



Mr. Mark Detterman, P.G., C.E.G. Alameda County Environmental Health Services 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502

Re: Draft Feasibility Study/Corrective Action Plan

German Autocraft Facility 301 East 14th Street San Leandro, California RECEIVED

8:42 am, Dec 12, 2012

Alameda County Environmental Health

Dear Mr. Detterman:

Stratus Environmental, Inc. (Stratus) has prepared this *Draft Feasibility Study/Corrective Action Plan* (FS/CAP), on behalf of Mr. Seung Lee, for the German Autocraft Facility (the Site), located at 301 East 14th Street, San Leandro, California (see Figures 1 and 2). Subsurface petroleum hydrocarbon impact to soil and groundwater has previously been identified in the vicinity of the site. In a letter dated April 25, 2012, Alameda County Environmental Health Department (ACEHD) requested that a draft CAP report be prepared for the subject property. The April 25, 2012 letter indicated that petroleum hydrocarbon contaminant cleanup levels and cleanup goals be specified in the report, in accordance with the groundwater designation specified by the San Francisco Bay Regional Water Quality Control Board's (SF-RWQCB) Basin Plan for the area surrounding the site. ACEHD also stated that the document must evaluate the cost effectiveness of at least three viable alternatives for mitigating the site contaminants and propose implementation of the most cost effective corrective action remedial approach within these viable alternatives.

This document summarizes historical environmental investigations completed at the site and available information relevant to the ongoing environmental case, such as site geology and hydrogeology and the known extent of subsurface hydrocarbon impact. Based on this site specific information, and our experience implementing similar remedial projects in the past, Stratus has selected three remedial alternatives which we believe would be most appropriate for mitigating contaminants at the site. This report presents a technical description regarding each of these three technologies and their applicability to the site, and presents costs associated with use of these remedial approaches in remediation of site contaminants.

SITE DESCRIPTION

The property is located on the south corner of the intersection of E. 14th Street and Garcia Avenue in the City of San Leandro (Figure 2). Available records indicate that the property was used as a retail gasoline service station until 1981. According to historical documents prepared by previous consultants representing Mr. Lee, the property has been exclusively used for automotive repair since 1981. Mr. Lee purchased the property on April 15, 1985. In September 1990, six single-walled steel USTs (two 1,000-gallon and two 2,000-gallon USTs previously used to store unleaded gasoline, one 550-gallon UST previously used to store regular gasoline, and one 150-gallon UST previously used to store waste oil) were removed from the property and properly disposed. In addition, the fuel dispenser island and associated product lines were removed at that time. The general configuration of the site is shown on Figure 2. The area surrounding the site is mixed commercial and moderate density residential. A site vicinity map is included as Figure 3.

According to the State Water Resources Control Board's (SWRCB) GeoTracker database, numerous other contaminated properties under the ACEHD's regulatory oversight are present in the immediate vicinity of German Autocraft. Sunshine Cleaners, a dry cleaning business located at 223 East 14th Street, approximately 130 feet north-northwest of the site, has had an open (but predominately inactive) environmental case since 1993; the site is currently in the assessment phase for chlorinated solvents. San Leandro Chrysler-Plymouth, formerly located at 232 East 14th Street, northeast across 14th Street from German Autocraft, had a leaking UST environmental case open until 1997. In addition, the former Monument Gas station, located at 111 East 14th Street, approximately 375 feet north-northwest of German Autocraft, had a leaking UST case open until 2005. The Monument Gas case assessed groundwater contamination offsite to the southeast of that site (along Farrelly Drive) until closure.

CASE HISTORY

Environmental investigations at the site began in September 1990, when the six former single-walled steel USTs (two 1,000-gallon and two 2,000-gallon USTs previously used to store unleaded gasoline, one 550-gallon UST previously used to store regular gasoline, and one 150-gallon UST previously used to store waste oil) were removed from the property and properly disposed. The five fuel storage USTs were formerly located in a common pit on the north side of the property adjacent to Garcia Avenue; the waste oil UST was located on the south side of the station building/garage. During the removal of the USTs, The Environmental Construction Company (TECC) noted that both the 1,000-gallon and the 550-gallon USTs had holes in them and showed signs of extensive corrosion. Soil staining was noted in both the main UST area and the waste-oil UST area during excavation. Following the removal of the USTs and product lines, ten soil samples were collected from below the USTs, one soil sample from beneath the former piping, and three samples from stockpiled soil.

The main UST pit was excavated to approximately 44 feet long, 16 feet wide, and 8 feet deep; the waste oil UST pit was excavated to approximately 6 feet by 5 feet, and 6 feet deep. Historical documentation appears to indicate that the soil excavated from the waste oil UST excavation (~15 yd³) was removed from the site. When the main UST area excavation was completed, TECC lined the excavation area with plastic, placed the excavated soil back in the excavation pit, and covered with plastic as an intended temporary containment measure. Analytical results of soil samples collected during the UST removal activities indicated the presence of highly impacted soil (total petroleum hydrocarbons as gasoline [TPHg] and benzene, toluene, ethylbenzene, and total xylenes [BTEX] only) in the main UST pit. No detectable concentrations of TPHg, total petroleum hydrocarbons as diesel (TPHd), BTEX, oil and grease, or purgeable halocarbons were reported in the soil sample collected at the base of the waste oil UST excavation (though stockpile samples of excavated soil indicated some oil and grease impact).

In December 1990, TECC advanced three onsite soil borings (B-1, B-2, and B-3) to depths of about 35 feet bgs and installed one groundwater monitoring well (MW-1) screened across first-encountered water from approximately 30 to 35 feet bgs just northeast of the main former UST excavation. Soil and groundwater samples from these borings and the monitoring well indicated TPHg and BTEX impact at all four locations.

In December 1994 and January 1995, Chemist Enterprises (renamed in 1995 as Environmental Testing and Management [ETM]) advanced two additional on-site soil borings (CE-1 and CE-2) and installed two additional on-site groundwater monitoring wells (MW-2 and MW-3) to further evaluate soil and groundwater impact. Boring CE-2 was advanced within the former UST excavation/backfill to assess impact directly beneath the former USTs. Soil and groundwater impact were found to be highest within the smear zone and at the water table surface (approximately 20 to 30 feet bgs).

In June 1994, Mr. Lee applied and was accepted in the SWRCB's UST Cleanup Fund as a priority B claimant.

In August 1995, following the detection of liquid-phase hydrocarbons (LPH) in boring CE-1, one additional groundwater monitoring well (MW-4) was installed by ETM within the former UST excavation for the purpose of removing LPH. LPH was reported in well MW-4 after development; a passive skimmer system was subsequently installed in the well for removal of LPH. The thickness of LPH at well MW-4 prior to the installation of the skimmer system on September 22, 1995 was 0.10 feet. The skimmer system was maintained between September 1995 and June 1998, during which time, no measurable quantities of LPH were reported removed from well MW-4 (only water with a hydrocarbon sheen). Following numerous attempts to redevelop the well and extract additional LPH from the vicinity of well MW-4, the skimmer system was removed and the well was added to the regular monitoring and sampling program. During the third quarter 1995, a routine quarterly groundwater monitoring and sampling program was established at the site.

Between November 1995 and April 1996, ETM advanced thirty-nine (39) additional on- and off-site soil borings (ETM-1 through ETM-40, with ETM-16 attempted but not completed) throughout the surrounding residential neighborhood (Figure 3). Soil conditions were logged in borings ETM-1, ETM-2, ETM-5, ETM-6, ETM-7, ETM-10, ETM-11, ETM-17, ETM-19, ETM-21, and ETM-22. Soil samples were collected for laboratory analyses from borings ETM-1, ETM-2, and ETM-7. Grab groundwater samples were collected from all thirty-nine borings (except ETM-6 which did not yield water). Analytical results indicated hydrocarbon impact to groundwater was found to be extensive in the area downgradient (west-northwest) of the site; thirty of the thirty-eight grab groundwater samples were reported to contain TPHg and/or benzene. In addition, LPH was reported during the sampling of boring ETM-38, located on West Broadmoor Boulevard, approximately 320 feet northwest of the site. MW-1A was later installed immediately adjacent to boring ETM-38, and no LPH have been noted in this well during historical monitoring.

While canvassing the neighborhood to acquire access to properties for the investigation, ETM discovered a private residential irrigation well located at the residence at 141 Farrelly Drive, approximately 440 feet northwest (downgradient) of the site. The owner of the well (and the property), Mr. Mitch Ramirez, had been using the well for landscape irrigation; upon the discovery of LPH in boring ETM-38, approximately 115 feet southeast of the 141 Farrelly Drive irrigation well, ACDEH requested Mr. Ramirez discontinue use of his well. In April 1996, ETM collected a groundwater sample from the 141 Farrelly Drive well; results indicated the well was not impacted by petroleum hydrocarbons. With Mr. Ramirez's permission, the irrigation well was added to the periodic monitoring and sampling program. Further details on the well at 141 Farrelly Drive are presented in a later section of this document.

In May 1997, the City of San Leandro contracted AllCal Property Services (AllCal) to install one groundwater monitoring well near the location of boring ETM-38. The well was designated MW-1, but is now referred to as MW-1A to avoid confusion with German Autocraft's onsite well MW-1. Initial sampling results of well MW-1A indicated TPHg/BTEX impact (but LPH was not present).

In November 1997, the depression in the UST pits caused by the settling of the excavated soil was filled in with approximately 16 cubic yards of clayey silt soil and covered with Class II base rock.

In August 1998, ETM installed onsite monitoring well MW-5 and offsite monitoring wells MW-6, MW-8, MW-9, MW-10, and MW-11 to further evaluate the downgradient extent of TPHg/BTEX impact in Garcia Avenue and the residential city block between Garcia Ave. and Broadmoor Blvd. Well MW-7 was not installed due to a utility obstruction in Garcia Ave. Initial analytical results from the wells indicated impact to all six new wells.

In January 2001, three additional off-site groundwater monitoring wells (MW-12, MW-13, and MW-14) were installed by ETM to continue delineation of the groundwater impact offsite. Initial analytical results from wells MW-12 indicated impact; wells MW-13 and MW-14 indicated little to no impact to the southwest of the site in the vicinity of Lafayette Avenue.

In November 2007, Groundwater Cleaners, Inc. (GCI) prepared and submitted a *Corrective Action Plan* (CAP) that provided technical and cost effectiveness evaluations of monitored natural attenuation (MNA), soil excavation, dual phase extraction (DPE) / air sparging (AS), and bioremediation. Results of their evaluation indicated that DPE/AS would be most viable and cost-effective and recommended a 5-day DPE/AS pilot test be performed. In a letter dated December 28, 2007, ACEHD indicated their concurrence with the proposed DPE/AS feasibility study; however due to the data gap related to potential risk associated with the vapor intrusion pathway, the ACEHD requested that further site characterization be performed; specifically, a soil vapor investigation. GCI prepared a *Work Plan for Soil Vapor Investigation*, dated February 14, 2008, and a *Work Plan for DPE/AS Feasibility Study*, dated February 15, 2008. Both work plans were conditionally approved by ACEHD in a letter dated October 23, 2008.

In January 2009, GCI advanced eight on- and off-site soil borings (SV-1 through SV-8) and collected grab groundwater samples. In immediately adjacent boreholes, GCI installed temporary dual-completion soil vapor sampling points (at depths of approximately 5.0 to 5.5 feet bgs and at approximately 12.5 to 14.0 feet bgs). The shallow points were installed within clayey soil, while the deeper points were placed across a 1-foot thick sandy unit identified during continuous core of the adjacent borings. Analytical results of the soil vapor samples were compared to the Regional Water Quality Control Board, San Francisco's (RWQCB-SF) Environmental Screening Levels (ESLs) established for commercial land use (for the on-site auto repair business) and residential land use (for the predominant offsite land use) for TPHg, BTEX, and methyl tertiary butyl ether (MTBE). Analytical results of samples collected at the 5-foot depths did not exceed the onsite commercial or offsite residential ESLs, with the exception of SV-8 (which exceeded the residential ESL for TPHg) and SV-2 (which exceeded the residential ESL for benzene). Based on the results of the soil vapor sampling, GCI concluded that significant vertical attenuation is occurring and that results indicate that vapor intrusion concerns are unlikely based on commercial on-site and residential off-site uses.

In February and March 2009, GCI conducted the approved 5-day DPE remediation feasibility test at the site. DPE testing was performed using onsite wells MW-1, MW-2, MW-3, and MW-4, both individually and as a group, while using outlying wells MW-5, MW-6, and MW-8 to check for vacuum influences. GCI's DPE/AS Feasibility Report, dated March 31, 2009, stated that the DPE testing generally failed (too much water and not enough vapor flow) and concluded that only horizontal DPE wells would be appropriate (AS was never attempted). In response to this report, ACEHD issued a letter dated October

27, 2009, requesting a work plan for installation of DPE wells (and several additional items). GCI submitted a *Work Plan for Additional Investigation*, dated January 15, 2010, in which they partially addressed ACEHD's issues outlined in the October 2009 letter; ACEHD never formally reviewed the document and shortly thereafter, Stratus assumed consulting responsibilities for the site.

On July 22, 2010, a meeting was held between ACEHD and Stratus to review the current status of the project, to discuss the recent October 2009 ACEHD letter and GCI January 2010 response/work plan, and to discuss steps to begin remediation efforts at the site immediately. During this meeting, it was agreed that an SCM/IRAP would be prepared and would include a comprehensive data tabulation of all historic work performed at the site, would identify data gaps that require additional work, would propose any additional on-site wells/borings needed to complete onsite lateral and vertical soil assessment, and would include a proposal to excavate impacted soil at the former UST area as a preliminary remedial step before the initiation of DPE remediation. This approach was agreed upon by ACEHD, and was meant to expedite ACEHD's review time on the SCM/IRAP.

On January 24, 2011, Stratus oversaw the destruction of two groundwater monitoring wells (MW-1 and MW-4) which were located within the limits of the proposed excavation. During the same drilling mobilization, Stratus directed the advancement of soil borings B-4 and B-5, to a depth of approximately 32 feet bgs. These borings were performed in order to assess subsurface conditions near a former fuel dispenser and waste oil UST. Between May 17 and June 17, 2011, Stratus oversaw the excavation of approximately 788 tons of soil from the former site UST area. The excavation extended to a maximum depth of about 12 feet below surface grade. After removing this soil, clean backfill material was replaced within the excavation cavity. A map illustrating the approximate location of the excavation, and soil analytical results for samples collected during this work, are provided in Appendix A. In November 2011, offsite well MW-6 was destroyed in the presence of a Stratus representative.

GEOLOGY

The site lies on the East Bay Plain approximately one mile west of the Oakland/San Leandro Hills and the northwest-trending Hayward Fault, and approximately three miles east of the San Francisco Bay. The site is at an elevation of approximately 50 feet above mean seal level (msl) with local topography predominately flat and sloping gently towards the west.

Local subsurface soil stratigraphy has been investigated by the drilling of more than 60 vertical soil borings at the site and immediately surrounding area on behalf of Mr. Lee, which have been logged by an array of different geologists over the past 15+ years. Most of the historic borings were logged on 5-foot intervals, although the eight soil borings

drilled in 2009 (SV-1 through SV-8) were continuously cored (to approximately 14 feet bgs). According to available geologic boring logs related to the site, subsurface soils have been logged to a maximum depth of approximately 45 feet bgs. A table summarizing well construction and soil boring details is provided in Appendix B.

From the surface to approximately 25 feet bgs, the soil generally consists of fine-grained materials (clay and sandy clay). Beneath the upper fine-grained material, from approximately 25 to 35 feet bgs (ranging from 3 to 13 feet in apparent thickness), a sandy unit of apparent higher permeability is present (clayey and silty sands with some clean sands). It is within this sandy layer that groundwater is first encountered. In general, the sandy water-bearing unit appears to thicken and coarsen to the west and northwest of site (offsite, downgradient). Notably, the sandy layer appears to be thin (to absent) in the center of the site property itself (B-1, B-2, B-3, MW-1, and ETM-7) and to the northeast of the site across 14th Avenue (ETM-10, ETM-11). Beneath the sandy water-bearing unit, additional fine-grained soils have been encountered (clays). In both the upper and lower clayey layers, thin (1 to 4 feet in apparent thickness), discontinuous, sandy layers are reportedly interbedded. Notably, within the thick upper section of vadose zone clays, an approximate 1-foot thick sand, clay with sand, clayey gravel or gravelly clay was encountered between 11 and 14 feet bgs (targeted in deep soil gas sample locations). A geologic cross-section illustrating interpreted geologic conditions beneath the site and site vicinity is included as Figure 4. The surface trace of this cross section is included on Figure 3.

HYDROGEOLOGY

A total of fourteen permanent groundwater monitoring wells (MW-1 through MW-6, MW-8 through MW-14, and MW-1A) have been screened to depths of between 20 and 40 feet bgs to monitor groundwater occurrence and quality in the first encountered water-bearing zone. The monitoring well array includes five onsite wells, and nine offsite wells spanning the city block west-northwest of the site, from Garcia Avenue to Broadmoor Boulevard. Historically, groundwater in the monitoring well array has been measured as shallow as 15.05 feet bgs to as deep as 30.25 feet bgs, with a historical average of about 25 feet bgs. Seasonal fluctuations in water table levels on the order of 5 to 10 feet are typical. Lowest groundwater levels were observed in the early 1990's. The geologic cross section provided as Figure 4 includes an illustration of the groundwater elevation fluctuation range in comparison to subsurface soil types at these depths within the subsurface.

Historically, the dominant groundwater flow in the vicinity of the site has been generally west and west-northwest at an average gradient of approximately 0.002 foot per foot (ft/ft). Onsite, groundwater flow appears to be more complex. During the period 1994 though 1998, only wells MW-1, MW-2, and MW-3 were gauged for depth to groundwater. In that period, groundwater flow was calculated to be predominantly south to southwest (generally towards well MW-2). Following installation of additional wells, the flow direction had the

appearance of shifting to the west with the increase in spatial data. Figure 5 presents a groundwater elevation contour map using data collected during the third quarter 2012.

EXTENT OF IMPACT TO SOIL

TPHg / gasoline range organics (GRO) and BTEX compounds are identified as the primary chemicals of concern (COCs) at the site. One of the USTs formerly used at the site stored leaded gasoline (550 gallon capacity) and, when removed, was noted to have holes and corrosion (tank no. 3). Lead, although reported in some soil samples collected at the site, is generally not mobile in groundwater at the pH levels found at the site, and is therefore not identified as a COC at this time. Appendix B contains tables that summarize historical soil analytical results for samples collected during subsurface site investigation work. A figure summarizing onsite soil analytical results is included in Appendix B.

A review of the Appendix B figure illustrates that historically (prior to excavation), petroleum hydrocarbon impact to the vadose zone (above 15 feet bgs) was limited to areas within approximately 5 to 10 feet of the USTs and fuel delivery/storage equipment in the northern portion of the site. Excavation work appears to have removed nearly all of these fuel contaminants from the subsurface, and thus data regarding former petroleum hydrocarbon impact to the vadose zone is not discussed further in this report.

Seasonal groundwater fluctuations in the area of the site indicate that the water table surface fluctuates between the two main lithologic zones, i.e., the upper fine-grained layer, and the mostly continuous sandy layer beneath it. Impacted groundwater present within the fine-grained sediments (whether fully saturated or capillary fringe) has likely resulted in adsorption/re-adsorption of hydrocarbons to clayey soils, resulting in a 'smearing' of the soil impact within the bottom 5 to 7 feet of the upper fine-grained unit. This 'smear-zone' is apparent in data collected from borings MW-1, MW-2, MW-3, MW-8, MW-10, CE-1, CE-2, B-1, ETM-1, ETM-2, and ETM-7. Soil from these borings was tested, either in the field using handheld photo/flame ionization detectors or through laboratory analysis, and hydrocarbon impact was not detected until just above groundwater.

In general, the highest concentrations of petroleum hydrocarbons in soil appear to be present between approximately 25 and 35 feet bgs, which is the area approximately 5 feet above and below the historical low groundwater level observed in the monitoring well network. A review of the Appendix B figure illustrates that elevated concentrations of petroleum hydrocarbons in soil, were detected in the northern portion of the site, near the former UST and fuel dispenser area, with relatively minimal offsite impact to soil. An exception to this is the area near well boring MW-2, which is located approximately 50 to 70 feet southwest of the former USTs, and indicated the presence of GRO and benzene at maximum levels of 6,300 mg/Kg and 110 mg/Kg, respectively. It should be noted that most of the on-site soil samples used to assess the concentrations and locations of fuel contaminants in soil were collected during the 1990's, and since most of the petroleum

hydrocarbon mass appears to be situated in the upper portion of the saturated interval, some re-distribution of contaminants in soil is likely to have occurred. Given this condition, the ability to precisely illustrate the current distribution of fuel contaminants in soil within the 'smear zone' is limited. However, based on our understanding of site geological conditions and more recent data available for the site, we believe that most of the petroleum hydrocarbon mass remains in soil within the smear zone in the northern portion of the site.

During the 1994/1995 assessments, soil samples from borings MW-2, MW-3, MW-4, CE-1, and CE-2 were analyzed for total lead. Sixteen of eighteen samples collected had total lead concentrations ranging from 4.0 to 7.9 mg/Kg. Assuming this concentration can be considered a background measurement of the naturally-occurring levels of lead in soil beneath the site, the concentrations of 23.5 and 12.4 mg/Kg detected in boring CE-2 at 5 feet and 20 feet, respectively, may be indicative of impact from leaded gasoline.

EXTENT OF IMPACT TO GROUNDWATER

A total of fourteen permanent groundwater monitoring wells (MW-1 through MW-6, MW-8 through MW-14, and MW-1A) have been installed and sampled to evaluate the lateral extent of impact to the first encountered water-bearing zone beneath the site and site vicinity, although three of the wells (MW-1, MW-4, and MW-6) have now been abandoned. A routine quarterly groundwater monitoring and sampling program was initiated at the site during the third quarter 1995 and is ongoing. Historical groundwater elevation data and groundwater analytical results (through the third quarter 2012) are provided in Appendix C. The most recent GRO and benzene concentrations detected in groundwater at the site, based on a July 2012 groundwater sampling event, are included on Figures 6 and 7, respectively.

Historically, GRO and BTEX impact has been reported in all existing monitoring wells installed at the site to monitor the lateral extent of impact, with the exception of the 141 Farrelly Drive irrigation well. In the mid-1990s when groundwater monitoring and sampling was first initiated, GRO and BTEX levels were high in samples collected from on-site monitoring wells MW-1, MW-2, and MW-3. Maximum GRO and benzene concentrations of 1,100,000 micrograms per liter (μ g/L) and 29,000 μ g/L, respectively, were reported in samples collected from well MW-1 in 1995/1996. Over the approximately 17 year routine monitoring/sampling period, GRO and benzene concentrations have decreased in all wells. During 2012 well sampling, maximum concentrations of GRO in the monitoring wells ranged from 170 μ g/L (MW-5) to 6,100 μ g/L (MW-2). During 2012, benzene has only been detected in samples collected from two wells (MW-2 and MW-10, at maximum levels of 31 μ g/L and 13 μ g/L, respectively). It should be noted that prior to destruction of wells in the northern portion of the site in 2010, GRO and benzene were detected at maximum concentrations of 75,000 μ g/L and 670 μ g/L, respectively, and although wells are no longer located in this portion of the

site, higher levels of GRO and BTEX area expected to remain in this area despite the absence of current data.

Stratus has prepared figures that illustrate the approximate limits of the GRO and benzene contaminant plumes over time, using data collected during 2000, 2006, and 2010; these figures are presented in Appendix D. The figures illustrate that the orientation of the contaminant plumes in the northwest direction (downgradient and towards the 141 Farrelly Drive well) has remained relatively consistent over time. The figures show that by approximately 2006, the GRO and benzene contaminant plumes appear to have impacted the largest area of the subsurface, including the areas near wells MW-11 and MW-13. Since 2006, the lateral margins of the contaminant plumes appear to have shrunk, as recent samples from wells MW-11 and MW-13 are absent of petroleum hydrocarbons.

Although the area of impacted groundwater appears to have decreased over time, petroleum hydrocarbons (in particular GRO) impact a relatively large area of the subsurface. The GRO plume is over 500 feet in length, and impacts the most downgradient monitoring wells from the site (MW-12 and MW-1A). While GRO concentrations over time appear to be decreasing, concentrations of GRO remain moderately high. Benzene impact to groundwater during the site monitoring period has decreased significantly, as evidenced by both declines in concentrations and the lateral area of impact over time. Given the available data, benzene appears to be attenuating more quickly than GRO.

SENSITIVE RECEPTORS

Human Health

Although the highest impact to groundwater lies beneath Mr. Lee's property at the German Autocraft site itself and beneath Garcia Avenue, the known lateral extent of the dissolved-phase contaminant plumes reaches approximately 300 feet downgradient (west) of the property line. The offsite portion of the plume underlies apartments and single family residences (some of which have basements). Residents of these homes, as well as commercial workers at the German Autocraft facility, are potential receptors of vapor intrusion off-gassing from impacted soil/groundwater at depth.

In January 2009, to evaluate risk to human health, GCI advanced eight on- and off-site soil borings (SV-1 through SV-8) and collected grab groundwater samples. In immediately adjacent boreholes, GCI installed temporary dual-completion soil vapor sampling points (at depths of approximately 5.0 to 5.5 feet bgs and at approximately 12.5 to 14.0 feet bgs). The shallow points were installed within clayey soil, while the deeper points were placed across a 1-foot thick sandy unit identified during continuous core of the adjacent borings. Analytical results of the soil vapor samples were compared to the RWQCB-SF ESLs

protective of vapor intrusion concerns under a commercial land use (for the on-site auto repair business) and residential (for the predominant offsite land use) for TPHg, BTEX, and MTBE. Analytical results of samples collected at the 5-foot depths did not exceed the onsite commercial or offsite residential ESLs, with the exception of SV-8 (which exceeded the residential ESL for TPHg) and SV-2 (which exceeded the residential ESL for benzene). Based on the results of the soil vapor sampling, GCI concluded that significant vertical attenuation is occurring and that results indicate that vapor intrusion concerns are unlikely based on commercial on-site and residential off-site uses.

Surface Water / Ecological

Based on Stratus' review of aerial photos of the surrounding area, no surface water bodies are present in near downgradient locations; no ecological receptors have been identified at this time.

Groundwater

According to previous consultants' reports, numerous shallow (<100 ft) private domestic wells are reportedly present in the vicinity of the site and reportedly used for seasonal irrigation by homeowners. Historical site documents indicate that East Bay Municipal Utility District (EBMUD) has provided back-flow prevention devices to owners where such wells have plumbed connections to the main house supply, but there is no certainty that all such situations have been addressed. EBMUD is the local water supplier, using mainly imported or local reservoir water for drinking water.

The only confirmed location of the reportedly numerous domestic irrigation wells in the immediate site vicinity is a privately owned irrigation well located at 141 Farrelly Drive, approximately 420 feet west of the site. The presence of this well was first discovered during neighborhood canvassing (for the purpose of access) by ETM during the 1995/1996 assessment. Most of the information about the well, as reported by ETM and GCI, comes from the property owner, Mr. Mitch Ramirez. According to Mr. Ramirez, the house on the property was built in 1949, and the well was already in existence at that time. The well was used for irrigation of the orchards that were present in the area before urban development. Mr. Ramirez reported that he used the well regularly for watering his landscaping. When LPH was discovered in boring ETM-38, approximately 120 feet upgradient from the 141 Farrelly Drive well, ETM and ACEHD took steps to stop the use of the well at 141 Farrelly Drive, in order to avoid human exposure and to stop any influence the well may have on groundwater gradient in the area. Mr. Ramirez was asked to allow Mr. Lee's consultants to collect groundwater samples from his well, and to cease use of the well. Groundwater analytical results for samples from the 141 Farrelly Drive well have never shown reportable concentrations of petroleum hydrocarbons.

Records about the construction of the well are vague and contradictory. Previous consultants ETM and GCI reported the diameter of the well to be 5, 2, and 10 inches on various occasions (Stratus technicians report that the well is 6 inches in diameter). Depth figures are also contradictory; previous consultants indicated total depths ranging from 28 to 65 feet. The screen/perforation interval for the well was unreported until GCI reported it to be 25 to 65 feet bgs in 2008.

FEASIBILITY STUDY / CORRECTIVE ACTION PLAN

As directed by ACEHD in the April 25, 2012 letter, Stratus has selected three remedial technologies that we believe could be effective in mitigating petroleum hydrocarbon impact to the subsurface, based on our understanding of the geologic and hydrogeologic conditions and the extent of contaminant impact in the site vicinity. The remedial technologies were chosen and evaluated in accordance with the requirements identified in the Central Valley Region Regional Water Quality Control Board's (CVRWQCB) Appendix A-Recommendations for Preliminary Investigation and Evaluation of Underground Tank Sites (April 16, 2004). For each remedial alternative, Stratus has prepared an estimate of the costs necessary to complete remediation pilot testing, install the remediation system, conduct operation and maintenance, as needed, throughout the anticipated life-cycle of the remedial project, and conduct groundwater monitoring during the remedial efforts and for one year following the end of the remediation project. A list of assumptions used in developing each cost estimate is also provided for each remedial alternative selected for evaluation.

Remediation Objectives and Cleanup Goals

As requested by ACEHD in the April 25, 2012 letter, Stratus has provided contamination cleanup goals that are in accordance with the SF-RWQCB Basin Plan for the subject site. Since the area is surrounded by both residential and commercial properties, Environmental Screening Levels (ESLs) that were developed by the SF-RWQCB and presented in a document titled *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* (Interim Final November 2007, Revised May 2008), for both residential and commercial property, are shown.

It should be noted that the State Water Resources Control Board (SWRCB) recently adopted a low-threat policy for evaluating closure of underground fuel leak cases. Given this condition, the criteria established by the SWRCB's low-threat closure policy may be more appropriate for managing future environmental work activities at the site, instead of matrix-specific cleanup goals for select contaminants. However, in order to maintain compliance with ACEHD's requests in the April 25, 2012 letter, Stratus has provided site specific cleanup goals dictated by the local Basin Plan and ESLs.

Soil Cleanup Goals

Given the relatively shallow groundwater levels in the site vicinity, the cleanup goals stated below are presented only for a shallow soil scenario and are based on leaching potential above groundwater. It should be noted that ESL-based cleanup levels for the fuel contaminants presented in the following table are identical for commercial and residential scenarios.

<u>Contaminant</u>	ESL-Based Soil Cleanup Level for Commercial Property (mg/Kg)	ESL-Based Soil Cleanup Level for Residential Property (mg/Kg)	Pathway Basis for Goal	Highest Remaining Concentration (mg/Kg) and Depth (feet bgs)
GRO	83	83	Groundwater Protection	6,300 mg/Kg, 31 ft. bgs
Benzene	0.044	0.044	Groundwater Protection	110 mg/Kg, 31 ft. bgs
Toluene	2.9	2.9	Groundwater Protection	130 mg/Kg, 28 ft. bgs
Ethylbenzene	3.3	2.3	Groundwater Protection	190 mg/Kg, 31 ft. bgs
Xylenes	2.3	2.3	Groundwater Protection	310 mg/Kg, 31 ft. bgs
МТВЕ	0.023	0.023	Groundwater Protection	<0.50 mg/Kg, 32 ft. bgs

Groundwater Cleanup Goals

The groundwater in the area surrounding the site has been designated in the SF-RWQCB Basin Plan as of beneficial or potentially beneficial use. Stratus has thus listed below cleanup levels that are based on this classification. Stratus would like to emphasize that although groundwater in the site vicinity is designated as beneficial or potentially beneficial, it appears very unlikely that this water would be developed as a water supply. The City of San Leandro apparently does not have "any plans to develop local ground-water resources for drinking water purposes, because of existing or potential

saltwater intrusion, contamination, or poor or limited quantity"¹. Given this observation, and that the area surrounding the site is served by an existing municipal water supply, it is our opinion that the ESL-based cleanup goals stated below are overly conservative. Stratus is thus suggesting that ACEHD consider allowing for more lenient groundwater cleanup objectives for the site.

Contaminant	ESL-Based Groundwater Cleanup Level (µg/L)	Pathway Basis for Goal	Recent Highest Concentration in µg/L, Well ID*
GRO	100	Ceiling Value	75,000 μg/L, MW-1 (2010)
Benzene	1.0	Drinking Water Toxicity	670 μg/L, MW-1 (2010)
Toluene	40	Ceiling Value	9,400 μg/L, MW-1 (2010)
Ethylbenzene	30	Ceiling Value	3,700 μg/L, MW-1 (2010)
Xylenes	20	Ceiling Value	19,000 μg/L, MW-1 (2010)
MTBE	5.0	Ceiling Value	<0.5

^{*} Note: Since wells MW-1 and MW-4 were destroyed in 2010 to accommodate excavation work, no monitoring wells are located in the areas of highest groundwater impact. Therefore, data collected from these wells in 2010 were included in this table.

Soil Vapor Cleanup Goals

The cleanup goals stated below are for concentrations of the specified contaminants in shallow soil (less than 5 feet bgs). Cleanup objectives are listed for both commercial and residential property, given the mixed-use development surrounding the site.

¹ East Bay Plain Groundwater Basin Beneficial Use Evaluation Report, Alameda and Contra Costa Counties, CA (San Francisco Bay-RWQCB, June 1999, page 72)

Contaminant	Commercial Property ESL-Based Soil Vapor Cleanup Level (µg/m³)	Residential Property ESL-Based Soil Vapor Cleanup Level (μg/m³)	Pathway Basis for Goal
GRO	29,000	10,000	Vapor Intrusion
Benzene	280	84	Vapor Intrusion
Toluene	180,000	63,000	Vapor Intrusion
Ethylbenzene	3,300	980	Vapor Intrusion
Xylenes	58,000	21,000	Vapor Intrusion
MTBE	31,000	9,400	Vapor Intrusion

Summary of Site Conditions:

The following site conditions were used in evaluating the remedial alternatives identified in this section:

- The site is an active automotive repair facility.
- The USTs and fuel delivery system were removed in 1990 and never replaced.
- Mixed residential and commercial land development surrounds the site.
- The site is located on the East Bay Plain, approximately one mile west of the Oakland/San Leandro Hills and 3 miles east of San Francisco Bay.
- A plume of groundwater contaminants (GRO/BTEX) impacts the onsite property and extends offsite approximately 400 feet west-northwest of the site.
- Attenuation of petroleum hydrocarbons (most notably benzene) has occurred over time (22 years) given the available groundwater analytical data.
- Most of the offsite plume is situated beneath residential property that may significantly limit access for performing aggressive remedial efforts.
- A majority of the petroleum hydrocarbon impact to shallow soil has been excavated and removed from the site.
- Available data suggests that the majority of remaining fuel contaminants are situated within the 'smear zone' and shallow saturated interval

 DPE is unlikely to be a viable or cost effective remedial alternative due to low air flow rates observed in the vadose zone during previous pilot testing work. However, due to the groundwater extraction rates observed during DPE pilot testing, pumping and treating groundwater (using submersible or pneumatic pumps) could be a viable remedial alternative.

Remedial Option #1: Installation and Operation of an Ozone Injection System for Performance of In-Situ Chemical Oxidation (ISCO)

ISCO involves injection of oxidants such as ozone, hydrogen peroxide, potassium permanganate, dissolved oxygen, etc., into the subsurface using specially designed wells. These oxidants break down the petroleum hydrocarbons to carbon dioxide and water. Some of the unreacted or residual oxidant breaks down to oxygen over time, resulting in dissolved oxygen, which aids in bioremediation of petroleum hydrocarbons. The performance of these chemical oxidation technologies varies from site to site depending on site geology, hydrogeology, and the nature and concentration of contaminants of concern. The effectiveness of ISCO is dependent on the delivery of oxidants to impacted areas, which in turn is dependent on the subsurface lithology.

Given the relatively large area impacted with dissolved petroleum hydrocarbons, installation of two ozone injection systems would be required in order to actively remediate the full expanse of the plume. Stratus has prepared a map (Figure 8) that illustrates the hypothetical layout of a remediation system that would utilize 16 wells for injection of ozone into the subsurface. Under this scenario, the 7 injection wells located closest to the site would be connected via subgrade piping to an ozone injection system constructed onsite. The other 10 wells located furthest from the site would need to be connected to an ozone injection system that would have to be installed on an offsite property. Performing offsite remediation at a relatively large distance from the site would require the cooperation of several offsite property owners, and would likely provide significant logistical difficulties for implementing the ISCO remedial project on a full-scale basis (ie to include remediation near the 'leading edge' of the groundwater contaminant plume). However, it has been our past experience that ISCO remediation in the source/near-source area alone reduces the concentration of petroleum hydrocarbons in groundwater that migrate offsite. By reducing the concentration of petroleum hydrocarbons that migrate offsite, the offsite portion of the groundwater contaminant plume will naturally attenuate at a faster rate, thus reducing the need for an offsite remediation system to mitigate low levels of impact to groundwater. Although the implementation of two ozone systems would reduce the contaminant mass in a shorter timeframe, the logistical constraints make it unfeasible and cost-prohibitive. Therefore the installation and implementation of a single near-source ISCO remediation system is the focus of this remedial option.

A disadvantage of using ozone injection would be an increase in groundwater monitoring costs during both pilot testing and the full-scale remedial work. Governmental regulatory agencies typically require that an evaluation of the geochemical changes in groundwater resulting from ISCO be performed. A Waste Discharge Requirement (WDR) permit would need to be obtained from the RWQCB in order to implement an ISCO remedial project, and the WDR would specify which chemical analyses would need to be performed (for various metals, anions, etc.). It has been our past experience that these chemical analysis costs are high, substantially increasing the total cost of analyzing a groundwater sample from a single well (versus analysis for petroleum hydrocarbon/fuel oxygenate contaminants only). However, it is likely that only some of the site monitoring wells (for the purposes of this estimate, we will assume about 5 wells) would require these extra chemical analyses.

The following assumptions were used in order to consider concurrent use of ozone injection techniques to mitigate site contaminants and in developing this cost estimate:

- Access to the public right-of-way, for the purpose of implementing the work proposed, will be granted by the City of San Leandro.
- Ozone injection equipment can be installed onsite.
- Pilot testing will not be necessary.
- A WDR permit can be obtained from the RWQCB.

For the purposes of this report, Stratus is estimating that 18 months of ozone injection remediation will be necessary to mitigate site contaminants to levels that will allow for closure of the site's environmental case. The table below presents a summary of the estimated costs to implement the ozone injection remedial approach described above.

<u>Task</u>	Estimated Cost
Design and Permitting	\$15,000
Well Installation	\$37,500
Equipment and Construction	\$115,000
Operation and Maintenance (18 months)	\$50,000
Groundwater Monitoring (2.5 years)	\$68,000
Total	\$285,500

Remedial Option #2: Injection of ORC Advanced[™] and RegenOx[™] for In-Situ Remediation

Under this scenario, Stratus would utilize a combination of ORC AdvancedTM and RegenOxTM (manufactured by Regenesis, Inc.) to complete in-situ remediation of site contaminants. Using this approach, an ORC AdvancedTM and/or RegenOxTM slurry would be injected into the subsurface, between a depth of approximately 25 and 40 feet bgs, at locations with documented petroleum hydrocarbon impact (GRO groundwater plume). A direct push rig containing specially designed down-hole tooling would be used to pump the ORC AdvancedTM and/or RegenOxTM slurry into the subsurface.

According to Regenesis, Inc., RegenOxTM uses an alkaline oxidant containing a sodium percarbonate complex in order to abate petroleum hydrocarbon contaminants. Once in the subsurface, the remediation slurry performs an oxidation reaction which is comparable to a Fenton's Reagent application. However, use of RegenOxTM is much safer than use of a Fenton's Reagent because the product is designed to not produce an undesirable exothermic chemical reaction hazard. ORC AdvancedTM is a product that is designed to enhance oxidative biodegradation of petroleum hydrocarbons for a period of approximately 12 months, based on product information provided by Regenesis. Stratus expects that a WDR permit would be required in order to allow for injection of ORC AdvancedTM and/or RegenOxTM into the subsurface.

An advantage of using the Regenesis product application remedial approach is that remediation can be performed over a short period of time, without installing any subsurface conveyances or equipment across nearby property or right-of-ways. Once a scope of work is approved by ACEHD, and the WDR permit is obtained, remediation could be initiated within a very short period of time, although one or more private property access agreements might be necessary. A disadvantage of using the Regenesis product application approach is that the effectiveness of the technology at the site would be difficult to evaluate until the work was actually performed at the site on a 'full scale' basis. In addition, it is unknown if remediation will be effective with only a single product application event, or if multiple injection events of one, or both, products would be necessary.

Given the site's geological conditions, and our understanding regarding the extent of impact, Stratus would recommend injection of RegenOxTM in the northern portion of the site, near former wells MW-1 and MW-4, existing well MW-3, and the former fuel dispenser islands in order to treat the portion of the site with the highest concentrations of fuel contaminants in groundwater. Since RegenOxTM is not a time-release product, and requires direct contact with contaminants to be effective, a tight spacing of direct push application borings (about 5-7 foot spacing) would be recommended in this portion of the site. In order to treat the majority of the plume area, including the southern portion of the site and offsite areas, Stratus would recommend injection of ORC AdvancedTM. According to Regenesis, dissolved oxygen released from application of ORC

AdvancedTM will diffuse laterally with time away from the injection boring, and if the borings are appropriately spaced (in this case, an approximate 10-foot lateral spacing appears appropriate), large areas of the contaminant plume can be treated through the 12-month lifecycle of the ORC AdvancedTM product.

Stratus has prepared an estimate of the costs associated with applying Regenesis products (both ORC AdvancedTM and RegenOxTM, depending upon the area of the site) in order to mitigate groundwater contaminants in-situ. For the purposes of this estimate, Stratus assumes that only one application of the product will be necessary. In the event that more than one application would be necessary, product procurement and application costs would significantly increase. The cost estimate is based on treating areas depicted on Figure 9.

<u>Task</u>	Estimated Cost
Product Procurement (including taxes and freight)	\$250,000
Product application using direct push technology	\$225,000
Groundwater Monitoring (Quarterly for 2 years)	\$50,000
Total	\$525,000

Remedial Option #3: Groundwater Extraction and Treatment (GET)

A groundwater extraction and treatment (GET) system typically involves continuous pumping of groundwater from an extraction well, or network of wells, situated within the area of known impact. Extracted groundwater is subsequently routed to a treatment system, normally consisting of granular activated carbon (GAC) vessels, prior to discharge to the sanitary sewer or storm drain. This remediation technology is effective if the significant subsurface petroleum hydrocarbon impact is in the dissolved phase and a constant groundwater yield can be attained. However, the operation and maintenance costs can be relatively high if it involves extracting and treating high volumes of groundwater.

An advantage of pumping and treating groundwater is that areas of the contaminant plume that are situated beneath private property can be captured and remediated without physically accessing the private property. Stratus has prepared a map (Figure 10) illustrating the location of five hypothetical extraction wells that could be used in the implementation of a GET remedial project. Under this scenario, four of the five wells (EX-

2 through EX-5) would be situated offsite, in nearby roadways that are within the lateral limits of the contaminant plume. Another advantage of pumping and treating groundwater is that hydraulic control is provided for the contaminant plume, which would limit lateral migration of dissolved petroleum hydrocarbons (although we believe that the plume is now relatively stable).

Based on our understanding of the site geology, and the findings of the DPE pilot testing, relatively low to moderate quantities of groundwater would likely be generated during shallow groundwater pumping; thus groundwater treatment volumes would not exclude this remedial approach. This statement assumes that an appropriate groundwater discharge permit (either from East Bay Municipal Utility District [EBMUD] for sewer discharge, or from the RWQCB for storm water discharge) can be obtained for the desired quantity of treated groundwater.

A disadvantage of implementing a GET remedial project is that pumping and treating groundwater may not reduce contaminant concentrations in groundwater to levels that would allow for closure of the site's environmental case. After a period of pumping groundwater, contaminant levels might reach 'asymptotic levels', beyond which it may be difficult to reduce concentrations of petroleum hydrocarbons. In addition, fuel contaminants that are 'adsorbed' within soil particles are not remediated using GET, and thus may provide a source for ongoing groundwater impact as these petroleum hydrocarbons slowly de-sorb into groundwater over time. Stratus anticipates that a longer period of remediation will be necessary for performance of GET remediation than an insitu groundwater remedial project, such as remedial options #1 and #2. It is unknown, however, as to whether or not pumping and treating groundwater would enable sufficient reduction in dissolved petroleum hydrocarbon concentrations to levels that would allow for closure of the site under 'low threat policy criteria'.

An administrative difficulty associated with implementing a GET remediation project involves the allocation of funds from California's Underground Storage Tank Cleanup Fund (USTCF). It has been our recent experience that very limited annual budgets have been allocated by the USTCF for sites using GET systems. If this were to be the case in upcoming years, continuous operation of a GET system may not be practical, with remediation only performed at times when adequate funding is available.

The following assumptions were used in order to consider GET remediation for use at the site and in developing this cost estimate:

• EBMUD will allow for discharge of treated groundwater to the sanitary sewer system under an appropriate permit.

- Access to the public right-of-way, for the purpose of implementing the proposed work (including the installation of extraction wells and conveyance of groundwater within piping trenches) will be allowed by the City of San Leandro.
- A period of 6 years would be required to perform remediation.

The table below presents a summary of the estimated costs to implement the GET remedial alternative.

Task	Estimated Cost
Pilot Testing	\$50,000
Design and Permitting	\$30,000
Well Installation	\$35,000
Equipment and Construction	\$115,000
Operation and Maintenance (6 years)	\$450,000
Groundwater Monitoring (7 years)	\$140,000
Total	\$820,000

No Action/Monitored Natural Attenuation

This management technique does not involve any active remedial action other than periodic groundwater monitoring. Natural attenuation is a process in which the indigenous microorganisms, under natural physical and chemical conditions, reduce/degrade the petroleum hydrocarbon concentrations. The natural attenuation rates for any given site are greatly influenced by the amount/type of naturally occurring microorganisms and dissolved oxygen (for aerobic conditions), or manganese, sulfate, iron, etc. (for anaerobic conditions), and temperature. In addition, the natural attenuation rates can also be limited by the subsurface petroleum hydrocarbon concentrations (electron donor).

If natural attenuation was to be implemented, the cost of conducting groundwater monitoring and sampling work is estimated to be approximately \$20,000.00 per year (assuming that the groundwater monitoring and sampling plan would be reduced to two semi-annual events). The annual cost would need to be adjusted periodically in order to adjust for inflationary changes. This estimated cost assumes that installation of additional monitoring wells would not be required in the future, and that resumption of a quarterly

monitoring and sampling schedule, which was required prior to implementation of State Water Resources Control Board Resolution 2009-0042, would not be necessary.

DISCUSSION

Given the costs associated with remediation, and the demonstrated reduction of petroleum hydrocarbon concentrations in groundwater during the site's monitoring period (most notably benzene), monitored natural attenuation warrants consideration as a long-term management strategy for the site. Using historical groundwater analytical data. Stratus has attempted to estimate the time that would be necessary in order for concentrations of contaminants (GRO and benzene) to attenuate beneath the site. Appendix E contains concentration versus time graphs of GRO and benzene levels at wells MW-1, MW-3, and MW-4. These graphs indicate that GRO and benzene levels will reach water quality objectives within only a few years (or trendlines of the data have already reached the water quality objective). However, our experience working on other fuel leak sites, we believe that it is unlikely that concentrations of contaminants in groundwater (in particular GRO) will attenuate to water quality objectives within a few years. Additionally, given the water use and supply issues in the State, the 141 Farrelly Drive well could always be modified and used as a drinking a water supply well for the residence and the contaminant plume extends beneath a residential neighborhood. Therefore, Stratus does not recommend natural attenuation as a remedial option for the site.

Active remediation is necessary in order to manage the site's environmental case to closure. Due to the cost and the duration of time required to complete the remedial effort, GWE is not a feasible remedial alternative for the subject site. This leaves either injection of ozone (ISCO) or injection of a combination of RegenOxTM and ORC AdvancedTM as practical and feasible remedial alternatives for mitigating onsite and near-source contaminants. Although the injection of a Regenesis product via the direct push would be the fastest pathway to achieve environmental case closure (2 years total), the cost of implementation is nearly double that of the ISCO option. The ISCO remedial option would only take approximately six additional months (2.5 years total) to fully achieve environmental case closure. Therefore, Stratus recommends implementing an ozone injection system onsite and installing the source/near-source area injection wells indicated on Figure 8.

In the April 25, 2012 letter, ACEHD personnel requested that a Draft Fact Sheet be prepared and submitted for agency review. Since this document recommends consideration of monitored natural attenuation at the site, or performing remedial pilot testing if active remediation is necessary to manage the site to closure, Stratus has not prepared the Draft Fact Sheet. In the event that a full-scale remediation project is proposed in the future, the requested Draft Fact Sheet will be prepared and submitted at a later date.

LIMITATIONS

This report was prepared in general accordance with accepted standards of care that existed at the time this work was performed. No other warranty, expressed or implied, is made. Conclusions and recommendations are based on field observations and data obtained from this work and previous investigations. It should be recognized that definition and evaluation of geologic conditions is a difficult and somewhat inexact science. Judgments leading to conclusions and recommendations are generally made with an incomplete knowledge of the subsurface conditions present. More extensive studies may be performed to reduce uncertainties. This report is solely for the use and information of our client unless otherwise noted.

If you have any questions or comments concerning this report, please contact Kasey Jones at (415) 516-0373.

Sincerely,

STRATUS ENVIRONMENTAL, INC.

Gowri S. Kowtha, P.E. Principal Engineer

Kasey L. Jones Senior Project Manager

Attachments:

Figure 2 Site Plan

Figure 3 Site Vicinity Map

Figure 4 Geologic Cross Section A to A'

Figure 5 Groundwater Elevation Contour Map, Third Quarter 2012 Figure 6 GRO Iso-Concentration Contour Map, Third Quarter 2012

Figure 7 Benzene Iso-Concentration Contour Map, Third Quarter 2012

Figure 8 Well Locations for Hypothetical Ozone Injection Remedial System Figure 9 Proposed Areas for Injection of RegenOxTM or ORC AdvancedTM

Figure 10 Well Locations for Hypothetical Groundwater Extraction and

Treatment System

Appendix A Site Map and Soil Analytical Results from 2011 Site Excavation

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Appendix B Soil Boring and Well Construction Detail Summary, Soil
Analytical Results from Assessment Work
Appendix C Historical Groundwater Analytical Data

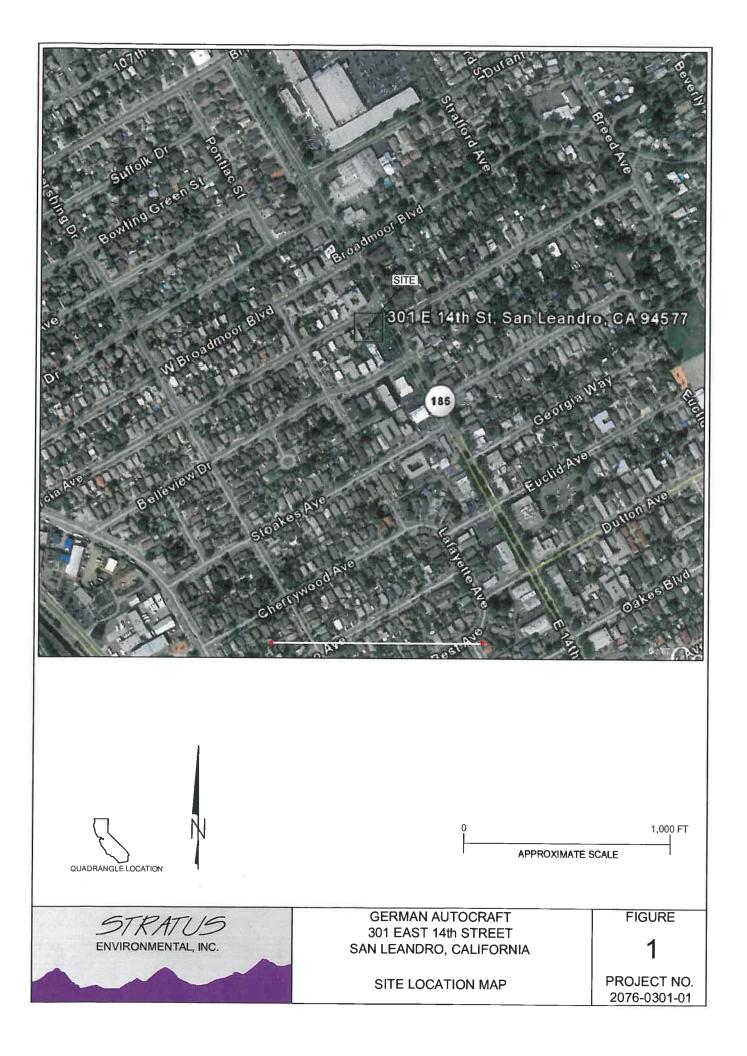
Appendix D Annual Average GRO and Benzene in Groundwater Iso-Concentration Contour Maps, 2000, 2006, and 2010

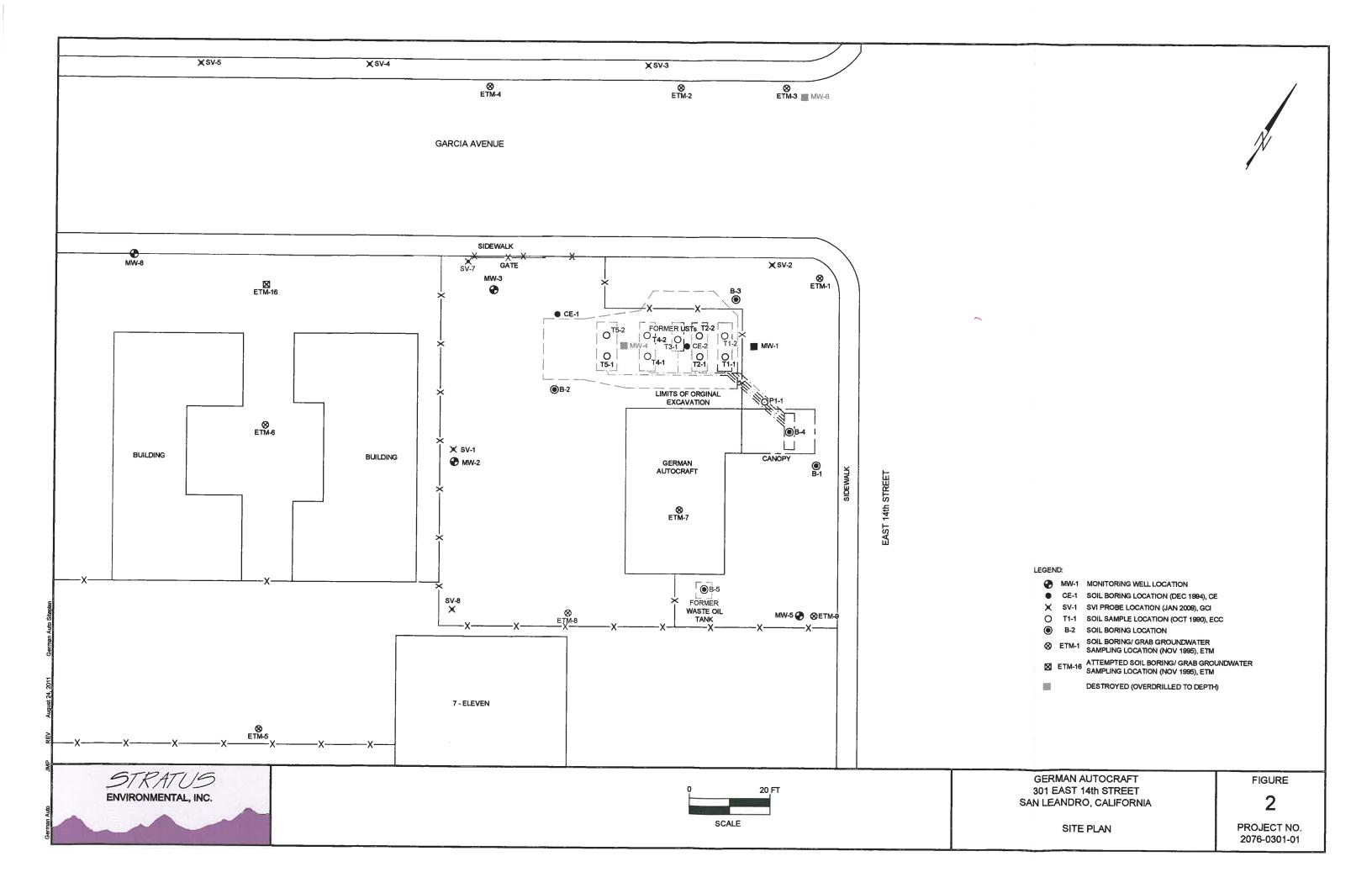
Appendix E GRO and Benzene Concentration Versus Time Graphs, Wells MW-1, MW-3, and MW-4

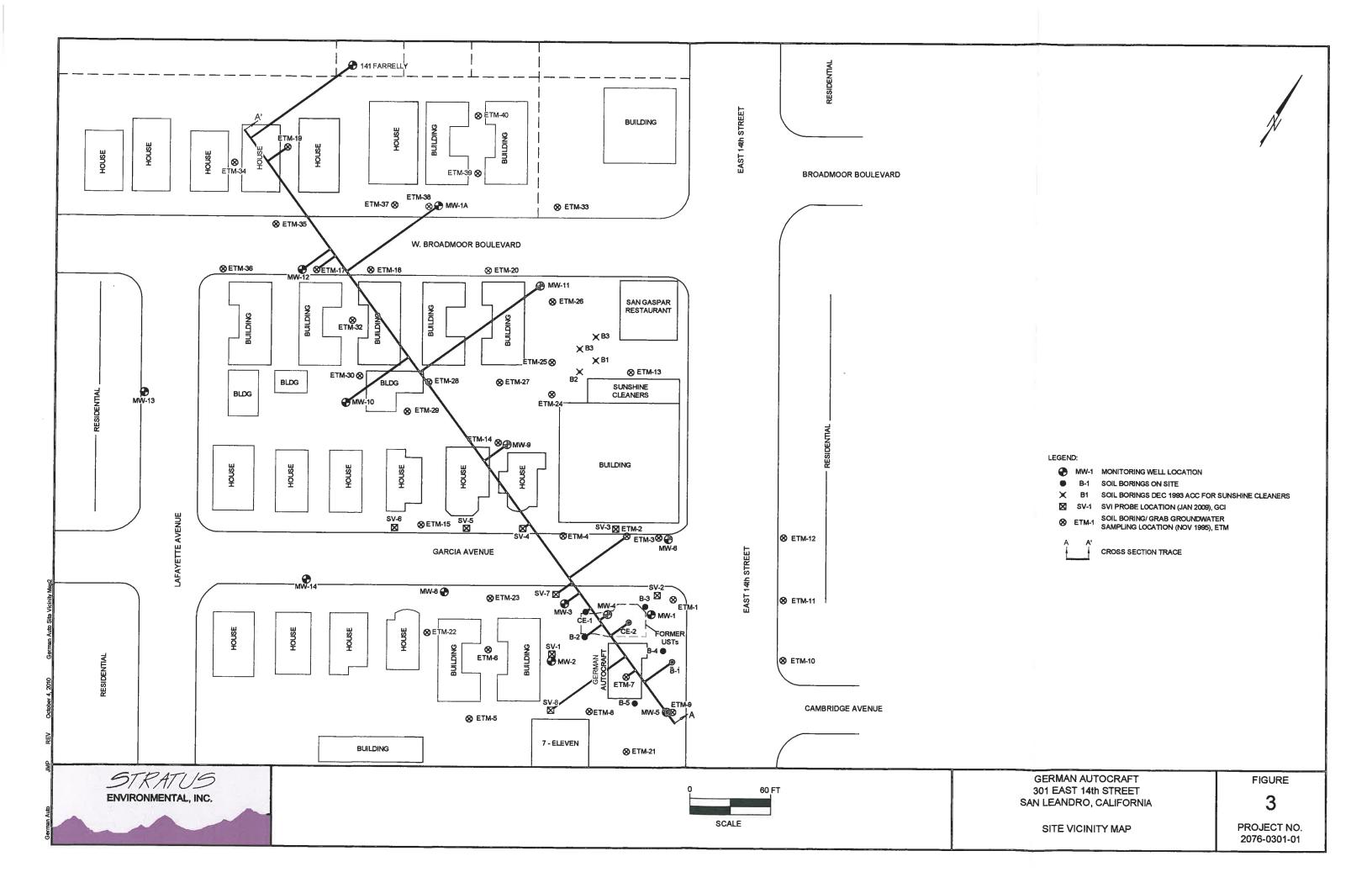
cc: Mr. Seung Lee, German Automotive

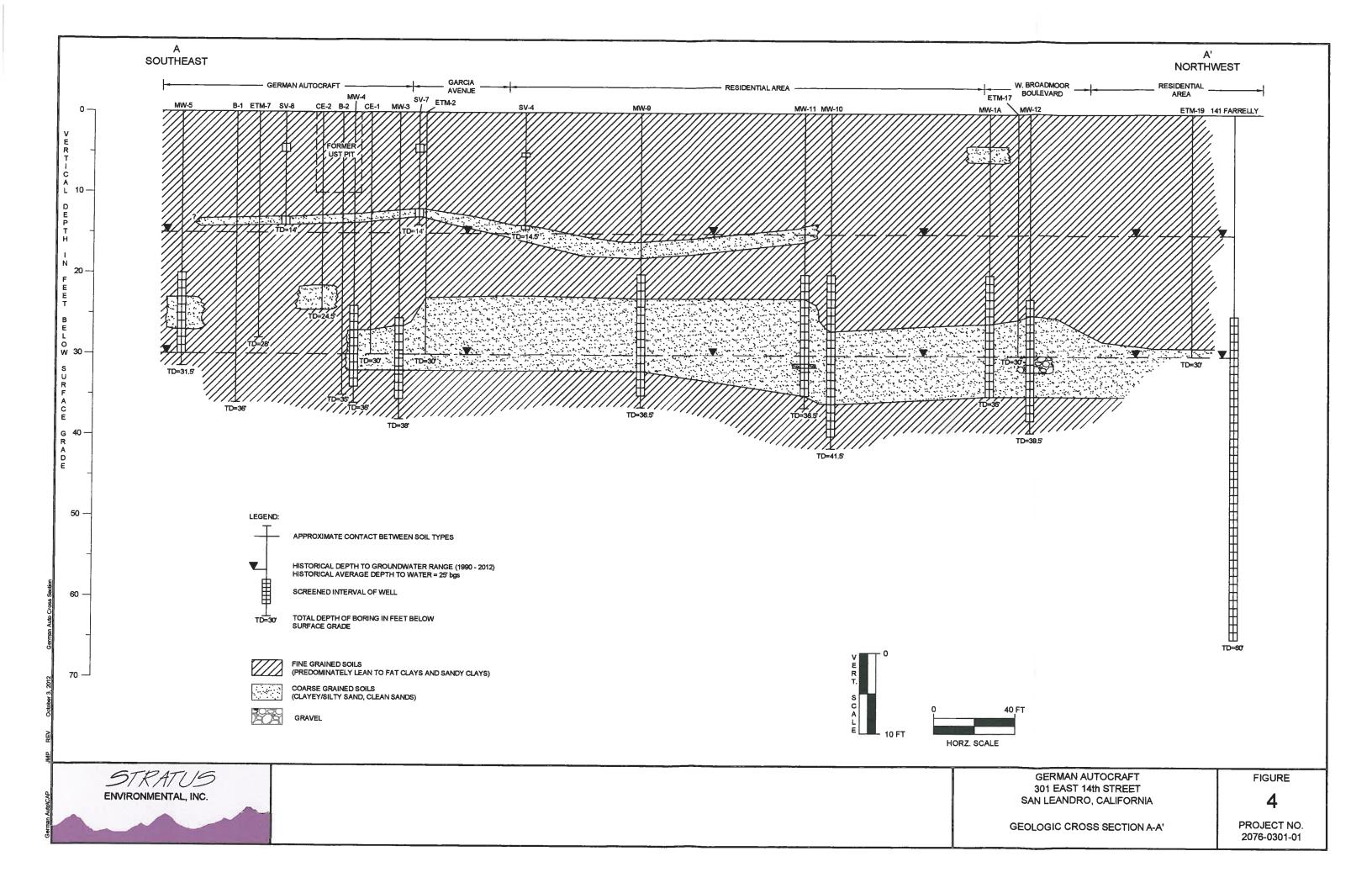
Mr. William Andrade

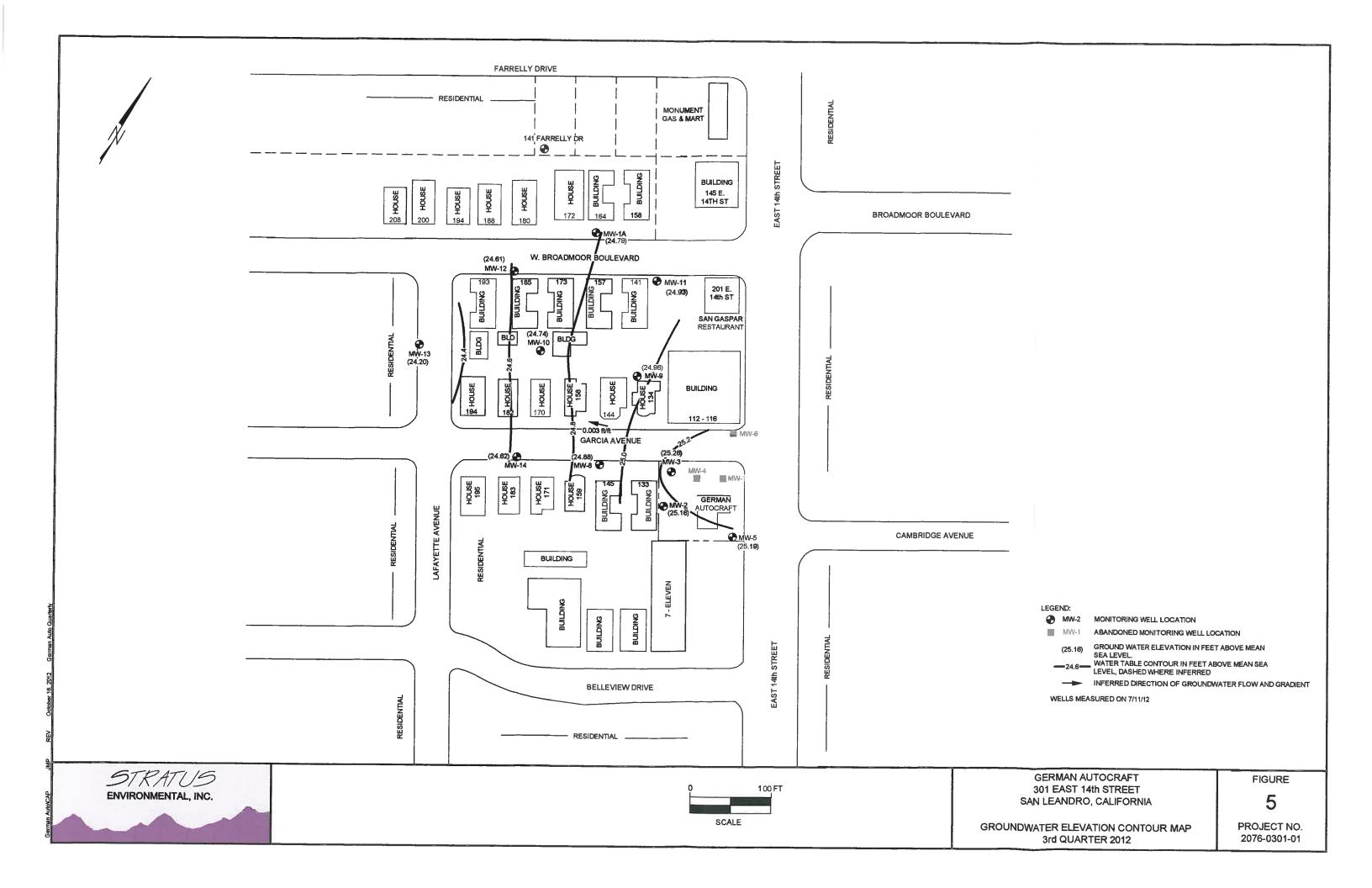
Mr. and Mrs. Steve Wilhelm

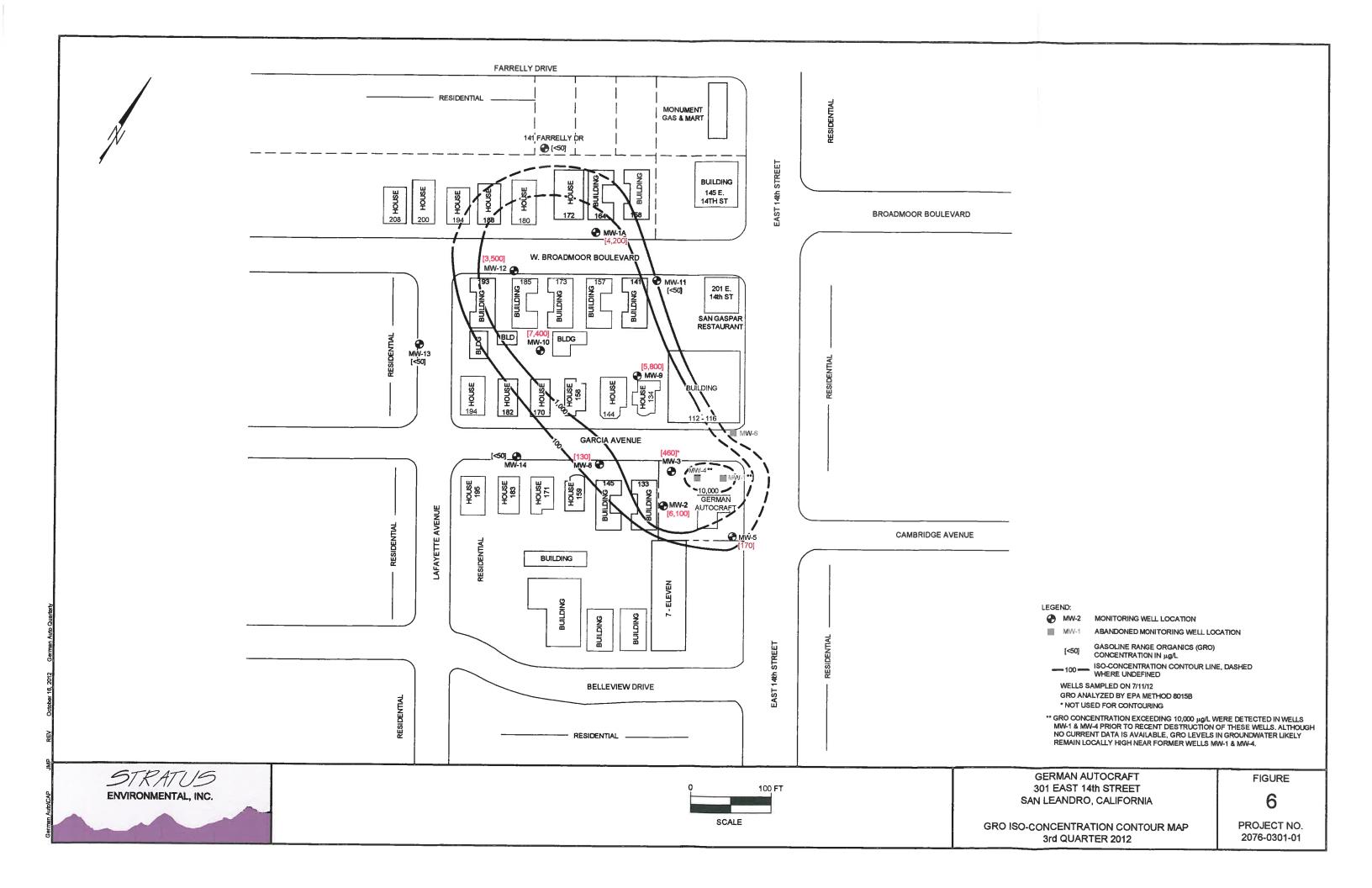


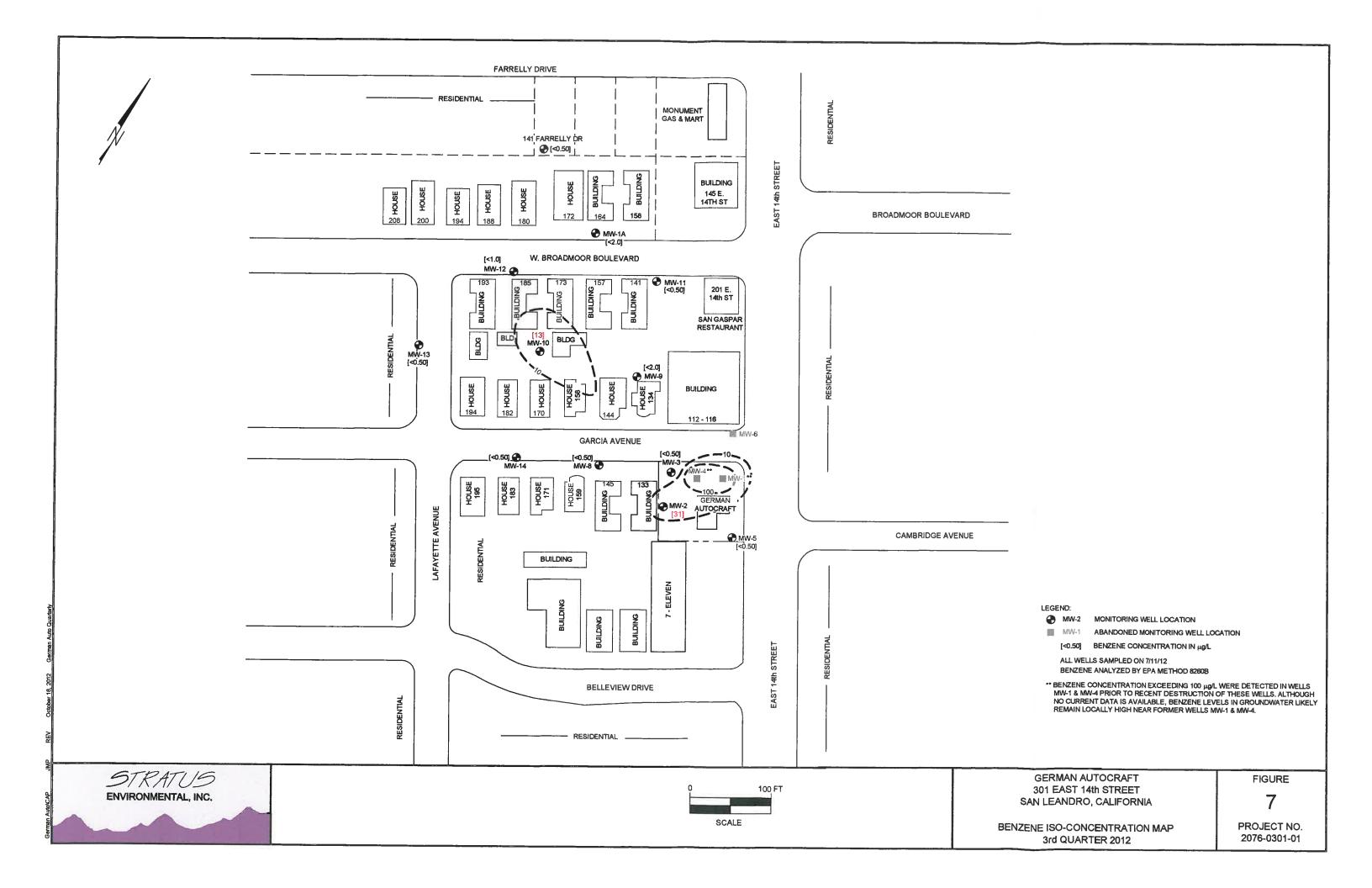


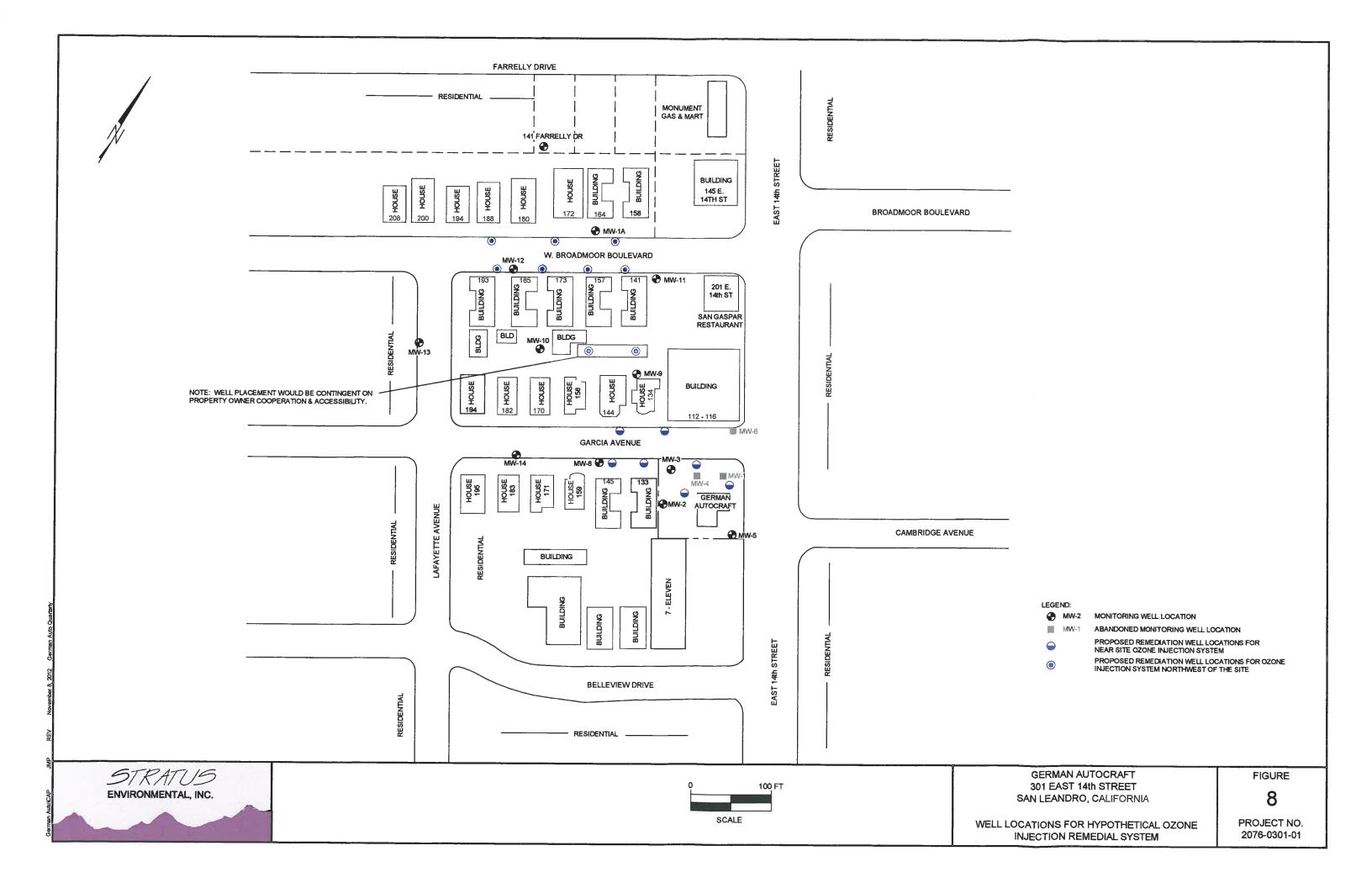


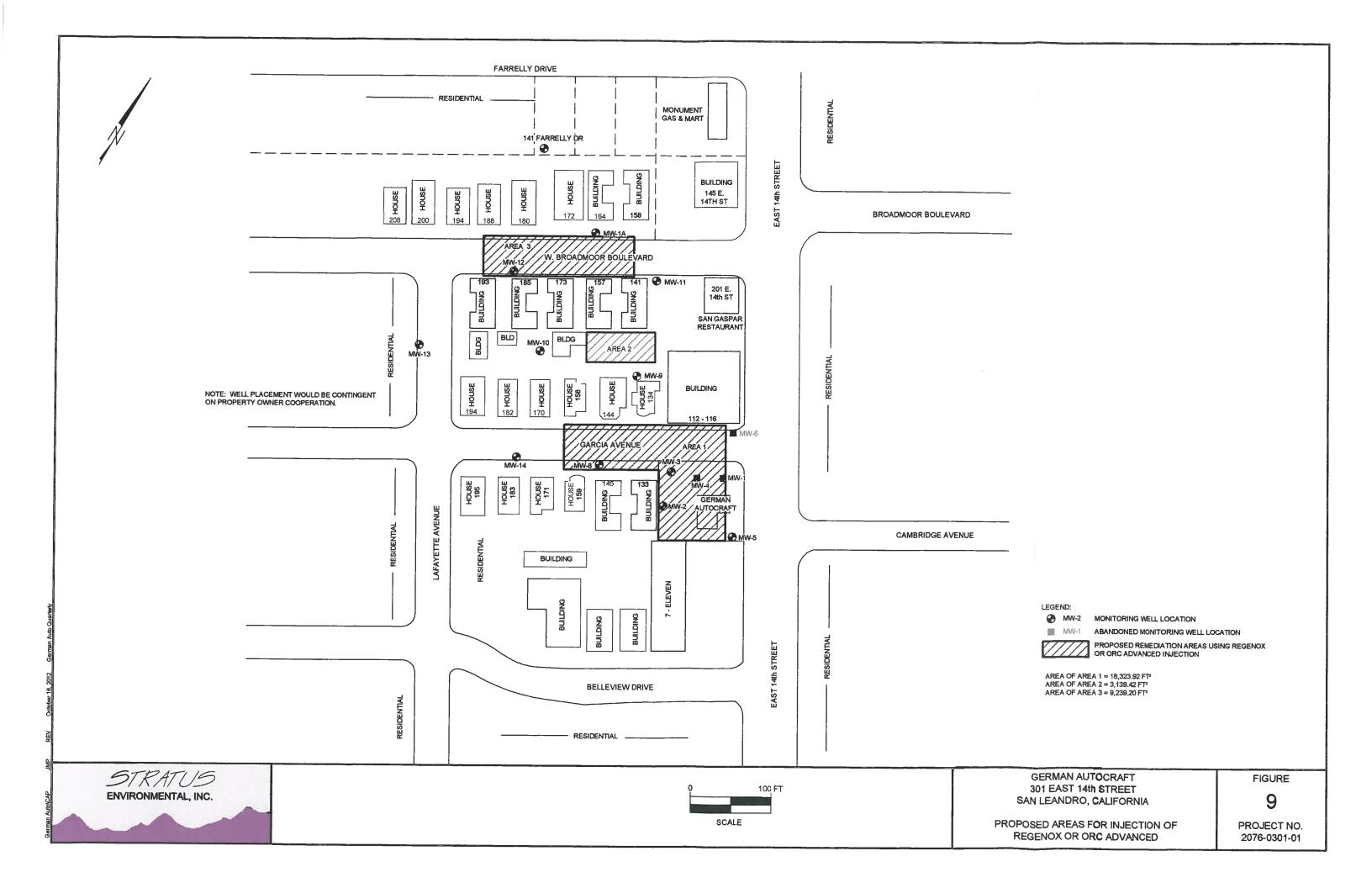


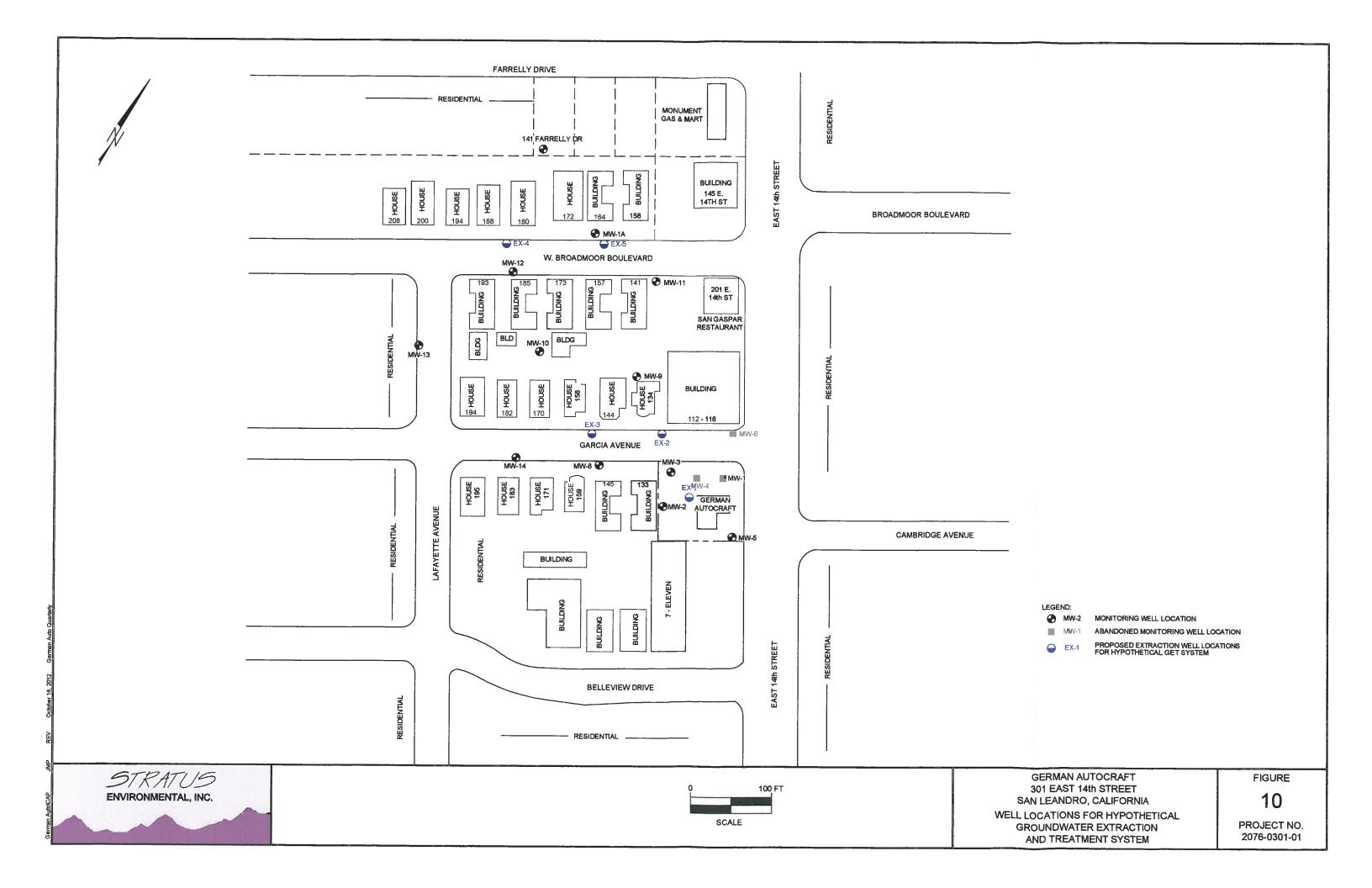






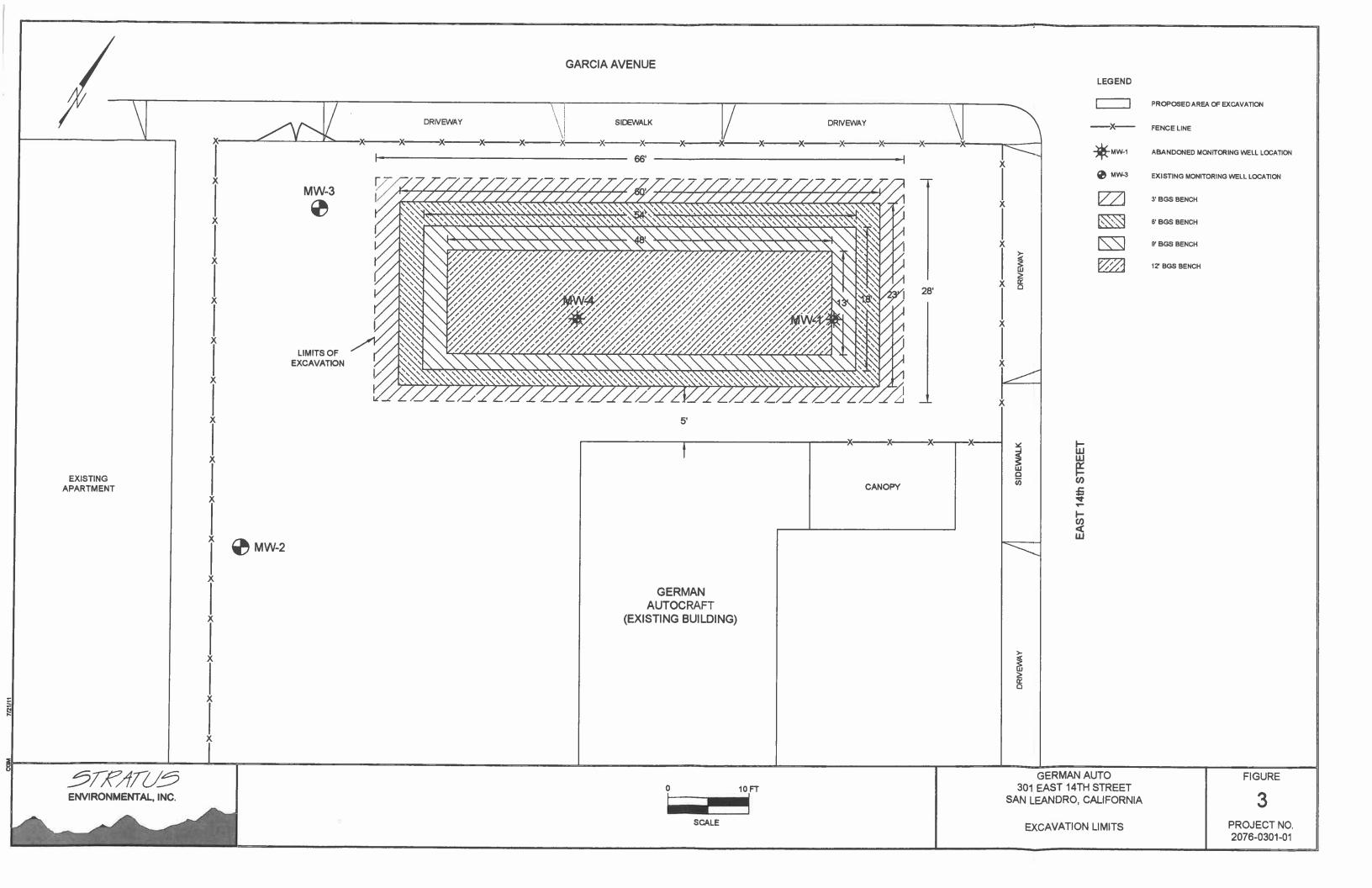


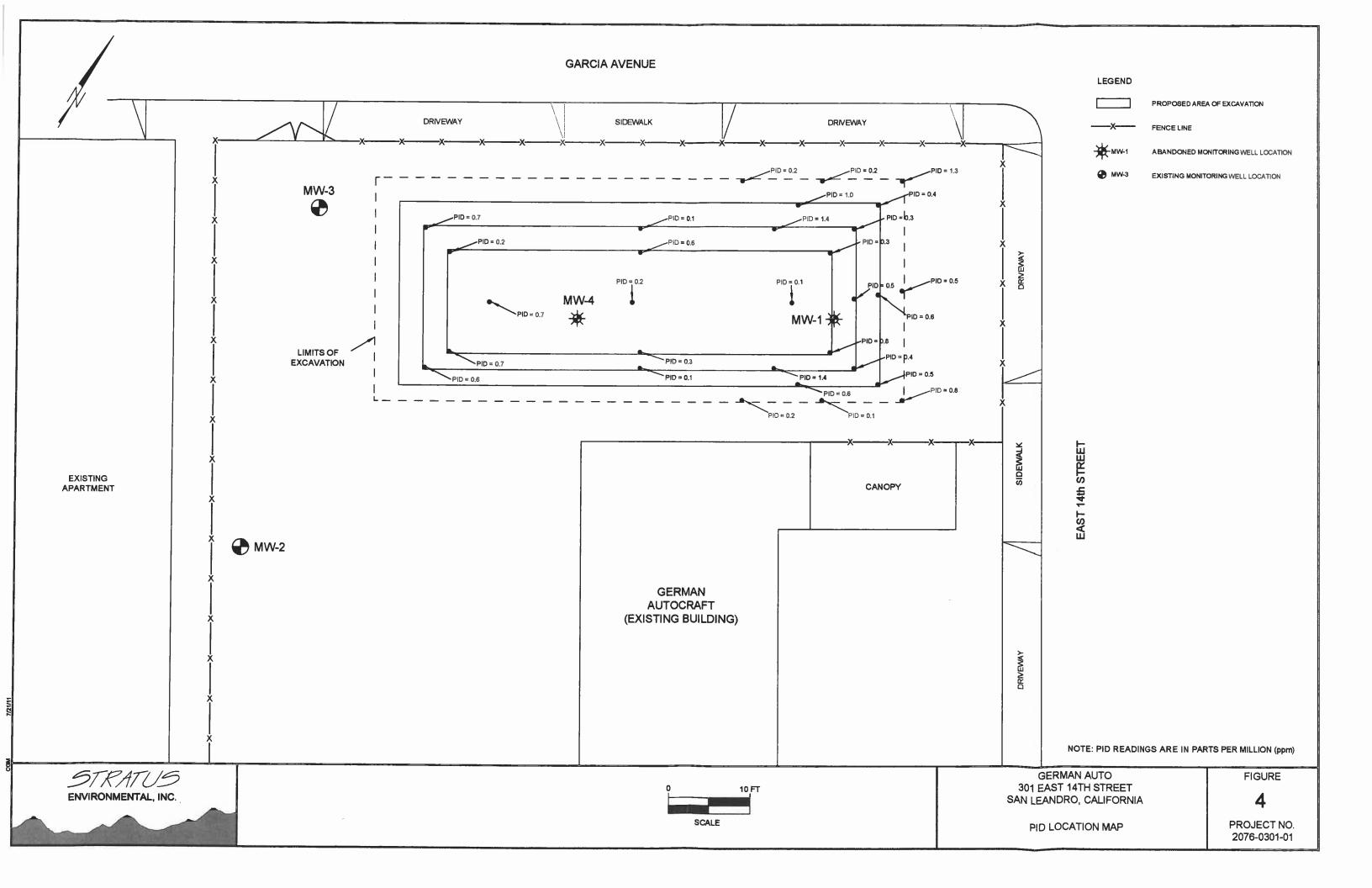




APPENDIX A

SITE MAP AND SOIL ANALYTICAL RESULTS FROM 2011 SITE EXCAVATION





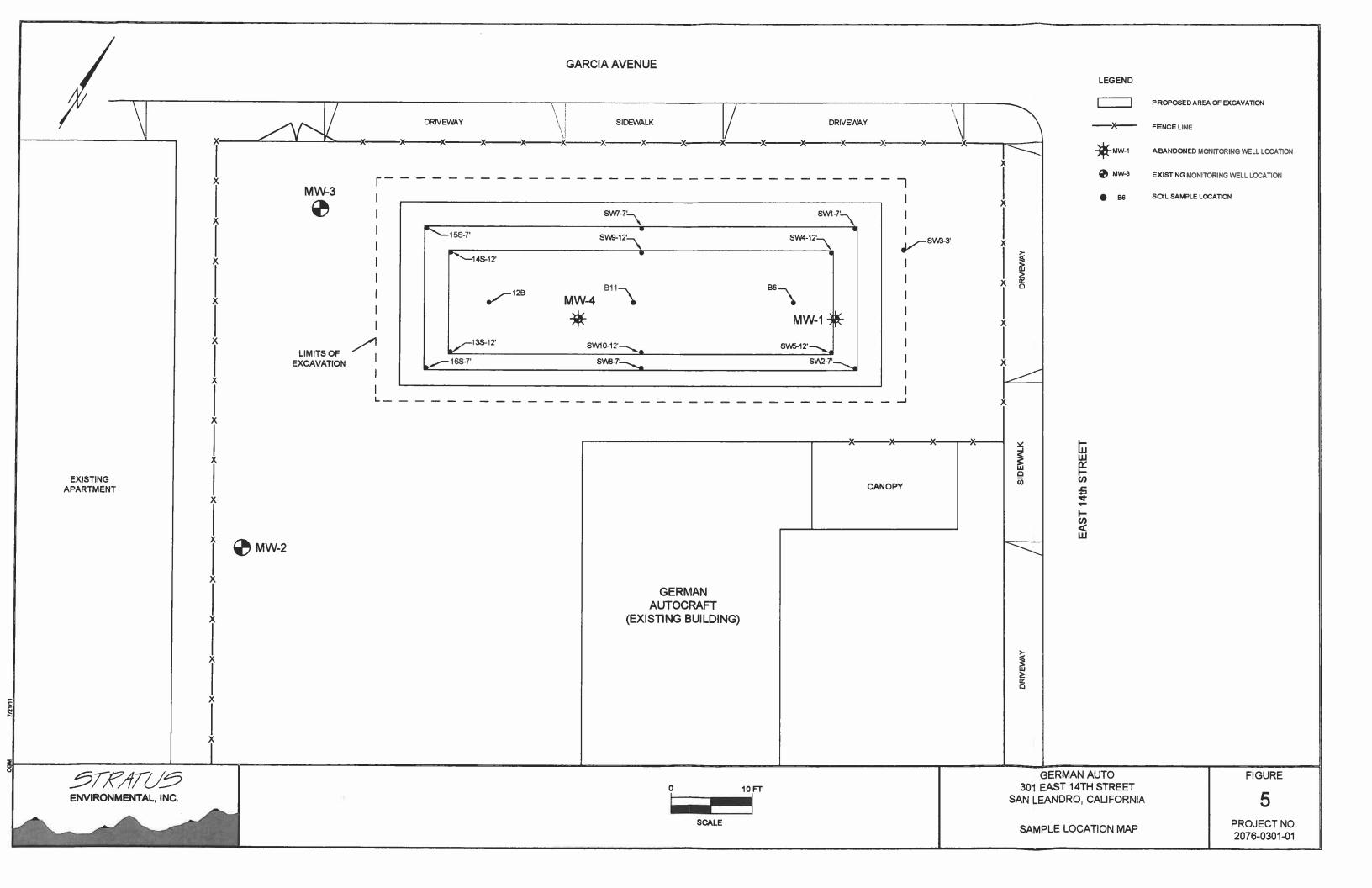


TABLE 2 SOIL ANALYTICAL SUMMARY - PETROLEUM HYDROCARBONS

German Autocraft

301 East 14th Street, San Leandro, California

Sample ID	Date Collected	Sample Depth (in feet)	GRO (μg/Kg)	Benzene (µg/Kg)	Toluene (μg/Kg)	Ethyl- benzene (µg/Kg)	Total Xylenes (µg/Kg)	MTBE (μg/Kg)	TBA (μg/Kg)	DIPE (µg/Kg)	ETBE (μg/Kg)	TAME (μg/Kg)	Ethanol (μg/Kg)	Methanol (μg/Kg)	1,2-DCA (μg/Kg)	EDB
SW1-7ft	5/20/11	7	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<20	<20	<20	<10,000	(μg/ K g)	(μg/ K g)	(μg/Kg)
SW2-7ft	5/20/11	7	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<20	<20	<20	<10,000	<10,000	<20	<40
SW3-3ft	5/20/11	3	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<20	<20	<20	<10,000	<10,000	<20	<40
SW4-12ft	5/20/11	12	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<20	<20	<20	<10,000	<10,000	<20	<40
SW5-12ft	5/20/11	12	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<20	<20	<20	<10,000	<10,000	<20	<40
В6	5/20/11	12	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<20	<20	<20	<10,000	<10,000	<20	<40
SW7-7ft	5/20/11	7	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<20	<20	<20	<10,000	<10,000	<20	<40
SW8-7ft	5/20/11	7	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<20	<20	<20	<10,000	<10,000	<20	<40
SW9-12ft	5/20/11	12	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<20	<20	<20	<10,000	<10,000	<20	<40
SW10-12ft	5/20/11	12	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<20	<20	<20	<10,000	<10,000	<20	<40
B11	5/20/11	12	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<20	<20	<20	<10,000	<10,000	<20	<40
12B	6/1/11	12	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<20	<20	<20			<20	<40
13S-12ft	6/1/11	12	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<20	<20	<20			<20	<40
14S-12ft	6/1/11	12	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<20	<20	<20			<20	<40
15S-7ft	6/2/11	7	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<20	<20	<20			<20	<40
16S-7ft	6/2/11	7	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<20	<20	<20			<20	<40

TABLE 2 SOIL ANALYTICAL SUMMARY - PETROLEUM HYDROCARBONS

German Autocraft

301 East 14th Street, San Leandro, California

SP-1,2,3,4 5/12/11 Stockpile <1,000 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <	Sample ID	Date Collected	Sample Depth (in feet)	GRO (μg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl- benzene (µg/Kg)	Total Xylenes (µg/Kg)	MTBE (μg/Kg)	TBA (μg/Kg)	DIPE (μg/Kg)	ETBE (µg/Kg)	TAME (μg/Kg)	Ethanol (μg/Kg)	Methanol	,	EDB
BK Fill 5/12/11 Stockpile <1.000 = 5.0 = 5.0			·	•				<5.0	<5.0								(μg/Kg)
	BK Fill	5/12/11	Stockpile	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0								

GRO = Gasoline Range Organics C4-C13

DRO = Gasoline Range Organics C13-C22

ORO = Gasoline Range Organics C22-C40+

MTBE = Methyl tertiary butyl ether

TBA = Tertiary butyl alcohol

DIPE = Di-isopropyl ether

ETBE = Ethyl tertiary butyl ether

TAME = Teriary amyl methyl ether

1,2-DCA - 1,2-Dichloroethane

EDB = 1,2-Dibromoethane

μg/Kg = micrograms per Kilogram

--- = Not analyzed

Sample BK Fill was additionally analyzed for DRO and ORO and was below laboratory reporting limits for each analyte (DRO = <5,000 $\mu g/Kg$ and ORO = <10,000 $\mu g/Kg$).

Samples analyzed by Alpha Analytical, Inc. GRO, DRO & ORO analyzed according EPA Method SW8015B; total lead analyzed according to EPA Method SW6020; remaining analytes analyzed by EPA Method SW8260B.

TABLE 3 SOIL ANALYTICAL SUMMARY - METALS

German Autocraft

301 East 14th Street, San Leandro, California

Sample I.D.	Date Collected	Pb (μg/Kg)	Be (μg/Kg)	V (μg/Kg)	Cr (μg/Kg)	Co (µg/Kg)	Ni (μg/Kg)	Cu (μg/Kg)	Zn (μg/Kg)	As (μg/Kg)	Se (ug/Kg)	Мо (це/Ке)	Ag	Cd	Sb (ug/Kg)	Ba (ug/Kg)	Hg (ug/Kg)	Tl (ug/Kg)
SP-1,2,3,4	5/12/11	7,700			***		** *** ***						(1-6/1-6)		(нв/жв)		(μg/ N g)	
CL STK 1&2	5/18/11	18,000				****			*****				40 TO 100		******	en Alexan		
BK Fill	05/12/11	3,300	<1,000	14,000	33,000	5,000	45,000	14,000	25,000	1,700	<1,000	<1,000	<1,000	<1,000	<1,000	86,000	<1,000	<1,000

Notes:

μg/Kg = micrograms per kilogram

--- = Not analyzed

Cu = Copper

Cr = Chromium

As = Arsenic

Be = Beryllium

Cd = Cadmium

Fe = Iron

Ba = Barium

Se = Selenium

V = Vanadium

Pb = Lead

Ni = Nickel

Co = Cobalt

Mo = Molybdenum

Zn = Zinc

Sb = Antimony

Ag = Silver

Tl = Thallium

Hg = Mercury

APPENDIX B

SOIL BORING AND WELL CONSTRUCTION DETAIL SUMMARY, SOIL ANALYTICAL RESULTS FROM ASSESSMENT WORK

TABLE 1
WELL CONSTRUCTION AND SOIL BORING SUMMARY

German Autocraft

301 E. 14th Street, San Leandro, California

Boring/Well I.D.	Date	Boring Depth (feet)	Boring Diameter (inches)	Well Diameter (inches)	Well Depth (feet)	Screen Interval (feet bgs)	Slot Size (inches)	Drilling Method	Consultant
Groundwater .	Monitoring Well.	5							
MW-1*	12/17/90	45	8	2	45	25-45	0.02	HSA	D :
MW-2	12/12/94	38	8	2	34	24-34	0.02	HSA	Environmental Const. Co
MW-3	12/12/94	38	8	2	35.5	25.5-35.5	0.010		Chemist Enterprises
MW-4*	08/31/95	36.5	8	2	34	24-34	0.010	HSA HSA	Chemist Enterprises
MW-1A	05/21/97	35	8	2	35	20-35	0.010	HSA HSA	Chemist Enterprises
MW-5	08/28/98	31.5	8	2	30	20-30	0.010		ALLCAL Prop. Serv. Inc
MW-6*	08/27/98	36.5	8	2	35	20-35	0.020	HSA	Env. Testing & Mgmt.
MW-8	08/27/98	31.5	8	2	30	20-33		HSA	Env. Testing & Mgmt.
MW-9	08/31/98	36.5	8	2	35	20-30	0.020	HSA	Env. Testing & Mgmt.
MW-10	08/28/98	41.5	8	2	40		0.020	HSA	Env. Testing & Mgmt.
MW-11	08/28/98	36.5	8	2	35	20-40	0.020	HSA	Env. Testing & Mgmt.
MW-12	01/30/01	39.5	8	2	38	20-35	0.020	HSA	Env. Testing & Mgmt.
MW-13	01/30/01	39.5	8	2	38	23-38	0.020	HSA	Env. Testing & Mgmt.
MW-14	01/31/01	31.5	8	2		23-38	0.020	HSA	Env. Testing & Mgmt.
141 Farrelly	Prior to 1949	51.5		6	30 65	20-30	0.020	HSA	Env. Testing & Mgmt.
	11101 to 1545			O	03	25-65	unknown	unknown	
Soil Borings									
B-1	12/11/90	35	8					HSA	Environmental Const. Co
B-2	12/10/90	35	8	~=				HSA	Environmental Const. Co
B-3	12/10/90	35	8					HSA	Environmental Const. Co
B-4	01/24/11	32	2					Geoprobe	Stratus Environmental
B-5	01/24/11	32	2					Geoprobe	Stratus Environmental
CE-1	12/13/94	30	8					HSA	Chemist Enterprises
CE-2	12/13/94	24.5	8					HSA	Chemist Enterprises
ETM-1	11/28/95	37	1					Geoprobe	Env. Testing & Mgmt.
ETM-2	11/28/95	30	1					Geoprobe	Env. Testing & Mgmt.
ETM-5	11/28-29/95	27	1					Geoprobe	Env. Testing & Mgmt. Env. Testing & Mgmt.
ETM-6	11/29/95	29	1		***			Geoprobe	
ETM-7	11/29/95	28	1					•	Env. Testing & Mgmt.
ETM-10	11/30/95	27.3	1.5					Geoprobe Pneumatic	Env. Testing & Mgmt.
ETM-11	11/30/95	27.3	1.5						Env. Testing & Mgmt.
ETM-17	03/25/96	30	1.5					Pneumatic	Env. Testing & Mgmt.
ETM-19	03/25/96	30	1.5					Pneumatic	Env. Testing & Mgmt.
ETM-21	03/26/96	24.5	1.5					Pneumatic	Env. Testing & Mgmt.
ETM-22	03/26/96	24.5	1.5					Pneumatic	Env. Testing & Mgmt.
	-2,20,70	21.5	1.5					Pneumatic	Env. Testing & Mgmt.

TABLE 1
WELL CONSTRUCTION AND SOIL BORING SUMMARY

German Autocraft

301 E. 14th Street, San Leandro, California

Boring/Well I.D.	Date	Boring Depth (feet)	Boring Diameter (inches)	Well Diameter (inches)	Well Depth (feet)	Screen Interval (feet bgs)	Slot Size (inches)	Drilling Method	Consultant
Soil Vapor Poit	nts					1000000			
SV-1	01/06/09	30	2	0.25	6.0 13.5	5.5-6.0 13.0-13.5	***	Stratoprobe	Groundwater Cleaners, Inc.
SV-2	01/06/09	30	2	0.25	6.0 13.0	5.5-6.0 12.5-13.0		Stratoprobe	Groundwater Cleaners, Inc.
SV-3	01/08/09	30	2	0.25	5.5 13.5	5.0-5.5 13.0-13.5		Stratoprobe	Groundwater Cleaners, Inc.
SV-4	01/08/09	14.5	2	0.25	5.25 14.5	4.75-5.25 14.0-14.5		Stratoprobe	Groundwater Cleaners, Inc.
SV-5	01/07/09	24	2	0.25	5.25 14.0	4.75-5.25 13.5-14.0	 	Stratoprobe	Groundwater Cleaners, Inc.
SV-6	01/07/09	35	2	0.25	5.5 12.0	5.0-5.5 11.5-12.0	 	Stratoprobe	Groundwater Cleaners, Inc.
SV-7	01/06/08	30	2	0.25	6.0 13.0	5.5-6.0 12.5-13.0		Stratoprobe	Groundwater Cleaners, Inc.
SV-8	01/08/09	14	2	0.25	5.25 14.0	4.75-5.25 13.5-14.0		Stratoprobe	Groundwater Cleaners, Inc.

Notes:

HSA = hollow stem auger

* = monitoring wells properly destroyed on January 25, 2011 (MW-1 and MW-4) or November 21, 2011 (MW-6)

TABLE 2 HISTORICAL SOIL ANALYTICAL SUMMARY

German Autocraft

301 East 14th Street, San Leandro, California

Sample ID	Date Collected	Sample Depth (feet bgs)	Oil and Grease (mg/kg)	DRO (mg/kg)	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Total Xylenes (mg/kg)	Total Lead (mg/kg)
T-1-1	10/1/1990	10			840	0.51	5.4	6.8	13	
T-1-2	10/1/1990	10			360	2.6	2.9	3.2	5.1	
T-2-1	10/1/1990	10			33	0.35	0.43	0.55	0.93	MA 100
T-2-2	10/1/1990	10			11	0.057	0.038	0.12	0.26	
T-3-1	10/1/1990	10			360	0.41	0.27	1.7	3.9	
T-4-1	10/1/1990	10			7.1	0.018	0.011	0.10	0.21	
T-4-2	10/1/1990	10			35	0.047	0.014	0.47	0.85	
T-5-1	10/1/1990	10			47	0.013	0.017	0.15	0.46	
T-5-2	10/1/1990	10			<2.5	< 0.005	< 0.005	< 0.005	< 0.005	
T-6-1	10/1/1990	7	<10	<5	<2.5	< 0.005	< 0.005	< 0.005	< 0.005	
PI-1	11/2/1990	3			<2.5	< 0.005	< 0.005	< 0.005	< 0.005	
CGS-1	10/1/1990				36	< 0.005	0.10	1.4	0.31	
CGS-2	10/1/1990				75	< 0.005	0.059	0.13	0.39	
CGS-3	10/1/1990		970	<5	<2.5	0.0098	0.010	0.043	0.0083	
B1	12/11/1990	12			1.7	< 0.005	< 0.005	0.0098	0.029	VIO AUG
		35			510	4.8	1.7	9.6	9.6	
В2	12/10/1990	12			4.7	0.010	0.060	0.083	0.012	
		35			10	0.86	0.90	0.31	0.38	
В3	12/10/1990	28		Die des	2,100	63	130	50	70	en co.
		35			1,700	1.4	1.9	11	8.2	
MW-1	12/17/1990	25			40	0.021	0.290	0.150	0.280	
		35			6.6	< 0.005	0.035	0.011	0.027	
MW-2	12/12/1994	31			6,300	110	65	190	310	4.5
		36			0.77	0.015	0.006	0.038	0.085	4.9
MW-3	12/12/1994	211		···	0.074	0.024	0.013	< 0.005	0.007	6.5
		211			< 0.5	< 0.005	< 0.005	< 0.005	< 0.005	5.5
		26			6.8	0.16	0.033	0.16	0.21	6.2
		31		ee aa	420	7.0	3.9	13	37	5.5
		36			0.86	0.10	0.007	0.037	0.078	6.2
		37.5			< 0.5	0.058	0.009	0.018	0.035	<4.0
CE1	12/13/1994	6			< 0.5	< 0.005	< 0.005	< 0.005	< 0.005	6.0
		11			< 0.5	< 0.005	< 0.005	< 0.005	< 0.005	7.9
		16			< 0.5	< 0.005	0.008	< 0.005	< 0.005	7.1
		21			94	1.1	1.3	2.4	5.1	7.0
		26			160	5.6	6.6	7.3	16	6.3
CE2	12/13/1994	5			< 0.5	< 0.005	< 0.005	< 0.005	< 0.005	23.5
		10			< 0.5	< 0.005	< 0.005	< 0.005	< 0.005	5.7
		15			57	< 0.005	< 0.005	0.59	1.8	4.1
		20			1,600	7.1	75	41	170	12.4
MW-4	8/31/1995	0-36.5 ²			540	6.2	3.1	6.8	19	<0.40

TABLE 2 HISTORICAL SOIL ANALYTICAL SUMMARY

German Autocraft

301 East 14th Street, San Leandro, California

Sample ID	Date Collected	Sample Depth (feet bgs)	Oil and Grease (mg/kg)	DRO (mg/kg)	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Total Xylenes (mg/kg)	Total Lead (mg/kg)
MW-1A	5/21/1997	20			<1	< 0.005	< 0.005	< 0.005	< 0.005	**
ETM-1	11/28/1995	17			16	< 0.05	< 0.05	< 0.05	< 0.05	n no
		22 24			8.4	0.029	< 0.005	0.055	0.067	
		25.5			76	0.82	1.8	2.8	3.8	
		23.3		**	370	9.6	10	11	18	
ETM-2	11/28/1995	22			0.54	0.026	< 0.005	0.012	0.010	
ETM-7	11/28/1995	23			< 0.50	< 0.005	< 0.005	< 0.005	0.011	
		26			1.1	0.019	0.017	0.029	0.036	
MW-5	8/28/1998	21			<1	< 0.005	< 0.005	< 0.005	< 0.005	NF 40.
MW-8	8/27/1998	21			<1	< 0.005	< 0.005	< 0.005	< 0.005	
		31			1.3	0.0052	< 0.005	< 0.005	0.006	
MW-9	8/31/1998	21	~~		<1	< 0.005	< 0.005	< 0.005	< 0.005	
		36			<1	< 0.019	< 0.005	< 0.005	< 0.005	
MW-10	8/28/1998	21.5			<1	< 0.005	< 0.005	< 0.005	< 0.005	
		31			<1	0.0054	< 0.005	< 0.005	< 0.005	
MW-11	8/28/1998	21			<1	< 0.005	< 0.005	< 0.005	< 0.005	
MW-12	1/30/2001	26.5		**	<1	< 0.005	< 0.005	< 0.005	< 0.005	
MW-13	1/30/2001	26.5			<1	< 0.005	< 0.005	< 0.005	< 0.005	
MW-14	1/30/2001	26.5			<1	< 0.005	< 0.005	< 0.005	< 0.005	

Legend

DRO = Diesel range organics (C9-C24)

GRO = Gasoline range organics (C4 - C13)

BTEX = Benzene, toluene, ethylbenzene, and xylenes

mg/kg = milligrams per kilogram

Notes

1 = Split sample.

2 = Soil sample composited from drill cuttings.

TABLE 3 SOIL ANALYTICAL RESULTS

German Autocraft, 301 East 14th Street, San Leandro, California

Date Collected	Sample Depth (feet)	DRO (mg/Kg)	ORO (mg/Kg)	GRO (mg/Kg)	Oil & Grease (mg/Kg)			benzene	3	TBA (mg/Kg)	MTBE (mg/Kg)	DIPE (mg/Kg)	ETBE (mg/Kg)	TAME (mg/Kg)	EDB (mg/Kg)	1,2-DCA (mg/Kg)	Total Lead (mg/Kg)
01/24/11	4			<1.0		<0.0050	<0.0050	< 0.0050	< 0.0050	< 0.50	<0.0050	< 0.020	<0.020	<0.020	< 0.040	<0.020	4.2
01/24/11	8			<1.0		<0.0050	<0.0050	< 0.0050	< 0.0050	< 0.50	< 0.0050	<0.020	<0.020	<0.020	< 0.040	<0.020	7.0
01/24/11	12			<1.0		<0.0050	<0.0050	<0.0050	<0.0050	<0.50	<0.0050	< 0.020	< 0.020	<0.020	< 0.040	<0.020	5.7
01/24/11	24			1.0		<0.0050	<0.0050	<0.0050	< 0.0050	<0.50	< 0.0050	< 0.020	<0.020	<0.020	< 0.040	<0.020	8.8
01/24/11	32			2,400		<0.50 [1]	<0.50 [1]	27	89.6	<50 [1]	<0.50 [1]	<1.0[1]	<1.0 [1]	<1.0[1]	<4.0 [1]	<1.0[1]	13.0
01/24/11	4	23 [2]	150	<1.0	95	<0.0050	< 0.0050	<0.0050	<0.0050	< 0.50	<0.0050	<0.020	<0.020	<0.020	<0.040	<0.020	14.0
01/24/11	8	<10	<10	<1.0	<50	<0.0050	<0.0050	< 0.0050	<0.0050	< 0.50	<0.0050	<0.020	<0.020	<0.020	<0.040	<0.020	7.3
01/24/11	12	<10	<10	<1.0	<50	<0.0050	<0.0050	< 0.0050	0.0055	< 0.50	<0.0050	<0.020	<0.020	<0.020			5.2
01/24/11	24	<10	<10	<1.0	<50	<0.0050	<0.0050	<0.0050	<0.0050	<0.50	< 0.0050	<0.020	<0.020				7.9
01/24/11	32	<10	<10	9.0	<50	<0.0050	<0.0050	<0.0050	0.0061	<0.50	<0.0050	<0.020	<0.020	<0.020	<0.040	<0.020	6.9
	01/24/11 01/24/11 01/24/11 01/24/11 01/24/11 01/24/11 01/24/11 01/24/11	Date Collected Depth (feet) 01/24/11 4 01/24/11 8 01/24/11 12 01/24/11 24 01/24/11 32 01/24/11 4 01/24/11 8 01/24/11 12 01/24/11 12 01/24/11 24	Date Collected Depth (feet) DRO (mg/Kg) 01/24/11 4 01/24/11 8 01/24/11 12 01/24/11 24 01/24/11 32 01/24/11 4 23 [2] 01/24/11 8 <10	Date Collected Collected Depth (feet) DRO (mg/Kg) ORO (mg/Kg) 01/24/11 4 01/24/11 8 01/24/11 12 01/24/11 24 01/24/11 32 01/24/11 4 23 [2] 150 01/24/11 8 <10	Date Collected Depth (feet) DRO (mg/Kg) ORO (mg/Kg) GRO (mg/Kg) 01/24/11 4 <1.0	Date Collected Depth (feet) DRO (mg/Kg) ORO (mg/Kg) GRO (mg/Kg) Grease (mg/Kg) 01/24/11 4 <1.0	Date Collected Collected Depth (feet) DRO (mg/Kg) ORO (mg/Kg) GRO (mg/Kg) Grease (mg/Kg) Benzene (mg/Kg) 01/24/11 4 <1.0	Date Collected Collected Depth (feet) DRO (mg/Kg) ORO (mg/Kg) GRO (mg/Kg) Grease (mg/Kg) Benzene (mg/Kg) Toluene (mg/Kg) 01/24/11 4 <1.0	Date Collected Collected Depth (feet) DRO (mg/Kg) GRO (mg/Kg) GRO (mg/Kg) Grease (mg/Kg) Benzene (mg/Kg) Toluene (mg/Kg) Enthyle benzene (mg/Kg) 01/24/11 4 <1.0	Date Collected Depth (feet) DRO (mg/Kg) (mg/Kg	Depth (feet) DRO (mg/Kg) CMO (mg/Kg)	Depth (feet) Depth (feet) DRO (mg/Kg) CRO (mg/Kg) Crease (mg/Kg)	Date Collected Depth (feet) DRO (mg/Kg) CMP (mg/Kg	Depth (rect) Depth (rect) Collected Depth (rect) Collected Depth (rect) Collected Depth (rect) Collected C	Depth (feet) Dept	Depth order Depth order	Dack Dack Dack Collected Dack Dack Collected Dack Dack Collected Dack Dack Dack Collected Dack Da

--- = not measured or not analyzed

DRO = Diesel Range Organics C13-C22

ORO = Oil Range Organics C22-C40+

GRO = Gasoline Range Organics C4-C13

MTBE = Methyl tertiary butyl ether

TBA = Tertiary butyl alcohol

DIPE = Di-isopropyl ether

ETBE = Ethyl tertiary butyl ether

TAME = Tertiary amyl methyl ether

1,2-DCA = 1,2-Dichloroethane

EDB = 1,2-Dibromoethane

mg/Kg miligrams per kilogram

Analytical Methods:

DRO, ORO & GRO analyzed according to EPA Method 8015B

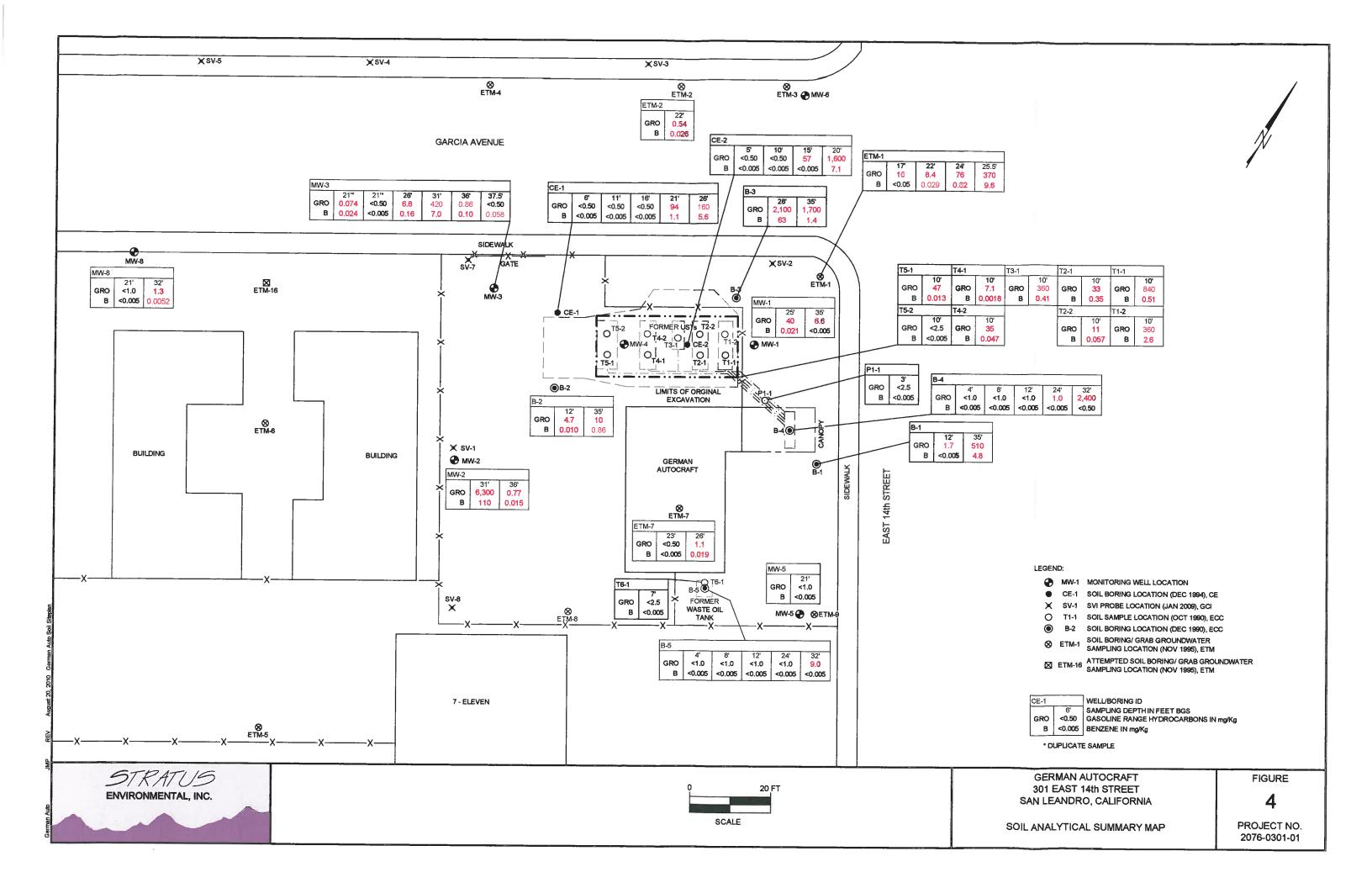
BTEX, MTBE, TBA, DIPE, ETBE, TAME, 1,2-DCA and EDB analyzed according to EPA Method 8260B

Total lead analyzed according to EPA Method SW6020

Oil & Grease analyzed according to EPA Method 1664A

Laboratory Qualifiers/Flags/Notes:

- [1] Reporting limits were increased due to high concentrations of target analytes.
- [2] DRO concentration may include contributions from heavier-end hydrocarbons that elute in the DRO range.



APPENDIX C HISTORICAL GROUNDWATER ANALYTICAL DATA

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)	DIPE (μg/L)		1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (µg/L)
MW-1	12/21/90	30.25	49.61	19.15												
	12/31/90		49.61		51,000	2,200	1,200	< 0.5	760				 			
	01/06/95		49.61		110,000	13,000	15,000	4,800	13,000				 			
	01/06/95		49.61		580,000	29,000	41,000	17,000	43,000				 			
	02/10/95	20.02	49.61	29.59									 			
	07/07/95	22.77	49.40	26.63	49,000	8,000	17,000	1,900	9,700				 			
	08/10/95	23.82	49.40	25.58									 			
	09/11/95	24.72	49.40	24.68				~~					 			
	10/02/95	25.28	49.40	24.12	120,000	16,000	36,000	3,300	17,000				 			
	10/02/95		49.40		160,000	20,000	47,000	5,000	23,000				 			
	11/07/95	26.04	49.40	23.36					23,000				 			~~
	12/08/95	18.77	49.40	22.77		*-							 			
	01/12/96	25.05	49.40	24.35	1,100,000	11,000	18,000	15,000	51,000	18,000 [2]			 			
	01/12/96		49.40		98,000	2,100	4,600	2,500	10,000	<5,000			 			
	02/12/96	20.36	49.40	29.04			1,000	2,500		~5,000 			 			
	03/12/96	17.65	49.40	31.75	==			e- n-					 -			
	04/13/96	19.97	49.40	29.43	53,000	1,300	2,900	2,100	10,000	 -5 000			 			
	04/13/96		49.40		58,000	820	3,600	2,800	12,000	<5,000			 			
	05/14/96	21.51	49.40	27.89			J,000	2,600		<5,000		~~	 			
	06/20/96	22.21	49.40	27.19									 			
	07/26/96	23.45	49.40	25.95	91,000	2,600	7,200	2,900	14.000				 			
	07/26/96		49.40		67,000	2,300	*		14,000	<5,000			 			~~
	08/19/96	24.24	49.40	25.16		2,300	5,500	2,500	11,000	<5,000			 			
	09/17/96	24.96	49.40	24.44									 			
	10/21/96	25.77	49.40	23.63	210,000	4 900	17.000	2 200					 			
	10/21/96		49.40	23.03	210,000	4,800	17,000	2,300	15,000				 			
	11/27/96	25.12	49.40	24.28	210,000	5,400	18,000	2,600	11,000				 		***	
	12/27/96	21.17	49.40	28.23									 			
	01/28/97	16.38	49.40	33.02	120,000	 5 (00	15 000	2.100					 			~-
	01/28/97	10.56	49.40	<i>33.</i> 02		5,600	15,000	2,100	11,000				 			
	04/25/97	22.26	49.40	27.14	130,000	5,500	15,000	2,300	12,000				 			
	04/25/97		49.40		180,000	6,900	20,000	2,600	13,000				 			
	07/17/97	24.85	49.40	24.55	170,000	6,500	20,000	2,500	13,000		***		 			
	10/21/97	26.55	49.40 49.40	24.55	220,000	8,300	41,000	2,700	16,000				 			
	03/10/98	15.05		22.85	240,000	9,400	33,000	3,300	22,000				 			
	06/06/98	18.71	49.40	34.35	120,000	11,000	46,000	3,700	21,000	BM 844			 			
	09/30/98	23.45	49.40	30.69	110,000	7,600	32,000	4,800	23,000	~~			 			
			49.40	25.95	140,000	5,800	29,000	3,500	18,000				 			
	12/30/98	24.27	49.40	25.13	78,000	5,200	24,000	3,200	19,000				 			

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (μg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)	DIPE (µg/L)	ETBE (µg/L)		1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (μg/L)
MW-1	03/13/99	19.42	49.40	29.98										· · · · · · · · · · · · · · · · · · ·			
(con't)	03/23/99		49.40		250,000	8,000	43,000	5,200	27,000								
	09/29/99	25.01	49.40	24.39	140,000	6,100	35,000	5,400	27,000								
	12/29/99	25.65	49.40	23.75											-		
	03/18/00	17.48	49.40	31.92	120,000	5,100	33,000	4,600	24,000						w 10		
	07/18/00	23.19	49.40	26.21					21,000								
	09/26/00	24.39	49.40	25.01	~~												
	12/28/00	24.77	49.40	24.63													
	03/20/01		49.40		100,000	3,600	41,000	4,700	25,000	<1,250							
	03/30/01	21.93	49.40	27.47		-,				~1,230		~~					
	10/05/01	25.58	49.40	23.82								~-					
	03/28/02	20.74	49.40	28.66	100,000	2,800	24,000	5,400	28,900								
	03/31/03	22.72	49.40	26.68	100,000	2,200	19,000	4,900	21,000								
	06/19/03	23.17	49.40	26.23		_,			21,000								
	09/30/03	25.35	49.40	24.05													
	02/10/04	22.44	49.40	26.96													
	03/31/04		49.40		100,000	2,100	21,000	6,200	36,000								
	06/30/04	24.67	49.40	24.73													
	09/14/04	27.89	49.40	21.51	160,000	1,800	16,000	5,500	30,000								
	03/29/06	18.84	49.40	30.56	69,000	1,400	16,000	4,900	28,000								
	06/24/06	20.57	49.40	28.83					20,000								
	09/30/06	23.53	49.40	25.87	120,000	1,400	13,000	5,200	29,000	<500							
	12/11/06	22.78	49.40	26.29				5,200		-500							
	03/16/07		49.40				***										
	06/10/07	24.36	49.40	25.04													
	09/14/07	25.92	49.40	23.48	92,000	1,000	9,400	4,300	23,000	<250							
	12/14/07	26.22	49.40	23.18		-,		.,500	23,000	~230							
	03/12/08	22.4	49.40	27													
	06/11/08	24.97	49.40	24.43													
	09/05/08	26.44	49.40	22.96	110,000	1,000	11,000	4,200	21.000	<250							
	12/13/08	27.16	49.40	22.24				- ,200	21,000	~230							
	03/14/09	21.82	49.40	27.58	110,000	1,000	14,000	3,700	21,000	<1,000							
	12/07/09	26.42	49.40	22.98	49,000	540	5,500	2,000	9,400	<1000							
	03/15/10	21.21	49.40	28.19			5,500	2,000	9,400	<100 							
	09/13/10 03/01/11	25.25	49.40	24.15	75,000	670	9400	3700	19,000 estroyed	<50[5]				4	 <100[5] ·	 <200[5]	89

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (μg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)	DIPE (μg/L)	ETBE (µg/L)		1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (µg/L)
MW-2	01/06/95				980,000	9,400	5,600	19,000	42,000					<u> </u>			
	02/10/95	20.52	50.14	29.62											~-		
	07/07/95	23.55	50.02	26.47	71,000	5,300	1,800	6,100	9,000			Mr an					
	08/10/95	24.62	50.02	25.4													
	09/11/95	25.53	50.02	24.49													
,	10/02/95	26.08	50.02	23.94	40,000	2,900	200	2,800	3,600								
	11/07/95	26.89	50.02	23.13				2,000	5,000								
	12/08/95	27.47	50.02	22.55													
	01/12/96	25.82	50.02	24.2	260,000	2,600	2,200	6,300	7,800								
	02/12/96	20.99	50.02	29.03				0,500	,	<12,500							
	03/12/96	18.42	50.02	31.6													
	04/13/96	20.77	50.02	29.25	30,000	1,900	370	2,300	2,400								
	04/29/96		50.02			930	<25	1,200	-	520 [2]							
	05/14/96	22.34	50.02	27.68		250	-23	1,200	1,400.								
	06/20/96	23.05	50.02	26.97												m e-	
	07/26/96	24.28	50.02	25.74	180,000	1,400	640		 	-5.000		~-					
	08/19/96	25.05	50.02	24.97	100,000	1,400		2,100	5,000	<5,000							
	09/17/96	25.8	50.02	24.22													
	10/21/96	26.59	50.02	23.43	62,000	2,100		2 100	2.700								
	11/27/96	25.93	50.02	24.09	02,000	2,100	< 0.5	2,100	2,700								
	12/27/96	21.99	50.02	28.03													
	01/28/97	17.31	50.02	32.71	46,000	1.500	0.4	1.000									
	04/25/97	23.14	50.02	26.88	23,000	1,500	94	1,800	2,000								
	07/17/97	25.71	50.02	24.31	95,000	790	26	820	730								
	10/21/97	27.33	50.02	22.69		2,200	<0.5	3,100	4,300			~-					
	03/10/98	15.82	50.02	34.2	31,000	2,000	< 0.5	2,100	1,900								
	06/06/98	19.61	50.02	30.41	19,000	730	44	820	1,000	~-							
	09/30/98	24.34	50.02	25.68	16,000	670	1,100	510	1,200								
	12/30/98	25.09	50.02	23.08	24,000	600	77	680	580								
	03/13/99	20.22	50.02	24.93	9,300	510	96	450	480								
	03/23/99				 											w-	
	09/29/99	25.9	50.02 50.02	24.12	5,700	580	9.4	400	280								
	12/29/99	26.5		24.12	17,000	880	240	830	1,000							Pr +**	
	03/18/00	26.5 18.15	50.02	23.52	11,000	800	11	860	780								
	07/18/00		50.02	31.87	11,000	790	14	520	450								
	09/26/00	24.01	50.02	26.01	10,000	560	27	630	530			~-					
		25.33	50.02	24.69	6,800	450	7.4	290	200								
	12/28/00 03/30/01	25.63	50.02	24.39	12,000	540	30	420	330								
	03/30/01	22.71	50.02	27.31	3,500	230	<10	<10	<10	<100							

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (μg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (μg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)			1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (µg/L)
MW-2	10/05/01	26.38	50.02	23.64								 				
(con't)	03/28/02	21.59	50.02	28.43	7,000	570	16	170	71			 				
	09/30/02	25.84	50.02	24.18							-	 				
	03/31/03	23.63	50.02	26.39	5,000	620	<12.5	71	<25			 				
	06/19/03	23.98	50.02	26.04								 				
	09/30/03	26.19	50.02	23.83								 				
	02/10/04	23.27	50.02	26.75						Pr 400		 				
	03/31/04		50.02		8,200	500	<12.5	65	<25			 				
	06/30/04	25.45	50.02	24.57								 				
	09/14/04	26.7	50.02	23.32	9,000	560	<13	57	<25			 				
	03/29/06	19.61	50.02	30.41	5,200	1,400	<20	52	<20			 				
	06/24/06	21.41	50.02	28.61												
	09/30/06	24.37	50.02	25.65	4,800	900	64	22	110	<50		 				
	12/11/06	23.92	50.02	26.1								~~				
	03/16/07	22.78	50.02	27.24								 				
	06/10/07	25.12	50.02	24.9				***				 ~-				
	09/14/07	26.63	50.02	23.39	11,000	2,200	53	72	150	<50		 				
	12/14/07	26.58	50.02	23.44								 	**			
	03/12/08	23.1	50.02	26.92								 				
	06/11/08	25.71	50.02	24.31								 				
	09/05/08	27.14	50.02	22.88	10,000	1,000	49	120	120	<100		 				
	12/13/08	27.83	50.02	22.19				120				 Mr. was				
	03/14/09	22.38	50.02	27.64	9,800	270	28	210	110	<110		 				
	06/03/09	25.27	50.02	24.75	-,					~110 		 				
	12/07/09	27.11	50.02	22.91	9,000	150	48	170	110	<50		 				
	03/15/10	21.98	50.02	28.04						~30 		 				
	09/13/10	26.11	50.02	23.91	9,900	93	<5.0[5]	100	13[5]	<5.0[5]		 		-10553		
	03/01/11	21.55	50.02	28.47					15[5]	<5.0[5] 		 			<20[5]	18
	09/08/11	24.98	50.02	25.04	7,500	680	13	17	7.4[5]			 				
	03/06/12	26.11	50.02	23.91			1.5 ,		7.4[3]			 				
	07/11/12	24.86	50.02	25.16	6,100	31	2.2	33	3.0			 				

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (µg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)	DIPE (μg/L)		TAME (μg/L)	1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (μg/L)
MW-3	01/06/95		49.32		740,000	11,000	2,300	8,300	28,000								(1-8)
	02/10/95	19.75	49.32	29.57					20,000								
	07/07/95	22.82	49.32	26.5	86,000	12,000	8,600	4.900	19,000								
	08/10/95	23.88	49.32	25.44		,			17,000			***	-				
	09/11/95	24.78	49.32	24.54				-				-					
	10/02/95	25.32	49.32	24	100,000	15,000	11,000	6,000	20,000								
	11/07/95	26.11	49.32	23.21					20,000								
	12/08/95	26.7	49.32	22.62											-		
	01/12/96	25.07	49.32	24.25	84,000	6,500	4,100	3,200	12,000								
	02/12/96	20.32	49.32	29				5,200	12,000	<5,.000							
	03/12/96	17.65	49.32	31.67													
	04/13/96	20.06	49.32	29.26	48,000	7,600	3,600	2,800	9,400	-2.500							
	05/14/96	21.61	49.32	27.71			J,000		· ·	<2,500							
	06/20/96	22.32	49.32	27													
	07/26/96	23.65	49.32	25.67	62,000	6,400	3,100	3,000	11.000	-2.500							
	08/19/96	24.31	49.32	25.01			5,100		11,000	<2,500	-						
	09/17/96	25.05	49.32	24.27				pa. pa.									
	10/21/96	25.84	49.32	23.48	110,000	5,400	2,400	2.500	0.000								
	11/27/96	25.19	49.32	24.13		J,400 	Z,400 	2,500	9,800								
	12/27/96	21.21	49.32	28.11													
	01/28/97	16.54	49.32	32.78	130,000	5,500	15,000	2.200	12.000								
	04/25/97	22.38	49.32	26.94	180,000	6,900	-	2,300	12,000								
	07/17/97	24.95	49.32	24.37	69,000	5,100	20,000	2,600	13,000								
	10/21/97	26.59	49.32	22.73	58,000	4,300	1,100	1,800	8,600								-
	03/10/98	15.19	49.32	34.13	25,000	3,000	1,300	2,100	8,000					~-			
	06/06/98	18.85	49.32	30.47	52,000	4,400	1,300	1,100	3,700								
	09/30/98	23.57	49.32	25.75	42,000	4,400	1,900	2,300	6,900								
	12/30/98	24.33	49.32	24.99	34,000	4,300	1,400	1,800	6,600								
	03/13/99	19.49	49.32	29.83	44,000	3,500	770	2,300	9,000								
	09/29/99	25.12	49.32	24.2	39,000	*	1,000	1,700	5,200								
	12/29/99	25.72	49.32	23.6	39,000	6,000	840	2,400	8,100								
	03/18/00	17.5	49.32	31.82	,	4,600	790	2,400	8,100								
	07/18/00	23.28	49.32	26.04	21,000	3,100	550	1,400	4,100								
	09/26/00	24.52	49.32	24.8	30,000	5,000	950	2,000	5,700								~-
	12/28/00	24.32	49.32	24.8 24.45	36,000	5,300	640	2,400	9,900								
	03/20/01	24.07	49.32		33,000	4,700	450	2,100	6,400								
	03/20/01	21.93	49.32	27.20	21,000	2,000	260	570	3,000	< 500							
	10/05/01	25.62	49.32 49.32	27.39													
	10/03/01	23.02	47.32	23.7					**								

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (μg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)	DIPE (µg/L)	TAME (μg/L)	1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (μg/L)
MW-3	03/28/02	20.83	49.32	28.49				**					 			
(con't)	09/30/02	25.2	49.32	24.12									 			
	03/31/03	22.82	49.32	26.5	25,000	3,200	280	1,600	4,200				 			
	06/19/03	23.29	49.32	26.03	etr ess					m			 			
	09/30/03	25.5	49.32	23.82									***			
	02/10/04	22.53	49.32	26.79									 			
	03/31/04		49.32		11,000	1,000	940	550	1,900				 			
	06/30/04	24.73	49.32	24.59									 			
	09/14/04	27.93	49.32	21.39	42,000	3,600	190	2,200	4,800				 			
	03/29/06	18.87	49.32	30.45	7,200	180	17	460	680				 			
	06/24/06	22.65	49.32	26.67									 			
	09/30/06	24.49	49.32	24.83	7,100	130	94	500	820	< 50			 			
	12/11/06	23.03	49.32	26.29									 			
	03/16/07	21.97	49.32	27.35									 			
	06/10/07	24.28	49.32	25.04					***	~-			 			
	09/14/07	25.75	49.32	23.57	6,700	16	44	200	400	<10			 			
	12/14/07	25.96	49.32	23.36									 			
	03/12/08	22.31	49.32	27.01									 			
	06/11/08	24.8	49.32	24.52						Pr. 00			 			
	09/05/08	26.23	49.32	23.09	6,300	7.6	82	92	290	< 5.0			 			
	12/13/08	26.93	49.32	22.39									 	~-		
	03/14/09	21.65	49.32	27.67	3,300	13	17	56	140	< 50			 			
	12/07/09	26.2	49.32	23.12	2,800	13	43	74	150	<50			 			
	03/15/10	21.15	49.32	28.17									 			
	09/13/10	25.20	49.32	24.12	1,400	< 0.50	< 0.50	5.3	2.9	< 0.50			 	<1.0	<2.0	22
	03/01/11	20.66	49.32	28.66									 	<1.0		22
	09/08/11	24.19	49.32	25.13	1,000	29	2.1	29	6.7				 			
	03/06/12	25.22	49.32	24.10								ma. 100	 			
	07/11/12	24.06	49.32	25.26	460	< 0.50	< 0.50	< 0.50	< 0.50				 			

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (µg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)				1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (µg/L)
MW-4	12/30/98	24.56	49.61	25.05	12,000	1,200	1,100	290	1,400								
	03/13/99	19.72	49.61	29.89													
	03/23/99		49.61		89,000	5,900	8,700	2,000	9,200								
	09/29/99	25.34	49.61	24.27	48,000	5,300	6,800	1,700	7,700								
	12/29/99	25.97	49.61	23.64													
	03/18/00	17.76	49.61	31.85	44,000	4,500	7,500	2,200	11,000								
	12/28/00	25.09	49.61	24.52	~~												
	03/30/01	22.21	49.61	27.4	10,000	700	620	<10	1,900	<100				~~			
	10/05/01	25.84	49.61	23.77					1,500								
	03/28/02	21.03	49.61	28.58	30,000	3,700	3,100	1,100	4,100								
	09/30/02	25.29	49.61	24.32			5,100	1,100	,	~~					~~		
	03/31/03	23.02	49.61	26.59	25,000	2,000	2,100	820	2.000								
	06/19/03	23.45	49.61	26.16		2,000	2,100		2,900								
	09/30/03	25.65	49.61	23.96													
	03/31/04		49.61		24,000	2,500	200	1,400	2 000								
	09/14/04	28.16	49.61	21.45	14,000	760	550		2,800								
	03/29/06	19.87	49.61	29.74	17,000	2,000		430	1,600								
	06/24/06	22.86	49.61	26.75			1,200	910	2,400							***	
	09/30/06	23.94	49.61	25.67	4,000	440	120							***			
	12/11/06	23.36	49.61	26.25	4,000	440	120	240	360	<50							
	03/16/07	22.26	49.61	27.35													
	06/10/07	24.6	49.61	25.01													
	09/14/07	26.11	49.61	23.5	10.000	1 200											
	12/14/07	26.39	49.61	23.22	10,000	1,300	96	440	560	<50		~~					
	03/12/08	22.62	49.61														
	06/11/08	25.19		26.99													
	09/05/08	26.64	49.61	24.42	12.000												
	12/13/08	27.36	49.61	22.97	12,000	1,400	110	960	840	< 300							
	03/14/09	21.96	49.61	22.25									~-				
	12/07/09		49.61	27.65	44,000	1,700	1,000	2,600	6,700	<250			~-				
		26.6	49.61	23.01	26,000	920	160	2,100	3,200	<250							
	03/15/10	21.59	49.61	28.02													
	09/13/10 03/01/11	25.70	49.61	23.91	9,900	660	56	550 Well De	465 estroyed	<2.5[5]					<5.0[5]	<10[5]	<5.0[5]

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (µg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)	DIPE (µg/L)	ETBE (µg/L)		1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (µg/L)
MW-5	12/30/98	24.51	49.57	25.06	170	1.1	< 0.5	< 0.5	4.8								
	03/13/99	19.64	49.57	29.93													
	03/22/99		49.57		470	3.8	0.51	2	< 0.5								
	09/29/99	25.31	49.57	24.26	1,200	13	4.2	2.7	4.2						~~		
	03/18/00	25.93	49.57	23.64	660	5.5	0.62	1.6	1.7								
	03/28/02	17.63	49.57	31.94										***			
	03/29/06		49.57		190	< 0.5	< 0.5	< 0.5	< 0.5								
	09/30/06	Dry	49.57	n/a				**					~~				
	09/14/07	Dry	49.57	n/a													
	12/14/07	Dry	49.57	n/a													
	06/11/08	Dry	49.57	n/a					**								
	09/05/08	Dry	49.57	n/a		~-											
	12/13/08	Dry	49.57	n/a													
	03/14/09	Dry	49.57	n/a													
	12/07/09	Dry	49.57	n/a				M 60									
	03/15/10	21.46	49.57	28.11													
	09/13/10	25.62	49.57	23.95	260	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50					-1.0	-2.0	
	03/01/11	21.05	49.57	28.52										-	<1.0	<2.0	18
	09/08/11	24.46	49.57	25.11	210	< 0.50	< 0.50	< 0.50	< 0.50			~~					
	03/06/12	25.64	49.57	23.93					<0.50 								
	07/11/12	24.38	49.57	25.19	170	< 0.50	< 0.50	< 0.50	< 0.50								

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (μg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)	DIPE (μg/L)	TAME (μg/L)	1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (μg/L)
MW-6	12/30/98	22.92	48.06	25.14	400	1	< 0.5	< 0.5	4.8				 			
	03/13/99	18.09	48.06	29.97									 ,			
	03/22/99		48.06		390	< 0.5	< 0.5	< 0.5	< 0.5				 			
	09/29/99	23.68	48.06	24.38	330	1.8	1.4	1.5	< 0.5				 			
	12/29/99	24.31	48.06	23.75									 			
	03/18/00	16.2	48.06	31.86	200	1.3	< 0.5	< 0.5	< 0.5				 			
	07/18/00	21.84	48.06	26.22												
	09/26/00	23.11	48.06	24.95	240	1.5	< 0.5	< 0.5	< 0.5					**		
	12/28/00	23.45	48.06	24.61									 			
	03/20/01		48.06		160	< 0.5	< 0.5	< 0.5	< 0.5	<5.0			 			
	03/30/01	20.65	48.06	27.41									 			
	10/05/01	24.24	48.06	23.82									 			
	03/28/02	19.41	48.06	28.65	88	0.89	< 0.5	< 0.5	< 0.5		No. and		 			
	09/30/02	23.65	48.06	24.41									 			
	03/29/06		48.06										 			
	09/30/06	22.33	48.06	25.73	280	5.5	24	14	69	<5.0			 			
	09/14/07	24.58	48.06	23.48	<50	< 0.5	<0.5	<0.5	<0.5	<5.0			 			
	12/14/07	24.88	48.06	23.18						\J.U			 			
	03/12/08	21.03	48.06	27.03									 			
	06/11/08	23.62	48.06	24.44									 			
	09/05/08	25.1	48.06	22.96	84	0.92	0.76	1.7	3.5				 			
	12/13/08	25.81	48.06	22.25	~-		0.70			< 5.0			 			
	06/03/09	23.2	48.06	24.86									 			
	03/15/10	19.87	48.06	28.19									 			
	09/13/10	23.92	48.06	24.14	<50	< 0.50	<0.50	< 0.50	 -0.50		~-		 			
	03/01/11		48.06	21:14		~0.50			< 0.50	< 0.50			 	<1.0	< 2.0	30
	09/08/11		48.06										 			
	03/06/12		,					Well D	estroyed	***			 			

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (μg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (μg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)	DIPE (µg/L)	TAME (μg/L)	1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (μg/L)
MW-8	12/30/98	24.21	49.35	25.14	2,200	70	0.94	26	15							
	03/13/99		49.35										 			
	03/23/99		49.35		2,300	34	1.1	15	13				 			
	09/29/99		49.35		8,800	140	<50	53	<50				 			
	12/29/99		49.35		1,900	64	1	22	23							
	03/18/00		49.35		1,400	36	< 0.5	12	9.3				 			
	07/18/00		49.35		3,000	67	9.8	38	38				 			
	09/26/00		49.35		1,200	24	3	24	15				 			
	12/28/00		49.35		1,200	47	3.7	17	18				 			
	03/20/01		49.35		1,300	7.8	<2.5	<2.5	14	<25			 	-		
	03/30/01		49.35						1 T	~23			 			
	10/05/01		49.35		1,800	28	<2.5	20	23				 			
	03/28/02		49.35		1,100	12	1.7	11	10.8				 		No. nor	
	09/30/02		49.35		1,400	15	24	32	22				 			
	09/30/06	24.07	49.35	25.28	760	4.9	31	13	64	<5.0			 			
	03/16/07		49.35		370	< 0.5	8.1	0.52	0.94	<5.0			 			
	09/14/07	26.12	49.35	23.23	1,300	1.3	20	3	1.6	<5.0			 			
	12/14/07	26.35	49.35	23				<i></i>					 			
	03/12/08	22.65	49.35	26.7	520	1.4	11	3.9	5.6	<5.0			 			
	06/11/08	25.23	49.35	24.12				3.7	5.0				 			
	09/05/08	26.62	49.35	22.73	1,800	1.9	30	5	4	<25			 			
	12/13/08	27.3	49.35	22.05				<i>-</i> -					 			
	03/14/09	21.8	49.35	27.55	950	3.1	42	36	180	 -5 0			 			
	06/03/09	24.83	49.35	24.52				J0 		<5.0			 			
	12/07/09	26.58	49.35	22.77	2,200	2.2	42	10	 19	 -5 0			 			***
	03/15/10	21.48	49.35	27.87	90	< 0.50	< 0.50	< 0.50	< 0.50	<5.0			 			
	09/13/10	25.58	49.35	23.77	550	< 0.50	< 0.50	1.7	<0.50	< 0.50			 			
	03/01/11	21.12	49.35	28.23	120	< 0.50	< 0.50	< 0.50	<0.50 <0.50				 	<1.0	<2.0	< 5.0
	09/08/11	24.58	49.35	24.77	150	< 0.50	< 0.50	< 0.50	<0.50 <0.50				 			
	03/06/12	25.65	49.35	23.70	410	< 0.50	< 0.50	1.0					 			
	07/11/12	24.47	49.35	24.88	130	< 0.50	< 0.50	< 0.50	<0.50 <0.50				 			

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (μg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (μg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)	DIPE (μg/L)	ETBE (µg/L)		1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (µg/L)
MW-9	12/30/98	23.98	48.77	24.79	25,000	23	<10	180	620								
	03/13/99	19.19	48.77	29.58													
	03/23/99		48.77		27,000	35	<20	600	920								
	09/29/99	24.72	48.77	24.05	42,000	140	130	1,000	1,700								
	12/29/99	25.32	48.77	23.45	1,100,000	1,200	1,300	4,300	8,700								
	03/18/00	17.31	48.77	31.46	17,000	89	46	10	600								
	07/18/00	22.94	48.77	25.83	12,000	39	8.2	540	760								
	09/26/00	24.16	48.77	24.61	11,000	19	<5	470	610								
	12/28/00	24.48	48.77	24.29	22,000	100	<100	610	770								
	03/20/01		48.77		8,200	40	<10	14	210	<100							
	03/30/01	21.65	48.77	27.12													
	10/05/01	25.23	48.77	23.54	77,000	<100	110	780	850								
	03/28/02	20.45	48.77	28.32	11,000	34	6.1	220	180								
	09/30/02	24.66	48.77	24.11	34,000	<125	140	240	370								
	03/31/03	22.44	48.77	26.33	6,200	<12.5	<12.5	130	87								
	06/19/03	22.87	48.77	25.9													
	09/30/03	25	48.77	23.77	9,700	52	<25	160	87								
	02/10/04	22.13	48.77	26.64													
	06/30/04	24.55	48.77	24.22													
	09/14/04	25.69	48.77	23.08	9,500	48	<25	93	<50								
	03/29/06	16.74	48.77	32.03	6,200	< 0.5	< 0.5	57	11								
	06/24/06	22.43	48.77	26.34													
	09/30/06	23.4	48.77	25.37	2,200	3.7	31	37	40	<17							
	12/11/06	22.78	48.77	25.99	-,					-17							
	03/16/07	21.76	48.77	27.01	3,200	2.2	37	18	2.9						~~		
	09/14/07	25.5	48.77	23.27	2,600	1.4	28	13	3.2								
	12/14/07	25.83	48.77	22.94					5.2	<5.0					-		
	03/12/08	22.08	48.77	26.69	2,800	2.3	32	12	5.3								
	06/11/08	24.61	48.77	24.16		4.5			J.J	<5.0							
	09/05/08	26.04	48.77	22.73	3,800	2.5	40	6.1	2.8	<100							
	12/13/08	26.74	48.77	22.03				0.1	2.0	<100							
	03/14/09	21.46	48.77	27.31	7,100	11	63	50		 -50							
	06/03/09	24.21	48.77	24.56					120	<50							
	12/07/09	26.03	48.77	22.74	3,600	4	34	 18	22	 -5 0							
	03/15/10	20.91	48.77	27.86	2,900	1,1	<1.0		22	<5.0						***	
	09/13/10	24.93	48.77	23.84	4,500	<2.0[5]		11	<1.0	<1.0							
	03/01/11	20.40	48.77	28.37	4,100		<2.0[5]	15	<2.0[5]					'	<4.0[5]	<8.0[5]	9.3
	09/08/11	23.90	48.77	24.87	3,800	<1.0[5]	<1.0[5]	10	<1.0[5]								
	03/06/12	25.02	48.77	23.75	3,800	<1.0[5]	<1.0[5]	7.7	<1.0[5]								
	07/11/12	23.81	48.77	24.96	-	<1.5[5]	<1.5[5]	6.6	<1.5[5]					•••			
	- 11 x x/ x 2	22.01	то. / /	۵4.70	5,800	<2.0[5]	<2.0[5]	6.2	<2.0[5]						**		

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (μg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)	DIPE (µg/L)	ETBE (μg/L)	1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (μg/L)
MW-10	12/30/98	25.15	49.93	24.78	6,900	130	19	140	210							
	03/13/99	20,62	49.93	29.31										 		
	03/23/99		49.93		6,600	150	33	240	170					 		
	09/29/99	26.13	49.93	23.8	9,300	60	38	280	150					 		
	12/29/99	26.7	49.93	23.23	5,800	87	10	420	180					 		
	03/18/00	18.67	49.93	31.26	3,800	180	11	220	120					 		
	07/18/00	24.38	49.93	25.55	9,100	120	33	210	130					 		
	09/26/00	25.59	49.93	24.34	4,500	22	8.8	1.3	18					 		
	12/28/00	25.9	49.93	24.03	3,900	55	13	98	38					 		
	03/30/01	23.14	49.93	26.79	4,500	48	6	<5	23	01 / -5 0				 		
	10/05/01	26.6	49.93	23.33	5,200	70	28	41	30	81 / < 5.0				 		
	03/28/02	21.87	49.93	28.06	7,400	45	20	210	66					 		
	09/30/02	26.05	49.93	23.88	670	54	5.9	76				Pr 407		 		
	03/31/03	23.87	49.93	26.06	5,700	31	3.9	67	23					 		
	06/19/03	24.28	49.93	25.65		<i>3</i> 1			27					 		
	09/30/03	26.37	49.93	23.56	7,400	61	<50		-100				~-	 		
	02/10/04	23.54	49.93	26.39				<50	<100					 		
	06/30/04	25.71	49.93	24.22									***	 		
	09/14/04	26.85	49.93	23.08	9.100	47	-25	 6.1						 		
	03/29/06	20.18	49.93	29.75	6,800		<25	51	<50					 		
	06/24/06	23.87	49.93	26.06		140	18	270	160					 		
	09/30/06	24.8	49.93	25.13										 		
	03/16/07	23.09	49.93	26.84	5,700	61	30	78	120	<100				 		
	09/14/07	26.87	49.93	23.06	10,000	71 55	15	46	25	<50				 		
	12/14/07	27.14	49.93		5,800	55	18	22	15	<10				 		
	03/12/08	23.48	49.93	22.79	0.200								~~	 		
	06/11/08	25.48	49.93	26.45	9,300	240	23	48	37	< 50				 		
	09/05/08	27.38	49.93	23.95	0.400									 ~~		
	12/13/08	28.04		22.55	8,400	120	12	18	16	<250				 		
	03/14/09	22.73	49.93	21.89	0.100									 		
	12/07/09	27.33	49.93	27.2	8,100	300	25	36	72	<250				 		
			49.93	22.6	8,400	160	26	32	34	<100				 		
	03/15/10 09/13/10	22.27	49.93	27.66	5,200	110	4.1	29	16	< 2.0				 		
	03/01/11	26.88	49.93	23.05	6,800	43	2.5	31	13[5]			P- W		 <4.0[5] <	<8.0[5]	< 5.0
	09/08/11	21.77	49.93	28.16	8,100	32	3.2	53	11[5]					 		
		25.27	49.93	24.66	7,700	13	<2.5[5]	30	9.0[5]					 		
	03/06/12	26.37	49.93	23.56	5,300	9.8	2.5	25	7.0					 m-		
	07/11/12	25.19	49.93	24.74	7,400	13	3.1	34	7.1					 		

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (μg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (μg/L)	Total Xylenes (µg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)	DIPE (µg/L)	ETBE (μg/L)	TAME (μg/L)	1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (μg/L)
MW-11	12/30/98	23.15	47.93	24.78	80	<0.5	<0.5	0.93	1.6								
	03/13/99	18.37	47.93	29.56													
	03/23/99		47.93		< 50	< 0.5	< 0.5	< 0.5	< 0.5								
	09/29/99	23.9	47.93	24.03	94	< 0.5	< 0.5	< 0.5	< 0.5								
	12/29/99	24.5	47.93	23.43													
	03/18/00	16.55	47.93	31.38	< 50	< 0.5	< 0.5	< 0.5	< 0.5						w-m		
	07/18/00	22.12	47.93	25.81													
	09/26/00	23.35	47.93	24.58	< 50	< 0.5	< 0.5	< 0.5	< 0.5								
	12/28/00	23.67	47.93	24.26												***	
	03/20/01		47.93		< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0							
	03/30/01	20.9	47.93	27.03		~-											
	10/05/01	24.41	47.93	23.52													
	03/28/02	19.62	47.93	28.31	< 50	< 0.5	< 0.5	< 0.5	<1.5								
	09/30/02	23.84	47.93	24.09													
	09/30/06	22.58	47.93	25.35	160	1.8	12	7.6	40	< 5.0							
	09/14/07	24.72	47.93	25.21	< 50	< 0.5	<0.5	<0.5	< 0.5	<5.0							
	12/14/07	25	47.93	22.93						~5.0 							
	06/11/08	23.81	47.93	24.12													
	09/05/08	25.23	47.93	22.7	150	0.93	0.6	1.6	2.5	< 5.0							
	12/13/08	25.93	47.93	22										~-			
	03/15/10	20.10	47.93	27.83													
	09/13/10	24.11	47.93	23.82	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50					 -1.0		
	03/01/11	19.57	47.93	28.36					~0.50 	~0.30 					<1.0	<2.0	22
	09/08/11	23.08	47.93	24.85	< 50	< 0.50	< 0.50	< 0.50	< 0.50								
	03/06/12	24.18	47.93	23.75					~0.50 								
	07/11/12	23.00	47.93	24.93	<50	< 0.50	< 0.50	< 0.50	< 0.50								

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (μg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (μg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)	DIPE (µg/L)		TAME (μg/L)	1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (μg/L)
MW-12	12/30/98	23.68	48.46	24.78				**	**								
	03/13/99	18.9	48.46	29.56													
	09/29/99	24.43	48.46	24.03					40 Mg								
	12/29/99	25.03	48.46	23.43						~-							
	03/18/00	17.08	48.46	31.38					==								
	07/18/00	22.65	48.46	25.81													
	09/26/00	23.88	48.46	24.58						**							
	12/28/00	24.2	48.46	24.26													
	03/20/01		48.46		4,100	28	6.2	<5	16	90 / < 5.0							
	03/30/01	21.43	48.46	27.03													
	06/29/01		48.46		4,200	26	25	19	29								
	10/05/01	24.94	48.46	23.52													
	12/21/01		48.46		5,300	9.7	<2.5	41	14								
	03/28/02	20.15	48.46	28.31	4,900	20	<2.5	69	23								
	06/28/02		48.46		2,600	29	<12.5	30	<25								
	09/30/02	24.37	48.46	24.09	700	16	4.9	19	9.8								
	09/30/06	22.58	48.46	26.18	2,100	6.2	15	16	38	<10							
	12/11/06	23.88	48.46	24.88	5,500	13	24	16	23	<17							
	03/16/07	21.77	48.46	26.99	4,900	11	24	16	8.5	<50							
	06/10/07	24.06	48.46	24.7	2,600	<2.5	<2.5	13	9.5								
	09/14/07		48.46		2,000		~2.5	15		<25				~~			
	12/14/07	25.77	48.46	22.99		***											
	03/12/08		48.46		***												
	06/11/08	24.6	48.46	23.86	6,200	11	21	26	8.1								
	09/05/08	25.97	48.46	22.49	5,000	7.3	15	20 12	8.1 5.9	<50 <25							
	12/13/08	26.66	48.46	21.8	4,400	7.6	19	12	3.9 9.4	<25							
	03/14/09	21.36	48.46	27.1	6,800	16	19	20	9.4 60	<25							
	06/03/09	24.2	48.46	24.26	6,400	6.5	24	25		<50							
	12/07/09		48.46		0,400	0.5	Z4 		6.1	<50							
	03/15/10	20.89	48.46	27.57	5,100	5.0	<2.0	15	4.2						***		
	09/13/10	24.91	48.46	23.55	5,400	<2.0[5]			4.3	<2.0							
	03/01/11	20.40	48.46	28.06	5,900	<2.0[5] <2.0[5]	<2.0[5]	10	3.5						<4.0[5]	<8.0[5]	14
	09/08/11		48.46	28.00	3,900	~2.0[5]	<2.0[5]	18	3.9[5]								
	03/06/12	25.01	48.46	23.45	4,100		 -1 5[5]		2.5				101 00				
	07/11/12	23.85	48.46	23.43	-	<1.5[5]	<1.5[5]	6.9	2.5	***							
	U1111112	<i>ل</i> ى, <i>دى</i>	40.40	24.01	3,500	<1.0[5]	<1.0[5]	7.4	1.8								

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (µg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)	DIPE (µg/L)	ETBE (µg/L)	1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (μg/L)
MW-13	12/30/98	24.73	49.51	24.78										 		
	03/13/99	19.95	49.51	29.56										 ~~		
	09/29/99	25.48	49.51	24.03										 		
	12/29/99	26.08	49.51	23.43										 		
	03/18/00	18.13	49.51	31.38										 		
	07/18/00	23.7	49.51	25.81					***					 		
	09/26/00	24.93	49.51	24.58										 		
	12/28/00	25.25	49.51	24.26										 		
	03/20/01		49.51		< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0				 		
	03/30/01	22.48	49.51	27.03						~5.0 				 		
	06/29/01		49.51		<50	< 0.5	< 0.5	< 0.5	< 0.5					 		
	10/05/01	25.99	49.51	23.52	< 50	< 0.5	< 0.5	< 0.5	<0.5					 		
	12/21/01		49.51		<50	< 0.5	< 0.5	< 0.5	<0.5					 		
	03/28/02	21.2	49.51	28.31	<50	< 0.5	< 0.5	< 0.5	<1.5		N			 		
	06/28/02		49.51		<50	<0.5	<0.5	<0.5	<1.0					 		
	09/30/02	25.42	49.51	24.09	<50	< 0.5	< 0.5	<0.5	<1.0					 		
	12/21/02		49.51		<50	<0.5	<0.5	<0.5	<1.0					 		
	09/30/06	22.58	49.51	26.93	170	2.1	13	8.1	43					 		
	12/11/06	25.33	49.51	24.18	110	4.6	6.5	4.6	43 17	<5.0				 		
	03/16/07	23	49.51	26.51	<50	<0.5	<0.5	<0.5	<0.5	<5.0				 		
	06/10/07	25.5	49.51	24.01	54	0.8	0.84	1.3	5.4	<5.0				 		
	09/14/07	26.85	49.51	22.66	<50	<0.5	<0.5	<0.5		<5.0				 		
	12/14/07	27.11	49.51	22.4	<50	0.76	<0.5	2.3	<0.5	<5.0				 		
	03/12/08	23.5	49.51	26.01	<50	< 0.5	<0.5		2.6	<5.0		~-		 		
	06/11/08	26.02	49.51	23.49	120	0.58	0.97	0.66	2.2	<5.0				 		
	09/05/08	27.29	49.51	22.22	78	< 0.5	0.6	1.1	2	<5.0	m-			 		
	12/13/08	27.96	49.51	21.55	59	0.93	<0.5	0.98	2.1	<5.0				 		
	03/14/09	22.48	49.51	27.03	260	1.1	8.8	2.5	3.8	<5.0				 ***		
	06/03/09	25.61	49.51	23.9	<50	<0.5	<0.5	10	46	<5.0				 		
	12/07/09	27.40	49.51	22.11	190	1.2	1.6	0.65	0.69	<5.0				 		
	03/15/10	22.26	49.51	27.25	<50	< 0.50	< 0.50	5.8	13	<5.0				 		
	09/13/10	26.40	49.51	23.11	<50	<0.50		<0.50	< 0.50	< 0.50				 		
	03/01/11	21.82	49.51	27.69	<50	<0.50	<0.50	< 0.50	<0.50					 <1.0	< 2.0	8.0
	09/08/11	25.38	49.51	24.13	<50	<0.50	<0.50	< 0.50	< 0.50					 		
	03/06/12	26.49	49.51	23.02	<50		< 0.50	<0.50	< 0.50					 		
	07/11/12	25.31	49.51	24.20	<50 <50	< 0.50	< 0.50	< 0.50	< 0.50					 		
		med and 1	77.71	44.40	\30	< 0.50	< 0.50	< 0.50	< 0.50					 		

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (µg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (μg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)	DIPE (μg/L)	ETBE (μg/L)		1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (μg/L)
MW-14	12/30/98	24.76	49.54	24.78													
	03/13/99	19.98	49.54	29.56													
	09/29/99	25.51	49.54	24.03													
	12/29/99	26.11	49.54	23.43													
	03/18/00	18.16	49.54	31.38													
	07/18/00	23.73	49.54	25.81				***									
	09/26/00	24.96	49.54	24.58													
	12/28/00	25.28	49.54	24.26												~~	
	03/20/01		49.54		200	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0							
	03/30/01	22.51	49.54	27.03	~-												
	06/29/01		49.54		660	< 0.5	< 0.5	<0.5	4.6				~-				
	10/05/01	26.02	49.54	23.52	770	1.7	1.5	0.91	8.3								
	12/21/01		49.54		1,500	3.1	1.3	1.9	8.3 22								
	03/28/02	21.23	49.54	28.31	390	1.7	< 0.5	< 0.5								~-	
	06/28/02		49.54		120	< 0.5	<0.5	<0.5	0.74								
	09/30/02	25.45	49.54	24.09	210	< 0.5	1.7	<0.5	<1			***					
	12/21/02		49.54		53	<0.5	<0.5		1.1								
	09/30/06	22.58	49.54	26.96	210	2.5	15	< 0.5	<1.0	-5.0							
	12/11/06	24.9	49.54	24.64	190	6.7	9.9	9.1	48	< 5.0	***						
	03/16/07	22.67	49.54	26.87	<50	<0.5	9.9 1.1	5.4	19	<5.0							
	06/10/07	25.11	49.54	24.43	73	1.1		< 0.5	< 0.5	<5.0							
	09/14/07	26.56	49.54	22.98	<50	< 0.5	1.3	1.8	7.2	<5.0							
	12/14/07	26.8	49.54	22.74	69	1.1	<0.5	< 0.5	< 0.5	<5.0							
	03/01/08	23.03	49.54	26.51			0.57	3.5	4.5	< 5.0						**	
	03/12/08		49.54	20.51	110	0.61	1.2	1.0									
	06/11/08	25.69	49.54	23.85	52		1.2	1.2	3.6	< 5.0							
	09/05/08	27.04	49.54	22.5	95	<0.5	0.68	<0.5	1	< 5.0		**					
	12/13/08	27.72	49.54	21.82	93 220	< 0.5	1.3	0.61	2.3	< 5.0							
	03/14/09	22.22	49.54	27.32		1.5	4.3	3.2	5.1	<5.0							
	06/03/09	25.3	49.54	24.24	360	1.4	12	13	61	< 5.0							
	12/07/09	27.1	49.54	24.24	68	< 0.5	1.9	0.81	1.1	< 5.0							
	03/15/10	21.94	49.54		220	1.3	2.7	6.9	15	< 5.0							
	09/13/10	26.05		27.60	<50	<0.50	< 0.50	< 0.50	< 0.50	< 0.50							
	03/01/11	21.50	49.54	23.49	<50	< 0.50	< 0.50	< 0.50	< 0.50						<1.0	< 2.0	11
	09/08/11	25.02	49.54	28.04	<50	<0.50	< 0.50	< 0.50	< 0.50				-				
	03/06/11		49.54	24.52	<50	< 0.50	< 0.50	< 0.50	< 0.50								
		26.13	49.54	23.41	<50	< 0.50	< 0.50	< 0.50	< 0.50					***			
	07/11/12	24.92	49.54	24.62	<50	< 0.50	< 0.50	< 0.50	< 0.50	M- M-							

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (μg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (μg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)	DIPE (µg/L)			1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (μg/L)
MW-1A	05/30/97		48.24		12,000	18	8.7	90	540								
	12/30/98	23.6	48.24	24.64	51	< 0.5	< 0.5	< 0.5	< 0.5								
	03/13/99	18.85	48.24	29.39													
	03/23/99		48.24		1,800	4	< 0.5	3	7.5								
	03/23/99		48.24		2,200	10	0.52	3.1	7.1					**			
	09/29/99	24.35	48.24	23.89	13,000	63	26	30	72								
	12/29/99	24.95	48.24	23.29													
	03/08/00		48.24		6,100	36	<5	9.7	45								
	03/18/00	16.99	48.24	31.25													
	07/18/00	22.6	48.24	25.64											~-		
	09/26/00	23.76	48.24	24.48	11,000	14	<5	65	150					~~			
	12/28/00	24.11	48.24	24.13													
	03/30/01	21.22	48.24	27.02	4,800	30	6	<5	7	51 / < 5.0	~-						
	10/05/01	24.86	48.24	23.38	15,000	76	41	36	140	J17\J.0							
	03/28/02	20.1	48.24	28.14	9,300	35	<12.5	17	32				-				
	09/30/02	24.28	48.24	23.96	23,000	<50	63	77	230								
	09/30/06	23.03	48.24	25.21	2,500	4.1	25	22	49	<5.0					94 M		
	03/16/07		48.24		1,800	1.8	17	6.4	4.4	<5.0 <5.0						~~	
	09/14/07	25.13	48.24	23.11	1.500	1.1	15	2.8	1.8	<5.0 <5.0							
	12/14/07	25.43	48.24	22.81				2.0									
	03/12/08	21.75	48.24	26.49	1,200	2.1	12	5	3.6	<5.0							
	06/11/08	24.24	48.24	24					J.0 	~5.0 							
	09/05/08	25.62	48.24	22.62	1,900	2.4	14	10	5.4	<5.0							
	12/13/08	26.33	48.24	21.91										~-		**	
	03/14/09	21.07	48.24	27.17	1,700	2.5	13	11	32	<5.0							
	03/15/10	20.52	48.24	27.72	2,400	< 0.50	< 0.50	5.5	2.3	<0.50							
	09/13/10	24.55	48.24	23.69	2,800	< 0.50	< 0.50	7.6	2.3								
	03/01/11	20.02	48.24	28.22	2,600	< 0.50	< 0.50	6.2	2.4						<1.0	<2.0	6.9
	09/08/11	23.52	48.24	24.72	2,200	<1.0[5]	<1.0[5]	7.4	2.3						-		
	03/06/12	24.60	48.24	23.64	2,100	<1.0[5]	<1.0[5]	9.0	2.3								
	07/11/12	23.45	48.24	24.79	4,200	<2.0[5]	<2.0[5]	6.4	2.6								

Well Number	Date Collected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (µg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (μg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)	DIPE (μg/L)	ETBE (µg/L)		1,2-DCA (μg/L)	EDB (µg/L)	Lead (Pb) (µg/L)
141	04/06/96		48.76		<50	< 0.5	<0.5	< 0.5	<0.5								
Farrelly	10/02/99	~~	48.76		< 50	< 0.5	< 0.5	< 0.5	< 0.5								
	03/18/00	17.9	48.76	30.86	< 50	< 0.5	< 0.5	< 0.5	< 0.5								
	07/13/00		48.76		< 50	< 0.5	< 0.5	< 0.5	< 0.5								
	09/26/00	24.66	48.76	24.1	< 50	< 0.5	< 0.5	< 0.5	< 0.5								
	12/29/00		48.76		< 50	< 0.5	< 0.5	< 0.5	< 0.5	<5.0 [3]	<20	< 5.0	< 5.0	< 5.0	<5.0	<5.0	<5.0
	03/20/01		48.76							<5.0 [3]	<20	<5.0	< 5.0	<5.0	<5.0	<5.0	<5.0
	03/30/01	22.25	48.76	26.51						(-)						~5.0 	~5.0
	12/21/01		48.76		< 50	< 0.5	< 0.5	< 0.5	< 0.5								
	09/30/02	25.34	48.76	23.42	< 50	< 0.5	< 0.5	< 0.5	<1.0								
	12/21/02	20.07	48.76	28.69	< 50	< 0.5	< 0.5	< 0.5	<1.0								
	06/19/03	23.55	48.76	25.21	< 50	< 0.5	< 0.5	< 0.5	<1.0								
	09/14/04	26.12	48.76	22.64	< 50	< 0.5	< 0.5	< 0.5	<1.0								
	03/16/07	22.28	48.76	26.48	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0							
	09/14/07	25.98	48.76	22.78	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0							
	03/12/08		48.76														
	06/11/08		48.76														
	09/05/08	26.48	48.76	22.28	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0							
	12/13/08	27.2	48.76	21.56	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0							
	03/14/09		48.76														
	06/03/09	25.83	48.76	22.93	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0							
	12/07/09		48.76														
	03/15/10		48.76		< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50							
	09/13/10		48.76		< 50	< 0.50	< 0.50	< 0.50	< 0.50						<1.0	<2.0	<5.0
	03/01/11		48.76													~2.0	1
	09/08/11	24.50	48.76	24.26	< 50	< 0.50	< 0.50	< 0.50	< 0.50								
	03/06/12	25.57	48.76	23.19	< 50	< 0.50	< 0.50	< 0.50	< 0.50								
	07/11/12		48.76		<50	< 0.50	< 0.50	< 0.50	< 0.50								

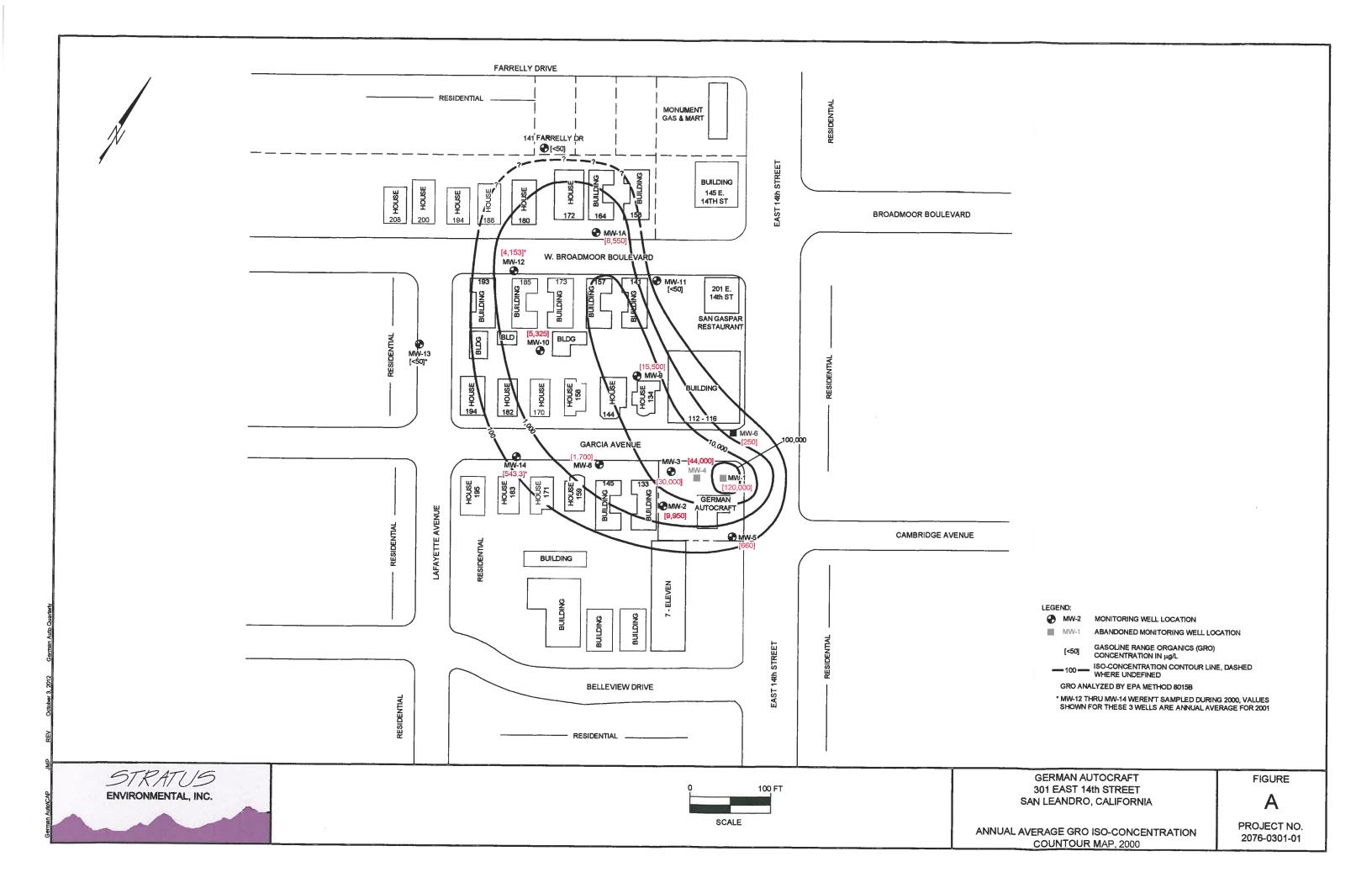
TABLE 2

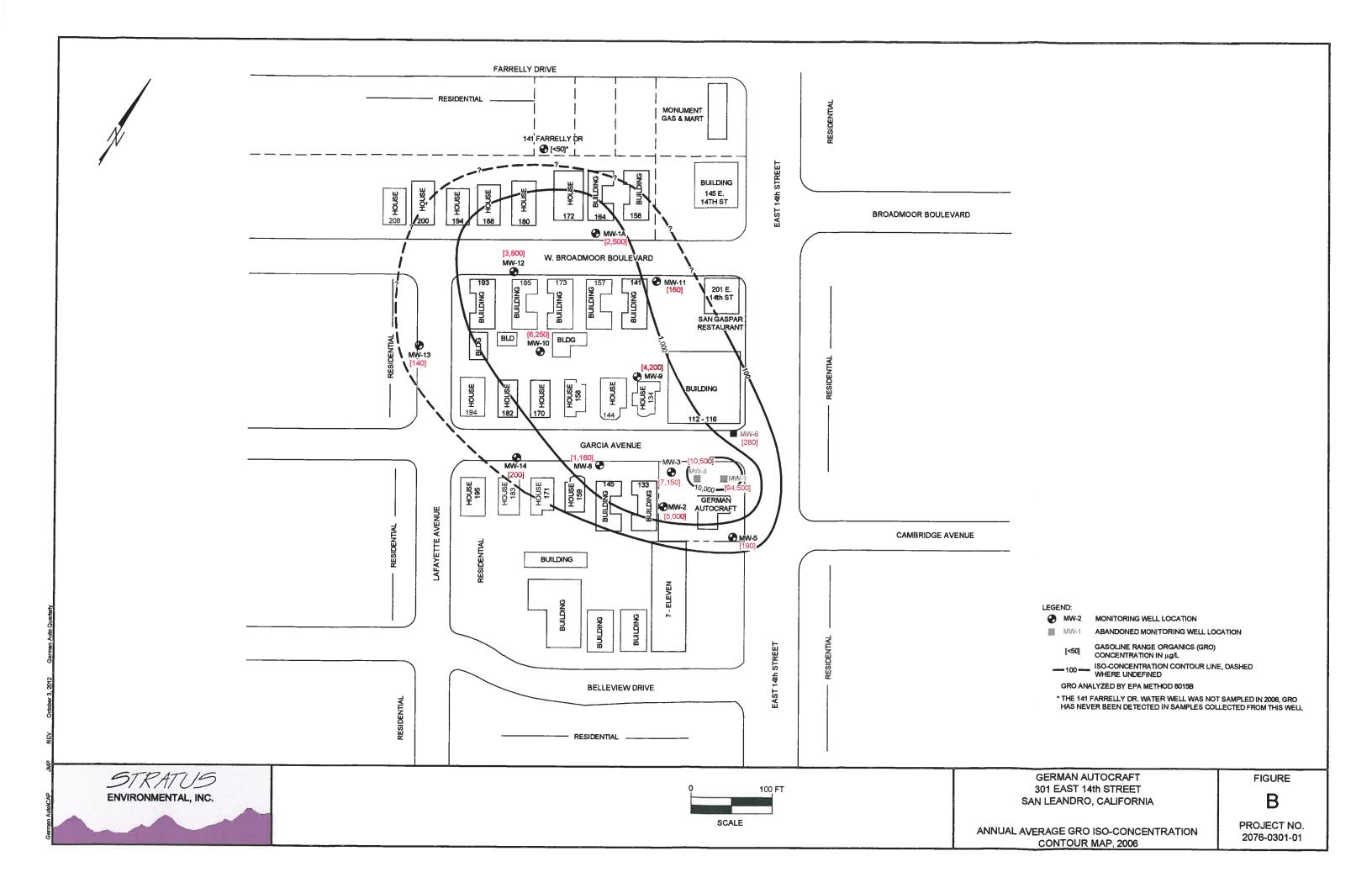
GROUNDWATER ELEVATION AND ANALYTICAL SUMMARY

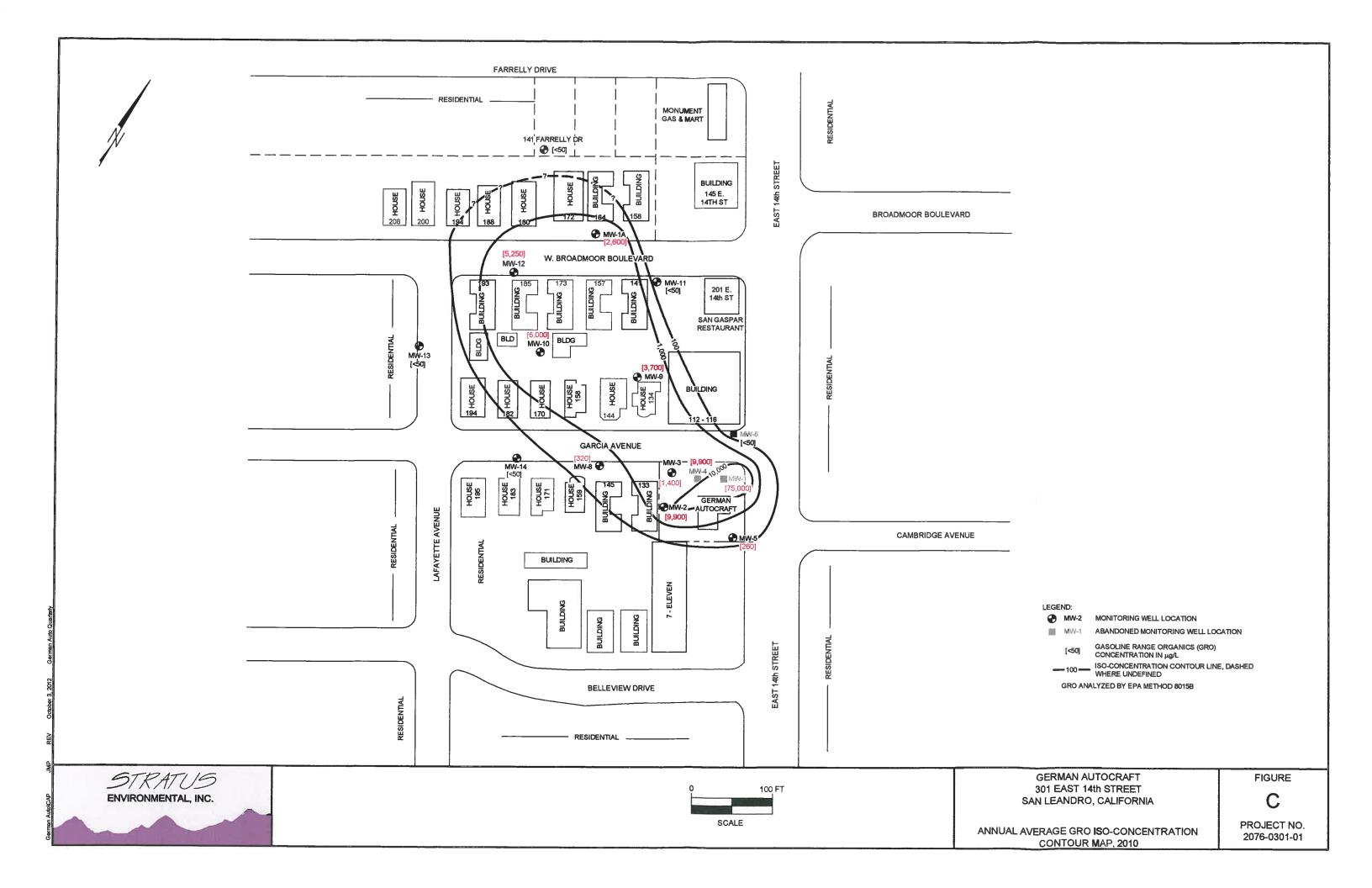
11	Date llected	Depth to Water (feet)	Top of Casing Elevation (ft msl)	Grouwater Elevation (ft msl)	GRO[1] (μg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE [3,4] (μg/L)	TBA (μg/L)		ETBE (µg/L)		1,2-DCA (μg/L)	EDB (μg/L)	Lead (Pb) (μg/L)	
Legend/Key:					Analytical Ma	athoder												
GRO = Gasoline Rang	nge Organics	s C4-C13			Analytical Methods:													
MTBE = Methyl tertia					GRO analyzed according to EPA Method 8015B													
TBA = Tertiary butyl					BTEX and MTBE analyzed according to EPA Method 8020/8021B prior to 2010 Beginning in 2010 RTEX MTBE TRA DIRE STREET and TAME and													
DIPE = Di-isopropyl e					Beginning in 2010, BTEX, MTBE, TBA, DIPE, ETBE, and TAME analyzed by EPA Method 8260B													
ETBE = Ethyl tertiary					Laboratory Qualifiers/Flags/Notes:													
TAME = Tertiary amy					[1] GRO reported as Total Petroleum Hydrocarbons as Gasoline (TPHg) prior to 2010													
1,2-DCA = 1,2-Dichlo	oroethane																	
EDB = 1,2-Dibromoe					[2] This value may be inaccurate. Second Quarter 1996 Environmental Activities Report, dated August 8, 1996 by Environmental Testing & Management casts doubt on the validity of this laboratory result.													
= not measured, not	t analyzed, o	or not availal	ble															
ft msl = feet above me	ean sea level	1			[3] When two MTBE results listed, the first is by EPA 8020/8021 and second is confirmation by 8260. If only one result, by 8260													
μg/L = micrograms pe	er liter			i	[4] All MTBE results by EPA 8020, except where qualified by [3] and during 3/15/10 event when analyzed by 8260[5] Reporting limits were increased due to high concentrations of target analytes													
Analytical data present	nt here prior	to first quar	ter 2010 provid	led by Groundwat	er Cleaners, Inc	c. Stratus has n	ot reviewed lab	oratory reports	and makes no	representation	s regarding	accuracy c	of these dat	a.				

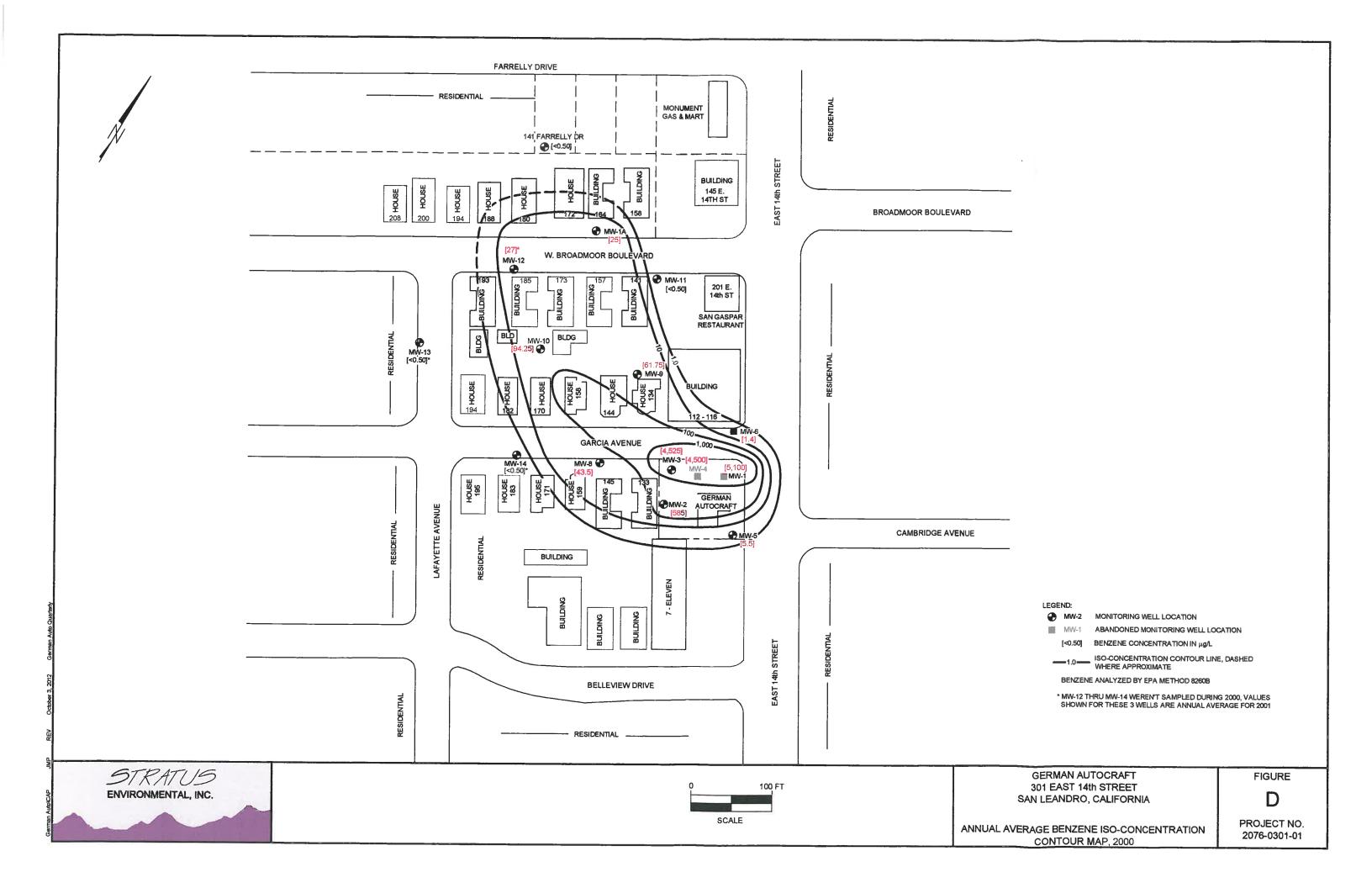
APPENDIX D

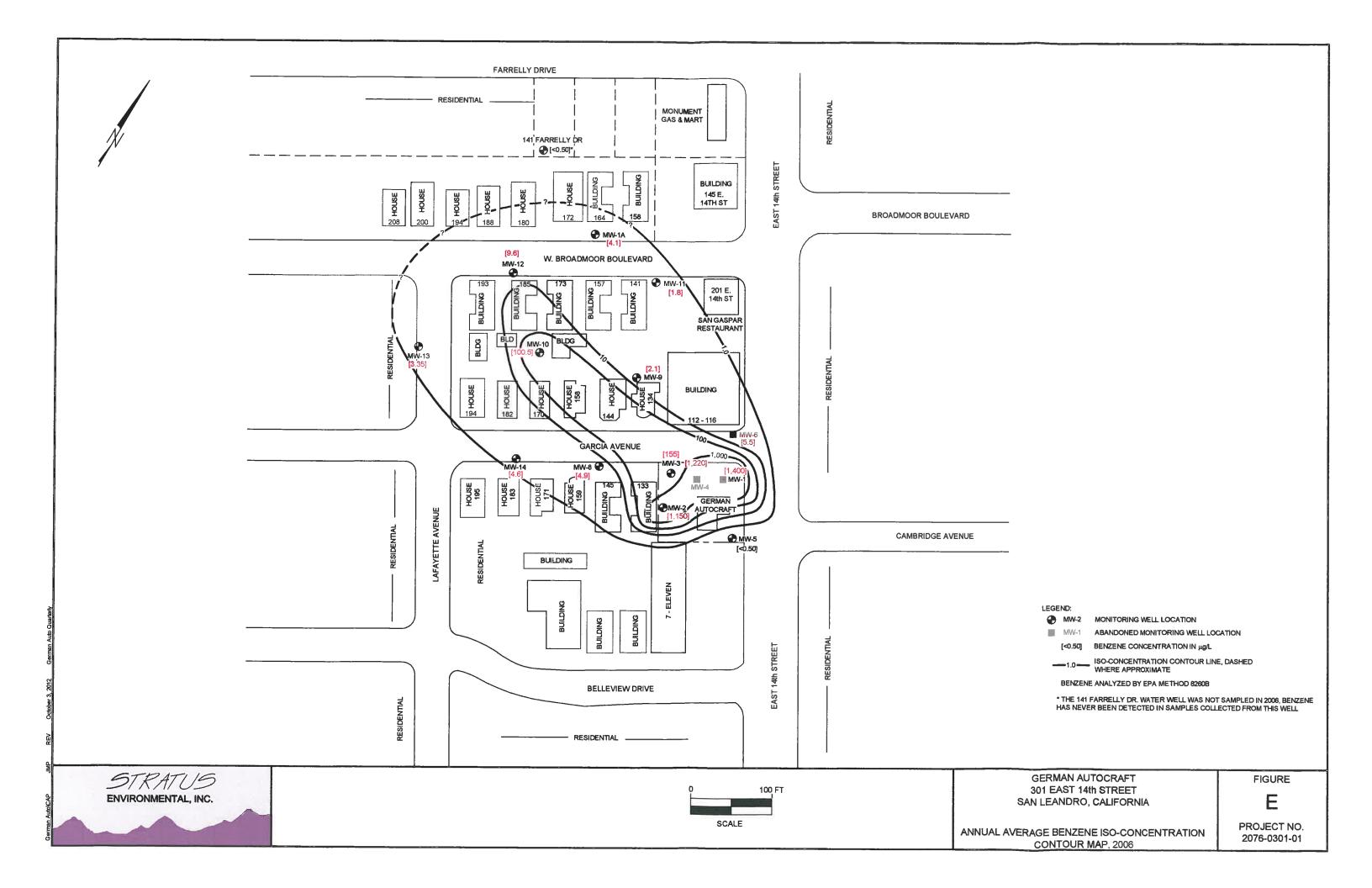
ANNUAL AVERAGE GRO AND BENZENE IN GROUNDWATER ISO-CONCENTRATION CONTOUR MAPS, 2000, 2006, AND 2010

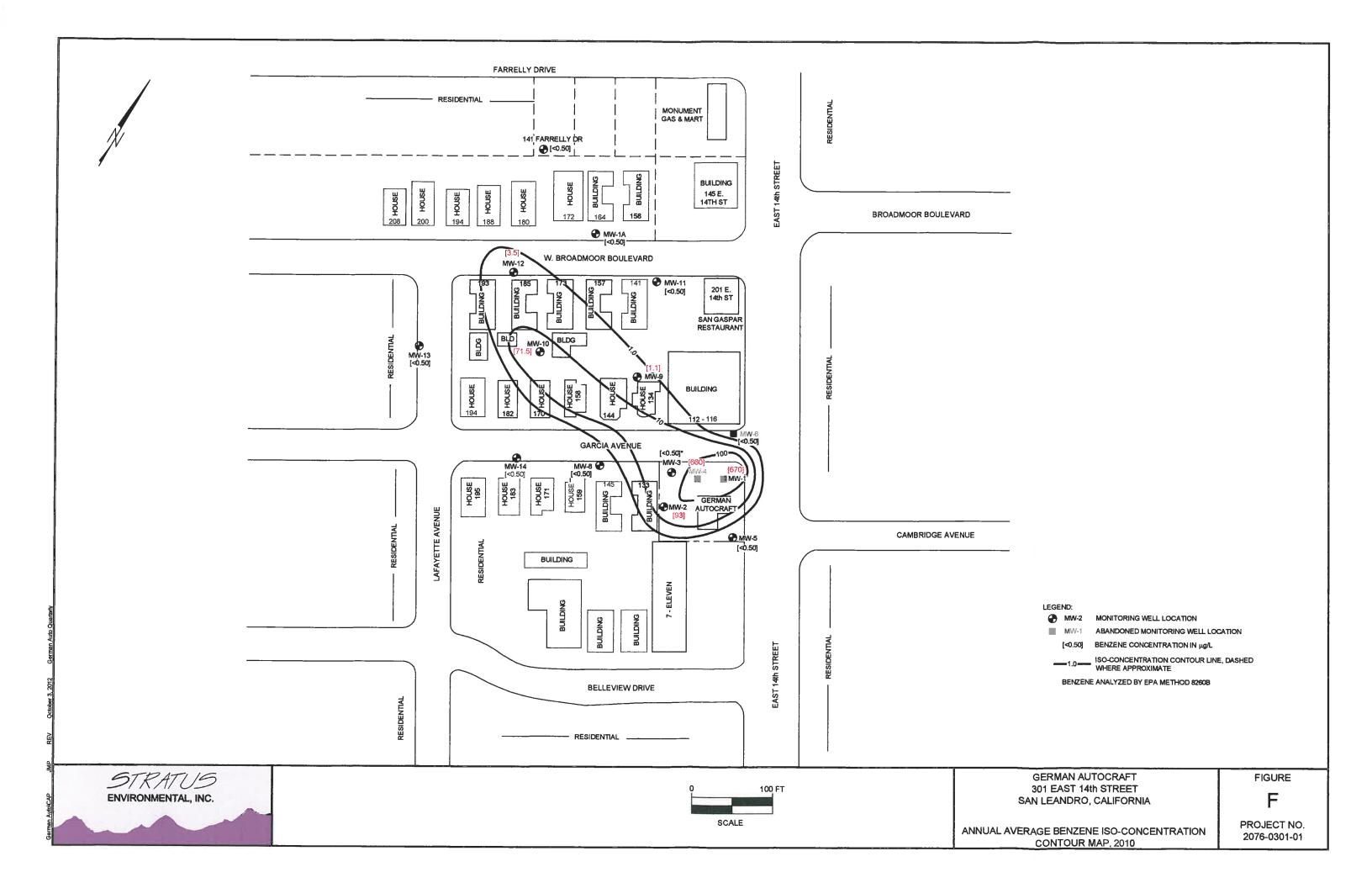








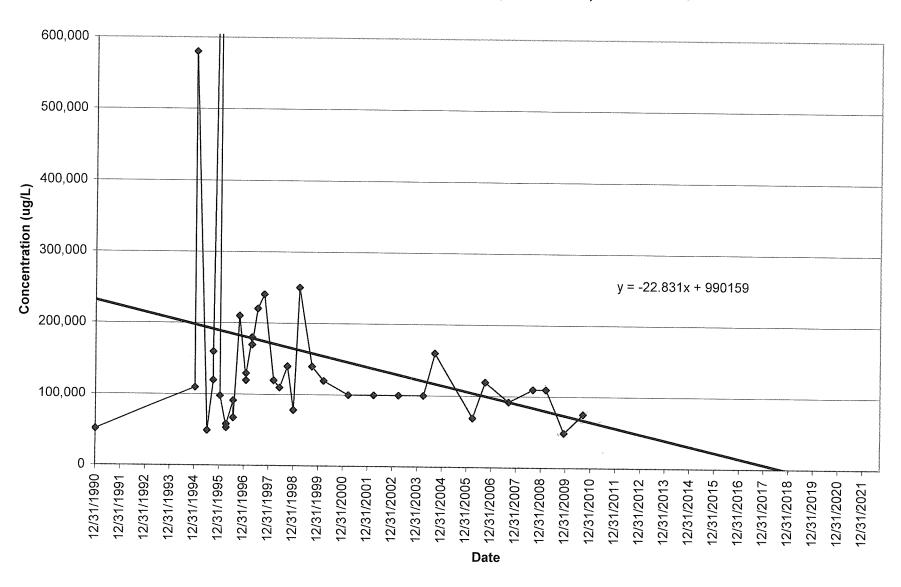




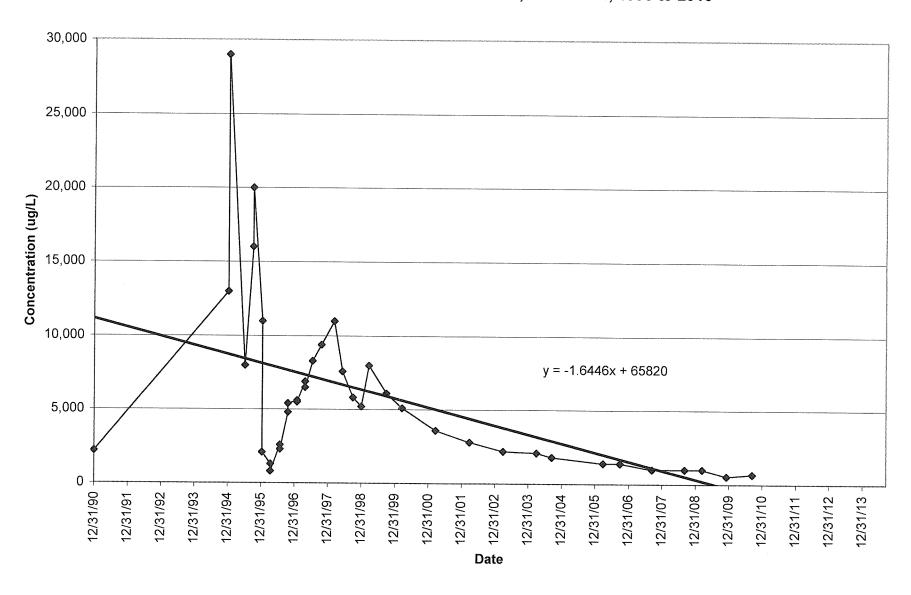
APPENDIX E

GRO AND BENZENE CONCENTRATION VERSUS TIME GRAPHS, WELLS MW-1, MW-3, AND MW-4

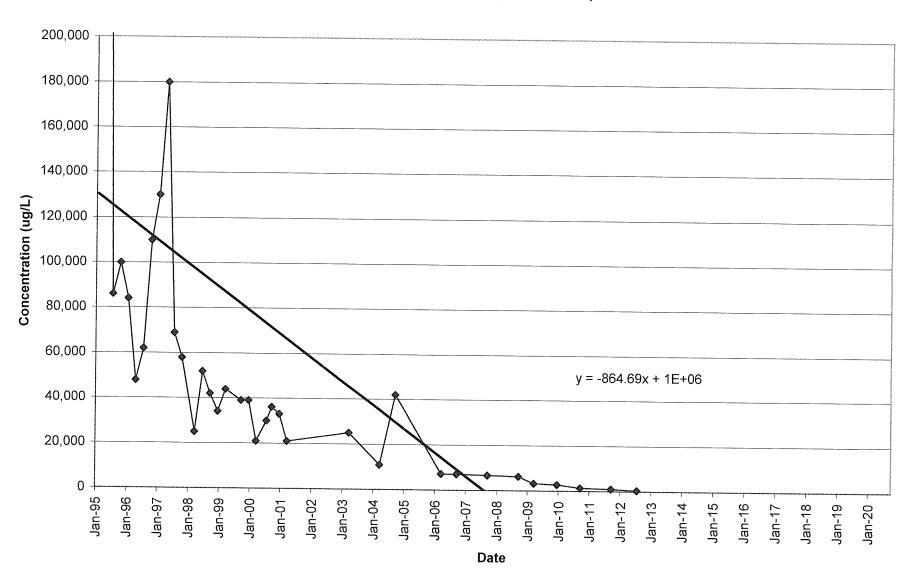
GRO Concentrations in Groundwater, Well MW-1, 1990 to 2010



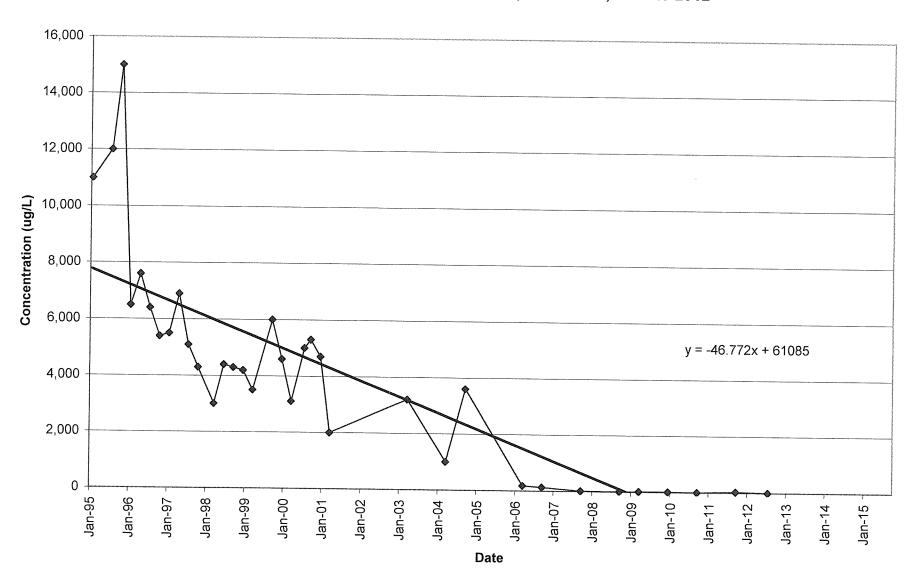
Benzene Concentrations in Groundwater, Well MW-1, 1990 to 2010



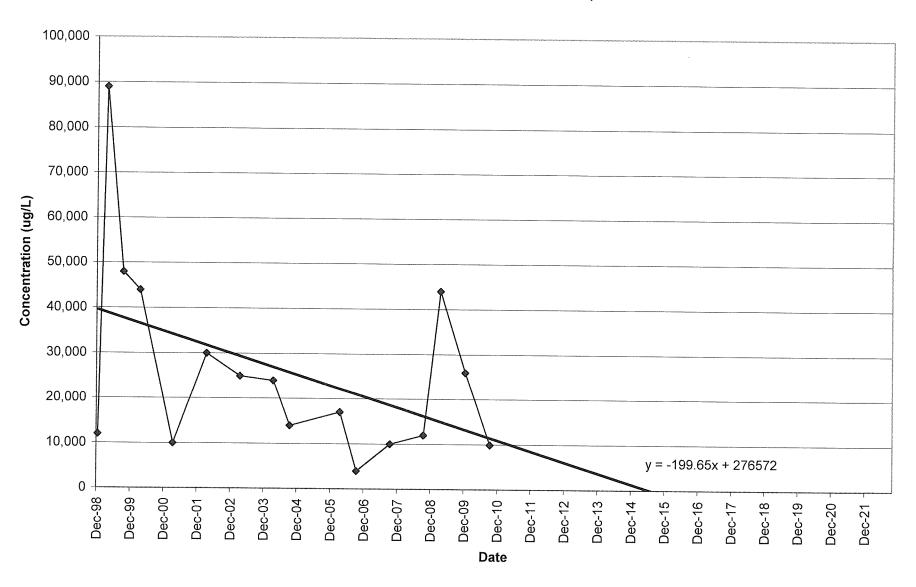
GRO Concentrations in Groundwater, Well MW-3, 1995 to 2012



Benzene Concentrations in Groundwater, Well MW-3, 1995 to 2012



GRO Concentrations in Groundwater, Well MW-4, 1998 to 2010



Benzene Concentrations in Groundwater, Well MW-4, 1998 to 2010

