



**SOIL REMEDIATION SYSTEM WORKPLAN  
RMW – CHAMPION PARTS REBUILDERS, INC.  
2696 SOUTH MAPLE AVENUE  
FRESNO, CALIFORNIA**

**TES No. 22054.001**

**April 18, 2012**

*Prepared for and submitted to:*

**Mr. James Johnson  
Saint Anthony's Bread Basket  
4831 East Clinton Avenue  
Fresno, California 93703**



GEOTECHNICAL & ENVIRONMENTAL ENGINEERING — CONSTRUCTION TESTING & INSPECTION

April 18, 2012

TES # 22054.001

**Mr. James Johnson**  
**Saint Anthony's Bread Basket**  
**4831 East Clinton Avenue**  
**Fresno, California 93703**

**RE: Soil Remediation System Workplan**  
**RMW – Champion Parts Rebuilders**  
**2696 South Maple Avenue**  
**Fresno, California**

Mr. Johnson:

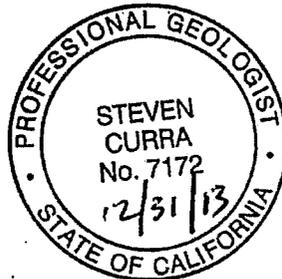
In accordance with your request and authorization, **TECHNICON** Engineering Services, Inc., has completed this Soil Remediation Workplan for the above-referenced site. This report has been completed in response to the California Regional Water Quality Control Boards (RWQCBs) request.

We appreciate the opportunity to assist you with your project. If you should have any questions or require additional information, please contact us at (559) 276-9311.

Respectfully submitted,  
**TECHNICON ENGINEERING SERVICES, INC.**

Charles Casey Barsamian  
Staff Geologist – Project Manager

Steve Curra, PG  
Senior Geologist  
Manager-Environmental Engineering Division



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### **FIGURES** (following text)

Figure 1 – Vicinity Map

Figure 2 – Site Map

Figure 3 – Well Detail

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2696 SOUTH MAPLE AVENUE  
FRESNO, CALIFORNIA**

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**1.0 INTRODUCTION**

In accordance with your request, Technicon Engineering Services, Inc., has completed this Soil Remediation Workplan for the above-referenced site. This report includes a description of the project location and history of the site, purpose of the investigation, project objective and scope, and our evaluations.

**2.0 SITE LOCATION AND DESCRIPTION**

The subject site is located 500 feet west of Maple Avenue, approximately 700 feet south of Jensen Avenue, in Malaga, California (Figure 1). The site is surrounded by commercial structures to the north, east, south and west.

According to the U.S. Geological Survey 7.5 Minute Malaga, California topographic quadrangle map, dated 1963, photo revised 1981, the subject site occupies a portion of Section 24, Township 14 South, Range 20 East, Mount Diablo Baseline and Meridian, at an elevation of approximately 290 feet above mean sea level.

**3.0 BACKGROUND INFORMATION**

It is Technicon's understanding that the existing structure has occupied the site since the late 1970's and was formerly an active automobile parts building operation, initially Champion and, more recently, Autoline. Since April of 2001, no parts rebuilding operations have been conducted at the site and the building has been vacant with the exception of limited office furniture and minor debris.

According to available documents, it appears that stained areas approximately 10 to 15 square feet were observed during a site investigation conducted in February of 2003 in numerous locations and appeared to be directly related to the locations of former processing activities. Between 2003 and 2006 numerous investigations were performed at the subject site to evaluate the presence and concentration of subsurface chlorinated VOCs that may have resulted from past operations. Soil vapor sampling and analyses conducted in 2003 and 2005 revealed that elevated levels of 1, 1,-DCE as high as 690 µg/L, 1, 1, 1-TCA as high as 35 µg/L, 1, 1, -DCA as high as 10 µg/L and PCE as high as 2.8 µg/L.

Technicon understands that the California Regional Water Quality Control Board (CRWQCB) has determined that the subsurface soil beneath the warehouse requires remediation. The CRWQCB has suggested that soil vapor extraction system be installed at the site to determine radius of influence and, if appropriate, be used to for site remediation.

#### 4.0 GEOLOGY

The subject site is located in the San Joaquin Valley, which is the southern half of the Great Central Valley of California. The Great Central Valley is an elongated structural trough in the interior of California that has been filled with a thick sequence of clastic sediments derived by erosion of the bordering Sierra Nevada and Coast Ranges. The clastic sediments rest upon bedrock of the Sierran Block (parent material of the Sierra Nevada) at an undetermined depth beneath the project site. The Sierra are composed of granitic and metamorphic rocks of pre-Tertiary age. These rocks comprise the basement complex beneath the east side of the valley. The Coast Ranges are composed of folded and faulted sedimentary rocks of Mesozoic and Cenozoic age.

The valley fill consists of a thick sequence of Jurassic to Holocene aged marine, lacustrine, fluvial, and eolian sediments. The eastern San Joaquin Valley is dominated by extensive alluvial fans and floodplains developed by rivers entering the valley from the Sierra Nevada. These broad, gently sloping, alluvial fans consist predominately of gravel, sand, and silt.

#### 5.0 HYDROGEOLOGY

The area of the subject site is generally underlain by groundwater occurring in unconfined, perched, and semi-confined conditions. Within the Central Valley, regional movement of groundwater is toward a topographic trough located on the western side of the valley, and from there, toward the north to the Sacramento River-Delta region.

The local groundwater table elevation fluctuates in the area of the subject site. This is caused by groundwater pumping for municipal and agricultural use and by groundwater recharge from rivers, canals, and ponding basins. According to the California Department of Water Resources (DWR) map entitled "Lines of Equal Elevation of Water in Wells", dated Spring 2009, indicated the groundwater to be approximately 70 feet deep. According to the DWR map, ground water in the vicinity of the subject site flows in generally towards a southwesterly direction.

## 6.0 PROJECT OBJECTIVE AND SCOPE

The RWQCB has required that a workplan be submitted to install soil vapor extraction (SVE) wells and conduct soil vapor extraction at the subject site. The objective of this project would be to employ a SVE system at the site to evaluate the rate of decline of soil vapor concentration that may be expected and to consider the efficacy of SVE from within the impacted zones at the subject site. The scope of services proposed for this investigation is as follows:

- Underground Service Alert will be contacted at least 48-hours prior to conducting the field work so that any underground utilities can be identified.
- Prepare a Site Health & Safety Plan (SHSP). The SHSP will identify the potential hazards to personnel working at the site, protocol for environmental monitoring, personal protective equipment, medical surveillance requirements, site control measures, and emergency procedures.
- Prior to the start of field work, the appropriate permits will be obtained from the City of Fresno, Fresno County EHS, and San Joaquin Valley Unified Air Pollution Control District (APCD), as necessary.
- The proposed vapor extraction well location(s) will be marked with white paint and Underground Service Alert (USA) will be notified at least 48 hours prior to the start of field work so that any underground utilities can be identified.
- Using a truck-mounted drilling rig equipped with hollow stem auger, seven 55-foot soil borings will be advanced through impacted areas identified in previous investigations within the footprint of the on-site structure. An additional four 55-foot soil borings will be advanced through impacted areas in the paved asphalt parking area located to the east of the on-site structure. The borings will be completed as a 2-inch diameter vapor extraction wells (Figure 3.) The wells will be constructed with an end plug, 0.02-inch slotted Schedule 40 PVC screen, blank PVC casing, locking well caps, and covered with flush-mounted well manholes encased in concrete. The wells will be constructed with a filter pack of #3 Monterey sand placed in the annular space between the well casings and boreholes from the bottom to approximately three feet above the top of the well screens. A layer of bentonite chips three feet thick will be placed above the filter packs and hydrated with clean water. Cement grout will be used to finish the annular spaces from the top of the bentonite seals to the top of the wells.
- Data will be obtained from the vapor extraction wells during SVE system start-up to determine the lateral radius of influence.
- Lateral vapor extraction lines will be connected to the installed VEWs and vapor extraction unit to be located northeast of the warehouse. The lines will be connected to the VEWs in a parallel fashion with shut-off valves located at the SVE unit to maximize vapor flow efficiency and isolation control.
- Soil samples will be collected at ten foot intervals into clean stainless steel tubes by driving a split- spoon sampler into undisturbed soils. Once collected, the ends of each sample tube will be covered with Teflon film, capped with plastic end caps,

labeled, placed into a plastic bag, and then placed into an ice chest cooled with synthetic ice for delivery to an analytical laboratory. The chemical analyses will be conducted by a State-certified analytical laboratory.

- Soil samples exhibiting field evidence of impact will be chemically analyzed for the presence and concentration of chlorinated VOCs per EPA Method 8260B.
- The drilling equipment (drill bit, augers, etc.) will be steam-cleaned prior to the start of field work, between advancement of soil borings, and/or at the end of the work day to prevent cross-contamination, as deemed necessary by the onsite field geologist.
- Impacted soil cuttings will be containerized in 55-gallon drums, sealed, labeled, and stored onsite while awaiting appropriate disposition. Drums will be stored on the site no longer than 90 days. It is understood that documentation that any auger cuttings and rinseate generated during drilling activities have been properly disposed must be provided. However, if less than one cubic yard of impacted soil cuttings are generated, the soils will be spread on the ground surface of the site in a suitable location and allowed to aerate. Cuttings exhibiting no field evidence of impact will be spread in a suitable location on the site.
- The borings will be logged by a geologist using the Unified Soil Classification System. Organic vapor screening will be conducted for the samples and in the area of the drilling activities (soil cuttings, worker areas, etc.) using an organic vapor meter (OVM) calibrated to 100 ppm isobutylene. The results of the monitoring will be recorded on the boring logs and included with the well installation report.
- Install one SVE system consisting of a regenerative extraction/injection blower, piping, two-stage (2,000 lb. canisters) granular-activated carbon (GAC) canister emission control system, and sampling ports. The proposed SVE unit will feature a 20HP motor mated to a 500CFM positive displacement blower. The blower is capable of producing 500ACFM and up to 12"Hg vacuum and is capable of a destruction rate of 98 percent. The SVE system will be attached to the proposed vapor extraction wells and initially, the SVE system would draw equally from each of the vapor extraction wells. The flow rate through each will be adjusted over time to optimize vapor extraction efficiency. The system would be operated on a continuous basis (24 hours a day).
- The SVE unit would be placed in a secured (fenced) area located northeast of the warehouse (Figure 2). Piping connecting the unit will be placed above grade and protected with delineators. Electrical service to the system will be extended from the building's service panel.
- Operate, monitor and maintain SVE system until VOC vapor concentrations reach attainment levels for clean closure. It is anticipated that the SVE system may operate for up to 18-months.
- Collect vapor samples from each of the system's sample ports. It is anticipated that the APCD will require sampling and analysis at system start-up and quarterly thereafter.
- When SVE system monitoring and sampling suggests that clean closure attainment levels have been achieved, a confirmation investigation will be conducted.

Confirmation investigation details will be included in a work plan to be prepared prior to conducting the investigation.

- At the completion of the investigation, a report will be prepared which will include field methodologies, tabulated analytical results, supporting documentation, and our findings and evaluations. A California Professional Engineer or Geologist and a Registered Environmental Assessor will sign the reports. Copies of the reports will be submitted to the RWQCB for review.
- Dismantle the SVE system, abandon the wells, and restore the site to its original condition.

## 7.0 SCHEDULE

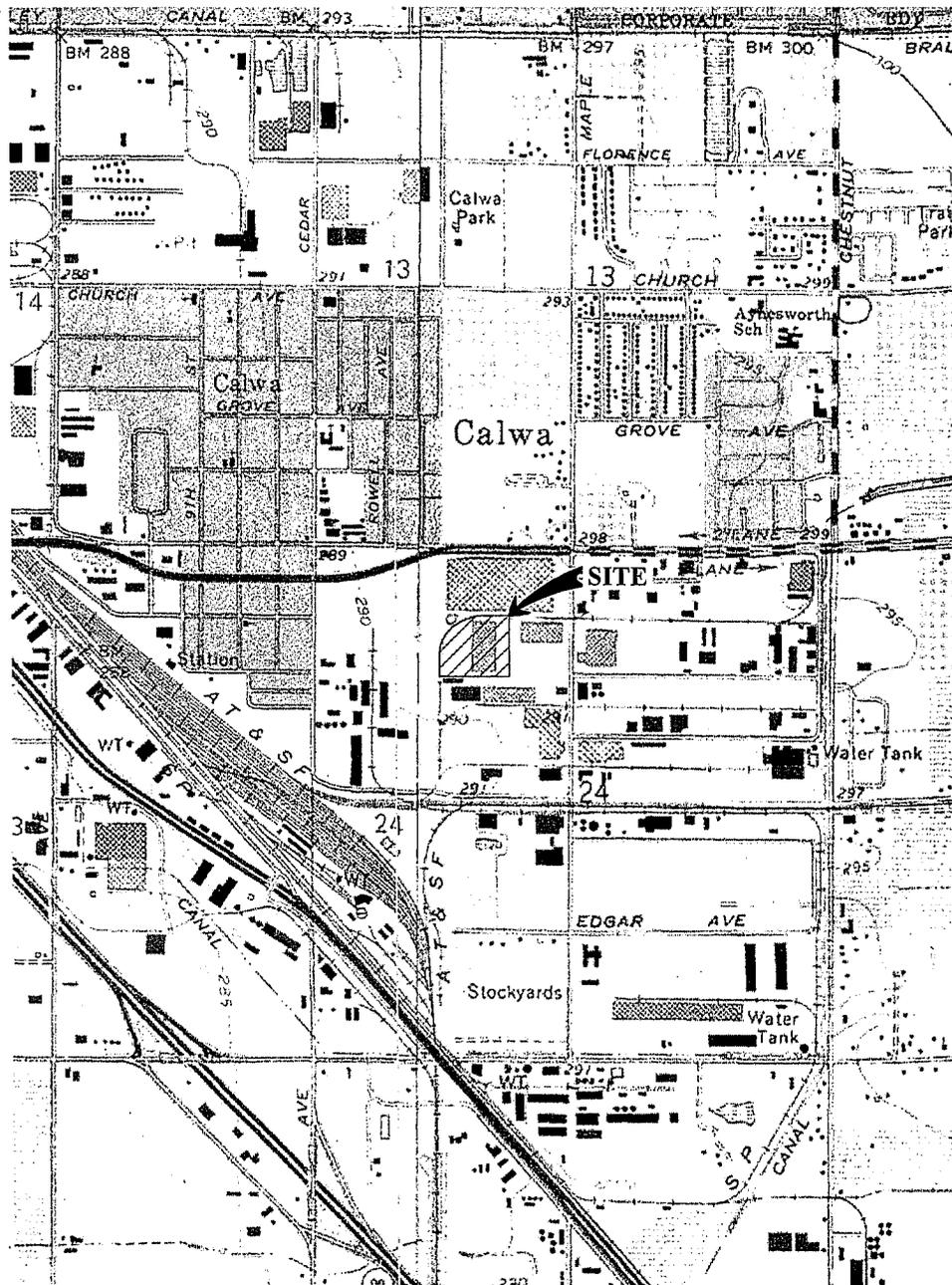
Once the Workplan is approved by the RWQCB, we could commence work within approximately two to three weeks. The well installation activities are anticipated to be completed within three weeks. APCD permitting may take several weeks. We anticipate that a final report detailing the results of the destruction rate and radius of influence could be completed within two to three weeks from the time the start-up test is completed.

## 8.0 LIMITATIONS

The objective of this investigation was to further evaluate existing petroleum hydrocarbon impacts to the soil and/or water at the subject site. The performance of this investigation does not certify or guarantee that the subject property is free of unidentified environmental impacts or hazardous materials, but rather presents our opinion as to the potential for such impacts to exist. The conclusions presented herein regarding the environmental integrity of the property are based on the observations and information gathered during the investigation.

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# FIGURES



LAT.: 36.7040°N, LONG.: 119.7487°W, 24-T14S-R20E, MDB&M, USGS MAP: MALAGA, DATE: 1964, PHOTO REV.: 1981



PROJECT:  
22054

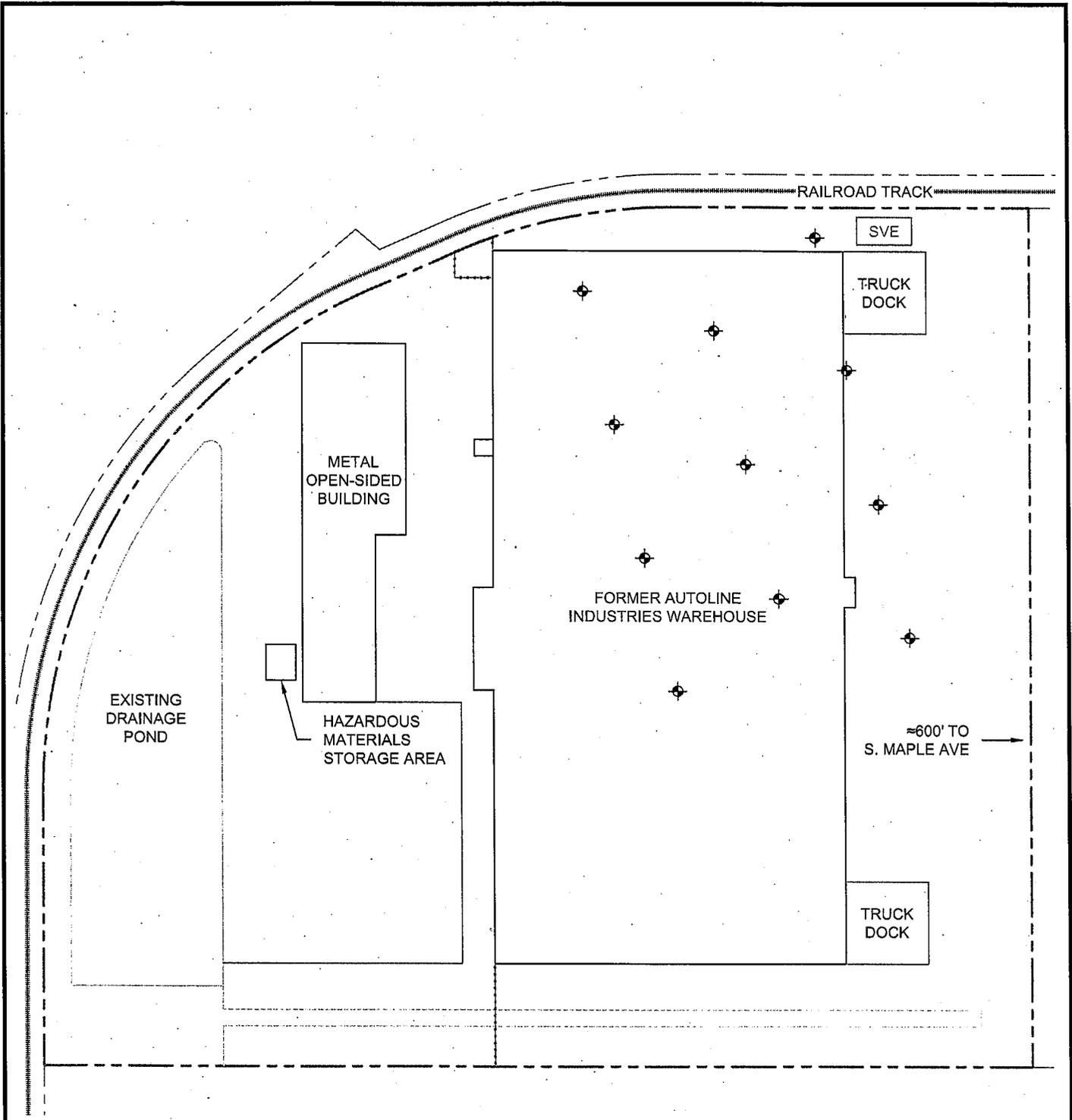
SOURCE: USGS  
TOPOGRAPHIC MAPS

VICINITY MAP  
FORMER AUTOLINE INDUSTRIES  
2696 SOUTH MAPLE AVENUE  
FRESNO, CALIFORNIA

FIGURE

1

NTS



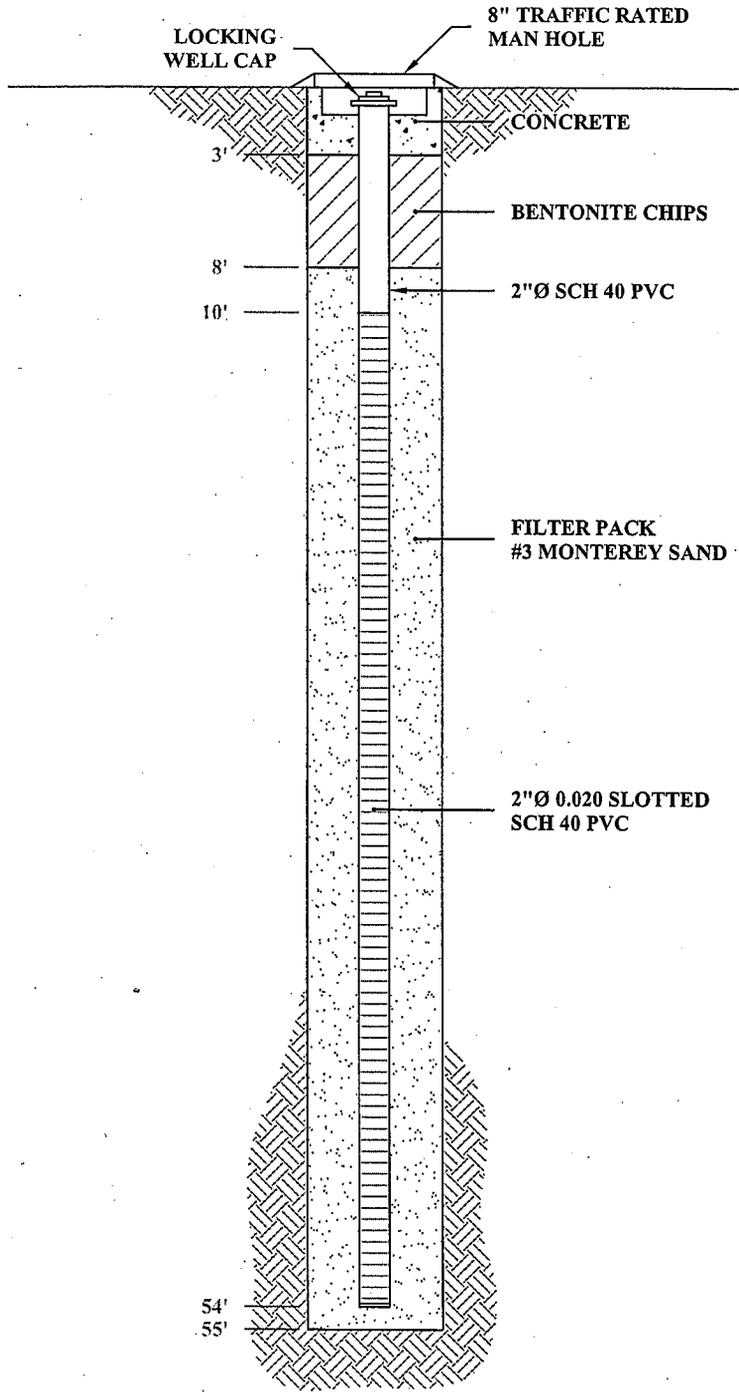
**SVE** =SOIL VAPOR EXTRACTION UNIT

=PROPOSED VAPOR EXTRACTION WELL / MONITORING POINT LOCATIONS



SCALE: 1"=100'  
 0' 50' 100'

 <b>TECHNICON</b> ENGINEERING SERVICES, INC.	PROJECT: 22054	SITE DETAIL FORMER AUTOLINE INDUSTRIES 2696 SOUTH MAPLE AVENUE FRESNO, CALIFORNIA	FIGURE
	CAD BY: MH		2



PROJECT:  
22054

CAD BY:  
MH

GROUND WATER MONITORING WELL  
FORMER AUTOLINE INDUSTRIES  
2696 SOUTH MAPLE AVENUE  
FRESNO, CALIFORNIA

FIGURE  
**3**  
NTS