

## Central Valley Regional Water Quality Control Board

28 December 2016

Dr. Balwinder Mahli  
2590 Butte House Rd  
Yuba City, CA 95993

***NOTICE OF APPLICABILITY TO OPERATE UNDER GENERAL ORDER NO. R5-2003-0044 FOR LAND DISPOSAL OF GROUNDWATER OR SURFACE WATER FROM CLEANUP OF PETROLEUM POLLUTION at QUICK-N-SHOP SERVICE STATION, 2590 BUTTE HOUSE ROAD, YUBA CITY, SUTTER COUNTY, CASE# 510085***

Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff have reviewed the *Addendum to Notice of Intent Application* (NOI Addendum), dated 27 September 2016, submitted on your behalf by Stratus Environmental Inc. (Stratus) for the Quick-N-Shop located at 2590 Butte House Road (Site) in Yuba City. The required application fee check in the amount of \$4699.00 was received along with the NOI Addendum.

Additional information related to the request to discharge groundwater to land from a petroleum cleanup has been included in the following submittals:

- *Remedial Action Plan*, date 14 July 2014
- *Notice of Intent Application* (NOI), dated 27 July 2016

In the NOI and NOI Addendum, Stratus proposes to discharge extracted groundwater by reinjecting it into the subsurface via two (2) injection wells (RW-1 and RW-2) to be installed into the water-bearing zone found between 40-50 feet below the ground surface (bgs), between existing wells MW-5 and MW-14. Gravel desposits, observed in Site borings and wells, at depths ranging between about 30-50 feet bgs are expected to accept the proposed injection of 5 to 10 gallons per minute (gpm) of treated groundwater.

Prior to being reinjected, extracted groundwater is proposed be pre-treated in holding tanks with concentrated ozone, and then treated through three (3) 2,000-pound granulated activated carbon (GAC) vessels. The discharge of treated groundwater is regulated by *Order No. R5-2003-004, General Order for Land Disposal of Groundwater or Surface Water from Cleanup of Petroleum Pollution* (General Order).

Based on review of the information provided, I have determined that this project meets the required conditions to operate under the General Order. You are hereby assigned General Order **R5-2003-004-032** to discharge treated groundwater from the proposed groundwater extraction system.

### PROJECT LOCATION

The Quick-N-Shop gasoline station and market is located at 2590 Butte House Road, on the southeast corner of the intersection of Butte House Road and Villa Avenue, in Yuba City, Sutter County. Municipal water is available in the area from Yuba City Water. A total of 231 water supply

wells were identified within 0.5 miles of the Site. The nearest surface water body is the Feather River approximately 3 miles to the east of the Site.

**PROJECT DESCRIPTION**

A dual-phase extraction and air-sparge system has been installed at the Quick-N-Shop Site, including associated soil vapor and groundwater extraction wells and air sparge wells. Analytical testing is conducted on 31 Site monitoring wells (19 shallow; 12 deep) as part of the corrective actions at this Site. Groundwater extraction influent and effluent analytical testing will be conducted as part of the attached Monitoring and Reporting Program. Remedial system operation and maintenance will be performed as detailed in Attachment A of the NOI. Under the permit, there are no surface waters associated with this project.

The anticipated influent concentrations are based on the maximum influent concentrations reported in the *Dual Phase Extraction Pilot Test Report* dated 26 February 2014. The anticipated flow rates and influent concentrations are shown in the tables below.

**TABLE 1: Anticipated Flow Rates**

Average Flow Rate	5 gpm
Maximum Flow Rate	10 gpm

**TABLE 2: Anticipated Influent Concentrations**

TPHg	15,000 ug/L
Benzene	1,300 ug/L
Toluene	1,200 ug/L
Ethylbenzene	260 ug/L
Xylenes	2,100 ug/L
MTBE	13,000 ug/L
Lead	11 ug/L

General Order R5-2003-004-032 requires the discharge of treated groundwater to meet the following standards;

**TABLE 3: Discharge Standards**

Constituent	Units	30-Day Median	Daily Max
Lead (total)	ug/L	2.0	2.0
Total Petroleum Hydrocarbons as Gasoline (TPHg)	ug/L	<50	50
Benzene	ug/L	<0.5	0.5
Toluene	ug/L	<0.5	5.0
Ethylbenzene	ug/L	<0.5	5.0
Total Xylenes	ug/L	<0.5	5.0
Methyl tert butyl ether (MTBE)	ug/L	<0.5	5.0
Tert butyl alcohol (TBA)	ug/L	<10	12
Ethyl tert butyl ether (ETBE)	ug/L	<0.5	5.0
Di-isopropyl ether (DIPE)	ug/L	<0.5	5.0
Tert amyl methyl ether (TAME)	ug/L	<0.5	5.0
Naphthalene	ug/L	<5.0	21

### ADDITIONAL REQUIREMENTS

1. While the proposed depths of injection wells RW-1 and RW-2 is 40-50 feet bgs, adjustments should be made based on field observations in order to target the gravels observed in other nearby borings and wells, in order to ensure the maximum possible injection rate.
2. Additional monitoring wells are required to monitor water quality down-gradient of the proposed injection wells RW-1 and RW-2. Groundwater flow direction in the deeper water zone has historically flowed north and northeast. While MW-10D is a deeper zone monitoring well located north of RW-1 and RW-2, no deeper monitoring well is located down-gradient to the northeast of injection wells; RW-1 and RW-2. An additional monitoring well constructed with a screened interval in the same water-bearing zone as the injection wells is needed to the northeast of RW-1 and RW-2, between existing water table wells, MW-15 and MW-14 to monitor effects of the proposed injections.
3. As detailed in the Monitoring and Reporting Program (MRP), influent sampling is to be performed monthly, though the frequency may be reduced to quarterly for individual constituents following three (3) consecutive monthly sampling events resulting in non-detectable concentrations. Effluent sampling is to be performed weekly for four (4) weeks, after which period, if no constituents exceed permitted effluent limits, the frequency may be reduced to monthly. Modifications to the sampling frequency will be directed by Central Valley Water Board staff as appropriate.
4. The required annual fee (as specified in the annual billing invoice to be issued by the State Water Resources Control Board) shall be submitted until this NOI is officially withdrawn.

If you have any questions or concerns please contact Alan Buehler by phone at (916) 464-4615 or by email at [alan.buehler@waterboards.ca.gov](mailto:alan.buehler@waterboards.ca.gov).



PAMELA C. CREEDON  
Executive Officer

#### Attachments:

Monitoring and Reporting Program  
Figures 1 through 3  
General Order R5-2003-0044

cc: Sriram Iyer, State Water Resources Control Board, Cleanup Fund, Sacramento  
Sukh Sahota, Sutter Co. Environmental Health Services, Yuba City  
Scott Bittinger, Stratus Environmental Inc., Cameron Park

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM  
FOR ORDER NO. R5-2003-0044-032

GENERAL ORDER FOR LAND DISPOSAL  
OF GROUNDWATER AND SURFACE WATER FROM CLEANUP OF  
PETROLEUM FUEL POLLUTION

The Discharger shall maintain water quality monitoring systems that are appropriate for detection and corrective action monitoring. Failure to comply with this Program constitutes non-compliance with the Waste Discharge Requirements and with the California Water Code, which can result in the imposition of civil monetary liability. Acceptable analysis methods are described in Finding 17 on page 3 of the General Order. Analytical detection level requirements are noted in Provision C.1 on page 5 of the Standard Provision and Reporting Requirements section of the General Order. The Discharger shall comply with the electronic data submittals required by Provision E.8 on page 10 of the General Order for influent, effluent, routine and special monitoring, and grab sample analyses.

**INFLUENT MONITORING**

1. Influent samples shall be collected after the last connection before the wastes enter the treatment process. Time of collection of a grab sample shall be recorded. The following shall constitute the influent monitoring program:
- 2.

**TABLE 1: Influent Monitoring Requirements**

Constituents	Units	Sample	Frequency
Lead ( dissolved) <sup>A</sup>	ug/L	Grab	Monthly
Total Petroleum Hydrocarbons as Gasoline (TPHg)	ug/L	Grab	Monthly <sup>B</sup>
Benzene	ug/L	Grab	Monthly <sup>B</sup>
Toluene	ug/L	Grab	Monthly <sup>B</sup>
Ethylbenzene	ug/L	Grab	Monthly <sup>B</sup>
Total Xylenes	ug/L	Grab	Monthly <sup>B</sup>
Methyl tert butyl ether (MTBE)	ug/L	Grab	Monthly <sup>B</sup>
Tert butyl alcohol (TBA)	ug/L	Grab	Monthly <sup>B</sup>
Ethyl tert butyl ether (ETBE)	ug/L	Grab	Monthly <sup>B</sup>
Di-isopropyl ether (DIPE)	ug/L	Grab	Monthly <sup>B</sup>
Tert amyl methyl ether (TAME)	ug/L	Grab	Monthly <sup>B</sup>
Naphthalene	ug/L	Grab	Monthly <sup>B</sup>

ug/L = micrograms per liter

A If lead is not detected in the first 2 sampling events, then testing, upon approval by Regional Board staff, may be discontinued.

B Influent samples shall be taken in conjunction with effluent samples. If three consecutive monthly sampling events result in a constituent having a non-detectable concentration, at appropriate detection limits, and the constituent is not present in the groundwater, or surface water being treated, then the sampling frequency **shall be reduced to quarterly** for that constituent. Required detection limits are described in Provision C.1 of this Order.

**EFFLUENT MONITORING**

3. Effluent samples shall be collected downstream of the treatment system, prior to the point of injection. Time of collection of a grab sample shall be recorded. The table on the following page shall constitute the effluent monitoring program:

**TABLE 2: Effluent Monitoring Requirements**

Constituents	Units	Sample	Frequency
Flow	gpm	Continuous	Monthly
Specific Conductivity	uS/cm	Grab	Monthly
pH	pH units	Grab	Monthly
Total Dissolved Solids	mg/L	Grab	Monthly
Lead (total dissolved) <sup>A</sup>	ug/L	Grab	Monthly <sup>A</sup>
Total Petroleum Hydrocarbons as Gasoline (TPHg)	ug/L	Grab	Monthly <sup>A</sup>
Benzene	ug/L	Grab	Monthly <sup>A</sup>
Toluene	ug/L	Grab	Monthly <sup>A</sup>
Ethylbenzene	ug/L	Grab	Monthly <sup>A</sup>
Total Xylenes	ug/L	Grab	Monthly <sup>A</sup>
Methyl tert butyl ether (MTBE)	ug/L	Grab	Monthly <sup>A</sup>
Tert butyl alcohol (TBA)	ug/L	Grab	Monthly <sup>A</sup>
Ethyl tert butyl ether (ETBE)	ug/L	Grab	Monthly <sup>A</sup>
Di-isopropyl ether (DIPE)	ug/L	Grab	Monthly <sup>A</sup>
Tert amyl methyl ether (TAME)	ug/L	Grab	Monthly <sup>A</sup>
Naphthalene	ug/L	Grab	Monthly <sup>A</sup>

A **Analyses shall be conducted weekly for four consecutive weeks** following initial discharge from the treatment system. 2) If any sample shows detectable TPHg, benzene, toluene, ethylbenzene, xylenes, MTBE, TBA, ETBE, DIPE, TAME, or Naphthalene, the Discharger shall immediately evaluate the treatment system, resample within three days of laboratory notification and reanalyze the effluent for the detected constituent(s), and shall continue sampling the effluent on a weekly basis until the constituent(s) concentrations are below permitted levels. Once four consecutive weeks are below permitted levels, monthly sampling may be initiated. 3) If a detectable concentration is determined to be present in wastewater, the frequency will revert back to weekly. 4) If a constituent is not present in the influent sample, then the testing for that constituent in effluent may be discontinued, upon approval by Regional Board staff, until detected in the influent. Appropriate quantitation (or reporting) limits are described in Part C.1 on page 7 of this Order.

4. In the event that effluent concentrations exceed the 30-Day Median or Daily Maximum limits listed in the General Order section C page 7 and 8, the Contingency Plan (proposed by Stratus Environmental Inc. in an email dated 1 December 2016) should be implemented.

The steps listed below summarize the Contingency Plan submitted by Status:

- I. The groundwater extraction system will be shut down, and Regional Board staff notified electronically within 48 hours of receipt of exceedance data.
- II. The treatment system will be evaluated, and granular activated carbon replaced as needed.
- III. Five (5) wells including injection wells RW-1 and RW-2 (to be installed during first quarter 2017), monitoring wells MW-5D and MW-10D, and an additional monitoring well (to be installed during first quarter 2017) screened between 40-50 feet bgs to be located between MW-14 and MW-15 will be sampled within 30 days of the report of exceedance. Analysis is to include the constituents listed in Table 2 above. .
- IV. If concentrations in these five wells remain below reporting limits, the groundwater extraction system may be restarted with Regional Board staff concurrence.

- V. If concentrations in any of these wells exceed reporting limits, an additional round of sampling will be performed within 30 days of the first sample described in Step III above. Analysis is to include the constituents listed in Table 2 above.
- VI. If concentrations from the second round of groundwater sampling exceed reporting limits, batch extraction will be performed in each well in which reporting limits were exceeded. During the batch extraction event, each well which exceeded reporting limits will be pumped for a period of two (2) hours at a rate of three (3) to five (5) gallons per minute. Batch extraction waste water will be disposed of off-site.
- VII. Following batch extraction, another round of samples will be collected from the five wells, as detailed in Step III above.
- VIII. If concentrations continue to exceed reporting limits in these wells, additional rounds of batch extraction and sampling will be performed, as described above, until concentrations of petroleum constituents in these wells are below laboratory reporting limits.
- IX. Once concentrations in these five wells are below reporting limits, the extraction system may be restarted with Regional Board staff concurrence.

**GROUNDWATER MONITORING**

- 5. As shown on attached **Figures 1 through 3**, there are 30 monitoring wells (18 shallow, 12 deep), 7 extraction wells, 6 air sparge wells, and 12 ozone sparge wells associated with this Site, and 3 surrounding domestic water supply wells. The groundwater monitoring program for the 30 monitoring wells, 3 domestic water supply wells, and any wells installed subsequent to the issuance of this Order, shall follow the schedule in Table 3 below.

**TABLE 3: Groundwater Monitoring Schedule**

Well Type	Well Screen Interval Range (ft bgs)	Semi-Annual (1 <sup>st</sup> & 3 <sup>rd</sup> Quarters)	Annual (1 <sup>st</sup> Quarter)	Reference Figure(s)
Shallow Monitoring Wells	5-25	MW-1 through MW-16, MW-17A, MW-18B	--	1 & 2
Deep Monitoring Wells	33-40	MW-5D, MW-10D, any newly installed monitoring wells	MW-2D, MW-6D through MW-9D, MW-11D through MW-13D, MW-17B, MW-18B	1 & 2
Extraction Wells	13-25	EX-1	--	1 & 2
Domestic Wells	--	2595BHR	1871Villa, 1921Redding	3

- 6. Collected groundwater samples should be analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tert butyl ether (MTBE), tert butyl alcohol (TBA), ethyl tert butyl ether (ETBE), di-isopropyl ether (DIPE), tert amyl methyl ether (TAME), and naphthalene.

**ANALYTICAL METHODS**

7. Analysis of individual analytes in influent, effluent, and groundwater samples must be performed in compliance with the EPA methods and Maximum Practical Quantitation Limits listed in the table below.

**TABLE 4: Analytical Requirements**

Constituent	EPA Method	Maximum Practical Quantitation Limit	Units
Total Petroleum Hydrocarbons as Gasoline (TPHg)	8015B	50	ug/L
Benzene	8260B	0.5	ug/L
Toluene	8260B	0.5	ug/L
Ethylbenzene	8260B	0.5	ug/L
Total Xylenes	8260B	0.5	ug/L
MTBE	8260B	0.5	ug/L
TBA	8260B	10	ug/L
ETBE	8260B	1.0	ug/L
DIPE	8260B	1.0	ug/L
TAME	8260B	2.0	ug/L
Naphthalene	8260B	1.0	ug/L
Dissolved Lead	200.8	2.0	ug/L
Total Dissolved Solids	160.1	10	mg/L

<sup>A</sup> For non-detectable results, all concentrations between the Method Detection Limit and the Practical Quantitation Limit shall be reported as trace.

<sup>B</sup> Report all discrete peaks identified during the normal course of analysis for the chemicals of concern.

Prior to construction, plans and specifications for groundwater monitoring wells, extraction wells and/or injection wells shall be submitted to the Regional Board staff for review and approval.

**REPORTING**

8. Within 30 days following the end of each calendar quarter, the Discharger shall submit to the Regional Board a report evaluating the effectiveness and progress of the groundwater cleanup, including at a minimum: both tabular and graphical summaries of the monitoring data obtained during the previous quarterly period; trends in the concentrations of the pollutants in groundwater monitoring wells; whether the contaminant plume is being captured by the dual phase extraction system or is continuing to spread; status of the soil vapor extraction; plans for improvements to the groundwater monitoring, extraction or treatment system; and the anticipated date for completion of cleanup activities. The annual report shall also include the reasons for and durations of all interruptions in the operation of the treatment systems.

9. In reporting the monitoring data, the Discharger shall arrange the data in tabular format so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly the compliance with Waste Discharge Requirements. Monitoring Reports will also include an evaluation of the ground water cleanup progress, trends, monitoring well analyses and plume containment. If this evaluation is already submitted to the Regional Board in a separate groundwater monitoring report, then the Discharger may reference the date and title of the most recent report in lieu of including it with the monitoring report required under this Order. 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 Waste Discharge Requirements.
10. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Regional Board.
11. The results of all monitoring done shall report:
  - (a) A concentration, if the result is above the analytical quantitation limit.
  - (b) "Trace", if the result is below the analytical quantitation limit but above the detection limit.
  - (c) "ND", if the result is below the detection limit.
  - (d) A discussion regarding all peaks displayed, whether petroleum fuel component or not.
12. The Discharger shall notify this Central Valley Water Board office within 48 hours of any unscheduled shutdown of any soil vapor and/or groundwater extraction system.
13. As required by the California Business and Professions Code sections 6735, 7835, and 7835.1, all reports shall be prepared by a registered professional or their subordinate and signed by the registered professional.
14. Quarterly electronic reports, which conform to the requirements of the California Code of Regulations, title 23, division 3, chapter 30, shall be submitted electronically over the internet to the State Water Board GeoTracker database system by the **1st day of the second month following the end of each calendar quarter (i.e., by 1 February, 1 May, 1 August, and 1 November)**, until such time as the Executive Officer determines that the reports are no longer necessary.
15. Each quarterly report shall include the following minimum information:
  - (a) A description and discussion of the groundwater sampling event and results, including trends in the concentrations of pollutants and groundwater elevations in the wells, how and when samples were collected, and whether the pollutant plume(s) is delineated.
  - (b) Field logs that contain, at a minimum, water quality parameters measured before, during, and after purging, method of purging, depth of water, volume of water purged, etc.
  - (c) Groundwater contour maps for all groundwater zones, if applicable.
  - (d) Isocontour pollutant concentration maps for all groundwater zones and all major constituents of concern, if applicable.

MONITORING AND REPORTING PROGRAM NO. R5-2003-0044-032  
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- (e) A table showing well construction details such as well number, groundwater zone being monitored, coordinates (longitude and latitude), ground surface elevation, reference elevation, elevation of screen, elevation of bentonite, elevation of filter pack, and elevation of well bottom.
- (f) A table showing historical lateral and vertical (if applicable) flow directions and gradients.
- (g) Cumulative data tables for all major constituents of concern containing the water quality analytical results and depth to groundwater for all monitoring wells for the past five years, if applicable. Raw laboratory data shall be provided on CD or DVD and included in the report. The Central Valley Water Board may request additional data as necessary.
- (h) A copy of the laboratory analytical data report.

The Discharger shall implement the above monitoring program immediately upon the commencement of the initial discharge covered by this Order.

This Monitoring and Reporting Program may be modified by the Assistant Executive Officer for individual discharges.

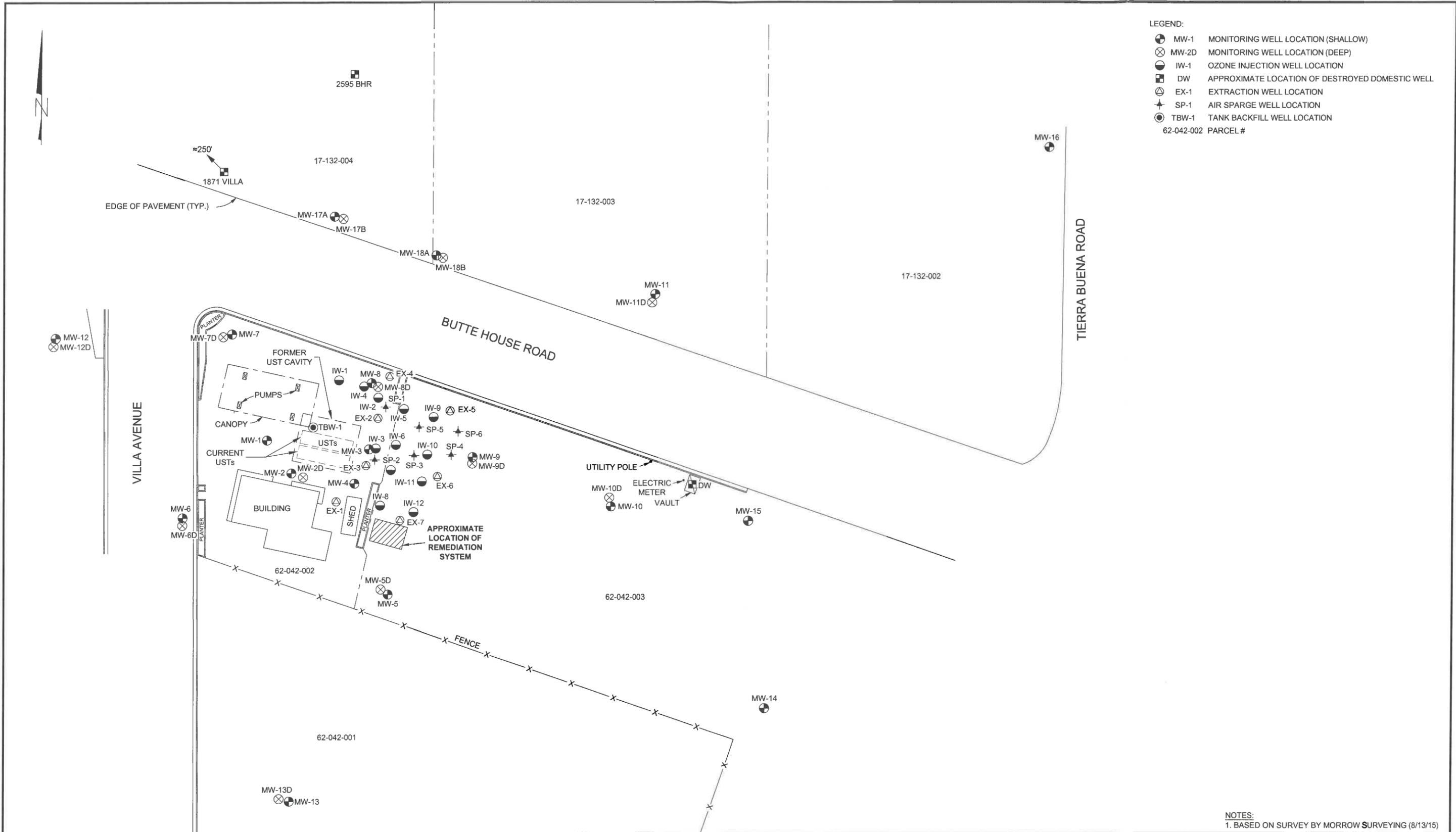
Ordered by:



PAMELA C. CREEDON, Executive Officer

12-23-14

(Date)

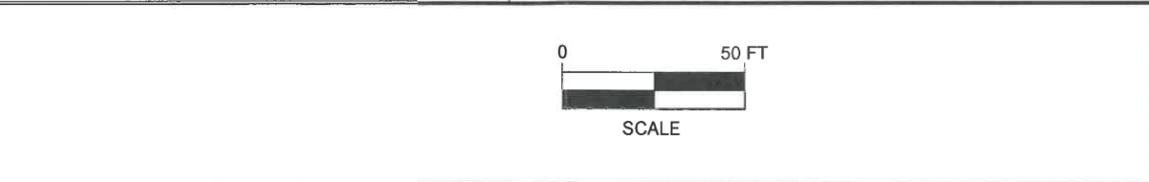


- LEGEND:
- ⊕ MW-1 MONITORING WELL LOCATION (SHALLOW)
  - ⊗ MW-2D MONITORING WELL LOCATION (DEEP)
  - ⊙ IW-1 OZONE INJECTION WELL LOCATION
  - ⊠ DW APPROXIMATE LOCATION OF DESTROYED DOMESTIC WELL
  - ⊕ EX-1 EXTRACTION WELL LOCATION
  - ⊕ SP-1 AIR SPARGE WELL LOCATION
  - ⊙ TBW-1 TANK BACKFILL WELL LOCATION
  - 62-042-002 PARCEL #

NOTES:  
 1. BASED ON SURVEY BY MORROW SURVEYING (8/13/15)



PATH NAME: Quick N Shop  
 DRAFTER INITIALS: DMG  
 DATE LAST REVISED: June 15, 2016  
 FILENAME: QuicknShop Siteplan

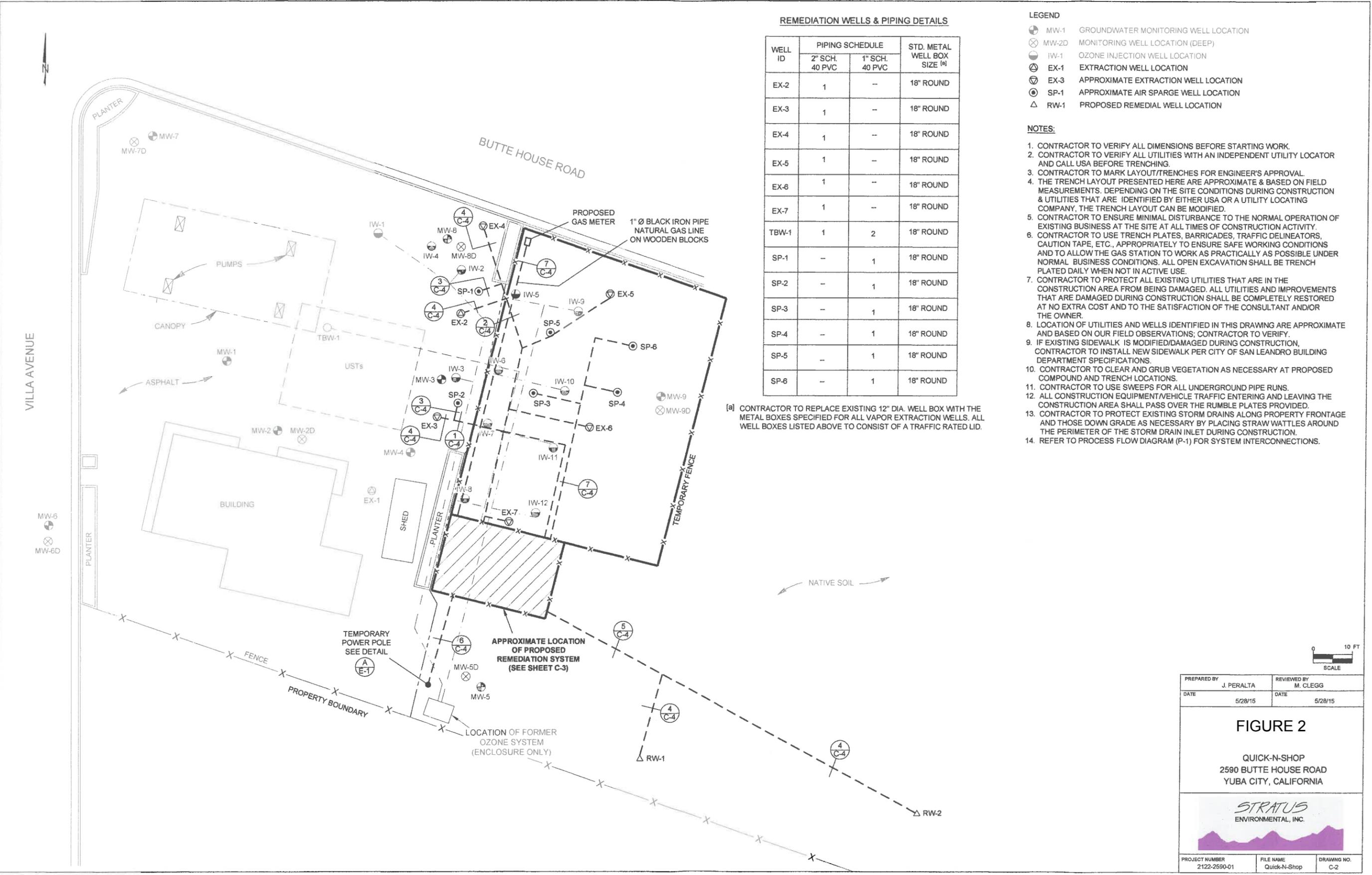


QUICK-N-SHOP  
 2590 BUTTE HOUSE ROAD  
 YUBA CITY, CALIFORNIA

SITE PLAN

FIGURE 1

PROJECT NO.  
 2122-2590-01



**REMEDIATION WELLS & PIPING DETAILS**

WELL ID	PIPING SCHEDULE		STD. METAL WELL BOX SIZE [a]
	2" SCH. 40 PVC	1" SCH. 40 PVC	
EX-2	1	--	18" ROUND
EX-3	1	--	18" ROUND
EX-4	1	--	18" ROUND
EX-5	1	--	18" ROUND
EX-6	1	--	18" ROUND
EX-7	1	--	18" ROUND
TBW-1	1	2	18" ROUND
SP-1	--	1	18" ROUND
SP-2	--	1	18" ROUND
SP-3	--	1	18" ROUND
SP-4	--	1	18" ROUND
SP-5	--	1	18" ROUND
SP-6	--	1	18" ROUND

[a] CONTRACTOR TO REPLACE EXISTING 12" DIA. WELL BOX WITH THE METAL BOXES SPECIFIED FOR ALL VAPOR EXTRACTION WELLS. ALL WELL BOXES LISTED ABOVE TO CONSIST OF A TRAFFIC RATED LID.

**LEGEND**

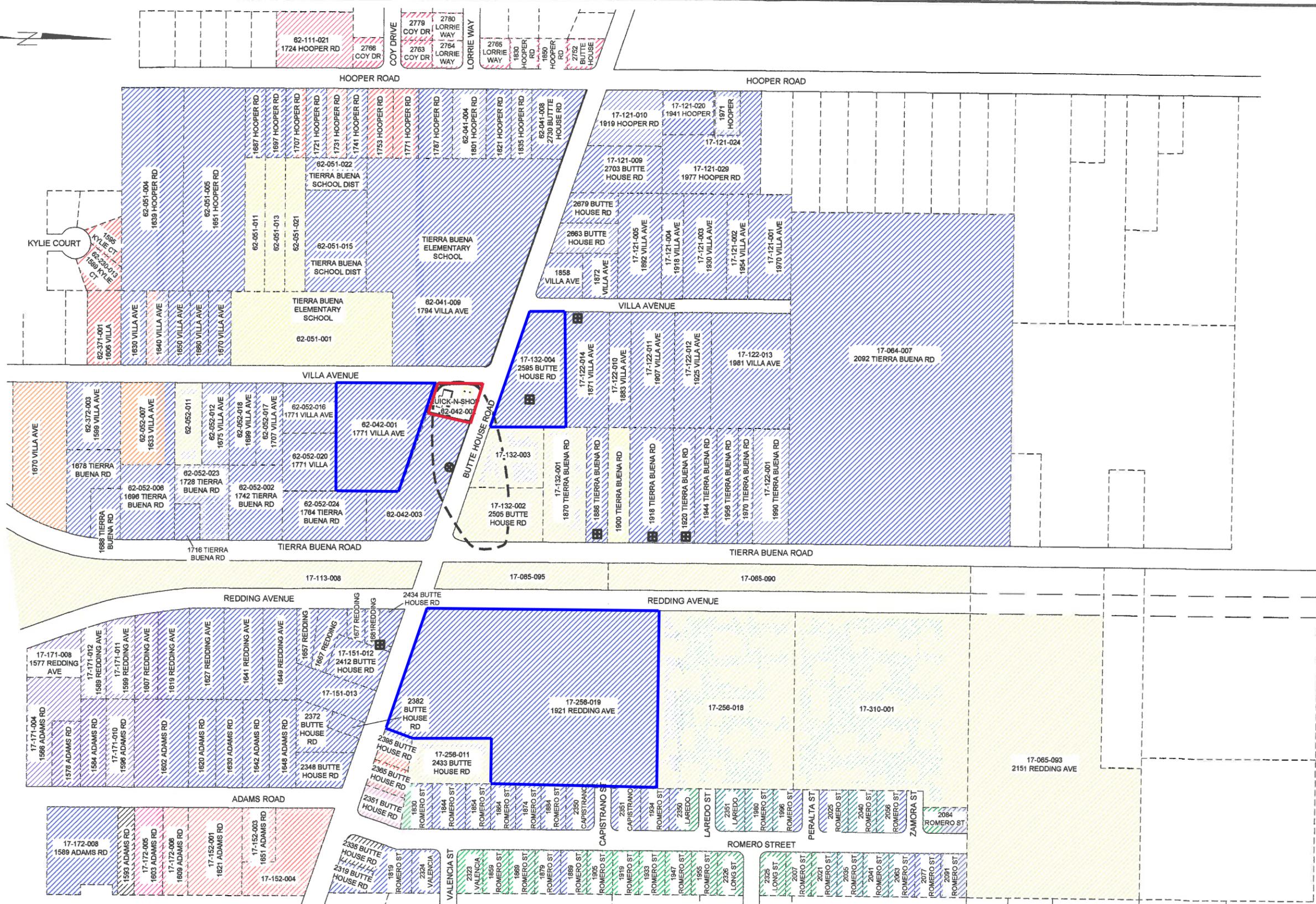
- MW-1 GROUNDWATER MONITORING WELL LOCATION
- ⊗ MW-2D MONITORING WELL LOCATION (DEEP)
- IW-1 OZONE INJECTION WELL LOCATION
- ⊙ EX-1 EXTRACTION WELL LOCATION
- ⊖ EX-3 APPROXIMATE EXTRACTION WELL LOCATION
- ⊙ SP-1 APPROXIMATE AIR SPARGE WELL LOCATION
- △ RW-1 PROPOSED REMEDIAL WELL LOCATION

**NOTES:**

1. CONTRACTOR TO VERIFY ALL DIMENSIONS BEFORE STARTING WORK.
2. CONTRACTOR TO VERIFY ALL UTILITIES WITH AN INDEPENDENT UTILITY LOCATOR AND CALL USA BEFORE TRENCHING.
3. CONTRACTOR TO MARK LAYOUT/TRENCHES FOR ENGINEER'S APPROVAL.
4. THE TRENCH LAYOUT PRESENTED HERE ARE APPROXIMATE & BASED ON FIELD MEASUREMENTS. DEPENDING ON THE SITE CONDITIONS DURING CONSTRUCTION & UTILITIES THAT ARE IDENTIFIED BY EITHER USA OR A UTILITY LOCATING COMPANY, THE TRENCH LAYOUT CAN BE MODIFIED.
5. CONTRACTOR TO ENSURE MINIMAL DISTURBANCE TO THE NORMAL OPERATION OF EXISTING BUSINESS AT THE SITE AT ALL TIMES OF CONSTRUCTION ACTIVITY.
6. CONTRACTOR TO USE TRENCH PLATES, BARRICADES, TRAFFIC DELINEATORS, CAUTION TAPE, ETC., APPROPRIATELY TO ENSURE SAFE WORKING CONDITIONS AND TO ALLOW THE GAS STATION TO WORK AS PRACTICALLY AS POSSIBLE UNDER NORMAL BUSINESS CONDITIONS. ALL OPEN EXCAVATION SHALL BE TRENCH PLATED DAILY WHEN NOT IN ACTIVE USE.
7. CONTRACTOR TO PROTECT ALL EXISTING UTILITIES THAT ARE IN THE CONSTRUCTION AREA FROM BEING DAMAGED. ALL UTILITIES AND IMPROVEMENTS THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE COMPLETELY RESTORED AT NO EXTRA COST AND TO THE SATISFACTION OF THE CONSULTANT AND/OR THE OWNER.
8. LOCATION OF UTILITIES AND WELLS IDENTIFIED IN THIS DRAWING ARE APPROXIMATE AND BASED ON OUR FIELD OBSERVATIONS; CONTRACTOR TO VERIFY.
9. IF EXISTING SIDEWALK IS MODIFIED/DAMAGED DURING CONSTRUCTION, CONTRACTOR TO INSTALL NEW SIDEWALK PER CITY OF SAN LEANDRO BUILDING DEPARTMENT SPECIFICATIONS.
10. CONTRACTOR TO CLEAR AND GRUB VEGETATION AS NECESSARY AT PROPOSED COMPOUND AND TRENCH LOCATIONS.
11. CONTRACTOR TO USE SWEEPS FOR ALL UNDERGROUND PIPE RUNS.
12. ALL CONSTRUCTION EQUIPMENT/VEHICLE TRAFFIC ENTERING AND LEAVING THE CONSTRUCTION AREA SHALL PASS OVER THE RUMBLE PLATES PROVIDED.
13. CONTRACTOR TO PROTECT EXISTING STORM DRAINS ALONG PROPERTY FRONTAGE AND THOSE DOWN GRADE AS NECESSARY BY PLACING STRAW WATTLES AROUND THE PERIMETER OF THE STORM DRAIN INLET DURING CONSTRUCTION.
14. REFER TO PROCESS FLOW DIAGRAM (P-1) FOR SYSTEM INTERCONNECTIONS.



PREPARED BY J. PERALTA	REVIEWED BY M. CLEGG
DATE 5/28/15	DATE 5/28/15
<b>FIGURE 2</b>	
QUICK-N-SHOP 2590 BUTTE HOUSE ROAD YUBA CITY, CALIFORNIA	
<i>STRATUS</i> ENVIRONMENTAL, INC.	
PROJECT NUMBER 2122-2590-01	FILE NAME Quick-N-Shop
DRAWING NO. C-2	

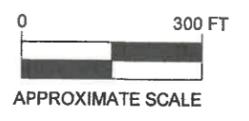


- LEGEND:**
- APPROXIMATE LIMITS OF SHALLOW MTBE PLUME
  - XX-XXX-XXX = PARCEL #
  - PROPERTY WITH WELL (VERBAL INDICATION FROM OWNER/TENANT, OR CONFIRMATION FROM PREVIOUS SRS OR STRATUS REPORT)
  - PROPERTY WITH WELL (ACCORDING TO STATEMENTS MADE BY NEIGHBORS)
  - PROPERTY WITH WELL (BASED ON DWR WELL LOG, NOT CONFIRMED WITH OWNER/TENANT)
  - PROPERTY SERVED BY MUNICIPAL WATER
  - VACANT LOT WITH NO KNOWN WATER SUPPLY
  - PROPERTY SERVED BY WATER FROM A NEARBY PARCEL (SAME OWNER)
  - UNKNOWN: CONTACT NOT MADE
  - OWNER REFUSED TO DISCLOSE INFORMATION
  - APPROXIMATE LOCATION WHERE WATER WELL HAS BEEN SAMPLED BY STRATUS (ALL SAMPLES ABSENT OF FUEL CONTAMINANTS)
  - APPROXIMATE LOCATION OF WATER WELL PROPOSED FOR DESTRUCTION

- Site
- Properties with Domestic Wells to be sampled

BASED ON SUTTER COUNTY PARCEL MAPS

**STRATUS**  
ENVIRONMENTAL, INC.



QUICK-N-SHOP  
2590 BUTTE HOUSE ROAD  
YUBA CITY, CALIFORNIA  
  
WATER SUPPLY WELL LOCATION MAP

**FIGURE 3**  
  
PROJECT NO.  
2122-2590-01

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2003-0044

GENERAL ORDER FOR LAND DISPOSAL  
OF GROUNDWATER OR SURFACE WATER FROM CLEANUP  
OF  
PETROLEUM POLLUTION

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) finds that:

1. California Water Code Section 13263(i) authorizes the Regional Board to prescribe general waste discharge requirements for a category of discharges if all the following criteria apply to the discharges in the category:
  - a. The discharges are produced by the same or similar operations.
  - b. The discharges involve the same or similar types of waste.
  - c. The discharges require the same or similar treatment standards.
  - d. The discharges are more appropriately regulated under general discharge requirements than individual discharge requirements.
2. It is appropriate to prescribe general waste discharge requirements for the discharge to land for disposal of groundwater or surface water produced during investigation and cleanup of waters polluted with petroleum constituents.
3. This Order serves as general Waste Discharge Requirements for the discharge to land for disposal of groundwater or surface water produced during the investigation and cleanup of waters polluted with petroleum constituents. As of the date of this Order, known primary constituents in petroleum products include, but are not limited to, Total Petroleum Hydrocarbons found in gasoline, diesel, light and heavy heating oils, and motor oil; benzene; toluene; ethylbenzene; xylene; naphthalene; polynuclear aromatic hydrocarbons (PAHs); ethylene dichloride; ethylene dibromide; fuel oxygenates that include methyl tertiary-butyl ether (MtBE), tertiary-butyl alcohol (TBA), di-isopropyl ether (DIPE), ethyl tertiary-butyl ether (ETBE), tertiary-amyl methyl ether (TAME), ethanol and methanol; and organic lead.
4. In time, other oxygenate compounds, other additives, or problematic components of fuels may become evident in groundwater or surface water. Effluent limitations have not yet been developed for all of these constituents. In the event that such limitations are developed, this Order may be reopened and the effluent limitations included in this Order for those compounds. If this Order is reopened and new and/or more stringent effluent limits are imposed, a phase-in period may be allowed for existing dischargers to adjust their treatment processes.

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5. Petroleum constituents discharged into groundwater at various sites throughout the Region adversely impact beneficial uses or pose a threat to existing and potential beneficial uses of groundwater. The constituents are undergoing remediation with oversight from this Regional Board. Remediation of the impacted groundwater includes groundwater extraction with treatment and subsequent discharge of the treated groundwater to land. Occasionally groundwater with petroleum fuel pollution enters a surface watercourse or surface drainage. Cleanup of such a discharge to surface waters may require the discharge of treated water to land.
6. Refined Stoddard Solvent (non-halogenated) is a petroleum distillate that, because of its chemical properties, may be covered by this Order.
7. Discharge of ground or surface water that contained pesticides (including herbicides and insecticides), halogenated solvents and petroleum constituents commingled with pesticides (except as noted in Part C) are not covered by this Order. If the ground or surface water contains constituents not addressed in this Order, the discharger must submit a report of waste discharge for an individual waste discharge requirement.
8. The information in the attached Information Sheet was considered in developing the Findings of this Order and is a part of this Order by reference.
9. On 22 November 1991, the Regional Board adopted General Order No. 91-25000 establishing waste discharge requirements for discharge to land of treated groundwater from cleanup of petroleum fuel. Order No. 91-25000 is not current with all types of fuel compounds and cleanup technologies and must be updated.
10. Wastewater generated from investigation and cleanup of groundwater with fuel pollution includes, but is not limited to, the following:
  - a. groundwater that has been polluted by petroleum constituents,
  - b. unpolluted groundwater pumped from beneath a layer of free product in order to establish a cone of depression to aid in the containment and extraction of the free product,
  - c. groundwater extracted during short- and long-term pump tests,
  - d. well development water,
  - e. purge water extracted prior to well sampling, and
  - f. groundwater released due to failure of treatment system.

These wastewaters may be produced, stored, and treated on a continuous or batch basis.

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11. Treated wastewater may either be disposed of by subsurface injection, subsurface infiltration, surface infiltration, evaporation, land spreading, spray disposal, reclaimed through irrigation of landscape or selected crops, or industrial processes.
12. The discharge of wastewater from a treatment system, other than to a community sanitary waste collection system, is a discharge of waste that could affect the quality of the waters of the State. Requirements must be prescribed for any discharge of waste that may affect the quality of the waters of the State, in accordance with California Water Code Section 13263.
13. A separate Notice of Intent must be filed for each discharge intended for coverage under this Order. The Notice of Intent shall consist of the Report of Waste Discharge, filing fee and, at a minimum, the contents detailed in **Attachment A**, entitled "Application Requirements".
14. The combined category of discharges covered by this Order have a Threat to Water Quality (TTWQ) and Complexity (CPLX) of 3B as defined in Title 23 California Code of Regulations (CCR) Division 3, Chapter 9, Section 2200 (CCR). Discharges with a category TTWQ of "3" are those discharges of waste that could degrade water quality without violating water quality objectives, or cause a minor impairment of designated beneficial uses. Discharges that use physical, chemical, or biological treatment systems have a CPLX category of "B".
15. Authorization to discharge will only be extended to persons who have filed the requisite Notice of Intent and have in their possession a "Notification of Applicability" from the Executive Officer. For purposes of this Order, those persons are "Dischargers" as used herein.
16. Best Practicable Treatment and Control technology includes, but is not limited to, air stripping and/or activated carbon and other processes capable of dependably removing petroleum fuel constituents to concentrations that are non-detectable by current analytical technology. Biotreatment, UV/Ozone, ion exchange resins, and other treatment technologies may be proposed, but if utilized must achieve the same treatment standard.
17. The current acceptable analytical methods are as follows:

Constituent	Units	Analytical ** Method
Total Petroleum Hydrocarbons Gasoline, Diesel, and Fuel Oil	µg/l	EPA Method 8015B/5030 & 8015B/3510 & 8260B
Benzene	µg/l	EPA Method 8021B/8260B

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Constituent	Units	Analytical ** Method
Toluene	µg/l	EPA Method 8021B/8260B
Ethylbenzene	µg/l	EPA Method 8021B/8260B
Xylene, Total	µg/l	EPA Method 8021B/8260B
MtBE (Methyl tert-Butyl Ether)	µg/l	EPA Method 8021B/8260B
Organic lead (as total lead)	µg/l	EPA Method 1639/200.9
Methanol	µg/l	EPA Method 8260B
Ethanol	µg/l	EPA Method 8260B
Tertiary Butyl Alcohol (TBA)	µg/l	EPA Method 8260B
Di-isopropyl Ether (DIPE)	µg/l	EPA Method 8260B
Ethyl Tertiary Butyl Ether (ETBE)	µg/l	EPA Method 8260B
Tertiary Amyl Methyl Ether (TAME)	µg/l	EPA Method 8260B
1,2,-Dichloroethane (1,2-DCA)	µg/l	EPA Method 8260B
1,2 Dibromoethane (EDB)	µg/l	EPA Method 8260B
Polynuclear Aromatics (PNAs)	µg/l	EPA Method 8310

\*\* Non-proprietary, performance based analytical methods may be used with approval of Regional Board staff.

18. The Regional Board adopted a *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* and a *Water Quality Control Plan, Second Edition, for the Tulare Lake Basin* (hereafter Basin Plans). The Basin Plans designate beneficial uses, establish water quality objectives, and contain implementation programs and policies to achieve water quality objectives for all waters of the Basins. These requirements implement the Basin Plans.

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19. Designated beneficial uses of groundwater within the Central Valley Region are municipal, industrial, and agricultural supply, with other beneficial uses for specific groundwater basins specifically designated in the Basin Plans.
20. The Basin Plans contain water quality objectives established for the reasonable protection of designated beneficial uses or the prevention of nuisance.
21. The permitted discharge is consistent with State Water Resources Control Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California") that requires that the quality of the waters of the state be maintained unless: (a) some change in water quality is consistent with the maximum benefit to the people of the state, b) the discharge will not unreasonably affect beneficial uses or result in a violation of any applicable water quality objective, and c) the discharge will be required to meet waste discharge requirements that will result in the implementation of the best practicable treatment or control. This Order establishes requirements for the discharge of waste from the cleanup of petroleum fuel pollution in waters of the state that require treatment to non-detectable levels using specified detection limits. This Order requires application of best practicable treatment or control for the kinds of constituents addressed in this Order. Therefore, any change in water quality will be insignificant and non-detectable. In addition, this Order applies to cleanup of polluted water and such cleanups are consistent with the maximum benefit to the people of the state even if some degradation to the receiving water may occur. If the water to be treated cannot meet the requirements of this Order, the discharger must cease the discharge, implement other measures, change the method of disposal, or take other action. The discharger may be required to obtain individual waste discharge requirements.
22. In 1991, the Regional Board adopted General Order No. 91-25000 and a mitigated Negative Declaration in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.) and the State CEQA Guidelines.
23. The Regional Board's action to adopt this Order, which is a revised version of Order No. 91-25000, is categorically exempt from CEQA based on Title 14 CCR Section 15308, which exempts actions by regulatory agencies for the restoration and protection of the environment where the regulatory process involves procedures for protection of the environment. The Regional Board's action to regulate the clean up petroleum fuel pollution in surface waters or groundwaters, is a regulatory action that restores and protects the environment. The action involves procedures for the protection of the environment, such as discharge requirements that establish effluent limitations and monitoring. Application of this exemption is limited by the factors described in Title 14 CCR Section 15300.2, subsections (b), (c), (d), (e), and (f). Additional compliance with CEQA may be required for individual projects.
24. The Regional Board's action to adopt this order also is categorically exempt from CEQA based on Title 14 CCR Section 15330, which exempts minor hazardous waste or hazardous

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substances clean up actions. This exemption applies to minor clean up actions where treated groundwater and surface water will be disposed of to land. Application of this exemption is further limited by the factors described in Title 14 CCR Section 15300.2, subsections (b), (c), (d), (e), and (f). Additional compliance with CEQA may be required for individual projects.

25. The Regional Board has notified the interested agencies and persons of its intent to adopt general waste discharge requirements for the discharge of groundwater from the investigation and cleanup of petroleum fuel pollution and has provided them with an opportunity to submit their written comments and recommendations.
26. The Regional Board, in a public meeting, heard and considered all comments pertaining to this permit.

**IT IS HEREBY ORDERED**, General Order No. 91-25000 is rescinded and that Dischargers, in order to meet the provisions contained in Division 7 of the California Water Code, and regulations and guidelines adopted thereunder, shall comply with the following:

**A. APPLICABILITY**

1. The source of all discharges covered by this Order shall be limited to groundwater or surface water from the investigation and cleanup of petroleum (Findings No. 1 – 6 above).
2. Dischargers seeking coverage under this Order shall submit a complete Notice of Intent, including a Report of Waste Discharge (as detailed in Attachment A) along with an appropriate filing fee.
3. If the Executive Officer finds that the proposed discharge qualifies for coverage under this Order, the Discharger shall be issued a Notification of Applicability. If a proposed discharge does not qualify for this Order, or if significant public comments are received on the application, the proposed discharge may be considered for individual waste discharge requirements or for coverage under this Order at a meeting of the Regional Board.

**B. DISCHARGE PROHIBITIONS**

1. Discharge of material other than surface water or groundwater from the investigation and cleanup of petroleum fuel pollution, or discharge from the investigation of petroleum fuel pollution where the surface or ground water contains waste constituents not addressed by this Order, is prohibited.
2. The discharge of wastes, wastewater, or treated wastewater into any surface water or surface water drainage course is prohibited.

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3. Bypass or overflow of untreated or partially treated waste is prohibited.
4. The discharge shall not cause the degradation of any individual or municipal water supply.
5. The surfacing of treated/untreated wastewater resulting from subsurface disposal/treatment of petroleum polluted ground or surface water is prohibited.
6. Ponding/ponding of treated/untreated effluent on the ground surface in any location other than that approved by Regional Board staff is prohibited.
7. Runoff of water from the permitted discharge area is prohibited.
8. Creation of pollution, contamination, or nuisance, as defined by Section 13050 of the California Water Code, is prohibited.
9. The export or discharge of wastes or wastewater into a separate groundwater area is prohibited.
10. The discharge of treated groundwater that has the potential to degrade the receiving groundwater quality, is prohibited.

**C. EFFLUENT LIMITATIONS**

1. The discharge of an effluent to land for disposal of ground and/or surface water from the cleanup of petroleum pollution must comply with the following limitations:

<u>Constituents</u>	<u>Daily Units</u>	<u>30-Day Median</u>	<u>Daily Maximum</u>
Total Petroleum Hydrocarbons (diesel, motor oil)	µg/l	<50	100
Total Petroleum Hydrocarbons (gasoline)	µg/l	<50	50
Benzene	µg/l	<0.5	0.5
Toluene	µg/l	<0.5	5.0
Ethylbenzene	µg/l	<0.5	5.0
Xylenes (total)	µg/l	<0.5	5.0

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<u>Constituents</u>	<u>Daily Units</u>	<u>30-Day Median</u>	<u>Daily Maximum</u>
Naphthalene	µg/l	<5.0	21
Carcinogenic PAHs*	µg/l	<0.5	<0.5
MtBE plus other ether oxygenates**	µg/l	<0.5	5
Tertiary Butyl Alcohol	µg/l	<5.0***	12***
Methanol	µg/l	<50	***
Ethanol	µg/l	<5.0	***
1,2-Dichloroethane (1,2-DCA)	µg/l	<0.5	<0.5
1,2-Dibromoethane (EDB)	µg/l	<0.5	<0.5
Lead	µg/l	2	2

\* Polynuclear Aromatic Hydrocarbons; the sum of benzo[a]pyrene, benz[a]anthracene, benzo[b]fluoranthene, benzo[j]fluoranthene, benzo[k]fluoranthene, dibenz[a,j]acridine, dibenz[a,h]acridine, 7H-dibenzo[c,g]carbazole, dibenzo[a,e]pyrene, dibenzo[a,h]pyrene, dibenzo[a,i]pyrene, dibenzo[a,l]pyrene, indeno[1,2,3-c,d]pyrene, 5-methylchrysene, 1-nitropyrene, 4-nitropyrene, 1,6-dinitropyrene, 1,8-dinitropyrene, 6-nitrochrysene, 2-nitrofluorene and chrysene.

\*\* The limit applies to each individual oxygenate compound.

\*\*\* Due to current technological and economic dynamics for these constituents, site specific approval will be issued for these constituents. Limitations to be determined by Regional Board staff upon review of each submitted Report of Waste Discharge. Appropriate limitations will be set in the Executive Officer's "Notice of Applicability" letter.

Note: 1) Constituent quantitation (or reporting) limits are to be sufficient to identify a violation to the above listed effluent limits and/or those specified in the applicable "Notice of Applicability" issued by the Executive Officer.

2) All detection and quantitation limits must be reported with the analytical results.

3) Published literature for Total Petroleum Hydrocarbons as gasoline provides a taste and odor threshold of 5 µg/l which is applied to the narrative Taste and Odor objective of the Basin Plan, but detection is 50 µg/l and is controlling.

2. The discharge of lead must comply with the above listed limitation unless the Discharger can demonstrate that higher concentrations are a result of naturally occurring background concentrations contained in the source water being treated. Background concentrations may be defined by using the methodology described in Title 27 CCR Section 20415.
3. The discharge shall not have a pH of less than 6.5 nor greater than 8.5.
4. The discharge shall remain within the designated disposal area at all times.

**D. SOLIDS DISPOSAL**

Collected screenings, sludges, and other solids removed from the treated groundwater, or generated as the result of groundwater treatment, shall be disposed of in a manner that is

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consistent with Title 22 CCR Division 2, Subdivision 1 and Division 4.5 and approved by the Executive Officer.

**E. PROVISIONS**

1. Dischargers currently covered by Order 91-25000 are automatically covered under this Order. Coverage under Order No. R5-2003-0044 may be terminated after 180 days from the date of adoption of said Order, unless a new Notice of Applicability (NOA) has been approved by the Executive Officer.
2. The Discharger shall comply with the Monitoring and Reporting Program No. R5-2003-0044, in which is a part of this Order.
3. The Discharger shall comply with all applicable "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (Waste Discharge to Land from Cleanup of Petroleum Pollution)" included as an attachment of this Order.
4. The Discharger may be required to submit technical reports pursuant to California Water Code Section 13267 as directed by the Executive Officer. The technical reports required by this order and the attached "Monitoring and Reporting Program No. R5-2003-0044" are necessary to assure compliance with these waste discharge requirements. These monitoring reports are necessary because existing data and information about the site indicate that waste, petroleum fuel and/or fuel additives such as, but not limited to, benzene, toluene, ethylbenzene, xylene, and MtBE, have been discharged or are being discharged at the property, which is/was owned and/or the UST system operated, formerly owned and/or operated, or leased and/or operated by the Discharger(s) named.
5. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Regional Board.
6. This Order does not pre-empt or supersede the authority of local agencies to prohibit, restrict, or control the discharge of groundwater or surface water cleanup wastewater subject to their control.
7. When individual waste discharge requirements are issued to a Discharger otherwise subject to this Order, the applicability of this Order to the Discharger is automatically terminated on the effective date of the individual Order.

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8. Title 23 CCR Sections 2729 and 2729.1 specify that underground tank owners and/or operators (individually or collectively the Responsible Party) or their agent submit analytical data electronically via the internet to the regulating agencies, using electronically deliverable formats (EDF) designated by the State Water Resources Control Board that are both non-proprietary and available as public domain. All EDF data must be submitted over the internet to the State Water Resources Control Board Geographic Environmental Information Management System database (Geotracker).
9. The Discharger shall notify the Regional Board when the cleanup activities covered by these requirements are complete, so that the Notice of Applicability may be withdrawn and the Discharger will no longer be covered by this Order or be responsible for payment of annual fees.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 14 March 2003.



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THOMAS R. PINKOS, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

STANDARD PROVISIONS AND REPORTING REQUIREMENTS  
FOR  
WASTE DISCHARGE REQUIREMENTS  
(Waste Discharge to Land from Cleanup of Petroleum Fuel Pollution)

**A. General Provisions:**

1. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, or protect the Discharger from liabilities under federal, state, or local laws. Nor, do they convey any property rights or exclusive privileges.
2. The Provisions of this Order are severable. If any provision of this Order is held invalid, the remainder of this Order shall not be affected.
3. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including but not limited to:
  - a. Violation of any term or condition contained in this Order;
  - b. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;
  - c. A change in any condition that results in either a temporary or permanent need to reduce or eliminate the authorized discharge; or
  - d. A material change in the character, location, or volume of discharge.
4. Before making a material change in the character, location, or volume of discharge, the Discharger shall file a new Report of Waste Discharge with the California Regional Water Quality Control Board, Central Valley Region (hereafter Board). A material change includes, but is not limited to, the following:
  - a. An increase in area or depth to be used for treated water disposal beyond that specified in the waste discharge requirements;
  - b. A significant change in disposal method, location, or volume, e.g., change from land disposal to land treatment;
5. Except for material determined to be confidential in accordance with California law and regulations, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Board. Data on waste discharges, water quality, meteorology, geology, and hydrogeology shall not be considered confidential.

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6. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the state resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature and impact of the noncompliance.
7. The Discharger shall maintain in good working order and operate as efficiently as possible any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
8. The Discharger shall permit representatives of the Board and the State Water Resources Control Board (SWRCB), upon presentation of credentials, to:
  - a. Enter premises where wastes are treated, stored, or disposed of and facilities in which any records are kept;
  - b. Copy any records required to be kept under terms and conditions of this Order;
  - c. Inspect, at reasonable hours, monitoring equipment required by this Order; and
  - d. Sample, photograph, and video tape any discharge, waste, waste management unit, or monitoring device.
9. For any electrically operated equipment at the site, the failure of which would cause loss of control or containment of waste materials, or violation of this Order, the Discharger shall employ safeguards to prevent loss of control over wastes. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means.
10. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be a defense for the Discharger's violations of the Order.
11. Neither the treatment nor the discharge shall create a condition of nuisance or pollution as defined by the California Water Code, Section 13050.
12. The discharge shall remain within the designated disposal area at all times.
13. The fact that the Discharger is unable to be accepted into the State's Underground Storage Tank Cleanup Fund (Fund), or if accepted into the Fund, to receive timely reimbursement of corrective actions costs or preapproval of proposed corrective action costs shall not be a defense for the Discharger's violation(s) of this Order.

**B. General Reporting Requirements:**

1. In the event the Discharger does not comply, or will be unable to comply, with any prohibition or limitation of this Order for any reason, the Discharger shall notify the applicable Board office by telephone at (916) 255-3000 (Sacramento), (559) 445-5116 (Fresno), or (530) 224-4845 (Redding) or another current number if the number is changed as soon as it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing within two weeks. The written notification shall state the nature, time, and cause of noncompliance, and shall include a timetable for corrective actions.
2. The Discharger shall have a plan for preventing and controlling accidental discharges, and for minimizing the effect of such events.

At a minimum this plan shall:

- a. Identify the possible sources of accidental loss or leakage of wastes from each waste management, treatment, or disposal unit;
- b. Evaluate the effectiveness of present waste management/treatment units and operational procedures, and identify needed changes of contingency plans; and
- c. Predict the effectiveness of the proposed changes in waste management/treatment units and procedures and provide an implementation schedule containing interim and final dates when changes will be implemented.

The Board, after review of the plan, may establish conditions that it deems necessary to control leakages and minimize their effects.

3. All reports shall be signed by the responsible persons identified below:
  - a. For a corporation: by a principal executive officer of at least the level of senior vice-president;
  - b. For a partnership or sole proprietorship: by a general partner or the proprietor;
  - c. For a municipality, state, federal, or other public agency: by either a principal executive officer of ranking, elected or appointed;
  - d. For an individual(s): the individuals/individuals named as Discharger; or
  - e. A duly authorized representative of a person designated in 3a, 3b, or 3c of this requirement if;
    - (1) the authorization is made in writing by a person described in 3a, 3b, or 3c of this provision;

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- (2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a waste management unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
- (3) the written authorization is submitted to the Board.

Any person signing a document under this Section shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of the those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

4. Technical and monitoring reports specified in this Order are requested pursuant to Section 13267 of the Water Code. Failing to furnish the reports by the specified deadlines and falsifying information in the reports, are misdemeanors that may result in assessment of civil liabilities against the Discharger.
5. The Discharger shall mail a copy of each monitoring report and any other reports required by this Order to the applicable staff person and Regional Board Program at:

California Regional Water Quality Control Board  
Central Valley Region – Sacramento Office  
3443 Routier Road, Suite A  
Sacramento, CA 95827-3003

Or

Central Valley Region – Fresno Office  
1685 "E" Street  
Fresno, CA 93706-2020

Or

Central Valley Region – Redding Office  
415 Knollcrest Drive, Suite 100  
Redding, CA 96002

or another current address if the office is relocated.

**C. Provisions for Monitoring:**

1. All analyses shall be made in accordance with the Environmental Protection Agency (EPA) latest edition of: (1) *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA 600 Series), (2) *Test Methods for Evaluating Solid Waste* (SW 846-latest edition) and *Methods for the Determination of Organic Compounds in Drinking Water* (EPA 500 Series). The test method may be modified subject to application and approval of alternate test procedures under the Code of Federal Regulations (40 CFR 136).
2. Chemical, bacteriological, and bioassay analysis shall be conducted at a laboratory certified for such analyses by the State Department of Health Services (DHS). In the event a certified laboratory is not available to the Discharger, analyses performed by a non-certified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Board staff. The Quality Assurance-Quality Control Program must conform to EPA and DHS guidelines or to procedures approved by the Board.
3. Unless otherwise specified, all metals shall be reported as Total Metals.
4. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained for a minimum of three years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer.

Record of monitoring information shall include:

- a. the date, exact place, and time of sampling or measurements,
  - b. the individual(s) who performed the sampling or measurements,
  - c. any other individuals who had custody of the samples prior to analysis,
  - d. the conditions under which samples were stored between collection and analysis,
  - e. the date(s) analyses were performed,
  - f. the individual(s) who performed the analyses,
  - g. the laboratory which performed the analysis,
  - h. the analytical techniques or methods used, and
  - i. the results of such analyses.
5. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated at least yearly to ensure their continued accuracy.

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6. The Discharger shall maintain a written sampling program sufficient to assure compliance with the terms of this Order. Anyone performing sampling on behalf of the Discharger shall be familiar with the sampling plan.
7. The Discharger shall construct all monitoring wells to meet or exceed the standards stated in the State Department of Water Resources *Bulletin No. 74-81 and 74-90* and subsequent revisions, and shall comply with the reporting provisions for wells required by Water Code Sections 13750 through 13755.

## INFORMATION SHEET

ORDER NO. R5-2003-0044  
GENERAL ORDER FOR LAND DISPOSAL  
OF GROUNDWATER OR SURFACE WATER  
FROM CLEANUP OF  
PETROLEUM FUEL POLLUTION

This Order is proposed to serve as general Waste Discharge Requirements for the discharge to land for disposal of groundwater or surface water produced during the investigation and cleanup of groundwater or surface water polluted with petroleum fuels such as, but not limited to, gasoline, diesel, and heavier fuel oils. The wastewater may be discharged to ponds, infiltration basins, spray disposal areas, subsurface infiltration, but not to surface waters. The treatment and discharge of groundwaters polluted with other chemicals, such as industrial solvents or pesticides, will not be covered by this Order. This Order will not cover: 1) Treated wastewaters discharged to municipal wastewater collection systems (which do not need waste discharge requirements from the Regional Board), and 2) waste discharges to surface waters and surface water drainage courses (which require an NPDES Permit adopted by the Regional Board).

Petroleum fuel constituents and additives in groundwater and/or surface water pose a threat or cause impact to existing and potential beneficial uses of groundwater. The number of proposed and ongoing groundwater cleanups of fuel constituents is increasing. The primary constituents of concern with petroleum products include, but are not limited to: total petroleum hydrocarbons in the gasoline, diesel and heavier ranges, and include individual compounds such as: benzene, toluene, ethylbenzene, xylenes and polynuclear aromatic hydrocarbons; and fuel additives such as methyl tertiary butyl ether (MtBE); and organic lead. In addition, other fuel oxygenates and additives such as methanol, ethanol, Tertiary Butyl Alcohol (TBA), Di-isopropyl Ether (DIPE), Ethyl Tertiary Butyl Ether (ETBE), Tertiary Amyl Methyl Ether (TAME), and other compounds may also be of concern. Existing wastewater treatment technology is capable of dependably removing these constituents to concentrations that are generally non-detectable by current analytical technology, but can be costly. Fuel oxygenates, such as MTBE and TBA, have become a more recent concern and can also be removed using the same wastewater treatment technology, although they are more difficult to remove, than other fuel components, and may require larger systems and longer remedial duration. The Department of Health Services secondary drinking water standard for MtBE is 5.0  $\mu\text{g/L}$  (ppb), based on the taste and odor threshold. And the TBA concentration of 12  $\mu\text{g/L}$  is the California Drinking Water Action level. The taste and odor threshold for DIPE has been published in the literature as 0.8  $\mu\text{g/L}$ .

Wastewater from a groundwater or surface water cleanup may include: treated water which had been impacted with fuel constituents; non-impacted water pumped from beneath a layer of free product in order to establish a cone of depression to aid in the containment and extraction of the free product; extracted water from short and long term pump tests; well development water; and purge water prior to well sampling. These wastewaters may be produced and treated on a continuous or batch basis. Treated wastewater may be disposed of by subsurface injection, subsurface infiltration, surface infiltration, evaporation, land spreading, spray disposal, reclamation for irrigation of landscape or selected crops, or for industrial process reuse.

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Effluent limits have been established as follows:

- a. 30-Day Median Concentrations for TPH, benzene, ethylbenzene, toluene, xylenes and MtBE are established as less than the quantitation or reporting limits, that is, less than the levels that can be quantified for specified, commonly available analytical technology. A 'median' is used rather than an 'average' or 'arithmetic mean' to allow for the quantitation of a constituent in individual samples without automatically causing violation of the monthly limitation, as would occur with an 'average' or 'mean' limit.

The current treatment technologies used for groundwater cleanup of petroleum fuel constituents are not normally subject to sudden upset or bypass, so rapid changes in effluent quality are not expected. If detectable concentrations of petroleum fuel constituents are found, the monitoring program requires immediate evaluation of the treatment system and weekly monitoring of the effluent until less than quantitation (or reporting) limit conditions are reestablished. The effluent sampling is not a substitute for process control monitoring by the Discharger.

- b. Daily Maximum Effluent Limitations are established to allow for some effluent quality variation without exceeding water quality objectives. In general, there will not be more than one sample taken in a month. However, should operational problems require more frequent monitoring, the daily maximum numbers will enable a discharger to increase the frequency of monitoring while correcting the operational problems and remain in compliance with waste discharge requirements. The following table shows water quality objectives and numerical limits used to interpret the objectives for each monitored constituent. The lowest of these limits for each chemical is selected as the maximum effluent limitation to comply with all water quality objectives. Where the lowest limit is lower than the analytical quantitation limit, the quantitation limit is used as the effluent limit.

Constituent	W Q Objective	Limit (µg/l)	Reference for Limit
Benzene	Chemical Constituents	1.0	California Primary MCL
	Toxicity	0.15	California Public Health Goal
	Taste and odors	170	Taste and Odor Threshold
Ethylbenzene	Chemical Constituents	700	California Primary MCL
	Toxicity	300	California Public Health Goal
	Taste and Odors	29	Taste and Odor Threshold
Toluene	Chemical Constituents	150	California Primary MCL
	Toxicity	150	California Public Health Goal
	Taste and Odors	42	Taste and Odor Threshold
Xylenes (sum of isomers)	Chemical Constituents	1750	California Primary MCL
	Toxicity	1800	California Public Health Goal
	Taste and Odors	17	Taste and Odor Threshold
Diesel or Kerosene	Toxicity	56 to 140	USEPA Superfund Provisional Reference Dose
	Taste and Odors	100	Taste and Odor Threshold

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Constituent	W Q Objective	Limit (µg/l)	Reference for Limit
Gasoline	Toxicity	21	USEPA Superfund Provisional Cancer Slope Factor
	Taste and Odors	5	Taste and Odor Threshold
Lead (inorganic)	Chemical Constituents	15	California Primary MCL
	Chemical Constituents	5000	Water Quality for Agriculture (Ayers & Wescot)
	Toxicity	2	California Public Health Goal
Tetraethyl lead	Toxicity	0.0007	USEPA IRIS Reference Dose
1,2-Dibromoethane (ethylene dibromide, EDB)	Chemical Constituents	0.05	California Primary MCL
	Toxicity	0.0097	Cal/EPA Cancer Potency Factor
1,2-Dichloroethane (ethylene dichloride, 1,2-DCA)	Chemical Constituents	0.5	California Primary MCL
	Toxicity	0.4	California Public Health Goal
	Taste and Odors	7000	Taste and Odor Threshold
Methyl tert -Butyl Ether (MtBE)	Chemical Constituents	13	California Primary MCL
	Chemical Constituents	5	California Secondary MCL
	Toxicity	13	California Public Health Goal
	Taste and Odors	5	Taste and Odor Threshold
Di-isopropyl Ether (DIPE)	Tastes and Odors	0.8	Taste and Odor Threshold
Tertiary Butyl Alcohol (TBA)	Toxicity	12	DHS Drinking Water Action Level
	Taste and Odors	290,000	Taste and Odor Threshold
Ethanol	Taste and Odors	760,000	Taste and Odor Threshold
Methanol	Toxicity	3500	USEPA IRIS Reference Dose
	Taste and Odors	740,000	Taste and Odor Threshold
Carcinogenic PAHs – sum as benzo(a)pyrene equivalents	Chemical Constituents	0.2	California Primary MCL for benzo(a)pyrene
	Toxicity	0.004	California Public Health Goal for benzo(a)pyrene
Naphthalene	Toxicity	170	DHS Drinking Water Action Level
	Taste and Odors	21	Taste and Odor Threshold

1. MCL = Maximum Contaminant Level as set by the California Department of Health Services.
2. IRIS = USEPA Integrated Risk Information System reference dose as a drinking water level.
3. California Public Health Goal as determined by the California Office of Environmental Health Hazard Assessment.

A Report of Waste Discharge and filing fee will be submitted by each proposed Discharger, providing information on the discharge as detailed in **Attachment A**. If the Executive Officer finds that the proposed discharge qualifies for coverage under this Order, the Discharger shall be issued a Notification of Applicability statement. Upon completion of treatment and cessation of the discharge, the Discharger may request official termination of coverage under this General Order from the Executive Officer. Failure to do so will result in the Discharger's continuing responsibility for payment of the annual fee associated with this Order.



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2003-0044

**ATTACHMENT A**  
**TO**  
**GENERAL ORDER FOR LAND DISPOSAL**  
**OF GROUNDWATER AND SURFACE WATER FROM CLEANUP OF**  
**PETROLEUM FUEL POLLUTION**

**APPLICATION REQUIREMENTS**

A Report of Waste Discharge (Form 200 plus supplemental information) and filing fee must be submitted to the Regional Water Quality Control Board, Central Valley Region (Regional Board) for each proposed discharge. The Report of Waste Discharge shall be prepared by or under the direction of a California Registered Civil Engineer, Registered Geologist, or Certified Engineering Geologist and shall provide at least the following information or, if a Problem Assessment Report (or functional equivalent) has been approved, it may be submitted. Additional data may be requested for specific sites.

**A. Wastewater treatment system and characteristics**

1. Description of event(s), which caused the waste to be discharged to groundwater pollution, including type and source of the waste constituents and date(s) when the discharge occurred and was discovered.
2. Narrative and schematic descriptions of the proposed extraction, treatment, and disposal systems. The designated disposal area must be shown on a map with an accuracy of plus or minus two feet. If the proposed treatment system uses activated carbon, submit an estimate of the breakthrough time for each carbon treatment unit.
3. Any water supply well, and surface waters, within 0.5 miles of the site shall be identified on a map.
4. A map showing the location of the facility, plume, extraction well(s), monitoring wells, treatment system, disposal facilities and site boundaries.
5. The anticipated average and maximum flows from the treatment system.
6. An operation plan describing general operations and maintenance procedures, process controls, monitoring and pumping rates.
7. Representative data for the following analyses of the groundwater that will be treated and discharged: (note: required quantitation (or reporting) limits are found in Part C.1 of this Order).

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- a. Volatile organic constituents (EPA Method 8021B or 8260B).
- b. Total Petroleum Hydrocarbons in the Gasoline and Diesel ranges (EPA Method 8015B/5030 and 8015B/3510). Additional or alternative TPH analyses may be required if the suspected pollutants contain hydrocarbon fractions outside the range of these tests.
- c. Lead, soluble lead or tetraethyl lead (Graphite Furnace AA or equivalent).
- d. Chlorinated pesticides (EPA Method 8081A).
- e. General mineral analysis, including electrical conductivity, total dissolved solids, chloride, sulfate, nitrate and pH.
- f. Polynuclear Aromatic Hydrocarbons (EPA Method 8310).
- g. Fuel oxygenates (EPA Method 8260B).

**B. Site hydrogeology**

1. Depth to groundwater, including seasonal variations, if known.
2. Direction and gradient of groundwater flow, if known.
3. Vertical and lateral extent of water quality degradation and pollution, if known, including details on the location, construction, and analytical results from groundwater monitoring wells used to define the plume. (Note: satisfactory plume definition, to be determined by Regional Board staff, must be completed as a condition for compliance with this Order) Also, describe other contaminant source areas or plumes that may be affected by the proposed extraction and discharge.
4. A statement on the potential impact of the wastewater discharge on the containment and rate of movement of the groundwater plume.
5. Effects of the extraction system on the groundwater gradient and the plume.
6. An estimate of the anticipated length the time extraction will be needed.
7. Describe water users; upgradient, downgradient or crossgradient; who could be affected by the extraction of groundwater or the disposal of treated groundwater.

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8. For surface disposal, provide design data that demonstrates that soils are capable of absorbing the proposed discharge, or in the case of injection, provide design data to demonstrate that hydrologic characteristics of the receiving formation are such that discharged waters will be accepted without causing adverse effects such as hydrofracturing or formation plugging.

**C. Groundwater Monitoring Program**

Discharger shall submit a groundwater monitoring program, which is to assess the nature and extent of the groundwater plume, the effectiveness of remediation activities, and the effect of the discharge. The proposed groundwater monitoring program shall be included with the Report of Waste Discharge.

**D. Antidegradation Analysis**

The applicant shall submit a report that compares the water quality of the receiving groundwater to the applied, or injected water. If significant degradation is proposed the Regional Board may require individual waste discharge requirements.

**E. Public Notice Requirements**

1. The applicant shall submit to the Regional Board a list of names and mailing addresses of nearby residents, including all adjacent property owners and all residents within a 500-foot radius of the treatment system and discharge location.
2. The applicant shall send letters, in an approved format, to each of the above interested parties listed in E.1. above, the local County Health Department and the California Department of Fish and Game describing the proposed project and including the following information:
  - a) Describe the cleanup project and the involved chemicals of concern,
  - b) Location of treatment system and discharge (both narrative and on map),
  - c) Explain permit application and project implementation time schedule,
  - d) Describe permit discharge limits and monitoring program,
  - e) State in letter that interested parties have two weeks from date of letter to submit comments to Regional Board office.

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3. The applicant shall submit to the Regional Board a copy of the "Public Notification Letter" described in E.2. above and shall submit a certification on who was sent a copy of the letter.

**F. Filing Fee Requirement**

The category of discharges applicable for coverage by this Order have been determined to have a Threat To Water Quality (TTWQ) and Complexity (CPLX) of 3B as defined in California Code of Regulations Title 23, Division 3, Chapter 9, Section 2200 (CCR). All permitted discharges covered under this Order are subject to the filing fee, and applicable annual fees, as set forth in the annual fee schedule contained in Section 2200 of the CCR at the time of Report of Waste Discharge submittal or as modified by regulation changes prior to and/or following discharge coverage by this Order.