January 18, 2013

Ms. Candace Salway
Plains Exploration & Production Company
5640 South Fairfax Avenue
Los Angeles, CA 90056

RESPONSE TO COMMENTS AND CHANGE OF BOARD MEETING LOCATION - TENTATIVE WASTE DISCHARGE REQUIREMENTS - LAND TREATMENT UNITS, INGLEWOOD OIL FIELD, LOS ANGELES, CA (FILE NO. 00-117, ORDER NO. 01-054, CI-8266, WDID NO. 4B191396002)

Dear Ms. Salway:

Reference is made to a letter from this Regional Water Quality Control Board (Regional Board), dated December 10, 2012, transmitting tentative Waste Discharge Requirements (WDRs) for the operation of land treatment units (LTUs) by the Plains Exploration & Production Company (Discharger) at the Inglewood Oil Field in Los Angeles, California (tentative Order). The deadline for submitting comments on the tentative Order was January 14, 2014. The Discharger was the only party to submit comments on the tentative Order by the deadline. Regional Board staff has considered all comments submitted, made appropriate revisions to the tentative Order accordingly, and prepared the attached Response to Comments. A redline version that includes all revisions to the tentative Order since it was released on December 15, 2011, as well as copies of all comments received, are also attached to this letter. For you convenience, these documents are also posted on the Regional Board website at *http://www.waterboards.ca.gov/losangeles/board_decisions/tentative_orders/.*

As has been announced previously, the tentative Order is scheduled to be considered by the Regional Board at a public hearing on February 7, 2013, at 9:00 AM. However, the location where the WDRs will be considered has changed. Rather than the Metropolitan Water District of Southern California, 700 North Alameda Street, Board Room, in Los Angeles, California, the Regional Board meeting will occur at the City of Culver City Council Chambers, 9770 Culver Boulevard. Culver City, California. The meeting time is unchanged and will begin at 9:00am on February 7, 2013.

Should you have any questions, please contact Dr. Enrique Casas at (213) 620-2299 (ecasas@waterboards.ca.gov).

Sincerely,

Wen Yang, Ph.D., P.G., C.E.G.
Land Disposal Unit Chief

Attachments

1) Comments received,
2) Responses to comments received
3) Revised tentative WDRs in redline format

cc: MAILING LIST

Mailing List
(VIA EMAIL ONLY)

Ms. Leslie Graves, State Water Resources Control Board
Honorable Mark Ridley-Thomas, County of Los Angeles Supervisor
Ms. Cindy Chen, County of Los Angeles, Department of Public Health
Mr. Mark De Bie, Waste Permitting, Compliance and Mitigation Division, CalRecycle
Mr. Reed Sato, Department of Toxic Substance Control
Mr. Ed Pert, Department of Fish and Game
Mr. Mark Stuart, Chief, Department of Water Resources, Southern District
Mr. Terry Oda, U.S. Environmental Protection Agency
Ms. Rena Kambara, County of Los Angeles Regional Planning
Mr. Paul Ferrazzi, City of Culver City
Mr. Nabil Abu-Ghazaleh, West Los Angeles College
Mr. Glenn Striegler, Los Angeles Unified School District
Mr. Scott Zeidman, Culver City Unified School District
Mr. Jeff Dritley, Vickers Family Trust
Ms. Liz Gosnell, Cone Fee Family Trust
Mr. Ian Cousineau, Raintree Community Home Owners Association
Mr. Gary Gless, Windsor Hills Home Owners Association
Mr. Jon Melvin, Blair Hills Home Owners Association
Ms. Catherine Cottles, United Home Owners Association (View Park)
Ms. Ronda Jones, Baldwin Hills Estates Home Owners Association
Mr. John Kuechle, Culver Crest Neighborhood Association
Ms. Carmen Spiva, Ladera Heights Civic Association
Mr. George Mallory, Lewis Homes
Ms. Irma Munoz, Baldwin Vista
Ms. Toni Tabor, Windsor Hills Block Club
Ms. Gwendolyn Flynn, Community Health Councils
Mr. David McNeill, Baldwin Hills Conservancy
Mr. Robert Garcia, The City Project
Ms. Lark Galloway-Gilliam, Community Health Councils, Inc.
Ms. Lisa Paillet, Plains Exploration & Production Company
Mr. Daniel Tormey, Cardno Entrix

PXP

January 7, 2013

Mr. Enrique Casas
California Regional Water Quality Control Board, Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

Re: **Comments on Amended Waste Discharge Requirements for Land Treatment Units**
File No. 00-117
Plains Exploration & Production Company
Inglewood Oil Field

Dear Mr. Casas:

We have reviewed the Amended Waste Discharge Requirements for the Inglewood Oil Field Land Treatment Units, and have the following comments. Our suggested modifications are shown in **bold** below.

Page	Paragraph Number	Comment
2	3	"and low levels of heavy metals and related waste constituents, **all of which were below relevant regulatory action levels".** This addition provides perspective on the cited results.
3	13	"disposed of at an onsite **water** treatment facility....permitted to re-inject **produced water** pursuant...." The water is not a wastewater, but is beneficially reused to enhance oil recovery and to counteract subsidence.
7	A.3	**"Oxygenation** of soils during the operation of...." The weathered crude oil contamination is relatively non-volatile and does not aerate. Rather, the land treatment units employ oxygenation of the soils to enhance natural biodegradation to decontaminate the soil.
7	6.a.i.	For consistency with the other standards, we request the sentence to read "For petroleum hydrocarbons, the threshold concentration is **an average** TPH concentration of less than ...."
8	6.a.ii.B.	Please delete PCBs as there are no uses of PCBs at the site, and no evidence of PCB spills or releases at the site. Additionally, the revised NPDES permit will require sampling of PCBs for a period of 5 years to confirm that they are not present. We do not expect to have any detections. If the requirement is kept in this permit then it would be double sampling for a constituent that is not expected to be present. If PCBs are detected in the NPDES sampling, then that would provide the Board with a reason to update this permit and include.

8	6.b.i.	For consistency with the other standards, we request the sentence to read " **An average** TPH concentration from ...."
8	6.b.ii.B.	Please delete PCBs as there are no uses of PCBs at the site, and no evidence of PCB spills or releases at the site. Additionally, the revised NPDES permit will require sampling of PCBs for a period of 5 years to confirm that they are not present. We do not expect to have any detections. If the requirement is kept in this permit then it would be double sampling for a constituent that is not expected to be present. If PCBs are detected in the NPDES sampling, then that would provide the Board with a reason to update this permit and include.

Monitoring and Reporting Program

Page	Paragraph Number	Comment
T-7 and T-8	4.a.	Nitrate, nitrite, ammonia, ortho-phosphate, chloride, sodium, sulfate, boron, electrical conductivity and chemical oxygen demand should be removed from the Constituent List since these are more appropriate for the unsaturated zone monitoring testing for breakthrough. Groundwater monitoring for these compounds would be triggered by a relevant detection in the unsaturated zone monitoring.
T-8	4.b.i.	Nitrate, ammonia and ortho-phosphate should be removed from the Constituent List since these are more appropriate for the unsaturated zone monitoring and not the groundwater well monitoring until triggered. See comment on page T-7.
T-9	4.b.ii.	Chloride, sodium, sulfate, nitrite, boron, electrical conductivity, COD should be removed from the Constituent List since these are more appropriate for the unsaturated zone monitoring and not the groundwater well monitoring until triggered. See comment on page T-7.

Thank you for the opportunity to comment on the Draft Amended WDRs. Please contact me at (323) 298-2266 if you have any questions.

Sincerely,

Candace L. Salway
EH&S Manager

Response to Comments

Commenter (Date submitted)	Summary of Comments	Response /Action
Plains Exploration and Production Company - Discharger (1/7/2013)	(1) Tentative Order, Finding No. 3 The Discharger requests to add clarifying language to the finding: "…and low levels of heavy metals and related waste constituents, **all of which were below relevant regulatory action levels."**	Regional Board staff agrees with the comment. The tentative Order was modified accordingly.
	(2) Tentative Order, Finding No. 13 The Discharger requests that the language be revised to describe wastewater produced at the Oil Field in the jargon of oil production, as follows: "Drainage water from within the LTUs is collected and disposed of at an onsite ~~wastewater~~ **water** treatment facility and is re-injected into the oil producing zones of the Oil Field after treatment. The Discharger is permitted to re-inject ~~wastewater~~ **produced water** pursuant to Industrial Waste Disposal Permit No. 357272 issued by the County of Los Angeles Department of Public Works.	Regional Board staff accepts the proposed language as the intent of the Finding is unchanged. The tentative Order was modified accordingly.
	(3) Tentative Order, Specification No. A.3 The Discharger suggests clarifying language. Replace the term "Aeration of soils" with "Oxygenation of soils."	Regional Board staff accepts the proposed language. The tentative Order was modified accordingly.
	(4) Tentative Order, Specification Nos. A.6.a.i and A.6.b.i The Discharger requests that the threshold concentration for petroleum hydrocarbons for onsite reuse and or offsite disposal is based on **average** results of waste characterization testing in order to be consistent with results for other contaminants of concern.	Regional Board staff concurs with the proposed language as an average result is more representative of soils that have been homogenized through repeated disking as part of remediation activities in a land treatment unit. The tentative Order was modified accordingly.
	(5) Tentative Order, Specification Nos. A.6.a.ii.B and A.6.b.ii.B The Discharger requests that polychlorinated biphenyls (PCBs) be eliminated from the soils characterization testing given that PCBs have not been identified as a contaminant of concern at the Oil Field.	Regional Board staff concurs with the proposed deletion because any PCB contamination at the Oil Field would likely first be identified in surface water quality monitoring associated with the Oil Field National Pollutant Discharge Elimination System (NPDES) permit, at which time the Executive Officer could add the constituent to the soils characterization for LTU operations. The tentative Order was modified accordingly.

Response to Comments

Commenter (Date submitted)	Summary of Comments	Response /Action
Plains Exploration and Production Company - Discharger (1/7/2013)	(6) Monitoring and Reporting Program Item No. C.4.a The Discharger requests that nitrate, nitrite, ammonia, ortho-phosphate, chloride, sodium, sulfate, boron, electrical conductivity, and chemical oxygen demand be removed from the list of groundwater monitoring constituents of concern.	Regional Board staff does not concur with the requested language. The constituent of concern list is simply a compilation of the constituents that may provide relevant information under specific monitoring conditions defined in Items C.4.b. The tentative Order was not modified accordingly.
	(7) Monitoring and Reporting Program Item No. C.4.b.i The Discharger requests that nitrate, ammonia, and ortho-phosphate be removed from the list of groundwater monitoring indicator parameters.	Regional Board staff concurs with the proposed deletion because any nutrients contamination associated with the use of nutrients as part of the land treatment units operations at the Oil Field would likely first be identified in surface water quality monitoring associated with the Oil Field National Pollutant Discharge Elimination System (NPDES) permit, at which time the Executive Officer could add these constituent to the groundwater monitoring parameters and reporting program for the facility. The tentative Order was modified accordingly.
	(8) Monitoring and Reporting Program Item No. C.4.b.ii The Discharger requests that chloride, sodium, sulfate, nitrite, boron, electrical conductivity, and chemical oxygen demand be removed from the list of groundwater monitoring supplemental parameters.	Regional Board staff does not concur with the requested language. As indicated Item No. C.4.b.ii, the intent of supplemental parameters monitoring is to provide information regarding general groundwater geochemistry. These parameters are not contaminants of concern associated with petroleum hydrocarbons, rather they are general parameters that could help define regional groundwater variability and potentially changes in groundwater chemistry associated with Oil Field operations (i.e. process water reintroduction and/or fracking). The tentative Order was not modified accordingly.

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

MONITORING AND REPORTING PROGRAM (CI-8266)
FOR
PLAINS EXPLORATION & PRODUCTION COMPANY
(INGLEWOOD OIL FIELD LAND TREATMENT UNITS)

File No. 00-117

This Monitoring and Reporting Program Order (MRP) is issued pursuant to California Water Code (CWC) section 13267 and requires implementation of monitoring and reporting requirements set forth in Waste Discharge Requirements Order No. R4-2013-XXXX and as required by Title 27 California Code of Regulations Division 2 (27 CCR). Failure to comply with this MRP Order may subject the Discharger to liability pursuant to CWC, including section 13268.

TENTATIVE

A. GENERAL

1. The Plains Exploration & Production Company (Discharger) is subject to monitoring and reporting requirements specified in 27 CCR, Division 2 (27 CCR) for the Inglewood Oil Field land treatment units (LTUs). This MRP is incorporated by reference into California Regional Water Quality Control Board, Los Angeles Region (Regional Board) Waste Discharge Requirements Order No. R4-2013-XXXX (Order). The principal purposes of a self-monitoring program by a waste discharger are:

   a. To document compliance with waste discharge requirements and prohibitions established by the Regional Board;

   b. To facilitate self-policing by a waste discharger in the prevention and abatement of pollution arising from the discharge of waste; and

   c. To prepare water quality analyses.

2. The Discharger shall implement this MRP as required in the Order, starting the first monitoring period immediately following adoption of the Order.

3. The Discharger shall conduct monitoring at the LTUs pursuant to 27 CCR section 20385, including detection monitoring pursuant to 27 CCR section 20420 and, if necessary, evaluation monitoring pursuant to 27 CCR section 20425 and corrective action monitoring pursuant to 27 CCR section 20430. The Discharger shall conduct all such monitoring in conformance with 27 CCR section 20415.

4. Monitoring of groundwater pursuant to requirements of the Baldwin Hills Community Standards District (BHCSD) shall be conducted to assess operational impacts to waters of the State, including detection monitoring to determine if water quality is being degraded

inconsistent with State Water Resources Control Board Resolution 68-16 ("Statement of Policy with Respect to Maintaining High Quality Waters in California"), . The Discharger shall comply with any directive by the Executive Officer to respond to a documented discharge to groundwater from the Oil Field.

B. REQUIRED REPORTS AND CONTINGENCY RESPONSE

The Discharger shall submit the following reports to this Regional Board in accordance with the schedules specified.

1. Quarterly Monitoring Report

   A written monitoring report shall be submitted quarterly to the Regional Board by the dates in the following schedule:

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

   Any reporting or tabulation requirements less than quarterly in length (i.e., monthly) shall be submitted in the corresponding quarterly report. Quarterly reports shall include, but shall not be limited to, the following items and sequence:

   a. Transmittal Letter: A letter transmitting the essential points of the monitoring program shall accompany each report. The letter shall include a discussion of any violations found since the last such report was submitted, and shall describe actions taken or planned for correcting those violations. If the Discharger has previously submitted a time schedule for correcting said violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. Monitoring reports and the letter transmitting the monitoring reports shall be signed and certified in accordance with Section F.7 of the Order.

   b. Summary of Non-Compliance – The report shall contain a summary of non-compliance that discusses the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with the Order. Significant aspects of any on-going corrective action measures conducted during the monitoring period shall also be summarized. This section shall be located at the front of the report and shall clearly list all non-compliance with the Order, as well as all exceedances of

water quality protection standards.

c. Site Conditions: General discussion of site conditions (geology, climate, 100-year 24-hour storm, and watershed specifics, etc.) relative to water quality monitoring.

d. Narrative Description: A narrative discussion of the site's various monitoring activities and results. Each requirement of Section C (Required Water Quality and Inspection Program) of this MRP shall be specifically discussed. If required, pursuant to Item A.4 above, the narrative description shall include a subsection regarding BHCSD related monitoring activities and results.

e. A Waste Treatment Completion Report including a tabular list of the quantities and types of materials processed at each LTU. This includes the source area, volume, and contamination levels for all waste soils deposited to the LTUs and for the materials removed from each LTU, the volume, residual concentrations, and final location for restricted re-use materials for each month of the quarter. The amount of additives used each month and their application rates shall also be reported. The reports shall also include the results of all the required sampling and analytical data of treated wastes obtained during the quarter.

f. Laboratory Results: Laboratory results and statements demonstrating compliance with Section C (Required Water Quality and Inspection Program) of this MRP. Results shall include any water sampling and analyses performed pursuant to BHCSD related monitoring activities or for any other monitoring outside of the requirements of this MRP. If the results of such additional sampling and analyses have or will be reported under separate cover, a statement as such shall be included in the monitoring report.

2. Annual Summary Report

The Discharger shall submit an annual summary report to the Regional Board covering the previous monitoring year. The annual monitoring period ends December 31. This report may be combined with the last quarterly report of the year and shall be submitted no later than January 15 of the following year. The annual summary report shall include at least the following:

a. Discussion: Include a comprehensive discussion of the compliance record, any significant monitoring system and operational changes, a summary of corrective action results and milestones, and a review of construction projects, with water quality significance, completed or commenced in the past year or planned for the up-coming year.

b. Graphical Presentation of Groundwater Analytical Data: For each Monitoring Point,

submit in graphical format the laboratory analytical data for all samples taken within at least the previous eight calendar years. Each such graph shall plot the concentration of one or more constituents over time for a given monitoring point, at a scale appropriate to show trends or variations in water quality maximum contaminant levels (MCL) shall be graphed along with constituent concentrations where applicable. Graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. In lieu of including graphs in the annual report, the Discharger may provide references if such data have been submitted electronically to a data base that is accessible to Regional Board staff.

c. Analytical Data: All monitoring analytical data obtained during the previous year, presented in tabular form.

d. Map(s): Map(s) showing the areas where any significant events have taken place during the previous calendar year.

e. An LTU drainage control system maintenance report that includes, but is not limited to, the following information:

   i. For the previous twelve months, a summary of the adequacy and effectiveness of the drainage control system to collect and divert the calculated volume of precipitation and peak flows resulting from a 100-year, 24-hour storm;

   ii. A tabular summary of both new and existing drainage control structures, including the types and completion dates of maintenance activities performed for each of these structures.

3. Submitting of Reports

   a. The Discharger shall submit all scheduled reports required in the Order and this MRP electronically, in accordance with section 3890 et seq. of the 23 CCR, division 3 or as directed by the Executive Officer. Until directed otherwise by the Executive Officer, all reports shall be submitted to the State Board GeoTracker data system in searchable PDF format. In addition all groundwater analytical data shall be submitted to GeoTracker in EDF format. Documents that cannot be conveniently reviewed in electronic format, such as large maps or drawings, shall be submitted as hard copies to the Regional Board office as instructed by Regional Board staff.

   b. All hard copy reports required in this MRP shall be addressed to:

      California Regional Water Quality Control Board

Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, California 90013
ATTN: Information Technology Unit

C. REQUIRED WATER QUALITY MONITORING AND INSPECTION PROGRAM

The Discharger shall conduct the following water quality monitoring and inspection program. Unless otherwise indicated, all monitoring data and inspection results shall be reported to the Regional Board as outlined in Section B (Required Reports and Contingency Response) of this M&RP. In addition, Regional Board staff may conduct appropriate verification tests to confirm the accuracy of the Discharger's self monitoring.

1. Environmental Monitoring Networks

a. The Discharger shall conduct soil (unsaturated zone) moisture monitoring and analytical monitoring. Routine soil (unsaturated zone) moisture monitoring shall be conducted at each LTU at monitoring points approved by the Executive Officer.

b. Routine groundwater monitoring shall be conducted at monitoring wells MW-2, MW-3, MW-5, MW-6, and MW-7, MW-8, MW-9, MW-11B, and MW-13 (as shown on Figure T-1) to meet monitoring requirements of the Order.

2. Waste Soil Monitoring

a. The Discharger shall monitor the soil and soil moisture liquid at the LTUs to evaluate which constituents of concern (COCs) have the potential to migrate out of the treatment zone or to groundwater.

b. For each soil batch of material to be treated, the Discharger shall take a representative initial waste sample and analyze for the following constituents:

Constituent	Units	Minimum Frequency of Analysis
Total Petroleum Hydrocarbons (TPH) (EPA Method 8015M)	mg/kg	Every 1,000 cubic yards

c. At the end of each treatment cycle, the Discharger shall take a representative sample of treated material and sample and analyze for the following constituents:

Constituent	Units	Minimum Sampling Frequency
TPH gasoline, C4-C12	mg/kg	Every 1,000 cubic yards
TPH diesel, C13-C22	mg/kg	Every 1,000 cubic yards

TPH, >C22	mg/kg	Every 1,000 cubic yards
Nitrate	mg/kg	Every 1,000 cubic yards
Nitrite	mg/kg	Every 1,000 cubic yards
Ammonia	mg/kg	Every 1,000 cubic yards
Ortho-Phosphate	mg/kg	Every 1,000 cubic yards
Lead	mg/kg	Every 1,000 cubic yards
Volatile Organic Compounds (VOCs) (EPA Method 8020/8270)	µg/kg	Every 1,000 cubic yards
Semi-VOCs (EPA Method 8020/8270)	µg/kg	Every 1,000 cubic yards

3. Unsaturated Zone Monitoring

a. The Discharger shall conduct unsaturated zone monitoring, in accordance with Sections D.7 and D.8 of the Order, immediately below the treatment zone. The Discharger shall express the results soil pore liquid monitoring in a form necessary for a determination of "measurably significant" pursuant to 27 CCR section 20435 (e)(1).

b. Within 60 days of the adoption of this Order, the Discharger shall propose, for the approval of the Regional Board Executive Officer, sampling, analysis, and statistical procedures that are designed to detect a reliable indication of a change of soil pore liquid quality in the treatment zone with the potential to result in a release to groundwater. If soil pore liquid is not routinely present in the treatment zone the Discharger need not implement sampling, analysis, and statistical procedures. If soil pore liquid is present the Discharger shall conduct the following:

i. The monitoring parameters shall include the constituents that degrade, transform, or immobilize in the treatment zone of the LTU and at a minimum shall include those parameters listed in Section C.4.b.*i* of the MRP. The Discharger shall implement the approved procedures and techniques for sample collection, sample preservation and shipment; analytical procedures; and chain of custody control.

ii. The Discharger shall determine whether there is a "measurably significant" increase of soil pore liquid quality below the treatment zone using a statistical method that provides reasonable confidence that migration from the treatment zone will be identified. The Discharger shall propose each statistical method in accordance with the provisions of 27 CCR section 20415(e)(7).

iii. In determining whether a "measurably significant" increase has occurred, the Discharger shall compare the value of each parameter or constituent to a background value for that parameter or constituent by using an appropriate statistical procedure as approved by the Executive Officer.

TENTATIVE

iv. The Discharger shall determine whether there has been a "measurably significant" increase below the treatment zone within a reasonable time period after completion of sampling.

v. If the Discharger determines that there is a "measurably significant" increase of constituents below the treatment zone, the Discharger may demonstrate that the increase resulted from an error in sampling, analysis, or evaluation pursuant to requirements of 27 CCR section 20420(k)(7). Otherwise, the Discharger shall determine concentration limits and conduct the statistical analyses in Section 4.e on a semiannual basis for all existing shallow groundwater monitoring wells downgradient of the affected unsaturated zone monitoring point.

4. Groundwater Quality Monitoring

a. COCs List — As of the date of this M&RP, the COCs list for groundwater monitoring wells consists of those constituents listed below. At any subsequent time, the COCs list shall include all constituents detected and affirmed in the soil (unsaturated zone) moisture monitoring required by this M&RP, and any constituent added by the Executive Officer. The Discharger shall notify Regional Board staff of any such new addition to the COCs list immediately, via phone, fax, or e-mail and shall report the addition of constituent(s) to the COCs list in the next scheduled monitoring report.

<u>Constituent</u>
Groundwater elevation
pH Units
TPH gasoline, C4-C12
TPH diesel, C13-C22
TPH, >C22
Nitrate
Nitrite
Ammonia
Ortho-Phosphate
Chloride
Sodium
Sulfate
Total dissolved solids (TDS)
Lead
Boron
Arsenic
Barium
Chromium

TENTATIVE

Cobalt
Copper
Zinc
VOCs and semi-VOCs
(EPA Method 8020/8270)
Electrical conductivity
Chemical Oxygen Demand (COD)
Methyl tert-butyl ether (MTBE)

b. Monitoring Parameters (MPars): Groundwater MPars include:

i. **Indicator Parameters** are constituents with the greatest likelihood of providing a reliable indication of a release to groundwater. The Discharger shall perform statistics-based trend analyses to evaluate a significant change in any indicator parameter in groundwater over time. The trend analyses performed shall be based on a Mann-Kendall test for determining a trend. The Mann-Kendall test is a non-parametric test, meaning that this test does not require the data to be normally distributed. The test uses only the relative magnitude of data rather than actual values. Therefore, missing values are allowed and constituents that are not detected in a laboratory analysis can still be used in the statistical analysis by assigning values equal to their reporting limit. The Mann-Kendall test is a two-tailed test that tests for both increasing and decreasing trends. The level of significance used for the Mann-Kendall test shall be 5%. At a minimum, the indicator parameters include those constituents listed below as well as any supplemental parameter added by the Executive Officer:

Constituent
TPH gasoline, C4-C12
TPH diesel, C13-C22
TPH, >C22
VOCs
Semi-VOCs
~~Nitrate~~
~~Ammonia~~
~~Ortho-Phosphate~~

ii. **Supplemental Parameters** are inorganic constituents that provide important information regarding groundwater geochemistry but are not expected to show significant variation in groundwater. Monitoring data for the supplemental parameters will generally be used differentiate changes in water chemistry throughout the facility and will not be subjected to routine statistical analysis. At a minimum, supplemental parameters include those constituents listed below as well

TENTATIVE

as all new COCs detected and affirmed in the soil (unsaturated zone) moisture monitoring or added by the Executive Officer:

Constituent
Groundwater elevation
pH Units
~~Chloride~~
~~Sodium~~
~~Sulfate~~
~~Nitrite~~
~~Boron~~
Arsenic
Barium
Chromium
Cobalt
Copper
Zinc
Lead
Total dissolved solids (TDS)
~~Electrical conductivity~~
~~COD~~
MTBE

c. Development and Updating of Concentration Limits – When directed by the Executive Officer in response to a progressive trend for an indicator parameter(s) attributed to a potential release to groundwater from the Oil Field the Discharger shall develop constituent concentration limits and implement statistical monitoring analysis and response procedures provided in Section C.4.e.i of this M&RP for all indicator parameters. The Discharger shall review the concentration limits in annual reports submitted to the Regional Board. When appropriate, new concentration limits shall be proposed.

d. Groundwater Quality Monitoring

i. Semiannual monitoring of all COCs shall be conducted at shallow groundwater monitoring wells (MW-2, MW-3, MW-5, MW-6, and MW-7, MW-8, MW-9)as shown in the following schedule:

Period	Sampling Period
April-June	May
October-December	November

TENTATIVE

Indicator parameters shall be analyzed for trends on a semiannual basis. If the Discharger finds, or is directed by the Executive Officer to respond to, an indication of a release to groundwater, the Discharger shall determine concentration limits and conduct the statistical analyses in Section 4.e on a semiannual basis.

ii. Groundwater monitoring of deep wells (MW-11B and MW-13) shall be conducted annually during the November sampling period for all COCs. Graphical presentation of deep groundwater analytical data shall be included in the Annual Reports pursuant to section B.2.b, above. After three years of monitoring deep groundwater quality, the Discharger may file a written request the Executive Officer to evaluate the effectiveness of continued deep groundwater monitoring.

e. Statistical Data Analysis Methodology

i. Intra-well comparison methods shall be used for all compliance wells for all constituents that are detectable at concentrations above their respective Method Detection Limit (MDL) in ten percent or more of the background data to date. Initially, for each given MPar at a given downgradient monitoring well (well/MPar pair), the proposed background data set shall consist of all validated data from that compliance well and parameter, from the preceding five-year period. Every two years, following the adoption of this M&RP, as part of the annual monitoring summary report, the Discharger shall add the newer data to the background data set for each well/MPar pair after validating (via a method approved by the Executive Officer) that the new data does not indicate an increase over the existing background data. At that time, the Discharger shall also retire the well/MPar's oldest two years of background data, thereby producing a data set covering the then-previous five years. The Discharger shall validate the proposed intra-well background data set as follows for each MPar at each well (initially) or, subsequently, at a new well or for a new MPar at an existing well. The Discharger shall report the validated or updated background data set, for each affected well/MPar pair, in the next scheduled monitoring report. The Discharger may use an alternative statistical method or approach for development of concentration limits, if proved by Regional Board staff.

ii. In the event that an approved data analysis method provides a preliminary indication that a given monitoring parameter has a measurably significant increase at a given well, the Discharger shall conduct a verification procedure (retest). The verification procedure shall be performed only for the constituent(s) or parameter(s) that has shown "measurably significant" evidence of a release, and shall be performed only for those monitoring points at which a release is indicated.

TENTATIVE

iii. For any monitoring parameter that is detectable at concentrations above its respective MDL in 10% or less of the background data to date, the constituent's concentration limit shall be its MDL. A measurable exceedance of this concentration limit shall be determined by application of the non-statistical analysis method described in Section C.4.f of this M&RP.

iv. Water Quality Monitoring Approach - The monitoring approach used for each monitoring parameter at each compliance well (well/MPar pair) shall be controlled by whether that monitoring parameter has exhibited a measurably significant increase at that well. Therefore, the Discharger shall monitor each well/MPar pair in one of two modes, as follows, either:

A. Detection Mode - For an MPar that has not produced a measurably significant increase at that well, the purpose of monitoring, for that well/MPar pair, is to watch for the MPar's arrival at that well at a concentration strong enough to trigger a measurably significant indication using an appropriate statistical or nonstatistical data analysis method; or

B. Tracking Mode - For an MPar that has produced a measurably significant increase at a given well, the purpose of the monitoring, for that well/MPar pair, is to verify the suitability and effectiveness of the existing or proposed corrective measures by tracking changes in the MPar's concentration at that location via an evolving concentration-versus-time plot.

v. Detection Mode Data Analyses - The following applies to all detection mode data analyses:

A. Monitoring Parameters Readily Detectable in Background — At any given monitoring point, the Discharger shall apply an appropriate statistical analysis for each detection mode monitoring parameter that exceeds its respective MDL in at least 10% of the applicable background data set;

B. Monitoring Parameters Not Readily Detectable in Background — For any monitoring point at which one or more monitoring parameters, in detection mode, exceed their respective MDL in less than 10% of the applicable background data set, the Discharger shall analyze the data for these monitoring parameters via the California Nonstatistical Data Analysis Method (CNSDAM) test described in Section C.4.f of this M&RP.

f. California Non-statistical Data Analysis Method (CNSDAM)

i. Non-Statistical Method for Detection Mode for MPars Seldom Found in Background - For any given compliance well, the Discharger shall use this data analysis method, jointly, for all constituents on the "scope list" in Section C.4.f.*i*.A of this M&RP (or, for each retest sample, the modified scope list of Section C.4.f.*ii*.B.

A. Scope List – Within 30 days of the effective date of this Order, the Discharger shall create a current "scope list" showing each detection mode MPar, at that well, that exceeds its MDL in less than 10% of its background data.

B. Two Triggers - From the scope list made under Section C.4.f.*i*.A, for an initial test (or, for a retest, the modified scope list under Section C.4.f.*ii*.B, the Discharger shall identify each MPar in the current sample from that well that exceeds either its respective MDL or PQL. The Discharger shall conclude that these exceeding MPars provide a preliminary indication (or, for a retest, provide a measurably significant indication) of a change in the nature or extent of the release, at that well, if either:

(a) Two or more of the MPars on a monitoring well's scope list exceed their respective MDL; or

(b) At least one of the MPars on a monitoring well's scope list equals or exceeds its respective PQL.

ii. Discrete Retest:

A. In the event that the Discharger concludes (pursuant to Section C.4.f.*i*.B) that there is a preliminary indication, then the Discharger shall immediately notify Regional Board staff by phone, fax, or e-mail and, within 30 days of such indication, shall collect two new (re-test) samples from the indicating compliance well.

B. For any given compliance well, the Discharger shall analyze the retest samples only for those constituents indicated in that well's original test, under Section C.4.f.*i*.B of this M&RP, and these indicated constituents shall comprise the well's "modified scope list." As soon as the retest data are available, the Discharger shall apply the same test (under Section C.4.f.*i*.B, but using this modified scope list) to separately analyze each of the two suites of retest data at that compliance well.

C. If either (or both) of the retest samples trips either (or both) of the triggers under Section C.4.f.*i*.B, then the Discharger shall conclude that there is a measurably

TENTATIVE

significant increase at that well for the constituent(s) indicated in the validating retest sample(s). Furthermore, thereafter, the Discharger shall monitor the indicated constituent(s) in tracking mode at that well, remove the constituent(s) from the scope list created for that well, notify the Regional Board in writing, and highlight this conclusion and these changes in the next scheduled monitoring report and in the LTUs's operating record.

D. SAMPLING AND ANALYTICAL PROCEDURES

1. Sampling and Analytical Methods

Sample collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA Methods (USEPA publication "SW-846"), and in accordance with a sampling and analysis plan acceptable to the Executive Officer. A State of California approved laboratory shall perform water analysis. Specific methods of analysis must be identified. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign reports of such work submitted to the Regional Board. In addition, the Discharger is responsible for evaluating that the laboratory analysis of samples from all Monitoring Points meets the following restrictions:

a. The methods of analysis and the detection limits used must be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., Trace) in historical data for that medium, the SW-846 analytical method having the lowest Method Detection Limit (MDL) shall be selected.

b. Trace results (results falling between the MDL and the Practical Quantitation Limit (PQL)) for organic compounds shall be reported as such.

c. MDL and PQL shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. Both limits shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived values, the results shall be flagged accordingly, and an estimate of the limit actually achieved shall be included.

d. For each MPar addressed during a given reporting period, the Discharger shall include in the monitoring report a listing of the prevailing MDL and PQL for that MPar, together with an indication as to whether the MDL, PQL, or both have changed since the prior reporting period. The Discharger shall require the analytical laboratory to

report censored data (trace level and non-detect determinations). In the event that an MPar's MDL and/or PQL change, the Discharger shall highlight that change in the report's summary and the report shall include an explanation for the change that is written and signed by the owner/director of the analytical laboratory.

e. Quality assurance and quality control (QA/QC) data shall be reported along with the sample results to which it applies. Sample results shall be reported unadjusted for blank results or spike recovery. The QA/QC data submittal shall include:

   i. The method, equipment, and analytical detection limits.

   ii. The recovery rates, including an explanation for any recovery rate that is outside the USEPA-specified recovery rate.

   iii. The results of equipment and method blanks.

   iv. he results of spiked and surrogate samples.

   v. The frequency of quality control analysis.

   vi. The name and qualifications of the person(s) performing the analyses.

f. QA/QC analytical results involving detection of common laboratory contaminants in any sample shall be reported and flagged for easy reference.

g. Non-targeted chromatographic peaks shall be identified, quantified, and reported to a reasonable extent. When significant unknown peaks are encountered, second column or second method confirmation procedures shall be performed in an attempt to identify and more accurately quantify the unknown analyte(s).

2. Records to be Maintained

Analytical records shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five years. The period of retention shall be extended during the course of any unresolved litigation or when directed by the Executive Officer. These records and reports are public documents and shall be made available for inspection during normal business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region. Such records shall show the following for each sample:

a. Identity of sample and the actual Monitoring Point designation from which it was taken, along with the identity of the individual who obtained the sample.

b. Date and time of sampling.

c. Date and time that analyses were started and completed, and the name of personnel performing each analysis.

d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used.

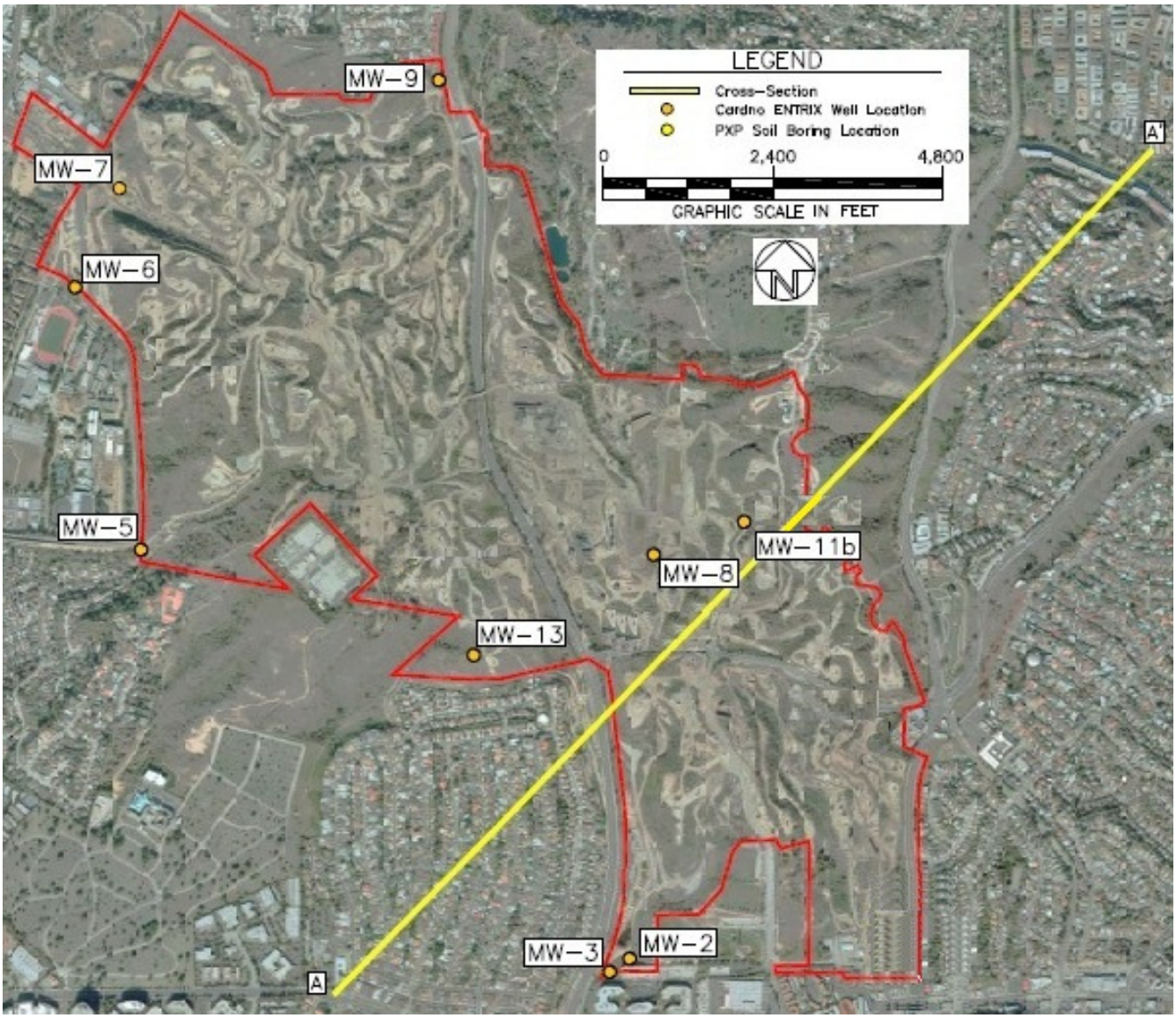
e. Results of analyses, and Method Detection Limit and Practical Quantitation Limit for each analysis.

Ordered by: _____
Samuel Unger, P.E.
Executive Officer

Date: February 7, 2013

TENTATIVE

FIGURE T-1
GROUNDWATER MONITORING LOCATION MAP



TENTATIVE

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

ORDER NO. R4-2013-XXXX

AMENDED WASTE DISCHARGE REQUIREMENTS
FOR
OIL FIELD AND LAND TREATMENT UNITS OPERATIONS

PLAINS EXPLORATION & PRODUCTION COMPANY
(INGLEWOOD OIL FIELD)

File No. 00-117

T E N T A T I V E

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

BACKGROUND

1. The Plains Exploration & Production Company (Discharger) operates the Inglewood Oil Field (Oil Field) located in the Baldwin Hills area of Los Angeles County, California (Figure 1). Oil and gas exploration and production at the site, dating back to the 1920s, currently involves extracting oil and gas from subsurface reservoirs located between 800 and 10,000 feet below ground surface. The operations include three bioremediation land treatment units (LTUs) for the treatment of petroleum hydrocarbons impacted soils that are regulated under Waste Discharge Requirements (WDRs) Order No. 01-054, adopted on April 26, 2001, issued to Stocker Resources, Inc. (Stocker), a predecessor owner of the Oil Field. The LTUs are the Vickers LTU which is 1.2 acres in size, the LAI North LTU which is 4.25 acres in size, and the LAI South LTU which is 1.0 acres is size (Figure 2).

2. In 1990, Chevron, a predecessor owner, initiated the sale of the Oil Field to Stocker. As part of the sale process, Chevron conducted Phase I and Phase II site assessments to determine the types and volumes of contaminants that could be present at the site due to extensive oil and gas production activities at the site. The Phase I site assessment focused on spills, aerial photographs, site walks to ascertain soil discoloration, odors, or other evidence of contamination at the site. The Phase II assessment was a more detailed examination that included soils sampling and testing. Based on the information collected, 284 "sites" (potential spill sites, old sumps/pits and 1928 vintage well sumps) were identified as having the potential to contain hazardous materials.

3. The Phase II investigation focused on 107 potential sites that could contain hazardous materials and 177 sites that were considered less likely to have the potential to contain hazardous materials. Assessment work was conducted on 107 sites with a high potential to contain hazardous materials and random sample of 25 percent of the remaining sites with a lesser potential to contain hazardous materials. Testing included sampling for total petroleum hydrocarbons, volatile organic compounds (VOCs), semi-volatile organic

compounds (SVOCs), polychlorinated biphenyls (PCBs), heavy metals (priority pollutant metals), and acidity (pH). The majority of the waste in the soil consisted of non-hazardous petroleum hydrocarbons and low levels of heavy metals and related waste constituents, all of which were below relevant regulatory action levels for an operating oil field. Stocker initiated a soil remediation program to treat petroleum hydrocarbons-impacted soil in onsite bio-remediation land treatment units (LTUs). The WDRs set forth enforceable conditions that apply to the LTUs.

4. Routinely, approximately 14,000 cubic yards of non-hazardous, petroleum hydrocarbons impacted soils derived from the abandonment of wells and routine Oil Field operations are remediated per treatment cycle at the three LTUs, with up to three treatment cycles per year at each LTU.

5. Petroleum hydrocarbons impacted soils are loaded into the LTUs and spread to a thickness of approximately two feet. Dissolved nutrients (ammonia and phosphate fertilizers) are sprayed onto the soils by sprinkler systems to enhance the reproduction of native bacteria that bio-degrade petroleum hydrocarbons. The soil is regularly disked to increase oxygenation. Based on past performance, soil bio-remediation cycles typically do not exceed six months.

6. Regulations in division 2 (Solid Waste), subdivision 1, (Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste) of title 27 of the California Code of Regulations (27 CCR) pertain to water quality aspects of the discharge of solid waste to land for treatment, storage, or disposal. These regulations establish waste and site classifications and waste management requirements for solid waste treatment, in LTUs.

7. Pursuant to 27 CCR section 20380, the owner or operator of a LTU that receives or has received waste shall comply with provisions of 27 CCR for the purpose of detecting, characterizing, and responding to releases to ground water, surface water, or the unsaturated zone. The California Water Code (CWC), section 13263(e), provides that all WDRs shall be reviewed periodically and, upon such review, may be revised by the Regional Board to address current site conditions and to comply with updated state or federal laws, regulations, policies, or guidelines.

ENVIRONMENTAL SETTING

8. The Oil Field is located within the Baldwin Hills, which is comprised of low groundwater-yielding bedrock that straddle the West Coast and Central Groundwater Basins of Los Angeles County. Groundwater, when present, is limited to perched and semi-perched zones located within canyon alluvium and consolidated sandstones and shales.

9. Groundwater encountered between 45 to 400 feet below ground surface in existing groundwater monitoring wells is deemed “fresh”. Groundwater becomes saline at

approximately 500 feet below ground surface, corresponding approximately to the top of the Pico Formation.

ENVIRONMENTAL PROTECTION AND MONITORING SYSTEMS

10. The LTUs were constructed with underlying compacted soil liners that satisfied requirements of section 20320(a) of 27 CCR, specifically that the soil liners are of appropriate chemical and physical properties to ensure that they do not fail to contain waste and ensure the protection of groundwater quality.

11. The LTUs are more than five feet above the highest anticipated elevation of underlying ground water, thus satisfy requirements of 27 CCR section 20240(c).

12. Perimeter berms approximately two-foot high are maintained around each LTU and satisfy precipitation and drainage control requirements of section 20365 of 27 CCR.

13. Drainage water from within the LTUs is collected and disposed of at an onsite ~~waste~~water treatment facility and is re-injected into the oil producing zones of the Oil Field after treatment. The Discharger is permitted to re-inject ~~wastewater~~ produced water pursuant to Industrial Waste Disposal Permit No. 357272 issued by the County of Los Angeles Department of Public Works.

14. The existing shallow groundwater monitoring network at the Oil Field (Figure 3) consists of monitoring wells (MW-2, MW-3, MW-5, MW-6, and MW-7, MW-8, and MW-9) constructed primarily in canyon areas around the perimeter of the Oil Field and targeting alluvium or water bearing zones where they exist in canyon bottoms as well as interior portions of the field. Two existing deep groundwater monitoring wells (MW-11B, and MW-13) extend to approximately the base of fresh water (the top of Pico Formation bedrock) and can provide water quality information for the deepest freshwater zones in the Baldwin Hills.

15. Surface waters in the Oil Field drain to several alluvial canyons that lead off-site. The Discharger operates six drainage retention basins (Figure 4) in alluvial canyons to prevent offsite releases of oil spills. Discharge from the drainage retention basins is regulated under a National Pollutant Discharge Elimination System (NPDES) permit (Order No. 94-028) adopted by the Regional Board on April 4, 1994.

16. Soil moisture (vadose zone) monitoring at the LTUs is not conducted at this time. This Order requires that soil pore moisture monitoring be conducted for the LTUs pursuant to applicable requirements of 27 CCR section 20435.

TENTATIVE

REGULATORY REQUIREMENTS

17. Section 20250(b)(5) of 27 CCR requires that Regional Boards specify in WDRs the elements of land treatment programs by dischargers who treat or dispose of wastes in LTUs.

18. The State Water Resources Control Board (State Water Board) has adopted regulations that require the electronic submittal of information (ESI) for Groundwater Cleanup programs (section 3890 et seq. of title 23 of the California Code of Regulation [23CCR] and division 3 of 27 CCR). Starting in January 1, 2005, electronic submittal of these items and a portable data format (PDF) copy of full reports was extended to include all State Water Board groundwater cleanup programs, including the Land Disposal Program. The requirements contained in this Order, as they are met, conform with ESI reporting regulations.

19. The Regional Board adopted the Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan) on June 13, 1994. The Basin Plan (including its subsequent amendments) designates beneficial uses of the surface and groundwater in the West Coast and Central Basin Groundwater Basins and sets forth water quality objectives to protect those beneficial uses. Beneficial uses of the groundwater in these basins include municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply.

20. State Water Resources Control Board (State Water Board) Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining High Quality Waters in California", also called the "anti-degradation policy") (Resolution 68-16) requires the Regional Board, in regulating the discharge of waste, to maintain high quality waters of the state until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Board's policies (e.g., quality that exceeds water quality objectives). The Regional Board finds that the discharge, as allowed in these waste discharge requirements, is consistent with Resolution No. 68-16 since this Order (1) requires compliance with 27 CCR Division 2 regarding waste management uses, which is considered the use of best practicable treatment and control, (2) requires implementation of monitoring and reporting programs as required by 27 CCR Division 2 to assure protection of water quality in compliance; and (3) does not allow discharges of waste to degrade water quality. If the discharge causes or threatens to cause degradation of water quality, then the Discharger will be required to take appropriate corrective action.

21. In 2008, the County of Los Angeles adopted the Baldwin Hills Community Standards District (BHCSD). A community standards district is a supplemental district used to address special issues that are unique to certain geographic areas within the unincorporated areas of Los Angeles County. The BHCSD establishes permanent development standards, operating requirements and procedures for the portions of the Oil

TENTATIVE

Field that are within the County of Los Angeles. The BHCSD provides a means for implementing enhanced regulations to address the unique compatibility concerns associated with operating an oil field in the midst of urban development. The BHCSD was developed with three main goals:

a. Provide detailed information about current and future operations at the Oil Field.

b. Determine potential environmental impacts that could result from future oil field development activities.

c. Determine if the proposed BHCSD had the necessary development standards, operating requirements, and procedures to mitigate potential environmental impacts of future oil field development activities.

A Final Environmental Impact Report (FEIR) to evaluate the environmental effects of Oil Field development and establish requirements for Oil Field operations was adopted by the County of Los Angeles in 2008. The FEIR was the first comprehensive environmental analysis of an established oil field within the County of Los Angeles.

22. The County of Los Angeles is the lead agency under the California Environmental Quality Act (CEQA) with respect to the activities that are the subject of this Order. On October 28, 2008, the Los Angeles County Board of Supervisors adopted a resolution approving and certifying the FEIR and adopting the BHCSD to establish additional regulations for oil and gas production activities in the unincorporated portion of the Oil Field located in the Baldwin Hills area.

23. The Regional Board is a responsible agency under the CEQA with respect to protection of water quality that are the subject of this Order. As a responsible agency, the Regional Board is required to consider the environmental documents prepared by the lead agency and reach its own conclusions regarding the project permitting. The Regional Board has considered the FEIR certified by the County.

24. The FEIR identified potentially significant impacts to the environment from the proposed project. Impacts within the regulatory authority of the Regional Board include impacts to water quality, impacts associated with floodplain modification, and impacts to biological resources in wetlands and riparian corridors. The FEIR identified the following environmental effects and mitigation measures to reduce these potential impacts to less than significant, which are measures of the BHCSD:

a. **Surface Water Quality Impacts**: The proposed project could potentially degrade the quality of surface water such that it fails to meet water quality objectives identified in the Basin Plan. The project proponent must comply with National Pollutant Discharge Elimination System (NPDES) Permit (Regional Board Order No. 94-028) to reduce the potential surface water quality impacts.

Storm Water Pollution:
- Maintain and implement a Storm Water Pollution and Prevention Plan.
- Update the Storm Water Pollution Prevention Plan prior to construction activities.

b. **Groundwater Quality Impacts**: The BHCSD incorporates mitigation measures that are necessary to reduce the potential impacts.

Groundwater monitoring wells and reports:
- Operator to install groundwater monitoring wells and prepare annual groundwater monitoring reports at the LTUs and retention basins.

The Regional Board finds that with respect to the potentially significant impacts of the project relating to actions within the jurisdiction of the Regional Board, this Order incorporates requirements that will reduce those impacts to less than significant.

The Discharger must comply with the applicable National Pollutant Discharge Elimination System (NPDES) Permit (Regional Board Order No. 94-028 and any revision or amendment of the order) for industrial facilities. This NPDES permit requires the discharger to implement storm water pollution prevention practices to reduce the potential surface water quality impacts from the facility and to comply with applicable water quality standards for surface water. This Order also includes requirements to protect surface water including those associated with any floodplain modification. This Order requires compliance with applicable provisions of regulations found at Title 27, CCR, Division 2 regarding land disposal and treatment of wastes. This Order requires implementation of a detailed and robust monitoring program in compliance with applicable provisions of regulations found at Title 27, CCR, Division 2.

25. The adoption of these WDRs for the LTUs does not authorize the expansion of use since the time of the adoption of the prior WDRs, and therefore, constitutes an existing project as defined in title 14 of the California Code of Regulations section 15301 which is exempt from the provisions of CEQA.

26. The Regional Board has notified interested agencies and all known interested persons of its intent to issue WDRs for operation of the LTUs. The Regional Board in a public meeting on February 7, 2013 heard and considered all comments pertaining to the WDRs .

27. Any person aggrieved by this action of the Regional Board may petition the State Water Board to review the action in accordance with California Water Code (CWC) section 13320 and 23CCR section 2050 and following. The State Water Board must receive the petition by 5:00 p.m., thirty 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.

TENTATIVE

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.

IT IS HEREBY ORDERED that the Discharger shall comply with the following at the Oil Field including the LTUs:

TENTATIVE

A. SPECIFICATIONS

1. Waste materials to be remediated at the LTUs shall be limited to petroleum hydrocarbons contaminated soils and sediments generated by the Discharger at the Oil Field only. No wastes from other generators or other sites shall be deposited at the LTUs. No refined products, solvents, or materials of a toxic nature, such as heavy metals, insecticides, poisons, or radioactive material, shall be deposited at the LTUs.

2. Source area, volume, and concentration levels for all waste soils hauled to the LTUs shall be reported.

3. The land treatment process includes the addition of water and nutrients to the soil, along with soil oxygenation. The treatment zone, pursuant to 27 CCR section 20250(b)(5) is herein defined as extending from the ground surface to one foot above the underlying compacted clay liner and shall not exceed five feet. ~~Aeration~~ Oxygenation of soils during the operation of the LTU shall not exceed the depth of the treatment zone.

4. Waste remediation shall be within the confines of the LTUs perimeter berms and shall be conducted in such a manner that no waste constituents are discharged to surface waters or groundwater.

5. Remediation Standards - For petroleum hydrocarbons contaminated soils, the threshold concentration is a total petroleum hydrocarbons (TPH) concentration of 500 mg/kg in the gasoline (C4-C12) carbon-chain range, 1,000 mg/kg in the diesel (C13-C22) carbon-chain range, and 5,000 mg/kg in the C23 or greater carbon-chain range. These limits are for remediated soils only and no mixing or diluting of soils is allowed to achieve acceptable disposal/reuse results.

6. Limits for onsite reuse and disposal of remediated soils:

    a. Unrestricted Use of Clean or Remediated Soils - Clean or remediated soils with minor residual wastes for which concentrations do not exceed the following threshold criteria may be disposed of or used onsite without restriction.

        i. For petroleum hydrocarbons, the threshold concentration is ~~a~~ an average TPH concentration of less than 250 mg/kg in the gasoline (C4-C12) carbon-chain range,

less than 500 mg/kg in the diesel (C13-C22) carbon-chain range, and less than 1,000 mg/kg in the C23 or greater carbon-chain range.

ii. For constituents other than petroleum hydrocarbons that are required to be profiled to comply with disposal requirements of this Order:

A. Soils with an average, contaminant-specific concentration that does not exceed a Regional Screening Levels (RSL for residential sites established by the U.S. Environmental Protection Agency (USEPA) Region 9 or soils with an average contaminant concentration that does not exceed a California Human Health Screening Level (CHHSL) for residential sites established by the California Environmental Protection Agency (Cal-EPA).

B. VOCs, SVOCs, ~~PCBs,~~ or CAM metals for which a RSL or CHHSL has not been established with an average contaminant-specific concentration that does not exceed, on a per weight basis, 100 times the maximum contaminant level (MCL) established by the USEPA or the State of California Department of Public Health.

b. Restricted Use of Remediated Soils - Soils that have been remediated to the following concentrations may be used on-site at the Oil Field but reuse areas and soil volumes must be reported in corresponding monitoring reports.

i. An average TPH concentration from 250 to 500 mg/kg in the gasoline (C4-C12) carbon-chain range, 500 to 1,000 mg/kg in the diesel (C13-C22) carbon-chain range, and 1,000 to 5,000 mg/kg in the C23 or greater carbon-chain range.

ii. For constituents other than petroleum hydrocarbons that are required to be profiled to comply with disposal requirements of this Order:

A. Soils with an average, contaminant-specific concentration that does not exceed a RSL for industrial sites established by the USEPA or Soils with an average, contaminant concentration that does not exceed a CHHSL for industrial sites established by the Cal-EPA.

B. VOCs, SVOCs, ~~PCBs,~~ or CAM metals for which a RSL or CHHSL has not been established with an average, contaminant concentration that does not exceed, on a per weight basis, 100 times of MCL established by the USEPA or the State of California Department of Public Health.

c. Constituents that naturally occur in soils (e.g., metals) may exceed the threshold concentration levels discussed above. Background concentrations shall be considered for these naturally occurring constituents in the Region. The Discharger must make a demonstration that they are naturally occurring and that these levels will not result in

TENTATIVE

exceedences of water quality standards in surface or groundwater surrounding the Oil Field.

B. PROHIBITIONS

1. No condition of pollution or nuisance shall be caused by the handling, treatment, storage, or disposal of petroleum contaminated soils at the LTUs.

2. Odors of a waste or bioremediation origin shall not be perceivable beyond the limits of property controlled by the Discharger.

C. REQUIREMENTS FOR ONSITE CONSTRUCTION/OPERATIONS

1. The Discharger shall operate, and maintain LTUs to maximize the degradation, transformation, and immobilization of waste constituents in the treatment zone.

2. No water shall be used at the LTUs except for surface dust control or for maintaining optimum moisture content in the LTUs. Water applied to the LTUs shall not be allowed to pond or runoff.

3. Surface runoff from drainage areas tributary to the LTUs shall be prevented from passing over or percolating through the treatment zone. Adequate facilities shall be provided to divert all surface runoff from storms away from treatment areas. Water falling on the LTUs shall be contained thereon, or collected and disposed of at the onsite treatment facility, the sanitary sewer, or as approved by the Regional Board Executive Officer.

4. The Discharger shall remove and relocate to a legal disposal site any wastes that are discharged in violation of these requirements. For the purpose of these requirements, a legal point of disposal is defined as one for which WDRs have been established by a California Regional Water Quality Control Board, and is in full compliance therewith.

D. REQUIREMENTS FOR CONTAINMENT SYSTEMS

1. Materials used in LTU containment structures shall have appropriate chemical and physical properties to ensure that such structures do not fail to contain waste because of pressure gradients (including hydraulic head and external hydrogeologic forces), physical contact with the waste or leachate, chemical reactions with soil and rock, climatic conditions, the stress of installation, or the stress of daily operation.

2. Earthen materials used in LTU containment structures shall consist of a mixture of clay and other suitable fine grained soils which have the following characteristics, and which, in combination, can be compacted to attain the required hydraulic conductivity when installed.

   a. At least 30 percent of the material, by weight, shall pass a No. 200 U.S. Standard sieve.

b. The materials shall be fine grained soils with a significant clay content and without organic matter, and which is a clayey sand, clay, sandy or silty clay, or sandy clay [e.g., the "SC", "CL", or "CH" soil classes under the American Society for Testing and Materials Designation: A2487-93 Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)].

3. The LTUs shall be capable of limiting, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping that could occur as a result of precipitation from a 100-year, 24-hour frequency storm.

4. Diversion and drainage facilities at the LTUs shall be designed, constructed, and maintained:

   a. To accommodate the anticipated volume of precipitation and peak flows from surface runoff that could occur as a result of precipitation from a 100-year, 24-hour duration storm;

   b. To effectively divert sheet flow runoff laterally, or via the shortest distance, into the drainage and collection facilities;

   c. To prevent surface erosion through the judicious use of:

      i. Energy dissipators where required to decrease the velocity of runoff; and

      ii. Slope protection and other erosion control measures.

   d. To control and intercept run-on, in order to isolate uncontaminated surface waters from water that might have come into contact with waste;

   e. To take into account:

      i. The LTU's drainage pattern at any given time;

      ii. The possible effects of the LTU's drainage pattern on and by the regional watershed;

      iii. The design capacity of drainage systems of downstream and adjacent properties by providing for the gradual release of retained water downstream in a manner which does not exceed the expected peak flow rate at the point of discharge if there were no waste management facility; and

   f. To preserve the function of drainage systems associated with the LTUs. The Discharger shall periodically remove accumulated sediment from associated sedimentation or detention basins as needed to preserve the design capacity of the system.

5. Stormwater collection and holding facilities associated with the LTUs shall be emptied immediately following moderate to large storms (in excess of 1.0 inches of rainfall at the Oil Field), or otherwise managed to maintain the design capacity of the system.

6. Surface and subsurface drainage from outside of a LTU shall be diverted from the LTUs.

7. The Discharger shall install soil moisture monitoring equipment beneath each of the LTUs in order to comply with requirements of 27 CCR, section 20435. The soil moisture monitoring equipment, placed beneath the compacted soil layer as near as practicable to the base of the treatment zone, shall consist of pressure/vacuum (suction) lysimeters consisting of a closed cylindrical chamber made of inert material and a soil water intake portion (cup) made of a low permeability porous material wherein soil moisture is drawn by vacuum into the chamber and collected by access tubes. The unsaturated zone monitoring system shall consist of a sufficient number of sampling points at appropriate locations and depths to yield samples that indicate the quality of soil pore liquid and the chemical makeup of the soil below the treatment zone.

8. The discharger shall conduct monitoring at the LTUs pursuant to requirements of 27 CCR section 20385, including detection monitoring pursuant to 27 CCR section 20420 and, if necessary, evaluation monitoring pursuant to 27 CCR section 20425 and corrective action monitoring pursuant to 27 CCR section 20430. The Discharger shall conduct such monitoring in conformance with 27 CCR section 20415.

9. Within 60 days of the adoption of this order, the Discharger shall submit a workplan for approval by the Executive Officer to install soil moisture monitoring equipment beneath each LTU in compliance with 27 CCR section 20435. The Discharger shall incorporate the following guidance in developing a workplan for installing the pressure/vacuum lysimeters.

    a. Lysimeters may be placed in either shallow trenches or in borings (either vertical or drilled at an angle below the LTU compacted clay liner). The lysimeteres shall be put in place with a silica flour filter pack to provide continuity with the surrounding formation.

    b. The lysimeters shall be installed at locations which will optimize their efficiency in relation to fluid movement in the vadose zone.

    c. Continuous soil coring shall be performed prior to designing a vadose zone monitoring system. Soils data must be obtained to identify the best depths for placement of the lysimeter. The structure, lithology and soil characteristics of the vadose zone must be determined for correct lysimeter placement. This information can be derived from continuous cores. A complete lithologic and soils analysis of the cores shall be performed.

    d. The lysimeter and tubing shall be pressure tested prior to placement in the ground.

TENTATIVE

Further, the whole installation must be field tested after it has been placed under vacuum to determine whether there are any significant leaks in the system and that there is continuity/contact between the lysimeter and its silica flour jacket with the formation.

E. REQUIREMENTS FOR DETECTION MONITORING

1. The Discharger shall conduct detection monitoring in compliance with 27 CCR section 20420 and shall implement the attached MRP No. CI-8266, which is incorporated herein by reference, and revisions thereto in order to detect, at the earliest opportunity, any unauthorized discharge of waste constituents from the LTUs or any unreasonable impairment of beneficial uses associated with the discharges of waste.

2. The water quality protection standards (WQPS) for the Oil Field and LTUs are established as background groundwater quality, which is set to either a statistically predicted value (if the constituent naturally exists) or the laboratory detection limit (if the constituent does not naturally exist in the water).

3. The following are five parts of the WQPS as established by the Regional Board:

   a. WQPS may be modified for site specific purposes by the Regional Board based on more recent or complete groundwater monitoring data such as from the monitoring network required by this Order, changes in background water quality, or for any other reason deemed valid by the Regional Board Executive Officer. Proposed changes must be in accordance with guidelines described in appropriate sections of 27 CCR.

   b. The Discharger shall test for the monitoring parameters and the constituents of concern (COCs) listed in MRP No. CI-8266.

   c. Concentration Limits - The concentration limit for each monitoring parameter and COC for each monitoring point shall be its background value as calculated using an appropriate statistical methodology for a given reporting period.

   d. Monitoring points - perimeter monitoring points and points of compliance for detection monitoring shall be those listed in MRP No. CI-8266.

4. At any time, the Discharger may file a written request, including appropriate supporting documents, with the Executive Officer, proposing modifications to MRP No. CI-8266. The Discharger shall implement any changes in the revised monitoring and reporting program approved by the Executive Officer upon receipt of a signed copy of revised MRP No. CI-8266.

5. Monitoring parameters and COCs listed in MRP No. CI-8266 are subject to appropriate statistical or non-statistical tests included in MRP No. CI-8266 sections and may be

modified by the Executive Officer as needed.

6. Unless otherwise approved by the Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Public Health. All analyses shall be conducted in accordance with the latest edition of Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) promulgated by the USEPA.

7. The Discharger shall furnish, under penalty of perjury, technical or monitoring program reports in accordance with CWC section 13267. Failure or refusal to furnish these reports or falsifying any information provided therein renders the Discharger guilty of a misdemeanor and subject to the penalties stated in CWC section 13268. Monitoring reports shall be submitted in accordance with the specifications contained in MRP No. CI-8266, as directed by the Executive Officer. MRP No. CI- 8266 is subject to periodic revisions, as warranted and approved by the Executive Officer.

8. If any of the monitoring wells and/or monitoring devices is inoperative, damaged, destroyed, or abandoned for any reason, the Discharger shall immediately provide substitutes acceptable to the Executive Officer to meet the monitoring requirements of this Order.

9. If a well or monitoring device is found to be inoperative, the Regional Board and other interested agencies shall be so informed in writing within seven days of such discovery, and this notification shall contain a time schedule for returning the well or monitoring device to operating order. Changes to the existing monitoring program shall be submitted for Executive Officer approval at least thirty days prior to implementing the change(s).

10. The Discharger shall provide for proper handling and disposal of water purged from the monitoring wells during sampling. Water purged from a well shall not be returned to that well (or any other well).

11. For any monitoring wells installed in the future, the Discharger shall submit technical reports for approval by the Executive Officer prior to installation. These technical reports shall be submitted at least sixty days prior to the anticipated date of installation of the wells or piezometers. These reports shall be accompanied by:

    i. Maps and cross sections showing the locations of the monitoring points; and,

    ii. Drawings and data showing construction details of the monitoring points. These data shall include:

        A. Casing and test hole diameter;
        B. Casing materials;
        C. Depth of each hole;
        D. The means by which the size and position of perforations shall be determined, or

verified, if in the field;
E. Method of joining sections of casing;
F. Nature of filter materials;
G. Depth and composition of soils; and
H. Method and length of time of well development.

12. The Discharger shall install any additional groundwater or monitoring devices necessary to comply with MRP No. CI-8266 as adopted or as revised by the Executive Officer.

F. REQUIREMENTS FOR REPORTING SCHEDULED ACTIVITIES

1. The Discharger shall comply with all reporting requirements included in MRP No. CI-8266.

2. The Discharger shall notify Regional Board staff at least thirty days prior to any maintenance activities, for approval by the Executive Officer, which could alter existing surface drainage patterns or change existing slope configurations at the LTUs. These activities may include, but not be limited to, significant grading activities, the importation of fill material, the design and installation of soil borings, groundwater monitoring wells and other devices for LTU investigation purposes.

3. The Discharger shall furnish, within a reasonable time, any information the Regional Board may require to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The Discharger shall also furnish to the Regional Board, upon request, copies of records required to be kept by this Order.

4. If the Discharger becomes aware that the Discharger failed to submit any relevant facts in any report to the Regional Board, it shall submit such facts or information within seven days of its discovery of the omission.

5. The Regional Board shall be notified of any incident resulting from LTU operations that may endanger the environment, by telephone within 24 hours, and in writing within 14 days. The written notification shall fully describe the incident including what occurred, when it occurred, the duration of the incident, when correction occurred (or when correction will occur if it is a continuing incident), and the steps taken or planned to reduce, eliminate, and/or prevent recurrence. All instances of non-compliance with this Order shall also be reported to the Regional Board in the same manner as stated above, and included in the next scheduled monitoring report.

6. The Discharger shall comply with the LTU closure and postclosure maintenance requirements and notification requirements contained in 27 CCR sections 20950(a)(2)(C) and 21420. Closure must be in accordance with a closure plan and postclosure maintenance plan approved by the Executive Officer.

TENTATIVE

7. All applications, reports, or information submitted to the Executive Officer shall be signed and certified as follows:

   i. The applications, reports, or information shall be signed as follows:

      i. For a corporation - by a principal executive officer of at least the level of vice-president.

      ii. For a partnership or sole proprietorship - by a general partner or the proprietor, respectively.

      iii. For a municipality, state, federal or other public agency - by either a principal executive officer or ranking elected official.

      iv. For a military installation - by the base commander or the person with overall responsibility for environmental matters in that branch of the military.

   ii. All other reports required by this Order and other information required by the Executive Officer shall be signed by a person designated in paragraph [a] of this provision, or by a duly authorized representative of that person. An individual is a duly authorized representative only if:

      i. The authorization is made in writing by a person described in paragraph [a] of this provision;

      ii. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity; and

      iii. The written authorization is submitted to the Executive Officer.

   iii. Any person signing a document under this section shall make the following certification:

      "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate 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 known violation."

G. GENERAL PROVISIONS

1. Groundwater quality for the Inglewood Oil Field shall conform to State Water Resources Control Board Resolution 68-16 (Statement of Policy with Respect to Maintaining High Quality Waters in California, also called the "anti-degradation policy").

2. In accordance with CWC section 13260, the Discharger shall file a report of any material change or proposed change in the character, location or volume of the waste discharge.

3. In the event of any change in name of operator or in control or ownership of land or waste disposal facilities owned or controlled by the Discharger, the Discharger shall:

   a. Notify this Regional Board in writing of such a change; and

   b. Notify the succeeding owner or operator by letter, a copy of which shall be filed with this Regional Board, of the existence of this order.

4. This Regional Board considers the Discharger to have continuing responsibility for correcting any problems which may arise in the future as a result of this waste discharge or water applied to this property during subsequent use of the land for other purposes.

5. This Order does not exempt the Discharger from compliance with any other laws, regulations, or ordinances which may be applicable, it does not legalize these waste treatment and disposal facilities and it leaves unaffected any further restrains on those facilities which may be contained in other statues or required by other agencies.

6. This Order is not intended to stop or redirect any investigation or mitigation activities not required by this Order but ordered by this Regional Board or other agency.

7. In accordance with CWC section 13263, these requirements are subject to periodic review and revision, if necessary, by this Regional Board.

8. In accordance with CWC section 13263(g), these requirements shall not create a vested right to continue to discharge. All discharges of waste into the waters of the State are privileges, not rights, and are subject to rescission or modification.

9. This Order includes the attached "Standard Provisions Applicable to Waste Discharge Requirements". If there is any conflict between provisions stated hereinbefore and the attached "Standard Provisions Applicable to Waste Discharge Requirements", those provisions attached hereinbefore prevail.

10. Failure to comply with this Order could subject the discharger to monetary civil liability in accordance with the CWC, including CWC sections 13268 and 13350.

H. TERMINATION

TENTATIVE

1. Except for enforcement purposes, Regional Board Order No. 01-054, adopted on April 26, 2001, is hereby terminated.

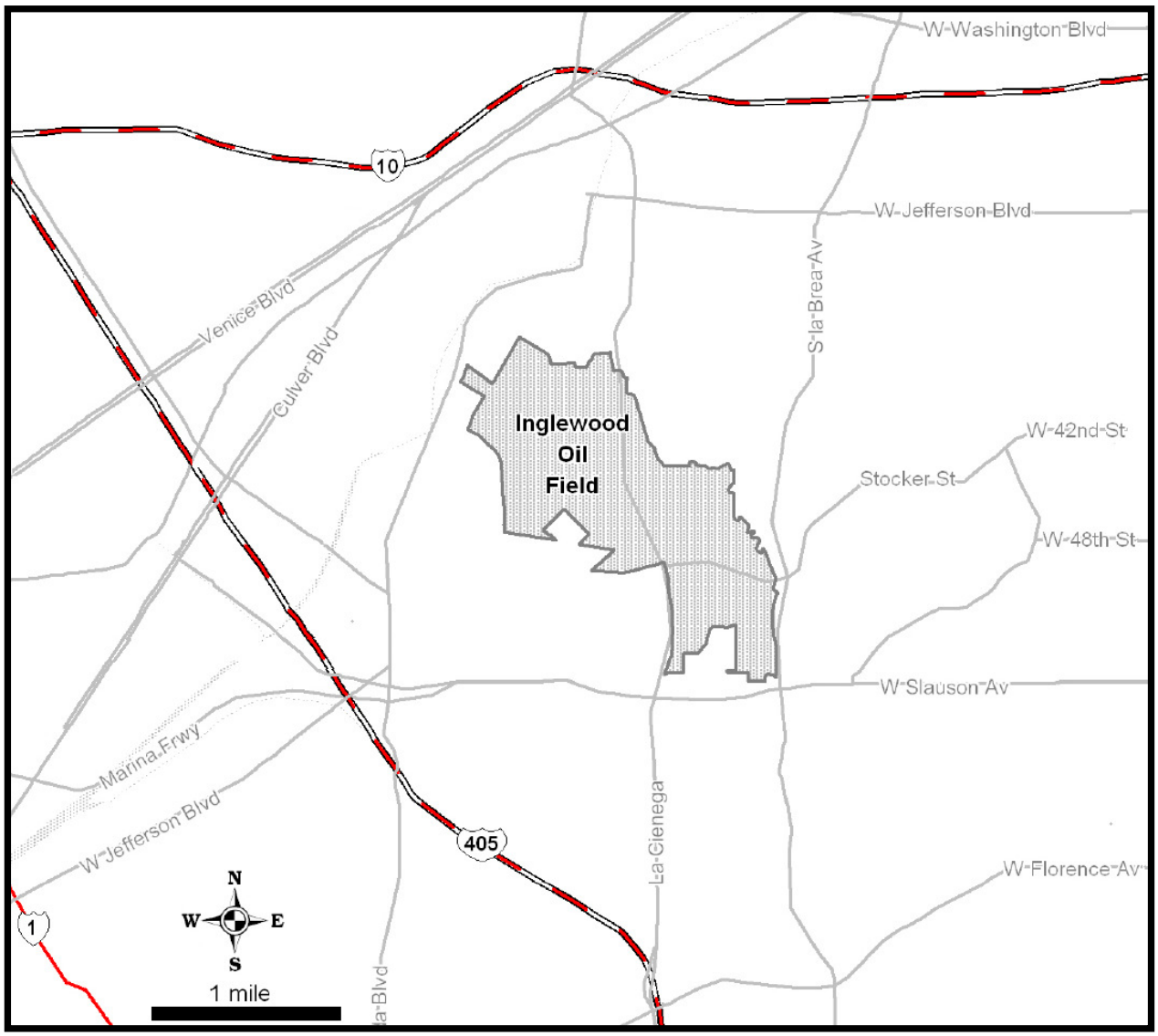
I, Samuel Unger, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region on February 7, 2013.

_____

Samuel Unger, P.E.
Executive Officer

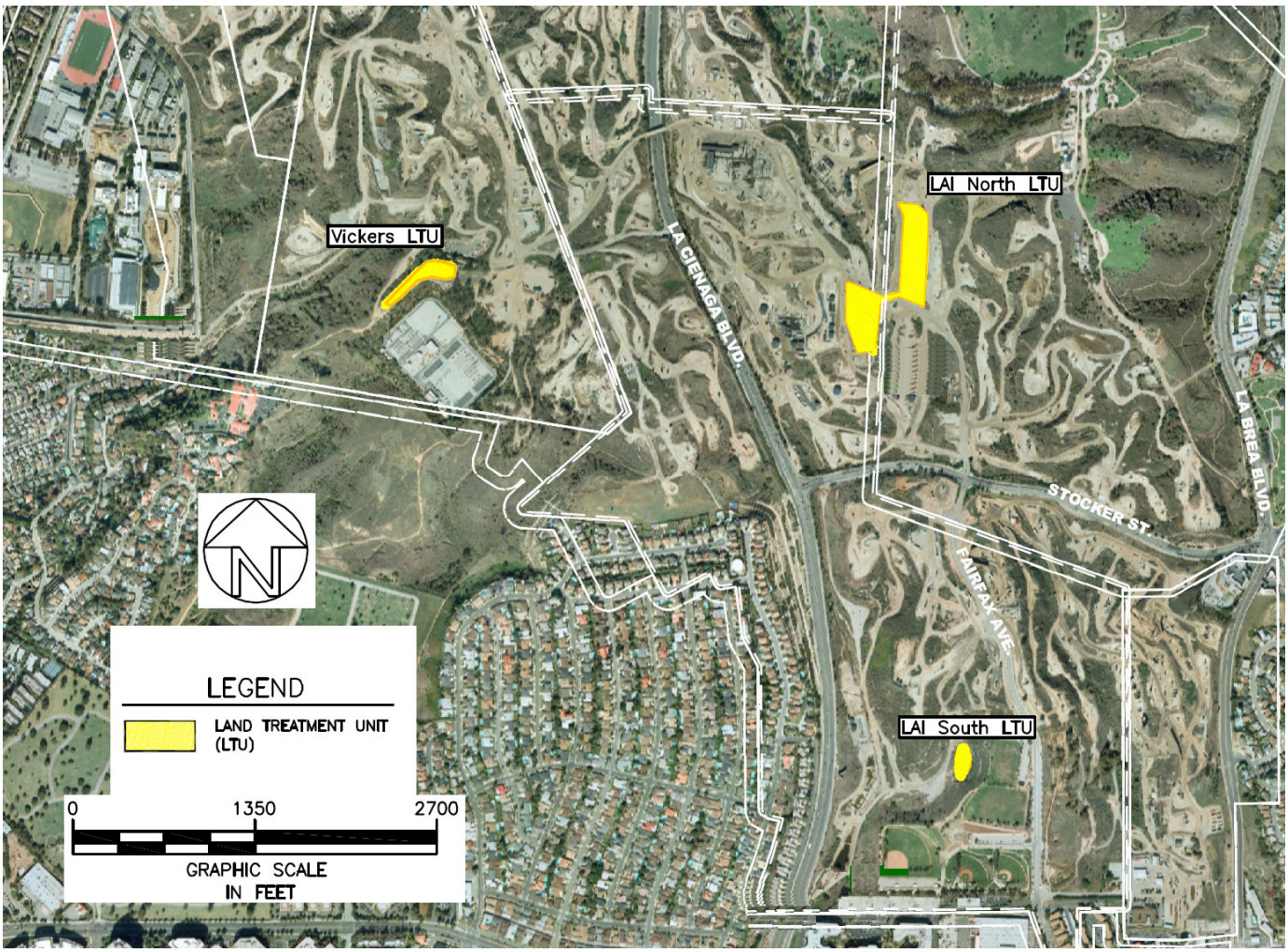
TENTATIVE

FIGURE 1:
SITE LOCATION MAP



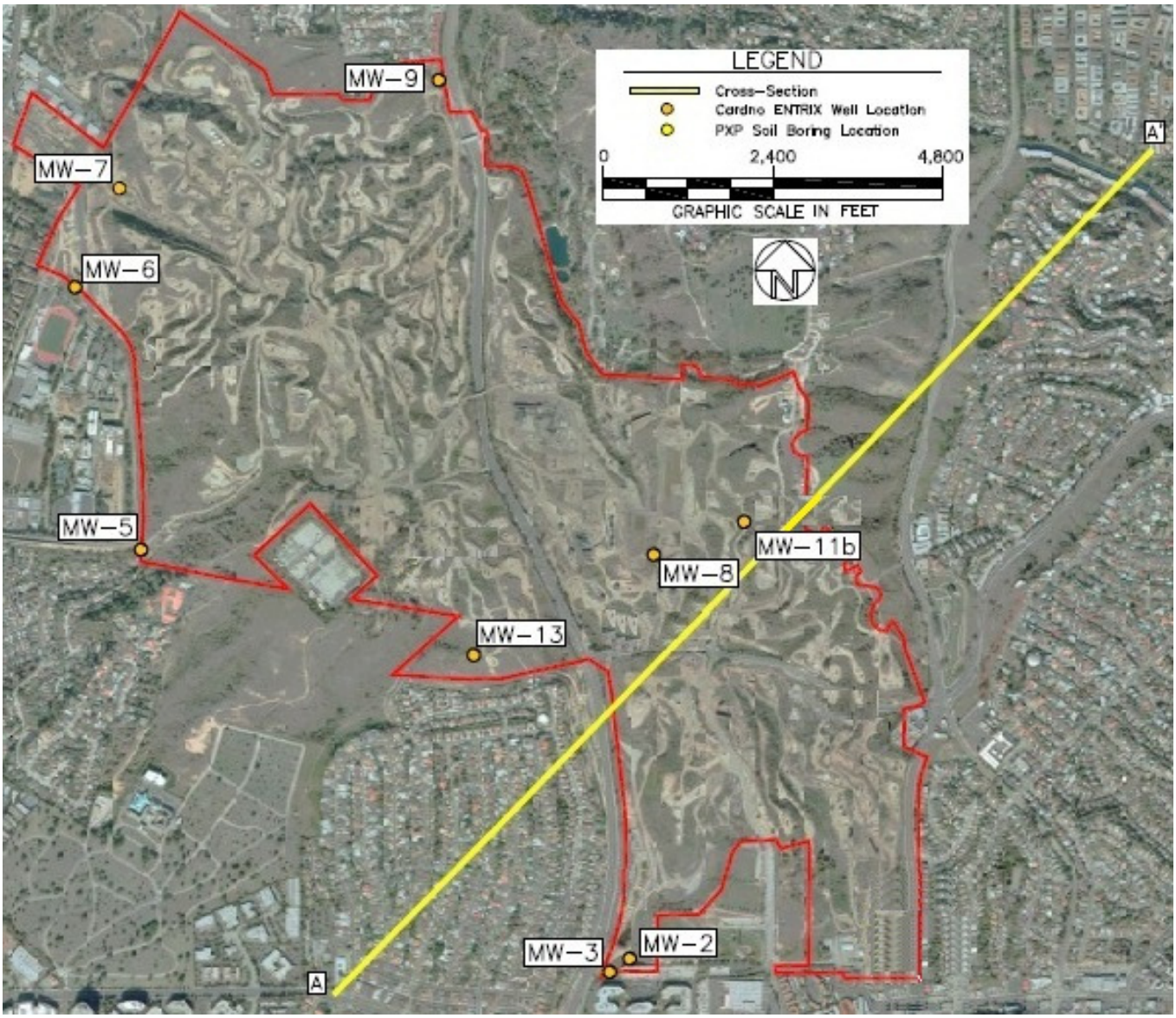
TENTATIVE

FIGURE 2:
LTUs LOCATION MAP



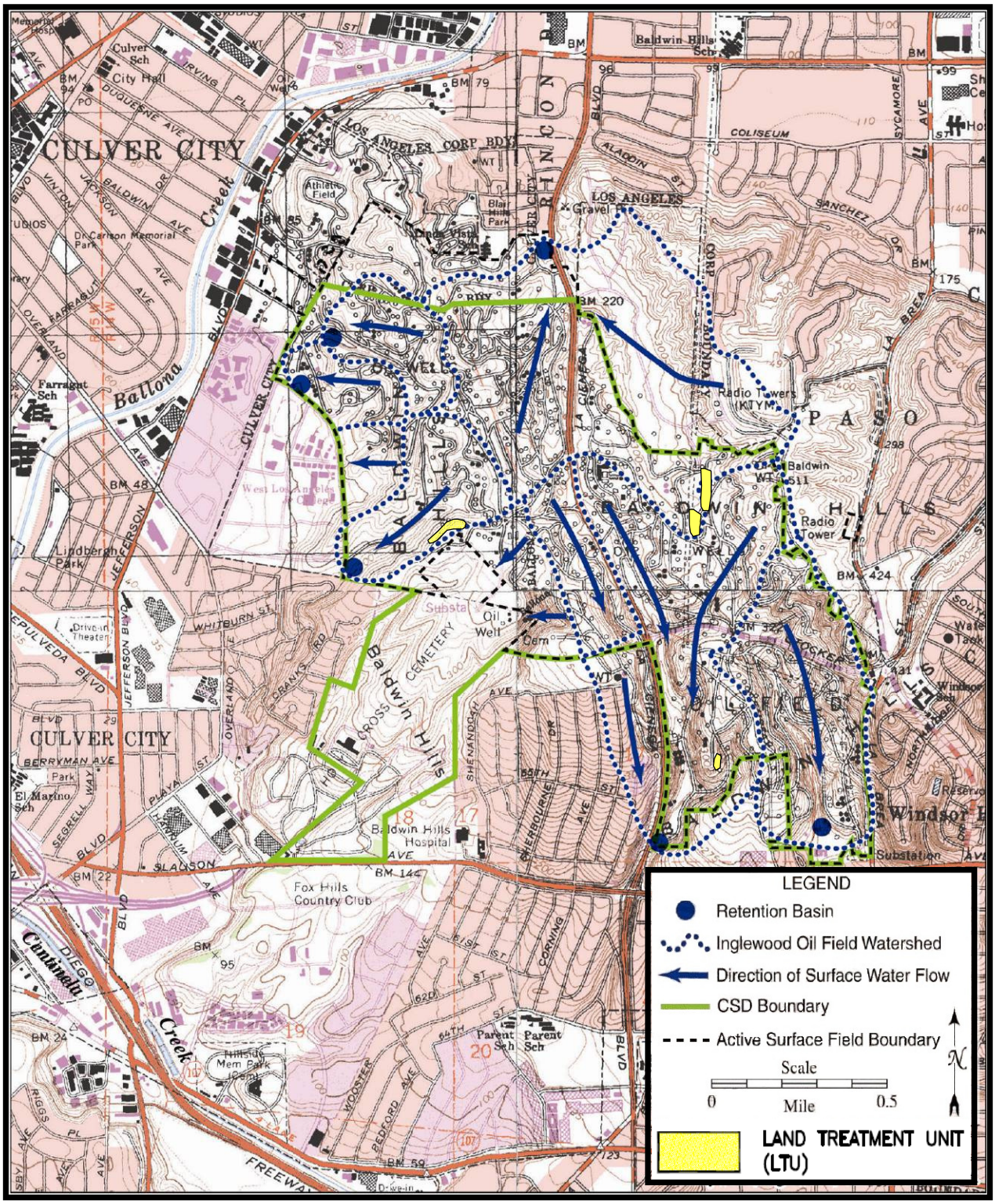
T E N T A T I V E

FIGURE 3:
GROUNDWATER MONITORING LOCATION MAP



TENTATIVE

FIGURE 4:
DRAINAGE AREAS AND DESILTING/RETENTION BASINS LOCATION MAP



TENTATIVE