EBA ENGINEERING
CIVIL & ENVIRONMENTAL ENGINEERS

November 17, 2008

Ms. Joan Fleck
North Coast Regional Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403

SUBJECT: REPORT OF FINDINGS
SONOMA–MARIN AREA RAIL TRANSIT PROPERTY, 2 FOURTH STREET AND 34 SIXTH STREET, SANTA ROSA, CALIFORNIA
EBA Project No. 08-1528 (8)

Dear Ms Fleck:

EBA Engineering (EBA) is submitting this Report of Findings (Report) on behalf of New Railroad Square LLC. This Report details the findings from the subsurface investigation activities that were proposed in EBA's Subsurface Investigation Work Plan dated September 4, 2008 and subsequently approved by the North Coast Regional Water Quality Control Board in a letter dated September 17, 2008. The work detailed herein was performed to further evaluate the site for potential environmental impairments which in turn could influence redevelopment costs and long-term liability.

If you should have any questions regarding the proposed work scope presented herein, please contact our office at (707) 544-0784.

Sincerely,
EBA ENGINEERING

Paul Nielsen

Timothy Nielsen
for Staff Geologist

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REPORT OF FINDINGS
SONOMA–MARIN AREA RAIL TRANSIT PROPERTY
2 FOURTH STREET AND 34 SIXTH STREET

SANTA ROSA, CALIFORNIA

NOVEMBER 2008

EBA Project No. *08-1528*

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1.0 INTRODUCTION

EBA Engineering (EBA) has contracted with New Railroad Square LLC to prepare this Report of Findings (Report) in relation to the proposed redevelopment of the Sonoma-Marin Area Rail Transit (SMART) property located in Santa Rosa, California, hereinafter referred to as the "project site". This report includes a description of the work performed, a site map showing features relevant to the investigation, graphical boring logs, analytical results, and corresponding conclusions and recommendations. Copies of the corresponding Certified Analytical Reports (CARs) are appended, as well as the results from a geophysical survey performed by NORCAL Geophysical Consultants Inc, (NORCAL). Data from the geophysical survey are summarized in a letter report prepared by NORCAL.

Over the period of roughly one month (i.e., mid-September to mid-October), the scope of work included the performance of a geophysical survey, preliminary assessment of suspect areas, advancement of 80 soil borings, and the collection of soil and groundwater samples for chemical analysis. The work initially addressed recommendations outlined in EBA's September 2008 *Subsurface Investigation Work Plan* ([Work Plan] EBA, 2008b), and was further modified and expanded as subsurface conditions warranted. The work detailed herein was accepted by the North Coast Regional Water Quality Control Board (NCRWQCB) in a letter dated September 17, 2008. This Report assesses the site for environmental impairments that could influence redevelopment costs and long-term liability.

2.0 BACKGROUND

2.1 Project Site Description and History

The seven-acre project site consists of two contiguous parcels of land identified as Sonoma County Assessor Parcel Numbers (APN) 010-171-004 (2 Fourth Street) and 010-166-003 (34 Sixth Street). The project site currently consists of a former railroad yard located in a historic district of downtown Santa Rosa. The properties are bounded on the south by Third Street, on the west by former commercial properties identified herein as the 3 West Third Street and 60 West Sixth Street Warehouses, on the north by West Sixth Street, and on the east by the main line railroad track right-of-way and commercial properties, including Aroma Roasters and Hotel La Rose. Santa Rosa Creek is located approximately 160 feet west of the western project site boundary, on the west side of the adjacent commercial properties. Please refer to Figure 2, Appendix A for an illustration of the general features for both the project site and adjacent properties.

Research suggests the project site was used as a railroad freight depot and maintenance/fueling yard from the late 1800's up until the 1960's. Historically, site structures included the main line track system that occupied the eastern side of the property, several associated railroad spurs and siding, a turntable, warehouses and freight houses. Multiple aboveground and underground fuel and water tanks were located throughout the property. Additionally, a Sanborn Fire Insurance map dated 1885 indicates the Santa Rosa Woolen Mills, which operated until 1906, was located in the northwestern portion of the project site.

Presently, the northern portion of the project site contains rough access ways, fencing, and waste lumber. The San Francisco and North Pacific Railroad line right-of-way and associated tracks trend along the eastern boundary of the project site. A freight house lies along the railroad tracks in the south-central portion of the property. The southern portion of the project site has several north-south trending railroad tracks, which disperse throughout the property as spur and main line tracks. Existing utilities include a sanitary sewer line, which trends axially northward from Third Street to Sixth Street and is fed by tie-ins from both Fourth and Fifth Streets. Both Fourth and Fifth Streets also have storm drains, which extend across the project site and terminate at Santa Rosa Creek to the west.

2.2 Project Site Investigation and Remediation Activities

Environmental investigation and remediation efforts have been conducted at the project site from the late 1980's up until the present. Previous efforts have included the removal of underground storage tanks (USTs), soil and groundwater sampling, and remedial excavations. A substantial amount of this work is summarized in the March 2008 *Phase I Environmental Site Assessment* (EBA, 2008a). A brief list of previous remediation efforts is provided below. Please refer to Figure 2, Appendix A for the locations of the miscellaneous features and areas of work identified in the respective bullet items:

- Extensive investigative activities were performed in the northwest area of the project site at the historic location of the Santa Rosa Woolen Mills facility, which operated in this area from the late 1800's until it was destroyed by fire in the 1906 earthquake. After this time, the area was utilized by the railroad for various uses including fuel storage and fueling operations. Soil samples collected in 2002 as part of an investigation of structures within this area indicated significant concentrations of petroleum hydrocarbons present in soil and groundwater in the area of the fueling structures, the area of the former aboveground fuel storage tank, and the location of a former UST. Impacts to soil were identified as being primarily heavy range petroleum hydrocarbons.

- In September 2001, five on-site and off-site groundwater monitoring wells were installed to characterize impacts to groundwater at the project site. A majority of the monitoring wells were installed in the area of the aforementioned Santa Rosa Woolen Mills facility in the northwest portion of the project site. An upgradient, single-screen monitoring well (SRMW-08) was installed on the eastern portion of the property in the vicinity of the main line railroad tracks.

- From June 2002 to November 2002, an additional characterization was performed in the northwestern area and a fenced enclosure at the property. Soil samples collected from these areas indicated significant concentrations of diesel and motor oil in soil. Proposed remedial options included excavation and removal of accessible impacted soil.

- In October and November 2003, approximately 6,500 cubic yards of impacted soil were removed from several areas of the project site. The most significant remediation efforts targeted the northwestern portion of the project site where several areas were excavated

to remove impacted soil. Source removal activities began in the area of a former wooden UST that is indicated on historic Sanborn maps for the Santa Rosa Woolen Mills facility. During the excavation activities, remnants of the former UST were found and removed, whereupon the excavation was advanced to a total depth of approximately 18 feet below ground surface (BGS). A significant amount of free-phase petroleum hydrocarbon product was encountered on the groundwater surface during the excavation activities. The product and water was subsequently pumped, treated and disposed of to the sanitary sewer. The excavation in this area, which resulted in the removal of approximately 700 cubic yards of impacted materials, proceeded to within 20 feet of the existing Sixth Street Warehouse and was subsequently terminated due to concerns of structure stability. Confirmation soil samples indicated that impacted materials containing significant concentrations of diesel and motor oil remained in place in the excavation sidewalls and groundwater in this area.

- Excavation activities in the northwestern portion of the property also included the removal of a fuel pipeline. The associated trench was enlarged as it encountered impacted materials in an area designated as the main pit excavation area. A total of 3,500 cubic yards of impacted materials were removed from this area. The excavation pit extended to depths below first encountered groundwater, which was encountered at approximately 19 feet BGS. The maximum depth attained by the excavation was approximately 22 feet BGS. Impacted groundwater encountered within the excavation pit, which included free-phase petroleum hydrocarbon product, was subsequently removed using pumps, treated, and disposed of to the sanitary sewer.

- Additional excavation was also performed on the south side of the aforementioned product line trench in the northwestern area. Approximately 325 cubic yards of impacted soil was removed from this area.

- Approximately 270 cubic yards of impacted soil was excavated and removed in the southwestern side of the project site identified as the "southern warehouse area".

- Quarterly groundwater monitoring performed in the northwestern portion of the project site property and west into the neighboring property parcel indicated low levels of petroleum hydrocarbons in a monitoring well identified as SRMW-13 located in the northwest corner of the property. In addition, the fuel oxygenate methyl tert-butyl ether (MtBE) was detected in SRMW-8 located on the northeast side of the property. The remaining monitoring wells appear to have been relatively free of impacts during the time monitored.

3.0 PROJECT SITE CONDITIONS

3.1 Regional Geology

The project site is centrally located within the Santa Rosa Plain, which is part of the Coast Range Geomorphic Province of northern California. The Coast Range Geomorphic Province is generally characterized as a series of northwest trending elongated ridges and valleys that are a result of folding and faulting. The Santa Rosa Plain, in turn, consists of alluvial fan deposits of Pleistocene and Holocene age. The alluvial fan deposits form a nearly continuous blanket over the Santa Rosa Plain and consist of poorly sorted coarse sand and gravel, moderately sorted fine sand and silt, and silty clay. The region of the project site has been mapped as having basement materials that underlie the alluvial fan deposits. The basement materials consist of marine sedimentary rocks of the Miocene Age Wilson Grove Formation. Portions of the Wilson Grove Formation are overlain in places by younger continental sedimentary rocks of the Pliocene-Pleistocene Age Glen Ellen Formation (Cardwell, 1958).

3.2 Project Site Geology and Hydrogeology

Previous subsurface investigations have documented that the project site is underlain by sandy silt and clay units from approximately zero to 20 feet BGS. These units, in turn, are underlain by a laterally continuous coarser grained unit composed of sand and gravels extending to approximately 30 feet BGS.

Groundwater has been encountered at depths ranging from seven to 16 feet BGS in on-site soil borings and monitoring wells. Groundwater monitoring has also indicated the groundwater flow direction to be approximately west-southwest towards Santa Rosa Creek.

4.0 SCOPE OF WORK

In accordance with both the Phase I Environmental Site Assessment recommendations (EBA, 2008a) and the objectives outlined in the Work Plan (EBA, 2008b), EBA assessed environmental conditions on the property that were either unknown or not completely characterized as part of previous investigative work performed by others. The following bullet items provide a general chronological synopsis of the work performed:

- A complete geophysical evaluation of the project site was performed to investigate for possible buried objects and debris, utilities, and other anomalies. In addition to canvassing the entire site, specific features of interest were also targeted. These features included an eastward trending buried steel pipeline that was observed in previous work near the western project site boundary (60 West Sixth Street Warehouse), as well as a buried corrugated metal pipe (CMP) structure within the fenced enclosure located in the east-central portion of the project site.

- Suspect areas and anomalies identified by the geophysical survey were further evaluated using an excavator. Findings from the excavation activities included the discovery of a previously undocumented 550-gallon UST. The contents of this UST were subsequently evacuated. The nature of two existing concrete slabs located in the west-central portion of the project site was also evaluated.

- EBA implemented a soil and groundwater sampling program that included the advancement of 75 soil borings at the locations shown on Figure 2 (Appendix A). Borehole depths varied from approximately five to 25 feet BGS and utilized hollow-stem auger (HSA), cone penetration testing (CPT), and Hydropunch® drilling methods, with hand-clearance of boreholes to appropriate depths.

- Select soil samples collected from shallow and intermediate zones were analyzed for Total Petroleum Hydrocarbons as gasoline, diesel, and motor oil (TPH-g TPH-d, and TPH-mo), polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), and California Assessment Manual (CAM) 17 metals. Samples of native soil immediately adjacent to pipe bedding material at selected sanitary sewer and storm drain locations were also collected to evaluate potential impacts from off-site sources.

- Groundwater grab samples, which were collected at 25 locations on the project site from either shallow (15 feet BGS) or deep (25 feet BGS) water-bearing zones, were analyzed for TPH-g, TPH-d, TPH-mo, and VOCs. Groundwater samples were also collected from existing on-site monitoring wells SRMW-07 and SRMW-08, which are screened across both water-bearing zones.

- Additional soil and groundwater grab samples were collected in response to the initial findings from the aforementioned activities. The additional work scope included the advancement of seven soil borings at select locations on the property. These soil borings were advanced in order to better characterize heavy range petroleum hydrocarbon and VOC impacts to soil and groundwater.

The following table provides a summary of soil boring identifications, approximate completion depths, and drilling/sampling methodologies employed as part of the various scopes of work and as described in greater detail in Section 5.0 (*Investigative Procedures*) of this Report.

TABLE A

SOIL BORING ID (Number of Soil Borings)	APPROXIMATE DEPTH (Feet BGS)	SOIL BORING METHOD & TARGET SAMPLES
Deep Groundwater Characterization: SB-1 Through SB-10 (10)	25	CPT/Hydropunch® Deep Groundwater Sample (only)
Shallow Groundwater Characterization: SB-1A Through SB-9A, SB-1B/C/D/E/F, SB-11, SB-13-W, SB-55-W, SB-61-W, SB-28-W, SB-42-W (20)	15	Hollow-stem Auger Shallow Groundwater Sample* Soil samples collected at ~2 and 5 feet BGS, as well as ~10 feet BGS at selected locations.
Soil Characterization (Sanitary Sewer and Storm Drains): SB-12 Through SB-14 (3)	10	Hollow-stem Auger/Hand Auger Soil Sample (only) Soil samples collected at 10 feet BGS.
Shallow Soil Characterization (Railroad Spur and Other Miscellaneous Locations): SB-18 Through SB-61, SB-30A/B, SB-45B (47)	5	Hollow-stem Auger/Hand Auger Soil Sample (only) Soil samples collected at ~2 and 5 feet BGS
Suspect Areas/Anomalies: S-N-Gate@2' and 3', S-FE@1' (3)	3	Excavator Soil Samples (only) Soil samples collected at 1, 2, or 3 feet BGS

* = No groundwater samples were collected from SB-5A, SB-9A, SB-61-W and SB-42-W due to dry conditions. In addition, no groundwater samples were collected from SB-1C/E/F due to the close proximity of prior groundwater sampling.

CPT = Cone Penetration Test.

~ = Approximately.

BGS = Below Ground Surface.

5.0 INVESTIGATIVE PROCEDURES

The following subsections provide a detailed description of the investigative procedures employed to implement the scope of work outlined in Section 4.0 (*Scope of Work*) of this Report.

5.1 Geophysical Survey

On August 29 and 30 and September 2, 2008, NORCAL performed a geophysical survey at the project site. The geophysical survey was accomplished by traversing the project site on a 5-foot by 10-foot grid using a magnetometer (MAG) and electromagnetic terrain conductivity meter (EM) to define localized magnetic and conductivity variations (anomalies) that might be caused by metallic and non-metallic subsurface sources. Based on these results, ground penetrating radar (GPR) was locally used to further define the nature of possible sources in terms of approximate dimensions and depth. Additionally, electromagnetic line locating methods (EMLL) were used to locate utilities and for correlation with the MAG, EM, and GPR results. The locations of all suspected subsurface features were documented on a scaled site plan. The two-person crew headed by a California Professional Geophysicist performed the field survey under the supervision of EBA.

5.2 Evaluation of Suspect Areas

Suspect areas and anomalies identified by the geophysical survey, as well as concrete structures located in the west-central portion of the project site and in the fenced enclosure, were evaluated using an excavator. On September 29 and October 1, 2008, EBA supervised John's Excavating (John's) of Santa Rosa, California in the exploration activities. In each case, the scope of work associated with this task was limited to diagnosing the respective features by excavating the area in question, then integrating subsequent sampling and testing services if deemed warranted. Following each exploration, the excavation was backfilled to ground surface using the excavation spoils. In regards to the concrete slab locations, the concrete slabs were broken up and stockpiled on-site adjacent to the corresponding excavation. Metal pipes and debris were also stockpiled on-site adjacent to the corresponding excavations in a similar manner. It should be noted that the eastward trending pipe observed in previous work near the western project site boundary (60 West Sixth Street Warehouse) was not found during the excavation activities. However, a previously unknown steel pipe was uncovered near the northeast corner of the 3 West Third Street Warehouse (Figure 2, Appendix A).

5.3 Utility Clearance and Permitting

Prior to the start of drilling activities, the project site was marked for Underground Service Alert (USA) and a drilling permit was obtained from the County of Sonoma Department of Health Services–Environmental Health Division.

5.4 Drilling and Soil Sample Collection

On September 16 through 25 and October 15, 2008, EBA supervised Clear Heart Drilling of Santa Rosa, California in soil boring advancement at the project site. The shallow soil borings (i.e., 15 feet BGS or less) were drilled using a conventional rotary auger drill rig equipped with HSAs. The upper five feet BGS of the soil profile was continuously sampled and screened in the field for VOCs using a photo-ionization detector (PID). With few exceptions, two (2) soil samples were collected in the upper five feet BGS and retained for chemical analysis. The soil samples retained for chemical analysis were collected in 2-inch diameter by 6-inch long stainless

steel tubes, sealed, capped, and labeled pending transport under chain-of-custody (COC) procedures to K Prime Inc., (K Prime) a California State-certified laboratory. Soil samples selected for VOC analysis were retained in Encore® samplers in accordance with Environmental Protection Agency (EPA) Method 5035.

Please note that the above sampling scheme does not pertain to soil borings SB-12 through SB-14, which targeted the sanitary sewer and storm drain locations. In the case of these soil borings, soil samples retained for chemical analysis were limited to the actual pipe bedding backfill material or soil in proximity of the pipe invert depth. Similarly, select step-out soil borings were advanced for a specific purpose that included separate sampling protocols. These included the step-out and follow-up soil borings SB-30A/B, SB-1B/C/D/E/F, SB-13-W, SB-55-W, SB-61-W, SB-28-W, and SB-42-W.

Each of the soil borings were logged in accordance with the Unified Soil Classification System (USCS) and recorded on a geologic boring log. Cuttings generated during drilling activities were retained and stored on-site in properly labeled DOT 17H 55-gallon steel drums pending characterization and disposal.

5.5 Shallow Groundwater Grab Sample Collection

Shallow groundwater grab samples were collected by advancing the respective boreholes approximately three feet below first encountered groundwater, whereupon the borehole tooling was retracted several feet and temporary polyvinyl chloride (PVC) slotted well casing was placed in the borehole. Following placement of the PVC casing, a groundwater grab sample was collected using a disposable bailer. The depth to groundwater within the temporary slotted casing was measured to the nearest 0.1 foot BGS prior to sample collection and recorded on the geologic boring logs.

Upon sample collection, the groundwater grab samples were transferred directly into laboratory-supplied containers from the bailer using a bottom-fitting dispenser to minimize volatilization and agitation of the sample. The sample containers were then labeled and placed under refrigerated conditions pending transport under COC procedures to K Prime for chemical analysis.

5.6 Deep Groundwater Grab Sample Collection

On October 6 and 7, 2008, EBA supervised Gregg Drilling and Testing Inc. (Gregg) in the advancement of ten CPT soil borings and the collection of deep groundwater grab samples using Hydropunch® sampling techniques. CPT drilling involves the advancement of a steel rod equipped with a cone tip that is capable of measuring miscellaneous lithologic parameters including Cone Bearing Pressure (Qc), Sleeve Friction (Fs), Pore Water Pressure (U), and Dual-Axis Inclination. The CPT rig and support truck are completely self-contained with an on-board water supply, steam cleaner, and decontamination station. The maximum depths of the CPT soil borings were approximately 25 feet BGS.

Data generated by the CPT drilling allowed EBA to evaluate the thickness and lithological characteristics of the stratigraphy at each of the respective CPT soil boring locations. This information was used to determine the depth of discrete groundwater sampling locations. Upon termination of the CPT soil boring, a second soil boring, located several feet from the previous soil boring, was advanced using the CPT rig and groundwater grab samples were collected using a Hydropunch® discrete groundwater sampling device at the target depth interval as identified in the initial CPT soil boring. This protocol was repeated at each of the CPT soil boring locations. Please refer to Appendix E for Gregg's *CPT Site Investigation Report* for graphical CPT boring logs and a description of the CPT methodology.

Groundwater grab samples were collected from the Hydropunch® discrete sampling device using a small diameter polyethylene bailer. Upon sample collection, the groundwater grab samples were transferred directly into laboratory-supplied containers from the bailer using a bottom-fitting dispenser to minimize volatilization and agitation of the sample. The sample containers were then labeled and placed under refrigerated conditions pending transport under COC procedures to K Prime for chemical analysis.

5.7 Monitoring Well Sampling

The existing on-site monitoring wells SRMW-07 and SRMW-08 were sampled by EBA on October 2, 2008 in accordance with EBA's Standard Operating Procedures for Groundwater Monitoring (SOPs) enclosed in Appendix F. Please refer to these SOPs for specific details regarding the various sampling protocols. Data compiled during the sampling activities were recorded on field sampling data sheets. Copies of the field sampling data sheets are included in Appendix G. All purge water generated during well sampling activities was retained and stored on-site in properly labeled DOT 17H 55-gallon steel drums pending characterization and subsequent disposal.

5.8 Equipment Decontamination and Borehole Abandonment

The drilling and sampling equipment was cleaned before drilling each soil boring to minimize the possibility of cross contamination. In addition, the sampling equipment was cleaned prior to collecting each soil sample with a tri-sodium phosphate solution and a potable water rinse. Equipment and tooling was cleaned on-site within a plastic-lined containment area. Decontamination water generated by the cleaning operations was retained and stored on-site in properly labeled DOT 17H 55-gallon steel drums pending characterization and disposal.

Upon completion of drilling and sampling activities, each of the HSA, CPT and hand augered soil borings were backfilled with cement grout to grade.

5.9 Analytical Testing

Each soil sample retained for chemical analysis was analyzed for TPH-d and TPH-mo using EPA Methods 8015DRO and 8015HRO, respectively. In addition, four soil samples were analyzed for TPH-g using EPA Method 8015GRO. Finally, soil samples from every fifth soil boring and other select locations were analyzed for the full list of VOCs and fuel oxygenates using EPA Method

8260B, PAHs using EPA Method 3550/8270, and CAM 17 metals (antimony, arsenic, barium, beryllium, cadmium chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium and zinc) using EPA Method 6010/7000. In the case of PAHs and CAM 17 metals, only the shallow soil sample from each soil boring was analyzed initially, followed by analysis of the deeper soil sample if elevated concentrations were detected in the shallow sample.

The groundwater samples collected for chemical analysis were analyzed for TPH-d, TPH-mo, and TPH-g using EPA Methods 8015DRO, 8015HRO, and 8015GRO respectively, as well as for the full list of VOCs and fuel oxygenates using EPA Method 8260.

6.0 FINDINGS

6.1 Geology and Hydrogeology

The geology of the project site is generally characterized by shallow (one to two feet BGS) rocky fill underlain by various lithologies including sandy silt and clayey sediments that contain varying amounts of angular to sub-rounded gravel. These finer-grained sediments extend to approximately 20 feet BGS, and are underlain by a laterally continuous coarser grained unit, defined in general as sand by the CPT, which extends to at least 25 feet BGS, the maximum depth explored.

The hydrogeology of the project site is likely controlled by aggradational packages of sediments separated by clayey layers. At an average depth of approximately 13 to 15 feet BGS, a thin, laterally extensive sandy unit overlays a similarly laterally extensive clayey bed. This more impervious underlying clay likely acts as a confining layer and inhibits the vertical migration of fluids. Based on this characteristic, the resulting perched groundwater in the more permeable sandy unit at 15 feet BGS was independently sampled from the deeper water-bearing zone that is present at approximately 20 to 25 feet BGS.

Historical groundwater monitoring has indicated the predominant groundwater flow direction to be approximately west-southwest across the project site, towards Santa Rosa Creek. As a result, the eastern portion of the project site is upgradient relative to the western portion.

6.2 Geophysical Survey

Findings from the geophysical survey identified several suspect areas. The most significant anomalies were identified in the west-central, south and north-central portions of the project site. It should be noted that the geophysical data was obscured in some areas of the project site by the presence of fencing, metal debris, buildings and railroad cars. Please refer to the NORCAL geophysical survey report included in Appendix D for a summary of the work performed, as well as maps indicating the suspect areas identified during the survey.

6.3 Evaluation of Suspect Areas

As previously mentioned, a UST was discovered on September 29, 2008 during excavation of the suspect areas. The UST was discovered while investigating a steel pipe that trended east from the northeastern corner of the 3 West Third Street warehouse approximately 50 feet, whereupon it turned towards the north. A second pipe was discovered that trended east-west across the project site. The UST was discovered while uncovering this east-west trending pipe. The UST was buried approximately one-foot BGS and was filled with what appeared to by oil. Given its relatively small size (550 gallons), the UST may have been used for heating oil storage. It should be noted that the UST is located in the west-central portion of the project site in the area identified by the geophysical survey as containing anomalies. The City of Santa Rosa Fire Department (SRFD) and NCRWQCB were notified immediately of the discovery. SRFD and NCRWCB personnel conducted site visits on September 29, 2008. The contents of the UST, which appeared to be comprised of oil, were removed by Maximum Oil Service LLC of Vallejo, California on October 1, 2008. The contents were hauled to Ramos Environmental Services of Sacramento, California, a licensed disposal facility. Disposal documentation was forwarded to the appropriate agencies on October 20, 2008. The UST was subsequently covered with plywood and soil and left in place.

In addition to the UST, several pipes, buried debris and railroad ties were uncovered during this phase of the investigation. When debris was uncovered, its location was documented and the material was generally left in place to be removed during project site development. Notably impacted soil was discovered at the northern portion of the project site and beneath the concrete slab within the fenced enclosure. The impacted material that was excavated in the northern portion of the project site was placed on, and covered with plastic sheeting pending characterization and disposal. Soil samples were obtained from both locations. The remaining suspect areas, including the former fuel island, CMP structure, and concrete structures, did not reveal any significant findings beyond buried wood and railroad ties, bricks, metal and debris. Please refer to Figure 2, Appendix A for the locations of the evaluated areas and sample locations.

6.4 Analytical Results

The tabulated analytical results from this investigation are presented in Tables 1 through 6, Appendix B. The CARs, including quality assurance/quality control (QA/QC), COC documentation, Method Reporting Limits (MRLs) and Reporting Limits (RLs) are included in Appendix I. The following subsections summarize the analytical findings from this investigation.

6.4.1 Soil

Analytical results indicate that approximately 23 percent of the soil samples analyzed contained detectable concentrations of TPH-d and TPH-mo. The TPH-d concentrations ranged from 15.9 to 4,410 milligrams per kilogram (mg/kg), with an average concentration of approximately 860 mg/kg. The TPH-mo concentrations, in turn, ranged from 21.0 to 3,570 mg/kg, with an average concentration of approximately 1,000 mg/kg. With the exception of three locations (SB-26, SB-33 and SB-56), the TPH-d and TPH-mo concentrations typically diminished with depth, and in

many cases declined to nondetectable levels in the deeper soil samples. Whereas the SB-26, SB-33 and SB-56 locations exhibited higher concentrations at depth, these conditions don't appear to be significant (i.e., related to a former UST, etc.) as the concentrations detected are relatively minor (50.2 to 52.7 mg/kg). Other pertinent findings with respect to petroleum hydrocarbons in soil are as follows:

- The SB-1A soil boring location exhibited significant petroleum hydrocarbon impacts to a depth of approximately 14 feet BGS. Step-out soil borings (SB-1B, SB-1C, SB-1D, SB-1E and SB-1F) were advanced around SB-1A in a successful effort to define the lateral and vertical extent of impacts in the area.

- Two soil samples were collected from the northern portion of the project site during the excavation activities (S-N-GATE @2' and S-N-GATE@3'). Analytical results indicated heavy range petroleum hydrocarbons in the shallow soil sample (S-N-GATE@2') with non-detect results for the deeper soil sample (S-N-GATE@3').

- TPH-g was detected in only one of the soil samples (S-FE@1') at a concentration of 402 mg/kg.

A total of 13 soil samples were analyzed for PAHs during this investigation. Analytical results indicated non-detect results with the exception of three locations (SB-1A, SB-8A and SB-60). SB-8A was the only location that warranted analysis of the deeper soil sample due to relatively higher and more consistent PAH concentrations. The resultant soil sample (SB-8A@5') collected at five feet BGS exhibited marked lower concentrations than the 2-foot deep soil sample (SB-8A@2'). Please note that the SB-1A soil sample (SB-1A@7.5') exhibited elevated PAH concentrations. However, subsequent deeper soil samples from SB-1A were not analyzed for PAHs due to the known deeper petroleum hydrocarbon impacts and the expected required future remediation of this area.

In regards to CAM 17 metals, analytical results from this investigation exhibit generally consistent concentrations that are considered indicative of background conditions. The one exception corresponds to the lead concentration detected in soil sample SB-60@2', which exhibited a concentration of 86 mg/kg. The lead concentrations detected in the remaining soil samples ranged from 5.6 to 21.1 mg/kg.

A total of 28 soil samples from 16 locations were analyzed for VOCs during this investigation. Tetrachloroethene (PCE) was the most prevalent of the observed VOCs as exhibited by detections at four of the 16 locations at concentrations ranging from 1.44 to 6.06 micrograms per kilogram (µg/kg). Included in the detectable concentrations of PCE are the soil samples that were collected from the SB-13 sanitary sewer location at a depth of nine feet BGS (SB-13@9') and at depths of ten feet BGS at the SB-28 and SB-61 locations. Please note that VOCs other than PCE were detected at only one location. This location corresponds to the shallow soil sample that was collected from beneath the concrete slab within the fenced enclosure (S-FE@1'). The VOCs detected at this location included m+p xylenes, o-xylene, n-propylbenzene, 1,3,5-trimethylbenzne, 1,2,4-trimethylbenzene, sec-butylbenzene, 4-isopropyltoluene and n-butylbenzene at concentrations ranging from 422 to 12,100 µg/kg. It should be noted, however,

that field observations during the exploratory excavation of this area indicated that the soil impacts were limited in vertical extent as the impacts appeared to diminish with depth.

Please refer to Figure 2, Appendix A for soil boring/sample locations, Appendix I for CARs and Tables 1 through 4, Appendix B for tabulated analytical results.

6.4.2 Groundwater

As previously noted, two water-bearing zones were sampled separately during this investigation. TPH-g, TPH-d, and TPH-mo were detected in only a few of the locations. The most notable of these detections correspond to TPH-d in SB-1 and SB-1A at concentrations of 29.7 and 27.0 milligrams per liter (mg/L), respectively, and TPH-d in SB-55 at a concentration of 2.64 mg/L. The SB-55 location is significant because there was no evidence of shallow soil impacts at this location and it is downgradient from an active leaking underground gasoline storage tank site located at 101 Wilson Street (Hotel La Rose). It should be noted that the SB-55 result was flagged by the laboratory as being a heavier hydrocarbon than gasoline and a lighter hydrocarbon than diesel, thereby suggesting the presence of weathered gasoline.

In regards to VOCs, PCE was detected in 19 of the 25 sampling locations from both shallow (approximately 15 feet BGS) and deep (approximately 25 feet BGS) water-bearing zones. Trichloroethene (TCE) and cis-1,2-dichloroethene (cis-1,2-DCE), both breakdown products of PCE, were also detected at various locations. It should be noted that PCE is also present in several upgradient monitoring wells located as far as approximately 400 feet east of the project site. In addition to the aforementioned chlorinated solvents, methyl tert-butyl ether (MtBE) was detected at various locations at the project site, while other miscellaneous VOCs were also detected at the SB-55-W location.

Please refer to Figure 2, Appendix A for groundwater sampling locations, Appendix I for CARs and Tables 5 and 6, Appendix B for tabulated analytical results.

7.0 DISCUSSION AND CONCLUSIONS

The following subsections summarize the findings and present conclusions from the drilling activities that were conducted during this investigation.

7.1 Soil

The presence of heavy range petroleum hydrocarbons (TPH-d and TPH-mo) in shallow soil at the project site is not surprising given its historic use as a railroad yard and light industrial area. In general, the detected concentrations were observed along the railroad spurs (former and current) and typically decreased with depth, thereby indicating the shallow nature of the impacts. Ultimately, the heavy range petroleum hydrocarbons in soil can be addressed as part of a Soil and Groundwater Management Plan (S&GMP) during site development activities. It should be noted that soil impacts observed during past investigations (i.e., "SRB-20", Geomatrix Consultants [Geomatrix], 2000 and the "Southern Warehouse" and "Fenced Enclosure" areas,

Kennedy/Jenks Consultants, [Kennedy/Jenks], 2004), which included elevated petroleum hydrocarbon concentrations in shallow soil, should also be addressed as part of the S&GMP.

One significant exception to the TPH-d and TPH-mo conditions described above corresponds to the area near SB-1A. The soil impacts in this area appear to extend to a depth of about 14 feet BGS and have been generally defined both laterally and vertically by soil borings SB-1B through SB-1F. The source of the soil impacts are unknown, however, they appear to be the result of a surface spill(s) based on the shallow initial occurrence (two feet BGS) of petroleum hydrocarbons. The elevated concentrations that were detected in this area will require future soil remediation.

In regards to the PAH detections, these compounds are often associated with heavy range petroleum hydrocarbons and their presence in shallow soil is to be expected. The levels of PAHs are generally below the San Francisco Bay Area Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs) and the United States Environmental Protection Agency Region 9 Preliminary Remediation Goals (PRGs). One exception corresponds to the detection of benzo (A) pyrene in soil sample SB-1A@7.5'. As noted earlier in Subsection 6.4.1, this is the area that will require future soil and/or groundwater remediation given the high concentrations of petroleum hydrocarbons that were detected in soil and groundwater. In general, PAHs in soil can be addressed as part of the S&GMP during site development activities.

The various metals detections at the project site appear to be generally indicative of background levels. Whereas the lead concentration detected in soil sample SB-60@2' (86 mg/kg) is elevated as compared to the remaining soil sample locations, it is well below regulatory action levels. Although this level of lead in soil doesn't require special handling, it would require further testing for disposal purposes. This is also true for the background concentrations of chromium detected in the project site soil. It should be noted that the arsenic concentrations in soil are consistent with past investigations (Geomatrix, 2000), as well as background concentrations in California in general (Bradford, et. al., 1996). In this regard, metals in soil can be addressed in the S&GMP during site development activities.

The detections of PCE in shallow soil appear to be randomly distributed along the railroad spurs at the project site. The source of these impacts is unknown but may have been associated with historic railroad operations (i.e., train/parts cleaning, etc.). PCE was also detected in soil adjacent to the sanitary sewer at the eastern edge of the project site. However, this PCE may be related to the sanitary sewer and/or associated pipe bedding material which may be serving as conduits for upgradient sources. This interpretation is supported by the fact that the shallow soil sample from this location (SB-13-W@5') did not contain PCE above the RL. Overall, the PCE concentrations in soil at various locations are well below the PRGs and ESLs for this constituent and can be addressed as part of the S&GMP.

7.2 Groundwater

The shallow and deep water-bearing zones underlying the project site appear to be relatively free of petroleum hydrocarbon impacts with the exception of the heavy range petroleum hydrocarbon

concentrations detected in groundwater in the SB-1/1A and SB-55 areas (presented in Subsection 6.4.2 above). Further details regarding these areas are provided as follows:

- The SB-1A-W (shallow water-bearing zone) concentrations are most likely due to the documented impacts in soil at this location. However, the TPH-d result for SB-1 is significant because the groundwater sample was collected from beneath the previously identified clay layer at a depth of 20 to 24 feet BGS. The clay layer was sampled during the advancement of SB-1A with non-detect results (SB-1A@15'). A possible explanation for this condition may be the presence of preferential pathways to the deeper water-bearing zone that were not observed during the previous drilling and soil sampling activities. Another explanation may be that the location of this soil boring is just south of the excavation work carried out as part of previous remediation efforts (Kennedy/Jenks, 2004). This previous effort culminated in the excavation and removal of approximately 6,500 cubic yards of petroleum hydrocarbon impacted soil, with depths reaching shallow groundwater (15 feet BGS) and below (18 feet BGS). Thus, it is possible that the excavation below the upper impacted soil induced further mobilization of the contaminants by possibly compromising the confining clay layer at approximately 15 feet BGS.

- Soil boring SB-55-W is located on the northeastern (upgradient) portion of the project site. Thus, it appears that the petroleum hydrocarbons detected (weathered gasoline) in groundwater at this location are related to an off-site source, possibly the USTs formerly located and/or abandoned at the Hotel La Rose site.

The remaining groundwater impacts correspond to MtBE and the chlorinated solvents PCE, TCE and cis-1,2-DCE. The presence of these constituents appears to be ubiquitous in the shallow and deep water-bearing zones underlying the project site. However, as for the cause of these impacts, there were no apparent on-site sources identified as part of this investigation. In this regard, the following evaluations are offered:

- Whereas shallow PCE detections were encountered in on-site soils, the concentrations are low and don't appear to represent a source large enough to impact groundwater on a scale as seen in the groundwater sample results.

- PCE was detected in groundwater samples both with and without detectable levels in overlying relevant soil samples.

- Groundwater sample results from the eastern (upgradient) edge of the project site (SB-7A-W, SB-8-W, SB-8A-W, SB-13-W and SRWW-08) exhibit detectable concentrations of PCE and/or TCE, cis-1,2-DCE and MtBE.

- PCE has been detected (February 4, 2008) in five upgradient monitoring wells (MW-12, MW-14, MW-15, MW-16 and 16D) that are associated with another site. The furthest of these monitoring wells (MW-12) is located approximately 400 feet upgradient of the project site. A copy of the CAR documenting the PCE detections in these monitoring wells is enclosed in Appendix J.

Based on these various lines of evidence, it appears that the MtBE and chlorinated solvent impacts to groundwater observed at the project site can likely be attributed to off-site, upgradient sources.

8.0 RECOMMENDATIONS

The following points present recommendations for addressing the pertinent environmental concerns discussed in the previous sections:

- Prepare a UST Removal Work Plan for the discovered oil UST and submit it to the SRFD and NCRWQCB for review and approval. Permit and remove the discovered UST upon receipt of approval and submit a Report of Findings documenting the removal activities, analytical results and conclusions and recommendations.

- Prepare a Soil Remediation Work Plan to address the deep soil impacts encountered in the area of soil boring SB-1A. Implement the work plan under permit and approval from the SRFD and NCRWQCB. Prepare a Report of Findings documenting the soil remediation activities, analytical results and conclusions and recommendations.

- Prepare a S&GMP for use during project site development to address the heavy range petroleum hydrocarbons, PCE, metals, and PAHs in shallow soil. As outlined in a February 23, 2007 NCRWQCB letter to Union Pacific Railroad, the S&GMP must include: "*1) a proposal to remove the known areas of shallow soil impacts, 2) a method to characterize, manage and dispose of any soil/fill material removed from the site for development reasons, and 3) a contingency plan for a potential encounter with newly discovered areas of contaminated soil and/or groundwater, or subsurface piping or structures, during trenching, parking garage construction and property development*". Additionally, the S&GMP "*.....must also include a method to control groundwater, impacted or otherwise, if encountered during the installation of utilities....*". Please refer to Appendix H for a copy of the February 23, 2007 letter. The areas to be addressed in the S&GMP should include, but may not be limited to: the railroad spurs that will be removed during development activities; the area in the "fenced enclosure", including the concrete slab area; the "southern warehouse" area that was documented by Kennedy/Jenks (Kennedy/Jenks, 2004); the SRB-20 area documented by Geomatrix (Geomatrix, 2000); and the north-central area of the project site identified during this investigation. It should be noted that railroad ties are considered special waste and must be disposed of at an appropriate facility. Therefore, any railroad ties that are removed during development activities must be stockpiled and disposed of properly. Finally, the debris encountered during this investigation should be disposed of properly during development activities.

- In regards to groundwater impacts, there are three primary areas of concern at the project site: 1) the area near SB-1; 2) the area near SB-55-W; and 3) the widespread VOC detections in groundwater. EBA recommends that the impacted soil be removed in the

vicinity of SB-1 and shallow groundwater monitoring wells be installed to evaluate the effectiveness of soil remediation on groundwater quality. Furthermore, EBA recommends that deeper screened monitoring wells be installed in the vicinity of SB-1 to evaluate deeper groundwater quality. In regards to the SB-55-W area and the widespread VOC impacts, it appears that these areas are associated with upgradient, off-site sources and that any further investigation that may be required should be the responsibility of others.

9.0 LIMITATIONS

This report was prepared in accordance with generally accepted standards of environmental geological practice at the place and time this investigation was performed. This warranty is in lieu of all other warranties, either expressed or implied. This investigation was conducted solely for the purpose of evaluating environmental conditions of the soil and groundwater with respect to hydrocarbons previously detected at the site. No soil engineering or geotechnical references are implied or should be inferred. Evaluation of the geologic conditions at the site for the purpose of this investigation is made from a limited number of observation points. Subsurface conditions may vary away from the data points available. Additional work, including further subsurface investigation, can reduce the inherent uncertainties associated with this type of investigation. This report has been prepared solely for the Client and any reliance on this report by third parties shall be at such party's sole risk.

When conducting geophysical surveys, it is important to recognize that there are limitations unique to each geophysical method and that it is possible that not all buried objects or substructures may be detected or characterized by any given method. These limitations may include; 1) subsurface targets that are at depths beyond the detection limits of specific instruments; 2) subsurface targets may not provide an adequate contrast in physical properties with the surrounding soils, such as non-metallic pipes, pipes with insulated joints, or pipes underwater; and 3) there may be other features above or below ground, such as metal debris, reinforcement, other nearby utilities, and/or building structures, that cause instrumental interference and do not allow detection of certain subsurface anomalies.

10.0 REFERENCES

Bradford et al., March 1996, *Kearney Foundation of Soil Science, Background Concentrations of Trace and Major Elements in California Soils, University of California Division of Agriculture and Natural Resources*,.

Cardwell, G.T., 1958, *Geology and Ground Water in the Santa Rosa and Petaluma Valley Areas Sonoma County California,* Geological Survey Water-Supply Paper 1427.

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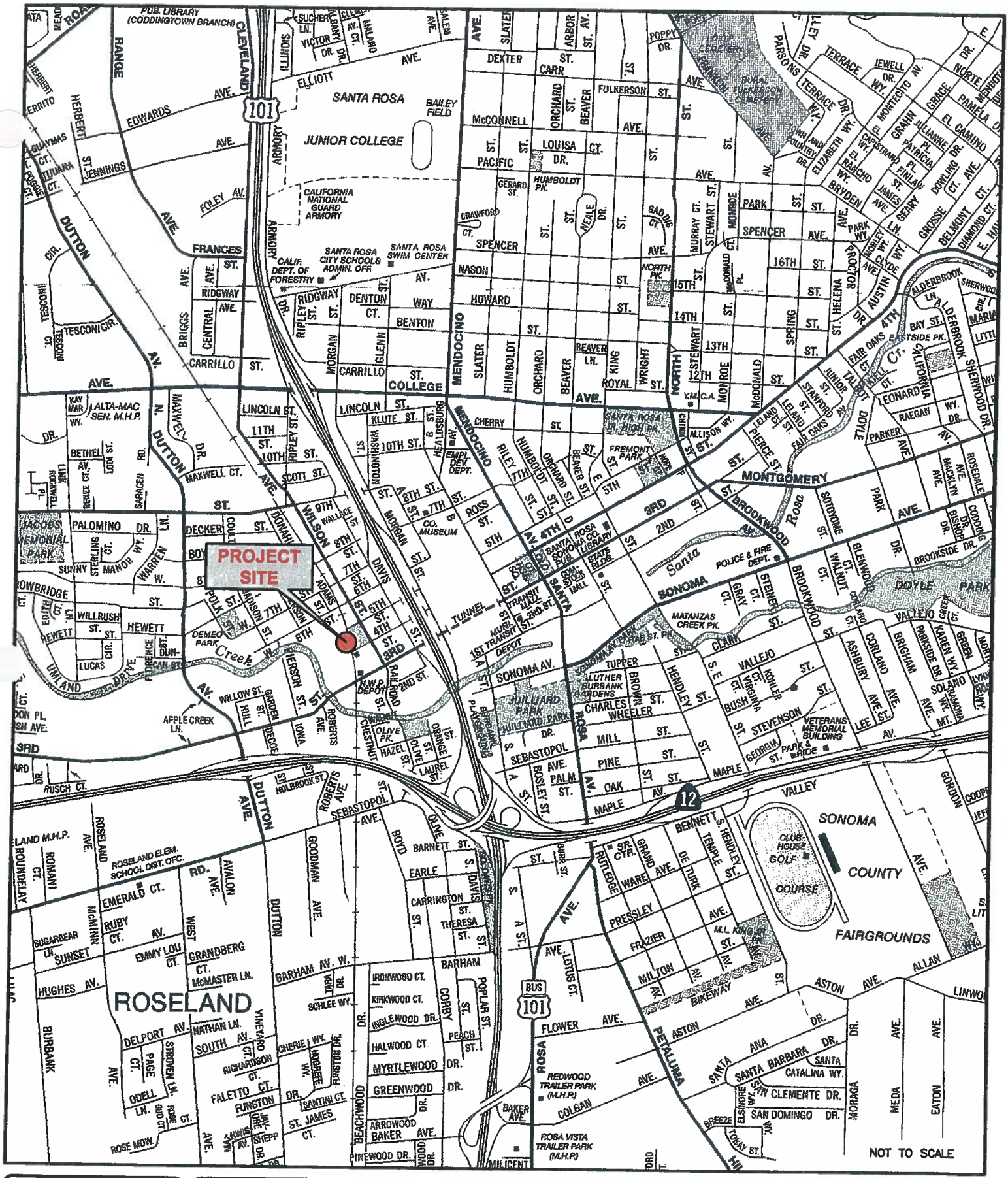
Kennedy/Jenks Consultants, January 2004, *Source Area Removal Report, Santa Rosa Station, Santa Rosa, California.* Kennedy/Jenks, Roseville, California.

APPENDIX A

FIGURES



EBA ENGINEERING

VICINITY MAP

SMART PROPERTY
2 FOURTH AND 34 SIXTH STREETS
SANTA ROSA, CALIFORNIA

FIGURE 1

08-1528

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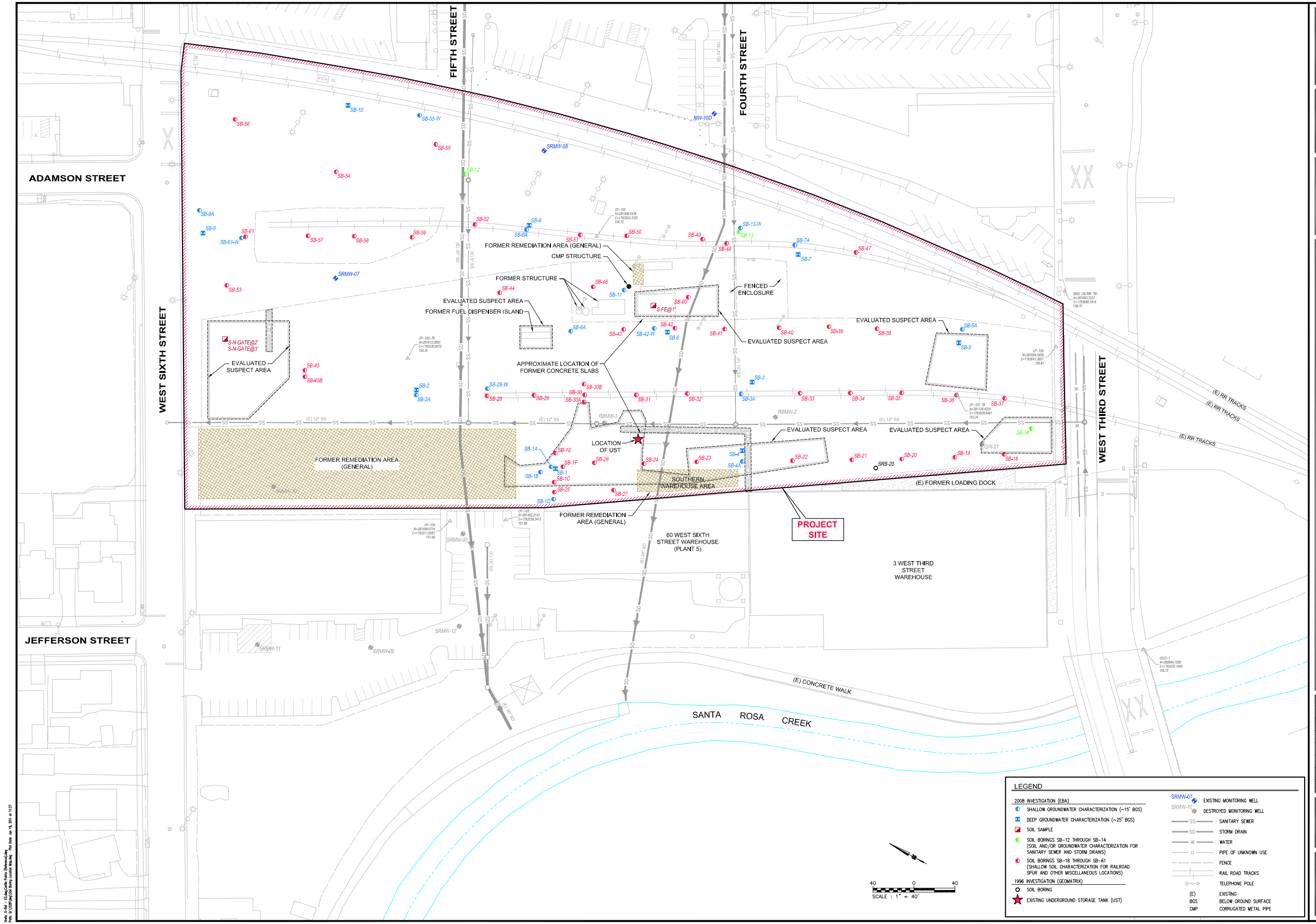

LEGEND

2008 INVESTIGATION (EBA)
- SHALLOW GROUNDWATER CHARACTERIZATION (~15' BGS)
- DEEP GROUNDWATER CHARACTERIZATION (~25' BGS)
- SOIL SAMPLE
- SOIL BORINGS SB-12 THROUGH SB-14 (SOIL AND/OR GROUNDWATER CHARACTERIZATION FOR SANITARY SEWER AND STORM DRAINS)
- SOIL BORINGS SB-18 THROUGH SB-61 (SHALLOW SOIL CHARACTERIZATION FOR RAILROAD SPUR AND OTHER MISCELLANEOUS LOCATIONS)

1996 INVESTIGATION (GEOMATRIX)
- SOIL BORING
- EXISTING UNDERGROUND STORAGE TANK (UST)

SRMW-07 EXISTING MONITORING WELL
SRMW-10 DESTROYED MONITORING WELL
SS SANITARY SEWER
SD STORM DRAIN
W WATER
U PIPE OF UNKNOWN USE
FENCE
RAIL ROAD TRACKS
TELEPHONE POLE
(E) EXISTING
BGS BELOW GROUND SURFACE
CMP CORRUGATED METAL PIPE

EBA ENGINEERING
825 Sonoma Avenue
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SOIL AND GROUNDWATER SAMPLING LOCATION MAP

SMART PROPERTY
2 FOURTH AND 34 SIXTH STREETS
SANTA ROSA, CALIFORNIA

Submittal / Revision:
1.
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Job No: 08-1528
Drawn By: SGH
Checked By: PN
Date: 2008-10-24

Figure 2
2 of 2

Job: 08-1528 - EBA Engineering - Santa Rosa, California
Path: Q:\1528\dwg\Soil Boring Location Map.dwg Plot Date: Jan 19, 2011 at 11:27

APPENDIX B

TABULATED ANALYTICAL RESULTS

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
TPH-d, TPH-mo, and TPH-g
SMART Property, Santa Rosa, California

Sample ID	Date Sampled	TPH-d (mg/kg)	TPH-mo (mg/kg)	TPH-g (mg/kg)
SB-1A@2'	9/16/2008	**385**[AC]	**360**	NA
SB-1A@5.5'	9/16/2008	**2,160**	**1,060**	NA
SB-1A@7.5'	9/16/2008	**4,410**	**2,170**	NA
SB-1A@12'	9/16/2008	**1,880**	**1,010**	NA
SB-1A@15'	9/16/2008	<10.0	<10.0	NA
SB-1B@5'	9/23/2008	<10.0	<10.0	NA
SB-1B@10'	9/23/2008	<10.0	<10.0	NA
SB-1C@8'	9/24/2008	**2,960**[AC]	**3,170**	NA
SB-1C@15'	9/24/2008	**41.8**	**21.0**	NA
SB-1D@15'	9/24/2008	<10.0	<10.0	NA
SB-1E@5'	9/24/2008	**99.3**[AC]	**304**	NA
SB-1E@14'	9/24/2008	**32.9**	**31**	NA
SB-1F@5'	9/24/2008	<10.0	<10.0	NA
SB-1F@14'	9/24/2008	<10.0	<10.0	NA
SB-2A@2'	9/17/2008	**1,460**[AC]	**2,460**	NA
SB-2A@5'	9/17/2008	<10.0	<10.0	NA
SB-3A@2'	9/17/2008	<10.0	**43.8**	NA
SB-3A@5'	9/17/2008	<10.0	<10.0	NA
SB-4A@2'	9/18/2008	**20.4**	<10.0	NA
SB-4A@5'	9/18/2008	<10.0	<10.0	NA
SB-5A@2'	9/18/2008	<10.0	<10.0	NA
SB-5A@6'	9/18/2008	<10.0	<10.0	NA
SB-6A@2'	9/19/2008	<10.0	<10.0	NA
SB-6A@5'	9/19/2008	<10.0	<10.0	NA
SB-7A@2'	9/22/2008	<10.0	<10.0	NA
SB-7A@5'	9/22/2008	<10.0	<10.0	NA
SB-8A@2'	9/22/2008	<10.0	<10.0	NA
SB-8A@5'	9/22/2008	<10.0	<10.0	NA
SB-9A@2'	9/23/2008	<10.0	<10.0	NA
SB-9A@5'	9/23/2008	<10.0	<10.0	NA
SB-11@9.5'	9/24/2008	<10.0	<10.0	NA
SB-11@15.5'	9/24/2008	<10.0	<10.0	NA
SB-12@8'	9/24/2008	<10.0	<10.0	<1.00
SB-13@9'	9/24/2008	<10.0	<10.0	<1.00
SB-14@11'	9/24/2008	<10.0	<10.0	<1.00
SB-18@2'	9/16/2008	<10.0	<10.0	NA
SB-18@5'	9/16/2008	<10.0	<10.0	NA
SB-19@2'	9/16/2008	<10.0	<10.0	NA
SB-19@6'	9/16/2008	<10.0	<10.0	NA
SB-20@2'	9/16/2008	<10.0	<10.0	NA
SB-20@5'	9/16/2008	<10.0	<10.0	NA
SB-21@2'	9/16/2008	**570**[AC]	**1,110**	NA
SB-21@5'	9/16/2008	<10.0	<10.0	NA
SB-22@2'	9/16/2008	<10.0	<10.0	NA
SB-22@5'	9/16/2008	<10.0	<10.0	NA
SB-23@3'	9/16/2008	<10.0	<10.0	NA
SB-23@5'	9/16/2008	<10.0	<10.0	NA
SB-24@2'	9/16/2008	**546**[AC]	**3,240**	NA
SB-24@5'	9/16/2008	**56.2**[AC]	**79.2**	NA
SB-25@2'	9/16/2008	**238**	**228**	NA
SB-25@5'	9/16/2008	<10.0	<10.0	NA
SB-26@2'	9/17/2008	<10.0	**48.3**	NA
SB-26@5.5'	9/17/2008	**52.2**[AC]	**84.1**	NA
SB-27@2'	9/17/2008	**98.3**[AC]	**283**	NA
SB-27@5.5'	9/17/2008	**32.4**	**24.0**	NA
SB-28@2'	9/17/2008	**936**[AC]	**1,780**	NA
SB-28@5'	9/17/2008	<10.0	<10.0	NA
SB-29@2'	9/17/2008	**2,340**[AC]	**3,570**	NA
SB-29@5'	9/17/2008	<10.0	<10.0	NA
SB-30@2'	9/17/2008	**1,150**	**621**	NA
SB-30@4'	9/17/2008	**474**	**280**	NA
SB-30@7'	9/17/2008	<10.0	<10.0	NA
SB-30A@5'	9/24/2008	<10.0	<10.0	NA
SB-30B@5'	9/24/2008	<10.0	<10.0	NA
SB-31@2'	9/17/2008	**318**[AS]	**715**	NA
SB-31@5'	9/17/2008	<10.0	<10.0	NA
SB-32@2'	9/17/2008	<10.0	<10.0	NA
SB-32@5'	9/17/2008	<10.0	<10.0	NA
SB-33@2'	9/18/2008	<10.0	<10.0	NA
SB-33@5'	9/18/2008	**50.2**[AC]	**138**	NA

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
TPH-d, TPH-mo, and TPH-g
SMART Property, Santa Rosa, California

Sample ID	Date Sampled	TPH-d (mg/kg)	TPH-mo (mg/kg)	TPH-g (mg/kg)
SB-34@2'	9/18/2008	**32.3**[AN]	<10.0	NA
SB-34@7'	9/18/2008	<10.0	<10.0	NA
SB-35@2'	9/18/2008	<10.0	<10.0	NA
SB-35@5'	9/18/2008	<10.0	<10.0	NA
SB-36@2'	9/18/2008	<10.0	<10.0	NA
SB-36@5'	9/18/2008	<10.0	<10.0	NA
SB-37@2'	9/18/2008	<10.0	<10.0	NA
SB-37@5'	9/18/2008	<10.0	<10.0	NA
SB-38@2'	9/18/2008	<10.0	<10.0	NA
SB-38@5'	9/18/2008	<10.0	<10.0	NA
SB-39@2'	9/18/2008	<10.0	<10.0	NA
SB-39@5'	9/18/2008	<10.0	<10.0	NA
SB-40@2'	9/19/2008	<10.0	<10.0	NA
SB-40@5'	9/19/2008	<10.0	<10.0	NA
SB-41@2'	9/19/2008	<10.0	<10.0	NA
SB-41@5'	9/19/2008	<10.0	<10.0	NA
SB-42@2'	9/19/2008	<10.0	<10.0	NA
SB-42@5'	9/19/2008	<10.0	<10.0	NA
SB-43@2'	9/19/2008	**15.9**	<10.0	NA
SB-43@5'	9/19/2008	<10.0	<10.0	NA
SB-44@2'	9/19/2008	<10.0	<10.0	NA
SB44@5'	9/19/2008	<10.0	**46.0**	NA
SB-45@2'	9/19/2008	<10.0	<10.0	NA
SB-45@5'	9/19/2008	<10.0	<10.0	NA
SB-45B@5'	9/23/2008	<10.0	<10.0	NA
SB-46@2'	9/19/2008	<10.0	<10.0	NA
SB-46@5'	9/19/2008	<10.0	<10.0	NA
SB-47@2'	9/22/2008	<10.0	<10.0	NA
SB47@5'	9/22/2008	<10.0	<10.0	NA
SB-48@2'	9/22/2008	**44.2**	<10.0	NA
SB-48@6'	9/22/2008	<10.0	<10.0	NA
SB-49@2'	9/22/2008	<10.0	<10.0	NA
SB-49@5'	9/22/2008	<10.0	<10.0	NA
SB-50@2'	9/22/2008	<10.0	<10.0	NA
SB-50@5'	9/22/2008	<10.0	<10.0	NA
SB-51@2'	9/22/2008	<10.0	<10.0	NA
SB-51@5'	9/22/2008	<10.0	<10.0	NA
SB-52@2'	9/22/2008	<10.0	<10.0	NA
SB-52@5'	9/22/2008	<10.0	<10.0	NA
SB-53@2'	9/22/2008	<10.0	<10.0	NA
SB-53@5'	9/22/2008	<10.0	<10.0	NA
SB-54@2'	9/23/2008	<10.0	<10.0	NA
SB-54@5'	9/23/2008	<10.0	<10.0	NA
SB-55@2'	9/23/2008	<10.0	<10.0	NA
SB-55@5'	9/23/2008	<10.0	<10.0	NA
SB-56@2'	9/23/2008	<10.0	**38.9**	NA
SB-56@5'	9/23/2008	**52.7**[AC]	**126**	NA
SB-57@2'	9/23/2008	<10.0	<10.0	NA
SB-57@5'	9/23/2008	<10.0	<10.0	NA
SB-58@2'	9/23/2008	<10.0	<10.0	NA
SB-58@5'	9/23/2008	<10.0	<10.0	NA
SB-59@2'	9/23/2008	**2,270**[AC]	**3,550**	NA
SB-59@5'	9/23/2008	<10.0	**36.5**	NA
SB-60@2'	9/23/2008	<10.0	<10.0	NA
SB-60@5'	9/23/2008	<10.0	<10.0	NA
SB-61@2'	9/23/2008	<10.0	<10.0	NA
SB-61@5'	9/23/2008	<10.0	<10.0	NA
S-N-GATE@2'	9/29/2008	**2,530**[AC]	**3,400**	NA
S-N-GATE@3'	9/29/2008	<10.0	<10.0	NA
S-FE@1'	9/29/2008	**615**[AK, AC]	**1,060**	**402**

NA = Not Analyzed
TPH-g = Total Petroleum Hydrocarbons as gasoline.
TPH-d = Total Petroleum Hydrocarbons as diesel.
TPH-mo = Total Petroleum Hydrocarbons as motor oil.
mg/kg = milligrams per kilogram.
AC = Heavier hydrocarbons contributing to diesel range quantitation.
AK = Lighter hydrocarbon than diesel.
AN = Unknown hydrocarbon with several peaks.

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS
SMART Property, Santa Rosa, California

Sample ID	Date Sampled	Acenaphthene	Acenaphthylene	Anthracene	Benzo (A) Anthracene	Benzo (B) Fluoranthene	Benzo (K) Fluoranthene	Benzo (A) Pyrene	Benzo (G,H,I) Perylene	Chrysene	Dibenzo (A,H) Anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-CD) Pyrene	Naphthalene	Phenanthrene	Pyrene
		µg/kg															
SB-1A@7.5'	9/16/2008	**212**	**102**	<5.00	**131**	<5.00	<5.00	**43.2**	**70.7**	**69.2**	<20.0	**32.6**	**85.3**	**28.1**	**82.3**	**18.5**	**139**
SB-5A@2'	9/18/2008	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<10.0	<2.50	<10.0	<2.50	<2.50	<10.0	<2.50	<2.50	<2.50
SB-8A@2'	9/22/2008	<2.50	<2.50	**3.33**	**8.39**	**4.89**	**4.58**	**11.5**	<10.0	**9.81**	<10.0	**14.2**	<2.50	<10.0	<2.50	**5.04**	**17.0**
SB-8A@5'	9/22/2008	<2.50	<2.50	<2.50	**3.99**	<2.50	<2.50	**3.26**	<10.0	**2.94**	<10.0	**3.25**	<2.50	<10.0	<2.50	<2.50	**3.55**
SB-11@9.5'	9/24/2008	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<10.0	<2.50	<10.0	<2.50	<2.50	<10.0	<2.50	<2.50	<2.50
SB-11@15.5'	9/24/2008	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<10.0	<2.50	<10.0	<2.50	<2.50	<10.0	<2.50	<2.50	<2.50
SB-18@2'	9/16/2008	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<10.0	<2.50	<10.0	<2.50	<2.50	<10.0	<2.50	<2.50	<2.50
SB-25@2'	9/16/2008	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<10.0	<2.50	<10.0	<2.50	<2.50	<10.0	<2.50	<2.50	<2.50
SB-28@2'	9/17/2008	<25.0	<25.0	<25.0	**34.6**	<25.0	<25.0	**360**	**670**	**79.4**	<100	<25.0	<25.0	<100	<25.0	**27.6**	<25.0
SB-28@5'	9/17/2008	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<10.0	<2.50	<10.0	<2.50	<2.50	<10.0	<2.50	<2.50	<2.50
SB-34@2'	9/18/2008	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<10.0	<2.50	<10.0	<2.50	<2.50	<10.0	<2.50	<2.50	<2.50
SB-45@2'	9/19/2008	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<10.0	<2.50	<10.0	<2.50	<2.50	<10.0	<2.50	<2.50	<2.50
SB-47@2'	9/22/2008	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<10.0	<2.50	<10.0	<2.50	<2.50	<10.0	<2.50	<2.50	<2.50
SB-56@2'	9/23/2008	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<10.0	<2.50	<10.0	<2.50	<2.50	<10.0	<2.50	<2.50	<2.50
SB-60@2'	9/23/2008	<2.50	<2.50	<2.50	**4.42**	<2.50	<2.50	<2.50	<10.0	<2.50	<10.0	**3.54**	<2.50	<10.0	<2.50	<2.50	**4.77**
SB-61@2'	9/23/2008	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<10.0	<2.50	<10.0	<2.50	<2.50	<10.0	<2.50	<2.50	<2.50

µg/kg = micrograms per kilogram.

TABLE 3
SOIL SAMPLE ANALYTICAL RESULTS
CAM 17 Metals
SMART Property, Santa Rosa, California

Sample ID	Date Sampled	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Selenium (Se)	Silver (Ag)	Thallium (Tl)	Vanadium (V)	Zinc (Zn)
		mg/kg																
SB-5A@2'	9/18/2008	<2.50	3.76	172	<2.50	<2.50	61.1	16.6	26.1	21.1	<0.100	<2.50	73.8	<2.50	<2.50	<2.50	59.0	46.6
SB-8A@2'	9/22/2008	<2.50	4.92	216	<2.50	<2.50	107	23.2	33.1	8.02	<0.100	<2.50	169	<2.50	<2.50	<2.50	64.8	63.8
SB-11@9.5'	9/25/2008	<2.50	2.69	191	<2.50	<2.50	119	16.9	22.6	6.82	<0.100	<2.50	141	<2.50	<2.50	<2.50	44.4	48.8
SB-11@15.5'	9/25/2008	<2.50	<2.50	161	<2.50	<2.50	83.7	10.7	23.4	6.82	<0.100	<2.50	117	<2.50	<2.50	<2.50	38.5	47.1
SB-18@2'	9/16/2008	<2.50	2.92	128	<2.50	<2.50	78.3	13.1	22.2	7.35	<0.100	<2.50	89.8	<2.50	<2.50	<2.50	43.2	46.0
SB-18@5'	9/16/2008	<2.50	5.25	185	<2.50	<2.50	98.2	17.9	24.5	5.60	<0.100	<2.50	135	<2.50	<2.50	<2.50	58.8	49.8
SB-25@2'	9/16/2008	<2.50	<2.50	71.5	<2.50	<2.50	30.5	9.88	33.9	20.6	<0.100	<2.50	54.3	<2.50	<2.50	<2.50	35.7	48.4
SB-28@2'	9/17/2008	<2.50	2.72	34.4	<2.50	<2.50	28.7	7.43	13.9	12.4	<0.100	<2.50	61.9	<2.50	<2.50	<2.50	24.5	26.4
SB-34@2'	9/18/2008	<2.50	2.84	170	<2.50	<2.50	63.7	14.0	23.6	6.58	<0.100	<2.50	79.1	<2.50	<2.50	<2.50	47.7	43.7
SB-45@2'	9/19/2008	<2.50	3.56	157	<2.50	<2.50	64.3	15.5	24.0	8.35	<0.100	<2.50	84.5	<2.50	<2.50	<2.50	47.1	44.7
SB-47@2'	9/22/2008	<2.50	3.94	168	<2.50	<2.50	62.8	18.0	22.5	5.98	<0.100	<2.50	91.2	<2.50	<2.50	<2.50	46.5	49.6
SB-56@2'	9/23/2008	<2.50	5.20	124	<2.50	<2.50	110	23.0	30.5	7.44	<0.100	<2.50	165	<2.50	<2.50	<2.50	64.3	61.2
SB-60@2'	9/23/2008	<2.50	5.03	147	<2.50	<2.50	79.1	18.9	48.2	86.0	0.255	<2.50	118	<2.50	<2.50	<2.50	54.3	49.1
SB-61@2'	9/23/2008	<2.50	4.95	209	<2.50	<2.50	107	22.6	31.8	8.53	<0.100	<2.50	154	<2.50	<2.50	<2.50	64.0	64.2

mg/kg = milligrams per kilogram.
CAM = California Assessment Manual.

TABLE 4
SOIL SAMPLE ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
SMART Property, Santa Rosa, California

Sample ID	Date	Units	PCE	Other VOCs
SB-1A@7.5'	9/16/08	µg/kg	<200	*
SB-5A@2'	9/18/08	µg/kg	<1.45	ND
SB-5A@6'	9/18/08	µg/kg	<1.33	ND
SB-8A@2'	9/22/08	µg/kg	**4.55**	ND
SB-8A@5'	9/22/08	µg/kg	**5.86**	ND
SB-11@9.5'	9/24/08	µg/kg	<1.37	ND
SB-12@8'	9/23/08	µg/kg	<1.11	ND
SB-13@9'	9/23/08	µg/kg	**1.44**	ND
SB-13-W@5'	10/15/08	µg/kg	<1.35	ND
SB-14@11'	9/23/08	µg/kg	<1.35	ND
SB-18@2'	9/16/08	µg/kg	<1.27	ND
SB-18@5'	9/16/08	µg/kg	<1.21	ND
SB-25@2'	9/16/08	µg/kg	<1.27	ND
SB-28@2'	9/17/08	µg/kg	**1.87**	ND
SB-28@5'	9/17/08	µg/kg	**2.58**	ND
SB-28-W@10'	10/15/08	µg/kg	**4.10**	ND
SB-34@2'	9/18/08	µg/kg	<1.33	ND
SB-34@7'	9/18/08	µg/kg	<1.31	ND
SB-45@2'	9/19/08	µg/kg	<1.36	ND
SB-45@5'	9/19/08	µg/kg	<1.28	ND
SB-47@2'	9/22/08	µg/kg	<1.32	ND
SB-47@5'	9/22/08	µg/kg	<1.33	ND
SB-56@2'	9/23/08	µg/kg	<1.28	ND
SB-56@5'	9/23/08	µg/kg	<1.61	ND
SB-61@2'	9/23/08	µg/kg	**6.06**	ND
SB-61@5'	9/23/08	µg/kg	**2.94**	ND
SB-61-W@10'	10/15/08	µg/kg	**1.69**	ND
S-FE@1'	9/29/08	µg/kg	<400	**

PCE = Tetrachloroethene
VOCs = Volatile Organic Compounds
µg/kg = micrograms per kilogram.
ND = Not detected at or above the laboratory's Reporting Limit. Please refer to the Certified Analytical Reports for actual reporting limits.
* = bromomethane (480 µg/kg).
** = m+p xylene(422 µg/kg), o-xylene(443 µg/kg), n-propylbenzene(556 µg/kg), 1,3,5-trimethylbenzene(4,200 µg/kg), 1,2,4-trimethylbenzene(12,100 µg/kg), sec-butylbenzene(1,080 µg/kg), 4-isopropyltoluene(1,680 µg/kg), n-butylbenzene(919 µg/kg). Remaining VOCs for S-FE@1' were non-detect.

TABLE 5
GROUNDWATER SAMPLE ANALYTICAL RESULTS
TPH-g, TPH-d, and TPH-mo
SMART Property, Santa Rosa, California

Sample ID	Date Sampled	TPH-g (mg/L)	TPH-d (mg/L)	TPH-mo (mg/L)
SB-1-W	10/6/2008	**1.44[AS]**	**29.7**	**19.7**
SB-1A-W	9/16/2008	**0.124[AS]**	**27.0**	**15.4**
SB-1B-W	9/25/2008	<0.050	<0.500	<0.500
SB-1D-W	9/25/2008	<0.050	<0.500	<0.500
SB-2A-W	9/17/2008	<0.050	<0.500	<0.500
SB-2-W	10/6/2008	<0.050	<0.050	<0.050
SB-3A-W	9/18/2008	<0.050	<0.500	<0.500
SB-3-W	10/7/2008	<0.050	<0.050	<0.050
SB-4A-W	9/18/2008	<0.050	<0.500	<0.500
SB-4-W	10/7/2008	<0.050	<0.050	<0.050
SB-5-W	10/6/2008	<0.050	<0.050	<0.050
SB-6A-W	9/19/2008	<0.050	<0.500	<0.500
SB-6-W	10/6/2008	<0.050	<0.050	<0.050
SB-7A-W	9/22/2008	<0.050	<0.500	<0.500
SB-7-W	10/7/2008	<0.050	<0.050	<0.050
SB-8A-W	9/23/2008	<0.050	<0.500	<0.500
SB-8-W	10/7/2008	<0.050	<0.050	<0.050
SB-9-W	10/7/2008	<0.050	**0.064**	<0.050
SB-10-W	10/7/2008	<0.050	**0.064**	<0.050
SB-11-W	9/25/2008	<0.050	<0.050	<0.050
SB-13-W	10/15/2008	<0.050	**0.279**	**0.246**
SB-28-W	10/15/2008	<0.050	<0.050	<0.050
SB-55-W	10/15/2008	**4.65[AS]**	**2.64[AK]**	<0.050
SRMW-07	10/2/2008	<0.050	<0.050	<0.050
SRMW-08	10/2/2008	<0.050	<0.050	<0.050

TPH-g = Total Petroleum Hydrocarbons as gasoline.
TPH-d = Total Petroleum Hydrocarbons as diesel.
TPH-mo = Total Petroleum Hydrocarbons as motor oil.
mg/L = milligrams per liter.
AK = Lighter hydrocarbon than diesel.
AS = Heavier hydrocarbon than gasoline contributing to value.

TABLE 6
GROUNDWATER ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
SMART Property, Santa Rosa, California

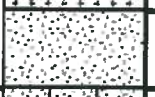
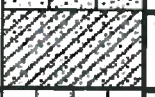
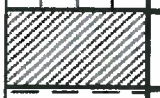
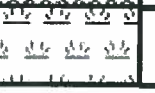
Sample ID	Water-Bearing Zone: Shallow/Deep	Date	Units	PCE	TCE	CIS-1,2-DCE	MtBE	Xylene (M+P)	N-Propylbenzene	1,2,4-Trimethylbenzene	All other VOCs
SB-1A-W	Shallow (~15' BGS)	9/16/2008	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<RL
SB-1B-W	Shallow (~15' BGS)	9/25/2008	µg/L	**0.520**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<RL
SB-1D-W	Shallow (~15' BGS)	9/25/2008	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<RL
SB-1-W	Deep (~25' BGS)	10/6/2008	µg/L	<1.00	<1.00	**1.15**	**1.40**	<1.00	<1.00	<1.00	<RL
SB-2A-W	Shallow (~15' BGS)	9/17/2008	µg/L	**1.96**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<RL
SB-2-W	Deep (~25' BGS)	10/6/2008	µg/L	**3.06**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<RL
SB-3A-W	Shallow (~15' BGS)	9/18/2008	µg/L	**3.03**	**0.750**	<0.500	**3.80**	<0.500	<0.500	<0.500	<RL
SB-3-W	Deep (~25' BGS)	10/7/2008	µg/L	**1.06**	**1.95**	**6.77**	**23.8**	<0.500	<0.500	<0.500	<RL
SB-4A-W	Shallow (~15' BGS)	9/18/2008	µg/L	**1.03**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<RL
SB-4-W	Deep (~25' BGS)	10/7/2008	µg/L	**12.7**	**1.96**	**0.530**	**21.3**	<0.500	<0.500	<0.500	<RL
SB-5-W	Deep (~25' BGS)	10/6/2008	µg/L	**5.88**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<RL
SB-6A-W	Shallow (~15' BGS)	9/19/2008	µg/L	**2.18**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<RL
SB-6-W	Deep (~25' BGS)	10/6/2008	µg/L	**9.63**	**2.70**	**1.20**	**47.1**	<0.500	<0.500	<0.500	<RL
SB-7A-W	Shallow (~15' BGS)	9/22/2008	µg/L	**3.40**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<RL
SB-7-W	Deep (~25' BGS)	10/7/2008	µg/L	<0.500	<0.500	<0.500	**2.31**	<0.500	<0.500	<0.500	<RL
SB-8A-W	Shallow (~15' BGS)	9/23/2008	µg/L	**1.03**	**0.720**	<0.500	**0.710**	<0.500	<0.500	<0.500	<RL
SB-8-W	Deep (~25' BGS)	10/7/2008	µg/L	**0.920**	<0.500	<0.500	**7.79**	<0.500	<0.500	<0.500	<RL
SB-9-W	Deep (~25' BGS)	10/7/2008	µg/L	**0.620**	<0.500	<0.500	**1.46**	<0.500	<0.500	<0.500	<RL
SB-10-W	Deep (~25' BGS)	10/7/2008	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<RL
SB-11-W	Shallow (~15' BGS)	9/25/2008	µg/L	**0.730**	**1.15**	<0.500	**2.73**	<0.500	<0.500	<0.500	<RL
SB-13-W	Shallow (~15' BGS)	10/15/2008	µg/L	**1.22**	**1.40**	**1.18**	<0.500	<0.500	<0.500	<0.500	<RL
SB-28-W	Shallow (~15' BGS)	10/15/2008	µg/L	**3.63**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<RL
SB-55-W	Shallow (~15' BGS)	10/15/2008	µg/L	<1.00	<1.00	<1.00	<1.00	**1.14**	**1.27**	**1.13**	<RL
SRMW-07	Screened across both	10/2/2008	µg/L	**0.920**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<RL
SRMW-08	Screened across both	10/2/2008	µg/L	**8.74**	**4.75**	**5.69**	**24.5**	<0.500	<0.500	<0.500	<RL

PCE = tetrachloroethene
TCE = trichloroethene
CIS-1,2-DCE = cis-1,2-dichloroethene
MtBE = methyl tert-butyl ether
VOCs = Volatile Organic Compounds
µg/L = micrograms per liter.
BGS = below ground surface.
~ = approximately
RL = method reporting limit.

APPENDIX C

BORING LOGS

UNIFIED SOIL CLASSIFICATION SYSTEM (U.S.C.S)

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS & VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE CLASSIFICATIONS

LEGEND

BGS	BELOW GROUND SURFACE
HC	PETROLEUM HYDROCARBONS
K	HYDRAULIC CONDUCTIVITY
MSL	MEAN SEA LEVEL
PID	PHOTOIONIZATION DETECTOR
ppm	PARTS PER MILLION
PVC	POLYVINYL CHLORIDE

~	APPROXIMATELY
@	AT
>	GREATER THAN
<	LESS THAN
"	INCHES
%	PERCENT

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BORING NUMBER SB-1A

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/16/08 **COMPLETED** 9/16/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 13.0 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
▼ **AT END OF DRILLING** 13.8 ft
NOTES
▽ **1.25hrs AFTER DRILLING** 13.4 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0	AU	100					FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			0
	SS	67	7-10-14 (24)	ML		1.5	SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, strong HC odor			
	SS	100	6-9-12 (21)				same as above, soft, strong HC odor		12.1	
5	SS	100	4-8-10 (18)						24.1	5
	AU	100					same as above, green (5Y 4/1), strong HC odor, free product consisting of heavy dark oil			
	SS	67	5-5-7 (12)						41.7	
	SS	100	3-4-4 (8)							
10	SS	100	0-1-3 (4)				same as above, wet			10
	SS	100	0-2-3 (5)			12.0				
	SS	100	2-2-2 (4)	SC			CLAYEY SAND; green (5Y 4/1), saturated, soft, 85% sand <15% fines, strong HC odor, free product			
						13.5	▽ ▼			
15	SS	100	4-6-8 (14)	CH			▼ CLAY ; brown (10YR5/3), stiff, saturated, no HC odor or product			15
						15.0	Bottom of Borehole at 15.0 feet BGS.			

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BORING NUMBER SB-1B

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/24/08 **COMPLETED** 9/24/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 13.0 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						2.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
	SS	75	9-10-12-16 (22)	ML			SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 65% fines, <20% fine-medium sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.0	
5	SS	75	8-14-14-15 (28)			5.0	GRAVELLY SILT; DARK BROWN (10yr 3/3), soft, 65% fines, 25% gravel, 10% sand, no HC odor		0.0	5
	SS	50	3-3-6-3 (9)	ML					0.0	
	SS	100	2-3-4-4 (7)			8.5	SANDY SILT; brown (10YR 5/3), very moist, medium stiff, 60% fines, 40% fine sand, trace gravel, no HC odor			
10	SS	100	3-5-5-6 (10)	ML			same as above, saturated, increase in gravel, 60% fines, 20% sand, 20% gravel, no HC odor			10
	SS	100	3-4-2-3 (6)			▽ 14.0	Bottom of Borehole at 14.0 feet BGS.			

GENERAL BH / TP / WELL 08-1528.GPJ GINT US.GDT 11/17/08

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BORING NUMBER SB-1C

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/25/08 **COMPLETED** 9/25/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 13.0 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						2.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
	SS	75	9-11-16-22 (27)	ML			SANDY SILT; dark brown (10YR 3/3), moist, hard, 65% fines, <20% fine-medium sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.0	
5										5
	SS	100	3-3-6-7 (9)				same as above, dark gray (N3), moist, stiff, 70% fines, 20% sand, <10% gravel, strong HC odor, visible product		8.0	
10							same as above, 60% fines, 30% sand, 10% gravel, strong HC odor			10
						12.0				
	SS	100	3-5-8-9 (13)				SILTY CLAY; brown (10YR 5/3) and gray (N5), saturated, very stiff, 90% fines, <10% fine sand, mottled, no HC odor ▽		1.3	
15						15.0				15
							Bottom of Borehole at 15.0 feet BGS.			

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BORING NUMBER SB-1D

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/25/08 **COMPLETED** 9/25/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
							FILL; brown (10YR 5/3), dry, rounded pea-sized gravel and sandy silt (FILL), 80% gravel, 15% fines, <5% sand, no HC odor		0.0	
5							same as above, moist, no HC odor		0.0	5
							same as above, moist, no HC odor			
10						10.0				10
				ML			SANDY GRAVELLY SILT; dark brown (10YR 3/3), moist, 60% fines, 25% sand, 15% gravel, no HC odor			
						13.0				
	SS	100	3-5-7-9 (12)	SM		14.0	SILTY SAND; brown (10YR 5/3), saturated, medium dense, 60% fine to very fine sand, 40% fines, no HC odor			
15				CL		15.0	CLAY; greenish gray (5G 6/1), saturated, stiff, mottled appearance, organic material, no HC odor			15
							Bottom of Borehole at 15.0 feet BGS.			

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BORING NUMBER SB-1E

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/25/08 **COMPLETED** 9/25/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 13.0 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
				ML		5.0	GRAVELLY SILT; brown (10YR 5/3), dry, 65% fines, 20% gravel, <15% sand, glass fragments, no HC odor			
5	GB	100				9.0	SILT; brown (10YR 5/3), 80% fines, <10% sand, <10% gravel, no HC odor			5
10				ML		12.0	GRAVELLY SILT; brown (10YR 5/3), moist, 70% fines, 20% gravel, <10% sand, no HC odor			10
				SC		14.0	CLAYEY SAND; brown (10YR 5/3), saturated, loose, 65% fine to medium sand, 35% fines, no HC odor ▽			
15	SS	100	3-4-5-5 (9)	CL		15.0	CLAY; greenish gray (5G 6/1), saturated, stiff, mottled appearance, no HC odor		0.0	15
							Bottom of Borehole at 15.0 feet BGS.			

GENERAL BH / TP / WELL 08-1528.GPJ GINT US.GDT 11/17/08

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BORING NUMBER SB-1F

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/25/08 **COMPLETED** 9/25/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			0
						1.5	SANDY SILT; dark brown (10YR 3/3), dry, 65% fines, <20% fine-medium sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			
				ML						
5	SS	100	6-16-14-17 (30)			5.0	same as above, moist, no HC odor		0.0	5
				ML						
10										10
	SS	100	2-4-6-8 (10)			12.5				
				SC			CLAYEY SAND; brown (10YR 5/3), saturated, medium stiff, 65% sand, 35% fines, no HC odor		0.0	
				CL		13.5	CLAY; greenish gray (5G 6/1), saturated, stiff, high plasticity, mottled appearance, no HC odor			
15						14.0	Bottom of Borehole at 15.0 feet BGS.			15

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BORING NUMBER SB-2A

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/17/08 **COMPLETED** 9/17/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 14.0 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0	AU						FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		0.5	0
	SS	67	12-12-4 (16)			2.0				
	SS	67	2-4-5 (9)	ML			SANDY SILT; dark brown (10YR 3/3), moist, medium stiff, 70% fines, <20% sand, <10% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.7	
5	SS	78	2-3-4 (7)				same as above, increase in gravel, 65% fines, 25% gravel, 10% sand, no HC odor			5
	SS	67	10-17-15 (32)			6.0	POORLY GRADED SANDY GRAVEL; brown (10YR 5/3), moist, medium dense, 60% gravel, 35% sand, <5% fines, hard drilling, no HC odor		0.9	
	SS	100	20-15-9 (24)	GP						
	SS	72	17-10-4 (14)				same as above, increase in fines, 60% gravel, 30% sand, 10% fines, reddish discoloration/oxidation, no HC odor		0.5	
10	SS	67	10-8-4 (12)				same as above, increase in fines, 60% gravel, 20% sand, 20% fines, no HC odor			10
	SS	0	6-3-2 (5)							
	SS	100	3-5-4 (9)			13.5				
				SM			▽ SILTY SAND; brown (10YR 5/3), saturated, loose, 60% fine sand, 35% fines, <5% gravel, no HC odor			
15	SS	100	4-5-7 (12)				same as above, brown and gray (10YR 5/3) and N5), no HC odor			15
						16.0	Bottom of Borehole at 16.0 feet BGS.			

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BORING NUMBER SB-3A

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/17/08 **COMPLETED** 9/18/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 13.0 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
▼ **AT END OF DRILLING** 14.4 ft
NOTES
▽ **13.5hrs AFTER DRILLING** 12.4 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			0
	SS	67	6-6-5 (11)			1.5	SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			
	SS	33	7-5-9 (14)	ML					0.0	
5	SS	33	12-9-8 (17)				same as above, 65%fines, <25% gravel, <10% sand			5
	SS	100	5-5-5 (10)							
	SS	100	3-4-6 (10)				same as above, 60% fines, <25% gravel, <15% sand			
	SS	100	2-3-4 (7)	ML		9.0	CLAYEY SILT; brown (10YR 5/3), moist, medium stiff, 95% fines, <5% trace fine sand, no HC odor			
10	SS	100	2-2-2 (4)				same as above, moist, almost saturated			10
	SS	100	1-2-3 (5)				same as above, saturated ▽			
	SS	100	3-2-4 (6)				▽ same as above, 85% fines, <10% rounded gravel, <5% fine sand			
				ML		14.0 / 14.5 ▼	SANDY SILT; brown (10YR 5/3), moist, medium stiff, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			
							Bottom of Borehole at 14.5 feet BGS.			

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BORING NUMBER SB-4A

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/18/08 **COMPLETED** 9/18/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 12.5 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
▼ **AT END OF DRILLING** 11.1 ft
NOTES
.5hrs AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0	AU	100				1.5	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			0
	SS	33	12-4-4-5 (8)	ML			SANDY SILT; dark brown (10YR 3/3), moist, stiff, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			
	SS	50	5-6-7-7 (13)						0.3	
5	SS	100	5-7-5-7 (12)				same as above, saturated, medium stiff, increase in fines			5
	SS	100	3-4-4-3 (8)							
10	SS	100	2-3-6-7 (9)			10.5				10
	SS	100	5-4-4-6 (8)	SP		11.5	FINE SAND; brown (10YR 5/3), saturated, medium dense, 95% fine sand, <5% trace fines, no HC odor ▼			
				ML		12.5	SANDY SILT; dark brown (10YR 3/3), moist, stiff, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor ▽			
	SS	0	11-16	GW		14.0	GRAVEL WITH SILT AND SAND; brown (10YR 5/3), saturated, 60% rounded gravel, 20% fines <20% sand, no HC odor			
							Bottom of Borehole at 14.0 feet BGS.			

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BORING NUMBER SB-5A

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/18/08 **COMPLETED** 9/18/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 13.0 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
24hrs AFTER DRILLING dry

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						1.8	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
	SS	100	4-4-5-6 (9)	CL-ML			CLAYEY SILT; dark brown (10YR 3/3), moist, stiff, 95% fines, <5% trace fine sand, no HC odor		0.0	
5	SS	100	4-7-10-11 (17)				same as above, very stiff, <12% gravel			5
	SS	100	6-9-10-17 (19)						0.0	
	SS	100	4-8-9-11 (17)			9.0				
10							SANDY SILT; dark brown (10YR 2/2), moist, very stiff, 65% fines, <20%sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			10
	SS	100	7-8-9-10 (17)	CL					0.0	
						12.0	same as above, wet, stiff			
	SS	100	3-4-5-7 (9)	SM			SILTY SAND; brown (10YR 4/4), saturated, loose, 85% fine to medium fine sand, <15% fines, no HC odor			
						13.0 ▽			0.0	
				CL			SILTY CLAY; dark brown (10YR 4/4), saturated, stiff, green mottling, no HC odor			
						14.0				
							Bottom of Borehole at 14.0 feet BGS.			

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BORING NUMBER SB-6A

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/19/08 **COMPLETED** 9/19/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 13.6 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nielson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)
0									
						1.5	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		
	SS	75	4-5-9-11 (14)				SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 70% fines, <20%sand, <10% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.0
5	SS	75	6-7-12-15 (19)	ML					
	SS	75	6-7-6-7 (13)						
						8.5			
	SS	75	4-4-4-4 (8)				SANDY SILT; brown (10YR 2/2), moist, medium stiff, <65%fines, <35% very fine sand, no HC odor		
10				ML					
	SS	75	2-3-4-4 (7)				same as above, saturated, medium stiff		
	SS	75	2-2-2-2 (4)				same as above, saturated, soft, trace rounded gravel ▽		
15	SS	75	1-1-1-2 (2)						
						16.0	Bottom of Borehole at 15.0 feet BGS.		

DEPTH (ft)
0
5
10
15

GENERAL BH / TP / WELL 08-1528.GPJ GINT US.GDT 11/17/08

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BORING NUMBER SB-7A

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/22/08 **COMPLETED** 9/22/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 13.0 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						2.5	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
	SS	75	8-6-6-6 (12)	ML			SANDY SILT; dark grey (N3), moist, stiff, 65% fines, <35% very fine sand, slight plasticity, no HC odor		1.5	
5	SS	75	6-5-9-14 (14)				same as above, very stiff			5
	SS	75	9-9-11-11 (20)	ML		6.5	SAND WITH SILT; dark brown (10YR 3/3), moist, very stiff, 60% fines, 35% sand, 5% gravel, rounded			
	SS	75	4-13-6-4 (19)	ML		8.5	GRAVELLY SILT; dark brown (10YR 3/3), moist, hard, 65% fines, 25% gravel, <10% sand, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			
10	SS	75	3-3-2-2 (5)	ML		10.5	SANDY SILT; brown (10YR 5/3), saturated, soft, 65% fines, <35% very fine sand, slight plasticity, no HC odor			10
	SS	75	3-2-3-3 (5)	ML		13.3 ▽				
				SC			CLAYEY SAND; brown (10YR 5/3), saturated, soft, 60% sand, 40% fines, no HC odor			
15	SS	75	2-3-3-5 (6)	CL		14.5	CLAY WITH SAND; gray (N5), saturated, stiff, 70% fines, 30% sand, no HC odor			15
						16.0	Bottom of Borehole at 15.0 feet BGS.			

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BORING NUMBER SB-8A

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/22/08 **COMPLETED** 9/22/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 13.5 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
▼ **AT END OF DRILLING** 14.0 ft
NOTES
▽ **14hrs AFTER DRILLING** 12.5 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0	AU	100				2.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			0
	SS	50	14-15-17-18 (32)	ML		4.0	SANDY SILT; dark brown (10YR 3/3), dry, hard, 60% fines, <25% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			
5	SS	50	12-14-16-16 (30)	SP			GRAVELLY SAND; brown (10YR 5/3), moist, dense, 65% poorly graded sand, 30% gravel, <5% fines, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.0	5
	SS	100	13-12-15-17 (27)							
	SS	100	12-27-30-25 (57)			8.5				
10	SS	13	8-5-4-5 (9)	SP-SM		11.0	SILTY SAND AND GRAVEL; brown (10YR 5/3), moist, dense, 40% medium to coarse sand, <35% fines, <25% gravel, no HC odor			10
	SS	100	4-5-2-3 (7)	ML		13.5 ▽	SANDY SILT; dark brown (10YR 3/3), saturated, hard, 60% fines, <25% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor ▼			
				CH		14.0 ▼	CLAY; gray (N5), saturated, stiff, trace fine sand, no HC odor			
							Bottom of Borehole at 14.0 feet BGS.			

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BORING NUMBER SB-9A

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/23/08 **COMPLETED** 9/24/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 13.0 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
24hrs AFTER DRILLING dry

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0	AU	100				1.5	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			0
	SS	67	5-6-7-10 (13)	SP-SM			SILTY SAND AND GRAVEL; brown (10YR 5/3), moist, very stiff, 60% fines, 20% sand, 20% gravel, no HC odor		0.0	
5	SS	75	6-6-8-10 (14)							5
	SS	100	4-5-8-7 (13)			6.5				
	SS	100	3-5-5-6 (10)	SP			SILT AND SAND; brown (10YR 5/3), moist, very stiff, 50% very fine sand, 50% silt, trace rounded gravel, no HC odor			
10	SS	75	3-9-11-17 (20)			10.5	same as above, very moist, stiff			10
	SS	50	14-16-19-20 (35)	SP			GRAVELLY SAND; brown (10YR 5/3), saturated, medium dense, 50% poorly graded sand, <48% sub-angular to sub-rounded gravel, to 1.5 inches in diameter, <2% trace fines			
15	SS	75	15-15-20-20 (35)	SP		14.0	▽			15
						16.0	same as above, gray (N5), saturated, dense, no HC odor			
							Bottom of Borehole at 16.0 feet BGS.			

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BORING NUMBER SB-11

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/25/08 **COMPLETED** 9/25/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 13.5 ft
LOGGED BY P. Nelson (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0						0.1	ASPHALT			0
							FILL, GRAVELLY SILTY SAND; gravel to 1/2 inch diameter			
						3.0	FILL, Pea-sized gravel			
5				ML			GRAVELLY SILT; dark brown (10yr 3/3), dry, hard, 75% fines, 15% gravel, <10% sand, gravel to 1/4 inches in diameter, no HC odor			5
	SS	33	19-32-36 (68)						0.0	
	SS	33	17-19-17 (36)				same as above, poor recovery, no HC odor			
	SS	33	11-9-11 (20)			9.0			0.0	
10	SS	33	10-11-13 (24)	SM			SILTY SAND; dark yellowish brown (10YR 3/4), moist, medium dense, 60% well graded sand, 40% fines, no HC odor			10
	SS	33	13-14-19 (33)				same as above, increase in fines to 50%			
	SS	100	9-8-7 (15)	ML		12.5	SANDY SILT; brown (10YR 5/3), moist, stiff, 70% fines, 30% poorly graded sand, no HC odor ▽		0.0	
15	SS	100	4-9-16 (25)	CL		14.5	CLAY; very dark grayish brown (10YR 3/2), moist, very stiff, 90% clay, <10% sandm moderate plasticity, no HC odor		0.0	15
						15.5	Bottom of Borehole at 15.5 feet BGS.			

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BORING NUMBER SB-12

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/23/08 **COMPLETED** 9/23/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger to 5'Hand Clear to pipe invert
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0						SANDY GRAVEL (FILL); dark brown (10YR 5/3), dry, 75% gravel, 25% sand		0.0	0
5	GB	100	ML		4.0	GRAVELLY CLAYEY SILT, dark brown (10YR 3/3), moist 75% fines, <25% gravel, no HC odor			5
					8.0	Bottom of Borehole at 8.0 feet BGS.			

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BORING NUMBER SB-13

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/24/08 **COMPLETED** 9/24/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger to 5'Hand Clear to pipe invert
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0									0
					2.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
	GB	100	ML			GRAVELLY SILT; dark gray (N5), moist, 75% clayey silt, 20% gravel, <5% trace sand, no HC odor, gravel to 3" diameter			
5						same as above, stiff			5
	GB	100			9.0			0.0	
10						Bottom of Borehole at 11.0 feet BGS.			10

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BORING NUMBER SB-13-W

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 10/15/08 **COMPLETED** 10/15/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 12.5 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
						1.5				
				ML			SANDY SILT; dark gray (N5), moist, 75% clayey silt, 20% sand, gravel, no HC odor, gravel to 3" diameter			
						4.0				
5	SS	67	7-8-12 (20)				same as above, very stiff, no HC odor		0.0	5
10										10
						12.0				
				SW-SM			▽ SAND WITH GRAVEL AND SILT; gray (N5), saturated, loose, 55% sand, 30% gravel, 15% fines, no HC odor			
15	SS	100	3-3-3 (6)						0.0	15
						15.0	Bottom of Borehole at 15.0 feet BGS.			

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BORING NUMBER SB-14

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/24/08 **COMPLETED** 9/24/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger to 5'Hand Clear to pipe invert
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0			ML			SANDY SILT; dark brown (10YR 3/3), moist, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			0
5	GB	100				same as above, moist, no HC odor		0.0	5
10			ML		10.0	CLAYEY SILT WITH GRAVEL; brown (10YR 5/3), moist, 80% fines, 15% gravel, <5% trace fine sand, no HC odor		0.0	10
					11.0	Bottom of Borehole at 11.0 feet BGS.			

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BORING NUMBER SB-18

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/16/08 **COMPLETED** 9/16/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						1.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
	SS	100	10-5-8 (13)	ML			SANDY SILT; dark brown (10YR 2/2), moist, very stiff, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.2	
	SS	100	3-4-5 (9)						0.3	
5	SS	100	2-3-3 (6)						5.1	5
						6.0	Bottom of Borehole at 5.5 feet BGS.			

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BORING NUMBER SB-19

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/16/08 **COMPLETED** 9/16/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						1.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
	SS	100	5-4-6 (10)	ML			SANDY SILT; dark brown (10YR 2/2), moist, very stiff, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.5	
	SS	100	4-5-5/0"							
5	SS	33	5-6-7 (13)						3.9	5
	SS	100	5-5-6 (11)			7.0			14.2	
							Bottom of Borehole at 7.0 feet BGS.			

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BORING NUMBER SB-20

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/16/08 **COMPLETED** 9/16/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						1.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
	SS	100	5-6-9 (15)	ML			SANDY SILT; dark brown (10YR 2/2), moist, very stiff, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.8	
	SS	17	4-5-8 (13)						11.6	
5	SS	100	5-8-9 (17)			5.5			0.7	5
							Bottom of Borehole at 5.5 feet BGS.			

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BORING NUMBER SB-21

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/16/08 **COMPLETED** 9/16/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
						1.5				
	SS	33	9-5-11 (16)				SANDY SILT; dark brown (10YR 2/2), moist, very stiff, 60% fines, <25% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			
	SS	100	5-7-10 (17)	ML					1.7	
5	SS	100	5-6-8 (14)						4.6	5
						5.5	Bottom of Borehole at 5.5 feet BGS.			

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BORING NUMBER SB-22

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/16/08 **COMPLETED** 9/16/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
	SS	67	6-4-6 (10)				FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		0.9	
	SS	33	5-6-7 (13)			3.5				
5	SS	100	4-3-3 (6)	ML			SANDY SILT; dark brown (10YR 2/2), moist, very stiff, 60% fines, <25% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		1.5	5
						5.5	Bottom of Borehole at 5.5 feet BGS.			

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BORING NUMBER SB-23

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/16/08 **COMPLETED** 9/16/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
						1.5				
	SS	17	50				SANDY SILT; dark brown (10YR 2/2), moist, very stiff, 60% fines, <25% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		1.1	
	SS	67	7-9-12 (21)	CL						
5	SS	100	4-4-4 (8)						1.9	5
						5.5				
							Bottom of Borehole at 5.5 feet BGS.			

GENERAL BH / TP / WELL 08-1528.GPJ GINT US.GDT 11/17/08

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BORING NUMBER SB-24

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/16/08 **COMPLETED** 9/16/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			0
	SS	33	8-9-12 (21)						0.3	
	SS	67	8-9-13 (22)						0.2	
	SS	33	8-11-11 (22)			4.5			0.2	
5				ML		5.5	SANDY SILT; dark brown (10YR 2/2), moist, very stiff, 65% fines, <30% sand, <5% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			5
							Bottom of Borehole at 5.5 feet BGS.			

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BORING NUMBER SB-25

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/16/08 **COMPLETED** 9/16/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	DEPTH (ft)
0									0
	SS	67	9-5-5 (10)			2.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		
	SS	100	7-13-12 (25)	ML			SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 70% fines, <20% sand, <10% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		
5	SS	100	4-7-12 (19)			5.5			5
							Bottom of Borehole at 5.5 feet BGS.		

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BORING NUMBER SB-26

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/17/08 **COMPLETED** 9/17/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
	SS	50	14-9-6 (15)				FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		0.5	
	SS	67	6-8-11 (19)			3.5			0.7	
5	SS	100	13-10-13 (23)	ML		5.5	SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 70% fines, <20% sand, <10% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			5
							Bottom of Borehole at 5.5 feet BGS.			

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BORING NUMBER SB-27

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/17/08 **COMPLETED** 9/17/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
	SS	33	48-12-16 (28)			2.0			0.5	
	SS	67	12-13-18 (31)	ML			SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 60% fines, <25% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			
5	SS	100	9-9-10 (19)			5.5			0.5	5
							Bottom of Borehole at 5.5 feet BGS.			

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BORING NUMBER SB-28

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/17/08 **COMPLETED** 9/17/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			0
	SS	67	8-6-9 (15)			2.0			0.5	
	SS	67	4-7-9 (16)	ML			SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 70% fines, <25% sand, <5% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.5	
5	SS	100	5-7-11 (18)			5.5			0.5	5
							Bottom of Borehole at 5.5 feet BGS.			

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BORING NUMBER SB-28-W

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 10/15/08 **COMPLETED** 10/15/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 13.0 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						2.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
5				ML			SANDY SILT; dark brown (10YR 3/3), moist, 80% fines, <20% sand, trace gravel, no HC odor			5
10	SS	100	6-5-3 (8)				same as above, brown (10YR 5/3), medium stiff, 80% fines, <20% fine sand, trace gravel, no HC odor		0.0	10
						14.0	▽			
15	SS	100	2-3-7 (10)	SC			SAND WITH CLAY; brown (10YR 5/3) saturated, stiff, 80% medium sand, <20% fines, trace gravel, no HC odor		0.0	15
						16.0	Bottom of Borehole at 16.0 feet BGS.			

GENERAL BH / TP / WELL 08-1528.GPJ GINT US.GDT 11/17/08

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BORING NUMBER SB-29

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/17/08 **COMPLETED** 9/17/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	DEPTH (ft)
0									0
						0.8	Railroad tie, treated timber		
	SS	67	21-9-6 (15)			1.8	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		
	SS	67	9-12-16 (28)	ML			SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 70% fines, <25% sand, <5% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		
5	SS	100	10-12-12 (24)			5.5			5
							Bottom of Borehole at 5.5 feet BGS.		

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BORING NUMBER SB-30

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/17/08 **COMPLETED** 9/17/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0							Fill, Rock and gravel to 2 inches in diameter, dry			0
	SS	67	10-7-8 (15)			2.0			0.2	
	SS	100	6-5-6 (11)				SANDY SILT; olive-gray (5Y 4/1), moist, very stiff, 70% fines, <25% sand, <5% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, strong HC odor			
5	SS	100	4-8-11 (19)	ML					11.2	5
	SS	100	7-10-11 (21)			6.5				
						7.0	same as above, dark brown (10yr 3/3), no HC odor			
							Bottom of Borehole at 5.5 feet BGS.			

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BORING NUMBER SB-30A

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/25/08 **COMPLETED** 9/25/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						1.5	FILL; brown (10YR 5/3), dry, gravel to 1/2 inch diameter, trace fines and sand, no HC odor			
				ML			GRAVELLY SILT; dark brown (10YR 3/3), moist, hard, 65% fines, 20% gravel, <15% sand, no HC odor		0.0	
5	SS	100	11-12-12-19 (24)			6.0			0.0	5
							Bottom of Borehole at 6.0 feet BGS.			

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BORING NUMBER SB-30B

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/25/08 **COMPLETED** 9/25/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						1.5	FILL; brown (10YR 5/3), dry, gravel to 1/2 inch diameter, trace fines and sand, no HC odor			
				ML			GRAVELLY SILT; brown (10YR 5/3), moist, stiff, 65% fines, 20% gravel, <15% sand, no HC odor		0.0	
5	SS	100	5-4-4-8 (8)			5.0			0.0	5
				ML		6.0	SANDY SILT; dark gray and brown (N3-10YR 5/3), moist, stiff, 65% fines, 30% very fine sand, <5% trace gravel, mottled appearance, no HC odor			
							Bottom of Borehole at 6.0 feet BGS.			

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BORING NUMBER SB-31

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/17/08 **COMPLETED** 9/17/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	DEPTH (ft)
0									0
	SS	33	8-10-7 (17)				FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		
	SS	33	9-7-8 (15)			3.0			
	SS	67	4-6-11 (17)	ML			SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 70% fines, <25% sand, <5% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		
5						5.5			5
							Bottom of Borehole at 5.5 feet BGS.		

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BORING NUMBER SB-32

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/17/08 **COMPLETED** 9/17/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	DEPTH (ft)
0									0
	SS	33	8-5-5 (10)			2.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		
	SS	67	3-3-4 (7)	SM		3.0	SILTY SAND; Brown (10YR 5/3), saturated, loose, 85% fine to medium fine sand, <15% fines, no HC odor		
	SS	100	4-5-6 (11)	ML		5.5	SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 70% fines, <20% sand, <10% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		
5							Bottom of Borehole at 5.5 feet BGS.		5

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BORING NUMBER SB-33

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/18/08 **COMPLETED** 9/18/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	DEPTH (ft)
0									0
	SS	67	11-10-10 (20)			2.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		
	SS	33	13-11-17 (28)	ML			SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		
5	SS	75	19-24-5-8 (29)			6.0			5
							Bottom of Borehole at 6.0 feet BGS.		

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BORING NUMBER SB-34

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/18/08 **COMPLETED** 9/18/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0							Fill, Rock and gravel to 2 inches in diameter, dry, no HC odor			0
	SS	100	11-5-8 (13)	ML		1.5	SANDY SILT; dark brown (10YR 3/3) and green, moist, stiff, 80% fines, <15% sand, <5% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, HC odor		14	
	SS	33	8-4-4 (8)				Same as above, dark brown and black, HC odor			
5	SS	100	8-15-8 (23)						0.9	5
	SS	100	11-15-13 (28)			7.0	Same as above, dark brown (10YR 3/3), very stiff, no HC odor			
							Bottom of Borehole at 7.0 feet BGS.			

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BORING NUMBER SB-35

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/18/08 **COMPLETED** 9/18/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	DEPTH (ft)
0									0
						1.5	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		
	SS	33	7-6-6 (12)	ML			SANDY SILT; dark brown (10YR 3/3), moist, stiff, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		
	SS	33	9-5-6 (11)						
5	SS	67	6-6-12 (18)			5.5			5
							Bottom of Borehole at 5.5 feet BGS.		

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BORING NUMBER SB-36

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/18/08 **COMPLETED** 9/18/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
						1.5				
	SS	33	18-6-7 (13)				SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.0	
	SS	33	10-6-6 (12)	ML						
5	SS	67	6-7-11 (18)			5.5				5
							Bottom of Borehole at 5.5 feet BGS.			

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BORING NUMBER SB-37

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/18/08 **COMPLETED** 9/18/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	DEPTH (ft)
0									0
							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		
	SS	100	15-9-9 (18)	ML		1.5	SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 85% fines, <10% sand, <5% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, trace roots, no HC odor		
	SS	100	9-5-5 (10)				same as above, 65% fines, <20% gravel, <15% sand		
5	SS	100	8-12			5.0			5
							Bottom of Borehole at 5.0 feet BGS.		

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BORING NUMBER SB-38

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/18/08 **COMPLETED** 9/18/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0						0.3	BCC: Bituminous concrete			0
							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, trace glass, no HC odor			
						1.8				
	SS	50	11-11-11-11 (22)	ML			SANDY SILT; dark brown (10YR 3/3), moist, stiff, 70% fines, <15% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.0	
5	SS	75	10-14-15-22 (29)			6.0				5
							Bottom of Borehole at 6.0 feet BGS.			

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BORING NUMBER SB-39

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/18/08 **COMPLETED** 9/18/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0						0.3	BCC: Bituminous concrete			0
							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
						1.5				
	SS	100	5-4-5-5 (9)	ML			SANDY SILT; dark brown (10YR 3/3), moist, stiff, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.0	
						4.5				
5	SS	100	2-5-6-9 (11)	ML			CLAYEY SILT; brown (10YR 2/2), moist, stiff, 95% fines, <5% trace fine sand, no HC odor			5
						6.0				
							Bottom of Borehole at 6.0 feet BGS.			

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BORING NUMBER SB-40

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/19/08 **COMPLETED** 9/19/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	DEPTH (ft)
0									0
						1.3	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		
				ML		2.5	SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		
	SS	100	7-10-9-8 (19)	ML		4.5	SANDY SILT; brown (10YR 2/2), moist, very stiff, <65% fines, <35% very fine sand, no HC odor		
5	SS	100	8-8-9-9 (17)	ML		6.0	CLAYEY SILT; dark brown (10YR 3/3), moist, very stiff, 95% fines, <5% trace fine sand, no HC odor		5
							Bottom of Borehole at 6.0 feet BGS.		

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BORING NUMBER SB-41

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/19/08 **COMPLETED** 9/19/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	DEPTH (ft)
0									0
						1.5	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		
	SS	100	7-10-7-7 (17)	ML		2.5	SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		
				ML		4.5	VERY FINE SAND AND SILT; brown (10YR 5/3), moist, very stiff, <65% fines, <35% very fine sand, no HC odor		
5	SS	75	5-9-15-20 (24)	ML		6.0	SANDY SILT; dark brown (10YR 3/3), moist, hard, 60% fines, <20% sand, <20% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		5
							Bottom of Borehole at 6.0 feet BGS.		

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BORING NUMBER SB-42

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/19/08 **COMPLETED** 9/19/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						1.5	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
	SS	75	4-5-4-5 (9)	ML			VERY FINE SAND AND SILT; brown (10YR 5/3), moist, stiff, <65% fines, <35% very fine sand, no HC odor		0.0	
						4.5				
5	SS	100	6-5-5-7 (10)	ML			SANDY SILT; dark brown (10YR 3/3), moist, hard, 70% fines, <15% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			5
						6.0	Bottom of Borehole at 6.0 feet BGS.			

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BORING NUMBER SB-42-W

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 10/15/08 **COMPLETED** 10/15/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 12.0 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						1.5	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
	SS	100	10-10-6 (16)	SP		3.5	VERY FINE SAND WITH SILT; brown (10YR 5/3), moist, very stiff, 55% fine sand, 45% fines, no HC odor		0.0	
5	SS	100	8-10-12 (22)	ML			SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.0	5
	SS	100	13-20-21 (41)						0.0	
	SS	100	9-12-16 (28)				same as above, 85% fines, 15% sand, trace gravel, no HC odor		0.0	
	SS	100	5-6-7 (13)			9.5			0.0	
10	SS	100	3-4-5 (9)	SP			SILTY FINE SAND; brown (10YR 5/3), moist, loose, 60% fine sand, 40% fines, no HC odor		0.0	10
	SS	100	6-6-7 (13)			11.5			0.0	
	SS	100	3-5-5 (10)	SC			▽ SAND WITH CLAY; brown (10YR 5/3) saturated, stiff, 85% medium sand, <15% fines, no HC odor		0.0	
15	SS	100	3-4-7 (11)	OH		13.5	ORGANIC SILT; dark brown (10YR 3/3), saturated, stiff, no HC odor		0.0	15
						15.5	Bottom of Borehole at 15.5 feet BGS.			

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BORING NUMBER SB-43

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/19/08 **COMPLETED** 9/19/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						1.5	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
	SS	75	6-8-12-10 (20)	ML			GRAVELLY SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 65% fines, <25% gravel, <10% sand, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			
5	SS	75	5-11-15-19 (26)			6.0			0.0	5
							Bottom of Borehole at 6.0 feet BGS.			

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BORING NUMBER SB-44

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/19/08 **COMPLETED** 9/19/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	DEPTH (ft)
0									0
						1.8	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		
	SS	100	5-10-12-13 (22)	ML			CLAYEY SILT; dark brown (10YR 3/3), moist,very stiff, 95% fines, <5% trace sand and gravel, no HC odor		
						4.5			
5	SS	100	3-5-7-9 (12)	ML			GRAVELLY SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 70% fines, <15% gravel, <15% sand, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		5
						6.0	Bottom of Borehole at 6.0 feet BGS.		

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BORING NUMBER SB-45

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/19/08 **COMPLETED** 9/19/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						1.5	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
	SS	100	3-6-6-7 (12)	ML			SANDY SILT; dark brown (10YR 3/3), moist, stiff, 65% fines, <25% gravel, <10% sand, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.0	
5	SS	100	6-6-6-6 (12)			6.0			0.0	5
							Bottom of Borehole at 6.0 feet BGS.			

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BORING NUMBER SB-45B

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/24/08 **COMPLETED** 9/24/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						1.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor wood			
				ML		5.5	GRAVELLY SILT; dark brown (10YR 3/3), moist, stiff, 65% fines, 25% gravel, <10% trace sand, no HC odor			
5	SS	100	4-5-5 (10)						0.0	5
							Bottom of Borehole at 6.0 feet BGS.			

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BORING NUMBER SB-46

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/19/08 **COMPLETED** 9/19/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0						0.5	ASPHALT			0
							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
						2.5				
	SS	75	17-22-14-14 (36)	ML			SANDY SILT; dark brown (10YR 3/3), moist, stiff, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.0	
5	SS	75	6-12-19-24 (31)			5.0				5
				ML			GRAVELLY SILT; dark brown (10YR 3/3), moist, hard, 65% fines, 25% gravel, <10% sand, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			
						6.0	Bottom of Borehole at 6.0 feet BGS.			

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BORING NUMBER SB-47

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/22/08 **COMPLETED** 9/22/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
						2.5				
	SS	75	9-6-5-9 (11)				SANDY SILT; dark grey (N3), moist, stiff, 65% fines, <35% very fine sand, no HC odor		1.5	
5	SS	100	8-10-13-13 (23)	ML					1.3	5
						6.0				
							Bottom of Borehole at 6.0 feet BGS.			

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BORING NUMBER SB-48

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/22/08 **COMPLETED** 9/22/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			0
	SS	50	12-5-5-5 (10)	ML		2.5	SANDY SILT; dark grey (N3), moist, stiff, 65% fines, <35% very fine sand, HC odor		11.9	
5	SS	100	5-8-9-11 (17)	ML		5.0	SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 65% fines, <25% very fine sand, <10% gravel, no HC odor		1.2	5
						6.0	Bottom of Borehole at 6.0 feet BGS.			

EBA Engineering
825 Sonoma Avenue
Santa Rosa, CA 95404
Telephone: 707-544-0784
Fax: 707-544-0866

BORING NUMBER SB-49

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/22/08 **COMPLETED** 9/22/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	DEPTH (ft)
0									0
						2.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		
	SS	50	6-9-12-19 (21)	ML			SANDY SILT; dark brown (10YR 3/3), moist, hard, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		
5	SS	75	5-10-12-13 (22)			6.0			5
							Bottom of Borehole at 6.0 feet BGS.		

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Fax: 707-544-0866

BORING NUMBER SB-50

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/22/08 **COMPLETED** 9/22/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			0
						2.5				
	SS	50	9-4-7-9 (11)	ML			SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 65% fines, <15% sand, <20% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.0	
5	SS	100	4-10-10-10 (20)				same as above, 70% fines, <15% sand, <15% gravel			5
						6.0				
							Bottom of Borehole at 6.0 feet BGS.			

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Fax: 707-544-0866

BORING NUMBER SB-51

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/22/08 **COMPLETED** 9/22/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						2.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
	SS	50	9-6-10-22 (16)	ML			SANDY SILT; dark brown (10YR 3/3), moist, hard, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.0	
5	SS	100	9-9-13-14 (22)			6.0	same as above, very stiff			5
							Bottom of Borehole at 6.0 feet BGS.			

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BORING NUMBER SB-52

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/22/08 **COMPLETED** 9/22/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY M. Peebles (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	DEPTH (ft)
0									0
						2.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		
	SS	50	10-15-18-23 (33)	ML			SANDY SILT; dark brown (10YR 3/3), moist, hard, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		
5	SS	50	10-16-18-20 (34)			6.0	same as above, 70% fines, <20% sand, <10% gravel		5
							Bottom of Borehole at 6.0 feet BGS.		

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BORING NUMBER SB-53

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/22/08 **COMPLETED** 9/22/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0				SM			SILTY SAND; dark brown (10YR 3/3),dry, 50% medium to fine sand, 30% silt, <20% gravel to 1/2-inch diameter, no HC odor			0
	SS	50	8-10-14-13 (24)			3.0			0.0	
				ML			SANDY SILT; dark brown (10YR 3/3), moist, hard, 65% fines, <20% sand, <15% gravel, sub-angular to rounded gravels to 0.5 inches in diameter of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			
5	SS	75	7-9-10-13 (19)			6.0				5
							Bottom of Borehole at 6.0 feet BGS.			

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BORING NUMBER SB-54

CLIENT New Railroad Square LLC **PROJECT NAME** SMART Property

PROJECT NUMBER 08-1528 **PROJECT LOCATION** 2 Fourth St. and 34 Sixth St., Santa Rosa, California

DATE STARTED 9/23/08 **COMPLETED** 9/23/08 **GROUND ELEVATION** ft MSL **CASING ELEVATION** ft MSL

DRILLING CONTRACTOR Clear Heart Drilling, Inc. **GROUND WATER LEVELS:** **HOLE SIZE** 7"

DRILLING METHOD Hollow-Stem Auger **AT TIME OF DRILLING** ---

LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA) **AT END OF DRILLING** ---

NOTES **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						2.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
	SS	100	8-7-10-14 (17)	ML			GRAVELLY SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 60% fines, <25% gravel, <15% sand, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.0	
5	SS	100	5-8-7-9 (15)			6.0	same as above, moist, stiff			5
							Bottom of Borehole at 6.0 feet BGS.			

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Santa Rosa, CA 95404
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Fax: 707-544-0866

BORING NUMBER SB-55

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/23/08 **COMPLETED** 9/23/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						2.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
	SS	75	8-9-10-10 (19)	ML			SANDY SILT; dark brown (10YR 3/3), moist, very stiff, 60% fines, <25% sand, <15% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.0	
5	SS	100	4-8-12-15 (20)			6.0	same as above, moist, very stiff			5
							Bottom of Borehole at 6.0 feet BGS.			

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BORING NUMBER SB-55-W

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 10/15/08 **COMPLETED** 10/15/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 12.0 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						2.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
				ML			SANDY SILT; dark brown (10YR 3/3), moist, 80% fines, <15% sand, <5% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor			
	AU						same as above, brown (10YR 5/3), increase in moisture content, moist, no HC odor		0.0	
5										5
							same as above, no HC odor			
10										10
	AU								0.2	
						13.0	▽			
	SS	100	11-13-20 (33)	GP			SANDY GRAVEL; gray (N5), saturated, dense, 85% poorly graded gravel, 15% sand, strong HC odor		0.3	
15						16.0				15
							Bottom of Borehole at 16.0 feet BGS.			

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BORING NUMBER SB-56

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/23/08 **COMPLETED** 9/23/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						1.5	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor, trace glass			
	SS	75	5-5-10-11 (15)	ML			GRAVELLY SILT; dark brown (10YR 3/3), moist, very stiff, 65% fines, <20% gravel <15% sand, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		0.0	
5	SS	100	9-9-8-8 (17)			6.0	same as above, moist, very stiff		1.0	5
							Bottom of Borehole at 6.0 feet BGS.			

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825 Sonoma Avenue
Santa Rosa, CA 95404
Telephone: 707-544-0784
Fax: 707-544-0866

BORING NUMBER SB-57

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/23/08 **COMPLETED** 9/23/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	DEPTH (ft)
0						0.5	ASPHALT		0
				ML			SILT WITH FINE SAND; dark brown (10YR 3/3), very moist, medium stiff, 65% fines, <25% fine sand, <10% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		
	SS	100	2-2-4-4 (6)						
5	SS	100	2-4-5-8 (9)				same as above, stiff		5
						6.0	Bottom of Borehole at 6.0 feet BGS.		

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Fax: 707-544-0866

BORING NUMBER SB-58

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/23/08 **COMPLETED** 9/23/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	DEPTH (ft)
0									0
						1.5	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		
	SS	75	4-6-8-8 (14)	ML			SILT WITH FINE SAND; dark brown (10YR 3/3), moist, stiff, 65% fines, <30% fine sand, <5% gravel, sub-angular to rounded gravels of various lithologies including: chert, mafics, metamorphics, and volcanics, no HC odor		
5	SS	100	5-5-9-9 (14)			6.0	same as above, very stiff		5
							Bottom of Borehole at 6.0 feet BGS.		

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Fax: 707-544-0866

BORING NUMBER SB-59

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/23/08 **COMPLETED** 9/23/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY M. Peebles (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	DEPTH (ft)
0									0
						1.0	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor		
	SS	100	3-6-7-7 (13)	ML			SILT WITH VERY FINE SAND; dark brown (10YR 3/3), moist, stiff, 80% fines, <20% fine sand, <5% gravel, no HC odor		
5	SS	100	5-5-8-8 (13)				same as above, very stiff		5
						6.0	Bottom of Borehole at 6.0 feet BGS.		

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Santa Rosa, CA 95404
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Fax: 707-544-0866

BORING NUMBER SB-60

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/23/08 **COMPLETED** 9/23/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0							FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor, trace glass			0
						2.5				
	SS	50	7-8-9-8 (17)	ML			SILT WITH FINE SAND; dark brown (10YR 3/3), moist, very stiff, 75% fines, <20% fine sand, <5% trace gravel, no HC odor		0.0	
5	SS	100	6-6-7-9 (13)				same as above, very stiff			5
						6.0	Bottom of Borehole at 6.0 feet BGS.			

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BORING NUMBER SB-61

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 9/24/08 **COMPLETED** 9/24/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
AT TIME OF DRILLING ---
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						1.5	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor, trace glass			
	SS	75	4-6-7-6 (13)	ML			GRAVELLY SILT; dark brown (10YR 3/3), moist, stiff, 75% silt, 20% gravel, <5% trace fine sand, no HC odor		0.0	
5	SS	100	5-7-9-10 (16)				same as above, very stiff			5
						6.0	Bottom of Borehole at 6.0 feet BGS.			

GENERAL BH / TP / WELL 08-1528.GPJ GINT US.GDT 11/17/08

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Santa Rosa, CA 95404
Telephone: 707-544-0784
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BORING NUMBER SB-61-W

CLIENT New Railroad Square LLC
PROJECT NAME SMART Property
PROJECT NUMBER 08-1528
PROJECT LOCATION 2 Fourth St. and 34 Sixth St., Santa Rosa, California
DATE STARTED 10/15/08 **COMPLETED** 10/15/08
GROUND ELEVATION ft MSL **CASING ELEVATION** ft MSL
DRILLING CONTRACTOR Clear Heart Drilling, Inc.
GROUND WATER LEVELS: **HOLE SIZE** 7"
DRILLING METHOD Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 13.0 ft
LOGGED BY T. Nielsen (EBA) **CHECKED BY** P. Nelson (EBA)
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	CONTACT DEPTH	MATERIAL DESCRIPTION	CONTACT ELEVATION	PID (ppm)	DEPTH (ft)
0										0
						0.8	FILL; rock and gravelly soil, gravel to 3 inches in diameter, dry, no HC odor			
							SANDY SILT; dark brown (10YR 3/3), moist, 75% silt, 20% fine sand, <5% trace gravel, no HC odor			
5	AU			ML					0.0	5
						8.5				
							SANDY SILT; brown (10YR 5/3), moist, stiff, 75% silt, 25% fine sand, no HC odor			
10	SS	100	4-6-7 (13)						0.0	10
				ML			▽ same as above, saturated, 70% fines, 15% sand, 15% gravel			
15	SS	100	4-9-14 (23)			14.5			0.0	15
				GP			POORLY GRADED GRAVEL WITH SAND; brown (10YR 5/3), saturated, medium dense, 75% gravel, 20% sand, <5% fines, no HC odor			
						16.0	Bottom of Borehole at 16.0 feet BGS.			

GENERAL BH / TP / WELL 08-1528.GPJ GINT US.GDT 11/17/08

APPENDIX D

NORCAL GEOPHYSICAL CONSULTANTS INC.
GEOPHYSICAL SURVEY REPORT

NORCAL GEOPHYSICAL CONSULTANTS, INC.

October 6, 2008

EBA Engineering
825 Sonoma Avenue
Suite C
Santa Rosa, California 95404

Subject: Geophysical Survey
Railroad Square SMART Property
Santa Rosa, California

NORCAL Job No: 08-282.21

Attention: Mr. David Noren

Dear Mr. Noren:

This report presents the findings of a geophysical investigation performed by NORCAL Geophysical Consultants, Inc. at the Sacramento-Marin Area Rapid Transit (SMART) Property in Railroad Square, Santa Rosa, California. The geophysical survey was conducted during the period August 29th through September 2nd, 2008 by the following NORCAL personnel:

- David T. Hagin PGp 1033
- Sierra Boyd PGp 1060
- Senior Geophysical Technician Travis W. Black

Site orientation, background information and logistical support were provided by Mr. Paul Nelson of EBA Engineering.

SITE DESCRIPTION AND PURPOSE

The geophysical survey area is a former rail yard located in the Railroad Square area of Santa Rosa, between 3rd and 6th Streets, bounded on the east by railroad tracks and on the west by the remains of the "Old Cannery" buildings (Plate 1). The approximate 5.6 acre site contains numerous metallic objects at ground surface, such as old railroad cars and their parts, railroad tracks, I-beams, chain-link fences, metallic structures and numerous other assorted metallic objects.

The purpose of this investigation is to assess the potential for the existence of underground storage tanks (UST's) underground utilities, or other subsurface features such as buried debris, through the use of geophysical methods.

NORCAL

METHODOLOGY

The geophysical methods used for this investigation were: vertical magnetic gradient (VMG), electromagnetic terrain conductivity (TC), ground penetrating radar (GPR) and electromagnetic line locating (EMLL) methods. The VMG was used to detect magnetic (ferrous) metal objects buried in the shallow subsurface, whereas the TC was used to characterize lateral changes in soil conductivity. The GPR method can detect changes in electrical properties of the shallow subsurface which may be caused by the presence of buried debris.

Although it was known that the numerous site cultural features would cause interference in the MAG and TC data and doubtless mask many areas, these methods were preformed in due diligence on the premise that buried debris or UST's may exist in areas where the surface is clear of metallic features.

Subsequent to the MAG/TC investigation, ground penetrating radar (GPR) was used locally to further define the nature of possible buried sources in terms of dimensions and depth. Additionally, electromagnetic line locating equipment (EMLL) was used to trace out accessible site utilities for correlation with other geophysical methods. A more detailed discussion of these methods, data analysis, geophysical instrumentation, and limitations is presented in Appendix A.

FIELD INVESTIGATION

Initially, a survey grid was established to provide horizontal position control for data acquisition. The grid required for this area extends to a maximum of 400 feet in the site easting direction and 815 feet in the site northing direction. Data acquisition consisted of a series of traverses spaced 10 feet apart which were oriented parallel to the western site boundary (site northing). MAG and TC data were acquired along the northing grid lines at approximately 5-foot intervals, resulting in an approximate 10 X 5 foot grid.

Subsequently, the data were uploaded to a field computer and processed to produce preliminary VMG and TC contour maps. These maps were then evaluated for lateral VMG and TC variations that might be caused by buried objects, differences in soil composition and/or moisture, or above-ground features. Variations that could not be attributed to obvious above-ground items or apparent utility lines were considered anomalous. Features identified on the VMG and TC maps as anomalous were further investigated with the GPR.

The GPR follow-up consisted of conducting several representative profiles in the vicinity of the VMG and TC anomalies for additional characterization. Typically, the profiles were centered on the anomaly and ranged in length from 40 to 140 feet.

Finally, the EMLL was employed to trace out underground lines which were accessible from the surface. These results were correlated with the previously acquired data to help identify the possible sources of any measured variations.

DATA ANALYSIS

Magnetic Data

Magnetic data were carefully evaluated and edited, then contoured for review and interpretation. The contour map was then assessed for magnetic variations which could not be explained by known magnetic sources; unexplained variations in the magnetic data were interpreted as due to subsurface metallic (ferromagnetic) sources.

Terrain Conductivity Data

Terrain conductivity data were reviewed for quality control, edited and contoured for interpretation. TC contour maps were interpreted based on variation in TC values and the potential causes for these variations.

GPR Data

We reviewed and categorized reflection data for each GPR profile. GPR records were analyzed by visually inspecting each record for distinctive reflection characteristics that can be caused by localized subsurface features commonly associated with landfill material such as debris, voids, and miscellaneous objects or excavated and backfilled zones. Features are analyzed in terms of depth, lateral extent and amplitude of reflections in order to interpret which are likely to represent features of interest. A sample GPR profile is presented for illustration.

RESULTS and CONCLUSIONS

The VMG and TC data are presented as colored contour maps on Plates 2 and 3. VMG is a method designed to be sensitive to nearby metallic sources and less sensitive to regional and temporal variations. TC quantifies the electrical conductivity of the underlying material, mainly influenced by buried subsurface features, changes in moisture content and the variations on the site materials. Plate 4 presents a sample of GPR data selected from approximately 700 lineal feet of GPR profile acquired.

The VMG map presented on Plate 2 shows numerous zones with tightly closed contours. In most locations, numerous above-ground magnetic sources, such as railroad tracks and cars, chain-link fences, metallic structures, utility poles and large metal posts provide an explanation for the observed VMG variations. The numerous contour closures near the railroad tracks are likely to be associated with the tracks and historic railroad debris; however, the larger of these may represent larger buried debris or utilities. Anomalies in close proximity to the tracks are more likely to be associated with the railway.

There are also several areas containing numerous closed contours which have no apparent source. These areas tend to be on the western portion of the site and range in size from a few tens of feet across to approximately 200 feet across. These contour closures vary in both lateral extent and magnitude, and may represent objects as large as a UST or as small as hand-sized debris. The largest of these zones have been indicated on Plate 2 with red hachuring.

The terrain conductivity contour map shown on Plate 3 indicates modest variations in conductivity over a majority of the site. The prominent features shown on this map appear to correlate with known features, such as the chain link fence and other structures. One exception is the distinct linear assemblage of localized contour closures that extends generally east-west in the vicinity of the noted railroad cars on Plate 3. This feature is at least 130 feet long and about 25 feet wide; it is indicated by blue hachuring on the map. As this feature cannot be associated with any known source, it is interpreted to be due to buried non-ferrous, conductive debris. Also, a small, but relatively high magnitude anomaly appears centered near 300-northing, 40-easting (blue hachure).

Representative GPR profiles suggest that VMG anomalies are likely due to relatively small, scattered, buried ferromagnetic debris; however, the presence of larger objects is possible as not all areas were covered by the follow-up GPR survey. Plate 4 shows a typical GPR record, interpreted as showing shallow buried debris. The reflection characteristics of the upper 2.5 to 3 feet containing the debris appear distinct from the underlying layers, and suggest the depth of the disturbed soil in this area.

The EMLL investigation was limited as there were few locations to induce current. Within the area of the noted pump island, two discontinuous vent lines were traced short distances where they appear to truncate, indicating that the UST's they were venting have probably been removed.

DISCUSSION

The VMG investigation revealed several areas which display magnetic variations with no apparent source, identified as VMG anomalies. The character of these anomalies, as well as subsequent GPR investigation, suggests that the source of these anomalous magnetic variations is scattered buried metallic debris in the shallow subsurface. The largest of these areas have been marked on Plate 3 by red hachure.

TC variations are generally modest, and appear to be related to identifiable sources, except in two locations. These anomalies likely indicate buried conductive material, and are shown on Plate 4 with blue hachure.

Comparison of Plate 3 and Plate 4 shows little correlation between the VMG map and the TC map. In the VMG anomaly areas (red hachure) the EM shows little or no response, probably because the interpreted scattered debris contributes little to the total volume of earth measured for each TC reading; additionally, the focus of the instrument is deeper than the interpreted debris. This observation substantiates the interpretation of the VMG anomalies as primarily scattered debris.

It is notable that the chain-link fence creates strong variation on the TC map, while the railroad tracks show no effect. This is probably because the fence is inter-connected over the entire distance spanned, creating a large antenna. This antenna absorbs and conducts the signal produced by the instrument. The railroad tracks, however, can have a gap between the rails thus minimizing the tracks to act as an antenna in a similar manner as the chain-link fence.

Of further note is the fact that the linear TC anomaly near the railroad cars shows little correlation with the VMG map. This may be due to the composition of the debris materials; certain debris can be conductive but not magnetic.

STANDARD CARE AND WARRANTY

The scope of NORCAL's services for this project consisted of using geophysical methods to characterize the shallow subsurface. The accuracy of our findings is subject to specific site conditions and limitations inherent to the techniques used. We performed our services in a manner consistent with the level of skill ordinarily exercised by members of the profession currently employing similar methods. No warranty, with respect to the performance of services or products delivered under this agreement, expressed or implied, is made by NORCAL.

We appreciate having the opportunity to provide our services to EBA Engineering.

Sincerely,

NORCAL Geophysical Consultants, Inc.

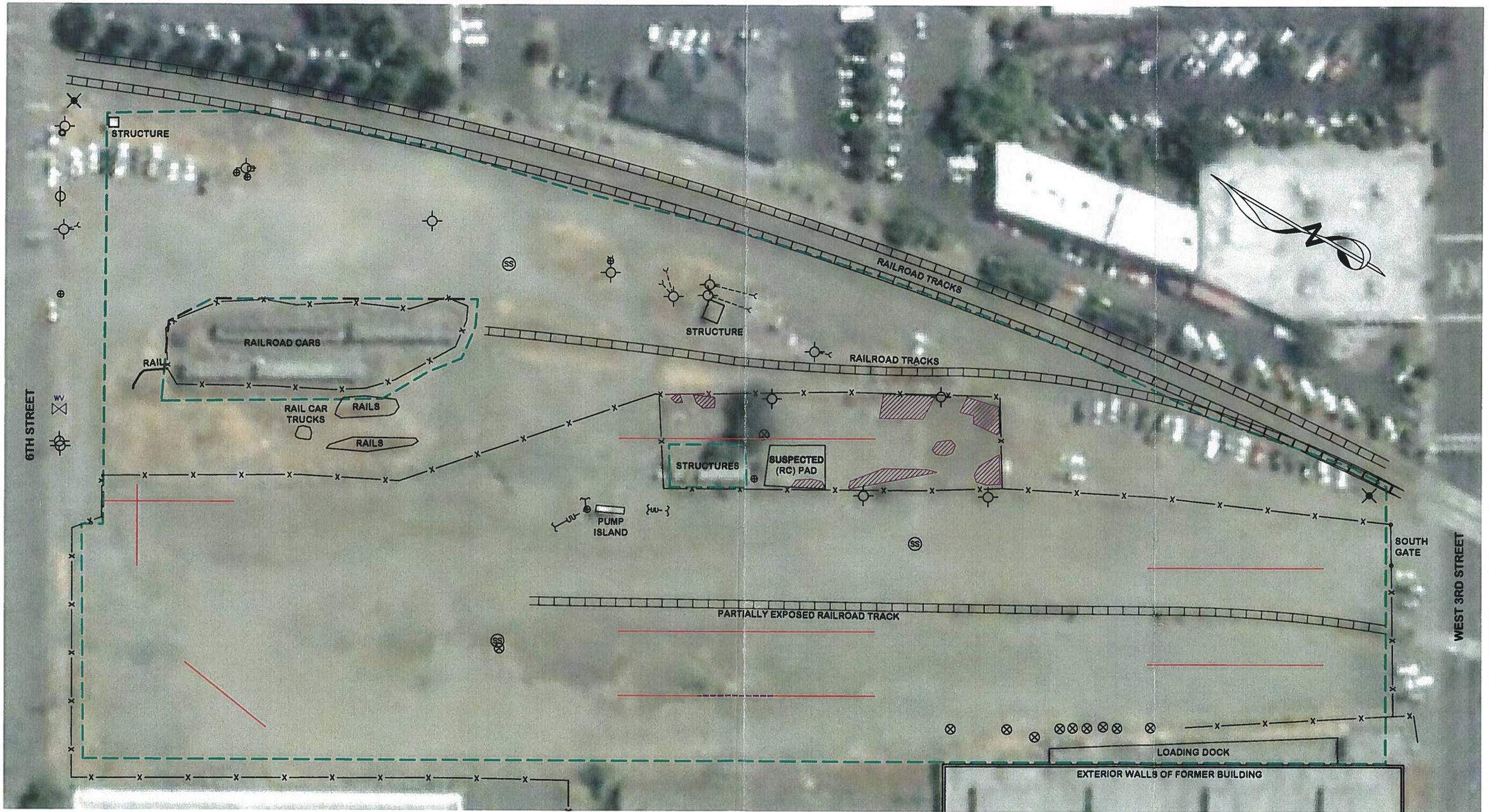
David T. Hagin

David T. Hagin
Geophysicist GP-1033

DTH/KGB/tt

Enclosures: Plates 1-6

Appendix A - Geophysical Methodology, Instrumentation, Data Analysis, and Limitations



LEGEND

— — —	LIMITS OF GEOPHYSICAL SURVEY	▨	METALLIC & NONMETALLIC DEBRIS	⌽	SIGN POST
———	GPR TRAVERSE	⊕	BOLLARD	⌽	UTILITY POLE/GUY WIRE
- - - - - - - -	LOCATION OF SAMPLE GPR PROFILE (PLATE 4)	⊗	METAL POST	o	VENT PIPE
——x——	FENCE	✱	RAILROAD SIGNAL/CONTROL ARM	WV ⋈	WATER VALVE/METER
— —uu— —	UNDIFFERENTIATED UTILITY LINE	Ⓢ	SANITARY SEWER MANWAY	(RC)	REINFORCED CONCRETE

SCALE

0 30 60 120

(1 inch = 60 feet)

NORCAL

SITE MAP
SMART PROPERTY
RAILROAD SQUARE

LOCATION: SANTA ROSA, CALIFORNIA

CLIENT: EBA ENGINEERING

JOB #: 08-282.21

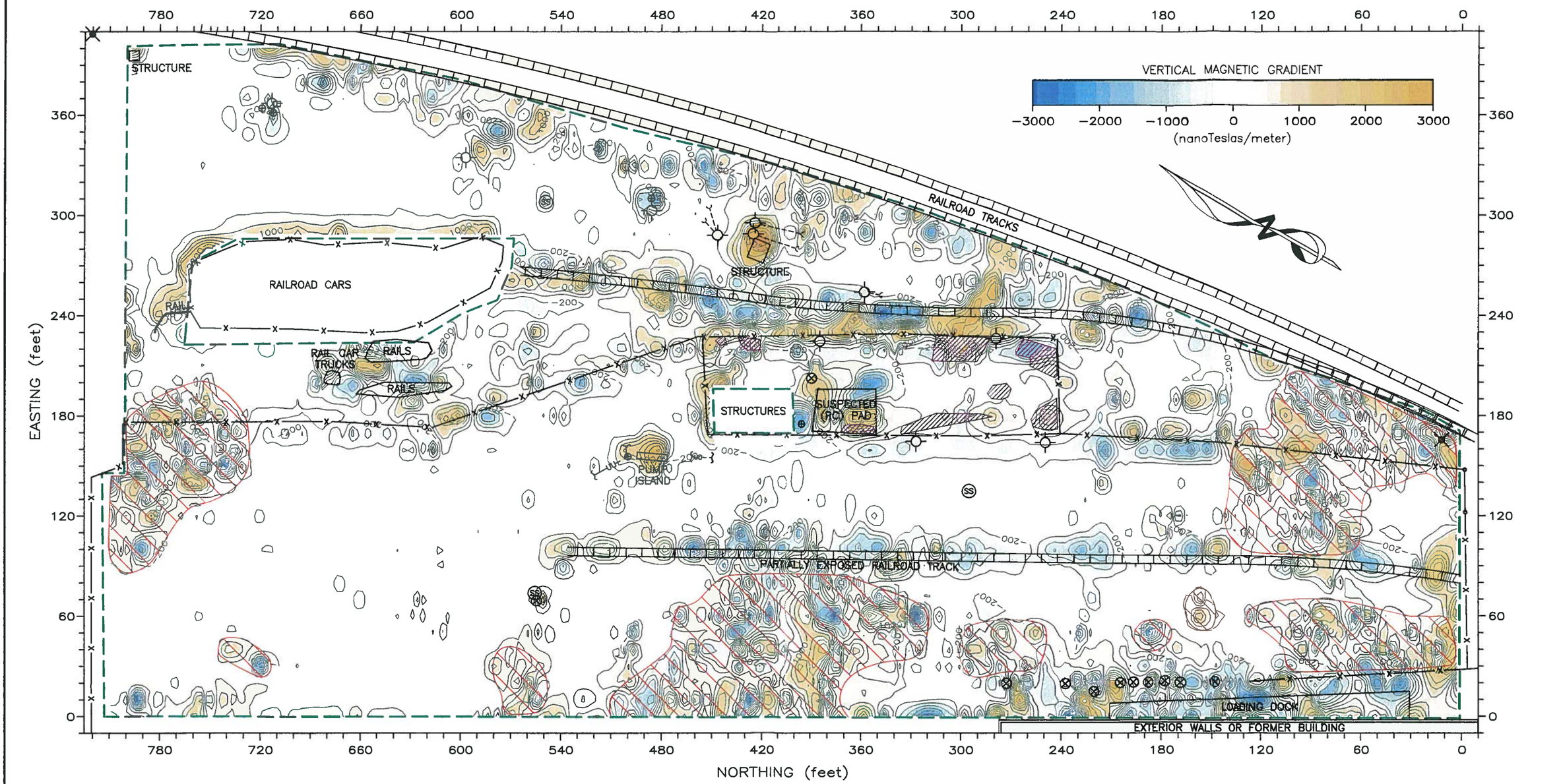
NORCAL GEOPHYSICAL CONSULTANTS INC.

DATE: OCT. 2008

DRAWN BY: G.RANDALL

APPROVED BY: DTH

PLATE 1



LEGEND

— — —	LIMITS OF GEOPHYSICAL SURVEY	▨	METALLIC & NONMETALLIC DEBRIS	(SS)	SANITARY SEWER MANWAY
—0—	VERTICAL MAGNETIC GRADIENT CONTOUR (CONTOUR INTERVAL = 500 nT/m)	⊕	BOLLARD	ϕ	SIGN POST
▨	VERTICAL MAGNETIC GRADIENT ANOMALY	⊗	METAL POST	⊸	UTILITY POLE/GUY WIRE
—x—	FENCE	✕	RAILROAD SIGNAL/CONTROL ARM	(RC)	REINFROCED CONCRETE
— —UU— —	UNDIFFERENTIATED UTILITY LINE	═══	RAILROAD TRACKS		

SCALE
0 30 60 120
(1 inch = 60 feet)

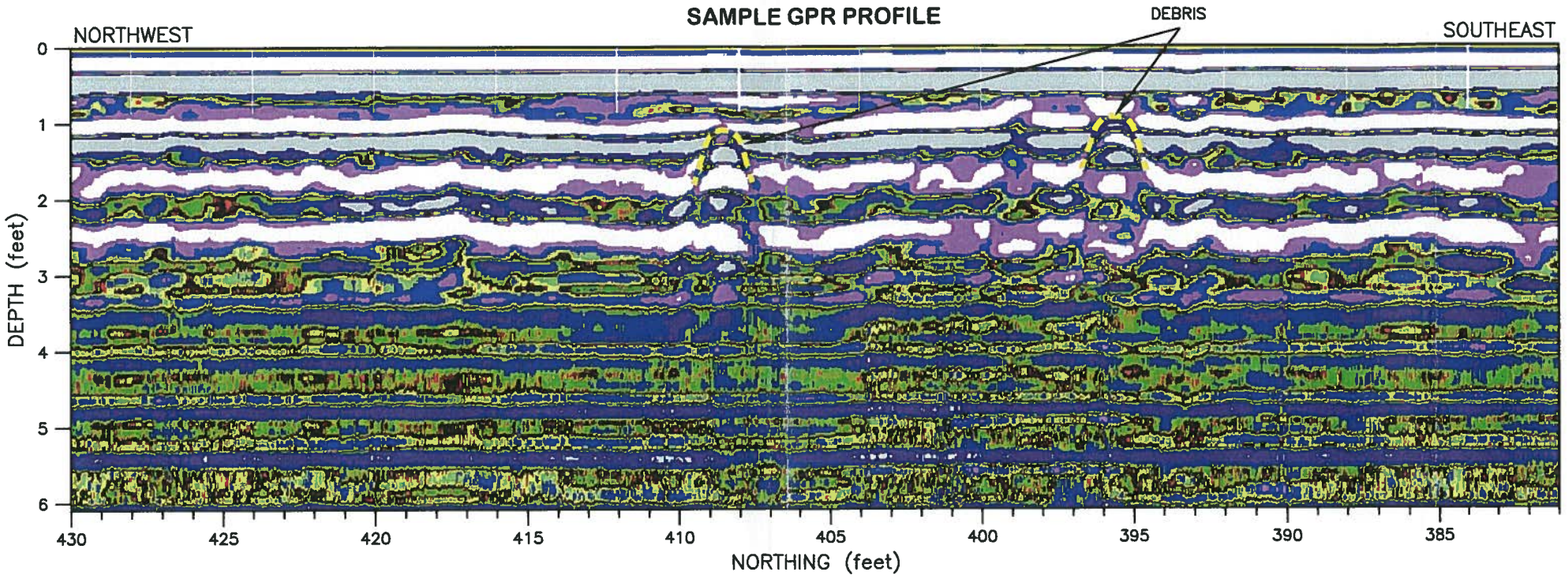
NORCAL

VERTICAL MAGNETIC GRADIENT CONTOUR MAP SMART PROPERTY–RAILROAD SQUARE

LOCATION: SANTA ROSA, CALIFORNIA
CLIENT: EBA ENGINEERING
NORCAL GEOPHYSICAL CONSULTANTS INC.
JOB #: 08–282.21
DATE: OCT. 2008
DRAWN BY: G.RANDALL
APPROVED BY: DTH

PLATE 2

SAMPLE GPR PROFILE



HORIZONTAL SCALE
0 5 10
(1 inch = 5 feet)
VERTICAL SCALE: 1 inch = 2 feet)

NORCAL

SAMPLE GPR PROFILE
SMART PROPERTY
RAILROAD SQUARE

LOCATION: SANTA ROSA, CALIFORNIA
CLIENT: EBA ENGINEERING
JOB #: 08-282.21
NORCAL GEOPHYSICAL CONSULTANTS INC.
DATE: OCT. 2008
DRAWN BY: G.RANDALL
APPROVED BY: DTH

PLATE 4

Appendix A

GEOPHYSICAL METHODOLOGY

Appendix A

VERTICAL MAGNETIC GRADIENT (VMG)

Methodology

Vertical magnetic gradient surveys are used to determine the presence of buried ferrous objects. A magnetic gradiometer measures the vertical gradient of the earth's magnetic field. It consists of two total field magnetic sensors separated vertically by one-half meter. The magnetic field strength is measured simultaneously at both of these sensors. The difference in magnetic intensity between these measurements is proportional to the vertical gradient of the earth's magnetic field. Because the vertical gradient is constant with respect to time, the effect of diurnal variations is eliminated. Therefore, a gradiometer provides higher sensitivity and better resolution of near surface sources than total field magnetometers. Areas with significant amounts of buried metal typically produce anomalously steep magnetic gradients. Since it is sensitive to ferrous metal sources both above and below ground, site and vicinity surface conditions can affect survey results.

A Geometrics G-858 cesium vapor magnetometer or a SCINTREX ENVI-MAP proton precession magnetometer is typically used to obtain vertical magnetic gradient data. These instruments feature a built-in memory that stores the vertical magnetic gradient and survey grid information. The information can be down loaded to a computer for further processing.

Data Analysis

Computer Processing

The VMG data are down loaded to a lap-top computer and converted it into a format for contouring. The contouring program (SURFER Version 8.0 by Golden Software) calculates an evenly spaced array of values (grid) based on the observed field data. Finally, these gridded values are contoured to produce a VMG contour map.

Contour Map Interpretation

The VMG contour map illustrates the variations in the vertical magnetic gradient across the site. Areas without below or above ground ferrous metal are characterized by very low magnetic gradients. In these areas, there are very few contours. In areas with above or below ground ferrous metal, the magnetic gradient is relatively steep. These areas are characterized by numerous closely spaced contours and are considered anomalous. If the source of the anomaly is linear (e.g. underground utilities or fence lines), then the contours tend to be parallel and evenly distributed. If the source of the anomaly is localized (e.g. sign post, buried drum, etc.), then the contours tend to form circular or elliptical closures proportional to the size of the object. The larger the object and the closer it is to the magnetometer, the denser the concentrations of contours. Magnetic anomalies that cannot be attributed to above ground objects (fences, vehicles, buildings, etc.) are probably caused by buried objects.

USTs are often characterized by circular to elliptical contour closures. These closures have magnitudes ranging from several hundred to several thousand nano-Tesla per meter (nT/m) depending on the size and depth of the tank. If the UST is cylindrical and lying horizontally, it will often produce a bi-polar VMG anomaly. This consists of two adjacent contour closures. One has VMG values that increase towards the center of the closure and is referred to as a positive lobe. The second has VMG values that decrease towards the center of the closure and is referred to as a negative lobe. Typically, the positive lobe is situated directly above the UST and the negative lobe is to the north of the UST. Utilities and scattered metal debris, on the other hand, are generally characterized by single circular or irregular shaped negative lobes, or a group of alternating positive and negative lobes (closures). These closures typically have magnitudes ranging from less than fifty to several hundred nano-Tesla per meter (nT/m) depending on the size, depth, and amount of utilities and debris in a given area.

Limitations

Below ground metal ferrous objects produce localized variations in the earth's magnetic field. The magnetic intensity associated with buried metal depends on the mass of the metal and the distance the metal object is from the magnetometer sensor. As the distance between the object and the magnetometer sensor increases, the intensity of the associated field decreases, thereby making detection more difficult. In addition, the ability to detect a buried metal object is based on the intensity of these variations versus the intensity of the background variations. Background variations can be caused by other nearby above or below ground metallic sources. Cultural features such as chain link fences, buildings, debris, railroad spurs, utilities, above ground electric lines, etc. typically produce numerous magnetic variations with high intensities. These variations may mask effects from buried metal objects, or make it very difficult to determine whether the magnetic variations are associated with below ground metal or above/below ground cultural features.

ELECTROMAGNETIC TERRAIN CONDUCTIVITY (TC)

Methodology

The electromagnetic method is used to measure variations in subsurface electrical conductivity that may be due to buried foreign objects or changes in subsurface materials. The electromagnetic system utilizes two coils separated by a specified distance. One of these coils transmits a time-varying electromagnetic signal (primary magnetic field) which induces current flow in the earth. This in turn creates a secondary magnetic field which is detected by the receiver coil. The secondary signal is complex and has both quadrature and in-phase components. The amplitude of the quadrature component is proportional to the electrical conductivity of the subsurface materials. The in-phase component is proportional to conductivity, but is also affected by electrical properties associated with metal objects. The instrument displays the quadrature component in units of milliSiemens/meter (mS/m). Since this measurement represents the conductivity of the volume of material sampled, rather than individual layers, it is an apparent value and is referred to as terrain conductivity.

Electromagnetic surveys are typically conducted using a Geonics EM31-DL ground conductivity meter connected to an Omnidata data recorder. The EM31 has a fixed coil separation of 12 feet, which results in a total depth of investigation of approximately 10 to 15 feet depending upon local site conditions. The data recorder automatically stores EM values as well as station locations and annotations regarding cultural features.

Data Analysis

Computer Processing

The TC data are down loaded to a lap-top computer and converted it into a format for contouring. The contouring program (SURFER Version 8.0 by Golden Software) calculates an evenly spaced array of values (grid) based on the observed field data. Finally, these gridded values are contoured to produce a TC contour map.

Contour Map Interpretation

The TC contour map shows the variations in the electromagnetic terrain conductivity values within the survey area. The contour map is characterized by a series of contour lines that represent specific values. Areas that lack contour lines, or where the contours are spaced far apart, indicate a minimal change or variation in the respective values. This is indicative of relatively uniform conditions. Areas where contours are closely spaced indicate variations that are not uniform and probably caused by local sources.

In areas where there are significant quantities of above or below ground metal objects, the measured values are relatively large. These areas are characterized by numerous closely spaced contours. If the source of the anomaly is linear (e.g. underground utilities, railroad spurs, culvert, etc.), then the contours tend to parallel the object, and are closely spaced in close proximity to the object. If the below ground source is localized (e.g. buried drum, isolated metal debris, etc.), then the contours tend to form circular or elliptical closures that enclose the object. The larger the object and the closer it is to the geophysical instrument, the more contours there are in a given area. Variations that cannot be attributed to known above and/or below ground objects (metal well casings, reinforced concrete surface drain, above ground 55 gallon drums, utilities, etc.) are caused by unknown buried objects and are considered anomalous.

Buried landfill material is often characterized by circular to elliptical contour closures. These closures can vary from large circular closures that cover broad areas, to clusters of small closures that occur in zones. If the composition of the landfill is generally homogenous and nonmetallic, the contours tend to form large closures representing low values. If the fill material consists of both nonmetallic and metallic debris that varies significantly throughout the landfill, the contours tend to occur as numerous small closures representing both high and low values.

Limitations

There are inherent limitations associated with TC techniques that may not allow for the detection of all subsurface features of interest. These limitations are related to the composition of the

subsurface feature, its size and depth of burial, and its proximity to other above or below ground features. In general, as the distance between a subsurface object and the respective geophysical instrument increases, the intensity of the associated field decreases, thereby making detection more difficult. In addition, above and below ground objects, such as buildings, debris, utilities, above ground electric lines, etc., typically produce interference that may mask effects from nearby buried features (targets).

Apart from the physical limitations of the instruments and the unwanted effects from secondary objects, the ability to detect subsurface features is also dependent upon the density of data acquisition points. If the distance between data acquisition points is significantly larger than the size of the subsurface feature, then this object may not be detectable.

GROUND PENETRATING RADAR (GPR)

Methodology

Ground penetrating radar is a method that provides a continuous, high resolution cross-section depicting variations in the electrical properties of the shallow subsurface. The method is particularly sensitive to variations in electrical conductivity and electrical permittivity (the ability of a material to hold a charge when an electrical field is applied).

The GPR system operates by radiating electromagnetic pulses into the ground from a transducer (antenna) as it is moved along a traverse. Since most earth materials are transparent to electromagnetic energy, the signal spreads downward into the subsurface. However, when the signal encounters a contrast in electrical permittivity, a portion of the electromagnetic energy is reflected back to the surface. When the signal encounters a metal object, all of the incident energy is reflected. The reflected signals are received by the same transducer and are printed in cross-section form on a graphical recorder. Changes in subsurface reflection character on the GPR records can provide information regarding the location of voids, USTs, sumps, buried debris, underground utilities, and variations in the shallow stratigraphy.

The depth of investigation is dependant upon antenna frequency and ground conductivity, as determined by soil conditions. Clayey soils are typically high in water content and relatively conductive, potentially limiting the depth of investigation. Locally, optimum conditions for GPR are dry, sandy soils, although the method has been quite successful when used on snow and ice.

The GPR system used was a Geophysical Survey Systems, Inc. SIR-3000 Subsurface Interface Radar equipped with a 500 megahertz (MHz) transducer. This transducer is near the center of the available frequency range and is used to provide high resolution at shallow depths.

Data Analysis

GPR records are examined to identify reflection patterns characteristic of voids, USTs, utilities, and other buried debris. Typically, USTs, conduits and pipes are manifested by broad localized hyperbolic (upside-down "U" shape) reflection patterns, whereas voids may be quite irregular in

shape. The intensity of a reflection pattern is usually dependent upon the condition of the respective object or void, its burial depth, and the type of fill over the feature. Utilities and other buried debris are typically manifested by narrow localized hyperbolic reflections that vary in intensity.

Limitations

The ability to detect subsurface targets is dependent on site specific conditions. These conditions include depth of burial, the size or diameter of the target, the condition of the specific target in question, the type of backfill material associated with the target, and the surface conditions over the target (reinforced concrete, etc.). Under ideal conditions, the GPR can generally detect objects buried to approximately six feet. However, as the clay content in the subsurface increases, the GPR depth of detection decreases. Therefore, it is possible that on-site soil conditions and target features may limit the depth of detection to the upper one to two feet below ground surface.

ELECTROMAGNETIC LINE LOCATION/METAL DETECTION (EMLL)

Methodology

Electromagnetic line location techniques are used to locate the magnetic field resulting from an electric current flowing on a line. These magnetic fields can arise from currents already on the line (passive) or currents applied to a line with a transmitter (active). The most common passive signals are generated by live electric lines and re-radiated radio signals. Active signals can be introduced by connecting the transmitter to the line at accessible locations or by induction.

The detection of underground utilities is affected by the composition and construction of the line in question. Utilities detectable with standard line location techniques include any continuously connected metal pipes, cables/wires or utilities with tracer wires. Unless the utilities carry a passive current, they must be exposed at the surface or in accessible utility vaults. These generally include water, electric, natural gas, telephone, and other conduits related to facility operations. Utilities that are not detectable using standard electromagnetic line location techniques include those made of non-electrically conductive materials such as PVC, fiberglass, vitrified clay, and pipes with insulated connections.

Buried objects can also be detected, without direct contact, by using the induction mode. This is used to detect buried near surface metal objects such as rebar, manhole covers, USTs, and various metallic debris. The induction mode is used by holding the transmitter-receiver unit above the ground and continuously scanning the surface. The unit utilizes two orthogonal coils that are separated by a specified distance. One of the coils transmits an electromagnetic signal (primary magnetic field) which in turn produces a secondary magnetic field about the subsurface metal object. Since the receiver coil is orthogonal to the transmitter coil, it is unaffected by the primary field. Therefore, the secondary magnetic fields produced by buried metal object will generate an audible response from the unit. The peak of this response indicates when the unit is directly over the metal object.

The instrumentation we used for the EMLL survey consists of a Radio Detection RD-400 and a Fisher TW-6 inductive pipe and cable locator.

Data Analysis

The EMLL instrumentation indicates the presence of buried metal by emitting an audible tone; there are no recorded data to analyze. Therefore, the locations of buried objects detected with the EMLL method are marked on the ground surface during the survey.

Limitations

The detection of underground utilities is dependent upon the composition and construction of the line of interest, as well as depth. Utilities detectable with standard line location techniques include any continuously connected metal pipes, cables/wires or utilities with tracer wires. Unless carrying a passive current these utilities must be exposed at the surface or accessible in an utility vaults. These generally include water, electric, natural gas, telephone, and other conduits related to facility operations. Utilities that may not be detectable using standard electromagnetic line location techniques include certain abandoned utilities, utilities not exposed at the ground surface, or those made of non-electrically conductive materials such as PVC, fiberglass, vitrified clay, and metal pipes with insulating joints. Pipes generally deeper than about five to seven feet may not be detected.

APPENDIX E

GREGG DRILLING AND TESTING
CONE PENETRATION TEST REPORT

GREGG DRILLING & TESTING, INC.
GEOTECHNICAL AND ENVIRONMENTAL INVESTIGATION SERVICES

October 9, 2008

EBA Engineering
Attn: Paul Nelson
825 Sonoma Avenue
Santa Rosa, CA 95404

Subject: CPT Site Investigation
Smart Railroad Property
Santa Rosa, California
GREGG Project Number: 08-0253MA

Dear Mr. Nelson:

The following report presents the results of GREGG Drilling & Testing's Cone Penetration Test investigation for the above referenced site. The following testing services were performed:

1	Cone Penetration Tests	(CPTU)	☒
2	Pore Pressure Dissipation Tests	(PPD)	☐
3	Seismic Cone Penetration Tests	(SCPTU)	☐
4	Resistivity Cone Penetration Tests	(RCPTU)	☐
5	UVOST Laser Induced Fluorescence	(UVOST)	☐
6	Groundwater Sampling	(GWS)	☒
7	Soil Sampling	(SS)	☐
8	Vapor Sampling	(VS)	☐
9	Vane Shear Testing	(VST)	☐
10	SPT Energy Calibration	(SPTE)	☐

A list of reference papers providing additional background on the specific tests conducted is provided in the bibliography following the text of the report. If you would like a copy of any of these publications or should you have any questions or comments regarding the contents of this report, please do not hesitate to contact our office at (925) 313-5800.

Sincerely,
GREGG Drilling & Testing, Inc.

Mary Walden
Operations Manager

Cone Penetration Test Sounding Summary

-Table 1-

CPT Sounding Identification	Date	Termination Depth (Feet)	Depth of Groundwater Samples (Feet)	Depth of Soil Samples (Feet)	Depth of Pore Pressure Dissipation Tests (Feet)
CPT-1	10/06/08	25	24	-	-
CPT-2	10/06/08	25	24	-	-
CPT-3	10/07/08	25	25	-	-
CPT-4	10/06/08	25	24	-	-
CPT-5	10/06/08	25	24	-	-
CPT-6	10/06/08	25	24	-	-
CPT-7	10/07/08	25	25	-	-
CPT-8	10/07/08	25	24	-	-
CPT-9	10/07/08	25	25	-	-
CPT-10	10/07/08	25	25	-	-

Cone Penetration Testing Procedure (CPT)

Gregg Drilling carries out all Cone Penetration Tests (CPT) using an integrated electronic cone system, *Figure CPT*. The soundings were conducted using a 20 ton capacity cone with a tip area of 15 cm^2 and a friction sleeve area of 225 cm^2. The cone is designed with an equal end area friction sleeve and a tip end area ratio of 0.80.

The cone takes measurements of cone bearing (q_c), sleeve friction (f_s) and penetration pore water pressure (u_2) at 5-cm intervals during penetration to provide a nearly continuous hydrogeologic log. CPT data reduction and interpretation is performed in real time facilitating on-site decision making. The above mentioned parameters are stored on disk for further analysis and reference. All CPT soundings are performed in accordance with revised (2002) ASTM standards (D 5778-95).

The cone also contains a porous filter element located directly behind the cone tip (u_2), *Figure CPT*. It consists of porous plastic and is 5.0mm thick. The filter element is used to obtain penetration pore pressure as the cone is advanced as well as Pore Pressure Dissipation Tests (PPDT's) during appropriate pauses in penetration. It should be noted that prior to penetration, the element is fully saturated with silicon oil under vacuum pressure to ensure accurate and fast dissipation.

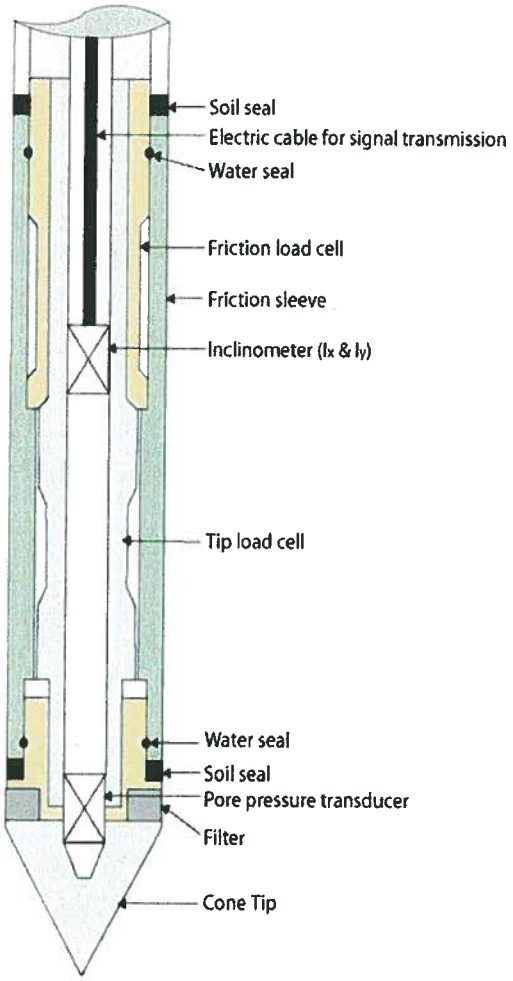


Figure CPT

When the soundings are complete, the test holes are grouted using a Gregg support rig. The grouting procedures generally consist of pushing a hollow CPT rod with a "knock out" plug to the termination depth of the test hole. Grout is then pumped under pressure as the tremie pipe is pulled from the hole. Disruption or further contamination to the site is therefore minimized.

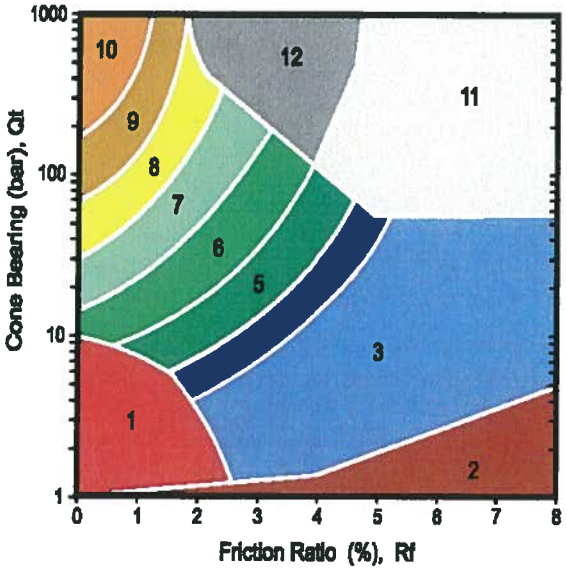
Cone Penetration Test Data & Interpretation

The Cone Penetration Test (CPT) data collected from your site are presented in graphical form in the attached report. The plots include interpreted Soil Behavior Type (SBT) based on the charts described by Robertson (1990). Typical plots display SBT based on the non-normalized charts of Robertson et al (1986). For CPT soundings extending greater than 50 feet, we recommend the use of the normalized charts of Robertson (1990) which can be displayed as SBTn, upon request. The report also includes spreadsheet output of computer calculations of basic interpretation in terms of SBT and SBTn and various geotechnical parameters using current published correlations based on the comprehensive review by Lunne, Robertson and Powell (1997), as well as recent updates by Professor Robertson. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed. Gregg Drilling & Testing Inc. do not warranty the correctness or the applicability of any of the geotechnical parameters interpreted by the software and do not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used in the software.

Some interpretation methods require input of the groundwater level to calculate vertical effective stress. An estimate of the in-situ groundwater level has been made based on field observations and/or CPT results, but should be verified by the user.

A summary of locations and depths is available in Table 1. Note that all penetration depths referenced in the data are with respect to the existing ground surface.

Note that it is not always possible to clearly identify a soil type based solely on q_t, f_s, and u_2. In these situations, experience, judgment, and an assessment of the pore pressure dissipation data should be used to infer the correct soil behavior type.



(After Robertson, et al., 1986)

ZONE		SBT
1		Sensitive, fine grained
2		Organic materials
3		Clay
4		Silty clay to clay
5		Clayey silt to silty clay
6		Sandy silt to clayey silt
7		Silty sand to sandy silt
8		Sand to silty sand
9		Sand
10		Gravely sand to sand
11		Very stiff fine grained*
12		Sand to clayey sand*

*over consolidated or cemented

Figure SBT

Groundwater Sampling (GWS)

Gregg Drilling conducts groundwater sampling using a Hydropunch® type groundwater sampler, *Figure GWS*. The groundwater sampler has a retrievable stainless steel or disposable PVC screen with steel drop off tip. This allows for samples to be taken at multiple depth intervals within the same sounding location. In areas of slower water recharge, provisions may be made to set temporary PVC well screens during sampling to allow the drill rig to advance to the next sample location while the groundwater is allowed to infiltrate.

The groundwater sampler operates by advancing 1 ¾ inch hollow push rods with the filter tip in a closed configuration to the base of the desired sampling interval. Once at the desired sample depth, the push rods are retracted; exposing the encased filter screen and allowing groundwater to infiltrate hydrostatically from the formation into the inlet screen. A small diameter bailer (approximately ½ or ¾ inch) is lowered through the push rods into the screen section for sample collection. The number of downhole trips with the bailer and time necessary to complete the sample collection at each depth interval is a function of sampling protocols, volume requirements, and the yield characteristics and storage capacity of the formation. Upon completion of sample collection, the push rods and sampler, with the exception of the PVC screen and steel drop off tip are retrieved to the ground surface, decontaminated and prepared for the next sampling event.

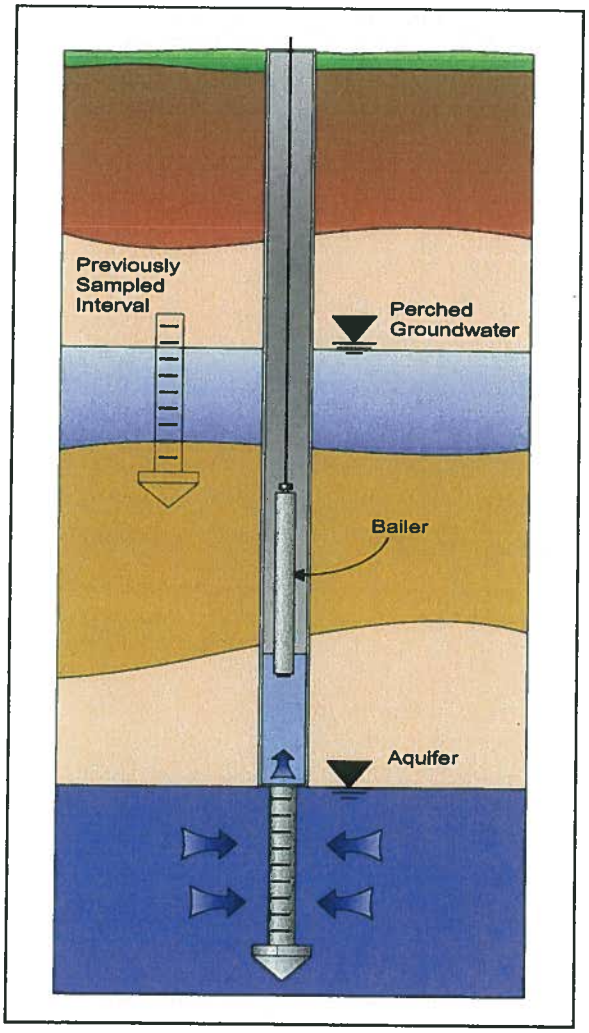


Figure GWS

A summary of the groundwater samples collected, including the sampling date, depth and location identification, is presented in Table 1 and the corresponding CPT plot.

For a detailed reference on direct push groundwater sampling, refer to Zemo et. al., 1992.

Bibliography

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Campanella, R.G. and I. Weemees, "Development and Use of An Electrical Resistivity Cone for Groundwater Contamination Studies", Canadian Geotechnical Journal, Vol. 27 No. 5, 1990 pp. 557-567.

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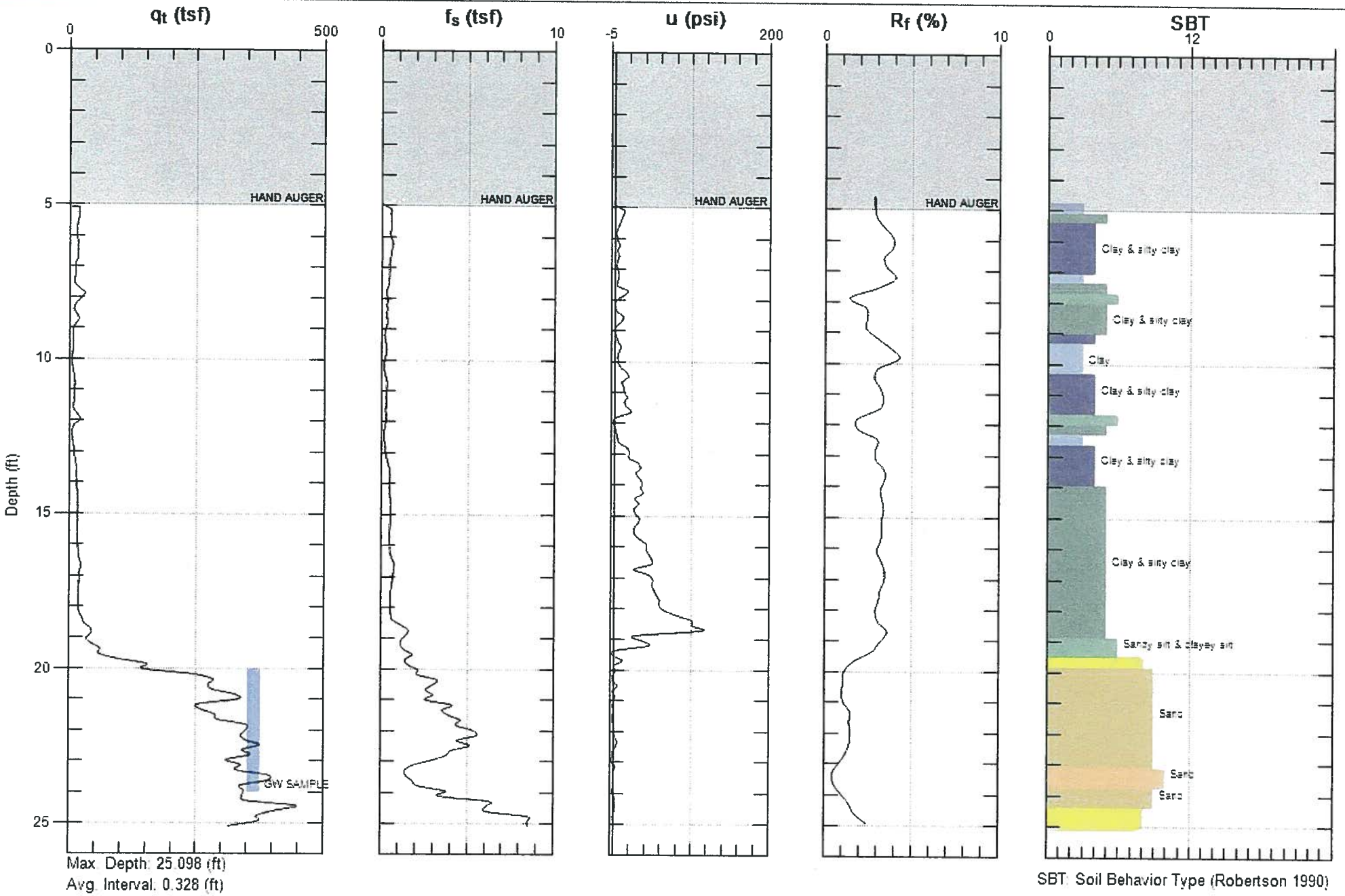
Zemo, D.A., T.A. Delfino, J.D. Gallinatti, V.A. Baker and L.R. Hilpert, "Field Comparison of Analytical Results from Discrete-Depth Groundwater Samplers" BAT EnviroProbe and QED HydroPunch, Sixth national Outdoor Action Conference, Las Vegas, Nevada Proceedings, 1992, pp 299-312.

Copies of ASTM Standards are available through www.astm.org

EBA ENGINEERING

Site: SMART PROPERTY
Sounding: SB-1

Engineer: P. NELSON
Date: 10/6/2008 01:56



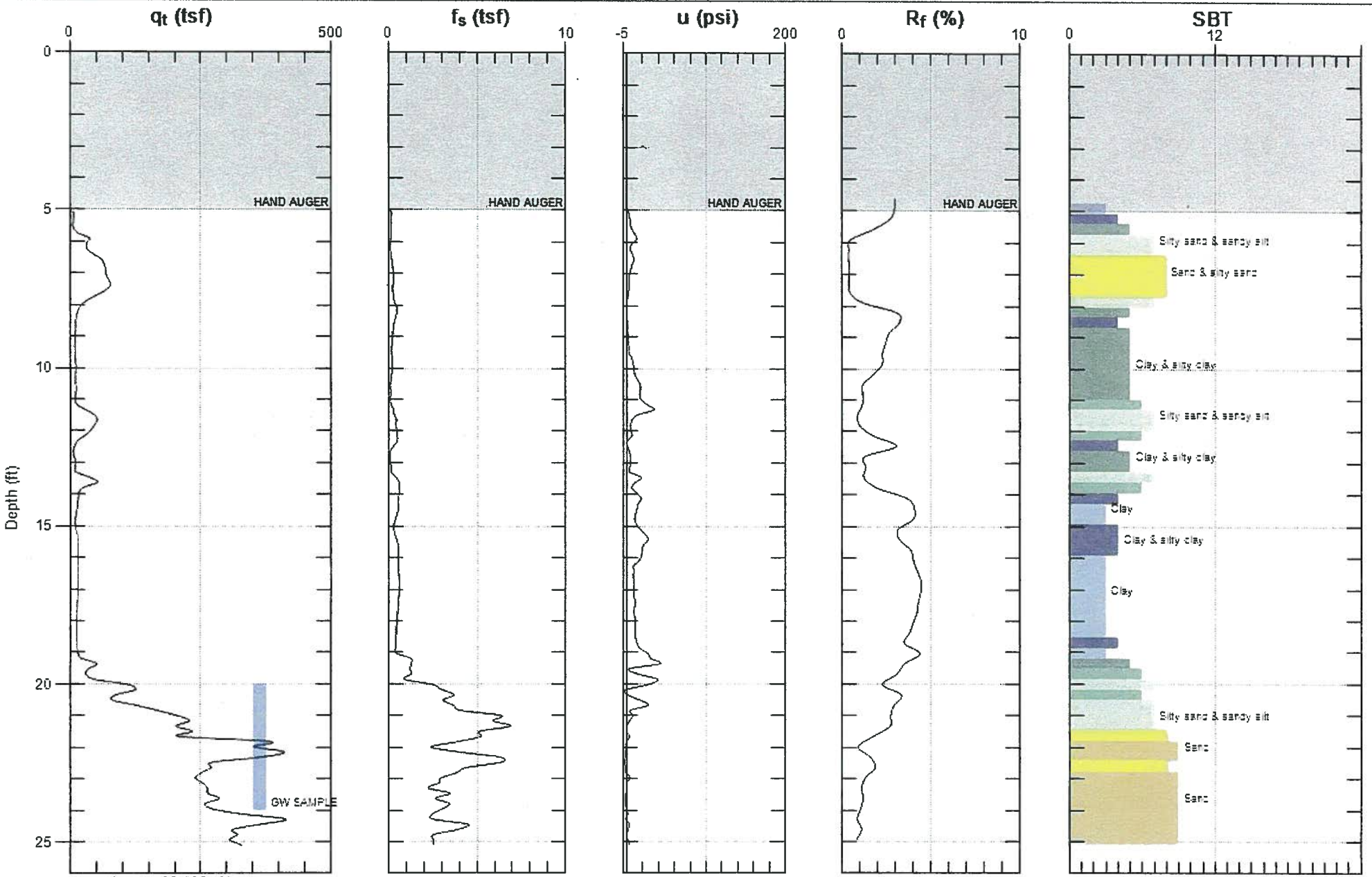
Max. Depth: 25.098 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

EBA ENGINEERING

Site: SMART PROPERTY
Sounding: SB-2

Engineer: P. NELSON
Date: 10/6/2008 12:05



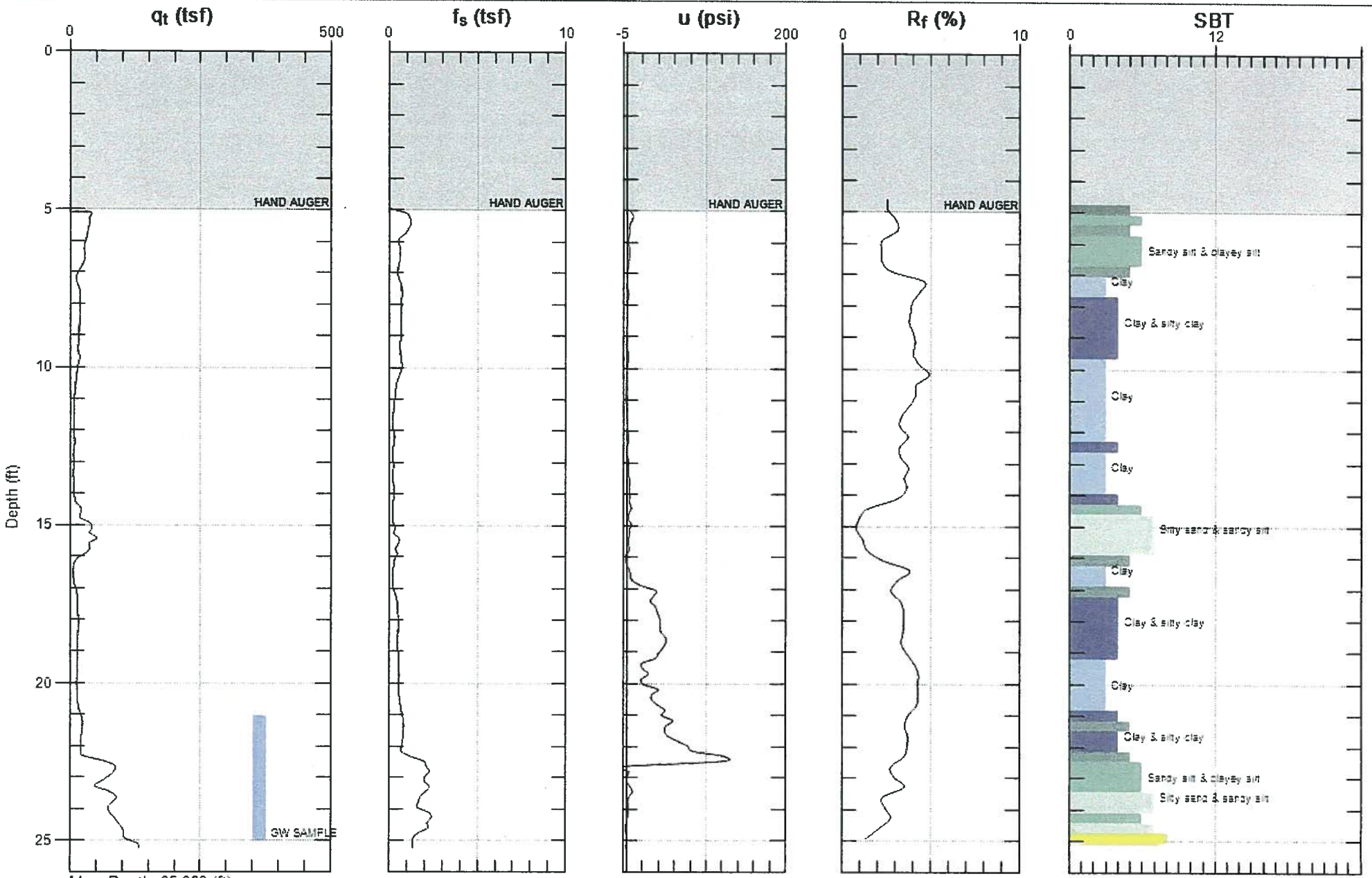
Max. Depth: 25.098 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

EBA ENGINEERING

Site: SMART PROPERTY
Sounding: SB-03

Engineer: P. NELSON
Date: 10/7/2008 04:41



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Avg. Interval: 0.328 (ft)

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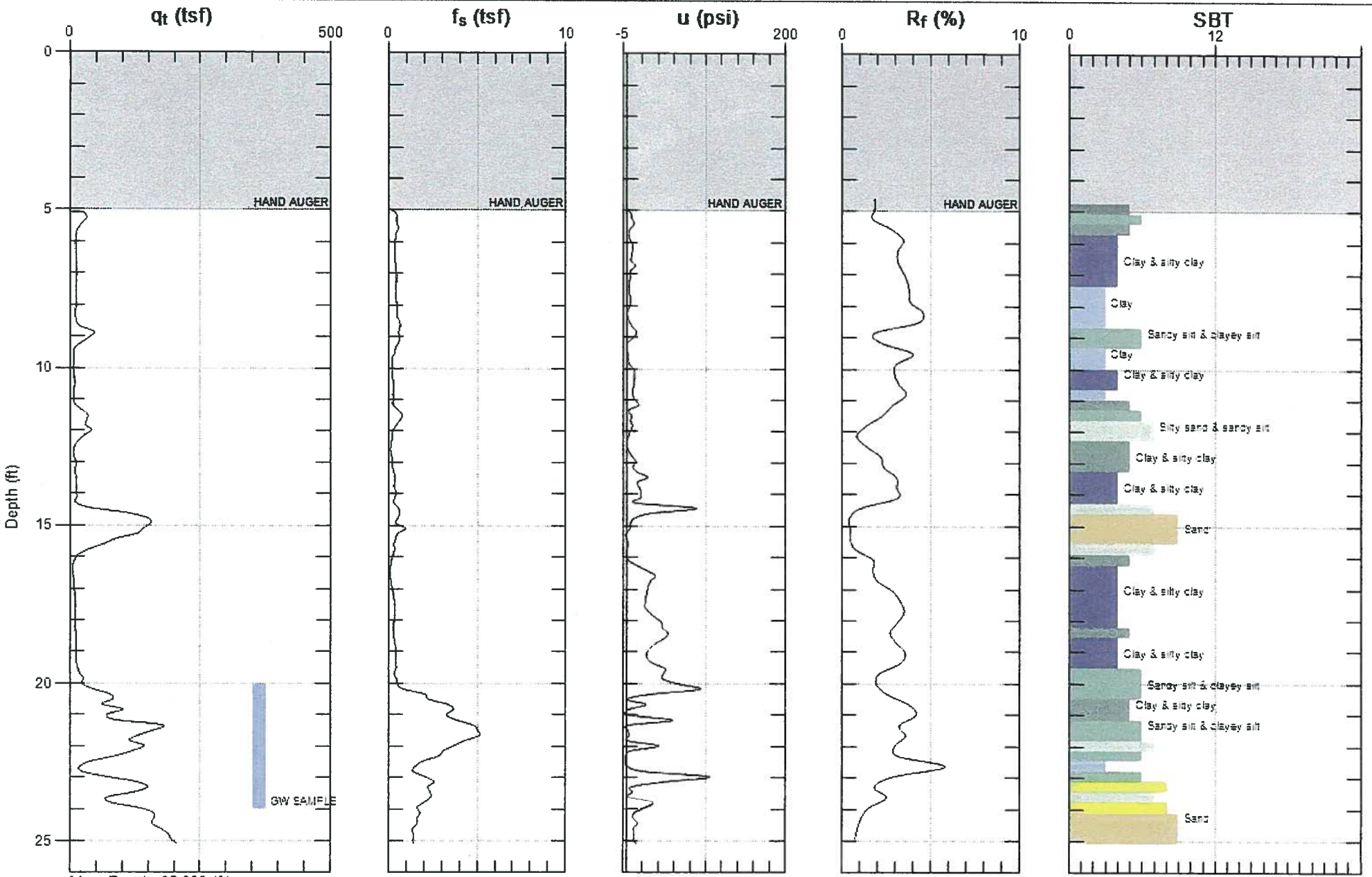
EBA ENGINEERING

Site: SMART PROPERTY
Sounding: SB-4

Engineer: P. NELSON
Date: 10/6/2008 03:34



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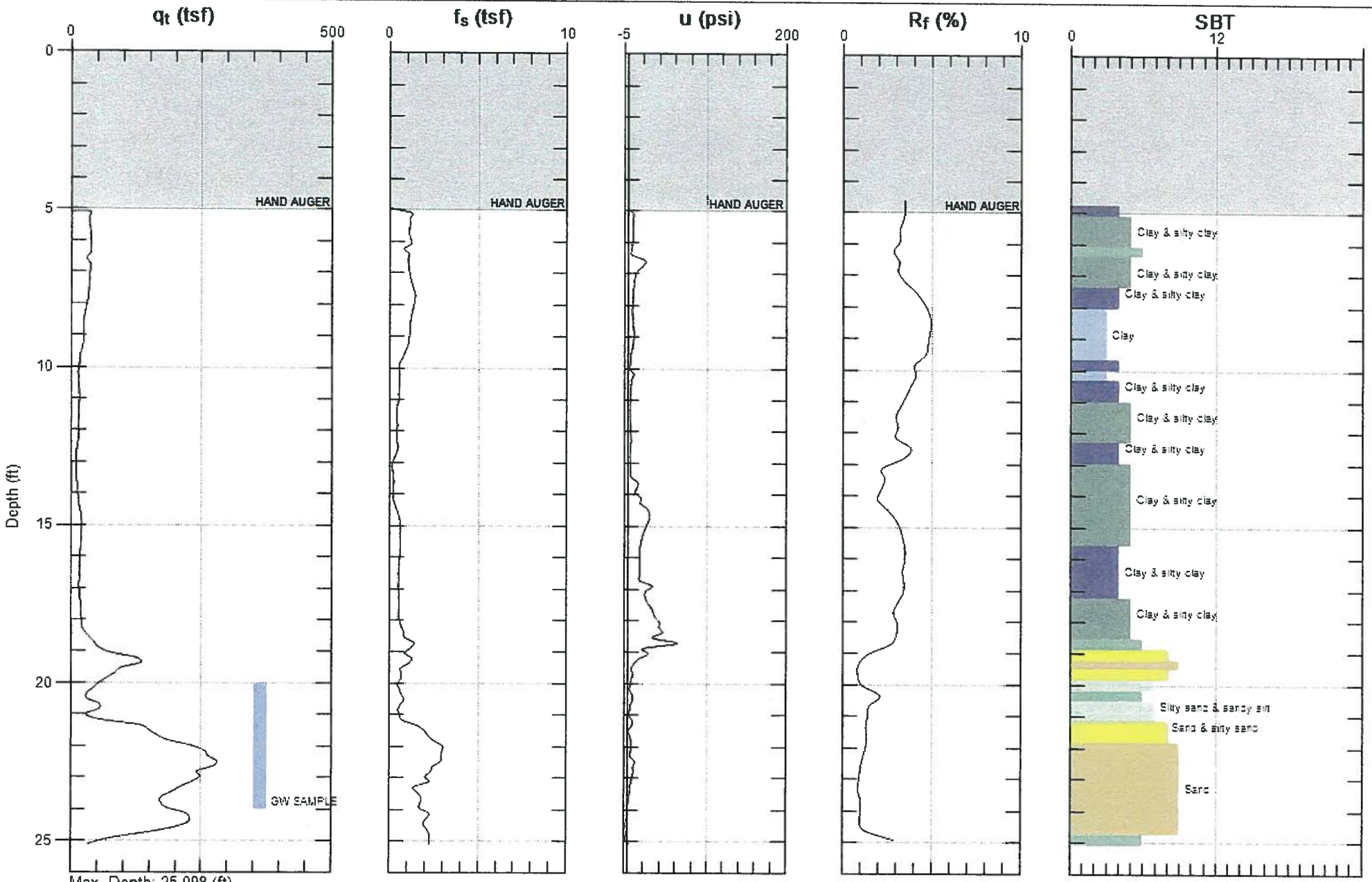
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

EBA ENGINEERING

Site: SMART PROPERTY
Sounding: SB-5

Engineer: P. NELSON
Date: 10/6/2008 08:32



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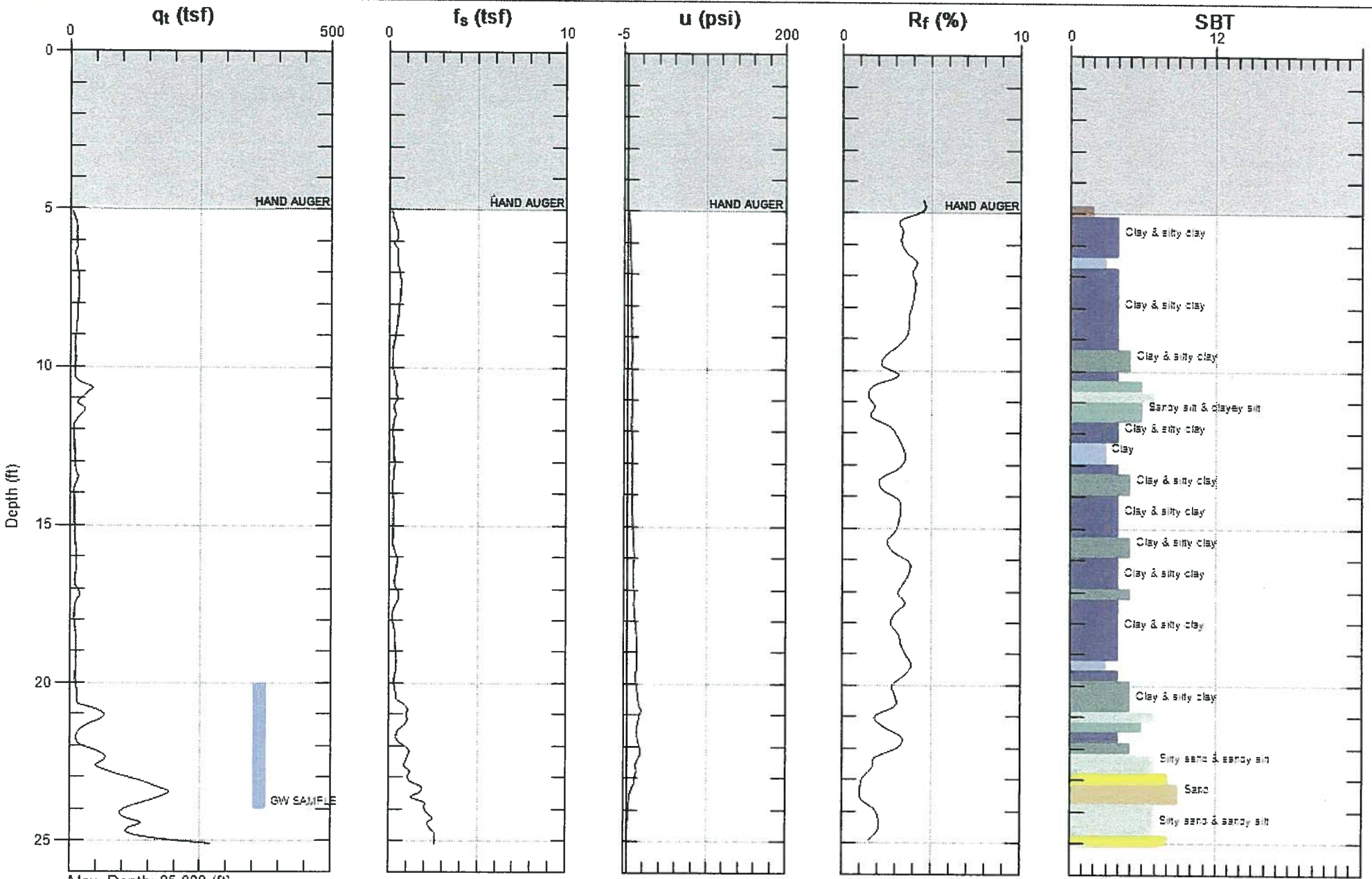
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

EBA ENGINEERING

Site: SMART PROPERTY
Sounding: SB-6

Engineer: P. NELSON
Date: 10/6/2008 10:07



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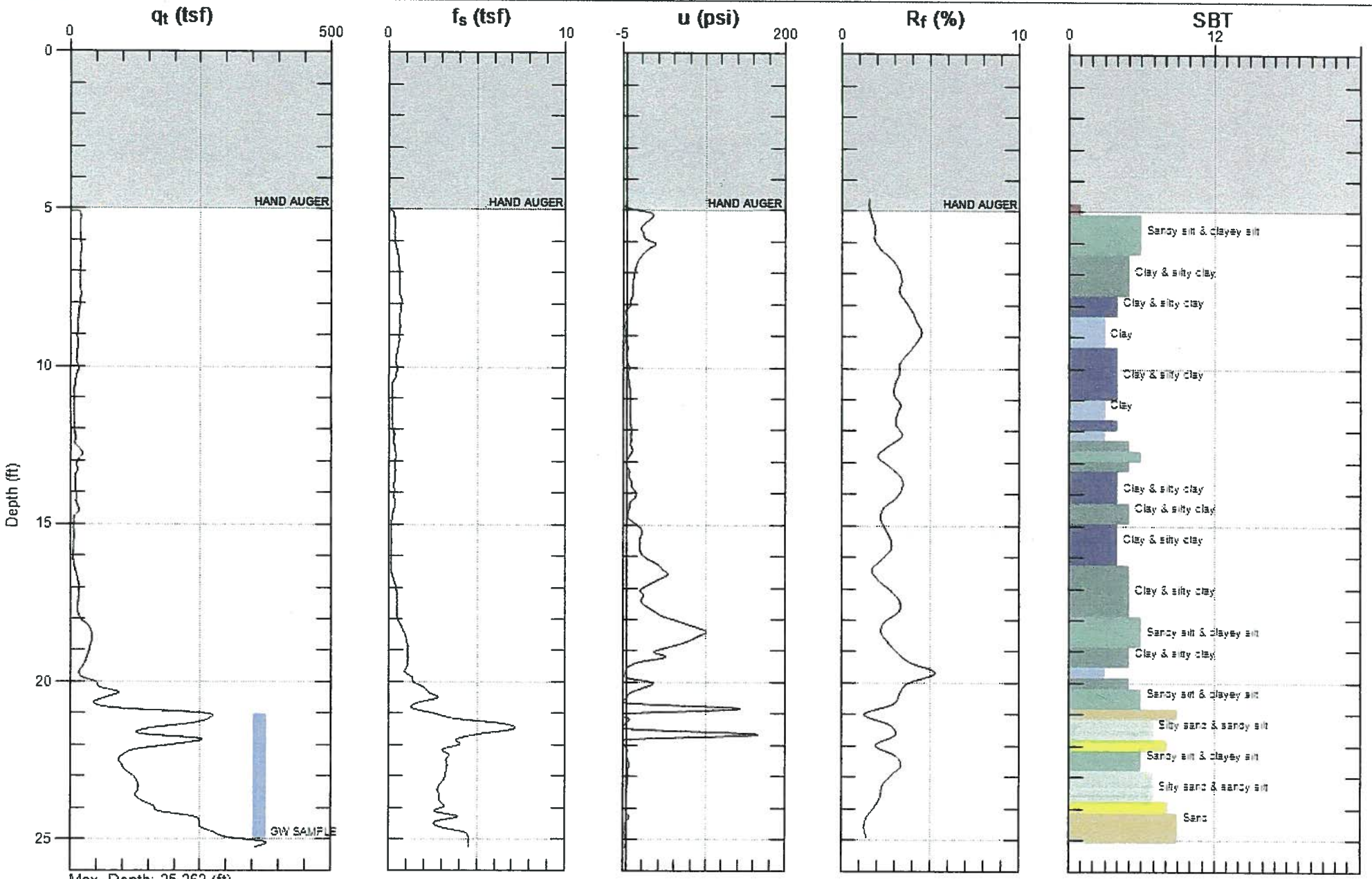
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

EBA ENGINEERING

Site: SMART PROPERTY
Sounding: SB-07

Engineer: P. NELSON
Date: 10/7/2008 02:43



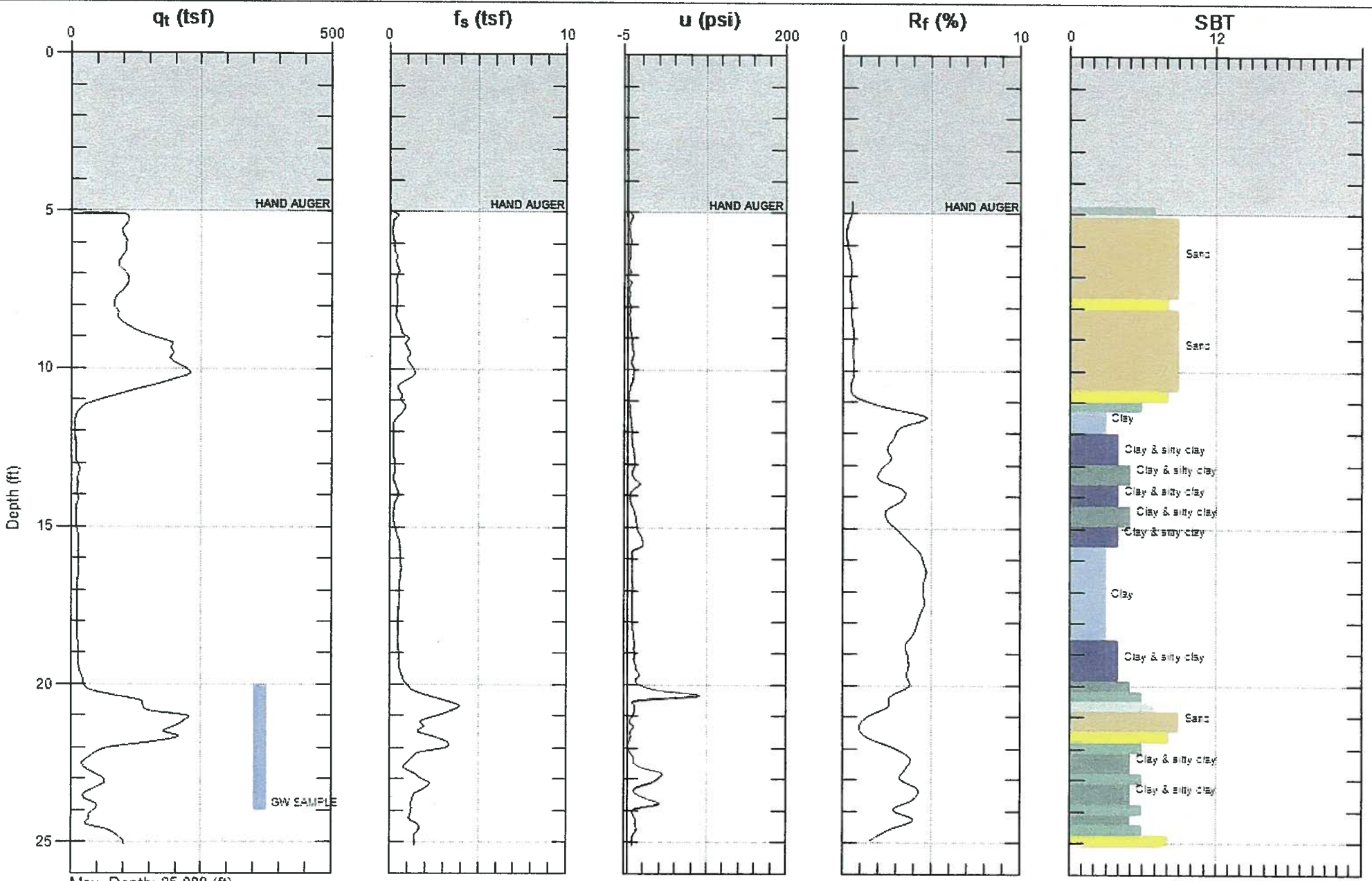
Max. Depth: 25.262 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

EBA ENGINEERING

Site: SMART PROPERTY
Sounding: SB-08

Engineer: P. NELSON
Date: 10/7/2008 12:59



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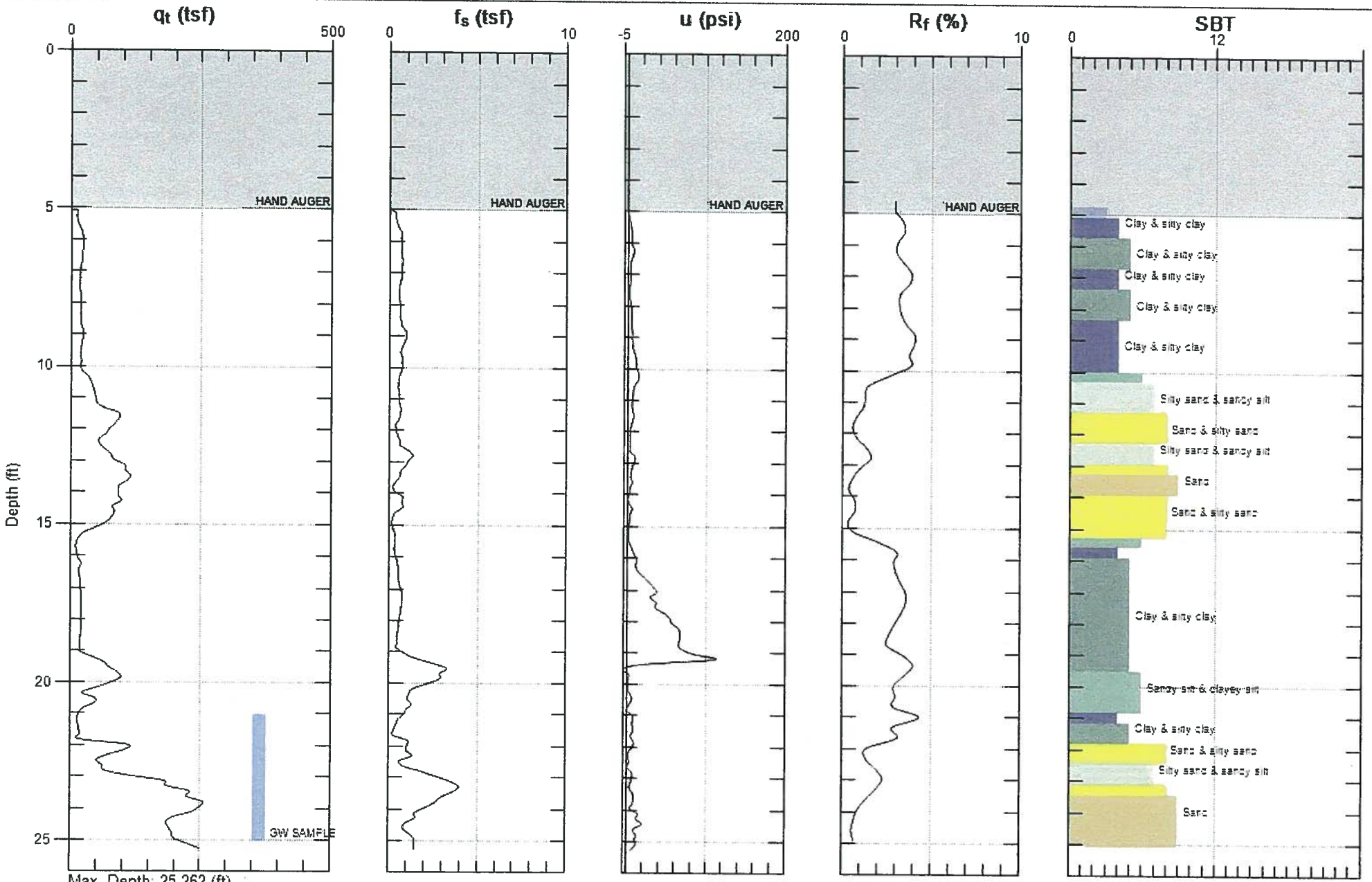
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

EBA ENGINEERING

Site: SMART PROPERTY
Sounding: SB-09

Engineer: P. NELSON
Date: 10/7/2008 08:26



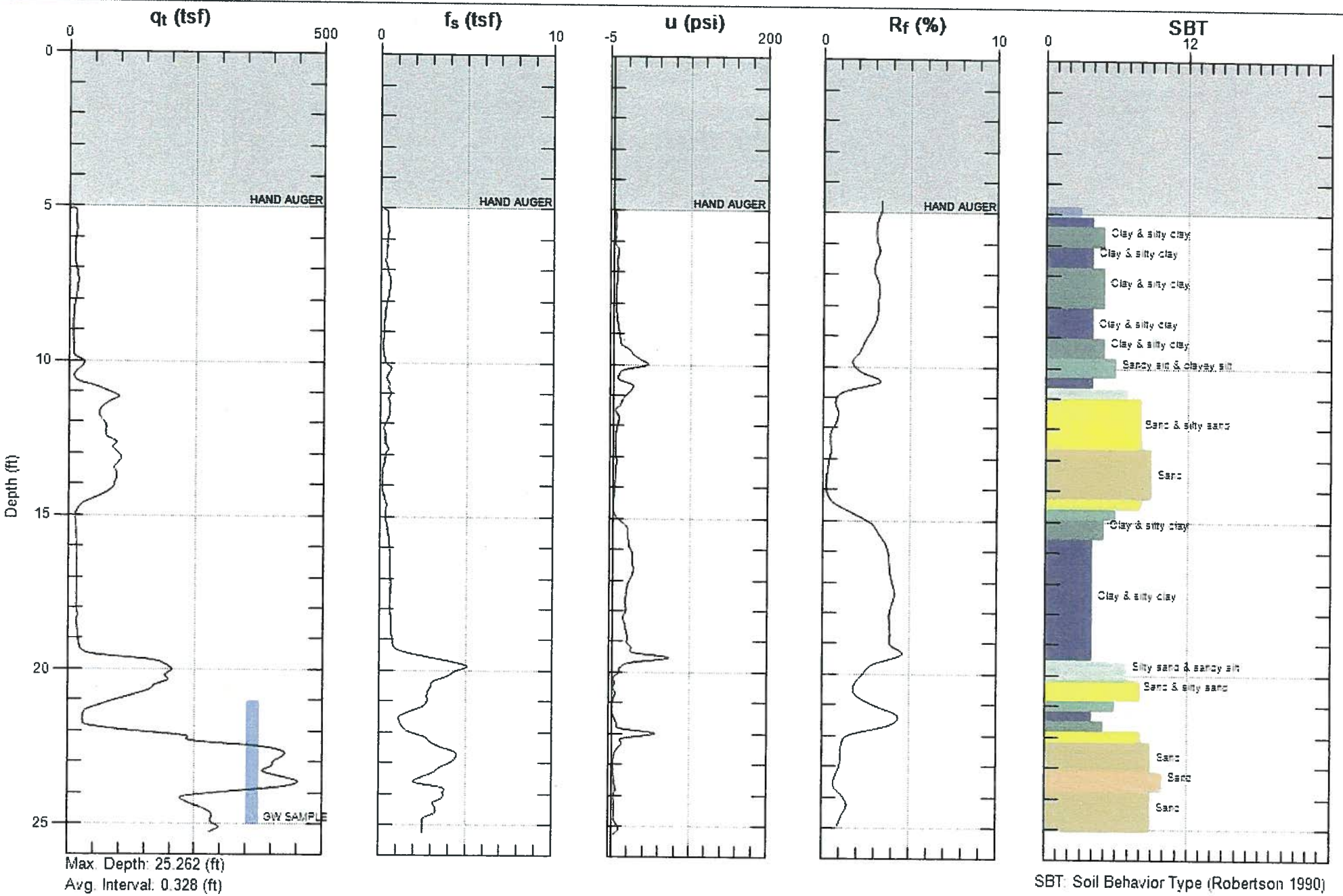
Max. Depth: 25.262 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

EBA ENGINEERING

Site: SMART PROPERTY
Sounding: SB-10

Engineer: P. NELSON
Date: 10/7/2008 10:37



Max. Depth: 25.262 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

APPENDIX F

STANDARD OPERATING PROCEDURES

STANDARD OPERATING PROCEDURES

GROUNDWATER MONITORING

The groundwater monitoring procedures presented herein were developed to provide consistent and reproducible sampling methods; proper application of analytical methods; accurate and precise analytical results; and provide guidelines so that the overall objectives of the monitoring program are achieved. The following documents were used as guidelines for the development of these procedures:

- *RCRA Groundwater Monitoring Technical Enforcement Guidance Document,* OSWER 9950.1, September 1986.

GROUNDWATER ELEVATION SURVEY

Prior to each sampling event, wells at the site will be measured for static groundwater levels during a single water-level survey. Groundwater levels will be converted to elevations (referenced to mean sea level or an assumed referenced datum) and either tabulated or graphically displayed on a potentiometric surface map. The wells will be sampled for chemical constituents after the groundwater level survey is completed.

Groundwater levels will be measured with an electric sounder. The electric sounder is a transistor based instrument that uses a reel-mounted, two-conductor, coaxial cable that connects the control panel to the sensor. The cable is marked at 0.01-foot increments. The groundwater level is measured by lowering the sensor into the well. A low-current circuit is completed when the sensor contacts the groundwater, which serves as an electrolyte. The current is amplified and fed into an indicator light and audible buzzer, signaling when groundwater has been contacted. A sensitivity control compensates for highly saline or conductive water. The electric sounder will be decontaminated by rinsing with clean water after each use. Depth to groundwater will be recorded to the nearest 0.01 foot in the field data sheets and/or logbook. The groundwater elevation at each well will then be calculated by subtracting the measured depth to groundwater from the surveyed elevation of the top of the well casing (TOC). The total depth of the well will then be measured in the wells scheduled for sampling by lowering the sensor to the bottom of the well. The total depth of the well will be recorded to the nearest 0.01 foot in the field data sheet or logbook and used to calculate purge volumes and to determine whether the well screen is partially obstructed by silt.

SAMPLE COLLECTION

Sample collection procedures include equipment cleaning, groundwater level and total well depth measurements, well purging and sampling, and surface water sampling. The well sampling sequence will start with those wells having the lowest concentration of contaminants (if applicable). Ensuing samples are collected from wells of increasing contamination.

All field measurements will be recorded on a field data sheet or logbook. The pH, specific conductance, and temperature meters will be calibrated each day before beginning field activities.

Well Sampling

A bladder pump, Teflon bailer, disposable polyethylene bailer, or stainless steel bailer are the only equipment acceptable for well sampling. When samples for volatile organic analysis are being collected with a bladder pump, the pump flow will be regulated to approximately 100 milliliters (ml) per minute to minimize pump effluent turbulence and aeration. Glass bottles of at least 40 ml volume and fitted with Teflon-lined septa will be used in sampling for volatile organics. These bottles will be filled completely to prevent air from remaining in the bottle. A positive meniscus forms when the bottle is completely full. A convex Teflon septum will be placed over the positive meniscus to eliminate air. After the bottle is capped, it will be inverted and tapped to verify that it contains no air bubbles. The sample containers for other parameters will then be filled and capped. All filtering for dissolved metals will be performed in the laboratory.

SAMPLE PRESERVATION AND HANDLING

Sample Containers and Preservation

Sample containers vary with each type of analytical parameter. Container types and materials selected are nonreactive with the particular analytical parameter tested. Specific sample volume, container types, and preservation requirements are identified by the laboratory conducting the analyses.

Sample Handling

Sample containers will be labeled immediately following collection. Samples will be kept cool with cold packs until received by the laboratory. Cold packs will be replaced each day to maintain refrigeration. All samples will then be transported under Chain-of-Custody (COC) Record protocols as discussed below.

SAMPLE DOCUMENTATION

The following procedures will be used during sampling and analysis to provide COC control during sample handling from collection through storage.

Chain-of-Custody (COC) Records

All samples will be accompanied by a COC Record. When transferring samples, the individuals relinquishing and receiving will sign, date, and note the time on the record. This record will be

FIELD QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Quality Assurance/Quality Control (QA/QC) measures will be taken to confirm the integrity of the field and laboratory data generated during the monitoring program. The procedures used to assess data quality are described in this section.

Field Quality Assurance Procedures

Quality assurance procedures for the sampling program will consist of collecting field equipment blanks (if necessary), trip blanks, and duplicate samples. In the event all sampling points are equipped with dedicated equipment (i.e., pumps or dedicated bailers), equipment blanks will not required. The trip blank will remain with the bottles used for sampling for the duration of the sampling event, and at no time will the trip blank be opened. The trip blank will provide a check on bottle cleaning procedures and sample transport conditions. The trip blank sample will be analyzed for volatile organic compounds. Finally, duplicate samples will be periodically collected to check the reproducibility of the laboratory.

ANALYTICAL METHODS AND PROCEDURES

Laboratory analysis will be performed by a State certified analytical laboratory. Samples collected as part of the monitoring program will be analyzed consistent with accepted analytical procedures.

APPENDIX G

FIELD SAMPLING DATA SHEETS

Project No.	08-1528	Well No:	SRMW -07
Project Location:	2 Fourth Street and 34 Sixth Street, Santa Rosa, CA	Well Depth from TOC:	20.0'
Global I.D.		Well Diameter:	2"
Date:	10/2/08	Product Level from TOC:	NA
Time:	10:33	Water Level from TOC:	14.24'
Recorded by:	R. Johnson (EBA)	Screened Interval:	10.7'-20.0'
Purge Duration:	7 minutes	Well Elevation (TOC):	151.25 feet above MSL

WEATHER

Wind:	Moderate, 5-10 miles per hour	Precip. in last 5 days:	0.00 " (STA)

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

(20 ' - 14.24') x (0.08333)2 x 3.14 x 7.48 = 0.94 gallons in one well volume

{ Well Depth - Water Level } { Well radius (ft) }

2.82 gallons in 3 well volumes 3.0 gallons removed

CALIBRATION

Parameter	Time	Calibration	Before Sampling	Time	After Sampling
pH:	10:24	7.00	7.00		
EC:	10:24	1,413	1,414		

FIELD MEASUREMENTS

Time	pH	EC (µS/cm)	Temp (°C)	Gallons Removed	Appearance
10:34	7.37	526	20.0	0.5	Clear, no fines, no HC odor
10:35	7.38	524	19.7	1.0	Clear, no fines, no HC odor
10:36	7.38	522	19.5	1.5	Clear, no fines, no HC odor
10:39	7.39	521	19.4	2.0	Cloudy, moderate fines, no HC odor
10:40	7.4	519	19.4	2.5	Cloudy, moderate fines, no HC odor
10:41	7.4	520	19.3	3.0	Cloudy, moderate fines, no HC odor

Water Level After Purging:	NA	ft. (TOC)	80% of Original Water Level:	15.40'	ft. (TOC)
Water Level Before Sampling:	12.09	ft. (TOC)			
APPEARANCE OF SAMPLE:	Slightly cloudy, no HC odor		Time:	12:00	

Bailer: Aqua Bailer Single Sample	Type: Disposable Polyethylene	GPM:
Submersible:	Type:	GPM:
Dedicated:	Type:	GPM:

DECONTAMINATION METHOD: TSP wash and disposable bailers

SAMPLE ANALYSIS: TPH-g, TPH-d, TPH-mo, VOCs

LABORATORY: KPrime, Inc.

Project No.	08-1528	Well No:	SRMW -08
Project Location:	2 Fourth Street and 34 Sixth Street, Santa Rosa, CA	Well Depth from TOC:	20.5'
Global I.D.		Well Diameter:	2"
Date:	10/2/08	Product Level from TOC:	NA
Time:	10:50	Water Level from TOC:	12.10'
Recorded by:	R. Johnson (EBA)	Screened Interval:	10.9'-20.5'
Purge Duration:	6 minutes	Well Elevation (TOC):	152.29 feet above MSL
		WEATHER	
Wind:	Moderate, 5-10 miles per hour	Precip. in last 5 days:	0.00 " (STA)

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

(20.5 ' -	12.10') x (0.08333)2 x 3.14 x 7.48 =	1.37	gallons in one well volume
{ Well Depth - Water Level }	{ Well radius (ft) }		
4.11	gallons in 3 well volumes	4.0	gallons removed

CALIBRATION

Parameter	Time	Calibration	Before Sampling	Time	After Sampling
pH:	10:24	7.00	7.00		
EC:	10:24	1,413	1,414		

FIELD MEASUREMENTS

Time	pH	EC (µS/cm)	Temp (°C)	Gallons Removed	Appearance
10:51	7.19	706	20.3	1.0	Clear, no fines, no HC odor
10:52	7.11	705	20.2	1.5	Clear, no fines, no HC odor
10:53	7.09	703	20.1	2.0	Clear, no fines, no HC odor
10:54	7.08	702	20.1	2.5	Cloudy, moderate fines, no HC odor
10:55	7.07	701	20.1	3.0	Cloudy, moderate fines, no HC odor
10:56	7.06	701	20	3.5	Cloudy, moderate fines, no HC odor
10:57	7.06	698	20	4.0	Cloudy, moderate fines, no HC odor

Water Level After Purging:	NA	ft. (TOC)	80% of Original Water Level:	13.78'	ft. (TOC)
Water Level Before Sampling:	12.09	ft. (TOC)			
APPEARANCE OF SAMPLE:	Slightly cloudy, no HC odor		Time:	12:15	

Bailer: Aqua Bailer Single Sample	Type: Disposable Polyethylene	GPM:
Submersible:	Type:	GPM:
Dedicated:	Type:	GPM:

DECONTAMINATION METHOD: TSP wash and disposable bailers

SAMPLE ANALYSIS: TPH-g, TPH-d, TPH-mo, VOCs

LABORATORY: KPrime, Inc.

APPENDIX H

FEBRUARY 23, 2007
NORTH COAST REGIONAL WATER QUALITY CONTROL BOARD LETTER

California Regional Water Quality Control Board
North Coast Region
Mr. John W. Corbett, Chairman

Linda S. Adams
Secretary for
Environmental Protection

www.waterboards.ca.gov/northcoast
5550 Skylane Boulevard, Suite A, Santa Rosa, California 95403
Phone: (877) 721-9203 (toll free) • Office: (707) 576-2220 • FAX: (707) 523-0135

Arnold
Schwarzenegger
Governor

February 23, 2007

REC'D FEB 26 2007

Mr. Mike Grant
Union Pacific Railroad
Manager Environmental Site Remediation
1408 Middle Harbor Road
Oakland, CA 94607

Dear Mr. Grant:

Subject: Case Status
File: Southern Pacific Transportation Company, 3rd Street Property
Santa Rosa, Case No. 1TSR196

Regional Water Board staff has reviewed the August 11, 2006 *Results of Additional Groundwater Monitoring Event and Recommendation for No Further Action* prepared by Kennedy/Jenks Consultants and the file for the Southern Pacific Transportation Company site (Third Street site) in Santa Rosa. The purpose of this letter is to provide you with a written status report regarding our consideration of no further action, and also identify the remaining regulatory requirements for completion of this project and those associated with the proposed property development. Our comments are as follows:

- The post corrective action groundwater verification monitoring results reveal significant water quality improvements in the vicinity of SRMW-13. The presence of separate phase hydrocarbons has been reduced to dissolved concentrations of diesel range hydrocarbons detected at 280, ug/l.

- The area of groundwater impact extends an unknown distance to the west beneath the adjacent property. However, the groundwater analytical results demonstrate that the heavy hydrocarbon plume has not migrated to monitoring wells SRMW-12 to the north, SRMW-06 and SRMW-11 to the west and SRMW-05 and SRMW-14 to the south and therefore, does not appear to be a threat to Santa Rosa Creek.

- Groundwater impacts from Methyl tert Butyl Ether (MtBE) also exist in the vicinity of SRMW-7 and SRMW-8 located on the eastern portion of the site. On site sources of MtBE were investigated and not found. Based on the available information, including MtBE detections in grab groundwater samples and in SRMW-8 at the eastern property boundary, the source of MtBE appears to be off site and up gradient.

Therefore, no further groundwater testing is required at this time associated with the areas where corrective actions have been completed to date. Since the public notice requirements have been completed and comments were not received, you may proceed with monitoring well decommissioning in compliance with Sonoma County Environmental Health Division regulatory requirements.

A no further action letter will be issued upon completion of the following items:

- The submittal of documentation showing proper well abandonment;
- The submittal of documentation showing proper disposal of drummed waste currently stored at the site, if any;
- Compliance with the State Water Resources Control Board, Geotracker data base electronic submittal requirements; and
- A written commitment from the person or persons who will be taking responsibility for the preparation and implementation of a Soil and Groundwater Management Plan, as discussed below.

The subject site is the location of the proposed Sonoma Marin Area Rail Transit (SMART) development project referred to as the Railroad Square Development, a transit-oriented redevelopment project. Regional Water Board staff attended and spoke at meetings during the master developer selection process and provided interested parties with a fact sheet dated May 24, 2006 (Enclosed).

As stated in the fact sheet, the issuance of a no further action letter in this case does not equate to a property with unrestricted land use free of environmental requirements. Areas of shallow soil impacts remain in place, including but not limited to SRB-20 and in the fenced enclosure area in the vicinity of the power pole. Spills and leaks may have also occurred in areas other than those where corrective action was completed in October 2003 due to the historical land use. And deep soil impacts remain in place where corrective action was completed due to site constraints and rainy weather conditions. Groundwater management may also be an issue since the development design includes subsurface parking.

Therefore, the preparation of a soil and groundwater management plan is required, and must be included as a component of the building permit application to the City of Santa Rosa Department of Community Development and Santa Rosa Fire Department. Since the timing of development is unknown, and the Railroad Square Development Project is dependent upon the issuance of a no further action letter that facilitates a change in property ownership to SMART, we only need to have at this time the written commitment from the person or persons who will taking responsibility for the preparation and implementation of the plan.

For your information, the soil and groundwater management plan must include 1) a proposal to remove the known areas containing shallow soil impacts, 2) a method to

characterize, manage and dispose of any soil/fill material removed from the site for development reasons, and 3) a contingency plan for a potential encounter with newly discovered areas of contaminated soil and/or groundwater, or subsurface piping or structures, during trenching, parking garage construction and property development.

The soil and groundwater management plan must also include a method to control groundwater, impacted or otherwise, if encountered during the installation of utilities or construction of the subsurface parking structures. If the subsurface parking garage is constructed below the seasonal high water table and is not designed to be water tight, a post construction groundwater management plan will also be needed. A contingency plan must be included for a proposed water tight structure in the event that it does not function as designed.

For the record, the railroad corridor located south of Third Street and north of Santa Rosa Creek is also part of the over all "site". A discussion regarding this parcel will be forthcoming under separate cover and will be independent of the north of Third Street parcels.

If you have any questions or would like to meet to discuss this case please contact Joan Fleck of my staff at (707) 576-2675.

Sincerely,

David S. Evans
Supervising Engineer

Enclosure: Fact Sheet

023107_JEF_SPTrans

cc: Fire Inspector Doug Dahme, Santa Rosa Fire Department
Fire Inspector Corey Vincent, Santa Rosa Fire Department
Mr. Jeffery Kolin, City Manager, P.O. Box 1678, Santa Rosa, CA 95402
Mr. John Nemeth, Rail Planning Manager, SMART District Office, 4040 Civic Center Drive, Suite 200, San Rafael, CA 94903
Ms. Lillian Hames, Project Director, SMART District Office, 4040 Civic Center Drive, Suite 200, San Rafael, CA 94903
Ms. Lucrecia Millia, Property Manager, SMART District Office, 4040 Civic Center Drive, Suite 200, San Rafael, CA 94903
Mr. Mike Grant, Union Pacific Railroad, Manager Environmental Site Remediation, 49 Stevenson Street, 15th Floor, San Francisco, CA 94105
Ms. Laura Kennedy, Kennedy/Jenks, 622 Folsom Street, San Francisco, CA 94107
Ms. Cappie Garrett, 1104 McDonald Avenue, Santa Rosa, CA 95404
Messrs John Stewart and Richard Devine, Santa Rosa Canners, 160 Sansome

Street, 7th Floor, San Francisco, Ca 94104
Mr. Mike Martini, Santa Rosa City Counsel, P.O. Box 1678, Santa Rosa, CA 95402
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