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Via email

State Water Resources Control Board
Office of Chief Counsel
Jeannette L. Bashaw, Legal Analyst
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Re: Petition for Review and Stay of Cleanup and Abatement Order No. R4-2014-0130 and Request for Hearing
Former Chemcentral Site, Los Angeles
13900 Carmenita Road, Santa Fe Springs, California 90670
(SCP No. 0810, Site ID No. 2043F00)

Dear Ms. Bashaw:

Pursuant to the Porter-Cologne Water Quality Control Act (the "Act") Sections 13320 and 13321, and Title 23 of the California Code of Regulations, Sections 2050 *et seq.*, Univar USA Inc. ("Univar") hereby petitions the State Water Resources Control Board ("State Board") for review and stay of Cleanup and Abatement Order ("CAO") No. R4-2014-0130 ("Order") issued by the Regional Water Quality Control Board, Los Angeles Region ("Regional Board") dated September 17, 2014, requiring that Univar take certain actions at the former Chemcentral facility located at 13900 Carmenita Road ("Univar Property"). Univar also requests that the State Board direct the Regional Board to exercise its enforcement authority to require Golden West Refining Company ("Golden West") to comply with its obligations under the existing Golden West CAO, No. R4-2004-0020 ("Golden West CAO"). Finally, Univar requests a hearing in this matter.

A. UNIVAR'S CONTACT INFORMATION

Contact information for Univar is as follows:

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B. ACTION AND INACTION OF THE REGIONAL BOARD TO BE REVIEWED

1. Issuance of the Order.

Univar respectfully requests that the State Board review and rescind the Order, a copy of which is attached as part of Exhibit A. The Order requires Univar to, *inter alia*: (1) conduct and submit a phase I environmental site assessment report; (2) develop, submit and implement a site assessment work plan to assess, characterize, and delineate the extent of onsite and offsite wastes discharged to soil, soil vapor and groundwater; (3) conduct a remedial action for waste discharged at the Univar Property; (4) conduct a site-specific human health risk assessment; and (5) conduct groundwater monitoring and light non-aqueous phase liquid (“LNAPL”) recovery.

As discussed in more detail below, the Univar Property and surrounding vicinity are heavily impacted by LNAPL.¹ The LNAPL is not attributable to discharges by Univar or its predecessors, but resulted from historical discharges at the Golden West Refinery, a former petroleum refinery located less than 500 feet north of the Univar Property at 13539 Foster Road (“Golden West Facility”). Since 1985, the Regional Board has issued Golden West a series of orders to investigate and remediate contamination associated with past operations at the Golden West Facility. In 2004, the Regional Board ordered Golden West to cleanup and abate all onsite and offsite contamination originating from the Golden West Facility, which by necessity includes the LNAPL detected at the Univar Property (Golden West CAO, page 8, attached as Exhibit B). Even so, the Univar Property remains impacted by Golden West’s LNAPL. The Regional Board concedes the LNAPL is not associated with discharges caused or permitted by Univar or its predecessors. Notwithstanding this admission, the Regional Board has unjustly ordered Univar to investigate and remediate the LNAPL originating from the Golden West Facility. Because Univar is not the discharger of the LNAPL that has come to be located at the Univar Property, but which originates from the Golden West Facility, there is no legal basis for the Regional Board to require Univar to investigate and remediate Golden West’s LNAPL. As a separate but related matter, the Regional Board issued the Order without providing Univar any opportunity to comment on a new “allegation” raised for the first time in the final Order despite ample opportunity for the Regional Board to raise the allegation prior to issuance of the final Order.

For these reasons, the Regional Board has acted without authority in an *ultra vires* manner. The issuance of the Order is arbitrary and capricious, contravenes State law, and violates Univar’s due process rights. Univar hereby requests that the State Board stay the Order and direct its rescission by the Regional Board.

2. Failure to Enforce the Golden West CAO.

Univar requests that the State Board direct the Regional Board to enforce the Golden West CAO by ordering Golden West to remediate the LNAPL at the Univar Property. The Regional Board has made several findings that the LNAPL at the Univar Property originated at the Golden West Facility (*See e.g.* Regional Board Response to Comments Received for draft order R4-2013-0083 (“Comment Responses”), comment 17 on page 4, included as part of Exhibit A). Yet, for reasons that

¹ References to “LNAPL” or the “LNAPL Plume” as used in this petition include all contaminants related to the LNAPL that have been discharged from the Golden West Facility.

are unclear, the Regional Board has refused to enforce its exiting orders and take affirmative steps to require Golden West to abate the LNAPL at the Univar Property, even though Golden West is already obligated to do so under the Golden West CAO.

On June 26, 2014, the Regional Board issued an investigative order to Golden West and Chevron Environmental Management Company (“Chevron”) that requires them to submit a work plan to conduct a subsurface investigation of the LNAPL and dissolved phase plumes that have migrated from the Golden West Facility to offsite locations (Order No. R4-2013-0116, paragraph 1 on page 4). On October 16, 2014, the Regional Board amended this order by modifying the list of monitoring wells to be sampled and extending the applicable deadlines (Order No. R4-2013-0116-A01). The original and amended order are referred to herein as the “Golden West Investigative Order” and are attached as Exhibit C.² However, it is unclear whether Golden West or Chevron will investigate the LNAPL at the Univar Property as part of the Golden West Investigative Order.³

The Golden West Investigative Order articulates a clear need for additional sampling of the LNAPL discharged by Golden West. Therein lies the inequity; while the Golden West Investigative Order requires Golden West and Chevron to *investigate* the LNAPL, the Order requires Univar to go considerably further and to *abate* Golden West’s LNAPL even though there is no legal or technical justification for shifting Golden West’s responsibilities to Univar. The Regional Board supports its decision to issue the Order to Univar with the statement that, “Univar may be required to conduct the LNAPL removal unless and until Golden West Refinery takes over this activity under [the Golden West CAO]” (Comment Responses, comment 17 on page 4 (emphasis added)). The Regional Board does not have the legal authority to order Univar to undertake abatement activities on this basis. The Regional Board’s failure to enforce its orders to Golden West to abate offsite LNAPL, and instead to compel Univar to abate the LNAPL is arbitrary and capricious, contravenes State law, violates Univar’s due process rights, and defies reason.

C. DATES THE REGIONAL BOARD ACTED AND FAILED TO ACT

The Regional Board issued the Order to Univar on September 17, 2014. The Regional Board’s failure to enforce its own orders requiring Golden West to remediate LNAPL at the Univar Property has been ongoing since at least 2004, and continues today.

D. STATEMENT OF REASONS WHY THE REGIONAL BOARD’S ACTION/INACTION WAS INAPPROPRIATE AND IMPROPER

1. The Order is Improper.

The Order is improper and unlawful because it requires Univar, despite the fact that Univar is not the discharger of LNAPL, to investigate and abate LNAPL that originated from discharges at the

² Exhibit C also includes correspondence between Golden West’s consultant and the Regional Board as described in note 3 below. The Golden West Investigative Order does not supersede the Golden West CAO, and both orders are still in effect.

³ Golden West and Chevron have petitioned the State Board for review of the Golden West Investigative Order. In addition, correspondence between the Regional Board and Golden West suggest that neither Golden West nor Chevron plan to investigate the LNAPL that extends onto the Univar Property as part of the planned preliminary round of groundwater sampling.

Golden West Facility. The Order is also improper because the Regional Board incorporated new allegations into the Order that are not supported by substantial evidence and for which Univar did not have an opportunity to comment.

a. The LNAPL at the Univar Property Originated at the Golden West Facility.

Univar's comment letters on the draft Order, dated July 22, 2013 and August 5, 2013 (collectively, "Comment Letters") provide detailed evidence establishing that LNAPL has migrated onto the Univar Property from the Golden West Facility and was not discharged by Univar or its predecessors at the Univar Property.⁴ In response, the Regional Board unequivocally stated that it "concur[s] with Univar that, 'the LNAPL plume present beneath the [Univar Property] originates from the former Golden West Refinery.'" and further confirmed that "Golden West caused or contributed to the LNAPL plume that is beneath the [Univar] property" (Comment Responses, comment 17 on page 4 and comment 1 on page 1; *see also*, comment 8 on page 2) (emphasis added). In addition, the Regional Board stated in the Golden West Investigative Order that the LNAPL "extends off [the Golden West Facility] to the south approximately 3,000 feet" (Golden West Investigative Order, paragraph 4 on page 2) (emphasis added). The LNAPL at the Univar Property is located less than 500 feet downgradient of the Golden West Facility and is, therefore, within the 3,000 foot LNAPL plume discharged by Golden West.

Golden West has, in recent years, attempted to escape liability for LNAPL that has migrated offsite from the Golden West Facility. The Regional Board has reviewed, addressed, and controverted all defensive arguments Golden West has made in an attempt to avoid abating the offsite LNAPL plume (*See, e.g.* Letter from Regional Board to Golden West dated July 30, 2013 ("Regional Board Letter"), attached as Exhibit D). Golden West, despite its various other arguments to avoid liability, admits LNAPL has migrated offsite from the Golden West Facility to some extent. In its petition for review of the Golden West Investigative Order, Golden West admits that "LNAPL present on semi-perched groundwater approximately 3,000 feet from the [Golden West Facility] has a fresh appearance, a different chemical composition than LNAPL found at and within 599 feet down gradient of the [Golden West Facility]..." (Golden West's Petition for Review of Golden West Investigative Order, pages 2-3, the text of which is attached as Exhibit E) (emphasis added). On this basis, Golden West has requested that it be required only to monitor LNAPL located within 500 feet downgradient of the Golden West Facility (Golden West Petition, section VI(B), page 3-4). Notably, the Univar Property, and in particular the wells on the Univar Property that have reported detections of LNAPL, are located *less than 500 feet downgradient of the Golden West Facility*. By its own admission then, Golden West has recognized that the LNAPL at the Univar Property was discharged from the Golden West Facility.

Based on the substantial quantities of LNAPL released at the Golden West Facility as a result of historical activities, the regional direction of groundwater flow, and the proximity of the Univar Property to the Golden West Facility, it is evident that the Golden West Facility is the source of the LNAPL at and around the Univar Property, which is the exact finding of the Regional Board. The following paragraphs briefly summarize this information. Additional evidence establishing that the LNAPL originated at the Golden West Facility is included in the Comment Letters and the Regional Board Letter.

⁴ The Comment Letters are part of the administrative record.

i Substantial Quantities of LNAPL Have Been Discharged from the Golden West Facility.

Reports published by Golden West's consultants, including England Geosystem, Inc. and TRC, confirm that large quantities of LNAPL have been released at the Golden West Facility into the Semi-Perched and Artesia Aquifer. In 2001, England Geosystem estimated that between approximately 10 and 31 million gallons of hydrocarbons associated with the Golden West Facility were present in the Semi-Perched Aquifer and the lower Artesia Aquifer (*Final Design Report, Groundwater Remediation Systems*, Golden West Refinery; England Geosystem; May 2001). In 2004, the Regional Board estimated that approximately 2,226,000 million gallons of LNAPL remained in place beneath the Golden West Facility (Golden West CAO, paragraph 8 on page 4). These estimates are not only based on field observations (*i.e.*, area and thickness of the LNAPL plumes), but are deduced from the large volume of recovered product since 1999. In 2002, TRC estimated that approximately 60,000 barrels (2,500,000 gallons) of LNAPL had been recovered from the Semi-Perched and Artesia Aquifers through the Fourth Quarter 2001 (*Groundwater Monitoring Report, Fourth Quarter 2001*, Chemcentral Los Angeles; Earth Tech, Inc. January 2002). By June 2014, Golden West estimated it had already removed the equivalent of approximately 4,756,724 gallons of LNAPL (*Second Quarter 2014 Report*, Former Golden West Refinery, SLIC no. 227, July 2014). These figures suggest that millions of gallons of LNAPL remain in place at and downgradient of the Golden West Facility in the Semi-Perched and Artesia Aquifer.

ii. The Golden West Facility Is Hydraulically Upgradient of the Univar Property.

There is no dispute that groundwater flow in the Semi-Perched Aquifer underlying the Golden West Facility and the Univar Property runs southwesterly from the Golden West Facility through the northwest portion of the Univar Property. This has been confirmed by numerous reports prepared by Golden West's own consultants and by the Regional Board (*See e.g.* Order, paragraph 3 on page 2). Recent groundwater monitoring data collected by Environmental Resources Management ("ERM") in 2014 confirms that the flow direction continues to be from northeast towards the southwest (*Progress Report 2013 Groundwater Monitoring Univar USA Inc. Facility*; ERM, March 2014; Figure 5b). It is a well-known physical phenomenon that LNAPL will float on top of the water table as a large pool and be subject to transport primarily in the direction of groundwater flow. (Schwille, 1967; Freeze and Cherry, 1979). The southwesterly flow of regional groundwater, which is attributable to the lateral gradient present at the Golden West Facility and the Univar Property, is the primary driver for the transport of LNAPL from the Golden West Facility to the Univar Property.

There is no scientific or legal basis for the Regional Board to ignore these facts or disregard its own findings as a means of shifting Golden West's legal duties and obligations to Univar. Rather than enforcing the Golden West CAO, which would address the very discharges for which Golden West is responsible, the Regional Board has opted to attempt to shift Golden West's obligations to Univar. These obligations can only be imposed by the Regional Board on the actual discharger(s). In this case, the dischargers are well-known, existing entities that are financially viable and technically capable of performing these tasks. It is improper and arbitrary and capricious for the Regional Board to attempt to compel Univar to investigate and remediate LNAPL that has been migrating downgradient onto the Univar Property from the Golden West Facility for the past several decades.

b. *The Regional Board Made an Unsubstantiated Allegation in the Order Without Providing Univar an Opportunity to Comment.*

As noted above, the Regional Board provided Univar the opportunity to comment on the draft Order during the summer of 2013, which Univar did through the submittal of its Comment Letters. However, when the Regional Board issued the final Order after responding to Univar's Comment Letters, it incorporated an entirely new allegation into the final Order that had not previously been raised or discussed in any manner. This new allegation, which was added to the section titled "Evidence of Waste Discharges and Basis for Order," alleges that "the waste that was discharged as a result of operations at the [Univar Property] is commingled with the contamination plumes that originated offsite" (Order, paragraph 6 on page 3). Neither this statement nor any related or comparable language relating to this allegation was present in the draft Order. The draft Order did not contain any statements that might suggest to Univar that the Regional Board had any concerns or beliefs that the LNAPL plume at the Univar Property had become commingled with wholly distinct and unrelated chlorinated solvent contamination that the Regional Board has attributed to historical operations at the Univar Property. As a result, Univar had no opportunity to comment on the Regional Board's assertions with respect to alleged commingling or review any technical basis the Regional Board may have to support such an allegation.

Based on the evidence, there is no technical basis for the Regional Board's allegation of comingling. The Regional Board provided no explanation or justification for the comingling allegation in the Order. Instead, it included in the Golden West Investigative Order statements that suggest it considers the LNAPL to be separate and divisible from the dissolved phase impacts (*See* Golden West Investigative Order, paragraph 4 on page 2). In short, the Regional Board's new allegation regarding comingling of contaminants at the Univar Property lacks the requisite factual and technical support and is not supported by substantial evidence. As a result, the addition of this new, unsubstantiated allegation into the Order violated Univar's due process rights.

2. The Regional Board's Failure to Enforce the Golden West CAO is Improper.

The Regional Board has made findings that the Golden West Facility is the source of the LNAPL at and under the Univar Property and has ordered Golden West to investigate and remediate that LNAPL pursuant to the Golden West CAO (Comment Responses, comment 17 on page 4; Golden West CAO page 8). Golden West has failed to comply with the Golden West CAO, and as a result, the Regional Board appears to be attempting to compel Univar to assume what are Golden West's legal obligations to abate the LNAPL. The Regional Board's failure to enforce the Golden West CAO and require Golden West to fulfill its obligations is wholly inappropriate and not within the Regional Board's authority to require. This is not a situation in which the party legally responsible for the LNAPL discharges cannot be located, has dissolved, is bankrupt, is defunct, is unable to pay, or lacks the technical ability to perform the abatement; rather, Golden West is a viable entity that has repeatedly refused to comply with or agree to do work they have been ordered to perform. Moreover, the only plausible interpretation of the Regional Board's statement that Univar must undertake removal of Golden West's LNAPL "unless and until Golden West Refinery takes over this activity under [the Golden West CAO]," is that the Regional Board incorrectly believes Univar is willing to step into Golden West's shoes vis-à-vis LNAPL abatement at the Univar Property (Comment Responses, comment 17 on page 4). Univar is not so inclined, and the Regional Board has no authority to compel

Univar to do so on the administrative record as it currently stands. The Regional Board has the authority to enforce the Golden West CAO and mandate that Golden West abate the LNAPL at the Univar Property, and should do so rather than seek to compel Univar, a non-discharger of the LNAPL, to step into Golden West's shoes.

E. THE MANNER IN WHICH UNIVAR HAS BEEN AGGRIEVED

Univar has been and continues to be aggrieved by the actions and inactions of the Regional Board described above. First, and as noted above, under the Act there is no legal basis to compel Univar to assume the legal obligations of the actual discharger. Second, the Regional Board has not exercised its authority to compel Golden West to take the actions the Regional Board is now inappropriately attempting to order Univar to undertake. Third, compliance with the Order will cause Univar to incur significant additional costs to conduct work it is not legally obligated to perform, and if Univar does not do so, it will face potentially substantial penalties. Finally, if Golden West does not abate the LNAPL at the Univar Property, Univar's own investigation and remediation efforts related to potential contamination that may be associated with historical operations at the Univar Property will be significantly impacted. The costs of complying with the Order as it currently stands are estimated to be several orders of magnitude higher than if the LNAPL were not present. The placement of this burden on Univar, which lawfully belongs on Golden West, is an abuse of the Regional Board's discretion and defies reason.

Univar is further aggrieved by the fact that the Order includes a new allegation regarding alleged commingling of the LNAPL that was not in the draft Order, is not supported by the administrative record, and for which Univar did not have an opportunity to comment. As a consequence, the Regional Board's actions have infringed upon Univar's inherent due process rights.

F. SPECIFIC ACTIONS REQUESTED BY UNIVAR

Univar requests that the State Board stay the Order and hold a hearing in this matter. Univar further requests the State Board direct the Regional Board to rescind the Order and enforce the Golden West CAO against Golden West.

G. STATEMENT OF POINTS AND AUTHORITIES

1. Univar is Not Liable for Golden West's LNAPL.

Univar is not the discharger of the LNAPL detected at and in the vicinity of the Univar Property under Section 13304(a) of the Act. This conclusion is supported by substantial evidence, including the Regional Board's own findings. There is also no legal basis for the Regional Board's contention – and none is offered by the Regional Board – that Univar is liable for passive migration of LNAPL onto the Univar Property from the Golden West Facility. Moreover, under California's nuisance law, with which the Act must be consistently interpreted, Univar cannot be held liable for the LNAPL contamination since the discharger(s) of the LNAPL, Golden West and Chevron, never owned or operated the Univar Property, and the LNAPL is not reasonably abatable by Univar.

a. Univar Did Not “Cause or Permit” a Discharge that Resulted in the LNAPL.

The Order exceeds the authority of the Regional Board and is arbitrary and capricious because it requires Univar to investigate and abate the LNAPL despite the fact that Univar is not obligated to do so under applicable law. The Regional Board cites Sections 13304(a), 13304(c)(1), and 13267(b)(1) of the Act as the basis for issuing the Order. The authority cited by the Regional Board provides no support for the Regional Board’s actions. Section 13304(a) of the Act provides as follows:

Any person who has discharged or discharges waste...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 will probably be discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall...cleanup the waste or abate the effects of the waste...

Additionally, Section 13304(c)(1) provides that, “persons who ‘discharged the waste...within the meaning of [Section 13304(a)]’” are liable for reasonable cleanup costs incurred by a governmental agency. Finally, Section 13267(b)(1) allows regional boards to require that “any person who has discharged, discharges, or is suspected of having discharged...or who proposes to discharge waste within [their] region” to furnish technical or monitoring reports.

These provisions require that the person or entity being compelled to investigate or abate waste be the same entity that actually discharged the waste. Accordingly, the State Board requires that there must be “substantial evidence” that a named party “caused or permitted” a discharge of waste before the Regional Board can issue a CAO against that party. *In re Stinnes-Western Chemical Corp.*, WQ 86-16 at 11 (“[I]n order to uphold a Regional Board action, we must be able to find that the action was based on substantial evidence”), referencing *In re Exxon Co.*, et. al., WQ 85-7, at 10-11. The evidence set forth above in Section D establishes that discharges from the Golden West Facility are the source of the LNAPL at and in the vicinity of the Univar Property. Accordingly, the Regional Board lacks substantial evidence that Univar caused or permitted a discharge of waste that resulted in the presence of LNAPL and, therefore, the Order is beyond the authority of the Regional Board to issue and must be rescinded.

b. Univar is Not Responsible for the LNAPL Due to Passive Migration.

The Regional Board suggested for the first time in its Comment Responses that Univar may be liable for the LNAPL under a “passive migration” theory (Comment Responses, Comment 17 on page 4). The Regional Board provided no legal analysis or details supporting this contention, and we have found no precedent that would support Univar’s liability for the LNAPL at the Univar Property under a passive migration theory. To the contrary, applicable case law and State Board precedent establish that

passive migration of contaminants beneath the Univar Property is not sufficient to establish that Univar caused or permitted a discharge for purposes of liability under the Act.⁵

In *City of Modesto Redevelopment Agency v. Superior Court*, the California Court of Appeals analyzed the extent to which the actions of a party can be considered a discharge giving rise to liability under the Act. 119 Cal. App.4th 28 (2004). In that case, defendants had manufactured or sold solvents to drycleaners without alerting them to proper disposal methods despite being aware of the potential hazards associated with solvents. The Court of Appeals held that defendants' actions could not be construed as having caused or permitted a discharge under Section 13304 of the Act, reasoning that the California legislature did not intend the Act to impose liability on those whose involvement in a discharge was "remote and passive." *Id.* at 43. The court noted that the Act must be interpreted consistently with California's law of nuisance, and then determined that its legal conclusions were consistent with the State's nuisance laws. *Id.*

In *Redevelopment Agency of City of Stockton v. BNSF Railway Company*, the Ninth Circuit Court of Appeals further analyzed the extent to which Section 13304 of the Act imposes liability on parties that did not directly contribute to a discharge. 643 F.3d 668 (9th Cir. 2011). There, several railroads ("Railroads") installed and maintained a "French drain" on their property that unintentionally acted as a conduit for petroleum contamination migrating onto their property from a nearby property. *Id.* at 671. The Ninth Circuit held that the Railroads' actions did not render them liable under Section 13304 of the Act, citing *Modesto* for the proposition that "the words 'causes or permits' in Section 13304 of the Act were not intended 'to encompass those whose involvement with a spill was remote and passive.'" *Id.* at 677-78. The court found "the Railroads' involvement with the petroleum *spill* was not only remote, it was nonexistent; and their involvement with the emission of contamination from the french drain [sic] was entirely passive and unknowing." *Id.* at 676 (emphasis in original). The Ninth Circuit also concluded its holding was consistent with California nuisance law and that it had found no precedent that would support finding an otherwise innocent party liable for nuisance simply because they built a structure that "happens to affect the distribution of contamination released by someone else." *Id.* at 675. The Ninth Circuit noted that such a result "defies semantics, the law, and common sense." *Id.*

⁵ Nor does case law establish that passive migration itself is a discharge. The term "discharge" is not defined in the Act. Courts have therefore relied on dictionaries, which define the term "discharge" as "to relieve of a charge, load or burden; ... to give outlet to: pour forth: emit" or, "to release from confinement, custody or care." *Lake Madrone Water Dist. v. State Water Res. Control Bd.*, 209 Cal. App.3d 163, 173 (1989) (holding that the opening of a gate valve in a dam that released sediment was a discharge under Section 13304 of the Act); *Consumer Advocacy Grp, Inc. v. Exxon Mobil Corp.*, 104 Cal. App 4th 438, 444 (2002) (holding that the mere passive migration of chemicals was not a discharge under the Safe Drinking Water and Toxic Enforcement Act). As noted in the *Exxon* decision, all of these definitions "convey an active concept: that the actor releases something that was previously confined." *Id.* Therefore, there is no legal basis for defining the term "discharge" to include the passive migration of LNAPL at and around the Univar Property.

c. *Univar Is Not Responsible for the LNAPL under a Nuisance Theory.*

As noted in the judicial decisions above, courts must interpret the Act in a manner consistent with California nuisance law. California Civil Code Section 3483 provides that

Every successive owner of property who neglects to abate a continuing nuisance upon, or in the use of, such property, *created by a former owner*, is liable therefore in the same manner as the first one who created it.

(Emphasis added.) Put another way, liability can attach to a current owner of a contaminated property that neglects to abate a continuing nuisance, but *only if* that nuisance was created by a former owner of that property. Here, by contrast, the LNAPL detected at the Univar Property, is *not* associated with the operations of a former owner of the Univar Property, but rather, the operations of one or more wholly independent third parties at a separate facility immediately upgradient of the Univar Property. Neither Golden West nor Chevron ever owned the Univar Property. Accordingly, the Regional Board has no basis for interpreting the Act to mean that Univar is liable for the passive migration of LNAPL extending onto the Univar Property from the Golden West Facility.⁶

For the reasons noted above, Univar is not a responsible party under Section 13304(a) of the Act for the LNAPL because it did not “cause or permit” a discharge that resulted in the LNAPL that has been detected at and in the vicinity of the Univar Property. Nor does Univar have liability under the theory of passive migration advanced by the Regional Board. The Regional Board’s *ultra vires* effort to force Univar to step into the shoes of the actual discharger of the LNAPL is unjustified, not in accordance with the facts, violates state law, and is unsupported by applicable case law. Therefore, the State Board should rescind the Order issued by the Regional Board to Univar.

2. Univar Was Not Afforded Sufficient Opportunity to Comment on the Order.

The draft Order provided that Univar would have an opportunity to submit comments before the Order was finalized (Draft Order No. R4-2013-0083, page 1). Univar exercised its right to comment on the draft Order by submitting the Comment Letters to the Regional Board, which focused on the technical reasons the LNAPL at the Univar Property originated at the Golden West Facility. However, after the Comment Letters were submitted and without notifying Univar, the Regional Board modified the Order to add a new substantive allegation that the LNAPL from the Golden West Facility is commingled with contaminants related to historical operations at the Univar Property. Univar

⁶ In the *BNSF Railway* decision, the Ninth Circuit also acknowledged a theory of nuisance liability set forth in the Restatement (Second) of Torts §839 (1979), which provides that a possessor of land may be liable for nuisance if: (1) the nuisance constitutes an “abatable artificial condition” on the possessor’s land that is otherwise actionable, (2) the possessor is or should be aware of the condition, and (3) the possessor fails to abate the condition. However, Comment F of Restatement §839 provides that “*a condition is not abatable unless its abatement can be caused without unreasonable hardship or expense*” (emphasis added). California case law supports the proposition that in the context of nuisance claims, abatable means “reasonably abatable” given considerations of cost and practicality. *Mangini v. Aerojet*, 12 Cal. 4th 1087, 1100 (holding that a landowner could not recover cleanup costs against a party that formerly leased and polluted the land under a theory of continuing nuisance because the contamination was not proven to be reasonably abatable). Here, the LNAPL is not reasonably abatable by Univar. Although the full extent of LNAPL at the Univar Property has not yet been delineated, it is evident that LNAPL recovery will be extremely expensive and time consuming to address. Therefore, Univar bears no nuisance liability under Section 839 of the Restatement (Second) of Torts or any other theory.

objects substantively to this unsubstantiated and unsupported allegation, as there is no evidence in the administrative record to support it, but also objects procedurally. Univar's procedural objections are based on the fact that it has not been afforded adequate opportunity to understand the Regional Board's technical basis for making such an assertion or to present technical arguments to refute the assertion that the LNAPL plume is commingled with contamination that may have been discharged at the

Univar Property. The Regional Board's inclusion of this unsupported allegation in the Order without providing prior notice to Univar violated Univar's due process rights. Moreover, the Regional Board has provided no technical support for this allegation in the Order.

3. The Regional Board Has Failed to Enforce the Golden West CAO and Related Orders.

Golden West has been aware of the presence of free product in the Semi-Perched Aquifer since at least 1983, and has been subject to numerous CAOs issued by the Regional Board to address the LNAPL since 1985 (*See* CAO 91-025, paragraph 5 on page 2). The discovery of the LNAPL at the Golden West Refinery and other area refineries seems to have been the primary impetus for the first CAO issued to Golden West, which required Golden West to characterize the extent of any "free hydrocarbon plumes" on the groundwater surface at and downgradient of the Golden West Facility, and to develop remedial measures to address any impacts identified (CAO No. 85-17, paragraphs 1, 2 and 4 on page 3). In CAO 91-025, Golden West was ordered to "fully assess...groundwater contamination by free phase hydrocarbon product and its dissolved components originating at the [Golden West Facility]" and "begin remediation of offsite groundwater contamination" no later than July 1, 1992 (CAO No. 91-025, paragraph 1 at page 1 and page 8). In CAO 93-082, Golden West was ordered to:

cleanup and abate any on-site and off-site groundwater and soil contamination originating from the [Golden West Facility] ...identify free phase non-aqueous phase liquid (NAPL) in the vadose zone...and remediate any NAPL contamination in a timely manner.

(CAO No. 93-082, paragraph 1 and 2 at page 5). Finally, as has been previously discussed, the Golden West CAO broadly requires Golden West to "cleanup and abate contaminated soil and groundwater emanating from the [Golden West Facility]" (Golden West CAO, page 8).

Even though the Regional Board has issued these clear directives to Golden West in the form of numerous CAOs, the Regional Board continues to fail to enforce its orders, thereby damaging Univar. The Regional Board's actions requiring Univar to abate and remediate the LNAPL that Golden West discharged, directly contradict its finding that the LNAPL at the Univar Property originated at the Golden West Facility. By failing to abate the LNAPL at the Univar Property, Golden West is in violation of the Golden West CAO. Unfortunately, rather than penalizing Golden West for violating CAOs, the Regional Board has instead ordered Univar to undertake the work Golden West is already obligated to perform. The Regional Board's failure to enforce the Golden West CAO, and its decision to shift Golden West's responsibilities to Univar is arbitrary and capricious, outside of its authority, and prejudicial to Univar.

Jeannette L. Bashaw

October 17, 2014

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H. RECIPIENTS OF PETITION

Copies of this petition have been sent via email and U.S. mail to the following parties:

Regional Board:

Samuel Unger, P.E.

Executive Officer

Los Angeles Regional Water Quality Control Board

320 West Fourth Street, Suite 200

Los Angeles, CA 90013

sunger@waterboards.ca.gov

Adnan Siddiqui

Project Manager

Los Angeles Regional Water Quality Control Board

320 West Fourth Street, Suite 200

Los Angeles, CA 90013

asiddiqui@waterboards.ca.gov

Golden West:

Mr. Chris Panaitescu

General Manager

Golden West Refining Company

13116 Imperial Highway

Santa Fe Springs, CA 90670

panaitescu@thriftyoil.com

Mark B. Gilmartin, Esq.

Law Offices of Mark B. Gilmartin

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Chevron:

Bradley W. Rogers

Team Lead, Refining Business Unit

Chevron Environmental Management Company

6101 Bollinger Canyon Road

San Ramon, CA 94583

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Jeannette L. Bashaw
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Robert C. Goodman
Rogers Joseph O'Donnell, PC
311 California Street, 10th Floor
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rgoodman@rjo.com

Todd Littleworth, Esq.
Chevron Corporation
6101 Bollinger Canyon Road
San Ramon, CA 94583
tlittleworth@chevron.com

I. SUBSTANTIVE ISSUES WERE PREVIOUSLY RAISED TO THE EXTENT POSSIBLE

The substantive issues and objections raised by this petition were raised before the Regional Board in the Comment Letters to the extent possible. Univar was previously unable to comment on the Regional Board's new commingling allegation because the Regional Board raised this issue for the first time in the final Order. Therefore, the Regional Board's inclusion of this new allegation is subject to review under Section 2050(c) of Title 23 of the California Code of Regulations allowing Univar the opportunity to provide additional comments.

J. REQUEST FOR STAY

Pursuant to Section 2053 of Title 23 of the California Code of Regulations, a stay of the effect of an action of a regional board shall be granted if Univar alleges facts and produces proof of the following: (1) substantial harm to Univar or to the public interest if a stay is not granted; (2) a lack of substantial harm to other interested persons and to the public interest if a stay is granted; and (3) substantial questions of fact or law regarding the disputed action. For the following reasons, and as stated in the declaration of Leslie Schenck Reeve attached as Exhibit F, all of these requirements have been satisfied.

1. Univar Will Suffer Substantial Harm if the Stay Is Not Granted.

If the stay is not granted, Univar will be forced into an inequitable and impossible situation: comply with the Order by investigating and remediating LNAPL discharged from the Golden West Facility, which it has no legal obligation to abate, thereby incurring significant costs several orders of magnitude higher than it otherwise would were it not for the presence of Golden West's LNAPL; or face both substantial penalties for non-compliance with an Order and potential legal action by the Regional Board, all with no basis to recover any penalties imposed should Univar ultimately prevail. Therefore, Univar will suffer substantial, irreparable harm if the stay is not granted.

2. No Other Interested Persons or the Public Interest Will Suffer Substantial Harm if a Stay is Granted.

Granting Univar's request for a stay will not cause substantial harm to any interested persons or the public interest. The Regional Board has already identified the actual dischargers of the LNAPL –

Golden West and Chevron – as the responsible parties, both of which are financially viable and under orders by the Regional Board to conduct the investigation and remediation of the LNAPL. Therefore the abatement of the LNAPL by the appropriate discharger parties can proceed in a timely manner. Furthermore, Golden West has effectively admitted responsibility for the LNAPL at the Univar Property because it acknowledged in its petition for review of the Golden West Investigative Order that it is the source of the LNAPL located within 599 feet south of the Golden West Facility, which is where the Univar Property is located.

3. Substantial Questions of Fact and Law Exist Regarding the Disputed Action.

The Regional Board's issuance of the Order raises substantial questions of fact and law because the Order issued by the Regional Board requires Univar to remediate the LNAPL that was discharged from the Golden West Facility even though there is no substantial evidence or legal authority to support a finding that Univar is liable for the LNAPL under the Act.

For the foregoing reasons, Univar respectfully requests that the State Board direct the Regional Board to stay the Order and hold a hearing in this matter. Univar further requests the State Board direct the Regional Board to rescind the Order and enforce the Golden West CAO against Golden West.

Sincerely,



Leslie Schenck Reeve
Vice President & Associate General Counsel
Univar USA Inc.

Enclosures:

Exhibit A – Order and Comment Responses (September 17, 2014)

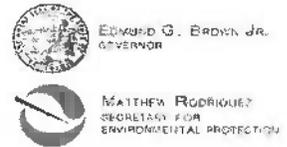
Exhibit B – Golden West CAO (August 24, 2004)

Exhibit C – Original Golden West Investigative Order (June 26, 2014)
Letter to Samuel Unger from Paul Parmentier and Neil Irish (September 10, 2014)
Amended Golden West Investigative Order (October 16, 2014)

Exhibit D – Regional Board Letter (July 30, 2013)

Exhibit E – Golden West's Petition for Review of Golden West Investigative Order
(July 25, 2014)

Exhibit F – Declaration of Leslie Schenck Reeve



Los Angeles Regional Water Quality Control Board

September 17, 2014

Mr. Michael Gaudette
Univar USA Inc.
1804 N. 20th Street
Nampa, ID 83687

Certified Mail
Return Receipt Requested
Claim No. 7001 0360 0000 3649 3422

SUBJECT: CLEANUP AND ABATEMENT ORDER NO. R4-2014-0130

**SITE: FORMER CHEMCENTRAL, LOS ANGELES, 13900 CARMENITA ROAD,
SANTA FE SPRINGS, CALIFORNIA 90670
(SCP NO. 0810, SITE ID NO.2043F00)**

Dear Mr. Gaudette:

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is the public agency with primary responsibility for the protection of ground and surface water quality for all beneficial uses within major portions of Los Angeles County and Ventura County. The site is situated within the jurisdiction of the Regional Board.

Enclosed is Cleanup and Abatement Order (CAO) No. R4-2014-0130, directing Univar USA Inc., to assess, monitor, cleanup, and abate the effects of wastes discharged to the soil and groundwater at the former Chemcentral Corporation facility located at 13900 Carmenita Road, Santa Fe Springs, California (Site). This Order is issued under section 13304 of the California Water Code.

A draft of this CAO was provided to you on June 18, 2013, inviting comments. Comments were provided on July 22, 2013 and August 5, 2013 by Univar USA Inc. The attached document, titled "Response to Comments – Draft Cleanup and Abatement Order No. R4-2013-0083," summarizes the comments received and the responses to those comments.

If you have any questions, please contact Mr. Adnan Siddiqui (project manager) at (213) 576-6812 (asiddiqui@waterboards.ca.gov) or Remediation Section Program Manager, Dr. Arthur Heath at (213) 576-6725 (aheath@waterboards.ca.gov).

Sincerely,


Samuel Unger, PE
Executive Officer

Enclosure: 1. Cleanup and Abatement Order No. R4-2014-0130
 2. Response to Comments –Draft Cleanup and Abatement Order No. R4-2013-0083

Cc: Michelle Ulick Rosenthal, Veris Law Group (via e-mail)
 Alfonso Nunez, ERM (via e-mail)

Regional Board Response to Comments Received for

Draft Cleanup and Abatement Order R4-2013-0083

Comments Due Date: July 22, 2013 extended to August 5, 2013

1 to 15: Comments from Univar dated July 22, 2013 and August 5, 2013

No.	Author	Comments	Regional Board's Response
1	Univar	<p>General comments A and B dated July 22, 2013 and comments A and B dated August 5, 2013</p> <p>Chemcentral is not the source of the light non-aqueous phase liquid (LNAPL) present in groundwater beneath the property. Multiple lines of evidence demonstrate that the LNAPL plume belongs to the former Golden West Refinery (Golden West), which is located north of the ATSF railroad tracks and up-gradient from the Chemcentral site. Univar will act to address contaminants in the subsurface environment for which it is responsible.</p>	<p>The Regional Board concurs with Univar that Golden West caused or contributed to the LNAPL plume that is beneath the Chemcentral property. Univar is responsible for cleanup and abatement of all waste discharged at the site. Waste that was discharged as a result of operations at the site may have commingled with the LNAPL plume that originated off-site. Golden West is required to cleanup and abate the LNAPL plume that originated from its property and migrated under the site, pursuant to Order No. R4-2004-0020.</p>
2	Univar	<p>General comments D dated July 22, 2013 and comments C dated August 5, 2013</p> <p>Reduce the scope of the draft CAO. There are data gaps in the nature and extent of Golden West's LNAPL plume. Univar proposes to take a systematic approach by conducting first the assessment to fill in the data gaps.</p>	<p>The extent of the LNAPL plume that originated from the Golden West Refinery is mostly defined. There are some data gaps but it does not prevent Univar from conducting work as described in the Time Schedule in the CAO. The Regional Board has already adopted a systematic approach in the CAO as drafted. In the Time Schedule portion of the Order, the Regional Board requires Univar to submit the Phase I assessment, site assessment work plan and groundwater monitoring work plans by definite due dates. The dates provided to submit the remedial action plan and human health risk assessment in the Time Schedule will be set by the Executive Officer based on the information and timing of the prior reports. The Regional Board understands that plans such as remedial</p>

		<p>action plans are dependent upon the evaluation of data collected during site assessment and monitoring.</p>	
3	Univar	<p>General comment C dated July 22, 2013 It appears that in sections 6(a) through 6(c) the Water Board is using the historical maximum concentrations detected in soil, soil gas and groundwater without reference to location and date of the sample. The historical concentrations do not represent current site conditions.</p>	<p>Correct, the maximum concentration of a chemical detected in the media (soil, soil vapor, groundwater) is cited. The Order has been revised to clarify that the concentrations listed are maximum detected concentrations. The additional data collected during site assessment according to the CAO and the updated site conceptual model will be considered to make decisions to proceed in the future. However, historical concentrations are also important to locate additional sampling points and to determine the fate of contaminants already released in the environment.</p>
4	Univar	<p>Comment dated July 22, 2013 Site History, Page 2, Item 4, Line 3. Change "Eighty five" to "Eighty eight"</p>	<p>Correction is made.</p>
5	Univar	<p>Water Board text, Site History, Page 2, Item 4 Line 6 Change "Chemcentral required" to "Chemcentral was acquired by"</p>	<p>Correction is made.</p>
6	Univar	<p>Comment dated July 22, 2013 Site History, Page 2, Item 5, Line 2 Change "terminal" to "Site"</p>	<p>Correction is made.</p>
7	Univar	<p>Comment dated July 22, 2013 Waste Discharges, Page 2, Item 6, Univar is unable to confirm bis (2-Ethylhexyl) phthalate concentration in groundwater of 11,000 micrograms per liter (µg/L).</p>	<p>The bis (2-ethylhexyl) phthalate concentration in groundwater is revised.</p>
8	Univar	<p>Comment dated July 22, 2013 Waste Discharges, Page 3, Item 6c, Second Paragraph, It is important to note and document that no LNAPL was detected from beneath the UST during the removal of USTs. The conditions of USTs and piping at that time need to be stated.</p>	<p>Finding 6 has been revised to state that no LNAPL was found in the UST excavation. The Regional Board also states in the Order that "there are LNAPL plumes in the Semi-Perched Aquifer and Artesia Aquifer that originate from the former Golden West Refinery, which extend</p>

			offsite beneath other properties including the Site." There were some petroleum related impacts found in the soil at the Site and it is reported that there was a leak in April 1995.
9	Univar	Comment dated July 22, 2013 Waste Discharges, Page 3, Item 6c, third Paragraph, Change "north" to "north and northeast".	Change is made.
10	Univar	Comment dated July 22, 2013 Source Elimination and Remediation Status, Page 3, Item 7, Line 1 Add "three" before "ASTs".	The text is revised.
11	Univar	Comment dated July 22, 2013 Source Elimination and Remediation Status, Page 3, Item 7, Line 2 Delete "demolished and".	The text is revised.
12	Univar	Comment dated July 22, 2013 Source Elimination and Remediation Status, Page 3, Item 7, Line 4. Change "A LNAPL" to "An LNAPL" and add "These USTs and ASTs were not used to store fuels".	Under section 5, Chemical Usage on page 2, contents of the USTs and ASTs are documented and do not include fuels.
13	Univar	Comment dated July 22, 2013 Summary of Findings, Page 3, Item 8a. Add "y)" after RSL and eliminate" through direct contact exposure".	The text is revised.
14	Univar	Comment dated July 22, 2013 Summary of Findings, Page 3, Item 8b. The date of soil gas data is not provided.	Soil gas data is provided in item 6b. In item 8b, the concentrations were compared with California Human Health Screening Levels. The soil vapor data was collected in August 2000.
15	Univar	Comment dated July 22, 2013 Summary of Findings, Page 4, Item c. Change "1-Dioxane" to "1, 4-Dioxane".	Correction is made.
16	Univar	Comment dated July 22, 2013	Item 19 is revised and PCBs are removed from the text at

		<p>Discharger Liability, Page 6, Item 19.</p> <p>To the best of Univar's knowledge, neither Univar's or Chemcentral's current or historical operations involved the use or release of PCBs. Moreover there is no evidence that Univar or its predecessor has any connection to PCBs. Accordingly, this allegation needs to be investigated.</p>	<p>this time. Information provided in the Phase I Environmental Site Assessment required under the CAO will be useful to determine whether PCBs may have been discharged at the site</p>
17	Univar	<p>Comment dated July 22, 2013</p> <p>Pages 9 and 10, Item 5, <u>Conduct groundwater monitoring and LNAPL recovery.</u></p> <p>Change all references to "groundwater monitoring and a LNAPL recovery" in Paragraphs A through D to "Groundwater monitoring", and</p> <p>Page 9 and 10, Item 5, Paragraph A, Line 3.</p> <p>The reference to "LNAPL recovery program currently implemented" is not correct. LNAPL recovery was performed to evaluate the persistence of LNAPL at the site as documented in the Rubicon report. The evaluation concluded that the LNAPL occurrence cannot be attributed to historical site operations, but rather, is an extension of the LNAPL plume originating from GWRC, which is located up gradient of the Site.</p>	<p>The Regional Board concurs with Univar that the LNAPL plume present beneath the Site originates from the former Golden West Refinery. The Regional Board is requiring Golden West Refinery to conduct onsite and offsite LANPL removal and groundwater monitoring pursuant to CAO No. R4-2004-0020. However, the requirement for Univar to conduct LNAPL recovery will remain in the CAO at this time. As the property owner, Univar is responsible for the passive migration of waste that is present at the Site. In this case, the LNAPL may pose a risk to the health and safety of Site workers. In addition, there are significant amounts of wastes, including solvents that were discharged at the Site. In order to conduct the assessment and/or cleanup of these pollutants released at the Site Univar may have to remove LNAPL as well. Univar may be required to conduct the LNAPL removal unless and until Golden West Refinery takes over this activity under CAO No. R4-2004-0020. The Regional Board does not allocate liability for cleanup costs, but Univar may seek to recover the cost of LNAPL related work from the Golden West Refining Company through other legal processes.</p>
18	Univar	<p>Comment dated July 22, 2013</p> <p>Attachment B, Page 16, Time Schedule, Directive 5.</p> <p>Change reference to "Conduct groundwater monitoring and light non-aqueous phase liquid" to "Conduct groundwater monitoring".</p>	<p>The requirement for Univar to conduct LNAPL recovery will remain in the CAO at this time. See Response to Comment No. 17.</p>
19	Univar	<p>Comment dated July 22, 2013</p>	<p>See Response to Comment No. 17.</p>

	<p>Attachment B, Page 16, Time Schedule, Directive 5a. Delete the reference to "LNAPL recovery".</p>		
20	<p>Univar</p>	<p>Comment dated July 22, 2013 Attachment C, Page 18, Groundwater Monitoring Table. Revise to include VOCs (EPA 8260B), 1,4-dioxane (EPA 8270C), temperature, pH, electrical conductivity, Oxidation-Reduction Potential and turbidity.</p>	<p>The analytical program in the Groundwater Monitoring Table is included only as an example. The actual groundwater monitoring program will be site-specific and will be approved according to the submitted report.</p>
21	<p>Univar</p>	<p>Comment dated July 22, 2013 Attachment C, Page 19, Monitoring Frequencies Specify the Groundwater Monitoring Program shall be implemented on a semi-annual basis.</p>	<p>The groundwater monitoring frequency will be established in the approval of the groundwater monitoring plan after Regional Board's review of the technical report submitted pursuant to Directive 5a of the Time Schedule.</p>
22	<p>Univar</p>	<p>Comment dated July 22, 2013 Attachment C, Page 19, Reporting Requirements, Second Paragraph. Specify that semi-annual groundwater monitoring reports shall be prepared.</p>	<p>See Response to Comment No. 21.</p>
23	<p>Univar</p>	<p>Comments dated July 22, 2013 and comments dated August 5, 2013 "Next Steps": Univar believe that it should not be responsible for the LNAPL recovery and/or its remediation at the Site. Univar acknowledges it may be responsible for the remediation of certain contaminants present on-site that were released as a result of Chemcentral's historical operations. Since Univar is not the discharger of LNAPL, at what point Univar will be compelled to perform LNAPL cleanup. Univar is available to discuss these matters with the Regional Board.</p>	<p>See Response to Comment No. 17. The Regional Board is available to meet with Univar, as needed.</p>

Los Angeles Regional Water Quality Control Board

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

CLEANUP AND ABATEMENT ORDER NO. R4-2014-0130
REQUIRING

UNIVAR USA INC.

TO ASSESS, CLEAN UP, AND ABATE
WASTE DISCHARGED TO WATERS OF THE STATE
(PURSUANT TO CALIFORNIA WATER CODE SECTIONS 13304 AND 13267)

AT FORMER CHEMCENTRAL, LOS ANGELES
13900 CARMENITA ROAD, SANTA FE SPRINGS, CALIFORNIA 90670
(SCP CASE NO. 0810 AND SITE ID NO. 2043F00)

This Cleanup and Abatement Order No. R4-2014-0130 (Order) is issued to Univar USA Inc. based on California Water Code sections 13304 and 13267, which authorize the Regional Water Quality Control Board, Los Angeles Region (Regional Board) to issue a Cleanup and Abatement Order and require the submittal of technical and monitoring reports.

The Regional Board finds that:

BACKGROUND

1. **Discharger:** Univar USA Inc. ("Univar") is a responsible party due to its acquisition of and merger with the former owner and operator, Chemcentral Corporation ("Chemcentral"), of 13900 Carmenita Road, Santa Fe Springs, California ("Site").
 - a) Chemcentral owned the Site. The Site is now owned by Univar due to its acquisition of and merger with Chemcentral.
 - b) Chemcentral operated a chemical bulk storage, blending and distribution facility at the Site that resulted in the discharge of wastes, including volatile organic compounds (VOCs) to the soil and groundwater. Univar continues to operate the chemical storage and distribution facility at the Site.

As detailed in this Cleanup and Abatement Order (Order), Chemcentral and Univar ("Dischargers") have caused or permitted waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state which creates, or threatens to create, a condition of pollution or nuisance.

2. **Location:** The Site is located at 13900 Carmenita Road in Santa Fe Springs, California. Attachment A, Figure 1, Site Location Map, attached hereto and incorporated herein by reference, depicts the location of the Site. Land use surrounding the Site is commercial/industrial.
3. **Groundwater Basin:** The Site is located in the Central Basin of the Los Angeles County Coastal Plain. The uppermost water bearing zone is the Semi-Perched Aquifer, which is laterally discontinuous beneath the Site. The groundwater in the Semi-Perched Aquifer is encountered at an approximate depth of 20 feet below ground surface (bgs). The groundwater in the Semi-Perched Aquifer flows toward the southwest. Based on boring logs from a nearby site, the Artesia Aquifer occurs between depths of 65 and 100 feet bgs. The Artesia Aquifer is a continuous water bearing zone. The groundwater in the Artesia Aquifer generally flows toward the northeast. The Silverado Aquifer occurs approximately 1000 feet bgs. The Site has an elevation of approximately 86 feet above mean sea level.

As set forth in the Water Quality Control Plan for the Los Angeles Region (Basin Plan), which was adopted on June 13, 1994, and amended from time to time, the designated beneficial uses for groundwater in the Central Basin include municipal and domestic drinking water supply (MUN), Industrial Service Supply (IND), Industrial Process Supply (PROC) and Agricultural Supply (AGR).

SITE HISTORY

4. **Site Description and Activities:** The Site is an approximate 7-acre property located in Santa Fe Springs. The Site was undeveloped before Chemcentral began to operate a chemical storage and distribution facility at the property in 1959. Eighty eight (88) underground storage tanks (UST) and three (3) aboveground storage tanks (ASTs) were installed at the Site between 1959 and 1970. The USTs and ASTs were removed in 1998. In 2007, Chemcentral was acquired by Univar. Univar continues to conduct chemical storage and distribution operations at the Site. Figure 2, Site Layout Map, of Attachment A, attached hereto and incorporated herein, depicts the Site features.
5. **Chemical Usage:** Chemcentral used the Site for the storage and distribution of liquid chemicals. The chemicals were transported to and from the Site by tanker train and tanker truck. The USTs and ASTs stored various types of chemicals, generally consisting of halogenated and non-halogenated solvents, alcohols, ketones, aliphatic and aromatic hydrocarbons, glycol ethers, esters, surfactants and plasticizers.

EVIDENCE OF WASTE DISCHARGES AND BASIS FOR ORDER

6. **Waste Discharges:** Since 1989, data collected from environmental investigations conducted at the Site indicate that waste discharges occurred during industrial operations at the Site.

Chemicals that have been detected in soil and/or groundwater at the Site include petroleum hydrocarbons, volatile organic compounds (VOCs), semi-volatile organic compounds (semi-VOCs) and phthalates.

Maximum concentrations of some chemicals detected in soil and groundwater at the Site, based on analytical testing results, are presented below:

- a) **In soil:** Tetrachloroethylene (PCE) at 380 milligrams per kilogram (mg/kg), trichloroethylene (TCE) at 37 mg/kg, 1,1,1-trichloroethane (1,1,1-TCA) at 6,100 mg/kg, methylene chloride at 990 mg/kg, benzene at 120 mg/kg, toluene at 2,100 mg/kg and xylenes at 2,600 mg/kg.
- b) **In soil-gas:** PCE at 129 micrograms per liter ($\mu\text{g/L}$), TCE at 57.5 $\mu\text{g/L}$, 1,1,1-trichloroethane (1,1,1-TCA) at 27,284 $\mu\text{g/L}$, vinyl chloride (VC) at 55 $\mu\text{g/L}$, benzene at 16 $\mu\text{g/L}$, toluene at 2,833 $\mu\text{g/L}$ and xylenes at 850 $\mu\text{g/L}$, according to the soil vapor data that was collected in August 2000;
- c) **In groundwater:** Benzene at 21,000 $\mu\text{g/L}$, toluene at 230,000 $\mu\text{g/L}$, total xylenes at 280,000 $\mu\text{g/L}$, methylene chloride at 66,000 $\mu\text{g/L}$, PCE at 19,000 $\mu\text{g/L}$, 1,1,1 TCA at 33,000 $\mu\text{g/L}$, TCE at 3,400 $\mu\text{g/L}$, VC at 2,430 $\mu\text{g/L}$, 1,1-DCA at 25,000 $\mu\text{g/L}$, Bis (2-ethylhexyl) phthalate at 8,500 $\mu\text{g/L}$, polychlorinated biphenyls (PCBs) at 180 $\mu\text{g/L}$, 1,4-Dioxane at 16,000 $\mu\text{g/L}$ and total petroleum hydrocarbon as gasoline at 260,000 $\mu\text{g/L}$.

In addition to the above listed chemical concentrations, there is light non-aqueous phase liquid (LNAPL) present in groundwater beneath the Site. The maximum thickness of LNAPL beneath the Site was measured in the Semi-Perched Aquifer in well C-4 at 11.67 feet in November 2002. The LNAPL plume beneath the Site consists of weathered petroleum hydrocarbon fuels. One gasoline and one diesel UST, each 8,000 gallons in capacity, and associated piping were removed from the Site in 1995. Low levels of petroleum hydrocarbons were detected in soil samples collected from beneath the USTs. Petroleum hydrocarbon impacted soil was found in the dispenser island area. Two soil borings C-5 and C-6 were drilled to 40 feet bgs adjacent to the USTs to install groundwater monitoring wells. The Semi-Perched Aquifer was not encountered in this area. No LNAPL was found in the UST excavation.

There are LNAPL plumes in the Semi-Perched Aquifer and Artesia Aquifer that originate from the former Golden West Refinery, a former petroleum refinery located immediately to the north of the Site, and extending offsite beneath other properties including the Site (see File No. SCP 0227A for additional information regarding the LNAPL plumes). The waste that was discharged as a result of operations at the Site is commingled with the contamination plumes that originated offsite. The Golden West Refinery LNAPL plume was discovered in 1979. The Regional Board is also overseeing assessment, cleanup, and remediation of the Golden West Refinery LNAPL plumes pursuant to Order No. R4-2004-0020.

7. **Source Elimination and Remediation Status:** The gasoline and diesel USTs and dispensers were removed in 1995 and soil was excavated to a depth of 11 feet bgs. The eighty-eight USTs and three ASTs located at the Site were removed in 1998. Twenty-five ASTs, which are currently in use, were installed in the southeast portion of the Site for chemical storage. The chemical storage, blending and distribution operations continue at the Site. A LNAPL removal program using on-site wells has been implemented intermittently at the Site since 2000, and approximately 1,000 gallons of LNAPL has been recovered from the Site.
8. **Summary of Findings from Subsurface Investigations:** The Regional Board has reviewed and evaluated the technical reports and records in its files pertaining to the

discharge, detection, and distribution of wastes at the Site and the Site vicinity. Elevated levels of chemicals including VOCs, semi-VOCs and other wastes have been detected in soil vapor, soil matrix, and groundwater beneath the Site. Univar is also implementing a groundwater sampling and monitoring program on a semi-annual schedule.

- a) The PCE, TCE and benzene concentrations in soil exceed the May 2014 United States Environmental Protection Agency (USEPA) Region IX direct contact exposure pathways Regional Screening Level (RSL) for commercial/industrial land use of 100 mg/kg, 6.0 mg/kg, and 5.1 mg/kg for PCE, TCE, and benzene, respectively posing a potential human health threat .
 - b) The PCE, TCE, VC, benzene, 1,1,1-TCA and toluene concentrations in soil gas exceed the January 2005 California Human Health Screening Levels (CHHSLs) of 0.603 µg/L, 1.770 µg/L, 0.0448 µg/L, 0.122 µg/L, 2,790 µg/L and 378 µg/L respectively for commercial/industrial land use posing a potential threat to human health through vapor intrusion into the indoor air.
 - c) The PCE, TCE, VC, 1,1,1-TCA, 1,1-DCA methylene chloride, benzene, toluene, total xylenes, Bis (2-ethylhexyl) phthalate and PCBs concentrations in groundwater exceed their respective Environmental Protection Agency, State Water Resources Control Board, Division of Drinking Water (DDW) maximum contamination levels (MCLs) of 5 µg/L, 5 µg/L, 0.5 µg/L, 200 µg/L, 5 µg/L, 5 µg/L, 1 µg/L, 150 µg/L, 1,750 µg/L, 6 µg/L and 0.5 µg/L posing a threat to drinking water resources. The concentration of 1,4-Dioxane in groundwater exceeds the notification level of 1 µg/L established by DDW.
9. **Regulatory Status:** The Site was included in the Regional Board's Site Cleanup Program (SCP) in September 1998. Between 1999 and 2001, Regional Board staff issued letters to Chemcentral regarding assessment, free product removal, groundwater monitoring and remediation. The Regional Board continues to provide regulatory oversight of the Site.
10. **Impairment of Drinking Water Wells:** The Regional Board has the authority to require the Discharger to pay for or provide uninterrupted replacement water service to each affected public water supplier or private well owner in accordance with Water Code section 13304.
11. **Sources of Information:** The sources for the evidence summarized above include but are not limited to: reports and other documentation in the Regional Board files, telephone calls and e-mail communication with the Dischargers and their consultants, and Site visits.

AUTHORITY - LEGAL REQUIREMENTS

12. Section 13304(a) of the Water Code provides that:

"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, cleanup 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. A cleanup and abatement order issued by the state board or a regional board may require the provision of, or payment for, uninterrupted replacement water service, which may include wellhead treatment, to each affected public water supplier or private well owner. Upon failure of any person to comply with the cleanup and abatement order, the Attorney General, at the request of the board, shall petition the superior court for that county for the issuance of an injunction requiring the person to comply with the order. In the suit, the court shall have jurisdiction to grant a prohibitory or mandatory injunction, either preliminary or permanent, as the facts may warrant."

13. Section 13304(c)(1) of the California Water Code provides that:

"[T]he person or persons who discharged the waste, discharges the waste, or threatened to cause or permit the discharge of the waste within the meaning of subdivision (a), are liable to that governmental agency to the extent of the reasonable costs actually incurred in cleaning up the waste, abating the effects of the waste, supervising cleanup or abatement activities, or taking other remedial action."

14. Section 13267(b)(1) of the California Water Code provides that:

"In conducting an investigation ... the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."

15. The State Water Resources Control Board (hereafter State Water Board) has adopted Resolution No. 92-49, the "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304" (Resolution 92-49). Resolution 92-49 sets forth the policies and procedures to be used during an investigation and cleanup of a polluted site and requires that cleanup levels be consistent with State Water Board Resolution 68-16, the "Statement of Policy With Respect to Maintaining High Quality of Waters in California." Resolution 92-49 and the Basin Plan establish the cleanup levels to be achieved. Resolution 92-49 requires the waste to be cleaned up to background, or if that is not reasonable, to an alternative level that is the most stringent level that is economically and technologically feasible in accordance with Title 23, California Code of Regulations (CCR) Section 2550.4. Any alternative cleanup level to background must (1) be consistent with the maximum benefit to the people of the state; (2) not unreasonably affect present and anticipated beneficial use of such water; and (3) not result in water quality less than that prescribed in the Basin Plan and applicable Water Quality Control Plans and Policies of the State Board.

16. The Regional Board adopted the Water Quality Control Plan for the Los Angeles Region (Basin Plan), which identifies beneficial uses and establishes water quality objectives to protect those uses. The Site overlies groundwater in the Central Basin of the Los Angeles Coastal Plain. The designated beneficial uses of the groundwater beneath the Site are Municipal (MUN), Industrial Service Supply (IND), Industrial Process Supply (PROC) and Agricultural Supply (AGR). The exceedance of applicable water quality objectives in the Basin Plan constitutes pollution as defined in Water Code section 13050(i)(1). The wastes detected in groundwater, soil matrix and vapor at the Site threaten to cause pollution and nuisance.
17. It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring the cleanup and remediation of waste in groundwater that is or may be used for domestic purposes, to meet standards designed to protect human health.
18. **Public Participation:** The Regional Board may require the Dischargers to submit a Public Participation Plan or engage in other activities to disseminate information and gather community input regarding the Site, as authorized or required by Water Code sections 13307.1, 13307.5 and 13307.6.

DISCHARGER LIABILITY

19. As described in this Order and the record of the Regional Board, Univar is subject to an order pursuant to Water Code section 13304 because the Discharger has caused or permitted waste, including VOCs, semi-VOCs, and PCBs, 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. The Discharger has caused or permitted VOCs and semi-VOCs to be discharged or deposited where the wastes are, or probably will pose, a potential human health threat to occupants of the building onsite through direct contact exposure to contaminated soil and/or groundwater or through vapor intrusion into indoor air. The condition of pollution is a priority violation and issuance or adoption of a cleanup or abatement order pursuant to Water Code Section 13304 is appropriate and consistent with the policies of the Regional Board.
20. The constituents found at the Site are described in Findings 6 and 8, and the Regional Board files related to this Site. These constituents 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(i), and nuisance as defined in Water Code section 13050(m). The concentration of wastes in soil and groundwater exceed water quality objectives contained in the Basin Plan, including maximum contaminant levels (MCLs).
21. This Order requires investigation and cleanup of the Site in compliance with the Water Code, the applicable Basin Plan, State Water Board Resolution 92-49, and other applicable plans, policies, and regulations. Univar, as the current and former owner and operator of the Site and facilities at the Site because of its acquisition and merger with Chemcentral, is responsible for complying with this Order.
22. This Order requires the submittal of technical or monitoring reports pursuant to Water Code section 13267. Univar is required to submit the reports because, as described in the findings in this Order and the records of the Regional Board, the Discharger

discharged waste and is suspected of having discharged or discharging waste at the Site. The reports are necessary to evaluate the extent of the impacts of the discharge of waste on water quality and public health, and to determine the scope of the remedy necessary to cleanup and abate those impacts. The burden, including costs, of the reports, bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. Additional evidence in support of requiring these reports, including monitoring and investigatory reports, can be found in the Regional Board files related to this Site.

CONCLUSIONS

23. 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) (Public 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 proposed remedial activities and possible associated environmental impacts. If the Regional Board determines that implementation of any plan required by this Order could have a significant effect on the environment, the Regional Board, or other lead agency, will conduct the necessary and appropriate environmental review prior to Executive Officer approval of the applicable plan.
24. Pursuant to sections 13304 and 13365 of the 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, including public participation.
25. Any person aggrieved by this action of the Regional Water Board may petition the 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.

REQUIRED ACTIONS

THEREFORE, IT IS HEREBY ORDERED, pursuant to sections 13267 and 13304 of the California Water Code that Univar shall investigate, cleanup, and abate the effects of waste discharged or deposited at or from the Site in accordance with the following requirements:

1. **Conduct and Submit a Phase I Environmental Site Assessment report:**
 - a. Conduct a Phase I environmental assessment for the property in accordance with the latest standards applicable, including the USEPA "All Appropriate Inquiry" rule.
2. **Develop, Submit and Implement a Site Assessment Work Plan(s) to Assess, Characterize and Delineate the Extent of Wastes in Soil, Soil Vapor and Groundwater:**
 - a. Fully assess and characterize and completely delineate the vertical and lateral extent of wastes onsite and offsite in the soil matrix, soil vapor, and groundwater. The Assessment will include VOCs and any other waste constituents that were discharged or deposited at the Site. The groundwater assessment must include assessment in the Semi-Perched Aquifer and Artesia Aquifer.
 - b. Identify the locations of all waste sources at the Site such as tanks, clarifiers, sumps, piping and other sources, to allow for full assessment of the extent of waste discharged at the Site.
 - c. Include a time schedule for implementation of the work proposed in the Site Assessment Work Plan.
 - d. Upon Executive Officer approval of the Site Assessment Work Plan(s) and time schedule, implement the Site Assessment Work Plan in accordance with the approved schedule. Upon completion of the work, submit a Site assessment report to the Regional Board containing the results, conclusions and recommendations.
 - e. The existing Site Conceptual Model (SCM) shall be updated when significant new information becomes available. The updated SCM shall be submitted to the Regional Board in Site Assessment reports.
 - f. Completion of the Site Assessment may require multiple work plans.
3. **Conduct Remedial Action:** Develop and implement a plan for the cleanup of waste in the soil matrix, soil vapor, and groundwater and abatement of the effects of the waste. Specifically, you shall:
 - A. Develop a comprehensive Remedial Action Plan (RAP) for cleanup of waste in the soil matrix, soil vapor and groundwater discharged or deposited at the Site and submit it to the Regional Board for review and approval. The RAP shall include, at a minimum:
 - i. Preliminary cleanup goals for soil and groundwater in compliance with State Water Board Resolution 92-49 ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304"). The cleanup levels must be protective of the human health, groundwater and surface water resources, environment and the beneficial uses set forth in the Basin Plan. Alternative cleanup levels to background for groundwater shall not exceed water quality objectives in the Basin Plan. Alternative cleanup levels to background for soil and soil vapor shall not exceed levels that will result in groundwater exceeding water quality objectives in the Basin Plan.

- ii. Discussion of the technology(ies) proposed for remediation of soil matrix, soil vapor and groundwater.
 - iii. Description of the selection criteria for choosing the proposed method over other potential remedial options. Discuss the technical merit, suitability of the selected method under the given Site conditions and waste constituents present, economic and temporal feasibility, and immediate and/or future beneficial results.
 - iv. Description of any pilot projects intended to be implemented.
 - v. Estimation of cumulative mass of wastes to be removed with the selected method. Include all calculations and methodologies used to obtain this estimate.
 - vi. A proposed schedule for completion of the RAP.
 - vii. Revisions to or additional RAPs may be needed if the implemented remedial measure does not completely achieve all Site cleanup goals.
 - B. Upon Regional Board approval of the Remedial Action Plan(s), you shall implement the RAP in accordance with the approved time schedule.
 - C. You shall submit remediation progress reports to this Regional Board as set forth in the Monitoring and Reporting Program (Attachment C) in accordance with the approved schedule in Time Schedule, Attachment B. The remediation progress reports shall document all performance data associated with the operating systems.
4. **Conduct Site-Specific Human Health Risk Assessment:** Upon assessment and/or implementation of the remedial action at the Site, Univar shall conduct a human health risk assessment (HHRA) using concentrations of chemicals in soil, soil vapor and groundwater at the Site.
5. **Conduct Groundwater Monitoring and LNAPL Recovery:**
- A. Develop a groundwater monitoring and a LNAPL recovery program. There are ten onsite and two offsite groundwater monitoring wells existing at the Site. Univar shall evaluate the groundwater monitoring and LNAPL recovery program currently implemented at the Site and develop a revised plan that includes new and/or replacement wells, installed in accordance with the action required in Requirement No. 2. In the evaluation, Univar must consider all pertinent information from each well including, but not limited to, the location of the well, well construction details, subsurface lithology, and historical analytical results. The revised groundwater monitoring and LNAPL recovery program must also include a sampling and analysis plan.
 - B. Upon Regional Board approval of the Groundwater Monitoring and LNAPL Recovery Program, you shall implement the plans in accordance with the approved time schedule.
 - C. You shall submit Groundwater Monitoring and LNAPL Recovery Program reports to this Regional Board as set forth in the Monitoring and Reporting Program (Attachment C) in accordance with the approved schedule in Time Schedule, Attachment B.

- D. Revision to the Groundwater Monitoring and LNAPL Recovery Program may be needed based on the results of groundwater monitoring and LNAPL recovery. The Regional Board may require revisions to and implementation of the revised Groundwater Monitoring and LNAPL Recovery Programs, but will consider revisions to the due dates if additional work is needed.
6. **Time Schedule:** Univar shall submit all required work plans and reports and complete work within the schedule in any approved work plan or RAP and the time schedule listed in Attachment B attached hereto and incorporated herein by reference, which may be revised by the Executive Officer without amending this Order. No such revision will be effective unless made in writing.
7. 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.
8. **Contractor/Consultant Qualification:** As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all reports shall be prepared by, or under the supervision of, a California registered professional engineer or geologist and signed by the registered professional. All technical reports submitted by Univar shall include a statement signed by the authorized representative certifying under penalty of law that the representative has examined and is familiar with the report and that to his knowledge, the report is true, complete, and accurate. All technical documents shall be signed by and stamped with the seal of the above-mentioned qualified professionals that reflects a license expiration date.
9. This Order is not intended to permit or allow Univar to cease any work required by any other Order issued by the Regional Board, nor shall it be used as a reason to stop or redirect any investigation or cleanup or remediation programs ordered by the Regional Board or any other agency. Furthermore, this Order does not exempt Univar 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 statutes or required by other agencies.
10. Univar shall submit a 30-day advance notice to the Regional Board of any planned changes in name, ownership, or control of the Site and shall provide a 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, Univar also shall provide a 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.

11. Destruction and abandonment of any groundwater well(s) at the Site must be approved by and reported to the Regional Board at least 30 days in advance. Any groundwater wells removed must be replaced within a reasonable time, at a location approved by the Regional Board. With written justification, the Regional Board may approve the destruction of groundwater wells without replacement. When a well is destroyed, 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.
12. In the event compliance cannot be achieved within the terms of this Order, Univar may request, in writing, an extension of the time specified. The extension request shall include an explanation why the specified date could not or will not be met and justification for the requested period of extension. Any extension request shall be submitted as soon as the situation is recognized and no later than the compliance date. Extension requests not approved in writing with reference to this Order are denied.
13. Reference herein to determinations and considerations to be made by the Regional Board regarding the terms of the Order may be made by the Executive Officer or his/her designee. Decisions and directives made by the Executive Officer in regards to this Order shall be as if made by the Regional Board.
14. The Regional Board, through its Executive Officer, may amend this Order as additional information becomes available. Upon request by Univar, and for good cause shown, the Executive Officer may defer, delete or extend the date of compliance for any action required of Univar under this Order without amending the Order. Any such revision must be made in writing to be effective. 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.
15. Continue any remediation or monitoring activities until such time as the Executive Officer determines that sufficient cleanup has been accomplished and this Order has been rescinded.
16. Reimburse the Regional Board for reasonable costs associated with oversight of the investigation and cleanup of the waste at or emanating from the Site. Provide the Regional Board with the name or names and contact information for the person to be provided billing statements from the State Water Resources Control Board.
17. A Public Participation Plan shall be prepared and/or updated when directed by the Executive Officer as necessary to reflect the degree of public interest in the investigation and cleanup process.
18. The Regional Board, under the authority given by Water Code section 13267(b)(1), requires you to include a perjury statement in all reports submitted under this Order. The perjury statement shall be signed by a senior authorized representative (not by a consultant). The perjury statement shall be in the following format:

"I, [NAME], certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision, in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the

system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

19. The State Water Board adopted regulations requiring the electronic submittals of information over the internet using the State Water Board GeoTracker data management system. You are required to comply by uploading all reports required in this Order and correspondence prepared to date on to the GeoTracker data management system. The text of the regulations can be found at the URL:

http://www.waterboards.ca.gov/ust/cleanup/electronic_reporting/docs/final_electronic_regs_dec04.pdf.

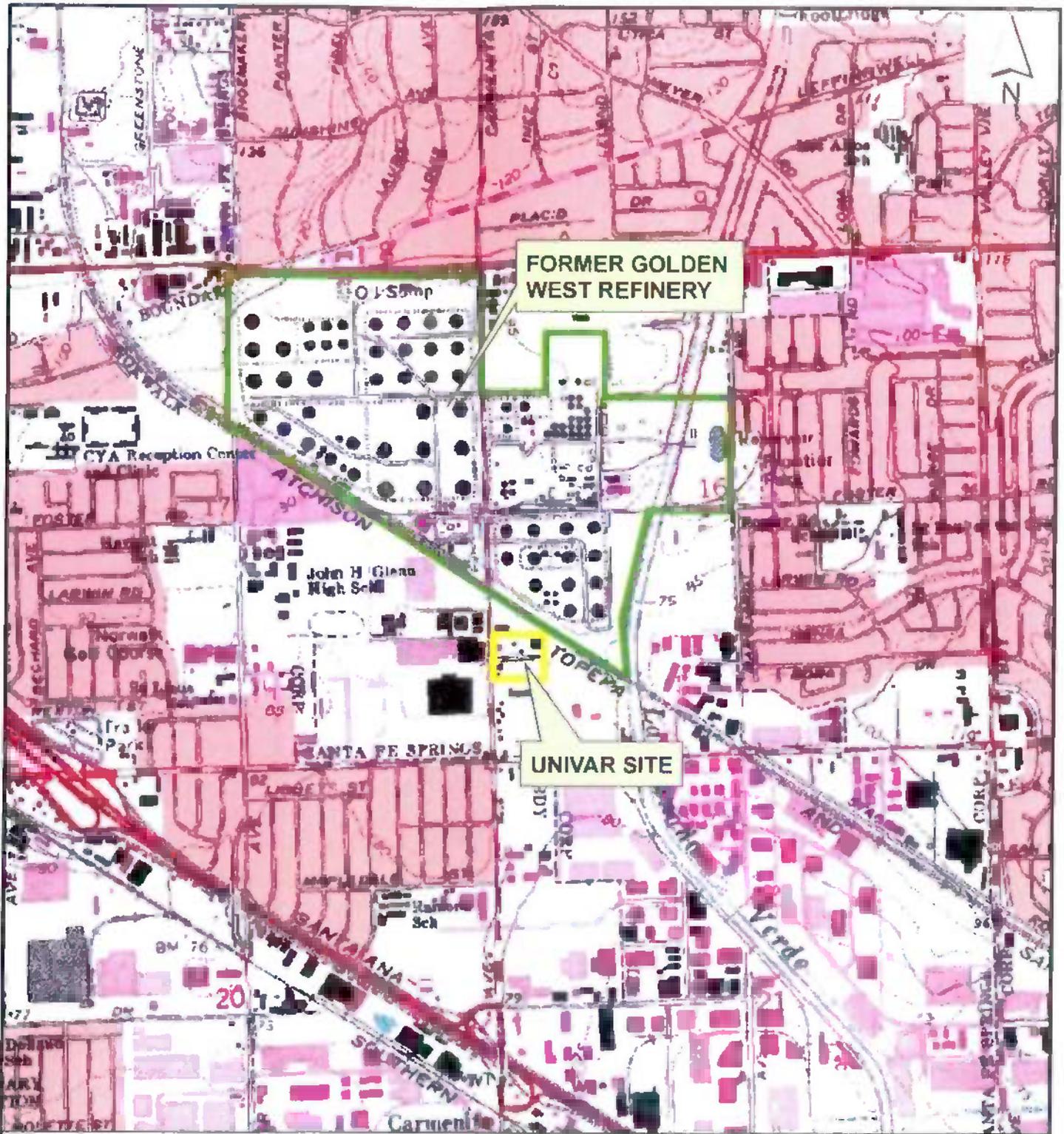
20. Failure to comply with the terms or conditions of this Order may result in imposition of civil liabilities, imposed either administratively by the Regional Board or judicially by the Superior Court in accordance with sections 13268, 13304, 13308, and/or 13350 of the California Water Code, and/or referral to the Attorney General of the State of California.
21. None of the obligations imposed by this Order on Univar 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: Samuel Unger
Samuel Unger, P.E.
Executive Officer

Date: Sept. 15, 2014

Attachment A

Figures



FORMER GOLDEN WEST REFINERY

UNIVAR SITE



FIGURE 1

SITE LOCATION MAP

Univar USA, Inc.
 13900 Carmenita Road
 Santa Fe Springs, California

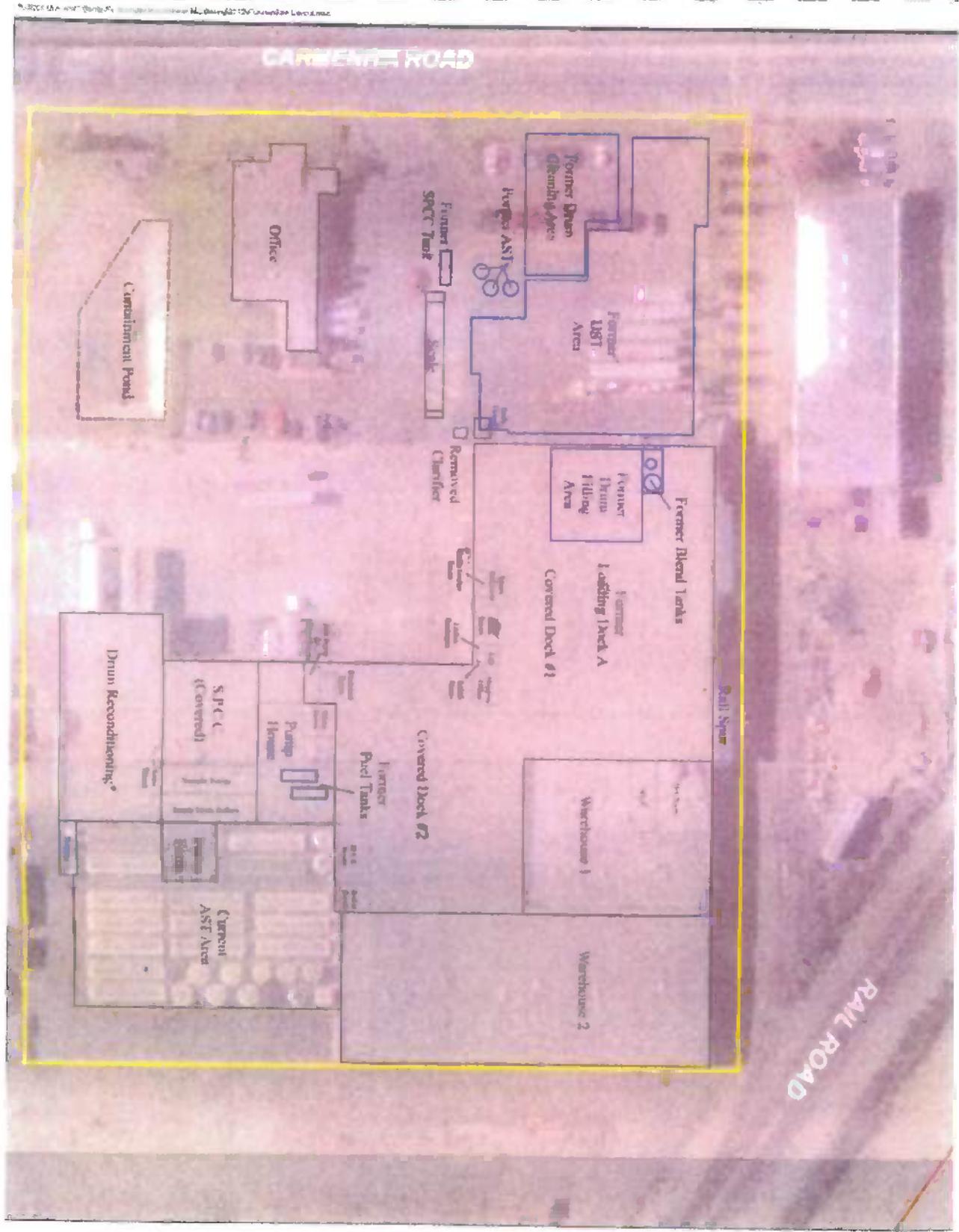
LEGEND

- SITE BOUNDARY
- FORMER GOLDEN WEST REFINERY BOUNDARY

REFERENCE
 U.S.G.S. 7.5 MINUTE TOPOGRAPHIC MAPS OF
 LOS ANGELES AND SOUTH GATE, CALIFORNIA
 DATED 1966 AND 1964 RESPECTIVELY
 PHOTOREVISED 1981



Prepared by Univar USA, Inc. Santa Fe Springs, California. Monitoring Facility 1 - SITE LOCATION MAP.



RAILROAD



LEGEND

- Current Site Features
- Intersecting Walls
- Former Site Features
- Property Line
- Current AST Area
- Former Golden West Refiner

*The drum reconditioning area is no longer used for this purpose, though the equipment is still there. The area is used for empty drum storage. Drum reconditioning is not currently conducted at the site.

FIGURE 2
SITE LAYOUT

ENVIRONMENTAL SCIENCE
 17500 CALVERTON ROAD
 SANTA FE SPRINGS, CALIFORNIA



ES-001-001

Attachment B

Time Schedule

Time Schedule

DIRECTIVE		DUE DATE
1.	Phase I Site Assessment:	
1a	Prepare a Phase I Environmental Site Assessment for the property	December 30, 2014
2.	Site Assessment Work Plan:	
2a	Prepare and submit to the Regional Board a work plan including a schedule for completing delineation of lateral and vertical extent of wastes in soil gas, soil matrix and groundwater onsite and offsite. Implement the Site Assessment Work Plan according to approved schedule. Submit a Site assessment report after the approval of the work plan and its implementation.	December 30, 2014
2b	Multiple Site Assessment Work Plans may be required to complete assessment of and fully delineate waste discharge	Within 60 days of receiving directives from the Regional Board.
3.	Conduct Remedial Action:	
3a	Submit a Remedial Action Plan(s) (RAP) for cleanup of wastes in soil, soil vapor and groundwater that includes a time schedule for implementation.	Within 60 days of receiving directives from the Regional Board.
3b	Implement RAP. Upon completion of implementation of the RAP, submit a Remedial Action Completion Report. Multiple RAPs may be required to complete assessment of and fully delineate waste discharge	According to schedule approved by the Executive Officer. According to schedule approved by the Executive Officer. According to schedule approved by the Executive Officer.

	DIRECTIVE	DUE DATE
4.	<p>Conduct Site-Specific Human Health Risk Assessment:</p> <p>Prepare and submit a Site-specific human health risk assessment considering all waste constituents in the soil matrix, soil gas and groundwater, all exposure pathways and receptors and applying existing regulatory human health screening levels and/or acceptable risk assessment models.</p> <p>Additional HHRAs may be required to address human health and ecological risks</p>	<p>According to schedule approved by the Executive Officer.</p> <p>According to schedule approved by the Executive Officer.</p>
5.	<p>Conduct Groundwater Monitoring and light non-aqueous phase liquid Recovery:</p>	
5a	<p>Prepare and submit to the Regional Board a NAPL Recovery and Groundwater Monitoring Plan for the Site. Include a Sampling and analysis plan.</p> <p>Implement the Groundwater Monitoring and NAPL Recovery Plan according to approved schedule</p>	<p>December 30, 2014</p> <p>According to schedule approved by the Executive Officer.</p>
6.	<p>Public Participation Plan</p>	
6a	<p>Develop a public participation plan to inform public and stakeholders about proposed activities and board actions</p>	<p>According to schedule approved by the Executive Officer.</p>

ATTACHMENT C

Monitoring and Reporting Program

**MONITORING AND REPORTING PROGRAM FOR
CLEANUP AND ABATEMENT ORDER NO. R4-2014-0130**

This Monitoring and Reporting Program (MRP) is issued pursuant to Water Code section 13267 and is part of Cleanup and Abatement Order No. R4-2012-0008 (Order). Failure to comply with this MRP can result in the imposition of civil liability, pursuant to the California Water Code section 13268. All sampling and analyses shall be by USEPA approved methods. The test methods chosen for detection of the constituents of concern shall be subject to review and concurrence by the California Regional Water Quality Control Board, Los Angeles Region (Regional Board).

Laboratory analytical reports to be included in technical reports shall contain a complete list of chemical constituents which are tested for and reported on by the testing laboratory. In addition, the reports shall include both the method detection limit and the practical quantification limit for the testing methods. All samples shall be analyzed within allowable holding times. All quality assurance/quality control (QA/QC) samples must be run on the same dates when samples were actually analyzed. Proper chain of custody procedures must be followed and a copy of the completed chain of custody form shall be submitted with the report. All analyses must be performed by a State Water Resources Control Board, Division of Drinking Water accredited laboratory.

The Regional Board's Quality Assurance Project Plan, September 2008, can be used as a reference and guidance for project activities involving sample collection, handling, analysis and data reporting. The guidance is available on the Regional Board's web Site at:

http://www.waterboards.ca.gov/rwqcb4/water_issues/programs/remediation/Board_SGV-SFVCleanupProgram_Sept2008_QAPP.pdf

GROUNDWATER MONITORING

Univar shall collect groundwater samples from groundwater monitoring wells installed for the purpose of site investigation and monitoring. Any monitoring wells installed in the future shall be added to the groundwater monitoring program and sampled regularly. The groundwater surface elevation (in feet above mean sea level [MSL]) in all monitoring wells shall be measured and used to determine the gradient and direction of groundwater flow.

The groundwater shall be analyzed for all constituents pertinent to the Site such as provided below:

Constituent	EPA Method
Volatile Organic Compounds (full scan)	EPA 8260B
Total petroleum hydrocarbons as gasoline	EPA 8015 modified
Metals	EPA 6010
Hexavalent Chromium	EPA 7199
Ammonium Perchlorate	EPA 314.0
1,4-dioxane	EPA 8270C
N-Nitrosodimethylamine (NDMA)	EPA 1625
Temperature	Field*
pH	Field
Electrical Conductivity	Field

Oxidation-Reduction Potential (ORP)	Field
Turbidity	Field

*Field - To be measured in the field.

REMEDIATION SYSTEMS

Reports on remediation systems shall contain all pertinent information regarding the Site remediation systems:

1. Maps showing location of all remediation wells, if applicable;
2. Status of each remediation system including amount of time operating and down time for maintenance and/or repair;
3. The report shall include tables summarizing the operating and performance parameters for the remediation systems; and
4. System inspection sheets shall document field activities conducted during each Site visit and shall be included in the reports

MONITORING FREQUENCIES

Specifications in this monitoring program are subject to periodic revisions. Monitoring requirements may be modified or revised by the Executive Officer based on review of monitoring data submitted pursuant to the Order, without amending the Order. Monitoring frequencies may be adjusted or parameters and locations removed or added by the Executive Officer, without amending the Order, if site conditions indicate that the changes are necessary. Any revisions to monitoring requirements or monitoring frequencies must be made in writing to be effective.

REPORTING REQUIREMENTS

1. Univar shall report all monitoring data and information as specified herein. Reports that do not comply with the required format will be REJECTED and Univar shall be deemed to be in noncompliance with the Monitoring and Reporting Program.
2. Regular groundwater monitoring reports shall be submitted to the Regional Water Board according to the schedule.

<u>Monitoring Period</u>	<u>Report Due</u>
January - March	April 15
April - June	July 15
July - September	October 15
October - December	January 15

Groundwater monitoring reports shall include a contour map showing groundwater elevations at the Site and the groundwater flow direction. The quarterly groundwater monitoring reports shall include tables summarizing the historical depth-to-water,

groundwater elevations and historical analytical results for each monitoring well. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Regional Water Board. Field monitoring well sampling sheets shall be completed for each monitoring well sampled and included in the report.

Remediation progress reports shall be submitted to the Regional Board according to the schedule:

Monitoring Period	Report Due
January - March	April 15
April - June	July 15
July - September	October 15
October - December	January 15

3. Remediation progress reports shall include an estimate of the cumulative mass of contaminant removed from the subsurface, system operating time, the effectiveness of the remediation system, any field notes pertaining to the operation and maintenance of the system and, if applicable, the reasons for and duration of all interruptions in the operation of any remediation system and actions planned or taken to correct and prevent interruptions.
4. In reporting the monitoring data, Univar shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized to demonstrate compliance with the requirements. All data shall be submitted in electronic form in a form acceptable to the Regional Board.



California Regional Water Quality Control Board

Los Angeles Region



Terry Tamminen
Secretary for
Environmental
Protection

Over 51 Years Serving Coastal Los Angeles and Ventura Counties
Recipient of the 2003 Environmental Leadership Award from Keep California Beautiful

Arnold Schwarzenegger
Governor

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.swrcb.ca.gov/rwqcb4>

August 24, 2004

Mr. Chris Panaitescu
Golden West Refining Company
13116 Imperial Hwy
Santa Fe Springs, CA 90670

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Claim No. 7003 3110 0003 3258 0716

CLEANUP AND ABATEMENT ORDER NO. R4-2004-0020 - GOLDEN WEST REFINING COMPANY - 13539 FOSTER ROAD, SANTA FE SPRINGS, CALIFORNIA (CAO NO. 93-082, SLIC NO. 227; SITE ID NO. 2040073)

Dear Mr. Panaitescu:

Enclosed is Cleanup and Abatement Order (CAO) No. R4-2004-0020 directing Golden West Refining Company (GWRC) to assess, cleanup, and abate the effects of contamination discharged to soil and groundwater at the subject facility in the city of Santa Fe Springs, California. This Order is issued under section 13304 of the California Water Code. Should GWRC fail to comply with any provision of this Order, it may be subject to further enforcement action, including injunction and civil monetary remedies, pursuant to appropriate California Water Code sections including, but not limited to, sections 13268, 13304, 13308, and 13350.

Pursuant to California Water Code section 13320, GWRC may seek review of this Order by filing a petition with the State Water Resources Control Board (State Board). Such a petition must be received by the State Board, located at 1001, I Street, Sacramento, California 95814, within 30 days of the date of this Order.

If you have any questions regarding this matter, please contact Ms. Thizar Tintut-Williams at (213) 576-6723 or Dr. Rebecca Chou, Unit Chief, at (213) 576-6733.

Sincerely,

Jonathan Bishop
Interim Executive Officer

Enclosures: Cleanup and Abatement Order No. R4-2004-0020
Attachment A - Time Schedule
Appendix A-1 - Site Plan
Appendix A-2 - Plot Plan

California Environmental Protection Agency



Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations

Mailing List

cc: John Youngerman, State Water Resources Control Board, Division of Water Quality
Russhawn Aldridge, Office of Environmental Health Hazard Assessment
Vu. T. Nguyen, Department of Toxic Substance Control, Region 3 - Glendale
Department of Interior, U. S. Fish and Wildlife Service
Department of Fish and Game, Region 5
DeAnn Johnson, County of Los Angeles, Community Development Commission
Shahin Nourshad, Los Angeles County Fire Department - Health Hazard Division
Katsumi Keeler, South Coast Air Quality Management District
Andy Lazaretto, City of Santa Fe Springs
Thomas Hall, City of Santa Fe Springs Fire Department



**STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

**Cleanup & Abatement Order No. R4-2004-0020
Requiring**

**GOLDEN WEST REFINING COMPANY
To
Assess, Cleanup and Abate the Effects of Contaminants
Discharged to Soil and Groundwater
(FILE NO. 85-13)**

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) herein finds that:

BACKGROUND

1. **Site Location:** The former Golden West Refining Company site (Site) subject to this Cleanup and Abatement Order (CAO) is approximately 265 acres and is located at 13539 Foster Road in the City of Santa Fe Springs, California. The Site is a former refinery that had four principal areas: Process Unit Area (PUA), West Tank Farm (WTF), Marketing Area (MA), and South Tank Farm (STF). See Site Map in Appendix A-1 and Appendix A-2 attached hereto and incorporated herein by reference.
2. **Ground Water Basin:** The Site is located within the central basin pressure area of the Los Angeles Coastal Plain Groundwater Basin (Central Basin). The alluvial basin underlying the Central Basin is an important source of groundwater, providing drinking water to over 1 million residents in the Los Angeles Region. As set forth in the *Water Quality Control Plan for the Los Angeles Region (Basin Plan)*, adopted on June 13, 1994, the Regional Board has designated beneficial uses for groundwater in the Central Basin (among which include municipal and domestic drinking water supplies), and has established water quality objectives for the protection of those beneficial uses. There are no drinking water supply wells within one mile of the Site.
3. **The Discharger Responsibilities:** Golden West Refining Company (Discharger) and/or its predecessors in interest have released pollutants, primarily petroleum hydrocarbons, volatile organic compounds, and metals into the soil at the Site and some pollutants have migrated into the groundwater beneath the Site. Subsurface investigations predating the Discharger's acquisition of the Site discovered that the Site's soil and groundwater are contaminated with petroleum hydrocarbons and metals. Some free-phase petroleum hydrocarbons have been detected in wells completed in a shallow, semi-perched groundwater zone at a depth of 20-24 feet below ground surface (bgs) and in wells completed at about 80 feet bgs in the Artesia Aquifer.

SITE HISTORY

4. **Site Activities:** Crude oil was refined in the PUA mainly into various fuels such as fuel oil, diesel, gasoline, and propane. The STF and WTF were used for storage and blending of crude oil, intermediate products, and finished products. Loading and inventory of finished products took place in the MA.

August 24, 2004

The refinery was built in the 1930s by the Wilshire Oil Company and was owned and operated by the Wilshire Oil Company until 1960 when it was sold to Gulf Oil Corporation, which continued refinery operations. The Discharger purchased the refinery from Gulf Oil Corporation in August 1983 and continued to refine crude oil into various fuels until February 1992, when the crude oil processing operations were suspended. All refining and associated activities have ceased at the Site, and nearly the entire facility has been demolished. Approximately two-thirds of the Site has been redeveloped into an industrial business park. The remaining parts of the Site are undergoing final remediation and will be redeveloped for industrial usage.

5. **Chemical Usage:** The former refinery stored and processed crude oil and petroleum, resulting in usage or storage of crude oil, refined fuels (gasoline, naphtha, diesel), tetra ethyl lead used as a fuel additive, and arsenic used as an anti-corrosion agent. Since the refinery operations ceased in 1992, the refinery did not manufacture fuels containing methyl tertiary-butyl ether (MTBE) or other fuel oxygenates. However, it appears that blending of MTBE in fuels was conducted for three months in late 1992, and MTBE was present in gasoline sold at the terminal facility between March 1995 to August 1997. On August 8, 1997, the Discharger discontinued the sale of gasoline at the terminal facility.

EVIDENCE OF CONTAMINATION AND BASIS FOR CALIFORNIA WATER CODE SECTION 13304 ORDER

6. **Waste Releases:** Under the direction of Regional Board staff, the Discharger has conducted site investigations that documented the discharge of wastes to soil and groundwater beneath the Site. Investigations of soil and groundwater since the early 1980s have documented waste releases to soil and groundwater near former pipelines, former above-ground and underground tanks, the former oil/water separator and localized areas of buried wastes.
7. **Soil Investigations:** More than 1,000 soil borings have been completed at the Site, and more than 3,000 soil samples were collected and analyzed for the constituents of concern (COCs) from the borings and from over 100 excavations. Soil samples from the investigations in the WTF contained up to 63,000 milligram per kilogram (mg/kg) of total recoverable petroleum hydrocarbons (TRPH), 8,100 mg/kg of total petroleum hydrocarbons (TPH) as gasoline, 95 mg/kg of benzene, and 9,300 mg/kg of lead. Impacted areas in the WTF and PUA were excavated prior to building construction under Regional Board supervision.

On May June 29, 2000, Regional Board amended Waste Discharger Requirements (WDR) Order No. 00-096 to the Discharger regulating re-use of soil at the PUA. A Human Health Risk Assessment (HHRA) was conducted at the request of the Santa Fe Springs Fire Department (SFSFD) and the Regional Board for the PUA, completed in 2002, and approved by the Office of Environmental Health Hazard Assessment (OEHHA) in July 2002. The HHRA was prepared to evaluate potential health risks to verify that the constituent concentrations listed in the WDR Order No. 00-096 for the PUA redevelopment activities are protective of human health, and to establish health-based screening levels for all identified COCs at the PUA. The HHRA report concluded that the limits identified for re-use of soils onsite are protective of human health, and that the PUA Site conditions do not pose an unacceptable human health risk for future Site occupants. After soil removal

and off-site disposal and/or recycling, Regional Board issued a 'no further action' for shallow soil (0-10 feet future grade) for the last remaining PUA parcel, which is the MNOP Development Zone, on October 8, 2003. Remaining deeper soil, 10 feet below future grade (bfg), at the southern subarea MNOP of the PUA contains up to 34,000 mg/kg TPH as gasoline and 800 mg/kg benzene. On November 26, 2003, the Discharger submitted a conceptual work plan to mitigate the residual contamination to the Regional Board. On February 26, 2004, in response to the conceptual work plan, the Regional Board issued a directive to the Discharger to submit a work plan to mitigate the residual contamination in the MNOP area. This work plan was submitted on April 20, 2004.

In the STF, the Discharger completed soil investigation and submitted a report to the Regional Board on September 30, 2003. The report indicated that soil concentrations of up to 58,000 mg/kg TRPH, 50,000 mg/kg TPH as gasoline, 150 mg/kg benzene, and 780 mg/kg lead are present in the soil, and the Discharger submitted a Remedial Action Plan (RAP) on September 30, 2003. Under the RAP, Discharger will remediate all shallow soil (0-10 feet) to the limits specified in the WDRs Order No. R4-2003-0158 adopted for the STF on December 4, 2003. The deeper soil (below 10 feet depth) investigation data indicates detectable soil concentration of TPH as gasoline and VOCs above the limits specified in the WDRs. The Discharger has proposed remediation of this impacted deep soil (below 10 feet depth) remaining at STF in the *Addendum to Remedial Action Work Plan/Soil Vapor Extraction Work Plan, South Tank Farm (Work Plan)* submitted to the Regional Board on February 26, 2004. The Work Plan was approved on April 29, 2004. The Discharger is required to conduct soil gas survey from 5 feet bfg and is required to submit a soil gas sampling work plan for in-door-air evaluation. In August 2004, the Regional Board has issued the Discharger authorization to backfill excavation in zones (STF1, STF2, STF3, and STF5) in STF.

8. **Groundwater Investigation:** Groundwater monitoring and sampling at the Site started in 1983, and there are currently 116 monitoring wells at and around the Site. Free-phase petroleum hydrocarbons have been found in monitoring wells completed in the discontinuous shallow semi-perched zone (20-35 feet bgs) and in the Artesia aquifer (80-100 feet bgs). The existing CAO No. 93-082 included a list of wells to be sampled, and the Discharger has been sampling the required wells for petroleum hydrocarbons, volatile organic compounds (VOCs), and selected metals. In addition, since 1998, the Discharger has been sampling additional perimeter wells for benzene, toluene, ethyl benzene, and xylenes (BTEX) to verify the lateral delineation of the plume. In September 2002, TRC Environmental prepared a summary of groundwater data for the semi-perched zone and Artesia aquifer and conducted groundwater sampling and modeling to evaluate the effectiveness of natural bioremediation in the aquifer. The report concluded that the volume of free-phase petroleum hydrocarbons has significantly decreased in both groundwater zones, and that the plumes in both aquifers appear to be stable at this time.

Groundwater Remediation: Discharger's predecessor initiated groundwater remediation in early 1980's, and Discharger further implemented site-wide groundwater remediation under Regional Board CAO numbers 85-17, 91-079 and 93-082. In 1985, the Regional Board issued CAO No. 85-17 requiring the Discharger to conduct a subsurface investigation and site assessment to characterize groundwater pollution beneath the Site. In April 1991, CAO No. 91-079, issued administratively by the Executive Officer, required that the Discharger implement soil and groundwater investigations to determine the extent of contaminant migration, and remediate site-derived soil and groundwater contamination.

CAO No. 91-079 was amended to reflect the compliance progress achieved by the Discharger, update the Cleanup and Investigation Activity Schedule, and continue the Regional Board oversight of the remaining cleanup activities.

Groundwater remediation under the PUA and other areas of the refinery is ongoing under CAO No. 93-082. Since 1983, the Discharger has actively removed free-phase petroleum hydrocarbons from the groundwater after installation and monitoring of more than 110 groundwater wells at the Site. To date, the Discharger has extracted more than 2.5 million gallons of free-phase petroleum hydrocarbons from the semi-perched and Artesia aquifers; continuing product removal efforts are reported monthly to the Regional Board. It is estimated that 2,226,000 gallons of free-phase petroleum hydrocarbons are present beneath the Site. Monitoring and sampling activities are reported to the Regional Board semiannually. In February 2001, the Discharger submitted the "Final Design Report, Groundwater Remediation Systems" that proposed an expanded groundwater remediation program at the Site. In October 2001, Regional Board staff approved the final design. Implementation of the final design is in progress. The enhanced free-product recovery system at the STF has installed and has been operating since July 2004. The enhanced free-product recovery will be completed and fully operational for the MNOP area by December 2005 and for the MA by December 2008. The main component, consisting of the upgrade of the STF groundwater remediation system, includes soil vapor extraction from 21 wells in the semi-perched zone and light non-aqueous phase liquid (LNAPL) recovery from six Artesia wells, is under construction and will be fully operational by September 2004.

9. **Source Elimination:** Since 1993, under CAO No. 93-082, the Discharger has dismantled petroleum storage and piping facilities and petroleum processing equipment, eliminating sources of contamination. The WTF, PUA and STF have been 100% demolished, and the MA's fueling facilities have been demolished so that the MA is inactive and used for warehouse rental and as a truck parking area, without any fuel mixing or loading activities.
10. **Halogenated Volatile Organic Compounds and Fuel Oxygenates:** Halogenated volatile organic compounds (cis-1,2-dichloroethylene, trichloroethylene, vinyl chloride, 1,2-dibromoethane, and 1,2-dichloroethane) have been detected in on-site Artesia Aquifer monitoring wells in the PUA in the vicinity of a former off-site landfill. In June 2003, the Discharger prepared, at the request of the Regional Board, a technical report on the evaluation of deep aquifer impact by potential site contaminants and particularly fuel oxygenates. The report documents that the presence of oxygenates in groundwater under the former refinery is localized under discrete portions of the WTF, MA and partially under the STF, and is defined laterally to non-detectable MTBE concentrations in downgradient wells and deeper wells. The June 2003 technical report proposed an expanded sampling program for fuel oxygenates under the current CAO No. 93-082 monitoring requirements. The technical report containing the results of the investigations is to be included in the semi-annual reports.
11. **Regulatory Status:** The Discharger has conducted soil and groundwater assessments to evaluate the extent of soil and groundwater contamination on Site. Site investigations directed by the Regional Board were done pursuant to section 13267 of the California Water Code. The purpose of this CAO is to ensure that the Discharger completes soil and groundwater assessment, conducts periodic monitoring, undertakes cleanup of all contaminants in the soil and groundwater that threaten to impair or further impair groundwater quality, and performs post remediation monitoring.

In February 1985, The Regional Board issued CAO No. 85-17, which required the Discharger to conduct subsurface investigations and site assessments to detect and characterize groundwater contamination beneath the respective facilities. In April 1991, CAO No. 91-079, issued administratively by the Executive Officer, required that the Discharger implement soil and groundwater investigations to determine the extent of contaminant migration, and remediate site-derived soil and groundwater contamination. CAO No. 91-079 was amended to reflect the compliance progress achieved by the Discharger, update the Cleanup and Investigation Activity Schedule, and continue the Regional Board oversight of the remaining cleanup activities.

On July 31, 1992, the Discharger filed a petition for reorganization under Chapter 11 of the U.S. Bankruptcy Code in the United States Bankruptcy Court. Cleanup and Abatement Order No. 93-082 was issued administratively by the Executive Officer on December 21, 1993, and amended and superseded Order No. 91-079. This CAO requires the Discharger primarily to cleanup on-site and off-site groundwater contamination originating from the Site. It also requires the Discharger to implement a source elimination program to detect leakage from above ground tanks and underground pipelines, identify free product in the vadose zone, if any, and remediate any free product in a timely manner.

The CAO No. 93-082 included a ten-year time schedule with annual planned expenditures specified as contained in the Discharger's Plan of Reorganization (Plan). The Plan was approved by the U.S. Bankruptcy Court on February 16, 1995, and became effective on February 28, 1995. Reorganized, the Discharger emerged from bankruptcy, and has been performing its obligations under CAO No. 93-082. The Discharger complied with the 10-year timetable for source elimination program documented in the CAO No. 93-082.

12. **Sources of Information:** The sources for the evidence summarized above include but are not limited to:
- a) Various technical reports submitted by the Discharger or its representatives to Regional Board staff from 1984 through August 2004.
 - b) Site inspections, meetings, letters, and telephone communications between Regional Board staff and the Discharger and/or its representatives from 1984 through January 2004. Discharger has complied with the requirements of the previous CAO No. 93-082, and continues to cooperate well with Regional Board staff.

CONCLUSIONS

13. **Pollution of Waters of the State:** The unauthorized discharge of chemical wastes by the Discharger's predecessors and/or Discharger was not permitted and is in violation of water quality objectives established in the *Basin Plan*. The past activities of the Discharger's predecessors and/or the Discharger have contaminated the underlying soils and polluted groundwater.

14. **Regional Board Authority:** Section 13304 of the California Water Code states, in part, that:

"Any person who has caused or permitted 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"

15. **Status of Site Assessment:** The Discharger has conducted multiple on-site and off-site assessments to characterize the nature, extent, and cleanup of waste discharges.

To complete the soil and groundwater assessment and continue appropriate cleanup, the Discharger must undertake the actions specified below, at a minimum:

- a. For soil contamination: The Discharger has submitted reports on soil investigation and remediation for all WTF and PUA areas. The WTF area is fully redeveloped and the PUA area is partially redeveloped. GWRC is currently conducting investigation and remediation of soil contamination in the STF area. Soil remediation at the STF area must be completed by June 30, 2005. Soil investigation in MA will be completed by June 30, 2007.
- b. For groundwater contamination: Complete the implementation of the Final Design Report, Groundwater Remediation Systems, approved by the Regional Board in October 2001. Regional Board staff's review of the groundwater issues in the PUA indicates that three extraction wells will be installed in the southwestern part of the Area MNOP after the redevelopment. Based on the current information, Regional Board staff will require additional groundwater assessment and remediation for the Area MNOP. The Discharger submitted a remedial action plan to address the residual contamination in the soil in the Area MNOP on April 20, 2004.
- c. For emerging chemical(s) and heavy metals in the unsaturated and saturated zones: As required by the Regional Board on December 2, 2003, the Discharger submitted on January 30, 2004, a Work Plan to characterize emerging chemicals and heavy metals in soil and groundwater.

16. **Cleanup Goals:** Pending confirmation of completion of adequate assessment and monitoring of the lateral and vertical extent of contamination in groundwater, the following information shall be considered when establishing preliminary cleanup goals.

- a. Remedial Action Plan(s) (RAP) to cleanup soil and groundwater contamination using, at a minimum, the criteria stated below in items b, c, and d.
- b. VOCs in the Unsaturated Zone: Cleanup levels set forth in *The Regional Board's Interim Site Assessment and Cleanup Guidebook, May 1996*, which considers contaminant concentrations, depth to the water table, the nature of the chemicals, soil conditions and texture, and attenuation trends; previous Waste Discharge Requirements issued by the Regional Board for parts of the Site, and Health-Based Levels approved by OEHHA for the PUA.

- c. Emerging Chemicals and Heavy Metals: Cleanup concentrations shall not exceed California's Maximum Contaminant Levels (MCLs) or Action Levels for drinking water as established by the State Department of Health Services for contaminants in the saturated zone. For emerging chemicals in the unsaturated zone, the Discharger will need to investigate if contaminants are present and the extent to which they may attenuate through the soil in order to determine soil cleanup levels that will not impact the underlying groundwater resources above Action Levels or MCLs. Residual heavy metal concentrations in the leachate released from the vadose zone that will be protective of underlying groundwater also known as "soluble designated levels" can be determined by following the guidance document "*Staff Report, The Designated Level Methodology For Waste Classification and Cleanup Level Determination*" dated October 1986 and Updated June 1989, that was published by the California Regional Water Quality Control Board, Central Valley Region.
- d. VOCs in the Saturated Zone: MCLs or Action Levels for drinking water, as established by the State Department of Health Services, at a point of compliance to be approved by the Regional Board.
- e. Pending completion of contaminant assessments, periodic monitoring and full implementation of the approved RAP, Regional Board staff may consider revised cleanup goals in accordance with the State Policies as below:

"Antidegradation Policy" (State Board Resolution No 68-16) 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 exceedance of water quality objectives in the *Basin Plan*.

"Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304" (State Board Resolution No. 92-49) which sets forth criteria to consider for those cases of pollution wherein restoration of water quality to background levels may not be reasonable.

17. Pursuant to section 13304 of the California Water Code, the Regional Board may seek reimbursement for all reasonable costs to investigate unauthorized discharges of wastes and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action.
18. **Impairment of Drinking Water Wells**: The Regional Board reserves the right to require the Discharger to develop and implement a plan that will mitigate impaired resources of groundwater and/or compensate purveyors for costs of replacing impaired water supplies if the findings demonstrate that contamination from this Site has caused or threatens to cause impairment of water supply wells.
19. This action is being taken for the protection of the environment and as such is exempt from the provisions of the California Environmental Quality Act (Public Resources Code section 21000 et seq.) in accordance with California Code of Regulations, title 14, section 15321.

IT IS HEREBY ORDERED, pursuant to section 13304 of the California Water Code, that the Discharger, Golden West Refining Company, shall cleanup and abate contaminated soil and groundwater emanating from the Site at 13539 East Foster Road, Santa Fe Springs, California in accordance with the following requirements:

1. **The Unsaturated Zone:** The Discharger shall prepare work plans to complete assessment of the unsaturated zone and, upon approval of the Regional Board Executive Officer (Executive Officer), implement effective cleanup measures to abate the effects of the petroleum hydrocarbons, metals and halogenated organic compounds release(s) into the unsaturated zone. These work plans can include a summary of the remediation already completed to date in parts of the former refinery and address the areas under investigation/remediation.
2. **The Saturated Zone:** The Discharger shall complete the implementation of the Final Design, Groundwater Remediation Systems. Implementation in Area MNOP of PUA will require additional groundwater remediation wells. After implementation of the approved system and after one year of system operation and yearly thereafter, the Discharger shall prepare an evaluation report and provide recommendation for improvement in groundwater remediation as necessary.
3. **Emergent Chemicals and Fuel Oxygenates:** As requested by the Regional Board on December 2, 2003, the Discharger prepared a work plan and, upon approval from the Executive Officer, shall implement the work plan for emergent chemicals in soil and groundwater.
4. **Assessment Technical Reports and Remedial Action Plans:** Upon completion of the assessment reports (i.e., Requirements 1, 2 and 3 above), the Discharger shall prepare a technical report that summarizes the results.

In the event that the results fail to confirm that:

- a. VOCs and petroleum hydrocarbons in the unsaturated zone are migrating to the water table, the Discharger shall develop and implement a work plan subject to the Executive Officer's approval for cleanup of soil contaminants;
 - b. Petroleum hydrocarbons in the saturated zone on-site and off-site are not continuing to migrate, the Discharger shall develop and implement a work plan subject to the Executive Officer's approval for supplemental containment, control and cleanup of groundwater pollution.
5. **Groundwater Monitoring:** The Discharger shall monitor the groundwater for chemicals of concern (COCs), to include the emergent chemicals after approval of the work plan requested by the Regional Board on December 2, 2003. Based on 19 years of groundwater monitoring and a 2002 groundwater study that demonstrated that the contamination is not migrating, the frequency of groundwater monitoring was reduced to semi-annual upon written approval from the Executive Officer. Groundwater monitoring in Area L of the PUA will be monitored quarterly until the absence of contaminant migration in that area is fully demonstrated. Future groundwater monitoring frequency may be adjusted if monitoring results indicate that a higher or lower monitoring frequency is justified, and after a plan is proposed by the Discharger and subsequently approved by the Executive Officer. The Executive Officer may approve a change in the monitoring frequency if it is shown that other

frequencies are adequate to monitor changes of contaminant concentrations, groundwater gradients, and the progress of any soil and groundwater remediation.

Abandonment of any groundwater wells installed during the required investigation and remediation for this project must be reported to and approved by Executive Officer in advance. Any groundwater monitoring well removed must be replaced within a time schedule and at a location approved by the Executive Officer. With justification, the Executive Officer may approve the abandonment of groundwater wells without replacement. When a well is removed, all work shall be completed in accordance with all applicable well abandonment requirements as required by the State Department of Health Services. Copies of well abandonment and a report of well abandonment are to be provided to the Executive Officer.

6. **Impairment of Drinking Water Wells:** The Regional Board reserves the right to require the Discharger to develop and implement a plan that will mitigate impaired resources of groundwater and/or compensate purveyors for costs of replacing impaired water supplies if the findings demonstrate that contamination from this Site has caused the impairment of the aquifer.
7. **Contractor/Consultant Qualification:** A California registered civil engineer, registered geologist or registered certified specialty geologist shall conduct or direct the subsurface investigation(s) and subsequent cleanup program. All technical documents shall be signed by and stamped with the seal of the above-mentioned qualified professionals.
8. **Cost Recovery:** The Discharger shall reimburse the Regional Board all reasonable costs incurred by the Regional Board to investigate the unauthorized discharges of waste by the Discharger and the Discharger's predecessors and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial actions. A cost recovery agreement is required until full compliance with this CAO is attained.
9. **Time Schedule:** The Discharger shall submit all required work plans and reports in accordance with the time schedule in Attachment A attached hereto and incorporated herein by reference.
10. All technical and monitoring reports required to be prepared and submitted to the Regional Board by or pursuant to this CAO are required pursuant to section 13267 of the California Water Code.
11. The Regional Board's authorized representative(s) shall be allowed:
 - Entry upon premises where a regulated facility or activity is located, conducted, or where records are stored, under the conditions of this CAO;
 - Access to copy any records that are stored under the conditions of this CAO;
 - Access to inspect any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this CAO; and
 - The right to photograph, sample, and monitor the Site for the purpose of ensuring compliance with this CAO, or as otherwise authorized by the California Water Code.

12. This CAO supercedes CAO No. 93-082, which is hereby rescinded, except for enforcement purposes. It is not intended to permit or allow the Discharger to cease any work required by any other order issued by the Regional Board, nor shall it be used as a reason to stop or redirect any investigation, monitoring, cleanup or remediation programs ordered by the Regional Board or any other agency. Furthermore, this CAO does not exempt the Discharger from compliance with any other laws, regulations, or ordinances which may be applicable, nor does it legalize the waste treatment and disposal facilities, and it leaves unaffected any further restrictions on those facilities which may be contained in other statutes or required by other agencies.
13. The Discharger shall submit 30-day advance notice to the Regional Board of any planned changes in name, ownership, or control of the Site; and shall provide 30-day advance notice of any planned physical changes to the Site that may affect compliance with this CAO. 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 CAO, and shall submit a copy of this advance notice to the Regional Board.
14. The Regional Board, through its Executive Officer, may revise this CAO 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 CAO. 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 CAO.
15. Pursuant to California Water Code section 13320 the Discharger may seek review of this CAO by filing a petition with the State Water Resources Control Board (State Board). Such a petition must be received by the State Board, located at P.O. Box 100, 1001 "T" Street, Sacramento, California, 95814, within 30 days of the date of this CAO.
16. Failure to comply with the terms or conditions of this CAO 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, 13304, 13308, and 13350 et seq. of the California Water Code, and/or referral to the Attorney General of the State of California for such action as he/she may deem appropriate.
17. None of the obligations imposed by this CAO 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:



Jonathan Bishop, Interim Executive Officer

Date: August 24, 2004

Attachment - A

TIME SCHEDULE

	REQUIREMENT	COMPLETION / DUE DATE
1	Assessment of Petroleum Hydrocarbons, VOCs, metals and Emergent Chemicals in the Unsaturated and Saturated Zone	
A	Emergent chemicals: Implement work plan as proposed by GWRC on January 28, 2004	November 15, 2004
B	Work plan for assessment of petroleum hydrocarbons, VOCs and metals in MA	June 30, 2005
C	Assessment report of petroleum hydrocarbons, VOCs and metals in MA	June 30, 2007

2	Groundwater Monitoring	
A	Site-Wide Monitoring Report: <u>Report Period</u> January to June July to December	Semi-annually each year (The first report under this CAO is due January 15, 2005) <u>Due Date</u> July 15 January 15
B	Area L of PUA down gradient wells (Approved by the Regional Board on July 9, 2003) <u>Report Period</u> January to March April to June July to September October to December	Quarterly each year (The first report under this CAO is due October 15, 2004.) <u>Due Date</u> April 15 July 15 October 15 January 15
C	Area Q of PUA down gradient wells (Approved by the Regional Board on July 9, 2003) <u>Report Period</u> January to March April to June July to September October to December	Quarterly each year (The first report under this CAO is due 3 months after completion of site construction, then quarterly thereafter.) <u>Due Date</u> April 15 July 15 October 15 January 15

3	Soil Remediation	
A	PUA: Implement Work plan to address deep soil contamination. Area MNOP, submitted November 2003	Within 5 months after completion of site construction
B	STF: Complete soil Remediation under WDR Order No.R4-2003 -0158 and the Regional Board guidance	December 15, 2005
C	MA: Prepare Remedial Action Plan (RAP) for deep soil contamination and implement the RAP	June 15, 2007
D	Submit Progress report as required by Waste Discharge Requirement Orders <u>Report Period</u> January to March April to June July to September October to December	Quarterly each year (The first report under this CAO is due October 15, 2004.) <u>Due Date</u> April 15 July 15 October 15 January 15

4	Groundwater Remediation	
A	PUA, Area MNOP: Implement complete LNAPL recovery system	December 15, 2005
B	MA: Implement Final Design, Groundwater Remediation Systems	December 15, 2008
C	Submit Quarterly Remediation Progress Report. <u>Report Period</u> January to March April to June July to September October to December	Quarterly each year (The first report under this CAO is due October 15,2004) <u>Due Date</u> April 15 July 15 October 15 January 15

FORMER GOLDEN WEST REFINERY

IMPERIAL HWY

FORMER WEST TANK FARM

FORMER PROCESS UNIT AREA

FORMER MARKETING AREA

SOUTH TANK FARM

CARMENITA

ROSECRANS

NOTES:

Reference: 7.5 Minute U.S.G.S.
Topographic Map of Whittier,
California, Dated: 1964, Photo
revised 1981

LEGEND

----- Property Line

SCALE (FEET)



APPENDIX A-1
SITE PLAN: FORMER GOLDEN WEST
REFINERY



0 1000 FT.
SCALE

EXPLANATION:

----- Former Refinery Property Boundary

**APPENDIX A-2
PLOT PLAN: FORMER GOLDEN
WEST REFINERY**

Los Angeles Regional Water Quality Control Board

June 26, 2014

Mr. Chris Panaitescu
Golden West Refining Company
13116 Imperial Highway
Santa Fe Springs, CA 90670

Certified Mail
Return Receipt Requested
Claim No. 7001 0360 0000 3649 3392

Mr. Brad Rogers, PE
Team Lead, Refining Business Unit
Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583

Certified Mail
Return Receipt Requested
Claim No. 7001 0360 0000 3649 3408

SUBJECT: REQUIREMENT FOR TECHNICAL REPORTS PURSUANT TO CALIFORNIA WATER CODE SECTION 13267 ORDER NO. R4-2013-0116

SITE: GOLDEN WEST REFINERY, 13539 FOSTER ROAD, SANTA FE SPRINGS, CALIFORNIA SITE CLEANUP PROGRAM NO. 0227A, SITE ID NO. 2040073

Dear Messrs. Panaitescu and Rogers:

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is the public agency with primary responsibility for the protection of groundwater and surface water quality for all beneficial uses within major portions of Los Angeles and Ventura counties, including the referenced site.

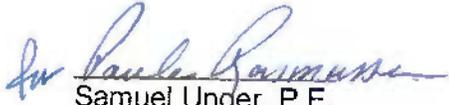
The Regional Board is providing regulatory oversight for the assessment and cleanup of contamination at the former Golden West Refinery site. We have determined that, to protect the beneficial use of the waters beneath the site, additional work is required.

Enclosed is a California Regional Board Order No. R4-2013-0116, pursuant to California Water Code section 13267 requiring you to develop the technical plans and to conduct the work.

June 26, 2014

If you have any questions, please contact Site Cleanup Program manager, Dr. Arthur Heath at (213) 576-6725 or project manager Mr. Adnan Siddiqui at (213) 576-6812 (asiddiqui@waterboards.ca.gov).

Sincerely,



Samuel Unger, P.E.
Executive Officer

Enclosure: CWC 13267 Order No. R4-2013-0116

CC: Katherine Baylor, USEPA (via e-mail)
Simon Tregurtha, Golden West (via e-mail)
Paul Permierter, The Source Group, Inc. (via e-mail)

Los Angeles Regional Water Quality Control Board

**ORDER TO PROVIDE TECHNICAL REPORTS
CALIFORNIA WATER CODE SECTION 13267 ORDER NO. R4-2013-0116
DIRECTED TO GOLDEN WEST REFINING COMPANY AND CHEVRON**

**GOLDEN WEST REFINERY
13539 FOSTER ROAD, SANTA FE SPRINGS, CALIFORNIA
SITE CLEANUP PROGRAM NO. 0227A, SITE ID NO. 2040073**

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) makes the following findings and issues this Order pursuant to California Water Code section 13267.

1. The Golden West Refinery is a former refinery and petroleum storage facility located at 13539 Foster Road in Santa Fe Springs, California (Site). From the 1920s to 1997, Golden West Refining Company (Golden West) and its predecessors owned the Site and conducted refining, blending and storage of crude oil and finished products at the Site. The Site encompasses approximately 269 acres and was divided into four areas based on the refinery operations. The Processing Unit Area was mainly used for refining crude oil into various products including fuel oil, diesel, and gasoline. The South Tank Farm and West Tank Farm were used for storage and blending of crude oil, intermediate products and finished products. Loading and inventory of finished products took place in the Marketing Area. The Site is now completely redeveloped into a business park for commercial and industrial use. Due to the historical use of the Site, soil and groundwater underlying the Site are impacted by petroleum hydrocarbons including light non-aqueous phase liquid (LNAPL) and volatile organic compounds (VOCs) that have extended to offsite areas. Prior to its acquisition by Golden West in 1983, the refinery was owned and operated by Gulf Oil Corporation. In 1984, Gulf Oil Corporation was acquired by Chevron.
2. The Site has been the subject of several cleanup and abatement orders (CAO) issued by the Regional Board. The most recent CAO, Order No. R4-2004-0020, was issued to Golden West on August 24, 2004. The 2004 CAO requires Golden West to assess, monitor, and cleanup and abate the effects of petroleum hydrocarbons and other contaminants of concern discharged to soil and groundwater at the Site. Additional findings by the Regional Board regarding the Site, operations at the Site, and discharges of waste at the Site are included in the 2004 CAO.
3. The Site is located in the Central Basin of the Los Angeles Coastal Plain. As set forth in the Water Quality Control Plan for the Los Angeles Region (Basin Plan), which was adopted on June 13, 1994, and amended from time to time, the designated beneficial uses for groundwater in the Central Basin include municipal and domestic drinking water supply (MUN), Industrial Service Supply (IND), Industrial Process Supply (PROC) and Agricultural Supply (AGR).
4. Data collected at the site since the 1980s and submitted to the Regional Board in technical and monitoring reports confirms that operations at the site resulted in the discharge of wastes to soil and groundwater. Evidence that is available in the files of the Regional Board for Site No. SCP 0227A show the presence of an LNAPL plume in both the shallow Semi-Perched Aquifer and

CHARLES STRINGER, CHAIR | SAMUEL UNGER, EXECUTIVE OFFICER

320 West 4th St., Suite 200, Los Angeles, CA 90013 | www.waterboards.ca.gov/losangeles

the deeper Artesia Aquifer under the Site. The LNAPL plume in the Semi-Perched Aquifer extends off-site to the south approximately 3,000 feet¹. There are also dissolved phase groundwater plumes present in the Semi-Perched Aquifer and Artesia Aquifer, which have migrated off-site. The analytical results from groundwater monitoring confirm that petroleum hydrocarbons, VOCs and methyl-tertiary-butyl ether (MTBE) are present in the groundwater. Benzene was detected at concentrations of 18,000 micrograms per liter ($\mu\text{g/L}$) and 29,000 $\mu\text{g/L}$ in the Semi-Perched and Artesia aquifers, respectively. MTBE was detected at a concentration of 14,500 $\mu\text{g/L}$ in the Artesia Aquifer. The concentrations of chemicals in the groundwater at the Site exceed the numerical objectives to protect the beneficial uses of groundwater set forth in the Basin Plan, which include municipal use². The residual contamination in soil and the LNAPL plumes continue to be a source for the dissolved phase groundwater plume.

5. Since the discovery of LNAPL in groundwater at the Site in 1979, approximately 241 groundwater wells have been installed both on and off site by Golden West and its predecessors. The purposes of these wells were to delineate and monitor the LNAPL and dissolved phase groundwater plumes in both aquifers, and for certain select wells, to remove LNAPL from the groundwater. Over time, approximately 101 of these wells were destroyed. Some, but not all, of the destroyed wells were replaced. At the present time there are 140 groundwater wells, located both on and off site.
6. In August 2013, Golden West conducted multi-depth soil vapor sampling at 11 off-site locations. Benzene was detected above the method reporting limit at only one sampling location. Another round of soil vapor sampling is required to confirm that vapors are not emanating from the Semi-Perched LNAPL plume to pose a risk to human health from vapor intrusion.
7. Under the current groundwater monitoring program, Golden West monitors 133 existing groundwater wells on a semi-annual basis for the presence of LNAPL and changes in groundwater levels. In addition, Golden West samples approximately 10 wells in the Artesia Aquifer for laboratory analyses. Currently, groundwater samples are analyzed for total petroleum hydrocarbons, oxygenates and VOCs.
8. Despite the implementation of a groundwater sampling and monitoring program by Golden West at the Site for decades, data gaps remain in the characterization of the LNAPL and dissolved phase plumes in the Semi-Perched and Artesia Aquifers. The distribution of LNAPL is not completely characterized due to the destruction of wells, placement of screen intervals and locations of groundwater wells. The groundwater sampling and monitoring program has not provided adequate information for the Regional Board to accurately monitor changes in the thickness and extent of LNAPL as well as the dissolved concentration of chemicals in the groundwater. In some cases groundwater wells were destroyed without collecting any samples and in other cases groundwater wells were destroyed even though sampling indicated that contaminants were present in the groundwater. There are also existing groundwater wells that have never been sampled to determine groundwater quality. Data gaps are particularly

¹ Additional data and information in support of the Regional Board's conclusion that operations at the Site are the source of the LNAPL plume that extends approximately 3000 feet down-gradient (southward) from the Site, beyond Rosecrans Boulevard, can be found in the Regional Board's letter to Mr. Chris Panaitescu, Golden West Refining Company, dated July 30, 2013, available at: <http://geotracker.waterboards.ca.gov/search>, SL373412444

² The California Department of Public Health maximum contaminant levels (MCLs) for benzene and MTBE are 1 micrograms per liter ($\mu\text{g/L}$) and 13 $\mu\text{g/L}$, respectively.

prevalent with respect to the Semi-Perched Aquifer, for which there is very little analytical data. Only a few Semi-Perched Aquifer wells have been sampled. Out of 108 Semi-perched Aquifer wells installed at the Site since 1981, most of the wells were never sampled and a few wells were sampled only one or two times. The most recent sample of a well in the Semi-Perched Aquifer taken for chemical analyses, was in 2002³. Golden West does not currently monitor the Semi-Perched Aquifer for pollutants such as petroleum hydrocarbons and VOCs.

9. As a result of gaps in the current and past groundwater monitoring programs, the Regional Board has incomplete data about the character of the LNAPL and dissolved phase groundwater contaminant plumes that emanate from the Site. These data gaps have limited the Regional Board's ability to verify the effectiveness of remediation and to determine the necessary scope and appropriate means of clean-up.
10. The Source Group, Inc. (SGI) submitted the Revised Groundwater Monitoring Program Review dated October 7, 2013. The proposed groundwater monitoring program does not address Regional Board concerns and falls short of the information needed to fill in the data gaps and to determine the proper remedy for the contaminant plumes emanating from the Site.
11. California Water Code section 13267(b)(1) states, in part: In conducting an investigation..., the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or, discharging, or who proposes to discharge waste within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.
12. Golden West and Chevron (Dischargers) have discharged, discharge, or are suspected of having discharged waste at the Site, some of which has migrated off-site. The waste discharged at the Site that has or is suspected of having migrated off-site includes the LNAPL plume in the Semi-Perched Aquifer that extends to the south of the Site approximately 3,000 feet. The Dischargers are responsible for the discharges of waste identified in this Order based on their ownership of the Site and operation at the Site that resulted in the discharge of waste.
13. This Order requires the Dischargers to prepare and submit a work plan to install new groundwater wells and to fill in the data gaps. In addition, the Dischargers are required to develop a groundwater sampling and monitoring work plan for the existing and new on-site and off-site Semi-Perched and Artesia Aquifer wells.
14. The Regional Board needs the information that will be supplied by additional subsurface characterization, installation of new wells and a revised groundwater sampling and monitoring program to determine the complete character of the LNAPL and dissolved phase groundwater plumes that emanate from the Site, and to verify effectiveness of ongoing remediation that includes LNAPL removal and the extent of natural attenuation, if any, and other facts required to appropriately define the scope and most effective methods of cleanup and abatement. Golden

³ Semi-Annual Groundwater Monitoring Report dated December 16, 2013.

West's current groundwater monitoring program and the modified program proposed by SGI in its report dated October 7, 2013, are inadequate.

15. The burdens, including costs, of these reports bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. Much of the necessary monitoring can be accomplished with existing wells. The gaps in available data are largely due to the failure of Golden West and its predecessors to monitor existing wells at the Site⁴. The additional work consisting of subsurface assessment, soil vapor survey, groundwater well installation and monitoring is necessary because it will provide information on residual contamination in the vadose zone and groundwater, aid in the recovery of LNAPL, and determine the effectiveness of remediation, stability of the dissolved phase plume, pace of natural attenuation and threat to human health from vapor intrusion. The information to be provided by the activities required by this Order is necessary to achieve the goals of Cleanup and Abatement Order No. R4-2004-0020 and assure adequate cleanup of the Site, which currently poses significant threats to the environment.
16. The issuance of this Order is exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to section 15061(b)(3), Chapter 3, Title 14 of the California Code of Regulations. This Order requires submittal of proposed work plans and, after approval of the proposed work plans by the Executive Officer, submission of technical and monitoring reports. Submittal of the proposed work plans to the Regional Board does not in itself have the potential to cause a significant effect on the environment. Because the proposed activities under the work plans are not yet known, and are subject to discretionary approval by the Regional Board, assessment of the potential environmental impacts of the proposed activities is premature at this time. If implementation of the proposed work plans may result in significant impacts on the environment, the appropriate lead agency will address the CEQA requirements prior to approving or implementing the work plan.
17. Any person aggrieved by this action of the Regional Water 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.

THEREFORE, IT IS HEREBY ORDERED that Golden West Refining Company and Chevron, pursuant to section 13267(b) of the California Water Code, are required to do the following:

1. By **September 15, 2014**, submit a work plan to conduct subsurface investigation and install additional groundwater wells to address gaps in available data in defining the extent of the on-site and off-site LNAPL and dissolved phase plumes in the Semi-Perched and Artesia Aquifers.

⁴ For example, wells in the Artesia Aquifer that are available for sampling but that Golden West has not sampled include: B-1, B-2, B-3, B-10, P-10, PO-3, PO-4, PO-7, PO-8, PO-11, PO-19, A-3A, A-22A, A-24A, A-56A, A-64, A-65, and A-66. See Semi Annual Groundwater Monitoring Report dated December 16, 2013.

The work plan must include, but should not be limited to, installation of groundwater wells at on-site and off-site locations to be approved by the Regional Water Board.

2. By **September 15, 2014**, submit a revised and comprehensive groundwater sampling and monitoring program for the LNAPL and dissolved phase groundwater plumes in the Semi-Perched and Artesia Aquifers, both on- and off-site covering the entire plume. The groundwater sampling and monitoring program should address, but not necessarily be limited to, concentration of contaminants dissolved in groundwater and geochemical parameters to monitor natural attenuation.
3. Conduct one additional round of soil vapor sampling at or near the 11 locations previously sampled in August 2013, pursuant to the Regional Board order dated July 23, 2013. The second round of soil vapor sampling is to confirm the results of previous sampling to evaluate any threat to human health from vapor intrusion due to the shallow depth of the LNAPL plume. Submit a report by **September 15, 2014** with the results of the soil vapor survey.
4. Comply with deadlines to be established by the Executive Officer for completion of activities and submission of technical reports described in [1] the work plan to install additional groundwater wells and [2] the groundwater sampling and monitoring program. The deadlines established by the Executive Officer, and any subsequent modifications approved by the Executive Officer, are incorporated herein by reference and are enforceable elements of this Order.
5. The Regional Board, through its Executive Officer, may revise this Order as additional information becomes available. Upon request by the Dischargers, and for good cause shown, the Executive Officer may defer, delete, or extend the date of compliance for any action required of the Dischargers under this Order.
6. This Order is not intended to permit or allow the Dischargers 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 Dischargers from compliance with any other laws, regulations, or ordinances which may be applicable.
7. The technical report is required to be submitted under the Water Code section 13267. Pursuant to Water Code section 13268(a), any person who fails to submit reports in accordance with this Order is guilty of a misdemeanor. Pursuant to Water Code section 13268(b)(1), failure to submit the required technical report described above by the specified due date(s) may result in the imposition of administrative civil liability by the Regional Board in an amount up to one thousand dollars (\$1,000) per day for each day the technical report is not received after the due date. These civil liabilities may be assessed by the Regional Board for failure to comply, beginning with the date that the violations first occurred, and without further warning.
8. The Regional Board, under the authority given by Water Code section 13267(b)(1), requires you to include a perjury statement in all reports submitted pursuant to this Order. The perjury statement shall be signed by a senior authorized Golden West Refining Company representative (not by a consultant). The perjury statement shall be in the following format:

"I, [NAME], certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision, in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my

inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

9. The State Board adopted regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27, California Code of Regulation) requiring the electronic submittal of information (ESI) for all site cleanup programs, starting January 1, 2005. Currently, all of the information on electronic submittals and GeoTracker contacts can be found at http://www.waterboards.ca.gov/ust/electronic_submittal. To comply with the above referenced regulation, you are required to upload all technical reports, documents, and well data to GeoTracker by the due dates specified in the Regional Board letters and orders issued to you or for the site. However, we may request that you submit hard copies of selected documents and data to the Regional Board in addition to electronic submittal of information to GeoTracker.

For your convenience, the GeoTracker Global ID for this site is SL373412444.

SO ORDERED.



Samuel Unger, P.E.
Executive Officer



September 10, 2014

Via Email

Samuel Unger, P. E.
Executive Officer
Los Angeles Regional Quality Control Board
320 West 4th Street, Suite 200
Los Angeles, CA 90013

**Subject: Requirement for Technical Reports Pursuant to California Water Code 13267
Refinery Site, Santa Fe Springs
Order Number R4-2013-0116
Request For Extension**

Dear Mr. Unger:

The above referenced Order to Provide Technical Reports issued on June 26, 2014, Order Number R4-2013-0116 (Order) requires submittal of the following three items to the Los Angeles Regional Water Quality Control Board (LARWQCB) by September 15, 2014:

1. A work plan to conduct subsurface investigation and install additional groundwater wells to address gaps in available data in defining the extent of the on-site and off-site LNAPL and dissolved phase plumes in the Semi-Perched and Artesia Aquifers,
2. A revised and comprehensive groundwater sampling and monitoring program for the LNAPL and dissolved phase plumes in the Semi-Perched and Artesia Aquifers, and
3. One additional round of soil vapor sampling at or near 11 locations previously sampled in August 2013, pursuant to an LARWQCB approval dated July 23, 2013.

Item 3 above has been completed and a report will be submitted by September 15, 2014, as required. The findings of this soil gas survey were reported to you and members of your staff verbally during a meeting at LARWQCB offices on August 28, 2014.

With respect to items 1 and 2 above, the challenges of complying with the submittal deadlines were presented by personnel from Golden West Refining Company ("GWRC") and Chevron Environmental Management Company ("CEMC") at the meeting on August 28, 2014. Principally, prior to development of a work plan to address site data gaps and a comprehensive groundwater sampling and monitoring program, the parties proposed to conduct a one-time, extended sampling event that will include a larger number of monitoring wells than GWRC's current protocol prior to performing items 1 and 2 of the Order. The results of this groundwater monitoring and sampling event will provide relevant information necessary for the preparation of well-grounded workplans.

At the conclusion of the meeting on August 28, 2014, it was agreed that a subsequent technical meeting should be held between LARWQCB staff and CEMC/GWRC technical representatives.

On September 2, 2014, Mr. Adnan Siddiqui of the LARWQCB met with technical representatives of CEMC and GWRC. During that meeting, Mr. Siddiqui commented on the previously submitted (October 7, 2013) Revised Groundwater Monitoring Program Review submitted by GWRC and a consensus on an expanded September 2014 groundwater sampling event was reached. The proposed sampling program agreed during the meeting is attached for LARWQCB approval.

Mr. Siddiqui also presented his areas of concern with respect to on-and off-site gaps in the monitoring well network in both the Semi-Perched and Artesia Aquifers. GWRC and CEMC agreed to research data relevant to these potential data gaps (e.g., historical soil boring logs, gauging records) and, as available, to include these data in the future data gap work plan.

The meeting participants also discussed a revised schedule for submittals to the RWQCB to allow for a stepped approach to satisfy the RWQCB's expectations. The revised schedule of deliverables would provide the requisite time for data collection, evaluation, and work plan preparation and reviews.

Accordingly, on behalf of GWRC and CEMC, we are requesting an extension of the submittal dates for the two first requirements in the Order as follows:

- By November 30, 2014, a report on the results of the proposed expanded groundwater sampling completed in September 2014, will be submitted. The report will include an evaluation of the groundwater data and a proposed program for future monitoring of LNAPL and dissolved phase constituents. (Item #2 of the Order)
- By January 31, 2015, a work plan to address data gaps to further define the extent of the LNAPL and dissolved plumes will be submitted. (Item #1 of the Order).

The requested extension for two of the three requirements in the Order are necessary to provide the requisite time to (1) evaluate the groundwater data to be collected in September 2014, (2) evaluate the data gaps described by Mr. Siddiqui during the September 2, 2014 meeting and additional data gap concerns that Mr. Siddiqui indicated will be forthcoming, and (3) to allow time for CEMC to become familiar with current site conditions.

GWRC and CEMC appreciate the LARWQCB's efforts in communicating technical concerns with the site monitoring program and potential data gaps, thereby allowing for a measured, stepped approach to a revised monitoring program and data gaps work plan. As you know,

Samuel Unger, P. E.
September 10, 2014
Page 3 of 3

GWRC, CEMC, and Chevron U.S.A. Inc. have filed petitions with the State Water Resources Control Board challenging the referenced Order, and their performance of work as discussed in this letter is without prejudice to their continued pursuit of those petitions.

Sincerely,



Paul Parmentier
The Source Group, Inc
Principal Hydrogeologist



Neil Irish
The Source Group, Inc
Principal Geologist

Attachment: Proposed Groundwater Sampling, September 2014

cc: Todd Littleworth, Esq., Chevron Senior Counsel
Randy Jewett, Chevron Area Manger, US WEST Refining Business
Brad Rogers, PE, CEMC
Mark B. Gilmartin, Esq.
Chris Panaitescu, GWRC
Adnan Siddiqui, CHG, RWQCB

ATTACHMENT

**GROUNDWATER SAMPLING LIST
SEPTEMBER 2014**

FORMER REFINERY, SANTA FE SPRINGS

Table 1
Wells Proposed For Single Event Sampling - September 2014
Former Refinery, Santa Fe Springs
Artesia Wells

Well I.D.	Location	Sampling History	Rationale	Additional Analyses
A-3A	North-East corner of WTF	none	Delineation of Northern Edge of MTBE Plume **	
A-4A *	West Edge of WTF	9 events 2008-2014	Upgradient Delineation of WTF Dissolved Plume **	MNA
A-5A *	South part of WTF	19 events 2003-2014	Delineation of Western Edge of MA MtBE Plume, Downgradient Edge of WTF **	
A-10A *	Center of STF	14 events 2006-2014	Delineation of Downgradient extent of MA MtBE Plume, may contain LNAPL **	MNA
A-17R *	Central MA	8 events 2009-2014	MA MtBE Plume **	MNA
A-18A	South-west edge of WTF	6 events 2005-2008	Between high MtBE A-17R and LNAPL at PUA	
A-21A *	Central WTF	19 events 2003-2014	WTF MtBE Plume **	MNA
A-22A	West-Central part of WTF	none	Delineation of Western Extent of WTF MtBE	
A-24A	North part of WTF	none	Delineation of Western Extent of WTF MtBE	
A-26A	East edge of WTF	1 event 2008	Downgradient Extent MtBE	
A-27A	East part of WTF	1 event 2008	Delineation of WTF MTBE Plumes	
A-29A	North part of PUA	6 events 2006-2008	Delineation of extent of WTF MTBE Plume **	
A-30A	North edge of PUA	None	Delineation of PUA Plume	
A-34	East edge of STF	1 event 1992	Downgradient Delineation of STF Plume	
A-35	East end of STF	1 event 1990	Delineation of STF Plume	
A-38A *	East end of PUA	17 events 2005-2014	Sentinel Well Downgradient Delineation of Dissolved Plume **	MNA
A-39A *	East end of PUA	17 events 2005-2014	Sentinel Well Downgradient Delineation of Dissolved Plume **	MNA
A-46A	North-west corner of PUA	1 event 2006	Northern Edge of PUA Plume and Downgradient Extent of WTF Plume	
A-48	East end of STF	6 events 2005-2008	Downgradient Delineation of STF Dissolved Plume **	MNA
A-52	West edge of MA	1 event 1992	Delineate West Extent of MA Plume	
A-56A	North Edge of WTF	none	Upgradient Delineation of WTF Dissolved Plume	
A-64	Central part of PUA	none	Delineation of LNAPL at A-37A	MNA
A-65	East edge of PUA	none	Downgradient Delineation of A-37A LNAPL	
A-66	East edge of PUA	None	Downgradient Extent PUA Plume	
AL-1	Central-east PUA	4 events 2004-2005	Northeastern Delineation of PUA Plume	
AL-3	East end of PUA	4 events 2004-2005	Downgradient of PUA Edge Plume **	MNA
AO-2	OFFSITE, South-east of STF	2 events 1991-1992	Delineation of STF Plume	
AO-6	OFFSITE, South of STF	15 events 1991-2010	Southern Delineation of STF Plume **	MNA
AO-7	OFFSITE, East of WTF	10 events 1992-2002	Downgradient Extent of WTF Plume	
AO-9	OFFSITE, North of PUA	13 events 1993-2008	Northern Delineation of PUA Plume	
AO-10 *	OFFSITE, South-east of PUA, STF	23 events 1992-2014	Sentinel Well Downgradient Delineation of Dissolved Plume **	MNA
AO-11 *	OFFSITE, South-east of PUA, STF	23 events 1992-2014	Sentinel Well Downgradient Delineation of Dissolved Plume **	MNA

Table 1
Wells Proposed For Single Event Sampling - September 2014
Former Refinery, Santa Fe Springs
Artesia Wells

Well I.D.	Location	Sampling History	Rationale	Additional Analyses
AO-18	OFFSITE, South-east of STF	22 events 1992-2008	Delineation of Dissolved Plume in STF **	
AO-20	OFFSITE, South of WTF	9 events 1992-2009	Upgradient, previously very low VOCs **	MNA
AO-21 *	OFFSITE, North of WTF	42 events 1992-2014	Delineation of Northern Upgradient Edge of Dissolved Plume **	MNA
MW-2A *	West Edge of WTF	15 events 2003-2014	Upgradient Delineation of WTF Dissolved Plume **	
TOTAL:	36 Wells		18 Wells in 2013 Monitoring Program	14

Note:

* Well Currently Sampled

** Well Proposed in 2013 Revised Monitoring Program

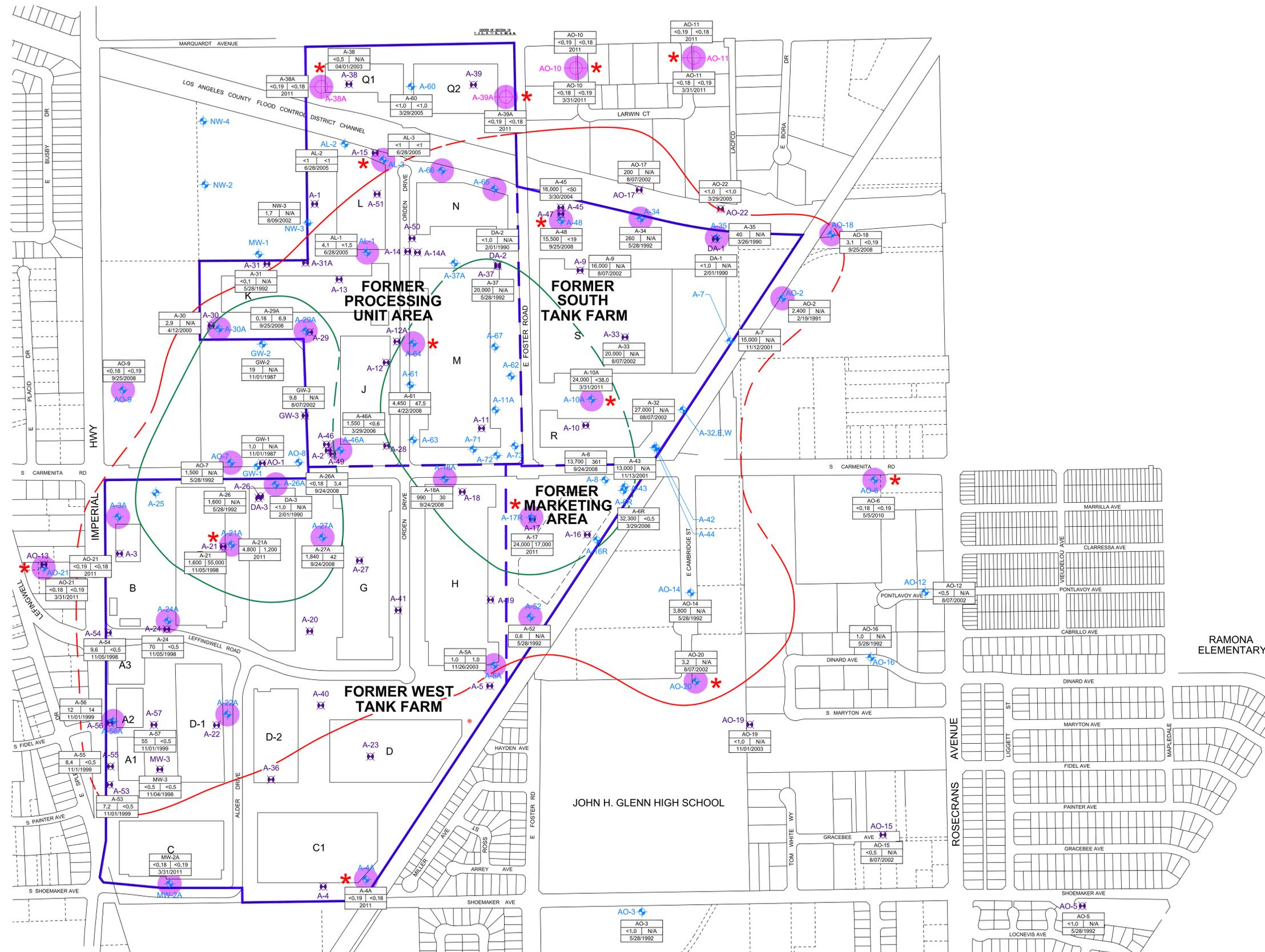
Table 2
Wells Proposed For Single Event Sampling - September 2014
Former Refinery, Santa Fe Springs
Semi-Perched Wells

Well No.	Location	Sampling History	Rationale	Additional Analyses
B-13	OFFSITE, South of MA and WTF	1 event 2002	MNA Testing in offsite LNAPL area	MNA
Carmenita Sump Influent *	OFFSITE, MA	Water Treatment System since 1980's	Representative of Semi-Perched STF and Offsite Groundwater **	MNA
MYTNN	OFFSITE, South of MA and WTF	1 event 2002	MNA Testing in offsite LNAPL area	MNA
P-2A	South edge of STF	None	MNA Testing in STF LNAPL area	MNA
P-10	East edge of STF	none	Delineation of Upgradient Extent of STF Semi-Perched Plume **	MNA
P-11	East edge of STF	none	Delineation of STF Semi-Perched Plume	MNA
PO-5	OFFSITE, South of MA and WTF	5 events 1992-2002	Downgradient Extent of Semi-Perched Plumes **	MNA
PO-12	OFFSITE, South of MA and WTF	2 events 1992-2002	Downgradient Extent of Semi-Perched Plumes **	MNA
PO-13	OFFSITE, South of MA and WTF	1 event 2002	Downgradient Extent of Semi-Perched Plumes **	MNA
PO-14	OFFSITE, South of MA and WTF	2 events 1992-2002	Downgradient Extent of Semi-Perched Plumes **	MNA
PO-16	OFFSITE, South of MA and WTF	1 event 2002	MNA Testing in offsite LNAPL area	MNA
PO-19	OFFSITE, South of MA and WTF	1 event 1992	Northwestern Delineation of Semi-Perched Plumes **	
SFS-2	OFFSITE, Adjacent to ChemCentral	1 event 2010	Investigation of Groundwater quality near ChemCentral, and South of STF	MNA
TOTAL:	12 Wells + Carmenita Sump		6 + Carmenita Sump in 2013 Monitoring Program	11 Wells + Carmenita Sump

Note:

* Well Currently Sampled

** Well Proposed to be sampled one time in 2013 Revised Monitoring Program

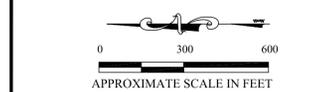


- LEGEND**
- GROUNDWATER MONITORING WELL (ZONE A)
 - ABANDONED GROUNDWATER MONITORING WELL (ZONE A)
 - FORMER FOUR REFINERY AREAS
 - ARTESIA SENTINEL WELL
 - GWRC PROPERTY BOUNDARY

SELECTED HISTORICAL DISSOLVED DATA

WELL I.D.	BENZENE µg/L / MTBE µg/L	DATE SAMPLED
AO-11	<0.19 <0.18	2011

- DETECTABLE DISSOLVED MTBE
- DETECTABLE DISSOLVED BENZENE
- PROPOSED WELLS TO BE SAMPLED
- PROPOSED MNA SAMPLING



DATE: 08/2014	FILE NAME: GWRC-DATA-2.DWG	SOURCE:
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PROPOSED GROUNDWATER WELL SAMPLING, SEPTEMBER 2014 ARTESIA WELLS

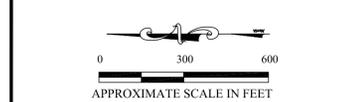
GOLDEN WEST REFINERY
SANTA FE SPRINGS, CALIFORNIA



- LEGEND**
- GROUNDWATER MONITORING WELL (ZONE SP)
 - ABANDONED GROUNDWATER MONITORING WELL (ZONE SP)
 - FORMER FOUR REFINERY AREAS
 - GWRC PROPERTY BOUNDARY

PO-15	WELL I.D.
<0.5 N/A	BENZENE µg/L / MTBE µg/L
8/7/2002	DATE SAMPLED

- INTERPRETED LATERAL EXTENT OF SEMI-PERCHED HYDROGEOLOGIC ZONE
- PROPOSED WELLS TO BE SAMPLED
- PROPOSED MNA SAMPLING



DATE: 08/2014	FILE NAME: GWRG-DATA-2.DWG	SOURCE:
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PROPOSED GROUNDWATER WELL SAMPLING, SEPTEMBER 2014 SEMI-PERCHED WELLS

GOLDEN WEST REFINERY
SANTA FE SPRINGS, CALIFORNIA



EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Los Angeles Regional Water Quality Control Board

October 16, 2014

Mr. Chris Panaiteescu
Golden West Refining Company
13116 Imperial Highway
Santa Fe Springs, CA 90670

Certified Mail
Return Receipt Requested
Claim No. 7001 0360 0000 3649 3507

Mr. Brad Rogers, PE
Team Lead, Refining Business Unit
Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583

Certified Mail
Return Receipt Requested
Claim No. 7001 0360 0000 3649 3514

SUBJECT: REQUIREMENTS PURSUANT TO CALIFORNIA WATER CODE SECTION 13267 AMENDED ORDER NO. R4-2013-0116-A01 AND APPROVAL OF TIME EXTENSION TO SUBMIT TECHNICAL REPORTS

SITE: GOLDEN WEST REFINERY, 13539 FOSTER ROAD, SANTA FE SPRINGS, CALIFORNIA SITE CLEANUP PROGRAM NO. 0227A, SITE ID NO. 2040073

Dear Messrs. Panaiteescu and Rogers:

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is the public agency with primary responsibility for the protection of groundwater and surface water quality for all beneficial uses within major portions of Los Angeles and Ventura counties, including the referenced site.

The Regional Board determined that additional investigation is necessary to protect the beneficial uses of the waters located beneath and in the vicinity of the former Golden West Refinery site at 13539 Foster Road, Santa Fe Springs, California. On June 26, 2014, the Regional Board directed Golden West Refining Company and Chevron to submit a subsurface investigation work plan and a comprehensive groundwater sampling and monitoring plan to the Regional Board, in Order No. R4-2013-0116.

On July 22, 2014, the Regional Board received a letter from Chevron Environmental Management Company (CEMC) requesting a meeting and objecting, among other matters, that Order No. R4-2013-0116-A01 did not identify the appropriate Chevron corporate entity. The Amended Order No. R4-2013-0016-A01 names Chevron U.S.A., Inc. as a responsible party as the successor in interest to Gulf Oil Corporation.

CHARLES S. RINGER, CHAIR | SAMUEL UNGER, EXECUTIVE OFFICER

320 West 4th St., Suite 200, Los Angeles, CA 90013 | www.waterboards.ca.gov/losangeles

October 16, 2014

On August 28, 2014, the Regional Board held a meeting with the representatives of CEMC, Chevron Corporation, Golden West Refining Company and their environmental consultants, The Source Group, Inc., (SGI) and Trihydro Corporation (Trihydro). Subsequently, the Regional Board received a letter dated September 10, 2014 (SGI letter) from SGI requesting on behalf of Golden West Refining Company to extend the due date of September 15, 2014, to submit the technical reports required pursuant to Order No. R4-2013-0116. In the SGI letter, a list of groundwater monitoring wells (attachment) that are proposed for sampling at the site was provided. On September 2, 2014, the Regional Board staff and representatives from SGI and Trihydro conducted a technical meeting to discuss the proposed wells, multi-depth discrete sampling in some wells and analytical program.

Due to the amount of time required to complete the sampling of all the proposed wells, analyze the data, develop a comprehensive groundwater sampling and monitoring plan, and develop a subsurface investigation work plan, your request for time extension is reasonable and is reflected in the Amended Order No. R4-2013-0016-A01 attached with this letter.

Based on review of the proposed groundwater sampling provided on September 10, 2014, you are authorized to conduct the next round of groundwater sampling at the site with the following modifications:

1. In addition to the thirty six (36) groundwater monitoring wells proposed for sampling in Artesia Aquifer, collect groundwater samples from wells A-25, AO-8 and A-43.
2. In addition to the twelve (12) groundwater monitoring wells proposed for sampling in Semi-Perched Aquifer, collect groundwater samples from wells B-1, B-2, B-10, P-6A, PO-1, PO-8, PO-10 and PO-17.
3. Analyze groundwater samples for the following chemicals:
 - a. Total petroleum hydrocarbons (TPH) gas, TPH, diesel, TPH motor oil using EPA 8015
 - b. benzene, toluene, xylenes and ethylbenzene, oxygenates using EPA 8260B,
 - c. semi-volatile organic compounds using EPA 8270C, and
 - d. monitored natural attenuation parameters
4. By **November 30, 2014**, submit the results of the groundwater sampling and a comprehensive groundwater sampling for the site to the Regional Board per Item 2 of the Amended Order No. R4-2013-0116-A01.
5. By **January 30, 2015**, submit a data gap and subsurface investigation work plan to the Regional Board, per Item 1 of the Amended Order No. R4-2013-0116-A01.

Enclosed is Amended Order No. R4-2013-0116-A01, pursuant to California Water Code section 13267. Unamended portions of Order No. R4-2013-0116 remain in full force and effect.

Mr. Panaitescu and Mr. Rogers - 2 -
Golden West Refining Company & Chevron U.S.A. Inc.
SCP No. 0227A

October 16, 2014

If you have any questions, please contact Site Cleanup Program manager, Dr. Arthur Heath at (213) 576-6725 or project manager Mr. Adnan Siddiqui at (213) 576-6812 (asiddiqui@waterboards.ca.gov).

Sincerely,


Samuel Unger, P.E.
Executive Officer

Enclosure* CWC 13267 Order No. R4-2013-0116-A01

CC: Katherine Baylor, USEPA (via e-mail)
Rod Spackman, Chevron U.S.A. Inc. (via e-mail)
Todd Littleworth, Esq., Chevron Corporation (via e-mail)
Robert C. Goodman, Rogers Joseph O'Donnell (via e-mail)
Mark B. Gilmartin, Esq., Law Offices of Mark B. Gilmartin (via e-mail)
Simon Tregurtha, Golden West (via e-mail)
Paul Permienter, The Source Group, Inc. (via e-mail)
Sara Brothers, TriHydro Corporation

Los Angeles Regional Water Quality Control Board

**AMENDED ORDER TO PROVIDE TECHNICAL REPORTS
CALIFORNIA WATER CODE SECTION 13267 ORDER NO. R4-2013-0116-A01
DIRECTED TO GOLDEN WEST REFINING COMPANY AND CHEVRON U.S.A., INC.**

**GOLDEN WEST REFINERY
13539 FOSTER ROAD, SANTA FE SPRINGS, CALIFORNIA
SITE CLEANUP PROGRAM NO. 0227A, SITE ID NO. 2040073**

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) makes the following findings and issues this Order pursuant to California Water Code section 13267.

1. The Golden West Refinery is a former refinery and petroleum storage facility located at 13539 Foster Road in Santa Fe Springs, California (Site). From the 1920s to 1997, Golden West Refining Company (Golden West) and its predecessors owned the Site and conducted refining, blending and storage of crude oil and finished products at the Site. The Site encompasses approximately 269 acres and was divided into four areas based on the refinery operations. The Processing Unit Area was mainly used for refining crude oil into various products including fuel oil, diesel, and gasoline. The South Tank Farm and West Tank Farm were used for storage and blending of crude oil, intermediate products and finished products. Loading and inventory of finished products took place in the Marketing Area. The Site is now completely redeveloped into a business park for commercial and industrial use. Due to the historical use of the Site, soil and groundwater underlying the Site are impacted by petroleum hydrocarbons including light non-aqueous phase liquid (LNAPL) and volatile organic compounds (VOCs) that have extended to offsite areas. Prior to its acquisition by Golden West in 1983, the refinery was owned and operated by Gulf Oil Corporation. In 1984, Gulf Oil Corporation merged with Standard Oil Company of California and was renamed Chevron Corporation.
2. The Site has been the subject of several cleanup and abatement orders (CAO) issued by the Regional Board. The most recent CAO, Order No. R4-2004-0020, was issued to Golden West on August 24, 2004. The 2004 CAO requires Golden West to assess, monitor, and cleanup and abate the effects of petroleum hydrocarbons and other contaminants of concern discharged to soil and groundwater at the Site. Additional findings by the Regional Board regarding the Site, operations at the Site, and discharges of waste at the Site are included in the 2004 CAO.
3. The Site is located in the Central Basin of the Los Angeles Coastal Plain. As set forth in the Water Quality Control Plan for the Los Angeles Region (Basin Plan), which was adopted on June 13, 1994, and amended from time to time, the designated beneficial uses for groundwater in the Central Basin include municipal and domestic drinking water supply (MUN), Industrial Service Supply (IND), Industrial Process Supply (PROC) and Agricultural Supply (AGR).
4. Data collected at the site since the 1980s and submitted to the Regional Board in technical and monitoring reports confirms that operations at the site resulted in the discharge of wastes to soil and groundwater. Evidence that is available in the files of the Regional Board for Site No. SCP 0227A show the presence of an LNAPL plume in both the shallow Semi-Perched Aquifer and

the deeper Artesia Aquifer under the Site. The LNAPL plume in the Semi-Perched Aquifer extends off-site to the south approximately 3,000 feet¹. There are also dissolved phase groundwater plumes present in the Semi-Perched Aquifer and Artesia Aquifer, which have migrated off-site. The analytical results from groundwater monitoring confirm that petroleum hydrocarbons, VOCs and methyl-tertiary-butyl ether (MTBE) are present in the groundwater. Benzene was detected at concentrations of 18,000 micrograms per liter ($\mu\text{g/L}$) and 29,000 $\mu\text{g/L}$ in the Semi-Perched and Artesia aquifers, respectively. MTBE was detected at a concentration of 14,500 $\mu\text{g/L}$ in the Artesia Aquifer. The concentrations of chemicals in the groundwater at the Site exceed the numerical objectives to protect the beneficial uses of groundwater set forth in the Basin Plan, which include municipal use². The residual contamination in soil and the LNAPL plumes continue to be a source for the dissolved phase groundwater plume.

5. Since the discovery of LNAPL in groundwater at the Site in 1979, approximately 241 groundwater wells have been installed both on and off site by Golden West and its predecessors. The purposes of these wells were to delineate and monitor the LNAPL and dissolved phase groundwater plumes in both aquifers, and for certain select wells, to remove LNAPL from the groundwater. Over time, approximately 101 of these wells were destroyed. Some, but not all, of the destroyed wells were replaced. At the present time there are 140 groundwater wells, located both on and off site.
6. In August 2013, Golden West conducted multi-depth soil vapor sampling at 11 off-site locations. Benzene was detected above the method reporting limit at only one sampling location. One more round of soil vapor sampling was completed in August 2014 to confirm the results of 2013 soil vapor sampling at the site.
7. Under the current groundwater monitoring program, Golden West monitors 133 existing groundwater wells on a semi-annual basis for the presence of LNAPL and changes in groundwater levels. In addition, Golden West samples approximately 10 wells in the Artesia Aquifer for laboratory analyses. Currently, groundwater samples are analyzed for total petroleum hydrocarbons, oxygenates and VOCs.
8. Despite the implementation of a groundwater sampling and monitoring program by Golden West at the Site for decades, data gaps remain in the characterization of the LNAPL and dissolved phase plumes in the Semi-Perched and Artesia Aquifers. The distribution of LNAPL is not completely characterized due to the destruction of wells, placement of screen intervals and locations of groundwater wells. The groundwater sampling and monitoring program has not provided adequate information for the Regional Board to accurately monitor changes in the thickness and extent of LNAPL as well as the dissolved concentration of chemicals in the groundwater. In some cases groundwater wells were destroyed without collecting any samples and in other cases groundwater wells were destroyed even though sampling indicated that contaminants were present in the groundwater. There are also existing groundwater wells that have never been sampled to determine groundwater quality. Data gaps are particularly

¹ Additional data and information in support of the Regional Board's conclusion that operations at the Site are the source of the LNAPL plume that extends approximately 3000 feet down-gradient (southward) from the Site, beyond Rosecrans Boulevard, can be found in the Regional Board's letter to Mr. Chris Panaitescu, Golden West Refining Company, dated July 30, 2013, available at: <http://geotracker.waterboards.ca.gov/search>. SL373412444

² The State Water Resources Control Board, Division of Drinking Water maximum contaminant levels (MCLs) for benzene and MTBE are 1 micrograms per liter ($\mu\text{g/L}$) and 13 $\mu\text{g/L}$, respectively.

prevalent with respect to the Semi-Perched Aquifer, for which there is very little analytical data. Only a few Semi-Perched Aquifer wells have been sampled. Out of 108 Semi-perched Aquifer wells installed at the Site since 1981, most of the wells were never sampled and a few wells were sampled only one or two times. The most recent sample of a well in the Semi-Perched Aquifer taken for chemical analyses, was in 2002³. Golden West does not currently monitor the Semi-Perched Aquifer for pollutants such as petroleum hydrocarbons and VOCs.

9. As a result of gaps in the current and past groundwater monitoring programs, the Regional Board has incomplete data about the character of the LNAPL and dissolved phase groundwater contaminant plumes that emanate from the Site. These data gaps have limited the Regional Board's ability to verify the effectiveness of remediation and to determine the necessary scope and appropriate means of clean-up.
10. The Source Group, Inc. (SGI) submitted the Revised Groundwater Monitoring Program Review dated October 7, 2013. The proposed groundwater monitoring program does not address Regional Board concerns and falls short of the information needed to fill in the data gaps and to determine the proper remedy for the contaminant plumes emanating from the Site.
11. California Water Code section 13267(b)(1) states, in part: In conducting an investigation..., the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or, discharging, or who proposes to discharge waste within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.
12. Golden West and Chevron U.S.A., Inc. (Dischargers) have discharged, discharge, or are suspected of having discharged waste at the Site, some of which has migrated off-site. The waste discharged at the Site that has or is suspected of having migrated off-site includes the LNAPL plume in the Semi-Perched Aquifer that extends to the south of the Site approximately 3,000 feet. The Dischargers are responsible for the discharges of waste identified in this Order based on their ownership of the Site and operation at the Site that resulted in the discharge of waste.
13. This Order requires the Dischargers to prepare and submit a work plan to install new groundwater wells and to fill in the data gaps. In addition, the Dischargers are required to develop a groundwater sampling and monitoring work plan for the existing and new on-site and off-site Semi-Perched and Artesia Aquifer wells.
14. The Regional Board needs the information that will be supplied by additional subsurface characterization, installation of new wells and a revised groundwater sampling and monitoring program to determine the complete character of the LNAPL and dissolved phase groundwater plumes that emanate from the Site, and to verify effectiveness of ongoing remediation that includes LNAPL removal and the extent of natural attenuation, if any, and other facts required to

³ Semi-Annual Groundwater Monitoring Report dated December 16, 2013.

appropriately define the scope and most effective methods of cleanup and abatement. Golden West's current groundwater monitoring program and the modified program proposed by SGI in its report dated October 7, 2013, are inadequate.

15. The burdens, including costs, of these reports bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. Much of the necessary monitoring can be accomplished with existing wells. The gaps in available data are largely due to the failure of Golden West and its predecessors to monitor existing wells at the Site⁴. The additional work consisting of subsurface assessment, soil vapor survey, groundwater well installation and monitoring is necessary because it will provide information on residual contamination in the vadose zone and groundwater, aid in the recovery of LNAPL, and determine the effectiveness of remediation, stability of the dissolved phase plume, pace of natural attenuation and threat to human health from vapor intrusion. The information to be provided by the activities required by this Order is necessary to achieve the goals of Cleanup and Abatement Order No. R4-2004-0020 and assure adequate cleanup of the Site, which currently poses significant threats to the environment.
16. The issuance of this Order is exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to section 15061(b)(3), Chapter 3, Title 14 of the California Code of Regulations. This Order requires submittal of proposed work plans and, after approval of the proposed work plans by the Executive Officer, submission of technical and monitoring reports. Submittal of the proposed work plans to the Regional Board does not in itself have the potential to cause a significant effect on the environment. Because the proposed activities under the work plans are not yet known, and are subject to discretionary approval by the Regional Board, assessment of the potential environmental impacts of the proposed activities is premature at this time. If implementation of the proposed work plans may result in significant impacts on the environment, the appropriate lead agency will address the CEQA requirements prior to approving or implementing the work plan.
17. Any person aggrieved by this action of the Regional Water 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.

THEREFORE, IT IS HEREBY ORDERED that Golden West Refining Company and Chevron U.S.A, Inc., pursuant to section 13267(b) of the California Water Code, are required to do the following:

⁴ For example, wells in the Artesia Aquifer that are available for sampling but that Golden West has not sampled include: B-1, B-2, B-3, B-10, P-10, PO-3, PO-4, PO-7, PO-8, PO-11, PO-19, A-3A, A-22A, A-24A, A-56A, A-64, A-65, and A-66. See Semi Annual Groundwater Monitoring Report dated December 16, 2013.

1. By **January 30, 2015**, submit a work plan to conduct subsurface investigation and install additional groundwater wells to address gaps in available data in defining the extent of the on-site and off-site LNAPL and dissolved phase plumes in the Semi-Perched and Artesia Aquifers. The work plan must include, but should not be limited to, installation of groundwater wells at on-site and off-site locations to be approved by the Regional Water Board.
2. By **November 30, 2014**, submit a revised and comprehensive groundwater sampling and monitoring program for the LNAPL and dissolved phase groundwater plumes in the Semi-Perched and Artesia Aquifers, both on- and off-site covering the entire plume. The groundwater sampling and monitoring program should address, but not necessarily be limited to, concentration of contaminants dissolved in groundwater and geochemical parameters to monitor natural attenuation.
3. Comply with deadlines to be established by the Executive Officer for completion of activities and submission of technical reports described in [1] the work plan to conduct subsurface investigation and install additional groundwater wells and [2] the groundwater sampling and monitoring program. The deadlines established by the Executive Officer, and any subsequent modifications approved by the Executive Officer, are incorporated herein by reference and are enforceable elements of this Order.
4. The Regional Board, through its Executive Officer, may revise this Order as additional information becomes available. Upon request by the Dischargers, and for good cause shown, the Executive Officer may defer, delete, or extend the date of compliance for any action required of the Dischargers under this Order.
5. This Order is not intended to permit or allow the Dischargers 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 Dischargers from compliance with any other laws, regulations, or ordinances which may be applicable.
6. The technical report is required to be submitted under the Water Code section 13267. Pursuant to Water Code section 13268(a), any person who fails to submit reports in accordance with this Order is guilty of a misdemeanor. Pursuant to Water Code section 13268(b)(1), failure to submit the required technical report described above by the specified due date(s) may result in the imposition of administrative civil liability by the Regional Board in an amount up to one thousand dollars (\$1,000) per day for each day the technical report is not received after the due date. These civil liabilities may be assessed by the Regional Board for failure to comply, beginning with the date that the violations first occurred, and without further warning.
7. The Regional Board, under the authority given by Water Code section 13267(b)(1), requires you to include a perjury statement in all reports submitted pursuant to this Order. The perjury statement shall be signed by a senior authorized Golden West Refining Company representative (not by a consultant). The perjury statement shall be in the following format:

"I, [NAME], certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision, in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and

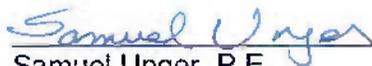
October 16, 2014

belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

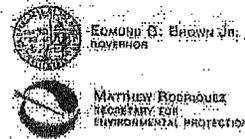
8. The State Board adopted regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27, California Code of Regulation) requiring the electronic submittal of information (ESI) for all site cleanup programs, starting January 1, 2005. Currently, all of the information on electronic submittals and GeoTracker contacts can be found at http://www.waterboards.ca.gov/ust/electronic_submittal. To comply with the above referenced regulation, you are required to upload all technical reports, documents, and well data to GeoTracker by the due dates specified in the Regional Board letters and orders issued to you or for the site. However, we may request that you submit hard copies of selected documents and data to the Regional Board in addition to electronic submittal of information to GeoTracker.

For your convenience, the GeoTracker Global ID for this site is SL373412444.

SO ORDERED



Samuel Unger, P.E.
Executive Officer



Los Angeles Regional Water Quality Control Board

July 30, 2013

Mr. Chris Panaitescu
Golden West Refining Company
13116 Imperial Highway
Santa Fe Springs, CA 90670

Certified Mail
Return Receipt Requested
Claim No. 7011 3500 0003 5491 0940

SUBJECT: RESPONSE TO GROUNDWATER PROGRAM REVIEW - CLEANUP AND ABATEMENT ORDER NO. R4-2004-0020

SITE: GOLDEN WEST REFINING COMPANY - 13539 FOSTER ROAD, SANTA FE SPRINGS, CALIFORNIA (SCP NO. 0227A, SITE ID NO. 2040073) ("Site")

Dear Mr. Panaitescu:

The California Regional Water Quality Control Board (Regional Board), Los Angeles Region, is the State regulatory agency with primary responsibility for the protection of groundwater and surface water quality for all beneficial uses within major portions of Los Angeles and Ventura Counties, including the referenced site. To accomplish this, the Regional Board issues investigative and cleanup orders authorized by the Porter Cologne Water Quality Control Act (California Water Code [CWC], Division 7).

The Source Group, Inc. (SGI) submitted a *Groundwater Monitoring Program Review* (Report) dated March 2012 to the Regional Board on behalf of the Golden West Refining Company (Golden West). In the Report, SGI asserts that many of the off-site wells installed by Golden West or its predecessors are located beyond the boundaries of the waste plume attributable to discharges of waste at the Site. SGI then proposes a modification to the current groundwater monitoring plan for the Site. Regional Board staff has completed its review of the Report.

I. Site History and Background

The Golden West Refining Company is a former refinery and petroleum storage facility located in Santa Fe Springs. From the 1920s to 1997, Golden West and its predecessors conducted refining, blending and storage of crude oil and finished products at the Site. The Site encompasses approximately 269 acres and was divided into four areas based on the refinery operations. The Processing Unit Area was mainly used for refining crude oil into various products such as fuel oil, diesel, and gasoline. Aviation fuels were also produced at the Site. The South Tank Farm and West Tank Farm were used for storage and blending of crude oil, intermediate products and finished products. Loading and inventory of finished products took place in the Marketing Area. The Site is now completely redeveloped into a business park for commercial and industrial use.

In 1979, when Gulf Oil Company owned and operated the refinery, light non-aqueous phase liquid (LNAPL) was discovered during the construction of the Carmenita Road underpass

MARIA MEBRANIAN, CHAIR | SAMUEL UNDERHILL, EXECUTIVE DIRECTOR

320 West 4th St., Suite 200, Los Angeles, CA 90013 | www.waterboards.ca.gov/losangeles

project. In 1985, the Regional Board issued Cleanup and Abatement Orders (CAOs) to 15 refineries in the Region, including Golden West, requiring subsurface assessment and groundwater characterization at their refineries. Subsequently, the Regional Board issued three additional CAOs to Golden West for assessment, monitoring and cleanup of LNAPL and related pollutants in soil and groundwater that originated from the Site. The most recent CAO, Order No. R4-2004-0020 was issued to Golden West on August 24, 2004. Since 1997, the Regional Board has also executed six prospective purchasers agreements related to the redevelopment of the Site.

Since its acquisition of the refinery in 1983, Golden West has conducted site assessment, LNAPL removal, limited soil excavation, and groundwater monitoring at the Site. The remedial activities conducted within the 269-acre property were primarily focused on the commercial and industrial redevelopment of the Site. Currently, Golden West is operating on-site soil vapor extraction systems to remediate petroleum hydrocarbons and volatile organic compounds (VOCs) in the unsaturated zone. Golden West is also removing LNAPL from on-site and off-site wells in the Semi-Perched and Artesia Aquifers. Golden West also gauges water levels in the Semi-Perched and Artesia Aquifers and collects groundwater samples from selected wells in the Artesia Aquifer to monitor the total petroleum hydrocarbons, oxygenates and VOCs on a semi-annual schedule.

The Site is located in the Central Basin pressure area of the Los Angeles Coastal Plain. The uppermost water bearing zone is the Semi-Perched Aquifer. This aquifer occurs both on and off site, but is laterally discontinuous in some areas. The Semi-Perched Aquifer is present in the southern part of the South Tank Farm and extends off site in the southwest direction. The groundwater in the Semi-Perched Aquifer is encountered at depths ranging between 20 and 50 feet below ground surface (bgs) and flows toward the southwest. The Artesia Aquifer is a continuous water bearing zone which occurs both on site and off site. The groundwater in the Artesia Aquifer is encountered between 65 and 100 feet bgs and generally flows toward the northeast.

II. LNAPL Plume in the Semi-Perched Aquifer

Since the discovery of LNAPL at the Site in 1979, Golden West and its predecessors conducted multiple subsurface investigations to characterize and monitor the identified waste plumes originating from the Site. The southern extent of the LNAPL plume in the Semi-Perched Aquifer from the South Tank Farm to well PO-16 was already defined by 1992. Isolated pools of LNAPL within water bearing zones in the Semi-Perched Aquifer were also identified in wells P-4, P-6, P-14 of the West Tank Farm and in well P-3 of the Processing Unit Area. A laterally continuous plume of LNAPL in the Semi-Perched Aquifer has been consistently mapped as extending approximately 3000 feet from the South Tank Farm in the down-gradient direction beyond Rosecrans Boulevard. The presence of the LNAPL plume in the South Tank Farm and area to the south of the Site is congruent with those areas in which the Semi-Perched Aquifer is present. The orientation of the plume extending to the south of the Site is also consistent with the groundwater flow direction of the Semi-Perched Aquifer.

Golden West has submitted a number of reports to the Regional Board that include maps of the LNAPL plume. All of the maps submitted prior to the Report, indicate only one LNAPL plume originating from the Site and extending off site to the south to well PO-16. Figure 1 depicting the various LNAPL plume maps submitted to the Regional Board over time is attached. A review of the well gauging data collected since 1985, indicates that the amount of LNAPL measured in individual on-site and off-site wells varies with time, and there is a general trend of decreasing

amount of LNAPL in most wells. This trend is attributable to many factors but mainly due to the removal of primary sources by dismantling of the refinery beginning in 1997 and continuous removal of LNAPL by Golden West.

It is also observed that in many wells, the LNAPL thickness, which was measured up to a few feet in a well at one time decreased to zero feet before the LNAPL came back in that well after some time. For example, LNAPL was measured at 4.1 feet in well B-13 in 1985 and it decreased to zero feet in 1995. In 1997 the LNAPL was again measured at 4.08 feet in well B-13 then its thickness decreased to 0.02 foot in 2005. In 2006, the LNAPL came back again into the well at 1.50 feet. The LNAPL was measured at zero feet in well B-13 during the latest well gauging event in March 2013. The variable LNAPL thickness measured in individual wells is also attributable to the well design and location, subsurface lithology, fluctuations in groundwater level, gradient and LNAPL saturation.

The shape of the LNAPL plume presented on plume maps is also dependent upon the interpretation of the data. In the 2008 GWRC Semi-Perched Aquifer LNAPL plume map on Figure 1 (attached), the plume is shown as isolated pools around off-site wells PO-16, B-16, B-13 and CCW. In Figure 1, Golden West has drawn the 2008 GWRC Semi-Perched Aquifer LNAPL plume into isolated blobs of LNAPL around each of the aforementioned four wells. The groundwater well CCW is located approximately 400 feet and B-13 is located approximately 1000 feet from the former refinery in the downgradient direction. Groundwater wells B-16 and PO-16 are located approximately 1,400 feet and 2,100 feet, respectively from well B-13 further in the downgradient direction. Due to the large distance between the wells, there is not adequate well control available to confirm the absence of LNAPL in the areas between these wells. In contrast, a better interpretation would be to draw a contiguous LNAPL plume connecting wells PO-16, B-16, B-13, MYTNN, B-13 and the wells located inside South Tank Farm, as reported by Golden West and its consultant since 1980s. Regional Board staff also noted that 0.29 foot of LNAPL was measured in well MYTNN during September 22, 2008 well gauging event but Golden West did not include well MYTNN to draw the Semi-Perched LNAPL plume map. LNAPL has been consistently measured in MYTNN since it was installed in 1986. Another Semi-Perched Aquifer well B-18 is located between wells B-16 and B-13. More than 2-feet of LNAPL were consistently measured in well B-18 since its installation in 1986 until 1989 when Golden West stopped gauging this well due to site access.

There is no reason to believe that LNAPL is not present in the area of the former well B-18 without installation of replacement wells to confirm it. In 1992, Golden West installed well AO-16 in the vicinity of well B-18; however, Well AO-16 is screened in the Artesia Aquifer while the LNAPL in this area occurs within the Semi-Perched Aquifer. As expected, Golden West has been gauging well AO-16 since 1992 and consistently reporting the absence of LNAPL in groundwater. Another example of fluctuating thickness of LNAPL is seen in the Artesia Aquifer well AO-8. In 1990 when the well was installed, the LNAPL thickness in the well was measured at 4.81 feet. The LNAPL thickness increased to 16.29 feet in 1992 before it dropped to zero feet in 1996. In March 2011, 15.69 feet of LNAPL was measured in the well. During the March 2013 well gauging event, zero feet of LNAPL was measured in AO-8.

In its Report, SGI does not dispute the presence of a continuous LNAPL plume extending from the South Tank Farm across Rosecrans Boulevard, but asserts that the portion of the plume originating from the Site extends off site only to few hundred feet. SGI claims that the LNAPL found in off-site downgradient wells B-13, MYTNN, B-16 and PO-16 in the Semi-Perched Aquifer is attributable to non-refinery sources. To support its claim, SGI relies on visual

observation, LNAPL finger printing and of the presence of other underground storage tank sites and oil conveyance pipelines in the area.

SGI collected LNAPL samples from five wells in the Semi-Perched Aquifer located incrementally farther away from the South Tank Farm in the downgradient direction. Well STF-16 is located at the boundary of the South Tank Farm; B-13 is located approximately 1,000 feet from Well STF-16; MYTNN is located approximately 2,000 feet from Well STF-16; B-16 is located approximately 2,300 feet from Well STF-16 and PO-16 is located approximately 3,000 feet from Well STF-16. Zymax Laboratory (Zymax) analyzed the five samples for chemical finger printing. All five samples were analyzed for Methylcyclopentadienyl Manganese Tricarbonyl, Ethylene Dibromide and organic lead speciation. Samples from STF-16, B-13 and MYTNN wells were additionally analyzed for C3-C44 whole oil and oxygenate blending agent.

1. Visual Observation

SGI describes the LNAPL found in wells STF-16, B-13, MYTNN, B-16 and PO-16 as visually distinct from one another based on the color and appearance of the samples. The SGI Report also references the Off Site Semi-perched Zone Cone Penetrometer/Hydropunch Investigation Report (CPT Report) by TriHydro Corporation (THC) dated September 18, 1991. In the CPT Report, THC also describes LNAPL collected from some hydropunch locations near Rosecrans Avenue and along Carmentia Road as "fresh" or "less-weathered" as compared to "more weathered" LNAPL collected at other locations close to the Site, based upon visual inspection. THC then suggests that there are localized hydrocarbon sources other than the former refinery. Similarly, SGI's Report attributes the LNAPL in the downgradient wells to a source other than the refinery operations.

SGI was not consistent in its use of visual observation to categorize the source of LNAPL. For example, in the Report, SGI described the product from both STF-16 and MYTNN wells as black and weathered, but also argued that LNAPL in MYTNN belongs to a plume that is distinct from the refinery plume.

More importantly, however, visual observation and color of LNAPL is not a reliable criterion to determine the age or source of a release. The color of the dye added during refining operations degrades with time, so using color to determine the source of a release is questionable, particularly in weathered products. In the latest fingerprinting report dated March 3, 2012, Zymax concludes that LNAPL from the three wells (STF-16, B-13, and MYTNN) is severely weathered. Zymax did not utilize color and appearance of the LNAPL samples to differentiate between fresh or weathered products, but rather, utilized chemical fingerprinting such as alkyl lead speciation and absence of oxygenates to reach a more reliable conclusion.

2. Finger-printing

Lead Compounds:

SGI also claims that LNAPL in the B-16 and PO-16 wells is from a different source than the LNAPL found in STF-16, B-13, and MYTNN based on the unique presence of two lead compounds. Zymax analyzed LNAPL samples from STF-16, B-13, MYTNN, B-16 and PO-16 to quantify five alkyl lead compounds consisting of tetraethyl lead (TEL), tetramethyl lead (TML), trimethylethyl lead (TMEL), dimethyldiethyl lead (DMDEL) and methyltriethyl lead (MTEL). TML was absent in all samples. TEL and MTEL were present in all five samples. TMEL and DMDEL were quantified only in the samples from B-16 and PO-16. In contrast to SGI, Zymax never claimed in its report that the LNAPL in the B-16 and PO-16 wells is from a different source than

LNAPL found in STF-16, B-13, and MYTNN, Zymax only estimated the age of gasoline based on the presence of alkyl lead in the samples to be between 1960 and 1992.

The analysis for alkyl lead compounds is a useful method to estimate the age of leaded gasoline. Refineries began using TEL as an anti-knocking agent and to boost the octane rating in gasoline in the 1920s. Its use as an additive peaked in 1959. After the discovery of TML in 1960, refineries introduced the use of all five alkyl lead compounds in leaded gasoline. But after 1985, TEL again became the dominant lead additive. In California, the manufacture of leaded gasoline was discontinued in 1992. The amount and type of alkyl lead in gasoline varied based on gasoline demand, price, regulations, and other factors specific to each refinery. The only certainty the presence of alkyl lead in LNAPL samples provides is that the gasoline was formulated between approximately 1920 and 1992, but most likely between 1960 and 1992. This time frame matches that of operations at the Golden West Refinery, which produced refined products between 1930s and 1992.

Additional Fingerprinting Analyses:

Based on the results of the fingerprinting and visual observations from STF-16, B-13 and MYTNN wells, SGI asserts that there are three types of LNAPL plumes in the Semi-Perched Aquifer from three separate releases. SGI concludes that the source of LNAPL in STF-16 is from the Site, but that the plume extends only a few hundred feet beyond the Site. The LNAPL in B-13 and MYTNN forms a second distinct plume, and the LNAPL in B-16 and PO-16 is from a third distinct plume. SGI identifies these three plumes separately on Figure 11 of the Report. According to SGI, the LNAPL in B-13 and MYTNN, and in B-16 and PO-16 (the second and third plumes) is from non-refinery sources.

Zymax identifies LNAPL found in all three wells, STF-16, B-13 and MYTNN, as severely weathered gasoline, degraded #2 diesel or #2 fuel oil. Zymax also identifies the higher iso-octane/methycyclohexane ratio in the STF-16 sample and concludes that the gasoline in STF-16 is from a different release than that found in B-13 and MYTNN. But the differences in iso-octane/methycyclohexane ratio in the samples only indicate differences in the formulation of the refined products that were produced and discharged at the Site. The iso-octane/methycyclohexane ratio is also affected by weathering of the LNAPL. Because a refinery produces differently formulated products over time, the Golden West Refinery is a likely source of LNAPL in all three wells.

To support its claim that hydrocarbon in semi-perched groundwater south of the refinery is from off-site sources and does not originate from the refinery, SGI also cites interpretation of the LNAPL found in Semi-Perched wells provided by THC in its reports, previously submitted to the Regional Board. The THC reports do not, however, only support SGI's interpretation. In a report dated April 26, 1990 (April 1990 Report), THC describes the free-floating hydrocarbon found in the Semi-Perched Aquifer and Artesia Aquifer. THC characterized the LNAPL based upon the analytical results of samples collected from 15 wells in the Semi-Perched Aquifer and 16 wells in the Artesia Aquifer located on and off site. THC states that LNAPL in well P-6, located in the West Tank Farm, and LNAPL in well P-9, located in the central South Tank Farm, likely originated from different sources than the LNAPL found in the remainder of the South Tank Farm. THC described the LNAPL in well P-3, located in the Processing Unit Area as similar to the LNAPL found in the South Tank Farm wells. These results show that there is considerable variation amongst LNAPL samples collected from wells located in different areas of the refinery, though all of the sampled LNAPL is attributable to releases that occurred at the Site. Furthermore, THC states that the characteristics of free-floating hydrocarbon in the South Tank

Farm and south of the refinery are similar. This statement includes LNAPL collected from B-13 and MYTNN located as far as 2,000 feet south of the refinery.

In the Report, SGI made a reference to the "California Leaking Underground Fuel Tank (LUFT) Historical Analysis" (LUFT study) by Rice et al. SGI reported that according to the LUFT study the benzene contaminated groundwater plumes at 90% of the sites extended to 255 feet or less, and the median plume length was 101 feet.

In the Report, SGI then used the LUFT study to claim that the plume originating from the Site does not extend more than few hundred feet off-site. According to SGI, the previous investigations were conducted on the premise that dissolved phase plumes migrate long distances and resulted in the installation and subsequent monitoring of numerous on-site and off-site wells for which redundant and irrelevant data was accumulated. SGI also states that most of the wells southwest of the refinery are located within other suspected contamination source areas at a distance, which is beyond from the typical distances of migration. SGI used its understanding of the plume migration to disregard historical data collected by Golden West and its consultants over the last several decades in order to propose and justify removal and destruction of Semi-Perched Aquifer and Artesia Aquifer wells.

The LUFT study cited by SGI was a study of the impacts due to leaks from underground storage tanks at gas station sites, and not of leaks from large refineries. The LUFT Study was focused on the length of dissolved phase groundwater plume resulting from a fuel hydrocarbon source, which is defined based upon the benzene concentration dissolved in groundwater. In the LUFT study, a benzene concentration of 10 micrograms per liter ($\mu\text{g/L}$) was used to define the length of a dissolved groundwater plume. The Site is a former refinery and not a gas station. There is already a 3000 foot long LNAPL plume that continues to act as a source for the dissolved phase groundwater plume. There is very limited data available for the dissolved benzene concentration in groundwater at the site. The analytical results from 1992 and/or 2002 sampling events indicate that benzene was detected at 13 $\mu\text{g/L}$ in a sample collected from well PO-5 in 2002. Well PO-5 is located downgradient from the known southernmost portion of the LNAPL plume in PO-16. The on-site and off-site Semi-Perched wells were never sampled regularly. Therefore a comprehensive groundwater monitoring program is needed for on-site and off-site wells.

The evidence submitted by SGI does not refute the Regional Board's conclusion that the LNAPL found in the Semi-Perched Aquifer both on and off site consists of various types of refined products released from the historical operations at the former Golden West Refinery. The visual observations and chemical fingerprinting of LNAPL collected from wells located both on- and off-site exhibit more similarities and only minor differences among the LNAPL samples, indicating that the former Golden West Refinery site is the likely source of the entire LNAPL plume.

SGI also fails to observe the distinction between identifying successive on-site releases as separate from one another, and concluding that they are from different sources. For example, there were hundreds of above ground tanks, some over five million gallons in capacity at the former Golden West Refinery that are documented as storing refined products including gasoline and diesel #2 fuel oil. If any tanks had a small leak, the product stored in those tanks would continue to contribute to the LNAPL plume. Over time, a tank can release different types of refined products manufactured at the refinery and stored in the tank over its life. This explains minor differences in chemical fingerprinting and appearance of the LNAPL. Zymax identified these differences as the basis to label the LNAPL samples to be from separate releases, but not necessarily from separate sources.

3. Other possible sources of LNAPL

SGI provides a list of sites identified as other possible sources of the LNAPL found in the Semi-Perched Aquifer to the south of the Site. SGI developed this list based upon its review of historical records and files in the possession of the City of Santa Fe Springs, the City of Norwalk, and the Regional Board. In Table 3 of the Report, SGI lists seventeen addresses of businesses as well as petroleum product pipelines located in the vicinity of the former refinery. The businesses include current or former locations of underground storage tanks (USTs) and gas stations. According to SGI, these sites or the petroleum product pipelines are the source of the off-site LNAPL plume in the Semi-Perched Aquifer.

The evidence submitted by SGI that the off-site LNAPL plume in the Semi-Perched Aquifer was caused by discharges from the alleged source sites is not sufficient to dispute existing evidence that the plume was caused, at least in significant part, by discharges at the Site.

First, some of the alleged source sites are located hundreds of feet from the known location of the off-site LNAPL plume. For example, United Rentals is located approximately 1,400 feet east of the LNAPL plume, an ARCO station is located approximately 1,300 feet east of the LNAPL plume, a Shell station is located approximately 1,700 feet west of the LNAPL plume and an UNOCAL station is located approximately 900 feet west of the LNAPL plume. The historical data presented by Golden West does not provide a conclusive link between the alleged offsite sources to the Semi-Perched LNAPL plume. In contrast, well gauging and sampling suggests that the Semi-Perched LNAPL plume had migrated over time to 3,000 feet from the Site in the hydraulically down-gradient (south-southwest) direction.

Second, SGI did not provide any evidence of a leak from any of the alleged sources of sufficient size to have caused a plume of the magnitude of the off-site LNAPL plume. The size of the plume is, however, commensurate with discharges from the refinery over the term of its operation. Refinery operations took place at the Site between the 1930s and 1992. Storage and blending of different petroleum products continued at the Site until 1997. There were numerous sources of LNAPL present within the 269-acre refinery boundaries throughout the refinery's operational life. These sources include, but are not limited to, hundreds of above-ground storage tanks with capacity as large as 5,628,000 gallons and underground product pipelines. After the demolition of the refinery, TPH, VOCs and lead impacted soil remain onsite acting as a source for groundwater contamination as well as threat to human health. For example, Golden West's consultants estimated that the amount of LNAPL discharged at the Site into the Semi-Perched Aquifer was between 3,360,000 and 10,080,000 gallons.¹

III. Groundwater Monitoring Program

Under the current groundwater monitoring program Golden West monitors 133 groundwater wells on a semi-annual basis for the presence of LNAPL and changes in groundwater levels. In addition, Golden West samples 11 wells in the Artesia Aquifer for laboratory analyses. Currently, groundwater samples are analyzed for total petroleum hydrocarbons, oxygenates and VOCs.

¹ These figures were reported to the Regional Board in the May 10, 2000 Addendum to the Conceptual Design Report by England & Associates (England & Associates Conceptual Design Report).

In its Report, SGI proposes a revised groundwater monitoring and sampling program. The revised program would discontinue monitoring of some wells and substitute alternate wells in the semi-annual sampling program. SGI also proposes to abandon a number of wells in the Artesia and Semi-Perched Aquifers. SGI proposes to abandon wells in the Semi-Perched Aquifer located to the south of the refinery, on the premise that the off-site LNAPL plume did not result from discharges at the Site.

1. History of Groundwater Monitoring at the Site

Since the discovery of LNAPL in groundwater at the Site in 1979, approximately 243 groundwater wells have been installed both on and off site by Golden West and its predecessors. The purposes of these wells were to delineate and monitor the LNAPL and dissolved phase groundwater plumes in both aquifers, and for certain select wells, to remove LNAPL from the groundwater. Over time, Golden West has destroyed approximately 100 of these wells. Some, but not all, of the destroyed wells were replaced. At the present time there are 141 groundwater wells, located both on and off site.

The groundwater sampling and monitoring program conducted by Golden West has not provided adequate groundwater data for the Regional Board to accurately monitor changes in the thickness and extent of LNAPL and dissolved phase plumes in the Semi-Perched and Artesia Aquifers, nor to determine the appropriate scope and methods of clean-up and abatement of the plumes. The data gaps are mostly due to the failure of Golden West and its predecessors to monitor all the groundwater wells installed at the Site. In addition, a number of wells located within the plumes were destroyed. Some of these wells were replaced with questionable screen intervals and locations.

For example, some wells in the Artesia Aquifer were destroyed even though monitoring indicated the presence of high concentrations of benzene, toluene or methyl tert butyl alcohol (MTBE).² Golden West destroyed other groundwater wells in the Artesia Aquifer without collecting any groundwater samples.³ In other instances, Golden West has not sampled wells in the Artesia Aquifer that have not been destroyed and are available for sampling.⁴ In addition, the screen intervals of some of the existing wells that are monitored appear to be inappropriate, producing samples that will fail to detect the LNAPL and dissolved phase plumes even if the plumes are present.

Data gaps are particularly prevalent with respect to the Semi-Perched Aquifer, for which there is very little monitoring data. Golden West's current monitoring program for the Semi-Perched Aquifer only includes gauging of fluid levels and removal of LNAPL from few wells. Only a few Semi-Perched Aquifer wells have been sampled, and sampling was only done in 1992 and 2002. Golden West does not currently monitor the Semi-Perched Aquifer for pollutants such as petroleum hydrocarbons and VOCs. SGI proposes only one well in the Semi-Perched Aquifer for future groundwater sampling. This well P-10 is located upgradient and outside the dissolved groundwater plume. In fact, SGI proposes to remove wells in the Semi-Perched Aquifer located south of the refinery based on its assertion that the LNAPL plume to the south of the Site

² Artesia wells A-2, A-9, and A-57 are examples of such wells.

³ These wells include A-12A, A-13, A-14, A-14A, A-15, A-18, A-19, A-20, A-23, A-25, A-28, A-31A, A-41, A-49, A-50, A-51, and AO-13.

⁴ These wells include A-3A, A-22A, A-24A, A-30A, A-36A, A-64, A-65, and A-66.

originated from off-site sources. As discussed previously in this letter, however, the weight of the available evidence shows that the off-site LNAPL plume did result from discharges originating at the Site and Golden West is responsible for monitoring and abating both the on-site and off-site portions of the LNAPL plume.

The *Conceptual Design Report* dated February 24, 2000, *Conceptual Design Addendum-Dissolved Phase Remediation* dated May 10, 2000 and the *Final Design Report* dated May 18, 2001, all prepared by England & Associates, proposed Monitored Natural Attenuation (MNA) in conjunction with LNAPL removal as the remedial approach for the dissolved phase groundwater plume. In the *Fate and Transport Modelling* report dated September 2002 by TRC, the dissolved phase plume was considered rapidly approaching steady-state conditions. TRC benzene, toluene, ethylbenzene and xylenes concentration within the 3,000 foot LNAPL plume as the source for dissolved phase groundwater plume, which was measured at variable distances from the leading edge of the LNAPL plume. TRC also recommended continued monitoring for verification. As indicated by its name, MNA requires monitoring of the chemicals of concern not only for plume migration and stability, but also natural attenuation parameters to confirm its occurrence. Based on the reports submitted, Golden West did not monitor MNA parameters and conducted regular sampling of the dissolved phase plume in the Semi-Perched Aquifer.

In addition, continued presence of LNAPL and very high concentrations in dissolved phase after several decades suggest that even a potentially stable plume may require active cleanup. The concentrations of contaminants such as benzene and MTBE dissolved in the Semi-Perched Aquifer and the Artesia Aquifer are at levels that require active cleanup. The California Department of Public Health maximum contaminant levels (MCLs) for benzene and MTBE are 1 micrograms per liter ($\mu\text{g/L}$) and 13 $\mu\text{g/L}$, respectively. The analytical results of groundwater samples collected from Semi-Perched and Artesia aquifer wells confirm that concentrations of benzene and MTBE in groundwater exceed their respective MCLs. Based on the limited data, benzene was detected at concentrations of 18,000 $\mu\text{g/L}$ and 29,000 $\mu\text{g/L}$ in the Semi-Perched and Artesia aquifers, respectively. MTBE was detected at a concentration of 14,500 $\mu\text{g/L}$ in the Artesia Aquifer. According to the Basin Plan, the beneficial uses of groundwater beneath the Site and the vicinity include municipal use. Therefore, cleanup of impacted groundwater to the MCLs is required. Appropriate groundwater sampling is also necessary to monitor the groundwater contaminant plume behavior and to determine the most effective means of cleanup and abatement of the existing contaminant plume and efficacy of completed clean-up activities to protect beneficial uses.

4. Conclusions

The results of the chemical fingerprinting, combined with the operational and regulatory history of the refinery and hydrogeology of the Site, supports the conclusion that the former Golden West Refinery site is the source of the 3000 foot long off-site LNAPL plume in the Semi-Perched Aquifer. The LNAPL samples collected from on- and off-site wells since early 1980s consist of characteristically variable refined products. During its active period, the refinery produced a variety of refined products including gasoline, diesel, and fuel oil. The variability in color and appearance, and therefore age, of the releases is best explained as the result of releases of different types of products that were produced and stored at the Site during the operational history of the refinery, rather than the result of releases from off-site sources. In the May 2000 Addendum to the *Conceptual Design Report*, England & Associates states "The refinery produced petroleum products such as gasoline, diesel and jet fuel over 70 years of operation. Over time, the refinery used and produced a wide range of materials with the potential to adversely affect groundwater". The operational history of the former refinery and the on-site and

Mr. Chris Panaitescu
Golden West Refining Company

- 10 -

July 30, 2013

off-site data collected by the Golden West and its predecessors, corroborates that the Site is the most logical source of the LNAPL plume in the Semi-Perched and Artesia Aquifers.

The current groundwater monitoring program is inadequate in addressing the LNAPL and dissolved phase groundwater plumes in the Semi-Perched and Artesia Aquifers. The proposed modifications in the Report are incomplete and not acceptable to the Regional Board. Furthermore, there are data gaps that require installation of additional wells in Semi-perched and Artesia Aquifers to completely characterize the entire LNAPL and dissolved phase groundwater plumes originating from the former Golden West refinery site.

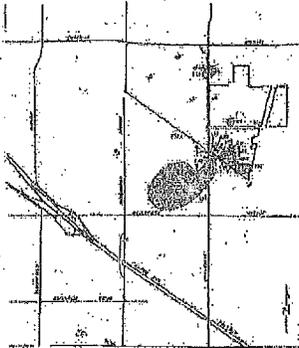
If you have any questions, please contact Mr. Adnan Siddiqui (project manager) at (213) 676-6812 (asiddiqui@waterboards.ca.gov) or Dr. Arthur Heath, Section Chief at (213) 676-6725 (aheath@waterboards.ca.gov).

Sincerely,

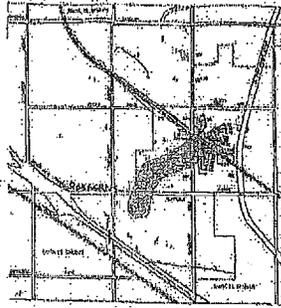

Samuel Unger, PE
Executive Officer

Attachment: Figure 1, 1990-2008 LNAPL Plume Maps in Semi-Perched Aquifer

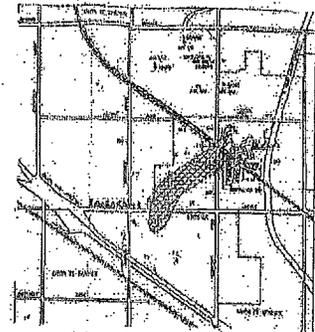
CC: Steve Armann, USEPA (via e-mail)
Katherine Baylor, USEPA (via e-mail)



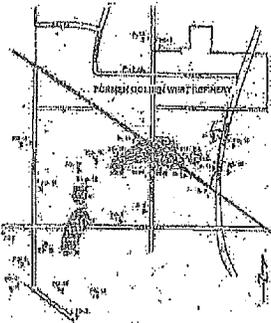
1990 - TRC



1995 - TRC



2000 - GWRC



2006 - GWRC



2008 - GWRC

Figure 1
Extent of LNAPL Plume
in Semi-Perched Aquifer

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9 GOLDEN WEST REFINING COMPANY

10 STATE OF CALIFORNIA

11 STATE WATER RESOURCES CONTROL BOARD

12 In the Matter of California Regional Water
13 Quality Control Board, Los Angeles Region,
14 Order No. R4-2013-0116 to Provide Technical
15 Reports for the Former Golden West Refinery,
16 13539 E. Foster Road, Santa Fe Springs,
17 California Pursuant to Water Code Section
18 13267 (SCP No. 0227A; Site ID No. 2040073)

19 SWRCB/OCC FILE NO. _____

20 **PETITION FOR REVIEW OF REGIONAL
21 BOARD ACTION AND REQUEST FOR
22 STAY**

23 Golden West Refining Company ("Petitioner") submits this petition for review of California
24 Regional Water Quality Control Board – Los Angeles Region ("Regional Board") Order No. R4-
25 2013-0116 ("Order") directing Petitioner to provide technical reports pursuant to California Water
26 Code Section 13267. Pursuant to Water Code Sections 13320 and 13321 and Sections 2050-2068
27 of Title 23 of the California Code of Regulations ("CCRs"), Petitioner requests that the State Board
28 stay, set aside and/or modify the Order.

29 **I. NAME AND ADDRESS OF PETITIONER**

30 Golden West Refining Company
31 Attn: Chris Panaitescu
32 13116 Imperial Highway
33 Santa Fe Springs, CA 90670
34 Telephone: 562-921-3581
35 Email: panaitescu@thriftyoil.com

36 **II. REGIONAL BOARD ACTION BEING PETITIONED**

37 The Regional Board has, *inter alia*, directed Petitioner to take three actions. First, the Order
38 directs Petitioner to submit a work plan to conduct subsurface investigation and install additional



1 groundwater wells to address gaps in available data defining the extent of an on-site and off-site
2 light non-aqueous phase liquid (“LNAPL”) and dissolved phase hydrocarbon plumes in the semi-
3 perched zone and Artesia Aquifer in the vicinity of the former Golden West Refinery, 13539 E.
4 Foster Road, Santa Fe Springs, California (“Site”). The Order requires that the work plan include,
5 but should not be limited to, installation of groundwater wells at on-site and off-site locations to be
6 approved by the Regional Board. Second, the Order directs Petitioner to submit a revised and
7 comprehensive groundwater sampling and monitoring program for the LNAPL and dissolved phase
8 groundwater plumes in the semi-perched zone and Artesia Aquifer both on-site and off-site
9 covering the entire plume. The Order requires that the groundwater sampling and monitoring
10 program address, but not necessarily be limited to, concentrations of contaminants dissolved in
11 groundwater and geochemical parameters to monitor natural attenuation. Third, the Order directs
12 Petitioner to conduct a second round of soil vapor sampling at or near eleven (11) off-site locations
13 previously sampled in August 2013. The stated purpose for repeating the previous soil vapor
14 sampling event is to confirm the previous results and evaluate any threat to human health from
15 vapor intrusion due to the shallow depth of off-site LNAPL. The work plans and soil vapor
16 sampling report are due by September 15, 2014.

17 **III. DATE OF REGIONAL BOARD ACTION**

18 The Regional Board issued the Order to Petitioner on June 26, 2014. The Order states that
19 any person aggrieved by the Order may petition the State Water Resources Control Board to review
20 the Order within the date that is thirty (30) days of the date of the Order (unless the 30th day is a
21 Saturday or Sunday). The date by which a petition for review may be filed is July 28, 2014.

22 **IV. STATEMENT OF REASONS WHY THE REGIONAL BOARD ACTION WAS** 23 **INAPPROPRIATE OR IMPROPER**

24 There is not “substantial evidence” indicating that the entirety of the off-site LNAPL in
25 semi-perched groundwater originated from a release of petroleum at the Site (in fact there is
26 “substantial evidence” to the contrary), and it is not reasonable to require Petitioner to conduct an
27 investigation of a condition caused by third parties. The evidence presented by Petitioner to the
28 Regional Board demonstrates that LNAPL present on semi-perched groundwater approximately

1 3,000 feet from the Site has a fresh appearance, a different chemical composition than LNAPL
2 found at and within 599 feet down gradient of the Site and wi, and did not originate from the Site.

3 The Regional Board has failed to consider substantial evidence presented by Petitioner that most of
4 the off-site LNAPL originated from off-site sources such as subsurface pipelines, underground
5 storage tanks (“USTs”) and other sources, some of which have been identified by Petitioner as
6 potential contributors to off-site LNAPL.

7 **V. PETITIONER IS AGGRIEVED**

8 Petitioner is aggrieved because the Regional Board is requiring Petitioner to: (1) investigate
9 off-site LNAPL and dissolved phase hydrocarbon plumes in the semi-perched groundwater zone
10 and Artesia Aquifer that did not result from a discharge at the Site, but were caused by third parties;
11 and (2) conduct a second round of soil vapor sampling at locations distant from the Site, unrelated
12 to the discharge at the Site, where hydrocarbons were detected in only one (1) of eleven (11)
13 locations at depths of five (5), ten (10) and fifteen (15) below ground surface (“bgs”) in August
14 2013.

15 In addition to the substantial cost of the work required by the Order, the Order provides that
16 pursuant to Water Code Section 13268(a), failure to submit a report required by the Order would
17 make Petitioner guilty of a misdemeanor and could result in administrative civil liability in an
18 amount up to one thousand dollars (\$1,000.00) per day for each day that a technical report is not
19 received after a due date.

20 **VI. REQUESTED STATE BOARD ACTION**

21 **A. Request for Stay**

22 Petitioner requests that the State Board stay the requirement that Petitioner submit work
23 plans, conduct soil vapor sampling and submit a soil vapor sampling report pursuant to Water Code
24 Section 13321 and 23 CCR Section 2053 until the Petition has been adjudicated by the State Board.

25 **B. Request for State Board Order Setting Aside Regional Board Order**

26 Petitioner requests that the State Board set aside the Order pursuant to Water Code Section
27 13320 and 23 CCR Section 2052 (a)(2)(B). Alternatively, Petitioner requests that the State Board
28 direct the Regional Board to require that Petitioner monitor LNAPL in the semi-perched

1 groundwater zone that exists within five hundred (500) feet southwest of the Site.

2 VII. STATEMENT OF POINTS AND AUTHORITIES

3 A. Site History

4 The Site is located in the City of Santa Fe Springs, County of Los Angeles, near crude-oil-
5 producing fields. In 1925, Wilshire Oil Company (“Wilshire”) purchased the Site and built storage
6 facilities. In 1936, Wilshire constructed an oil refinery located east of Carmenita Road and north of
7 East Foster Road, where gasoline and other finished petroleum products were manufactured. In
8 1960, Gulf Oil Corporation (“Gulf”) purchased the Site from Wilshire. Gulf refined crude oil into
9 finished gasoline, heavy fuel oils, diesel fuel and asphalt. In 1983, Petitioner purchased the Site
10 from Gulf. In 1984, Gulf merged with Standard Oil of California which is now known as Chevron
11 Corporation.

12 Petitioner operated a refinery process unit at the Site until February 1992, when crude oil
13 processing operations were suspended. Only fuel transport operations were conducted by Petitioner
14 at the Site from February 1992 to August 1997, when all petroleum storage operations ceased. The
15 265-acre Site was formerly comprised of four former operational units, including: (1) a processing
16 unit area (“PUA”); (2) south tank farm (“STF”); (3) marketing area (“MA”); and (4) west tank farm
17 (“WTF”). Multiple pipelines are or were located beneath Carmenita Road and adjacent to the
18 Atkinson Topeka and Santa Fe Railroad tracks south of the Site.

19 From 1997 to 2006, the aboveground and subsurface structures were demolished, the
20 shallow impacted soil (up to 10-15 feet bgs) were excavated and removed from the Site and the Site
21 was redeveloped into a business park. The redevelopment of the Site was performed under the
22 supervision of the Regional Board and other state and local government agencies. Petitioner has
23 been recognized for completing one the best Brownfields redevelopment projects in the State of
24 California.¹ The redevelopment has resulted in thousands of new jobs and invigorated economic
25 activity in a previously depressed part of the City of Santa Fe Springs.

26
27 ¹ The California Association for Local Economic Development, the International Economic
28 Development Council and the California Redevelopment Association have issued awards of
excellence for the redevelopment project.

1 **B. Cleanup and Abatement Order No. R4-2004-0020**

2 On August 24, 2004, the Regional Board issued Cleanup and Abatement Order No. R4-
3 2004-0020 (“CAO”) directing Petitioner to assess, clean up and abate contamination discharged to
4 the soil and groundwater at the Site. The CAO acknowledges that more than one thousand (1,000)
5 soil borings had been completed and approximately one hundred and sixteen (116) monitoring wells
6 had been installed. Substantial quantities of LNAPL had been removed from the semi-perched
7 groundwater and Artesia Aquifer as of the issuance of the CAO. Petitioner has complied with all
8 requirements of the CAO.

9 **C. Groundwater Monitoring Program Review**

10 1. SGI Groundwater Monitoring Program Review (March 2012)

11 In March 2012, Petitioner’s consultant, The Source Group, Inc. (“SGI”), performed a
12 groundwater monitoring program review. Following is a summary of some of the pertinent findings
13 made by SGI in the Groundwater Monitoring Program Review dated March 2012 (“GMPR”) and
14 submitted to the Regional Board.

15 Two shallow groundwater zones have been identified under the Site. The uppermost water-
16 bearing zone, referred to as the semi-perched zone, is found locally at depths ranging from 20 to 45
17 feet bgs in the Bellflower Formation.

18 The laterally discontinuous semi-perched zone is unconfined and occurs both on and off the
19 Site. The soils in this zone are comprised of clay and silt, with lenticular sand and gravel layers. The
20 sand and gravel layers are water saturated in some areas within and south of the Site and these
21 saturated sediments form the semi-perched zone. Where these lenticular sands and gravel layers are
22 not underlain by less-permeable clay and silt layers, the semi-perched zone is absent.

23 The semi-perched zone exists in the southern part of the Site and extends off-site to the
24 southwest, with a general southwesterly gradient direction. Groundwater elevations and southwestern
25 gradient in the semi-perched zone measured during groundwater monitoring events conducted since the
26 1980s have been consistent, with a groundwater gradient to the southwest and an average hydraulic
27 gradient of approximately 0.005 ft/ft.

28 The semi-perched groundwater zone is locally influenced by the continuous groundwater

1 extraction conducted by the City of Santa Fe Springs to maintain dewatering of the Carmenita Road
2 Underpass. This dewatering-related groundwater extraction conducted since the early 1980s has
3 created a constant depression in groundwater levels centered at the Carmenita/railroad intersection,
4 providing effective LNAPL migration control in the semi-perched groundwater zone.

5 The Artesia Aquifer is found at a depth of approximately 65 to 110 feet bgs under the Site and
6 off-site. The Artesia Aquifer is the first groundwater encountered under most of the Site. In the
7 southern part of the Site and off-site to the southwest, the Artesia Aquifer occurs under the semi-
8 perched zone and in these areas approximately 20-30 feet of unsaturated sediments underlie the low-
9 permeable perching layer that forms the base of the semi-perched zone.

10 The Artesia Aquifer is comprised of fluvial sediments of gravel, fine to coarse sand, and
11 interbedded silt and clay. The lithology of the upper portion of the Artesia Aquifer, where most of the
12 Artesia monitoring wells are completed, is irregular and reflects a complex sequence of interbedded
13 and laterally discontinuous layers of sand, silt, and clay. Vertically, the Artesia Aquifer extends to
14 depths of at least 200 feet and consists of sand and gravel with localized fine grain layers.

15 Groundwater gradient and direction in the Artesia groundwater zone varies throughout the
16 vicinity of the Site with localized mounding. However, in general, the groundwater flow has been
17 reported to move east-northeast and southeast.

18 In 1990-1991, Petitioner conducted a series of extensive groundwater investigations, including
19 lithology investigation on-site and off-site by cone penetrometer testing (CPT) and aquifer testing in
20 both the semi-perched zone and the Artesia Aquifer. The CPT investigation included a 110-location
21 lithology investigation south of the Site. The investigation resulted in confirmation of the occurrence
22 of the semi-perched groundwater in a sand/silty sand unit, underlain by a clay/silty clay perching layer.
23 The lateral extent of that semi-perched zone is limited areally for two principal reasons. First, where
24 the finer-grained deeper unit is not present, there is no longer any support for the overlying perched
25 zone. Second, where the permeable unit hosting the semi-perched layer pinches out between two
26 lower-permeability units, the fluid cannot accumulate in the tighter pore spaces of these less permeable
27 units and the zone disappears.

28 In 1991, aquifer tests were conducted in the semi-perched zone and Artesia Aquifer. The

1 aquifer testing in the semi-perched groundwater zone included the installation of test wells (TW) and
2 observation wells (OW). Testing of the groundwater zone indicated a low calculated hydraulic
3 conductivity of 3.5×10^{-4} cm/s to 1.7×10^{-6} cm/s and apparent heterogeneous contribution of
4 groundwater from sand lenses in overall fine-grained clay or silt layers which are expected to retard
5 fluid migration vertically and laterally.

6 Ongoing remedial efforts at the Site have significantly reduced the occurrence of LNAPL.
7 Monitoring data also indicate that off-site LNAPL is stable and not migrating downgradient.
8 Furthermore, the two on-site and two off-site Artesia Aquifer groundwater monitoring sentinel wells
9 have remained LNAPL-free since their installation. Similarly, the most downgradient wells in the
10 semi-perched groundwater zone (e.g., wells PO-5, PO-9, PO-12 and PO-14), which Petitioner contends
11 are unrelated to the hydrocarbon plume originating at the Site, have remained LNAPL-free since their
12 installation in the early 1990s.

13 Evaluations of hydrocarbon types in LNAPL from on-site and off-site wells include a 1991
14 investigation, a 1995 testing of on-site wells, and repeated observations during groundwater monitoring
15 and 2012 LNAPL testing and hydrocarbon fingerprinting.

16 The 1991 CPT and Hydropunch investigation also reported the distribution and apparent
17 characteristics of the LNAPL present at the Site and at off-site locations. Samples collected from off-
18 site locations, near Rosecrans Avenue and one location along Carmenita Road, appeared to be fresh,
19 unweathered petroleum product. These results contrasted sharply with the more weathered petroleum
20 product samples obtained farther north at the southern boundary of the Site. The degree of weathering
21 strongly suggested there were localized hydrocarbon sources in these areas and off-site sources, not
22 associated with historic releases at the Site, were the source of the off-site unweathered petroleum
23 products. LNAPL samples collected furthest from the Site appeared the freshest.

24 Petitioner's belief that LNAPL in the semi-perched groundwater more than 500 feet south of
25 the Site was caused by off-site sources was confirmed by SGI in February 2012. SGI obtained product
26 samples from a well in the southern edge of the Site (Well STF-16) and from four wells located west of
27 Carmenita Road, in the area between Cambridge Court (well B-13 and well MYTNN) and north and
28 south of Rosecrans (wells B-16 and PO-16). The visual observations of the LNAPL samples indicate

1 that the LNAPL present on the groundwater in the semi-perched groundwater along the southwestern
2 boundary of the Site in well STF-16 is characterized by a nearly opaque, black-colored liquid with a
3 viscosity typical of heavily weathered refined product. In the area between Cambridge Court and south
4 of Rosecrans Avenue, semi-perched groundwater monitoring well B-13 contains an amber product,
5 well MYTNN contains black, weathered product, and wells B-16 and PO-16 contain a lighter-colored
6 LNAPL that is visually distinct from well MYTNN.

7 The five product samples were initially submitted to Zymax Forensics (“Zymax”) in Escondido
8 for analysis of additive chemicals (GMPR, Appendix B). The results of the analysis indicated the
9 absence of Ethylene Dibromide (EDB) in all samples, and the unique presence of two lead compounds
10 (Tetramethyl Lead and Trimethylethyl Lead) in the product from wells B-16 and PO-16 near
11 Rosecrans Avenue. Based on this result and the observation of these two samples as visually distinct
12 from upgradient well MYTNN, the source of the product in B-16 and PO-16 is distinct from
13 upgradient wells.

14 The three remaining upgradient samples (MYTNN, B-13, and STF-16) were further analyzed
15 by Zymax Laboratories and the petroleum gas chromatograms were interpreted by forensic specialists.
16 The fingerprinting analysis reflects the presence in all three wells of severely weathered leaded
17 gasoline and degraded #2 diesel or #2 fuel oil. The report also indicates that the gasoline product in
18 STF-16, at the boundary of the Site, is distinct from samples from wells B-13 and MYTNN, indicating
19 a different source. Based on these fingerprinting results, the LNAPL in the semi-perched wells
20 consists of three types resulting from three separate releases: (1) the product in former STF wells; (2)
21 the product in the area of wells B-13 and MYTNN; and (3) the product in the vicinity of Rosecrans
22 Avenue.

23 The evaluation of the visual observations and laboratory analysis supports the interpretation
24 that the product found in the Cambridge Court/Rosecrans Avenue area in wells B-13, MYTNN, B-16
25 and PO-16 is attributable to non-Site sources.

26 The area surrounding the Site includes multiple commercial and industrial facilities, some of
27 which historically operated gasoline, diesel or waste oil storage tanks and pipelines. In 2011, SGI
28 conducted a review of historical records referenced in Environmental Data Resources (“EDR”) report,

1 and examined files at the City of Santa Fe Springs, City of Norwalk (through the County of Los
2 Angeles records) and the Regional Board. The results of this review are summarized and illustrated on
3 Figure 12 of the GMPR, which presents pipelines and selected facilities with reported petroleum
4 hydrocarbon storage located south and southwest of the Site. Table 3 of the GMPR also lists the
5 corresponding address and findings regarding the potential impact to the subsurface from the facilities
6 south of the Site.

7 Investigations by Petitioner in the 1980s and 1990s included the installation and sampling of
8 groundwater monitoring wells located several thousand feet southwesterly from the Site. The network
9 of wells is within an area encompassing numerous facilities containing petroleum storage tanks, many
10 of which have been documented to have leaked. Due to the well-documented groundwater monitoring
11 conducted by Petitioner since the late 1980s, most reports associated with underground storage tank
12 (“UST”) removals at these facilities include statements that attributed to Petitioner responsibility for
13 petroleum hydrocarbons found in groundwater without evidence supporting such attributions. Such
14 interpretations wrongly resulted in the assignment of responsibility for potential groundwater
15 contamination to Petitioner. Responsible government agencies, including the Regional Board, have
16 not attempted to determine actual responsibility for off-site groundwater contamination. These
17 unilateral, self-serving attributions of contamination to historic operations at the Site apparently
18 perpetuated the general belief that Petitioner is responsible for all local groundwater contamination.
19 The result was that requirements for on-site specific investigation or remediation at these off-site UST
20 locations were limited. Additionally, due to the long history of petroleum storage in the area, the
21 operation of USTs at these off-site small industrial sites included single-wall USTs with limited
22 monitoring, increasing the potential for leaks.

23 In particular, reports on the following facilities indicate impact to the subsurface or
24 undocumented potential sources within an area previously assigned to a plume originating from the
25 Site:

- 26 • Former ChemCentral Corporation, 13900 Carmenita Road, Santa Fe Springs, located
27 immediately south of the STF and railroad. At this site, soil contamination under former
28 gasoline and diesel USTs in the eastern part of the site may not have been fully characterized in

1 an area without any semi-perched groundwater; the western part of the site contained eighty-
2 eight USTs and three ASTs in an area of semi-perched groundwater. Some of these USTs
3 contained chlorinated VOCs and also compounds such as toluene that are common components
4 of gasoline and diesel. Subsurface contamination under these USTs has been documented but
5 not fully delineated, and an SVE system operated at the site for several years;

- 6 • Principal Capital Management, 13827 Carmenita Road, Santa Fe Springs. Reports indicate the
7 presence of hydrocarbons in soil under former USTs and the presence of hydrocarbons in
8 groundwater;
- 9 • Aggreko Corp, 13230 Cambridge Road. Reports indicate the presence of a former waste oil
10 UST, but no specific investigation information. Semi-perched well B-13 at the southern edge
11 of the site contains LNAPL;
- 12 • Bear State Air Conditioning Services, 13139 Rosecrans Avenue, Santa Fe Springs.
13 Contamination from USTs was documented to extend vertically to the semi-perched
14 groundwater. After continuing the vertical excavation of contaminated soil, a free-product
15 sample from the excavation and a sample from a well north of the Bear State site were
16 collected and analyzed. The laboratory reported that the samples consisted of a product similar
17 to aviation gas, but hydrocarbons were noted to contain high concentrations of aromatic
18 compounds. SGI noted that the presence of high concentrations of aromatics in the LNAPL
19 sample precludes the likelihood that the product migrated from the Site, located more than
20 2,000 feet from this property. Despite evidence of contamination extending to groundwater
21 and the presence of aromatics, the site was closed;
- 22 • Century Refrigeration, 14010 Maryton Avenue, Santa Fe Springs. At this site, a gasoline UST
23 was reported, some soil samples were collected and the site was closed;
- 24 • Certified Fasteners, 14107 Dinard Street/14106 Maryton Avenue, Santa Fe Springs. A UST
25 was removed on October 12, 1988. Three soil samples were taken, two from the bottom of the
26 UST and one 2 feet bgs below the dispenser. The highest TPH concentration was 5,190 mg/kg
27 (SP-1) under the west end of the UST excavation. Further soil sampling around the walls of the
28 dispenser excavation at 6 and 7 feet bgs encountered detections below 100 mg/kg. Closure was

1 granted 8 years later in 1996. No groundwater was encountered during UST excavation to 12
2 bgs.

3 In addition to the potential source areas listed on Table 3 and in Appendix A of the GMPR, petroleum
4 product pipelines are known to exist under Carmenita Road, Rosecrans Avenue, and Shoemaker
5 Avenue, providing additional, unexplored or unreported sources of potential contamination (GMPR,
6 Figure 12).

7 Many of the wells installed by Petitioner as part of early investigations associated with the Site
8 were installed prior to a wider understanding of typical migration of LNAPL and dissolved plumes
9 from petroleum release sites. These early investigations were apparently developed under the premise
10 that LNAPL and dissolved phase petroleum plumes had likely traveled miles away and downgradient
11 from the Site. For example, the installation of well PO-7, located 7,400 feet (1.4 miles) southwest of
12 the Site through an industrial neighborhood, reflects the limited understanding of hydrocarbon
13 contamination behavior in the 1980s. As reported later, for example, in 1998 as part of the study
14 known as the Lawrence Livermore Study (Rice et al., CA LUFT Historical Case Analysis),
15 groundwater-contaminated benzene plumes at ninety percent (90%) of the studied 217 sites extended
16 to 255 feet or less, and the median plume length was 101 feet. These reported typical dissolved plume
17 lengths are in stark contrast with the 1980s investigation pattern by Petitioner which included the
18 installation and testing of eight wells located more than 2,000 feet from the Site. The net result of the
19 installation and sampling of groundwater monitoring wells thousands of feet from the Site was that
20 Petitioner has been monitoring the off-site occurrence of hydrocarbons that originated from a multitude
21 of potential sources, all of which have not been fully delineated.

22 As mentioned above, the presence of the semi-perched zone at the Site is essentially limited to
23 the southeast boundary of the Site. The primary and secondary sources of contamination have been
24 removed, and remediation (including barrier wells, automated LNAPL removal systems, hand bailing,
25 vapor extraction, and Carmenita sump product and groundwater extraction) is actively reducing the
26 remaining hydrocarbon mass in source zone soils and groundwater and restricting off-site migration of
27 LNAPL. These remediation efforts have been reported under a fixed schedule to the RWQCB since
28 the 1990s without notices of non-compliance from the RWQCB.

1 The observation of potential sources and characteristics of the reported subsurface
2 contamination south and southwest of the Site indicates that the extent of downgradient contamination
3 in groundwater, reported previously as a large single plume originating from the Site, did not take into
4 account the impact to groundwater from off-site sources south of the Site. The semi-perched zone has
5 been shown to consist of mostly fine-grain material and discontinuous layers. This setting is not
6 conducive to lateral migration of LNAPL hundreds to thousands of feet.

7 Multiple known or suspected hydrocarbon sources (e.g., leaking USTs and/or pipelines) have
8 been documented to exist downgradient from the Site, located from several hundred to two thousand
9 feet south and southwest of the Site. As discussed above, the contribution of these off-site hydrocarbon
10 releases has resulted in the gross over-estimation of the actual downgradient, lateral extent of the
11 LNAPL extending from the Site. Detailed investigations in 1991 and recent fingerprinting indicate
12 multiple off-site sources of LNAPL southwest of the Site.

13 As illustrated on Figure 11 of the GMPR, the LNAPL found in the semi-perched zone south of
14 the Site represents three distinct plumes:

- 15 • The on- and off-site STF plume, as found along the STF's southern edge, where Petitioner is
16 actively conducting groundwater remediation on multiple wells, including barrier wells and
17 SVE.
- 18 • An off-site area of LNAPL extending from Cambridge Court near well B-13 to Maryton
19 Avenue near well MYTNN. This product is distinct from the STF plume in fingerprinting
20 characteristics and did not originate at the STF. It also did not originate at the MA, which does
21 not have a semi-perched zone. Moreover, well B-10, located at the northern edge of the semi-
22 perched hydrogeologic unit, does not contain LNAPL. It is unlikely that the degraded
23 gasoline/diesel mixture was released from the former waste oil tank located at 13230
24 Cambridge Court. Although undefined, it is possible that the source of the Cambridge/Maryton
25 LNAPL is the network of pipelines in the vicinity of the Carmenita/railroad intersection area,
26 possibly with contribution from the 13827 Carmenita former diesel USTs and the ChemCentral
27 facility at 13900 Carmenita Road.
- 28 • An off-site area of LNAPL with distinct fingerprint characteristics in the area of the

1 Rosecrans/Maryton/Dinard intersection. Gasoline releases to the subsurface were documented
2 at the 13139 Rosecrans Avenue site, and two facilities just north of this site, which also
3 contained gasoline USTs, had only limited sampling conducted. This LNAPL is found at a
4 lateral distance of more than 2,000 feet from the Site, a distance exceeding any expected
5 migration of LNAPL over such a distance in a fine grain, shallow zone of discontinuous
6 lithology.

7 Groundwater under the Site and off-site has been monitored by Petitioner on a semi-annual basis
8 for more than thirty (30) years. The extent of LNAPL in the semi-perched zone wells was most
9 recently documented in a Semi-Annual Groundwater Monitoring Report for January through June
10 2014 (GWRC, June 23, 2014).

11 2. Regional Board Meeting (June 2012)

12 On June 12, 2012, representatives of the Regional Board and Petitioner met to discuss
13 requirements for the Site. Petitioner presented forensic evidence that the LNAPL originating from the
14 Site does not extend more than hundreds of feet downgradient (southwest) from the Site. Petitioner
15 disputed that LNAPL originating at the Site extends approximately 3,000 feet southwest from the Site.
16 The Regional Board issued a written report summarizing the discussion of the meeting.

17 3. Regional Board Response (July 2013)

18 On July 30, 2013, the Regional Board issued a written response to the GMPR Report dated
19 March 12, 2013. The Regional Board continued to maintain that the LNAPL in the semi-perched
20 groundwater extends 3,000 feet southwest of the Site beyond Rosecrans Blvd. The Regional Board
21 noted that Petitioner monitors 133 groundwater wells and samples 11 Artesia Aquifer wells semi-
22 annually for total petroleum hydrocarbons, oxygenates and volatile organic compounds semi-annually.
23 The Regional Board stated that the continuing presence of LNAPL and very high concentrations of
24 dissolved phase after several decades suggest that even a potentially stable plume may require active
25 cleanup inasmuch as the California Department of Public Health maximum contaminant levels
26 ("MCLs") for benzene and MTBE are 1 microgram per liter ($\mu\text{g/L}$) and 13 $\mu\text{g/L}$, respectively. The
27 Regional Board concluded that: (a) the results of chemical fingerprinting, combined with the
28 operational and regulatory history of the Site, support the conclusion that the Site is the source of a

1 3,000-foot long off-site LNAPL plume in the semi-perched groundwater; (b) the current groundwater
2 monitoring program is inadequate in addressing LNAPL and a dissolved phase groundwater plume in
3 the semi-perched groundwater and Artesia Aquifer; and (c) the modifications proposed by SGI are
4 incomplete and not acceptable.

5 4. Petitioner Response (September/October 2013)

6 On September 12, 2013, Petitioner issued a letter report responding to the Regional Board's
7 letter dated July 30, 2013, and SGI provided specific response to twenty-eight (28) comments made by
8 the Regional Board. In the September 2012 letters, Petitioner and SGI provided additional technical
9 information that strongly supports Petitioner's position that the distant, off-site LNAPL did not
10 originate from the Site, but likely originated from multiple off-site sources. The RWQCB did not
11 provide technical responses to these 28 comments. Petitioner continues to disagree with the Regional
12 Board's assertion that a 3,000-foot LNAPL plume in semi-perched groundwater originated from the
13 Site.

14 On October 7, 2013, SGI issued a Revised GMPR. Figure 1 indicates those Artesia Aquifer
15 wells that Petitioner proposes to be included in a revised groundwater monitoring program. Figure 2
16 indicates those Semi-Perched wells that Petitioner proposes to be included in a revised groundwater
17 monitoring program. SGI proposed to implement the monitoring program in Q1 2014.

18 The Regional Board did not respond to specifics of the September 12, 2013 letter or the
19 Revised GMPR prior to issuing the Order on June 26, 2014.

20 **D. Soil Vapor Assessment**

21 On June 21, 2012, the Regional Board issued a requirement for soil vapor assessment
22 pursuant to the CAO.

23 On or about August 15, 2012, Petitioner submitted an Off-Site Soil Vapor Workpan
24 prepared by SGI. SGI reiterated its conclusion that the source of the LNAPL in semi-perched
25 groundwater resulted from off-site releases of fuel for which Petitioner is not responsible. SGI
26 proposed to collect soil gas samples from five (5) locations in the residential area southwest of the
27 WTF and one (1) on-site location.

28 On October 12, 2012, the Regional Board issued a letter conditionally approving portions of

1 the Workplan, but directing Petitioner to submit a supplemental work plan to assess the nature and
2 extent of hydrocarbon soil vapor in the residential neighborhood approximately 2,600 feet
3 southwest of the Site near well PO-16 located on the southwest corner of Fidel Avenue and Liggett
4 Street in the City of Norwalk.

5 On January 13, 2013, Petitioner submitted to the Regional Board a transmittal letter and
6 Vapor Survey Work Plan prepared by SGI dated January 13, 2013. The Work Plan proposed to
7 collect soil gas samples from six (6) locations in the residential area near well PO-16.

8 On June 14, 2013, the Regional Board issued a letter approving the Work Plan, but requiring
9 collection of soil gas samples from an additional nine (9) locations from 5-foot, 10-foot and 15-foot
10 depths.

11 On July 9, 2013, SGI submitted a Revised Soil Vapor Investigation Work Plan. The Work
12 Plan proposed to collect soil gas samples from eleven (11) locations at a depth of five (5) feet bgs.
13 Justifications for the proposed sampling locations are set forth in Table 1 of the Revised Work Plan.

14 On July 23, 2013, the Regional Board issued a letter approving the Revised Work Plan, but
15 requiring collection of soil gas samples from 5-foot, 10-foot and 15-foot depths.

16 On August 20-21, 2013, SGI installed temporary soil vapor probes and collected soil gas
17 samples from eleven (11) locations at 5-foot, 10-foot and 15-foot depths beneath streets and
18 sidewalks in a widespread area within the City of Santa Fe Springs and City of Norwalk. RWQCB
19 staff observed and approved the field sampling activities. Benzene was detected in only one (1)
20 location (RF-7) located in a commercial, non-residential area along Dinard Avenue in the City of
21 Santa Fe Springs in samples collected from 5-foot, 10-foot and 15-foot depths at concentrations of
22 .72 µg/L, .91 µg/L and 1.14 µg/L, respectively. The concentration of oxygen in the 5-foot sample
23 was 12.5 percent (%) suggesting a condition favorable to natural attenuation of hydrocarbons in the
24 subsurface. SGI used the Johnson and Edinger model for subsurface vapor intrusion to estimate
25 potential human health risk due to benzene and ethylbenzene detected in soil vapor probe location
26 RF-7. The excess cancer risk was calculated to be equal to or slightly greater than one-in-one
27 million. SGI concluded that benzene and ethylbenzene concentrations measured at location RF-7
28 do not pose a significant human health risk to indoor commercial/industrial worker receptors. The

1 results of the soil vapor survey were reported in a Soil Vapor Survey Report prepared by SGI dated
2 September 18, 2013.

3 The Order requires that Petitioner conduct a second round of soil vapor sampling at or near
4 the eleven (11) locations previously sampled in August 2013. The Order states that the second
5 round of sampling is required to confirm the results of previous sampling to evaluate any threat to
6 human health from vapor intrusion. The Regional Board has not provided any reason why it would
7 expect a second round of sampling to produce results different from those that previously
8 demonstrated the absence of any risk to human health from vapor intrusion. Contrary to the finding
9 in paragraph 15 of the Order, Petitioner contends the burden, including cost estimated to be
10 \$20,000, does not bear a reasonable relationship to the need for the work.

11 **E. Legal Standard**

12 Water Code Section 13267(b)(1) provides: "In conducting an investigation specified in
13 subsection (a), the regional board may require that any person who has discharged, discharges, or is
14 suspected of having discharged or discharging,...shall furnish, under penalty of perjury, technical or
15 monitoring program reports which the regional board requires. The burden, including costs, of
16 these reports shall bear a reasonable relationship to the need for the report and the benefits to be
17 obtained from the reports. In requiring those reports, the regional board shall provide the person
18 with a written explanation with regard to the need for the reports, and shall identify the evidence
19 that supports requiring that person to provide the reports. Water Code Section 13267(e) provides:
20 "As used in this section, "evidence" means any relevant evidence on which responsible persons are
21 accustomed to rely in the conduct of serious affairs, regardless of the existence of any common law
22 or statutory rule which might make improper the admission of the evidence over objection in a civil
23 action."

24 **VIII. THE PETITION HAS BEEN SENT TO THE REGIONAL BOARD AND OTHER**
25 **INTERESTED PARTIES**

26 A copy of this Petition has been sent by email to the following interested parties:

- 27
- Samuel Unger, PE, Executive Officer (sunger@waterboards.ca.gov)
 - Arthur Heath, Section Chief (aheath@waterboards.ca.gov)
- 28

- Adnan Siddiqui, Project Manager (asiddiqui@waterboards.ca.gov)
- Bradley W. Rogers, PE, Chevron Environmental Management Company
(brodgers@chevron.com)

IX. THE ISSUES RAISED IN THE PETITION WERE PRESENTED TO THE REGIONAL BOARD BEFORE THE REGIONAL BOARD ACTED

On or about September 19, 2011, the Regional Board requested that Petitioner submit a groundwater monitoring program review².

On March 12, 2012, SGI submitted a GMPR to the Regional Board.³ The GMPR presents a summary of previous remediation and groundwater monitoring data, provides an evaluation of the current network of monitoring wells and monitoring program, identifies documented and potential off-site sources of LNAPL and presents recommendations for future groundwater monitoring.

On June 12, 2012, representatives of Petitioner and SGI met with Regional Board staff to discuss remaining work to be performed under the CAO. The Regional Board expressed the need for, *inter alia*, off-site soil vapor data, particularly in the vicinity of a 2,600-foot plume in the semi-perched groundwater zone. Petitioner argued it is not responsible for the entirety of the LNAPL present on shallow groundwater in a residential neighborhood south of Rosecrans Avenue. Regional Board staff acknowledged that they had not reviewed the GMPR or evaluated potential off-site sources of LNAPL.⁴

On June 21, 2012, the Regional Board issued Requirements for Soil Vapor Assessment Pursuant to CAO.⁵

In August 2012, SGI issued an Off-Site Soil Vapor Survey Workplan.⁶

² A copy of the Regional Board email dated September 19, 2011 is submitted as Exhibit "1."

³ A copy of the GMPR dated March 12, 2012 is submitted as Exhibit "2."

⁴ A copy of a meeting summary issued by Regional Board staff on June 12, 2012 is submitted as Exhibit "3."

⁵ A copy of the Regional Board letter dated June 21, 2012 is submitted as Exhibit "4."

⁶ A copy of SGI's Work Plan dated August 2012 is submitted as Exhibit "5."

1 On October 12, 2012, the Regional Board issued a letter conditionally approving the
2 Workplan, but directing Petitioner to submit a supplemental work plan for a soil vapor survey
3 addressing the nature and extent of a soil vapor plume and vapor intrusion risks in the residential
4 neighborhood southwest of the Site in the City of Norwalk nearby well PO-16.⁷

5 On January 21, 2013, Petitioner submitted a transmittal letter and a Vapor Survey Work
6 Plan prepared by SGI.⁸

7 On June 14, 2013, the Regional Board issued a letter in response to SGI's Vapor Survey
8 Work Plan.⁹

9 On July 9, 2013, SGI issued a Revised Soil Vapor Investigation Work Plan.¹⁰

10 On July 23, 2013, the Regional Board issued a letter conditionally approving the Revised
11 Work Plan.¹¹

12 On July 30, 2013, the Regional Board issued a letter in response to SGI's Ground Water
13 Monitoring Program Review dated March 2013.¹²

14 On September 12, 2013, Petitioner issued a letter in response to the Regional Board's letter
15 dated July 30, 2013, and submitted Comments to: Response to Groundwater Program Review
16 prepared by SGI dated September 6, 2013.¹³

17 On September 18, 2013, SGI issued a Soil Vapor Survey Report documenting the soil gas
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19

20 ⁷ A copy of the Regional Board letter dated October 12, 2012 is attached as Exhibit "6."

21 ⁸ A copy of Petitioner's letter and SGI's Vapor Survey Work Plan dated January 21, 2013
22 are submitted as Exhibit "7."

23 ⁹ A copy of the Regional Board letter dated June 14, 2013 is submitted as Exhibit "8."

24 ¹⁰ A copy of SGI's Revised Soil Vapor Investigation Work Plan dated July 9, 2013 is
25 submitted as Exhibit "9."

26 ¹¹ A copy of the Regional Board letter dated July 23, 2013 is submitted as Exhibit "10."

27 ¹² A copy of the Regional Board letter dated July 30, 2013 is submitted as Exhibit "11."

28 ¹³ A copy of Petitioner's letter dated September 12, 2013 and SGI's Comments dated
September 6, 2013 are submitted as Exhibit "12."

1 testing witnessed by the RWQCB staff.¹⁴

2 On October 7, 2013, SGI issued a Revised Groundwater Monitoring Review.¹⁵

3 On June 23, 2014, Petitioner issued a Semi-Annual Groundwater Monitoring Report (January
4 – July 2014).¹⁶

5 On June 26, 2014, the Regional Board issued Order No. R4-2013-0116.¹⁷

6 **X. CONCLUSION**

7 For the foregoing reasons, Petitioner respectfully requests that the State Board grant a stay
8 and set aside the Regional Board action. Petitioner has faithfully complied with Regional Board
9 requirements under the CAO. Petitioner's willingness to cooperate should not be the basis for the
10 Regional Board to require investigation, evaluation and remediation of off-site contamination in the
11 vicinity of but not originating from the Site. Instead, the Regional Board should identify and issue
12 directives to third parties that caused the off-site LNAPL condition.

13
14 DATED: July 25, 2014

LAW OFFICES OF MARK B. GILMARTIN

15
16
17 By: 
18 Mark B. Gilmartin
19 Attorney for Petitioner
20 Golden West Refining Company

21
22 _____
23 ¹⁴ A copy of SGI's Soil Vapor Survey Report dated September 18, 2013 is submitted as
Exhibit "13."

24 ¹⁵ A copy of SGI's Revised Groundwater Monitoring Program Review dated October 7,
2013 is submitted as Exhibit "14."

25 ¹⁶ A copy of a Semi-Annual Groundwater Monitoring Report dated June 23, 2014 is
26 submitted as Exhibit "15."

27 ¹⁷ A copy of Regional Board Order No. R4-2013-0116 dated June 26, 2014 is submitted as
28 Exhibit "16."

DECLARATION OF MARK B. GILMARTIN

I, Mark B. Gilmartin, declare and state as follows:

1. I am an attorney licensed to practice law in the State of California. I am counsel for Petitioner Golden West Refining Company (“Petitioner”) with regard to Order No. R4-2013-0116 (“Order”) issued by the Regional Water Quality Control Board, Los Angeles Region (“Regional Board”) pursuant to Water Code Section 13267 requiring technical reports for the former Golden West Refinery, 13539 E. Foster Road, Santa Fe Springs, CA (“Site”).

2. I make this declaration in support of Petitioner’s request for stay of the Regional Board’s Order directing Petitioner to: (a) submit a work plan to conduct subsurface investigation and install additional groundwater wells to address gaps in available data in defining the extent of the on-site and off-site light non-aqueous phase liquid (“LNAPL”) and dissolved phase plumes in the semi-perched groundwater and Artesia Aquifer; (b) submit a revised and comprehensive groundwater sampling and monitoring program for LNAPL and a dissolved phase groundwater plume in the semi-perched groundwater and Artesia Aquifer, both on-site and off-site covering the entire plume, addressing concentrations of contaminants dissolved in groundwater and geochemical parameters to monitor natural attenuation; and (c) conduct a second round of soil vapor samples to evaluate potential for vapor intrusion at eleven off-site locations southwest of the Site.

3. The facts set forth herein are personally known to me. If called as a witness, I could and would testify thereto under oath.

4. There will be substantial harm to Petitioner if a stay is not granted. There is substantial evidence that Petitioner did not cause a 3,000-foot plume of LNAPL existing at approximately twenty (20) feet below ground surface (“bgs”) on the shallow semi-perched groundwater southwest of the Site in a residential/commercial area in the City of Santa Fe Springs and City of Norwalk. Petitioner will incur substantial costs and potential liability if it is required to conduct a second soil vapor survey and evaluate and report the results of the soil vapor survey. The estimated cost to conduct a second round of soil gas sampling and reporting is \$20,000. The estimated cost to install and monitor an unspecified number of groundwater monitoring wells is unknown.

DECLARATION OF LESLIE SCHENCK REEVE

I, Leslie Schenck Reeve, declare and state the following:

1. I am Vice President and Associate General Counsel for Univar USA Inc. (“Univar”), the petitioner. I have personal knowledge of the matters stated herein and could testify to these facts if called upon to testify as a witness.
2. I make this declaration in support of Univar’s request for a stay of the Cleanup and Abatement Order No. R4-2014-0130 (“Order”) issued by the Regional Water Quality Control Board, Los Angeles Region (“Regional Board”) dated September 17, 2014. The Order pertains to the former Chemcentral facility located at 13900 Carmenita Road, Santa Fe Springs California (“Univar Property”).
3. Univar will suffer substantial and irreparable harm if the Order is not stayed because it will be forced to either comply with an unlawful order at significant cost or face substantial penalties for non-compliance.
4. If the stay is granted, there will be no substantial harm to the public interest or other interested persons because the Regional Board has already stated that two viable parties, Golden West Refining Company and Chevron U.S.A., Inc., are responsible for remediating the light non-aqueous phase liquid (“LNAPL”) migrating from the Golden West Refinery at 13539 Foster Road, Santa Fe Springs California (“Golden West Facility”) onto the Univar Property.
5. The Order raises substantial questions of fact and law because the Regional Board is requiring Univar to investigate and abate LNAPL that was not discharged from the Univar Property. The Regional Board has provided no substantial evidence or legal authority to support a finding that Univar is liable for the LNAPL originating from the Golden West Facility and migrating onto the Univar Property.

I declare, under penalty of perjury under the laws of the State of California, that the foregoing is true and correct.

Executed this 17th day of October, 2014 at Portland, Oregon.



Leslie Schenck Reeve