoirs and the presence of residual petroleum hydrocarbons and conducted various activities, including partially dismantling the concrete in the reservoirs and grading the onsite materials, thereby spreading the waste."

To support Barclay Hollander's effort to avoid being named in the CAO, its consultant, Dr. Dagdigian, fabricated a theory that shallow soil was clean when the site was redeveloped in the 1960s and only became contaminated later. Dr. Dagdigian has proffered a "capillary rise" and "buoyancy" theory in which he hypothesizes that a perched water zone could have been created in the vadose zone either just above or just below the floors of each of the three former oil reservoirs at the Carousel Tract in response to rainfall events. According to this speculative theory, rising groundwater levels (which have never actually been observed at such a shallow level at this site) could have created a smear zone and could have brought the hydrocarbon light non-aqueous phase liquids (LNAPL) into previously clean shallow soil by capillary action and buoyancy forces. The Regional Board Response to Comments on the revised Cleanup and Abatement Order states: "Regional Board staff finds the Waterstone [Dagdigian] explanation of upward chemical migration at the site to be speculative and incomplete." I agree with the RWQCB's conclusion about and provide additional evidence below that refutes this theory.

The process of grading this site in the 1960s could easily be characterized as a burial project to dispose of petroleum-contaminated concrete and soil and the former reservoirs can be thought of as unregulated landfills. In preparation for redeveloping the site for residential land use in the 1960s, the developer defendants needed to dismantle the three massive oil reservoirs that Shell had previously operated at this site. These were huge storage reservoirs, covering much of the current residential neighborhood, with wood-frame roofs and concrete floors. The walls of the reservoirs were concrete-lined earthen berms. There were also interior berms providing spill containment around each reservoir and another earthen berm surrounding the entire property which I refer to in this report as the "perimeter berm." For the purposes of this letter, it is important to differentiate between the "reservoir berms" (which were an integral part of the reservoir structures and in constant contact with oil; see Figure 1) from the "interior" and "perimeter berms" (which were not part of the reservoir structures and appear to have had lower levels of soil contamination).

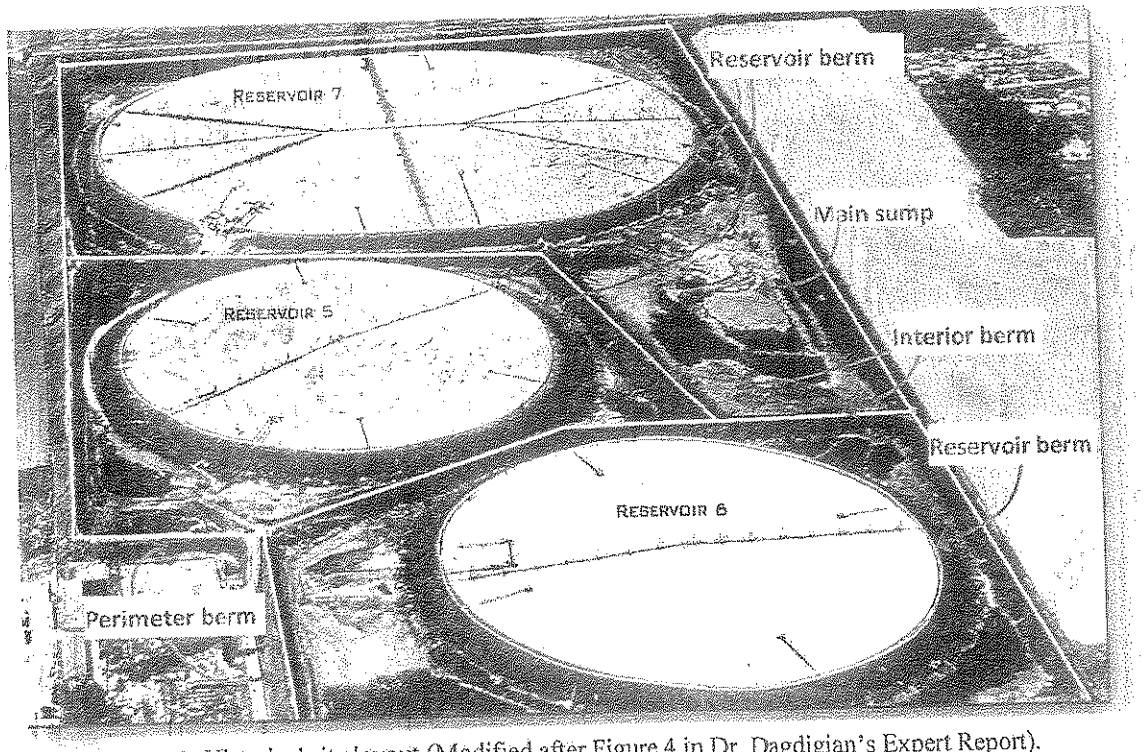

Figure 1. Historical site layout (Modified after Figure 4 in Dr. Dagdigian's Expert Report).

The reservoirs had been constructed in the 1920s by digging down approximately 15 feet and building up earthen reservoir berms another 12 to 15 feet. Before homes could be built on this property, these massive reservoirs needed to be filled in and the large berms needed to be leveled. The concrete floor on the

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western portion of Reservoir 5 was removed. For the remainder of Reservoir 5 and the other reservoirs, the concrete floors were left in place although eight-inch wide trenches were reportedly ripped into the concrete floors about 15 feet apart to facilitate drainage. Concrete from the trenches and the reservoir walls was broken up and placed above the floors. At minimum, Barclay was fully aware of the concrete burial. To this day, it remains unclear how much of this concrete exceeds cleanup standards due to petroleum soaking into the concrete during its decades of contact with oil.

Obviously, soil from the various berms would need to be placed back into the depressions that had constituted the oil reservoirs in order to make the final grade. Dr. Dagdigian makes the unsubstantiated claim that the reservoir berms were free of contamination at the time this work was accomplished but that in the intervening years, massive amounts of contamination naturally migrated upward into this fill material from below, thus causing the gross contamination we now find in soil above the reservoir floors. In issuing its revised Cleanup and Abatement Order, the State of California RWQCB has correctly rejected this argument.

Capillary rise refers to the rise of water or other fluids in soil pores resulting from the molecular attraction between the soil and the fluid (adhesion) and the surface tension of the fluid (cohesion). Although the term is obscure to non-scientists, most of us have observed capillary rise when we've placed a straw in a drink and noted that the liquid rises slightly higher in the straw than the level of the liquid in the glass. One can continue the drink experiment and dip different diameter straws into the same drink. You will find that there is a higher capillary rise for smaller and smaller diameter straws. For water in soils, this same phenomenon can occur, although capillary rise is generally only significant for fine grained soils (where the pore spaces are very small: comparable to a very small straw) directly above a water table. Up to several feet of capillary rise of water has been observed in fine-grained soils directly above a water table. For coarser grained sand, capillary rise (if observed at all) is limited to just a few inches. Weathered crude oil is more viscous than water, so weathered crude oil will be subject to much less capillary rise in soils than water. Dr. Dagdigian states "Much of the soil beneath the former reservoir floors is sandy and would act as a natural reservoir for the leaked oil."[1] Capillary rise of weathered crude oil would be infinitesimal in sandy soil. This kind of contrived logic is seldom seen in serious environmental science.

I am pleased that the professional environmental scientists and engineers at the State of California (Regional Water Quality Control Board, also known as "RWQCB") agree with me and have stated in their December 2014 Response to Comments (on the draft tentative revised Cleanup and Abatement Order naming Barclay Hollander as a responsible party) that:

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[1] Paradoxically, according to Dr. Dagdigian, four eyewitnesses from the 1960s had never seen any oil in soil under the reservoirs.

> "Based on Site investigation data, Regional Board staff concludes that the lateral and vertical distribution of petroleum hydrocarbons in soils at the Site is highly variable and could not have resulted from upward capillary migration."

My colleague, Dr. Lorne Everett and I have for many years focused our professional activities on the vadose zone (Dr. Everett is the Chair of the ASTM Vadose Zone Committee and as the former Director of the University of California at Santa Barbara Vadose Zone Monitoring Laboratory). Given our vadose zone experience, we completely reject Dr. Dagdigian's theory. Some of the bases for this opinion are summarized below.

The site was redeveloped by the developer defendants as a residential neighborhood beginning in 1966. The defendants did not remediate the subsurface contamination at the time of redevelopment. The roofs of the reservoirs were removed, but debris from the floors and walls were buried on site. Contaminated soil from the berms was redistributed across the site into low areas as part of the grading process in preparation for building homes on this site. There is evidence that Barclay Hollander was not experienced in dealing with contaminated sites: "thank you and Mr. Tubman for your patience in giving us sufficient time to remove the hazards on the Kast tank farm site. This type of cleanup work is a little unusual for our operation, and we are embarrassed for the length of time that it took to complete the job."[2] There is also evidence that Barclay Hollander was anxious to cut costs for the cleanup work:

> Q. And – what happened with the concrete? What did you do? Did you dig it all out and send it away?
> A. Well, initially when we were first looking at the job, the concept was to basically push it all in a pile and truck it out of there. But George Bach, the field engineer, for lack of a better title, came up with an idea that everyone accepted.
> And his idea was to break the – to rip the floor of the tanks and – and so that they would – any moisture would not be held up from draining on down and out of there and creating a problem. So that – he was quite proud of himself for coming up with a money-saving concept.[3]

[2] Richard Barclay, August 25, 1966 letter to D. E. Clark of Shell Oil Company.

[3] Lee Vollmer, March 2013, Deposition, page 98.

This combination of a drive to save time and money and lack of experience with contaminated sites may be part of the reason the site was left in such an unacceptable state by today's environmental standards. To our knowledge, all experts in this case agree that the floors of the reservoirs leaked when in use and caused contamination of the underlying soil. Dr. Dagdigian would have us believe that by some miracle, the concrete lining on the berms of the reservoirs—which were constructed the same way as the floors—did not leak oil and the soil in the reservoir berms somehow remained clean. This is a highly improbable scenario.

The first line of evidence cited by Dr. Dagdigian to support his theory that the reservoir berms were clean is his claim that no-one at the time noted contaminated soil. However, by Dr. Dagdigian's own admission, soil contamination is not always observable to the naked eye.[4] As an example of the unreliability of casual visual observation, Dr. Dagdigian notes that four workers at the site all testified that they did not observe petroleum hydrocarbon contamination under the reservoir floors during the ripping operation.[5] We now know that there was widespread contamination under the reservoir floors at the time, which these four workers apparently failed to discern. As a matter of fact, contamination under the floors was actually known at least as early as 1966 from the geotechnical borings advanced through the reservoir floors for a drainage study dated March 11, 1966. In that study, Pacific Soils reported "oil stains" and "oily" soil encountered in six borings that were advanced (12 to 15 feet) into soil beneath the concrete floor of Reservoir 6.[6] At this site, the major concern about oily soil was whether or not it could be adequately compacted and whether or not it allowed sufficient drainage. Soil could be quite contaminated and still pass these geotechnical criteria.

Dr. Dagdigian also helpfully documents that at Reservoirs 1 and 2 (these reservoirs were on the nearby Refinery site, were built at approximately the same time as the Carousel Tract reservoirs with the same design, and were decommissioned in the 1990s) soil contamination could not be reliably identified by visual inspection alone.[7] There was little correlation between visual signs of contamination and laboratory readings confirming contaminated soil. For example, the sample from 9-11.5 feet at boring 1 had no visual hydrocarbons, but a subsequent laboratory test revealed that this sample contained 4,900 mg/kg of total petroleum hydrocarbons (TPH). The sample from 0-1.5 feet at boring 8 contained 5,600 mg/kg of TPH but it was reported to have no visual signs of contamination. Obviously, visual observations alone are an unreliable test for soil contamination.

[4] Dagdigian, January 2014, Technical Response to the RWQCB Draft Cleanup and Abatement Order, Table 3.

[5] Dagdigian, June 2014, Technical Response to Shell's Comment Letter, p. 26.

[6] Pacific Soils Engineering, Inc. 1966. Subsurface drainage study for reservoir located in the southeast corner of Tract No. 24836 in County of Los Angeles, California. March 11. p. 1-8.

[7] Dagdigian, January 2014, Technical Response to the RWQCB Draft Cleanup and Abatement Order, Table 3.

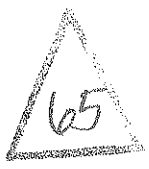
The second line of evidence relied upon by Dr. Dagdigian to support his opinion that soil in the upper berms was clean is a comparative analysis of the better-characterized soil conditions at the nearby Reservoirs 1 and 2. While some of the soil in the upper berms of these reservoirs was indeed clean, other portions were highly contaminated. For example, as shown in Dagdigian's January 2014 report[8], all the following samples were in the upper portion of the berms of Reservoirs 1 and 2. This is soil even Dr. Dagdigian would acknowledge, would have been bulldozed into the reservoirs for backfill at the Carousel Tract:

- Reservoir 1, Quadrant 1, Location H: TPH = 42,000 mg/kg
- Reservoir 1, Quadrant 3, Location H: TPH = 43,000 mg/kg
- Reservoir 1, Quadrant 5, Location H: TPH = 32,000 mg/kg
- Reservoir 2, Quadrant 1, Location G: TPH = 16,000 mg/kg
- Reservoir 2, Quadrant 4, Location H: TPH = 34,000 mg/kg
- Reservoir 2, Quadrant 1, Location E: TPH = 16,000 mg/kg
- Reservoir 2, Quadrant 3, Location H: TPH = 30,000 mg/kg

The question is not whether <u>all</u> the soil in the upper berms was contaminated; the question is whether at least <u>some</u> of the soil in the upper berms was contaminated. Dr. Dagdigian's own example from Reservoirs 1 and 2 show conclusively that some of the soil in the upper berms of these reservoirs was highly contaminated. Perversely, he then uses this information to conclude that none of the soil in the upper berms from the Carousel Tract reservoirs was contaminated even though these berms are otherwise extremely similar. This is clearly false logic.

There is another aspect of the Reservoir 1 and 2 project that Dr. Dagdigian obscures. The RWQCB required removal of hydrocarbon-saturated soils from the berms and under the reservoir floors. However, Dr. Dagdigian neglects to mention that there were additional requirements that needed to be met for any soil to be buried in the reservoir. The responsible party was required to insure that benzene was below 0.1 mg/kg, TPHg was below 1,000 mg/kg and PAH was non-detect (using the TCLP extract test) among other things. In his reports, Dr. Dagdigian plays a sleight of hand in which he sometimes implies that contamination is only significant if it is so severe as to be saturated with oil. Soil may be highly contaminated with dissolved, sorbed hydrocarbons and may pose a serious health risk but still not be "oil-saturated."

There is also a strange and unexplained temporal element to Dr. Dagdigian's theory. He opines that the largest amount of oil leakage was along the perimeter of the reservoirs, at the seam between the floors and



[8] Dagdigian, January 2014, Technical Response to the RWQCB Draft Cleanup and Abatement Order, Figures 23 and 24.

the walls. This is likely correct and this leakage likely occurred throughout the operational life of the reservoirs. However, in Dr. Dagdigian's theory, the forces of upward contaminant migration mysteriously do not begin until after 1966. The laws of physics and chemistry and hydrogeology cannot be suspended at will. If Dr. Dagdigian's theory (that capillary rise and buoyancy can cause large amounts of petroleum to rise up from depth and contaminate previously clean shallow soil) is to be believed, these forces would have been acting in the 1920s, 1930s, 1940s, 1950s and the 1960s and the berms would have become contaminated via this process long before Barclay graded them and spread the soil around the site. Instead, in Dr. Dagdigian's theory, somehow the forces of upward migration are only unleashed after 1966 after the allegedly clean upper berms had been spread into the former reservoirs. This is clearly an unreliable theory.

Excavation pilot studies conducted recently at the site confirm that the concrete slabs were relatively intact (other than the widely-spaced trenches) and thereby constitute an impervious layer that would prevent the upward migration via capillary pressure. Much of the soil immediately above the concrete floors is highly contaminated. It would have been impossible for these hydrocarbons to somehow have penetrated solid concrete by way of capillary rise or buoyancy to contaminate soil immediately above the reservoir floors.

Dr. Dagdigian's theory requires the highest petroleum concentrations to be under the reservoir floors.[9] If this pattern turns out to not be true, then his theory is disproven. In fact, this pattern does not hold up. The Regional Board stated in its December 2014 Response to Comments that:

> "Approximately 11,000 shallow soil samples from the Site have been analyzed from 2008 to present. Results of the sampling confirm that there are numerous instances where higher concentrations of petroleum hydrocarbons are observed at shallower depths than at deeper depths."

Dr. Dagdigian's own summary of data from the excavation pilot test at 24612 Neptune Avenue (Dagdigian Expert Report, Figure 9) shows numerous instances in which the highest concentrations of TPH are above the reservoir floor, not below it. For example, the 8-foot sample at location N24612XSWS was above the slab and the 9-foot sample was below the slab. The 8-ft sample contained 14,000 mg/kg of total petroleum hydrocarbons as diesel (TPHd) but the 9-foot sample had no detectable TPHd at all. Similarly, the 8.5-foot sample at location N24612XNWS was above the slab and the 9-foot sample was below the slab. The 8-ft sample contained 8,900 mg/kg of TPHd but the 9-foot sample had only 420 mg/kg of TPHd. These findings contradict Dr. Dagdigian's theory.

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[9] Dagdigian, November 2014, Expert Report, p. 37.

Dr. Dagdigian presents several arguments that petroleum hydrocarbons were not present in shallow soils (less than 10 feet deep) when Barclay developed the site in the late 1960's and that shallow soil only became contaminated by oil migrating upward from under the reservoirs. This theory requires that shallow soil outside the reservoir boundaries must still be clean (it would have been clean in the 1960s and would not be subject to future impact because it does not overlie the alleged contamination under the reservoir floors). However, occurrences of severe shallow petroleum hydrocarbon contamination do exist

Figure 2. Photo taken near 317 E 244th Street showing very viscous petroleum oozing out of the soil into a utility trench.

outside of the footprint of the tanks, contrary to the theory of capillary rise and buoyancy effects. For example, Figure 2 above, shows thick petroleum hydrocarbon found just 18 inches below the land surface in the vicinity of 317 E 244th Street, northwest of Reservoir 7. The petroleum observed in Figure 2 is extremely thick and viscous. This oil could never rise up through capillary action or be buoyed up by a rising water table to any measurable degree.

In its December 2014 revised Cleanup and Abatement Order, the RWQCB correctly states: "the lateral and vertical distribution of petroleum hydrocarbons in soil at this site is highly variable" (page 54). If capillary action and buoyancy were bringing petroleum hydrocarbons to the surface as Dr. Dagdigian has theorized, we would see a more even distribution of hydrocarbons at or near the surface. A layer of mobile LNAPL on top of a rising perched water table would result in a continuous smear zone and an

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even distribution in terms of depth across the footprint of the reservoirs. A homogeneous hydrocarbon presence across the site has never been noted.

Dr. Dagdigian's theory is further debunked by Geosyntec's series of soil contamination contour maps (an example of which is provided as Figure 3). When a perched aquifer develops, any mobile LNAPL[10] hydrocarbon will accumulate on top of the water table and can rise as the water table grows shallower and smear across the intervening soil lithology. Since water has a flat surface as it rises, the resulting hydrocarbon surface must be generally flat as well. As clearly demonstrated in the 10-foot data in Figure 3, the center of each of the three reservoirs has lower levels of hydrocarbon contamination: concentrations that are too low to be indicative of LNAPL. Secondly the majority of the hydrocarbon is found along the inside edge of the former reservoirs. It is impossible for a perched water table to spread hydrocarbon (whether by capillary rise or buoyancy effects) selectively along the edge of the reservoirs but leave the center of the reservoirs relatively free of hydrocarbon.

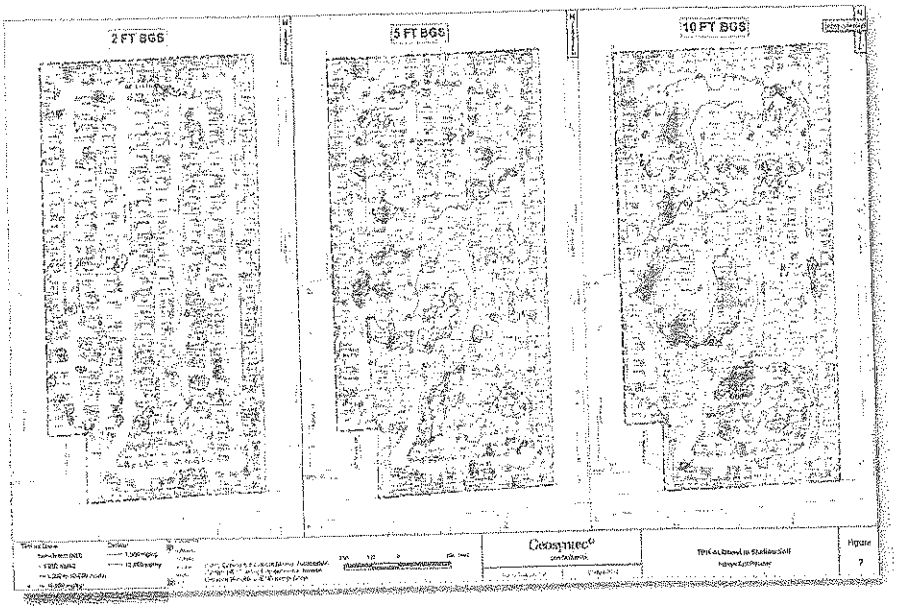

Figure 3. TPH as diesel in shallow soil.

In order to fill in the reservoir depressions, the circular reservoir berms would have been bulldozed first so that the outer perimeter berms (with lower concentrations of soil contamination compared to the reservoir berms) could subsequently be leveled. Since the highest concentrations of hydrocarbons are found along the inside edges of the former reservoirs, a logical interpretation is that the grading activity

[10] After time, much of the LNAPL (even if present) will not be mobile due to its increasing viscosity as it weathers in the environment and due to forces that bind it to the soil matrix. In this case, LNAPL would not rise at all in response to a rising water table. Instead, we would see submerged LNAPL as is depicted in Figure 4.

simply bulldozed the contaminated berms into the reservoir depressions, thereby creating the currently observed pattern. Since the perimeter and interior berms were less contaminated than the reservoir berms, their contribution would result in lower concentration soil being placed in the center and shallowest soil of each former reservoir depression.

Figure 4, below, is from EPA's Ground Water Issue, EPA/540/S-95/500 entitled "Light Nonaqueous Phase Liquids (Newell et al, 1995)." This figure demonstrates the accepted understanding that a rising water table will result in a generally even distribution of LNAPL as the water level rises. At Reservoirs 5, 6 and 7 (see Figure 3) the center of each reservoir has notably lower levels of contamination compared to the perimeter of the reservoirs. Thus Dr. Dagdigian's theory is contrary to EPA's understanding of LNAPL and perched water behavior. It is also contrary to my education and decades of experience in the environmental field.

Dr. Dagdigian's response to earlier critiques of his capillary rise argument was to shift gears and to rely on the phenomena of fluid saturation, buoyancy and pressure to explain the novel theory of upward migration of hydrocarbons at this site.[11] I have evaluated the only soil moisture data available over several vertical profiles at this site and the hard data demonstrates a highly variable soil moisture pattern completely inconsistent with any uniform pattern of perched groundwater or fluid saturation causing buoyancy. I have not seen any capillary pressure measurements at the site and therefore Dr. Dagdigian's capillary rise theory is simply speculation with no testing or credible scientific methodology to back it up.

Regarding the buoyancy component of Dr. Dagdigian's theory: this requires the formation of a perched aquifer (regional groundwater is between 50 and 60 feet deep under the Carousel Tract and it has never been measured as rising into the upper ten feet of soil). In order for infiltrating water to form a perched aquifer it must accumulate on an impermeable lithologic layer (or a very low permeability layer through which water percolates slower than the vertical recharge rate). Further this impermeable layer must be continuous under essentially the entire site in order to create a perched thickness of several feet required to bring the hydrocarbons close to the surface. (The very first illustration [Figure 1-1] in Dr. Everett's book entitled "Vadose Zone Monitoring for Hazardous Waste Sites" demonstrates that infiltrating water simply runs off the edges of fine grained layers unless they are continuous). No such impermeable layer has ever been observed at this site. For Dr. Dagdigian's theory to be correct, there must be a continuous clay layer under the reservoir floors at this site that no-one has ever mapped, in spite of literally thousands of soil borings and numerous cone penetrometer test (CPT) and ultraviolet optical screening tool (UVOST) vertical surveys having been advanced at this site. In fact, the only possible perching layers ever identified in the subsurface of the Carousel Tract are the concrete reservoir floors themselves and the only way they could act as a perching layer is if Barclay's drainage plan (cutting trenches in the floors)

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[11] Dagdigian, June 2014, Technical Response to Shell's Comment Letter, p. 3.

was faulty: in which case Barclay would still be responsible for exacerbating the subsurface environmental problems at this site.

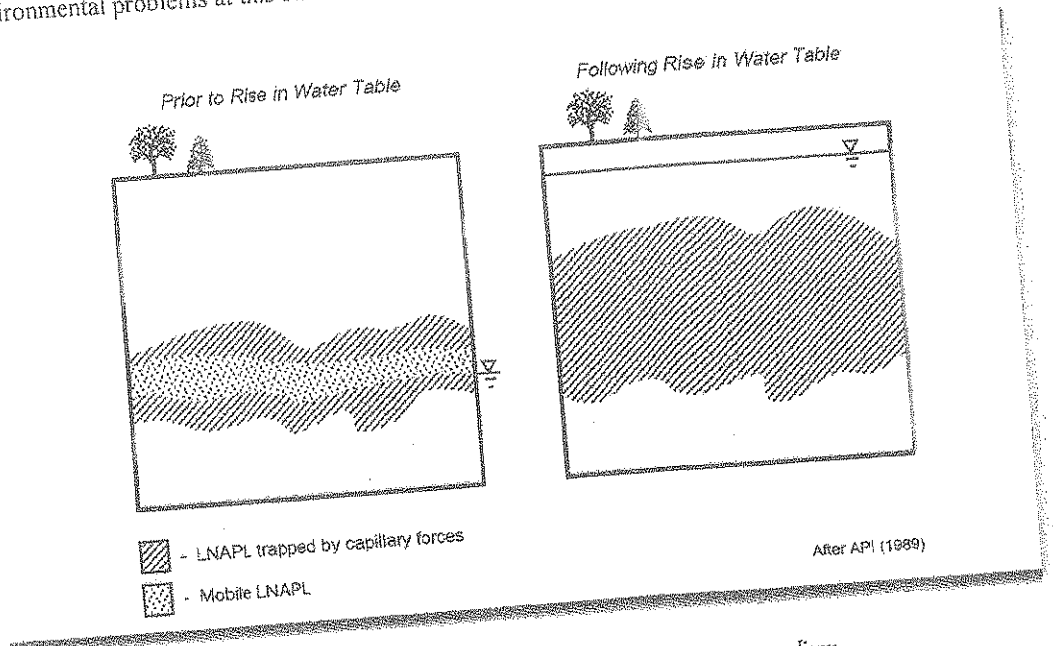

Figure 4. Effect of rising water table on LNAPL distribution in porous medium.

In addition, there must have been enough infiltration for a perched aquifer to actually form above the clay layer (or possibly the buried concrete floors): no perched aquifer has ever been observed at this site.

The buoyancy theory appears to only apply to LNAPL, thus it requires that the soil below the reservoir floors must have contained free product. This may have been the case in certain areas under Reservoir 6 where Pacific Soils encountered odorous and oily soils and where recent sampling has detected high concentrations of TPH. However, by Dr. Dagdigian's own admission, similar explorations under the other two reservoirs allegedly did not report visual signs of oil-saturated soils. Dagdigian notes that: "Sworn testimony from all 4 eyewitnesses indicated there was no observation of petroleum hydrocarbons beneath the reservoir floors."[12] Thus presumably the buoyancy and capillary rise theories cannot have been valid for Reservoirs 5 and 7 because Dr. Dagdigian would have us believe that the soil under these reservoirs was clean in 1967. This topic highlights a fundamental inconsistency in Dr. Dagdigian's unreliable and irrelevant theory. As noted above, one of the only lines of evidence for the berms being clean in 1967 was the assertion that workers at the site did not report observing oily soil in the berms. Dr. Dagdigian relies

[12] Dagdigian, June 2014, Technical Response to Shell's Comment Letter, p. 26.

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on this testimony to conclude that the berms must have been clean. However, workers also apparently did not observe oily soil under the floors of Reservoirs 5 and 7 but Dr. Dagdigian selectively rejects this information and concludes that this soil actually must have been grossly contaminated. (The true answer is that much of the soil under Reservoirs 5 and 7 is contaminated. The lesson to be drawn from this scenario is that visual observations are unreliable because there can be quite high levels of soil contamination that are not apparent to one's eyes or nose. Such contamination is only detectable by laboratory tests).

Dr. Dagdigian acknowledges that Barclay conducted infiltration tests to verify that ripping of the concrete floors would provide adequate subsurface drainage. Further, the County Engineer noted that the size and frequency of the planned channels were adequate to properly drain irrigation and rainfall water from the overlying soil.[13] Now Dr. Dagdigian says the drainage was not satisfactory for larger rainfall events and the infiltrating water built up to form a perched aquifer, but he has not done any calculations to show that any such increased infiltration ever actually happened or if it did, that the drainage was truly inadequate. Once again, Dr. Dagdigian's theory rests on untested speculation. Rather, Dr. Dagdigian simply says, *ipse dixit*, that unspecified rainfall events at unspecified dates caused an as-yet unobserved perched aquifer to form, which (in turn) provided a buoyancy effect to draw hydrocarbons upwards "for a number feet into the fill material."[14]

Dr. Dagdigian misrepresents the volume and source of the soil required to backfill each reservoir

Dr. Dagdigian's theory relies on the misconception that all soil required to fill the reservoirs to the original, natural grade came from the berms surrounding each reservoir.

> "...the berms surrounding each reservoir were created from the excavation of the reservoir itself, so backfilling that soil to its original location would have filled the reservoir to the current level grade. Therefore, soil from the outer berms would not have been required to fill the reservoirs back to grade."[15]

Contrary to Dr. Dagdigian's claim, simple volumetric calculations show that the amount of soil in each reservoir berm was insufficient, even if conservatively assuming that there was no volume reduction due to compaction. This means that soil from the perimeter berms was needed to complete the grade in the former reservoir depressions. This explains the broad pattern of less contaminated soil in the center of each reservoir and in the upper few feet of soil (which came largely from the perimeter berms) and more contaminated soil along the edges of the reservoirs and from 5-10 feet (which came largely from the

[13] Dagdigian, June 2014, Technical Response to Shell's Comment Letter, p. 21.
[14] Dagdigian, June 2014, Technical Response to Shell's Comment Letter, Appendix B, p. 2.
[15] Dagdigian, June 2014, Technical Response to Shell's Comment Letter, p. 21.

contaminated reservoir berms). The following are volume calculations for Reservoir 7 to exemplify the difference in volumes of the reservoir below the original, natural grade compared to the reservoir berm.

Referring to Figure 5, the volume of the reservoir below the original, native grade can be calculated as follows:

$$V_{reservoir} = \left[\frac{1}{2} * (B - A) + A\right] * d$$

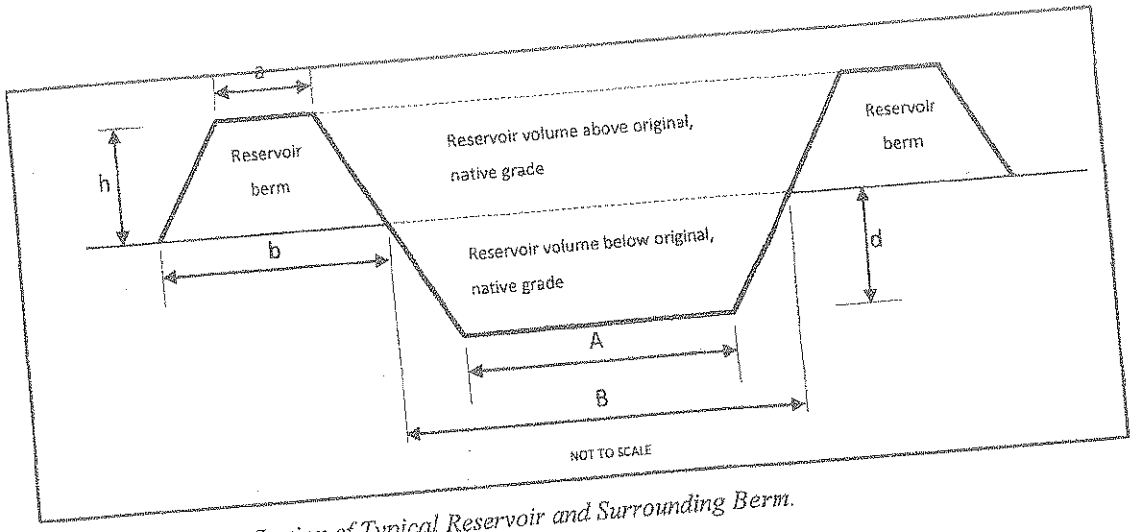

Figure 5. Cross Section of Typical Reservoir and Surrounding Berm.

Where,

$V_{reservoir}$ = volume of reservoir below original, natural grade (cubic feet)
A = area of reservoir at the floor level (square feet)
A = 354,062 sf, estimated based on historical reservoir topography[16]
B = area of reservoir at the original, native grade level (square feet)
B= 398,428 sf, estimated based on historical reservoir topography [*ibid.*]
d = depth of reservoir below the original, native grade (feet)
d = 12.5 ft, estimated based on historical reservoir topography [*ibid.*] and site conditions described in geotechnical reports by Pacific Soils Engineering, Inc.[17]

Given the values above, $V_{reservoir}$ = 4,703,062 cu ft

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[16] Dagdigian, November 2014, Expert Report, Figure 6.

[17] Pacific Soils Engineering, January 7, 1966, Preliminary soils investigation on Tract No. 24836 in the County of Los Angeles, California, p. 1.

The volume of reservoir berm can be calculated as follows:

$$V_{berm} = \frac{1}{2} * (a + b) * h * l$$

Where,

V_{berm} = volume of reservoir berm (cu ft)

a = width of top of berm (ft)

a = 20 ft, estimated average based on historical reservoir topography[18]

b = width of bottom of berm at the original, native grade (ft)

b = 60 ft, estimated average based on historical reservoir topography [*ibid.*]

h = height of berm above the original, native grade (ft)

h = 15 ft, estimated based on historical reservoir topography [*ibid.*] and site conditions described in geotechnical reports by Pacific Soils Engineering, Inc.[19]

l = length of berm (ft) measured along the center line of the berm

l = 2,427 ft, estimated based on historical reservoir topography [*ibid.*]

Given the values above, V_{berm} = 1,456,200 cu ft

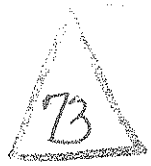
There was not nearly enough soil in the Reservoir 7 berm to fill the depression left by the reservoir. The shortfall is a huge volume of soil, estimated above to be more than 3,200,000 cu ft. This is the approximate additional volume of soil beyond the volume available in the reservoir berm that was required to fill Reservoir 7. If no imported soil was brought on site during grading,[20] then the additional soil must have been from the perimeter and interior berms. Because the perimeter and interior berms were not in constant contact with oil, it make sense that these berms were less contaminated compared to the reservoir berms. This explains why the centers of the former reservoirs and the shallowest soil has generally lower levels of contamination than the deeper soil that now occupies the former reservoirs. Soil in these areas was predominantly from the less contaminated perimeter and interior berms.

In the case of Reservoirs 5 and 6, the difference between the volume to be filled and the amount of soil available from the reservoir berm was calculated to be approximately 860,644 cu ft. This difference is smaller than Reservoir 7 due to the size difference of the reservoirs (2M barrels for Reservoir 7 as compared to 0.75M barrels for Reservoirs 5 and 6). The amount of soil available from the reservoir berm corresponds to 55% of the volume needed to fill in Reservoirs 5 and 6, but only 31% in the case of Reservoir 7. This difference in the relative proportion of volumes also explains the difference in the distribution of the petroleum hydrocarbons contaminated soil between the larger Reservoir 7 and the

[18] Dagdigian, November 2014, Expert Report, Figure 6.

[19] Pacific Soils Engineering, January 7, 1966, Preliminary soils investigation on Tract No. 24836 in the County of Los Angeles, California, p. 1.

[20] Dagdigian, November 2014, Expert Report, p. 14.



smaller Reservoirs 5 and 6 as discussed below. Specifically, the smaller reservoirs have less of a "doughnut hole" of less contaminated soil in the center of the reservoir footprint. This is because the berm volume from these smaller reservoirs would have filled more of the depression and the developers were able to use less soil from the perimeter berms.

Dr. Dagdigian misinterprets the distribution of petroleum hydrocarbon concentrations

Barclay Hollander and Dr. Dagdigian want us to believe that they minimally handled the soil at the site during grading and development. However, mixing of highly contaminated soil with less-contaminated soil during grading best explains the distribution of concentrations of petroleum hydrocarbons observed in shallow soils. Highly-contaminated soils were caused by leaking of petroleum hydrocarbons directly into the soils adjacent to the concrete-lined reservoir floors and berms. Less-contaminated soils (such as from the perimeter berms) were intentionally mixed with the more potent contamination from the reservoir berms and this mixture was spread over much of the site.

In addition to oil leaking out of the reservoirs, another source of contamination was the asphalt coating on the outside of the reservoir berms, and on the interior and perimeter berms. Some of the interior berms even had asphalt roads along the top of the berms. Asphalt is largely composed of high-molecular weight petroleum hydrocarbons and aggregate. This asphalt coating was left on site and mixed into the soil by the developer defendants during grading activities in the 1960s:

> And so as we -- as we moved that material,
> the dirt into the -- to complete the compaction, the
> asphalt just broke up. It just kind of got ground
> under and didn't require any special treatment. I'm
> sorry, but it just simply disappeared into the mix.[21]

Among other things, asphalt frequently contains naphthalene. Grading the asphalt-impregnated soil from the berms created a ring of naphthalene around the perimeter of the reservoir depressions. This pattern is consistent with the naphthalene sampling results and is further evidence that Dr. Dagdigian's theory of contamination rising with an imaginary perched water table is without merit.

Mr. Vollmer dismisses the asphalt as not requiring treatment and simply disappearing. Dr. Dagdigian does not acknowledge its contribution to the observed distribution of petroleum-contaminated soil. However, I estimated the volume of asphalt spread across the site and buried to be quite significant. Most of this material is likely now found in shallow soils because the interior and perimeter berms were used to grade the site after each reservoir had been partially filled with the soil from its own berm. This helps to explain the observed distribution of petroleum hydrocarbons in the reservoirs, and is furthered discussed below.

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[21] Vollmer, March 15, 2013, Deposition, p. 116.

In the following calculations, I estimated the volume of the asphalt coating to show that it is a significant source of contamination at this site. (See also Figure 6).

For the Reservoir Berms: $V_{asphalt}$ = (a + x) * berm length * asphalt thickness

For the Interior and Perimeter Berms: $V_{asphalt}$ = (a + 2x) * berm length * asphalt thickness

Where,

$V_{asphalt}$ = volume of asphalt coating (cu ft)

a = width of berm (ft)

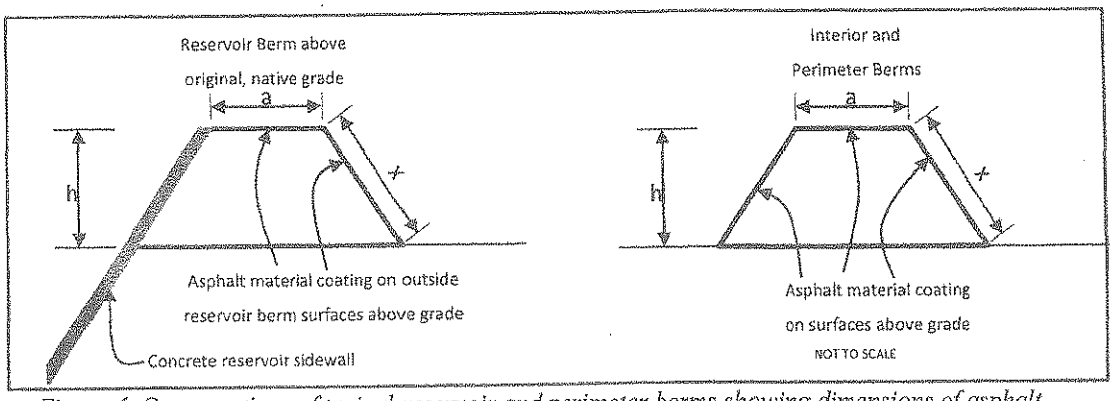

Figure 6. Cross sections of typical reservoir and perimeter berms showing dimensions of asphalt coatings.

a = 20 ft for reservoir berms and 13 ft for interior and perimeter berms, estimated average based on historical reservoir topography[22]

x = 27 ft for reservoir berms and 22.5 ft for interior and perimeter berms based on an angle of 33.7 degrees and a height (h) of 15 ft for reservoir berms and 12.5 ft for interior and perimeter berms, estimated average based on historical reservoir topography.

Berm length = 5,681 ft for reservoir berms and 7,613 ft for interior and perimeter berms, estimated average based on historical reservoir topography.

Assuming an asphalt thickness of one inch, the total volume of asphalt coating the berms (and subsequently mixed into the soil and left on site) was approximately 59,000 cubic feet or about 4,000,000 pounds (based on a specific gravity for asphalt of 1.04).

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[22] Dagdigian, November 2014, Expert Report, Figure 6.

The fact that the reservoir berms were contaminated even when the grading occurred in the 1960s is reflected in the current distribution of TPHd in the soil of Reservoirs 5 and 6 as compared to Reservoir 7. The current distribution of TPHd is presented in Figure 7 that was prepared using concentration data provided by the RWQCB in the form of a Microsoft Excel electronic file in 2014. The data was interpolated using C Tech Development Corporation's Mining Visualization System (MVS) software package. The data was interpolated in 3D (three dimensional) space using an Inverse Distance Weighting (IDW, Franke/Nielson) algorithm at a resolution of 5 by 5 by 0.5 feet in the X, Y and Z coordinate directions, respectively. Sample locations included in the dataset with a negative depth (collected above normal grade such as in planters) were excluded. TPHd results reported as zero were interpreted to be below the laboratory reporting limit or non-detect, and were set equal to one-half the reporting limit.

Figure 7 shows that, for example, at 5 ft below ground surface (bgs), Reservoirs 5 and 6 exhibit overall higher concentrations throughout the entire footprint of the reservoirs. Reservoir 7 exhibits lower concentrations in the central area of the footprint and higher concentrations towards the perimeter of the reservoir footprint. By contrast, when only concentrations between 50 and 625 mg/kg are plotted, the pattern is reversed. That is, Reservoir 7 exhibits impacted soils over the entire footprint including the central areas, but Reservoirs 5 and 6 exhibit less soil with lower concentrations in the central footprint areas. The simple explanation (Occam's razor) is that the depressions of Reservoirs 5 and 6 had a smaller volume below the original grade compared to the volume of their berms, and during grading the depressions were more completely filled with the high concentration soils of their own berms and therefore exhibit higher concentrations throughout and up to shallower depths. Reservoir 7 had a larger volume below the original, natural grade with respect to the volume of its berm and during grading the high concentration soils of its berm was only sufficient to fill the an outer ring of the depression and additional, less contaminated soils from the interior and perimeter berms at the site were used to fill the center and the shallower portion of the depression. The volume calculations discussed above and Figure 7 showing the distribution of the TPHd concentration plotted at concentrations above 625 mg/kg and concentrations between 50 and 625 mg/kg show how grading caused the distribution of shallow petroleum hydrocarbons in shallow soils at this site.

Other supporting evidence of the existence of contaminated soil in the reservoir berms in the 1960s and subsequent spreading of this material during grading is presented in Figures 8 and 9. Figure 8 shows an aerial photograph from 1966 which illustrates how the reservoir berms were breached early in the demolition program, presumably to accommodate removal of the roof structure, sludge and liquid waste. The concentration profiles on Figure 8 (from data collected in recent years) clearly shows that high concentration soils from the berm were spread outward during this initial phase of the demolition and grading. It is striking that this pattern is discernable even to this day: it could only be formed if the reservoir berms were already highly contaminated. Its contrastingly different contaminant distribution pattern was caused by the need to push this section of the reservoir berm outward to create access for

heavy equipment to reach the interior of the reservoir. Subsequently and according to Dr. Dagdigian[23] and testimony of Mr. Leroy Vollmer,[24] the reservoir berm was bulldozed inward to fill the reservoir, and elsewhere along the perimeter of the reservoirs, the distribution of the TPHd confirms that approach: showing high concentrations forming a ring around the interior of the former reservoir. And as discussed above, because of the insufficient soil volume in the reservoir berm to fill the reservoir, lower concentration soils from the surrounding interior and perimeter berms were subsequently used to complete the backfilling of the reservoir to grade. Hence the presence of lower concentrations found in soils in the central area of the reservoir and in the shallowest soil interval.

Another important piece of evidence relates to soil borings advanced by Pacific Soils in January 1966, including B6 and B8 which are shown on Figure 8. In 1966, these borings were advanced to depths of up to 35 feet at locations outside the footprint of the reservoirs and there are no indications of contamination in the descriptive boring logs.[25] Yet, as shown on Figure 8, the shallow soil in both these areas is now contaminated with petroleum hydrocarbons. These areas were clean before the grading activities at this site and now they are contaminated. This is clear proof that the backfill used in the vicinity of borings B6 and B8 must have been contaminated when the site was graded in 1967.

Dr. Dagdigian claims that "All petroleum hydrocarbon impacted soil that Barclay encountered was removed from the fill material and stockpiled onsite," and ultimately "hauled offsite for disposal" (Dagdigian, 2014, Expert Report, p. 14). He expanded upon this opinion in his January 2014 submittal to the RWQCB where he claimed that: "Petroleum Hydrocarbons 'Explicitly- Known' in Areas Outside the Reservoirs Were Minor and, Where Encountered, Were Removed from the Subject Property."[26] This is clearly false. For example, in his 2011 Declaration Mr. Bach noted, "I would expect to find higher level of contamination in and around the old sump areas because it was not possible to remove all of what would now be considered to be and prove to be contaminated soil" (p. 10, lines 7-10). It appears that the only contaminated soil removed from the site was soil so saturated with oil that it could not be adequately compacted or would not accommodate adequate drainage. This was purely a geotechnical consideration.

Another example that contamination was evident during redevelopment in the 1960s is illustrated in Figure 9. This figure shows details of an area north-west of Reservoir 7 where historical photographs from 1968 captured discoloration of surface soils during final phases of the development of the site. If visible on aerial photography, this stained soil would certainly have been visible to workers on the ground, yet this occurrence of contamination was rediscovered a few years ago when utility workers dug a trench in that area: proof that "explicitly known" areas of soil contamination were not removed in the

[23] Dagdigian, November 2014, Expert Report, Appendix B, p. 7.
[24] Vollmer Deposition, Volume 1, March 15, 2013, pp. 80-84.
[25] Pacific Soils Engineering, January 7, 1966, Preliminary Soils Investigation Report
[26] Dagdigian, January 2014, Technical Response to the RWQCB Draft Cleanup and Abatement Order, p. 7.

1960s. Decades later, utility workers uncovered contamination by a heavy liquid and tarry product during trenching in the same area as shown in the historical aerial photo (see also Figure 2 which is a recent photo from this location). The location and extent of this area was investigated and documented in 2013[27], and it coincides with the stained area in the 1968 aerial photograph. The distribution of the shallow TPHd concentrations show the presence of a continuous zone of high concentration of TPHd in soils extending from under the Reservoir 7 berm between 2 and 5 feet bgs that connects to this area outside of the reservoir footprint. This contamination was clearly evident to workers at the site during demolition of the reservoirs and grading of the site and yet it was not removed and was left to be rediscovered in homeowners' lawns many decades later.

In summary, we agree with the RWQCB's decision to name Barclay Hollander as a responsible party for subsurface contamination at the Carousel Tract and we trust the analysis contained in this letter will lend further support to your determination. Thank you for the opportunity to provide our comments on this important project.

Sincerely yours,
L. EVERETT & ASSOCIATES, LLC

James T. Wells, PhD, PG

[27] URS, February 2013, Delineation of Tar-like Material in the Vicinity of AT&T Excavations Near the Intersection of 244th Street and Marbella Avenue, Former Kast Property, Carson, California.

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LE&A

LEFT SIDE IMAGES:
LOWER TPHd LEVELS
(BETWEEN 50 AND
625 ug/kg)

RIGHT SIDE IMAGES:
HIGHER TPHd LEVELS
(ABOVE 625 ug/kg)

Depth
(ft bgs)
2

Reservoir 7

Reservoir 5

Reservoir 6

TPH (Diesel, mg/kg)
100,000
10,000
1,000
100
10

Depth
(ft bgs)
5

TPH (Diesel, mg/kg)
100,000
10,000
1,000
100
10

Depth
(ft bgs)
10

TPH (Diesel, mg/kg)
100,000
10,000
1,000
100
10

NOTES:
TPHd - total petroleum hydrocarbons as diesel
ft bgs - feet below ground surface
ug/kg - micrograms per kilogram

Concentration data source:
Compilation of TPHd soil data provided by the Regional Water Quality Control Board, Los Angeles Region in MS Excel electronic file format in 2014.

N
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0 250 500
APPROXIMATE SCALE IN FEET

ADELINO ACOSTA, ET AL. v. SHELL OIL COMPANY, ET AL.
CARSON, CALIFORNIA

DISTRIBUTION OF HIGHER AND LOWER LEVELS OF TOTAL PETROLEUM HYDROCARBONS AS DIESEL IN SOIL AT 2, 5 AND 10 FT BGS

SCALE: AS SHOWN

FIGURE 7

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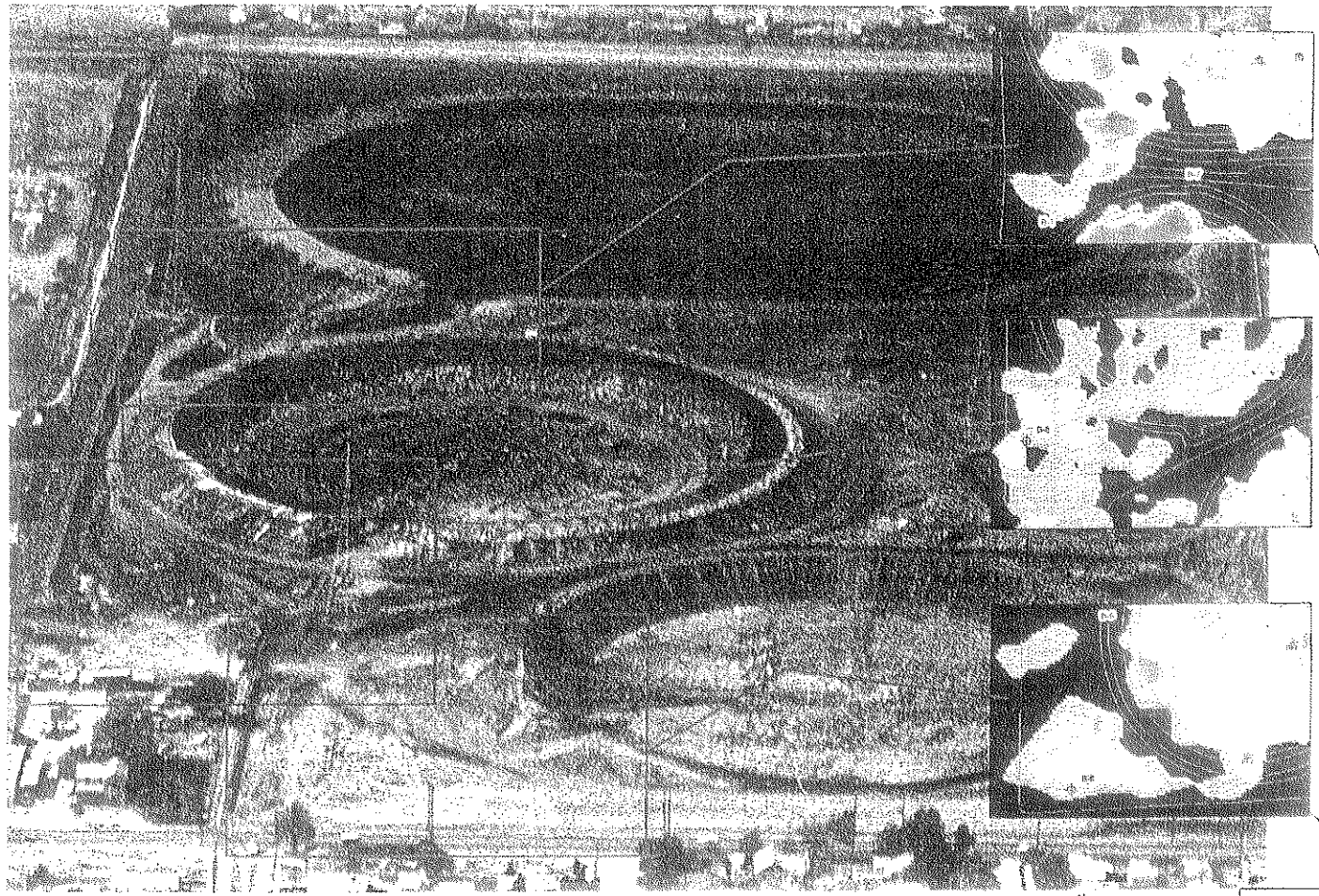

TPH (Diesel, mg/kg)

NOTES:
TPHd - total petroleum hydrocarbons as diesel
ft bgs - feet below ground surface
mg/kg - milligrams per kilogram

Aerial photograph source:
19660523 Spence E-47-113.jpg

Concentration data source:
Compilation of TPHd soil data provided by the Regional Water Quality Control Board, Los Angeles Region in MS Excel electronic file format in 2014.

N
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Feet

ZOELLNER ACOSTA, ET AL. V. SHELL OIL COMPANY, ET AL.
CARSON, CALIFORNIA

SOIL CONTAMINATION IN THE VICINITY OF RESERVOIRS 5, 6 AND 7 BREACH AREAS

SCALE: AS SHOWN

FIGURE 8

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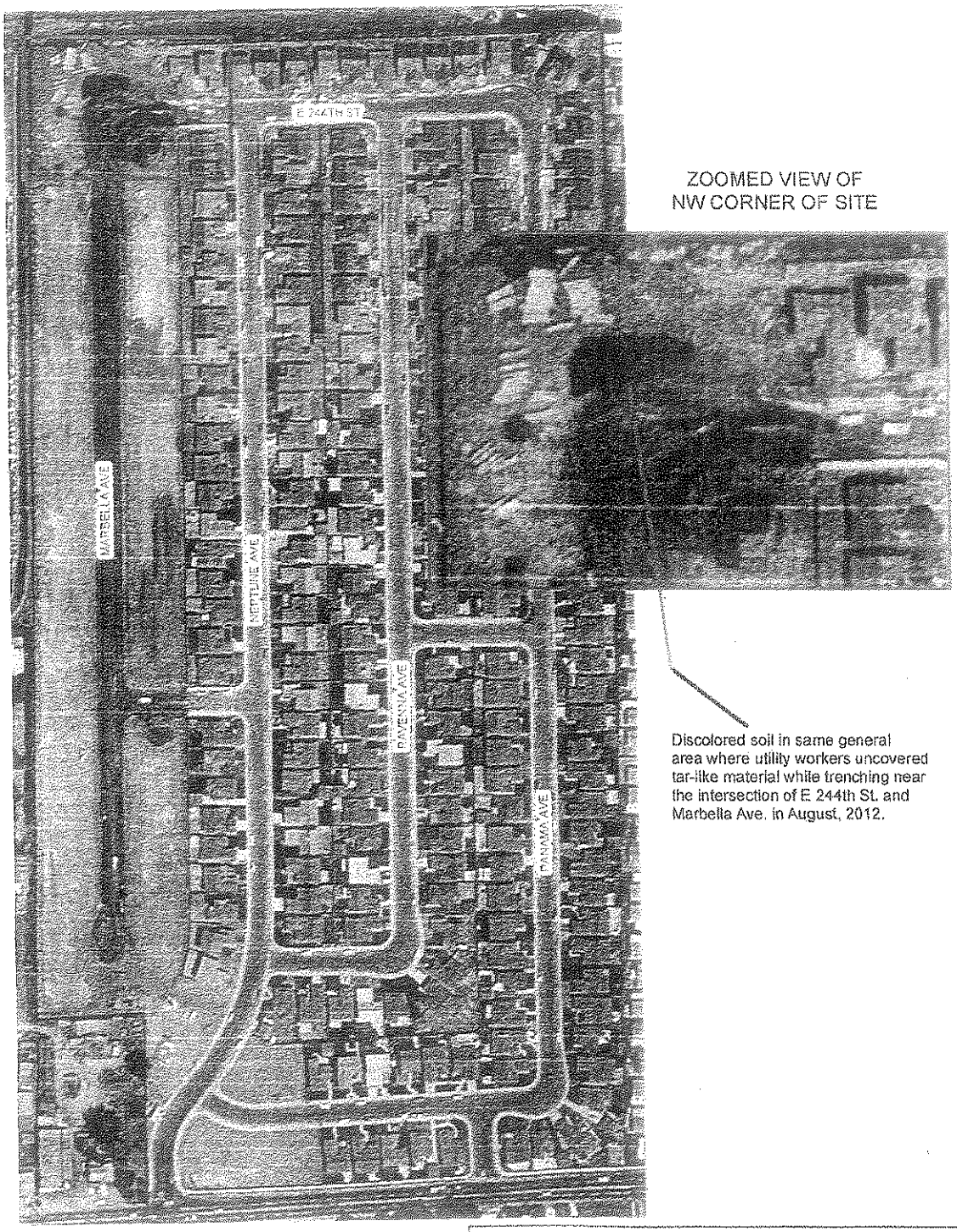
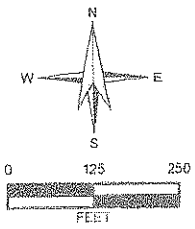


Aerial photograph source:
19680822 UCSB tg-2400_2-66.jpg



ADELINO ACOSTA, ET AL. V. SHELL OIL COMPANY, ET AL.
CARSON, CALIFORNIA

DISCOLORED SOIL OBSERVED
IN 1968 AERIAL PHOTOGRAPH
NEAR INTERSECTION OF E 244TH ST
AND MARBELLA AVE

SCALE: AS SHOWN

FIGURE 9

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Carousel Tract Environmental Investigation Timeline

Date	Significant Actions/Reports	Notes
March 11, 2008	DTSC informed LARWQCB about former Shell Oil Company Tank Farm	
May 2008	LAWRQCB initiated an environmental investigation	
December 2008	LAWRQCB approved proposed work plan submitted by Shell to investigate contaminates of concern	
December 31, 2008	LARWQCB issued California Water Code § 13267 Investigative Order	
October 15, 2009	Shell submitted Final Phase I Site Characterization Report	
March 2011	LARWQCB issued Cleanup and Abatement Order No. R4-201100046	
February 22, 2013	Shell submitted *Site-Specific Cleanup Goal Report*	
May 2013	LAWRQCB issued a fact sheet providing information and advising of comment period for *Site-Specific Cleanup Goal Report*	30-day comment period ending June 24, 2013
June 24, 2013	City submitted comments to *Site-Specific Cleanup Goal Report*	Forwarded reports by Everett & Associates and Soil/Water/Air Protection Enterprise
July 18, 2013	City Council conducted workshop to allow presentation by Mr. Sam Unger, Executive Director of LARWQCB	Presentation by Dr. Lorene Everett and James T. Wells PhD raising concerns related to environmental conditions
July 29, 2013	City Council adopted Resolution No. 13-081 declaring the existence of an emergency in the Carousel Tract	
July 30, 2013	Letters sent to the Governor, Attorney General, Los Angeles County Board of Supervisors and Mr. Unger	Requested immediate assistance due to emergency conditions in Carousel Tract
July 31, 2013	City staff, Mr. Bob Bowcock, Dr. Everett and Mr. Wells met with representatives of Los Angeles County Fire Department and Los Angeles County Department of Public Health	City Council declaration of emergency conditions discussed and copies of Everett & Associates reports transmitted for review

EXHIBIT NO. 6

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Carousel Tract Environmental Investigation Timeline

Date	Significant Actions/Reports	Notes
August 21, 2013	LARWQCB sent detailed letter to Shell denying proposed site-specific cleanup goals and requiring revisions to be submitted by October 21, 2013	LARWQCB incorporated OEHHA Memorandum dated July 22, 2013 and UCLA Expert Panel Interim Report dated July 24, 2013
September 11, 2013	City letter to Mr. Sam Unger	Expressing appreciation from City Council and community for response to *Site-Specific Cleanup Goal Report*
September 24, 2013	LARWQCB community open house CEQA scoping meeting	Request for input from community and public agencies related to evaluation of environmental impacts; comment period ends on October 8, 2013
September 30 – October 10, 2013	LARWQCB Public Participation Specialist to conduct office hours at Carson City Hall	Opportunity for LARWQCB to meet with residents and community stakeholders
October 8, 2013	CEQA scoping comments due to LARWQCB from September 9 through October 8, 2013	Comment letters sent by City of Carson and Bob Bowcock/Barbara Post
October 10, 2013	City staff arranging for a meeting with LARWQCB, LACoFD, Los Angeles County Department of Public Health, OEHHA, Mr. Bowcock, Dr. Everett and Mr. Wells PhD	Review of technical reports and discussion of public agencies responses and actions
October 21, 2013	Shell submitted a *Revised Site-Specific Cleanup Goal Report* to LARWQCB	Shell proposed to evaluate options that provide excavation in specific areas and does not include any further evaluation associated with the removal of homes
October 24, 2013	Los Angeles County Department of Public Health Letter to City of Carson	Letter states there is not an immediate health threat from site conditions

Carousel Tract Environmental Investigation Timeline

Date	Significant Actions/Reports	Notes
October 30, 2013	LARWQCB letter to Shell for review of *Community Outdoor Air Sampling and Analysis Report*	Based on statistical tests, LARWQCB concludes that outdoor air concentrations do not differ between the site and surrounding area. Shell is required to address OEHHA comments and to develop a work plan for an additional soil-vapor survey by November 29, 2013.LARWQCB determined on January 13, 2014 that no further evaluation required
October 31, 2013	LARWQCB notice on *Proposed Draft Revised Cleanup and Abatement Order No. R4-2011-0046*	The proposed draft order names Dole Food Company, Inc. as an additional responsible party. Comments and evidence must be submitted by 12:00 p.m. on December 6, 2013. Dole Food Company has requested an extension to January 2014 to provide comments.LARWQCB approved extension to January 13, 2014. On January 7, 2014, Regional Board approved extension to January 21, 2014
November 12, 2013	Letter to Carousel Tract Owners and Occupants advising of November 19, 2013 City Council Workshop	
November 19, 2013	City Council conducted workshop with Los Angeles County Department of Public Health and Los Angeles County Fire Department	
January 8, 2014	LARWQCB response to *Assessment of Environmental Impact and Feasibility of Removal of Residual Concrete Reservoir Slabs*	Directs Shell to either remove the residential concrete slabs as appropriate or isolate the residual concrete slabs beneath the foundation of the homes and paved areas using engineering techniques to the extent necessary to address long term health risks or nuisance concerns

Carousel Tract Environmental Investigation Timeline

Date	Significant Actions/Reports	Notes
January 13, 2014	LARWQCB response to *Revised Community Outdoor Air Sampling and Analysis Report*	LARWQCB concludes that outdoor air concentrations do not differ between the site and surrounding area. No further evaluation required
January 21, 2014	Dole response to *Proposed Draft Revised Cleanup and Abatement Order No. R4-2011-0046*	Dole requested to not be included in the Draft Order since their subsidiary, Barclay Hollander Corporation, did not discharge any of the contaminants of concern
January 23, 2014	Community meeting organized by Congresswoman Hahn	Meeting to hear from residents and discuss options for obtaining improved levels of response from the Regional Board
January 23, 2014	LARWQCB response to *Revised Site-Specific Cleanup Goal Report*	LARWQCB identified deficiencies in the Shell Revised Report and directed a remedial action plan, Human Health Risk Assessment and other environmental documents be submitted by March 10, 2014
February 10, 2014	LARWQCB clarification and revision to their January 8, 2014 letter (effective date of January 13, 2014) regarding the Residential Concrete Slab Report	LARWQCB removed reference to regulations for underground storage tanks
February 23, 2014	Shell submitted a Petition for Review and Request for Hearing to the State Water Resources Control Board in the matter of Cleanup and Abatement Order R4-2011-0046 (CAO)	The State Water Resources Control Board has not responded to Shell's petition
March 10, 2014	Shell submitted Remedial Action Plan (RAP), Human Health Risk Assessment (HHRA), and draft environmental documents to LARWQCB	LARWQCB set a tentative period of 30 day to review the documents and provide opportunity for public viewing
March 19, 2014	LARWQCB filed Notice of Preparation (NOP)	Preparation of a draft Environmental Impact Report in accordance to the California Environmental Quality Act (CEQA)
March 25, 2014	LARWQCB and PCR Service Corporation met with City's staff	As part of the draft Environmental Impact Report, staff discussed transportation, noise, and odor concerns with LARWQCB and PCR

Carousel Tract Environmental Investigation Timeline

April 18, 2014	LARWQCB received comments from LAUSD regarding the NOP	LARWQCB is reviewing LAUSD comments and will provide response
April 30. 2014	LARWQCB responded to Shell's RAP, FS, and HHRA	LARWQCB rejected Shell's proposed cleanup plan and revised RAP to be submitted by Shell by June 16, 2014 by 5 p.m.
April 30, 2014	LARWQCB issued notice of violation (NOV) to Shell for failure to submit a RAP based on approved site-specific cleanup goals	LARWQCB directed Shell to comply by June 16, 2014
May 23, 2014	LARWQCB met with Shell regarding the RAP	LARWQCB discussed deficiencies and revisions with Shell
June 3, 2014	LARWQCB issued notice of opportunity for additional public comment	The deadline to submit public comments is 5 p.m. on June 16,2014
June 4, 2014	LARWQCB granted Shell a two-week extension to submit the revised RAP, FS, and HHRA	The revised documents are due on June 30, 2014
June 16, 2014	Shell submitted additional comments regarding the Proposed Revised Draft Cleanup and Abatement Order No. R84-2011-0046	The Regional Board is reviewing Shell's comments
June 30, 2014	Shell submitted the revised RAP, FS, and HHRA to the Regional Board	The Regional Board is reviewing the revised documents
July 7, 2014	The City of Carson sent a letter notifying the Carousel Tract residents of the availability of the RAP, FS, and HHRA via the Regional Board	The documents are part of the draft EIR process

Carousel Tract Environmental Investigation Timeline

	website	
July 22, 2014	The Regional Board is reviewing the RAP, FS, HHRA and preparing the draft EIR. Testing of property in the Carousel Tract is ongoing	Testing result and the Regional Board latest activities are available at: http://geotracker.waterboards.ca.gov/
August 25, 2014	The Regional Board is reviewing the RAP, FS, HHRA and preparing the draft EIR.	No new dates set for meeting with the Carousel Tract residents
August 27, 2014	The Regional Board released August 2014 community update for the Carousel Tract	Tentative release of proposed RAP and Draft EIR in mid October 2014
September 19, 2014	Shell submitted the RAP Relocation Plan to the Regional Board	Tentative release of proposed RAP and Draft EIR at end of October 2014, and meeting with the Carousel Tract resident is projected to begin on November 2014
October 8, 2014	The Regional Board continues preparation of Draft EIR and review of the RAP	The Regional Board required the RAP addendums to be submitted by Shell on October 20, 2014. Meeting with the Carousel Tract residents is projected to occur in the middle of November 2014
October 15, 2014	The Regional Board scheduled community meetings	The Regional Board mailed invitations of community meetings to the Carousel Tract residents
October 15, 2014	Shell submitted addendums to the RAP, FS, and HHRA	The documents are posted on the Regional Board website
November 5, 2014	The Regional Board released the draft EIR proposed RAP for public review and comment	The draft EIR, proposed RAP and support documents are available at the Carson Library, the Los Angeles Regional Board Office and website

Carousel Tract Environmental Investigation Timeline

November 12,15,18,20, 2014	The Regional Board held community group meetings with Carousel Tract residents	The discussion was centered on the draft EIR and proposed RAP
November 22, 2014	The Regional Board hosted a public meeting at the Carson Community Center	The discussion centered on the draft EIR and proposed RAP
December 3, 2014	City of Carson Environmental Commission received the draft EIR and proposed RAP for review	City staff will submit the Commission's comments to the Regional Board
December 8, 2014	The Regional Board notified Dole Food Company Inc. (Dole) of its intention to revise the Cleanup and Abatement Order No. R4-2011-0046 CAO)	Barclay Hollander Corporation (Barclay), a wholly-owned subsidiary of Dole, to be named as responsible parties to the Carousel Tract contamination
December 24, 2014	Barclay sent a written request to the Regional Board	Barclay submitted additional written evidence, and schedule a formal evidentiary hearing with the Regional Board
January 6, 2015	Barclay sent a follow up letter to its December 24, 2014 Letter to the Regional Board	Barclay submitted additional documentary evidence to the Regional Board
January 6, 2015	Shell sent a letter to the Regional Board	Shell is opposed to Barclay's requests to submit additional evidence and for a formal evidentiary hearing
January 7, 2015	Integrated Resource Management, Inc. (IRM) responded to Barclay's December 24, 2014 Letter	IRM requested appropriate notice and opportunity to be heard for Carousel Tract residents. IRM also commented on the substance of the revised CAO and attached documentary evidence