

## California Regional Water Quality Control Board



## Los Angeles Region

Recipient of the 2001 Environmental Leadership Award from Keep California Beautiful

Arnold Schwarzenegger

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

September 9, 2010

Ms. Jennifer L. Wiley The Boeing Company 2201 Seal Beach Blvd., M/C 110-SE17 Seal Beach, CA 90740-5603

GENERAL WASTE DISCHARGE REQUIREMENTS, FOR TREATED GROUNDWATER RE-INJECTION (ORDER NO R4-2007-0019, SERIES NO 137, MRP NO. CI-9625) - THE BOEING COMPANY, FORMER COMPTON SITE, 233 EAST MANVILLE STREET, 200 EAST STANLEY STREET, AND 157 EAST STANLEY STREET, COMPTON, CALIFORNIA (FILE NO. 96-056; SCP NOS. 0462, 0559A, AND 0559B; SITE ID NO. 2045B00)

Dear Ms. Wiley:

Los Angeles Regional Water Quality Control Board (Regional Board) staff have completed the review of your application for coverage under General Waste Discharge Requirements (WDR) to inject treated groundwater at the site referenced above in Compton, California, for groundwater cleanup and remediation. The Remediation Workplan dated March 5, 2009, prepared by your consultant Haley & Aldrich for the above-referenced site was approved by Regional Board staff on June 24, 2009.

Soil and groundwater has been impacted by volatile organic compounds (VOCs), primarily trichloroethene (TCE) and associated break-down products. No further action letters for the soil have been issued by this Regional Board, on December 12, 2003, for the shallow soil, and on January 24, 2005, and March 19, 2008 for the deep soil. The analytical data from the groundwater monitoring event conducted in March 2010 indicated groundwater beneath the site was impacted by TCE (up to 2,300  $\mu$ g/L), cis-1,2-DCE (up to 270  $\mu$ g/L) and vinyl chloride (up to 150  $\mu$ g/L). Groundwater underlying the site is first encountered at approximately 60 feet below ground surface and groundwater gradient is to the northwest.

Boeing has installed 4 extraction wells and 3 injection wells in anticipation of the construction and operation of an on-site and an off-site groundwater extraction and treatment (GET) systems. The on-site GET system has been designed to extract groundwater at approximately 60 gallons per minute (gpm) with a maximum capacity of 120 gpm. The off-site GET system will be designed to pump and treat volumes of groundwater that are similar to the on-site GET system. The extracted groundwater will be treated by carbon filtration at a compound to be constructed on the easternmost portion of the 157 E. Stanley Street property. Treated water will then be pumped via water conveyance line to the injection wells located at 200 E. Stanley Street.

The Boeing Company SCP No. 0462, 0559A and 0559B

Regional Board staff has determined that the proposed discharge meets the conditions specified in Order No. R4-2007-0019, "Revised General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel, Volatile Organic Compound, and/or Hexavalent Chromium Impacted Sites (General WDRs)," adopted by the Los Angeles Regional Water Quality Control Board on March 1, 2007. Please refer to the attached Fact Sheet. This Waste Discharge Requirements shall not be terminated without this Regional Board's approval.

Enclosed are your Waste Discharge Requirements, consisting of General WDRs Board Order No. R4-2007-0019 and Monitoring and Reporting Program (MRP) No. CI-9625 and Standard Provisions. The Monitoring and Reporting Program requires you to implement the monitoring program on the effective date of this enrollment (September 9, 2010) under Regional Board Order No. R4-2007-0019. All monitoring reports shall be sent to the Regional Board, <u>ATTN: Information Technology Unit</u>. When submitting monitoring or technical reports to the Regional Board per these requirements, please include a reference to "Compliance File No. CI-9625", which will assure that the reports are directed to the appropriate file and staff. Also, please do not combine other reports with your monitoring reports. Submit each type of report as a separate document.

To avoid paying future annual fees, please submit written request for termination of your enrollment under the general WDR in a separate letter when your project has been completed and the WDR is no longer needed. Be aware that the annual fee covers the fiscal year billing period beginning July 1 and ending June 30, the following year. You will pay the full annual fee if your request for termination is made after the beginning of the new fiscal year beginning July 1.

A copy of the Order will be furnished to anyone who requests it, or online at: http://www.waterboards.ca.gov/losangeles/board decisions/adopted orders/by year.shtml

If you have any questions, please contact Ms. Ana Townsend at (213) 576-6738 or email at atownsend@waterboards.ca.gov.

Sincerely,

Samuel Unger, P E Executive Officer

### Enclosures:

- 1) Fact Sheet
- 2) Monitoring and Reporting Program, CI No. 9625
- 3) General Waste Discharge Requirements, Order No. R4-2007-0019

cc: See Mailing List

Ms. Wiley The Boeing Company SCP No. 0462, 0559A and 0559B

## Mailing List

Cheryl Ross, West Basin Municipal Water District Chris Nagler, Watermaster - California Department of Water Resources Nancy Matsumoto, Water Replenishment District of Southern California Robert Scott, Boeing Environmental, Health and Safety Richard Williams, Leighton Consulting, Inc.

## STATE OF CALIFORNIA CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD LOS ANGELES REGION 320 West 4<sup>th</sup> Street, Suite 200, Los Angeles, California 90013

FACT SHEET
WASTE DISCHARGE REQUIREMENTS
FOR
THE BOEING COMPANY
(BOEING FORMER COMPTON FACILITY)

## TREATED GROUNDWATER RE-INJECTION

ORDER NO. R4-2007-0019 (Series No. 137), CI-9625 FILE NO. 96-056, SCP NO. 0462, 0559A AND 0559B

## FACILITY ADDRESS

157 E. Stanley Street Compton, CA 90220 Latitude 33° 87' 26.93" N Longitude 118° 21' 84.30" W

## FACILITY CONTACT MAILING ADDRESS

Jennifer L. Wiley The Boeing Company 2201 Seal Beach Blvd., M/C 110-SE17 Seal Beach, CA 90740-5603

## PROJECT DESCRIPTION:

The Boeing Former Compton Facility (Site) is located at 157 E. Stanley Street, 200 E. Stanley Street, and 233 E. Manville Street in Compton, California. The Site occupies an area of approximately 10 acres, is located in the south-central part of Los Angeles County, and is bounded by Alameda Street on the east, S. Willowbrook Street on the west, the Artesia Freeway (SR 91) on the north and E. Manville Street on the south. The Site is approximately 400 feet west of Compton Creek, a tributary of the Los Angels River. A site vicinity map (Figure 1) and a map of existing and proposed wells (Figure 2) are attached.

The Boeing Company purchased the Site in 2001 and is the successor to companies that previously operated businesses at the Site which was first developed as a manufacturing facility in the mid-1950s. The Site was used between approximately 1955 and 1969 by North American Aviation, Rockwell International's Autonetics Division, and Rockwell's Space Division for aerospace manufacturing operations, production of military electronic components including radar and missile guidance systems, and manufacturing of electronic components for the National Aeronautics and Space Administration (NASA) rocket programs. Between 1969 and 1999, the Site was occupied by various companies and was used primarily for industrial manufacturing of airplane parts, electronic components, automobile service, precision tool manufacturing, the roofing industry, distribution of SCUBA gear, and the molding of plastic products. Manufacturing operations at 157 E. Stanley Street ceased in 1999 and at 200 E. Stanley Street in 1994.

Groundwater underlying the Site is first encountered at approximately 60 feet below ground surface and has been impacted by volatile organic compounds (VOCs), primarily trichloroethene (TCE) and associated break-down products. The groundwater flows from the southeast corner of the site to the northwest corner of the site (Figures 3, 4, and 5). Groundwater monitoring activities have been conducted since 1995 and previous groundwater remediation efforts have consisted of a dual-phase vacuum

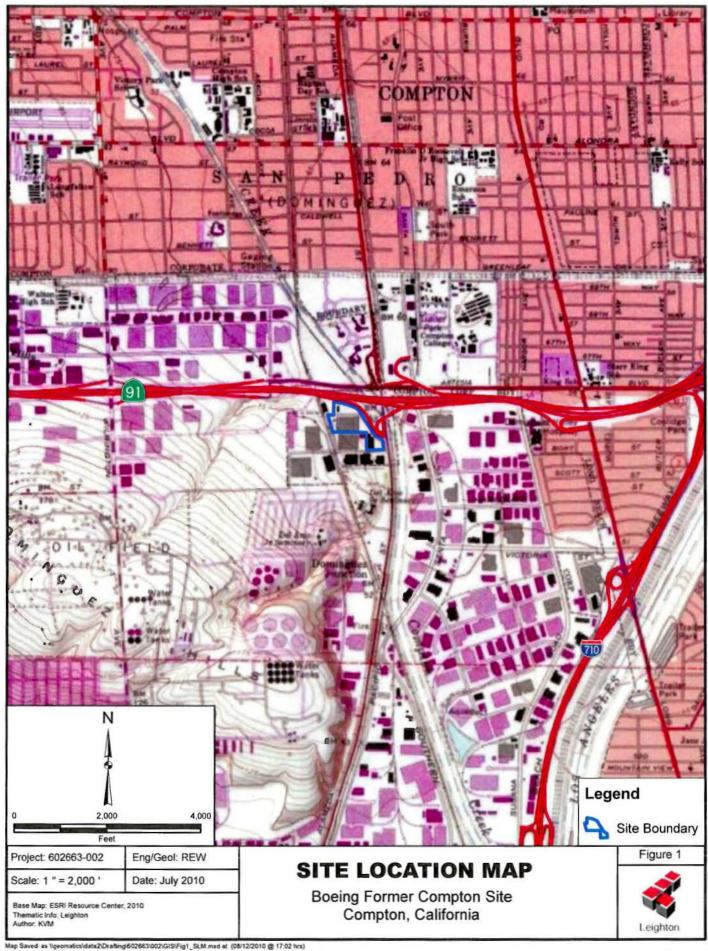
extraction test and an enhanced, in-situ bioremediation pilot test. A Site-wide Groundwater Assessment Report (SWGAR) was submitted in December 2005 and an addendum to the SWGAR was submitted in November 2008, following the installation of additional off-Site wells. These documents, along with ongoing groundwater monitoring activities, have characterized the TCE plume that impacts the underlying Bellflower Aquitard and A-Sand groundwater zones. The vadose zone and water bearing sediments beneath the Site consist of interbedded sands, silts and clays.

Based on the completed comprehensive site assessment, the data indicates that a VOC plume, primarily TCE, is present in shallow groundwater (Bellflower Aquitard) beneath most of the Site at concentrations exceeding the California drinking water maximum contaminant level. Tetrachloroethylene (PCE) is also present in shallow groundwater, but is limited to the northernmost portion of the property. VOCs are also present in deep groundwater beneath the Site (A-Sand). Both TCE and PCE groundwater contamination extends off-Site and is migrating toward the northwest within the A-Sand groundwater zone. The Bellflower Aquitard contaminant plume appears to be relatively stable. The approximate distribution of TCE concentrations are shown in Figures 6, 7 and 8.

## RATES AND DESCRIPTION OF TREATED GROUNDWATER RE-INJECTION:

Hydraulic Containment Barriers will extract groundwater at the on-Site downgradient boundary and at the off-Site leading edge of the VOC plumes. VOC contaminants will be removed from the extracted groundwater by activated carbon, prior to re-injection. The location of the off-Site and on-Site Groundwater Extraction and Treatment (GET) Systems and associated extraction and injection wells are depicted in Figure 2.

The GET Systems will each be designed to extract groundwater at approximately 60 gallons per minute (gpm) with a maximum capacity of 120 gpm. The re-injection rates of treated groundwater will therefore range from 120 to 240 gpm. For the on-Site GET System eighty-five percent, or more, of the extracted water will be pumped from the A-Sand with up to 15 percent extracted from the Bellflower Aquitard due to its low hydraulic transmissivity. The extracted groundwater will be treated at a compound to be constructed on the easternmost portion of the 157 E. Stanley Street property. Treated water will then be pumped via a water conveyance line to injection wells located at 200 E. Stanley Street. The off-Site GET System treatment compound is anticipated to be located at an offsite property downgradient of the Site (access agreement pending). All of the off-site groundwater will be extracted from, and re-injected into the A-Sand groundwater zone. Construction of the on-Site GET System is planned for the 4<sup>th</sup> quarter of 2010 and construction of the off-Site GET System is planned for 2011.



# S. ALAMEDA ST ARTESIA FREEWAY (SR-91) E. ARTESIA BLVD RAILROAD E. MANVILLE ST W. ARTESIA BLVD

## EXPLANATION

BELLFLOWER ADUITARD EXTRACTION WELL ON-SITE A-SAND EXTRACTION WELL

ON-SITE A-SAND INJECTION WELL

PROPOSED OFF-SITE A-SAND EXTRACTION WELL

PROPOSED OFF-SITE A-SAND INJECTION WELL

BELLFLOWER AQUITARD MONITOR WELL UPPER A-SAND (UAS) MONITOR WELL MIDDLE A-SAND (MAS) MONITOR WELL LOWER A-SAND (LAS) MONITOR WELL

FORMER WATER SUPPLY WELL (DESTROYED) PROPOSED GET REMEDIATION COMPOUNDS

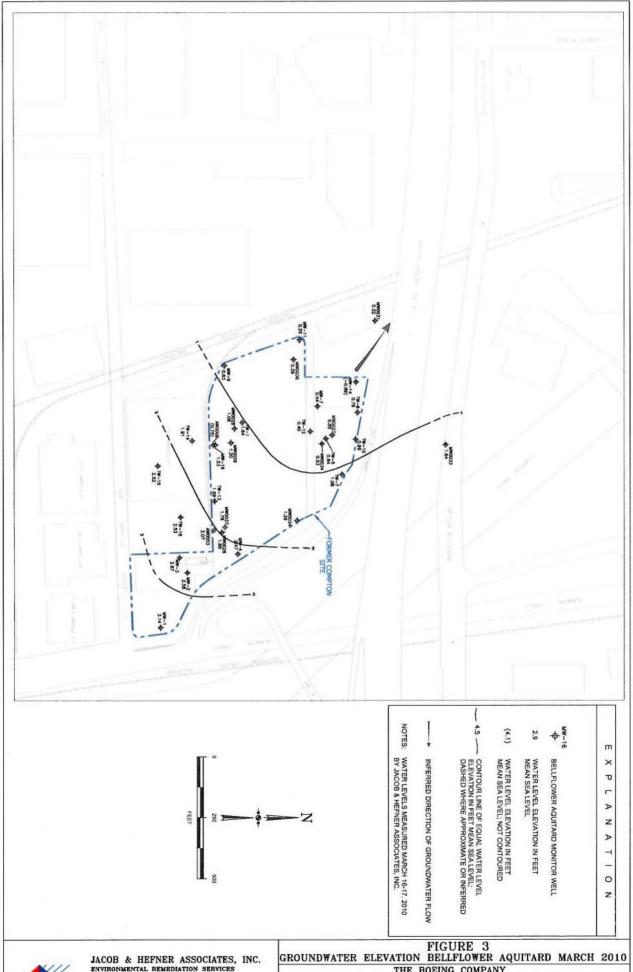
SITE BOUNDARY

THE BOEING COMPANY FORMER COMPTON SITE COMPTON, CALIFORNIA

GROUNDWATER EXTRACTION AND INJECTION



FIGURE 2 HPT NO 179 325 410-7869 REV BY



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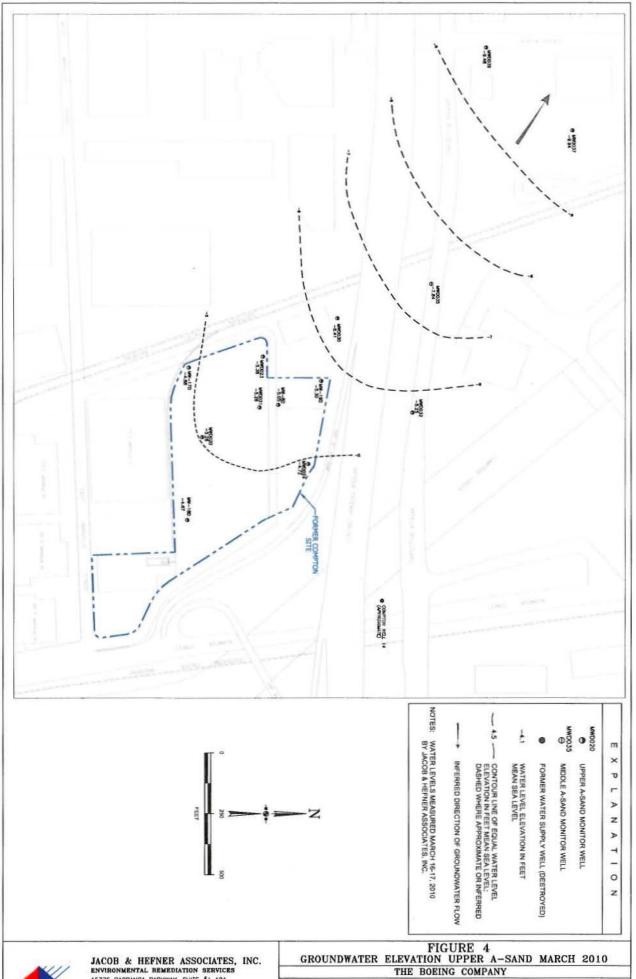
ENVIRONMENTAL REMEDIATION SERVICES

15375 BARRANCA PARKWAY, SUITE #J-101

IRVINE, CALIFORNIA 92618

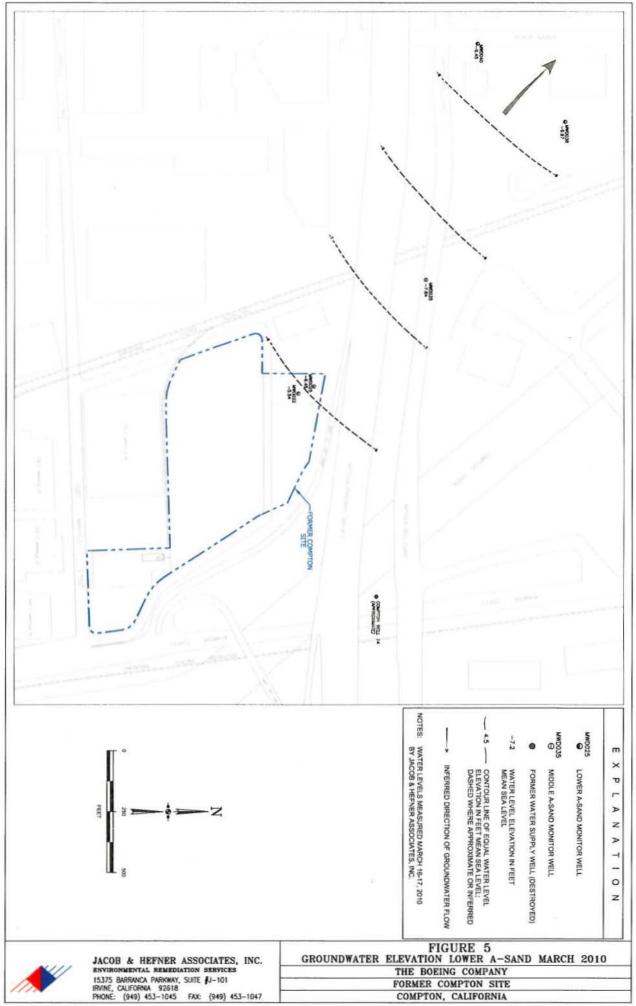
PHONE: (949) 453-1045 FAX: (949) 453-1047

THE BOEING COMPANY FORMER COMPTON SITE COMPTON, CALIFORNIA

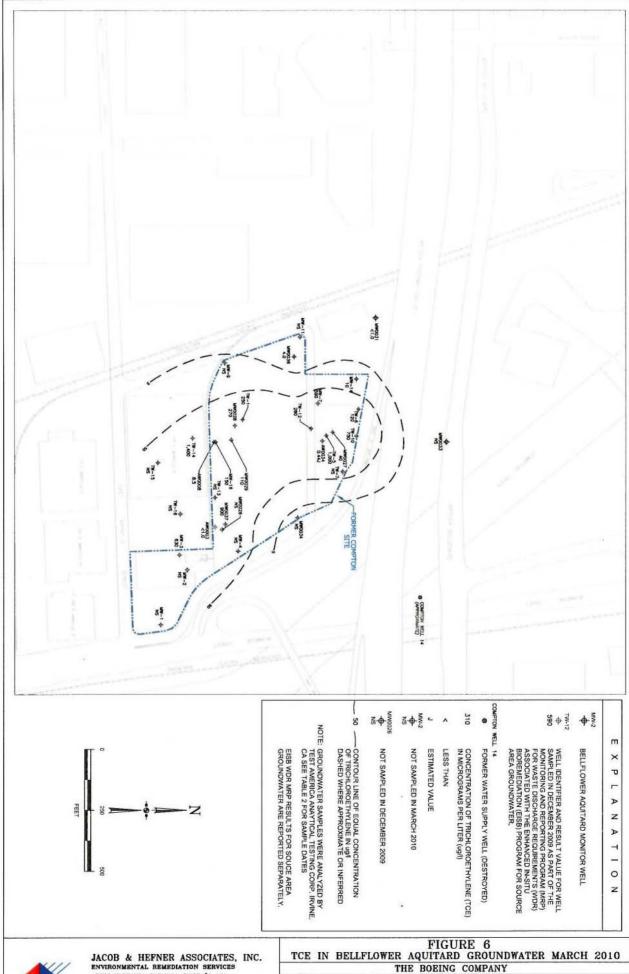


JACOB & HEFNER ASSOCIATES, INC. ENVIRONMENTAL REMEDIATION SERVICES 15375 BARRANCA PARKWAY, SUITE [J-101 IRWNE, CALIFORNIA 92618 PHONE: (949) 453-1045 FAX: (949) 453-1047

FORMER COMPTON SITE COMPTON, CALIFORNIA



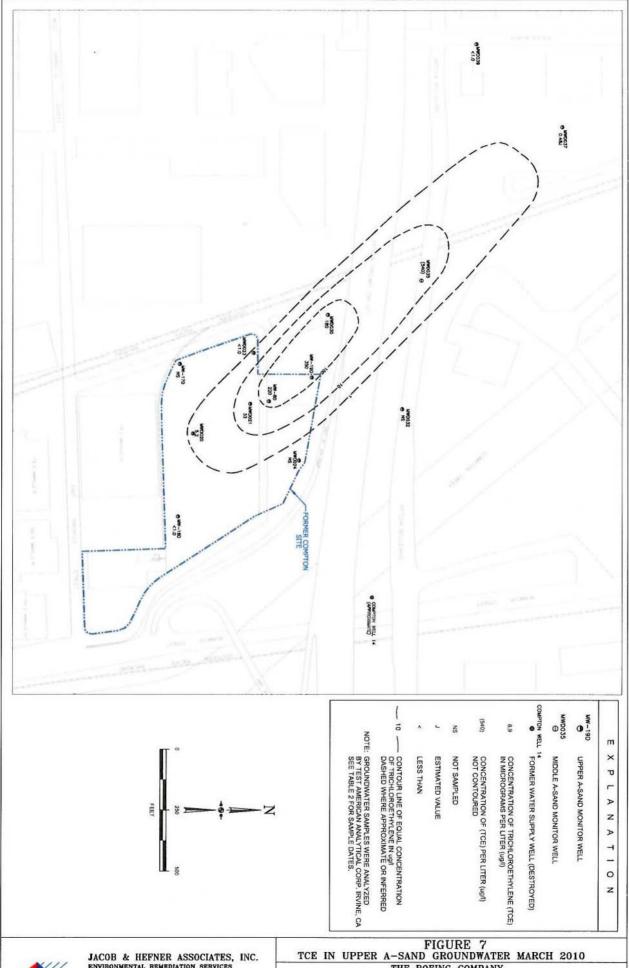
COMPTON, CALIFORNIA





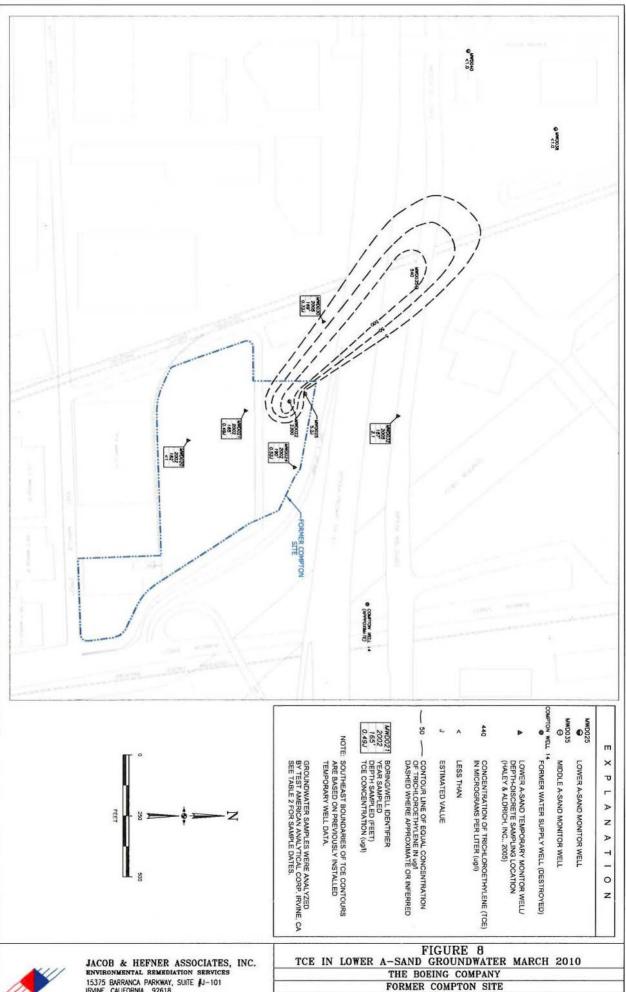
JACOB & HEFNER ASSOCIATES, INC. ENVIRONMENTAL REMEDIATION SERVICES 15375 BARRANCA PARKWAY, SUITE \$J-101 IRANE, CALIFORNIA 92618 PHONE: (949) 453-1045 FAX: (949) 453-1047

FORMER COMPTON SITE COMPTON, CALIFORNIA



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THE BOEING COMPANY FORMER COMPTON SITE COMPTON, CALIFORNIA



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COMPTON, CALIFORNIA

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

## MONITORING AND REPORTING PROGRAM NO. CI-9625 FOR

THE BOEING COMPANY
BOEING FORMER COMPTON FACILITY
COMPTON, CALIFORNIA
(TREATED GROUNDWATER RE-INJECTION)
(FILE NO. 96-056; SCP NO. 0462, 0559A and 0559B)
(ORDER NO. R4-2007-0019, SERIES NO. 137)

## I. REPORTING REQUIREMENTS

A. The Boeing Company (hereinafter Discharger) shall implement this monitoring and reporting program (MRP) on the effective date of this enrollment (September 9, 2010) under Regional Board Order No. R4-2007-0019 (Series No. 137). The first monitoring report (Post-Construction & Startup Report) under this program, for January – March 2011, shall be received at the Regional Board by April 30, 2011. Subsequent monitoring reports shall be received at the Regional Board according to the following schedule:

Monitoring Period	Report Due	
January - March	April 30	
April – June	July 30	
July - September	October 30	
October - December	January 30	
Annual Summary Report	March 15 of each year	
	beginning in 2012	

- B. If there is no discharge or injection during any reporting period, the report shall so state.

  Monitoring reports must be addressed to the Regional Board, Attention: <u>Information</u>
  Technology Unit.
- C. By March 15 of each year, starting in 2012, the Discharger shall submit an annual summary report to the Regional Board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous calendar year. In addition, the Discharger shall discuss the compliance record and the corrective actions taken or planned, which may be needed to bring the discharge into full compliance with the waste discharge requirements.
- D. Whenever wastes associated with the discharge under this Order are transported to a different disposal site, the following shall be reported in the monitoring report: type and quantity of wastes; name and address of the hauler (or method of transport if other than by hauling); and location of the final point(s) of disposal.

E. Laboratory analyses - all chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Public Health Environmental Laboratory Accreditation Program (ELAP). A copy of the laboratory certification shall be provided each time a new and/or renewal certification is obtained from ELAP.

Order No. R4-2007-0019

Series No. 137

- F. The method limits (MLs) employed for effluent analyses shall be lower than the permit limits established for a given parameter, unless the Discharger can demonstrate that a particular ML is not attainable and obtains approval for a higher ML from the Regional Board Executive Officer (Executive Officer). The Discharger shall submit a list of the analytical methods employed for each test and the associated laboratory quality assurance/quality control (QA/QC) procedures upon request by the Regional Board.
- G. Groundwater samples must be analyzed within allowable holding time limits as specified in 40 CFR Part 136. All QA/QC samples must be run on the same dates when samples were actually analyzed. The Discharger shall make available for inspection and/or submit the QA/QC documentation upon request by Regional Board staff.
- H. Each monitoring report must affirm in writing that "All analyses were conducted at a laboratory certified for such analyses by the California Department of Health Services, and in accordance with current United States Environmental Protection Agency (USEPA) guideline procedures or as specified in this Monitoring Program." Proper chain of custody procedures must be followed and a copy of the completed chain of custody form shall be submitted with the report.
- I. Each monitoring report shall contain a separate section titled "Summary of Non-Compliance" which discusses the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with WDRs. This section shall be located at the front of the report and shall clearly list all non-compliance with WDRs, as well as all excursions of effluent limitations.
- J. The Discharger shall maintain all sampling and analytical results: date, exact place, and time of sampling; dates analyses were performed; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.
- K. If the Discharger performs analyses on any groundwater samples more frequently than required by this Order using approved analytical methods, the results of those analyses shall be included in the report.
- L. In reporting the monitoring data, the Discharger 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 and, where applicable, shall include results of receiving water observations.

Order No. R4-2007-0019 Series No. 137

M. The Discharger should not implement any changes to the Monitoring and Reporting Program prior to receiving Executive Officer's written approval.

## 11. TREATED GROUNDWATER RE-INJECTION MONITORING REQUIREMENTS

The quarterly reports shall contain the following information regarding re-injection activities:

- Location map showing re-injection points used for the treated groundwater. Groundwater
  monitoring wells shall not be used as re-injection points to avoid reduction of groundwater
  monitoring network and data bias. Treated groundwater must only be injected into the five
  wells proposed and approved in the workplan(s).
- Written and tabular summary defining the quantity of treated groundwater injected per month to the groundwater and a summary describing the days on which the injection system was in operation.

## III. GROUNDWATER MONITORING PROGRAM

Monitoring of groundwater to be re-injected into the subsurface shall consist of sampling and analysis for specific water quality attributes and potential residual contaminants in accordance with the Los Angeles Region Basin Plan and shall be performed in addition to the on-going groundwater monitoring conducted under the Key Well Monitoring Plan for the Boeing Company Former Compton Site. The following groundwater extraction and treatment (GET) System components or sample points will be monitored under the MRP sampling program:

- Existing On-Site Extraction wells: EW-0101, EW-0102, EW-0103 and EW-0104
- Future Off-Site Extraction Well: EW-0105
- Influent Process Stream Samples: Total on-Site Influent and Total off-Site Influent
- Effluent Process Stream Samples: Total on-Site Effluent and Total off-Site Effluent
- Existing groundwater monitoring wells MWD020, MWD030 and MWD035
- Future downgradient groundwater monitoring well at a location to be approved by this Regional Board, prior to start-up of the off-Site GET System, if implemented.

Figure 1 shows the location of the Site. Figure 2 shows the groundwater monitoring wells, on-Site groundwater extraction and injection wells, and the proposed locations of the off-Site groundwater extraction and injection wells. Also depicted are the locations of the on-Site and off-Site GET System compounds. The precise configuration of the off-Site GET System components may change as they are subject to on-going negotiations with the off-Site property owners.

Baseline groundwater samples from the extraction and injection wells and a flow-weighted sample simulating the influent process stream have previously been analyzed. The required MRP constituents to be analyzed, and the monitoring schedule for each sample group are shown below.

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS	
Total Groundwater Extraction	Gallons	Flow Meter Measurement	Daily	
Total Groundwater Re-injection	Gallons	Flow Meter Measurement	Daily	
Groundwater Elevations	feet above mean sea level	In situ	Daily	
pН	pH units	Grab	Monthly for the first year, Semi-annual thereafter	
Temperature	°F/°C	Grab	Monthly for the first year, Semi-annual thereafter	
Total Dissolved Solids (TDS), Boron, Chloride, Sulfate	milligrams per liter (mg/L)	Grab	Monthly for the first year, Semi-annual thereafter	
Metals (arsenic, chromium, iron, lead, aluminum and nickel)	micrograms per liter (μg/L)	Grab	Monthly for the first year, Semi-annual thereafter	
VOC s	micrograms per liter (µg/L)	Grab	Monthly for the first year, Semi-annual thereafter	

The sampling frequency during the initial 30-day system startup and shakedown period will consist of a minimum of weekly sampling for the constituents and parameters shown above. Thereafter, the sampling and analysis will be conducted on a monthly basis as indicated.

All groundwater monitoring reports must include, at a minimum, the following:

- a. Summary of reporting period activities
- b. Summary of planned activities for upcoming reporting period
- c. Identification of well or GET System component sample point, date and time of sampling, and name of individual performing the sampling and the laboratory conducting the analysis.
- d. Daily groundwater elevation levels, recorded to 0.01 feet mean sea level (ft msl)
- e. Daily, monthly, and cumulative groundwater extraction rates in gallons by individual extraction well and total influent,
- f. Daily, monthly, and cumulative groundwater injection rates in gallons by individual injection wells and total effluent; and
- g. VOC concentrations ending each reporting period for TCE, PCE, cis-1, 2-DCE, Freon 11, Freon 113, toluene, and vinyl chloride for each groundwater extraction well and influent and effluent process stream sampling points.

## IV. 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 this Order. Monitoring frequencies may be adjusted to a less frequent basis or parameters and locations dropped by the Executive Officer if the Discharger makes a request and the request is backed by statistical trends of monitoring data submitted.

## V. CERTIFICATION STATEMENT

Each report shall contain the following completed declaration:

"I certify under penalty of law that this document, including all attachments and supplemental information, was prepared 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 a fine and imprisonment.

Executed on the	day of	at	•
			(Signature)
			(Title)"

## VI. PUBLIC DOCUMENTS

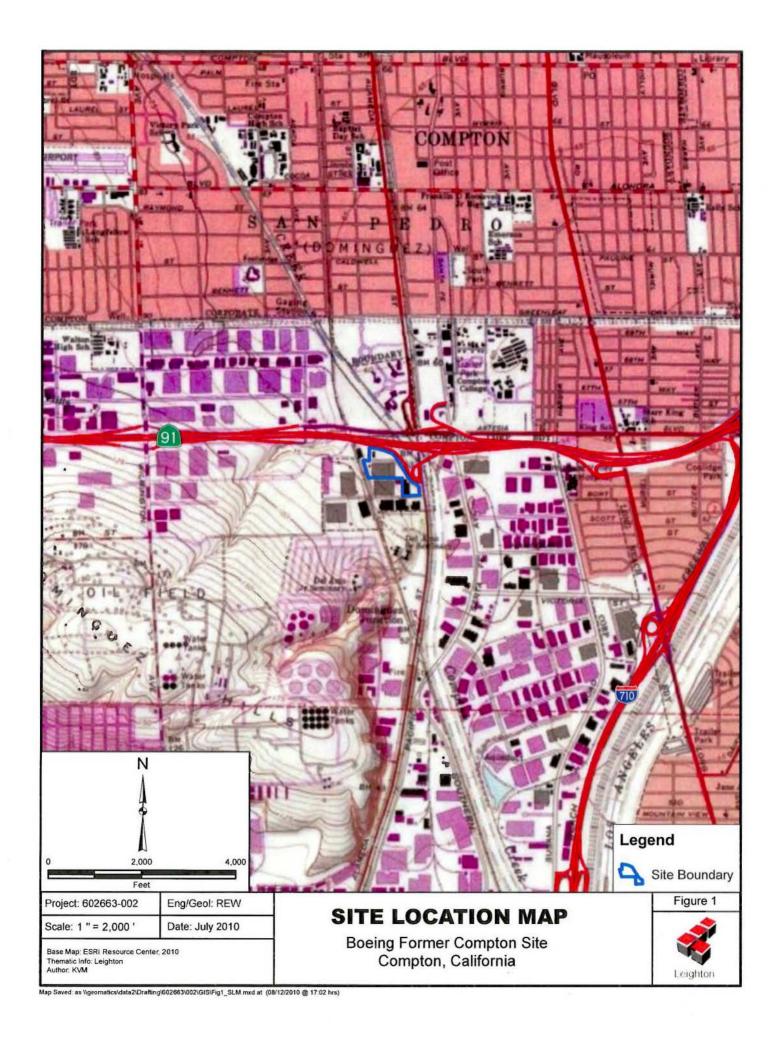
All records and reports submitted in compliance with this Order are public documents and shall be made available for inspection during normal business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region, upon request by interested parties. Only proprietary information, and only at the request of the Discharger will be treated as confidential.

Ordered by:

Samuel Unger

Executive Officer

Date: September 9, 2010







THE BOEING COMPANY FORMER COMPTON SITE COMPTON, CALIFORNIA



SITE BOUNDARY

PROPOSED GET REMEDIATION COMPOUNDS

FORMER WATER SUPPLY WELL (DESTROYED)

UPPER A-SAND (UAS) MONITOR WELL MIDDLE A-SAND (MAS) MONITOR WELL LOWER A-SAND (LAS) MONITOR WELL

BELLFLOWER AQUITARD MONITOR WELL

PROPOSED OFF-SITE A-SAND INJECTION WELL ON-SITE A-SAND INJECTION WELL

PROPOSED OFF-SITE A-SAND EXTRACTION WELL

BELLFLOWER AQUITARD EXTRACTION WELL

EXPLANATION

ON-SITE A-SAND EXTRACTION WELL