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REMEDIAL INVESTIGATION
McKESSON CORPORATION PROPERTY
9605 SORENSEN AVENUE
SANTA FE SPRINGS, CALIFORNIA

HLA Project No. 11[illegible]

Prepared for

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D INTERPRETED CPT DATA
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EXECUTIVE SUMMARY

This report presents the results of Harding Lawson Associates' (HLA) Remedial Investigation (RI) conducted at McKesson Corporation's (McKesson) former chemical facility located at 9005 Sorensen Avenue, Santa Fe Springs, California. HLA conducted this work on behalf of McKesson in accordance with Consent Order 89/90-007, issued by the California Department of Health Services (DHS), now the California Environmental Protection Agency - Department of Toxic Substances Control (DTSC). HLA's work was conducted in compliance with the DTSC guidelines and the U.S. Environmental Protection Agency's (EPA), October 1988, "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA." Methods implemented during the RI are described in HLA's workplan entitled "Workplan (Revision 3), Remedial Investigation and Feasibility Study, McKesson Corporation Property, 9005 Sorensen Avenue, Santa Fe Springs, California," (Workplan), dated April 25, 1991.

The facility is located at 9005 Sorensen Avenue, in the City of Santa Fe Springs, Los Angeles County, California. The site is fenced; occupies approximately 4.3 acres in an industrialized area; and is bounded on the east by Sorensen Avenue, on the south by Fontaine Trucking Equipment Company, on the west by a small agricultural field owned by Liquid Air Corporation, and on the north by a Southern Pacific Railroad easement and Angeles Chemical Company (Angeles); a bulk chemical repackaging facility.

McKesson Chemical Company, a former division of McKesson, operated a bulk chemical repackaging facility at the site from 1976 to 1986. During this period of operation, the facility was organized into four areas for the purpose of chemical packaging:

- A solvent repack area,
- A corrosive repack area,
- A hydrogen peroxide repack area, and
- A Freon blending area.

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Forty-four aboveground storage tanks (now demolished) were situated onsite within the four areas of operations. The tanks were contained within 2- to 3-foot-high concrete containment berms and separated by internal dike walls. Twenty-three underground storage tanks (USTs) are presently onsite and predominately located adjacent to the former aboveground solvent tank storage area. Railroad spurs are located along the northern and western boundaries of the site. Loading platforms and underground distribution lines were associated with the offloading of chemicals delivered via the railroad spurs. A drum storage area was used onsite for the storage of hazardous waste.

In September 1985, the DTSC issued a Resource Conservation and Recovery Act (RCRA) Part B Hazardous Waste Facility Permit for the drum-storage area. This area has since been closed under RCRA regulations. The final RCRA closure report was submitted to the DTSC on February 5, 1990 (HLA, 1990a). On June 28, 1990, the DTSC acknowledged that the storage-drum area was officially closed.

At the request of the DTSC, McKesson Environmental Services (MES) conducted three subsurface investigations at the facility during its period of operation. Two studies were undertaken in the aboveground solvent-storage area, and one study was conducted in the corrosive-storage area. Chlorinated solvents were detected in both the soil and groundwater in the aboveground solvent-storage area in these investigations. The corrosive storage area was investigated for USEPA extraction procedure (EP) Toxic compounds; none were detected.

The purpose of the RI was to assess the nature and extent of chemicals of concern in air, soil, surface water, and groundwater associated with the former operations at the McKesson site.

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The RI included the monitoring of ambient meteorological conditions and air quality, drilling of soil borings, drilling and installation of groundwater monitoring wells, cone penetrometer testing (CPT)/HydroPunch groundwater sampling, the collection and analysis of surface and subsurface soil samples, and the collection and analysis of surface water and groundwater samples. All field work and physical testing of soil samples was performed by HLA

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geologists, engineers, and technicians under the direct oversight of a registered geologist and/or professional engineer. Analytical testing of air, soil, and water samples was performed by a state-certified laboratory.

HLA's investigation of surface and subsurface soil and vadose zone conditions at the McKesson site was conducted in two phases. The first phase of the investigation was conducted from June to August 1990. Thirty-one soil borings were drilled and sampled during the first phase. Samples were also collected from four surface locations. Following review of the data collected during the first phase of the investigation, a second phase soil and vadose zone investigation was conducted in January and February of 1991, during which an additional ten soil borings were drilled and sampled.

Soil samples collected from borings drilled in the first phase of the investigation in the UST area, the aboveground storage tank area, and the Freon-blending area were analyzed for volatile and semivolatile organic compounds, glycols, and petroleum hydrocarbons. Based on the results from the first-phase borings, the samples collected from the three additional borings in the aboveground solvent-storage area were only analyzed for volatile organic compounds.

Soil samples collected in the corrosive and hydrogen peroxide bermed storage area were only analyzed for pH and selected ions and metals, with the exception of the two samples that were additionally analyzed for volatile and semivolatile organics, glycols, and petroleum hydrocarbons.

The groundwater investigation program consisted of the installation, monitoring, and sampling of a total of 18 onsite groundwater monitoring wells. Two wells were installed in a discontinuous perched-water zone encountered at two locations within the site. Twelve wells were installed in the upper portion of the underlying aquifer zone. Four additional wells were installed in the aquifer, two at an intermediate depth, and two at the bottom of the aquifer, to assess vertical hydraulic and chemical distribution characteristics. The monitoring well program was augmented by the collection of water samples using a

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HydroPunch sampling device. HydroPunch samples were collected at five onsite locations and twelve offsite locations.

Onsite groundwater monitoring wells were monitored for depth to groundwater 14 times during the period from June 1990 through April 1991. During the same period, three rounds of groundwater sampling were conducted. Samples collected in the first round of sampling conducted in August 1990 were analyzed using the following EPA methods:

- EPA Method 8240 - Volatile organic compounds,
- EPA Method 8270 - Semi-volatile compounds,
- EPA Method 8015 modified - Glycols,
- EPA Method 418.1 - Petroleum hydrocarbons,
- EPA Method 150.1 - pH,
- EPA Method 9050 - Conductivity,
- EPA Method 160.1 - Total dissolved solids,
- EPA Method 9036 - Sulfate,
- EPA Method 425.1 - Surfactants, and
- EPA Method 300.0/6010 - General minerals, selected metals.

Groundwater samples collected during subsequent sampling rounds were analyzed for volatile organics using EPA Method 8240 with selected samples being analyzed for general minerals and Ph. Hydropunch groundwater samples collected from onsite and offsite locations were analyzed for volatile organics using EPA Method 8240.

Impacts to vadose zone soils and groundwater by chlorinated hydrocarbon compounds were identified in this investigation. The predominant compounds detected in both the soil and groundwater are 1,1,1-trichloroethane (1,1,1-TCA), tetrachloroethene (PCE), trichloroethene (TCE), and methylene chloride (dichloromethane [DCM]). Elevated concentrations of these compounds detected in the soil appear to be limited in their areal extent to the immediate vicinity, including and surrounding the aboveground solvent storage area. Minor impacts to the soil were identified along the subsurface distribution lines connecting the northern railroad spur to the UST area. No significant impacts to vadose zone soils or groundwater

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were identified as resulting from activities associated with the storage, handling, or processing of corrosives, hydrogen peroxides, or glycols.

Two groundwater plumes exhibiting elevated concentrations of VOCs were identified during this investigation. An onsite plume, characterized by elevated concentrations of chlorinated hydrocarbons, including 1,1,1-TCA, PCE, TCE, 1,1-dichloroethene (1,1-DCE), and DCM was detected. Maximum concentrations of the major compounds comprising the onsite plume were detected in groundwater samples collected immediately downgradient of the aboveground solvent-storage area. Elevated concentrations extend offsite both downgradient and upgradient of the McKesson site. Even though a significant reduction of the concentration of compounds is observed perpendicular to the plume axis, the lateral extent of the plume has not been completely assessed. Vertically, the elevated concentration of compounds appear to be restricted to the upper part of the aquifer. No observations were made that would indicate elevated concentrations of dissolved organics or non-aqueous phase liquid solvents exist at depth within the aquifer.

An offsite plume, characterized by elevated concentrations of MEK, MIBK, and BTEX, in addition to concentrations of chlorinated hydrocarbons, was identified to the north (upgradient) and west (cross-gradient) of the McKesson site. This offsite plume extends downgradient from the Angeles site, which appears to be a possible source. Based on the compounds detected in the soil and the groundwater at the Angeles site during a preliminary investigation conducted in 1990 by SCS Engineers and the distribution of compounds detected in the groundwater upgradient of the McKesson site, the Angeles site appears to have contributed to the onsite plume identified at the McKesson site.

The observed distribution of compounds in the vadose zone soils appears to result from two transport processes. Within and in the vicinity of the aboveground solvent-storage area, the observed distribution is most probably the result of vertical migration of liquid-phase solvents through the vadose zone accompanied with lateral spreading along zones of high permeability contrasts. Away from the solvent storage tank area and at depths of 40 to 45 feet bgs, the detected concentrations of volatile organics appear to be the result of volatilization of dissolved compounds present in the groundwater.

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The observed plume configuration and aquifer test parameters indicated that the transport of chemical compounds in the groundwater is dominated by advection in a downgradient direction. Lateral to the plume axis, transport appears to be dependent primarily on diffusion. Diffusion also appears to control the distribution of compounds observed in the intermediate and deep zones of the aquifer.

A baseline risk assessment conducted by McLaren/ChemRisk concluded that under current conditions, the concentrations of the selected chemicals of concern detected in the site soils do not pose a significant noncancer risk or a significant increased cancer risk to future onsite residential or occupational populations. Risks to offsite populations were not quantitatively assessed. Site-related health risks associated with the chemicals detected in groundwater were not possible to assess because the relative contributions of probable onsite and offsite sources have not been established. The relationship between health effects and groundwater exposure irrespective of onsite versus offsite contribution of chemicals of concern was used to set cleanup levels for groundwater and soil.

Data collected as part of this investigation are sufficient to completely assess the extent of the groundwater plume identified onsite. However, offsite investigation of groundwater conditions is required to assess the downgradient, upgradient, and lateral extent of the plume. Assessment of soil and groundwater conditions upgradient of the McKesson site, including the Angeles site, is necessary to determine the magnitude of offsite contributions to the plumes identified both on and offsite.

The following activities are recommended to complete the remedial investigation of the McKesson site:

- Upon removal of the USTs, collection and analysis of soil samples from beneath the tanks.
- Analyses of soil samples collected during the tank removal activities should be evaluated.
- A report presenting the results of the UST removals and incorporating data generated during this investigation should be prepared as an addendum to the RI Report.

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These activities would complete the assessment of vadose zone soils onsite .

A workplan for the downgradient investigation of the groundwater plume detected onsite should be prepared. The scope of work associated with the downgradient investigation should be designed to monitor and assess the downgradient and lateral extent of the onsite plume.

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APPENDIX A

APPENDIX A
FIELD PROCEDURES

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APPENDIX A

FIELD PROCEDURES

A-1 SOIL BORING/SAMPLE COLLECTION
A-2 WELL INSTALLATION
A-3 WELL DEVELOPMENT
A-4 WELL MONITORING/SAMPLING
A-5 SURFACE SOIL AND SURFACE-WATER SAMPLING
A-6 CPT/HYDROPUNCH
A-7 AQUIFER TEST ANALYSIS

APPENDIX A-1
SOIL BORING/SAMPLE COLLECTION

This appendix presents the procedures used by HLA during drilling and sampling at the McKesson site. The soil classification chart and a key to the test data are summarized on Plate B1. Logs of HLA test borings are presented on Plates B-2 through B-46.

All soil borings were vertically drilled using a truck-mounted CME-75 drill rig equipped with 8-inch-outside-diameter hollow-stem augers. An HLA geologist observed the drilling and logged the borings. Soils were classified in accordance with the Unified Soil Classification System (USCS) presented on Plate B-1.

Soil borings (with the exception of SB-5) were sampled at ground surface and thereafter at 5-foot-depth intervals using a Sprague and Henwood (S&H) split-barrel, stainless-steel sampler (2.4-inch-inside-diameter). Each sampler was lined with three 6-inch-long brass tubes.

Samples were obtained by allowing a 140-pound hammer to fall 30 inches, driving the S&H sampler into native soil. Blow counts presented on the boring logs (Plates B-2 through B-46) have been converted to approximate equivalent standard penetration test N-values.

After retrieving and opening the split barrel, samples were monitored for volatile organic vapors using a photoionization detector (PID) and an organic vapor analyzer (OVA). The PID was equipped with a 10.2 electron-volt lamp and was calibrated each day against an isobutylene (benzene equivalent) standard. The OVA was precalibrated at the manufacturer and did not require daily adjustment.

The S&H tube closest to the tip of the sampler was sealed with Teflon-lined plastic caps, labeled, placed in a Ziploc bag, and stored on ice in a field cooler. Soil in the adjacent tube and the sampler shoe were visually classified according to the USCS. Samples were described with respect to their color, soil type, consistency or relative density, moisture, and other characteristics such as grain sizes, particle shapes, cementation, plasticity, stratification,

the presence of organic matter, and contaminant stain. Soil pH was also measured in the field on selected soil samples. Sample descriptions were recorded on the field log of the boring. The second S&H tube was capped, labeled, and sealed for later use editing the logs. All samples were handled under chain-of-custody protocol.

Soil cuttings generated during drilling were sealed in Department of Transportation (DOT) approved 55-gallon drums. The drums were labeled on the lid and on the side with the well number, date of generation, contents, and drilling interval. All cuttings were handled by HLA's subcontractor, Pacific Environmental Management Corporation (Long Beach, California), and properly disposed of.

All borings were backfilled using a cement-bentonite grout, poured directly into the borehole. The grout was made with 3-percent bentonite powder and Type II Portland cement. The grout was mixed in a trough using a grout pump.

Boring locations were marked by partially driving a nail into the grout and attaching orange flagging for visibility. Approximate X-Y measurements were taken of each boring with respect to permanent site features. Measurements were recorded on the field log of the boring.

Boring SB-22 was abandoned after encountering perched water approximately 2 feet below ground surface (bgs).

APPENDIX A-2
WELL INSTALLATION

This appendix presents the methods used by HLA to drill and install monitoring wells at the McKesson site. A summary of wells is presented in Table 11. Well completion diagrams are presented on Plates B-2 through B-46. Wellhead completion diagrams are presented on Plates B-47 and B-48.

Three monitoring wells, MW-1 through MW-3, were drilled and installed during Phase I at the locations shown on Plate 5. Monitoring well borings were vertically drilled using a truck-mounted CME-75 drill rig operated by HLA's subcontractor, West Hazmat Drilling Corporation (Anaheim, California). Borings were initially drilled to a depth of 41 to 46 feet bgs using 8-inch-diameter hollow-stem augers. After tripping out the augers, each boring was overreamed using a bucket auger rig equipped with an 18-inch-diameter bucket auger.

A 14-inch-diameter conductor casing was set in each boring and the annulus was backfilled with cement-bentonite grout. Twenty-four hours later, drilling continued with the 10-inch-diameter hollow-stem augers to a depth of approximately 71 feet bgs. An HLA geologist observed the drilling and logged the borings.

Monitoring Wells MW-1 through MW-3 were continuously sampled using a Moss wireline split-core barrel sampler (2.4-inch-inside-diameter). Upon retrieval, the sample core was immediately monitored for organic vapors using a PID and an OVA. The core was placed in tubular plastic sheeting, sealed at both ends with electrical tape, and stored in core boxes. The plastic sheeting was labeled with the date, boring number, and sample depth.

Soil samples were collected at approximately 5-foot intervals for chemical analysis by cutting a portion of the lower 1-foot of the core barrel sample and tightly packing it into a glass Mason jar. The jar was sealed with a Teflon-lined screw cap, labeled, and stored on ice in a field sample cooler. Analytical samples were handled under chain-of-custody protocol.

Soils were classified in accordance with the USCS using the same procedures as described in Appendix A-1.

Soil cuttings were handled as described in Appendix A-1.

Eight intermediate-depth wells (SB-4, SB-7, SB-10, SB-13, SB-17, SB-20, SB-23, SB-25) and one perched well (SB-32) were drilled and installed during Phase I at the locations shown on Plate 5. Intermediate-depth monitoring well borings were vertically drilled using a truck-mounted CME-75 drill rig equipped with 8- and 10-inch-outside-diameter hollow-stem augers. Drilling was conducted by HLA's subcontractor, West Hazmat Drilling Corporation (Anaheim, California), under the Supervision of an HLA geologist. Soils were sampled, classified, and stored using the procedures as described in Appendix A-1.

One intermediate well and one perched aquifer well (SB-36 and SB-37, respectively) were drilled and sampled during the second phase of work conducted between January 23 and February 7, 1991. Phase II intermediate and perched wells were drilled and sampled using the same methods as described in Appendix A-1.

Two sets of cluster wells were drilled and sampled during Phase II near existing Phase I Wells SB-17 and SB-23. Cluster wells were labeled SB-17A, SB-17B, SB-23A, and SB-23B (Plate 5).

Cluster well borings were initially drilled with a truck-mounted bucket-auger rig equipped with a 15-inch-diameter bucket auger. The bucket-auger boring was terminated at approximately 40 feet bgs in SB-17A and SB-17B and approximately 32 feet bgs in SB-23A and SB-23B. A 10-inch-inside-diameter steel conductor casing was set in each boring, and the annulus was backfilled with cement-bentonite grout. Drilling continued 24 hours later with a truck-mounted Mobil B-61 drill equipped with a 9-7/8 inch diameter rotary-drill bit. Drilling was conducted using direct mud-rotary methods. All bucket-auger and mud-rotary drilling was carried out by HLA's subcontractor H-F Drilling, Inc. (Fullerton, California). An HLA geologist observed the drilling and logged the borings.

Cluster Wells SB-17A and SB-23A were continuously sampled starting at the bottom of the bucket-auger borings using a Christensen 94 mm wireline sampling system. The sample core was handled as described above. Soils were classified according to the USCS using the same procedures as described in Appendix A-1.

All mud-rotary drill cuttings and drilling muds were contained in waste bins and handled by HLA's subcontractor, Pacific Environmental Management Corporation (Long Beach, California).

Groundwater was encountered at approximately 44 feet bgs at the eastern end of the site and at approximately 49 feet bgs at the western end. The first-phase wells (MW-1 through MW-3) were set approximately 20 feet below groundwater. Phase I intermediate-depth wells were set approximately 15 feet below groundwater. Perched aquifer wells were set at the base of first encountered groundwater. Phase II cluster wells SB-17A and SB-23A were set at the bottom of the aquifer (approximately 117 and 128 feet bgs, respectively). Cluster wells SB-17B and SB-23B were set at an intermediate depth within the aquifer (90 and 95 feet bgs, respectively).

All Phases I and II perched, intermediate, and deep wells were cased with 4-inch-diameter, flush-threaded, Schedule 40 PVC blank casing and well screen (0.02 inch slots). The base of each well was sealed with a PVC flush-threaded bottom cap. The top of each well was sealed with an expandable locking well cap. Cluster wells utilized stainless-steel screen. All well casing and screen was steam-cleaned with a hot-water washer prior to installation.

The annular space between the borehole wall and well screen was backfilled with Monterey No. 3 sand from the bottom of the borehole to approximately 3.0 feet above the top of the slotted casing. A 3- to 4-foot-thick bentonite pellet seal was placed above the sand pack. The remainder of the annulus was filled with a cement-bentonite grout (3 percent bentonite by weight). All annulus materials were slowly poured down the annulus. The height of the sand pack and bentonite pellets were periodically measured using a weighted cloth tape. Well completion details are presented on Plates B-2 through B-46.

Wells SB-23 and SB-37 were completed above grade, as illustrated on Plate B-47. All other wells were completed below grade, using a watertight, bolted well cover. The wellhead covers extend approximately 1 inch above the surrounding grade to allow for drainage of surface water away from the wellhead. Subsurface wellhead completion details are presented on Plate B-48.

An aluminum identification tag was placed inside each bolted well cover. The tag documented the well number, date of installation, diameter, depth, screen interval, and slot size. The top of each casing was marked on the north side for use as a monitoring and surveying reference point.

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APPENDIX A-3
WELL DEVELOPMENT

On July 26 through 30, 1990, Wells MW-1 through MW-3, SB-4, SB-7, SB-10, SB-13, SB-17, SB-20, SB-23, SB-25, and SB-32 were developed by HLA's subcontractor West Hazmat Drilling Corporation (Anaheim, California) under the supervision of an HLA geologist.

Total open well depths and depths to water were measured in all wells prior to beginning development. Measurements were obtained using a Solinst brand electric well sounder checked against a cloth tape and rule. Monitoring data were used to calculate four borehole volumes (the amount of water contained in the borehole multiplied four times) in each well as a minimum amount of water to be purged. Purge volumes were calculated as follows:

(1 annulus volume + 1 well casing volume) x 4 = 4 borehole volumes

1 annulus volume = (3.46 gal/mft) (Total Well Depth - Water Depth) (0.70)

assuming:

Borehole diameter = 10.25 inches

Casing diameter = 4 inches

30% pore space in the sand pack

1 casing volume = (Total Well Depth - Water Depth) $(4)^2$ (0.048 gal/ft^3)

Wells were developed using a 4-inch-diameter rubber-seal swab tool, a 4-inch by 6-foot stainless-steel bailer, and a 10-gallon-per-minute submersible pump. With the exception of SB-32, each well was surged with the swab tool for approximately 5 minutes and then bailed until approximately 55 gallons were removed. Surging was repeated a second time for approximately 5 minutes, and the wells were bailed again of approximately 30 gallons. Development was completed by installing a submersible pump approximately 5 feet from the bottom and pumping at 10 gallons per minute. Approximately 385 total gallons were removed from each well. Discharge rates were measured by directing discharged water into a 5-gallon bucket and tracking the time required to fill the bucket. The rates were converted to gallons per minute and recorded on the well development form. Water levels were remeasured immediately after removing the pump to assess the effects of pumping on the

aquifer. Purged water was stored in Department of Transportation (DOT)-approved 55-gallon drums.

Electrical conductivity, pH, and water temperature were measured at regular intervals during development to assess general groundwater quality and parameter stabilization. Water turbidity and color were also noted. All data were recorded on well development forms. Well development forms are presented in Appendix F.

Phase II wells were developed between February 1 and 9, 1991, by HLA's subcontractor H-F Drilling, Inc. (Fullerton, California), under the supervision of an HLA geologist.

Well SB-36 was developed using the same procedures as described above. Well SB-37 went dry after purging approximately 1 gallon and never recovered during the monitoring period.

Wells SB-17A, SB-17B, SB-23A, and SB-23B were treated with sodium acid pyrophosphate (SAPP) prior to surging and pumping. The SAPP was used as a silt and clay deflocculant and was poured as a solution directly into the wells. The wells were then surged for approximately 45 minutes to mix the solution. Wells SB-23A and MK-SB-23B were allowed to set approximately one hour before they were bailed and pumped. Well SB-17A and SB-17B were treated, surged, and allowed to set for approximately two days before bailing and pumping. Development of all cluster wells was completed using a 4-inch-diameter stainless-steel submersible pump. Discharge rates and water parameters were handled the same as for Phase I wells. Discharge water was stored in waste bins onsite. All purge, development, and rinsate water was properly manifested and disposed of by HLA's subcontractor, Pacific Environmental Management Corporation (Long Beach, California).

APPENDIX A-4
WELL MONITORING/SAMPLING

Wells at the McKesson site were sampled by HLA geologists in August and October 1990 and February 1991.

Static water levels were measured in all wells prior to sampling. Monitoring data were used to calculate four well casing volumes (the volume of water contained in one well casing multiplied by four for each well as a minimum amount to be purged.

Each well was purged using a 4-inch-diameter stainless-steel submersible pump. The pump was lowered to approximately 2 feet above the base of the well before pumping. The rate of discharge was measured using a 5-gallon bucket and a stopwatch. Water was pumped directly into DOT-approved 55-gallon drums which were then sealed and labeled. All purged rinsate water was properly manifested and properly disposed of by HLA's subcontractor, Pacific Environmental Management Corporation (Long Beach, California).

Electrical conductivity, pH, and water temperature were monitored at regular intervals while purging each well. All meters were calibrated at the start of each day of sampling. Electrical conductivity was calibrated to a 700 mmhos standard; pH was calibrated in pH-7 and pH-10 standard solutions. Well purging and sampling data are presented in Appendix G.

Well purging was complete when four well volumes had been removed. Well SB-32 consistently went dry before four well volumes could be removed. In this case, the water level was allowed to recover to 80 percent of the static water level, measured prior to sampling, before the well was sampled. Well SB-37 was purged dry during development and never recovered during the sampling period.

Groundwater samples were collected using a clean, 1-inch-diameter by 3-foot-long, stainless-steel bailer. Water samples were decanted from the bailer into clean, prelabeled sample containers. The containers were then sealed in plastic bags and placed on ice in a field

cooler. All water sampling equipment was washed with Liquinox solution, rinsed with potable water, and then rinsed with distilled water prior to sampling each well.

Duplicate samples were taken of selected wells to evaluate the precision of data received from the laboratory. The duplicate samples were collected in series from the same well using the same sampling procedure. Both original and duplicate samples were submitted "blind" to the laboratory and analyzed for the same parameters.

Blank samples were taken in the field to evaluate whether field procedures were providing a means of contamination to groundwater samples. One equipment blank was taken on each day of sampling by decanting distilled water from a decontaminated bailer into laboratory-prepared sample containers. One field blank was prepared at the beginning of each day of sampling by decanting distilled water directly into laboratory-prepared sample containers. The field blank was placed in the sample cooler at the beginning of the day and kept with the samples until they reached the lab. All blank samples were submitted "blind" to the laboratory.

All samples and blanks were submitted under chain-of-custody protocol.

APPENDIX A-5
SURFACE SOIL AND SURFACE-WATER SAMPLING

On July 17 and 18, 1990, eight surface-soil samples were collected by an HLA geologist from four different source areas (SS-01 to SS-04). All samples were obtained from the unlined drainage ditch near the run-off control sump discharge to the north of the site. Samples were collected at approximately 0.5 and 1.0 feet bgs using a hand auger. Samples were monitored for volatile organic vapors using a PID and OVA, and for pH. Soil samples were tightly packed into glass Mason jars and sealed with a Teflon-lined screw cap.

On June 23, 1990, two sets of surface-water samples were collected by an HLA geologist from two source areas (SW-01 and SW-02) along the unlined drainage channel to the northwest of the site (Plate 5). Samples were collected by submersing two volatile organic analysis (VOA) vials and two one-liter amber glass jars. Electrical conductivity, pH, and temperature readings were taken.

APPENDIX A-6
CPT/HYDROPUNCH

This appendix presents the procedures used during cone penetrometer testing (CPT) and Hydropunch groundwater sampling. Logs of CPT soundings are presented on Plates D-1 through D-18.

Soundings CPT-1 through CPT-18 were driven at the locations shown on Plate 6. CPT borings were driven using a 20-ton CPT rig equipped with a 1-1/2 inch diameter friction cone and push rods. The friction cone provided a detailed continuous record of soils encountered beneath the site. CPT probing was performed by HLA's subcontractor, Earth Technology Corporation (Huntington Beach, California), under the direction of an HLA geologist.

CPT-1 was driven approximately 10 feet from MW-1 to provide correlation of the CPT data with recovered soil types. CPT-1 was driven to approximately 60 feet bgs. All other CPT probes were driven to approximately 55 feet bgs. Computer printouts of soil behavior types were provided in the field by the subcontractor.

The CPT friction cone and push rods were steam-cleaned between each test location. Steam-cleaning rinsate was retained in DOT-approved 55-gallon drums.

After the friction cone and push rods were removed from the borings, a Hydropunch sampler was installed inside each CPT probe hole to collect groundwater samples. Refusal was encountered in CPT-5 at a depth of approximately 55 feet due to dense formation; consequently, no sample was obtained from CPT-5.

Groundwater samples were obtained by retrieving the Hydropunch sampler and transferring the sample into two laboratory-supplied, 40 ml VOA vials using a Teflon stopcock and plastic tubing. Sample vials were labeled, sealed in plastic bags, and stored on ice in a field sample cooler. All samples were handled under chain-of-custody protocol.

The Hydropunch sampler and push rods were steam-cleaned between each boring. All Teflon valves and plastic tubing related to sampling from the Hydropunch were discarded between use at each CPT probe hole. Steam-cleaning rinsate was retained in DOT-approved 55-gallon drums.

CPT probe holes were backfilled by pumping cement-bentonite grout through a tremie pipe. The abandoned CPT probe holes were then marked and labeled with spray paint for ease of location. Each location was measured in the field to a permanent feature on the site.

APPENDIX A-7
AQUIFER TEST ANALYSIS

This appendix presents the field methods used to evaluate aquifer characteristics at the former McKesson Chemical Facility. Slug test and pumpout data are presented in Tables H-1 through H-20. Hydrographs of pumpout data are presented in Appendix H.

Point-specific aquifer tests (slug tests) were conducted on MW-1 through MW-3, SB-4, SB-7, SB-13, SB-17, and SB-32 on August 15 and 16, 1990. Pumpout tests were conducted on Phase II cluster wells on February 13 and 14, 1991.

Slug tests were conducted by two HLA geologists using a 3-1/2-inch-outside-diameter PVC mandrel filled with inert Silica sand. Static water levels were first measured using a Solinst electric well sounder calibrated to a cloth tape and rule. An electronic pressure transducer was then set approximately one foot above the bottom of the well. The pressure transducer was connected to a Hermit data logger (In-Situ Inc., Laramie, Wyoming) which would record changes in water level in the well. The test was begun when the PVC mandrel was lowered into the well and completely submerged under water. The data logger was started immediately before the slug entered the water. During the test, water levels were simultaneously monitored with the electric well sounder to confirm the data. The test was repeated when the mandrel was removed.

Data stored on the data logger were printed out in the field to provide a backup copy of the test. The data were later transferred from the data logger to two computer disks, one primary, and one backup file.

The electronic pressure transducers, the electric well sounder, and the PVC mandrel were decontaminated using a Liquinox solution wash, a potable water rinse, and a distilled water rinse between each well. The rope connected to the mandrel was changed between each well.

Pumpout tests were conducted by two HLA geologists on SB-17, SB-17A, MK-SB-17B, SB-23, SB-23A, and SB-23B. Prior to the test, static water levels were measured in each well using an electric well sounder calibrated to a cloth tape and rule. A 4-inch-diameter stainless-steel submersible pump was then set in one cluster well, approximately 1 foot above the bottom of the well.

An electronic pressure transducer was set approximately 1 foot above the submersible pump. Transducers were also set approximately 1 foot above the bottom of the wells in the other two cluster wells. Transducers were plugged into data loggers. The test was begun when the submersible pump and the data loggers were simultaneously turned on. During the test, water levels were monitored with the electric well sounder to confirm the data. After a specified volume had been removed, the data loggers were stopped, reset, and restarted. The pump was turned off at the same time that the data loggers were turned on in order to gather aquifer recovery data. The test was repeated with the pump in each cluster well.

Data transfer was handled as described above.

Equipment decontamination was handled as described above.

APPENDIX B

APPENDIX B
BORING LOGS

Printed on Recycled Paper.

HDH\17333168\SOIL

MAJOR DIVISIONS				TYPICAL NAMES
COARSE-GRAINED SOILS (MORE THAN HALF IS LARGER THAN No. 200 SIEVE)	GRAVELS (MORE THAN HALF COARSE FRACTION IS LARGER THAN No. 4 SIEVE SIZE)	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES
			GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM	SILTY GRAVELS, POORLY GRADED GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SANDS (MORE THAN HALF COARSE FRACTION IS SMALLER THAN No. 4 SIEVE SIZE)	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL-GRADED SANDS, GRAVELLY SANDS
			SP	POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES
			SC	CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE-GRAINED SOILS (MORE THAN HALF IS SMALLER THAN No. 200 SIEVE)	SILTS AND CLAYS (LIQUID LIMIT 50% OR LESS)		ML	INORGANIC SILTS AND 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 CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (LIQUID LIMIT GREATER THAN 50%)		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

■ – "Undisturbed" S&H or Shelby tube sample

– Bulk or classification sample

– Standard Penetration Test sample

– No sample recovered

– Core sample

Blows/ft – Blows required to drive sampler 12 inches with a 140-pound hammer falling 30 inches. Blow counts for S&H samplers are converted to approximate "equivalent" SPT N values (N = 0.5 X S&H blows per foot)

HC Odor – Hydrocarbon Odor

- No – No Odor
- Lo – Slight Odor
- Md – Moderate Odor
- Sg – Strong Odor

PID – Photoionization Detector reading (10.2-electron-volt lamp, calibrated using an isobutylene standard)

OVA – Organic Vapor Analyzer (flame ionization detector) calibrated using a methane standard

* – Sample submitted for chemical analysis

** – Based on HLA Temporary Bench Mark (TBM) shown on Plate 2. Assumed elevation = 100.00'.

MCK0002597

KEY TO BORING LOG

Harding Lawson Associates
Engineering and Environmental Services

SOIL CLASSIFICATION CHART
& KEY TO BORING LOGS
McKesson Corporation Property
Santa Fe Springs, California

PLATE B1

DRAWN	JOB NUMBER	APPROVED	DATE	REVS	DATE
HK	17333,168.11	TAK	1/92		

Top of Casing 148.52 ft

Equipment 8 & 10" Hollow Auger

Elevation 149.1 ft Date 6/14/90

(See Plate B48 for Wellhead Construction)

18" dia. Borehole

14" dia. Steel Conductor Casing

4" dia. Blank PVC Casing

Bentonite-Cement Grout

Bentonite Pellet Seal

PID	OVA	Soil pH	Depth ft	Sample	
			0		3" ASPHALTIC CONCRETE
					BROWN SANDY SILT (ML) moist, with trace of gravel and some clay
0.0	0.0				GRAY GRAVELLY SAND (SP) moist, fine to coarse grained
0.0	0.0	8.81	5		RED-BROWN SILT (ML) moist, with some clay and trace of sand and gravel
					color change to dark brown
0.0	0.0				decreasing clay and gravel content
0.0	0.0				increasing sand content
0.0	0.0	8.84	10		ORANGE-BROWN SANDY CLAY (CL) moist, with some silt
0.0	0.0				increasing sand content, trace of gravel
					BROWN CLAYEY SAND (SC) moist, fine to medium grained with few gravel
0.0	0.0	8.17	15		ORANGE-BROWN SAND (SP) moist, fine to medium grained with trace of coarse-grained sand and some silt
0.0	0.0	9.20			becoming coarse-grained, color change to light brown
0.0	0.0		20		
0.0	0.0	9.48 *			with trace of gravel, increasing silt content
					BROWN SILTY SAND (SM) moist, very fine to fine grained with some clay, micaceous
			25		increasing clay content
					BROWN CLAY (CL) moist, with minor fine-grained sand
0.0	0.0				
0.0	0.0				increasing sand content
		8.99			with trace of sand, some silt
0.0	0.0		30		BROWN SILTY SAND (SM) moist, fine grained, micaceous
0.0	0.0				
0.0	0.0	8.92			trace of medium grained
			35		BROWN SANDY CLAY (CL) moist, fine-grained sand with trace of silt
0.0	0.0				color change to orange-brown
					decreasing sand content
0.0	0.0	8.80			color change to brown
					increasing sand content
0.0	0.0				color change to mottled brown and orange
			40		decreasing sand content

MCK0002598

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Log of Boring MK-MW-01 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

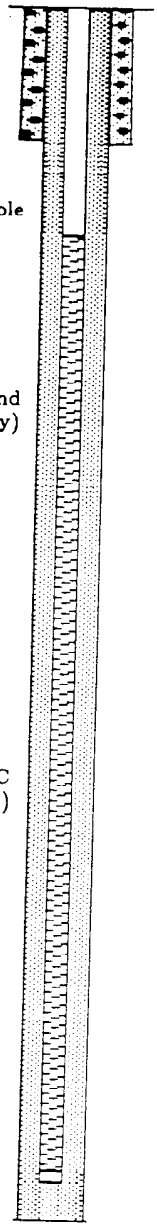
PLATE B2

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Top of Casing 148.52 ft

Equipment 8 & 10" Hollow Auger

Elevation 149.1 ft Date 6/14/90



PID	OVA	Soil pH	Depth ft	Sample	Description
0.0	0.0		40		BROWN SILT (ML) moist, with some fine-grained sand, micaceous
0.0	0.0	7.65 *			BROWN SANDY CLAY (CL) moist, fine-grained sand with some silt
0.0	0.0		45		MOTTLED BROWN AND ORANGE SAND (SP) very moist to wet, fine grained
					water level measured on 8/15/90
0.0	0.0		50		fine to medium grained
0.0	0.0				saturated color change to brown
		9.06			
			55		
					with some silt, micaceous
0.0	0.0	9.26			with few gravel
			60		medium grained
					fine to medium grained
					fine grained, increasing silt content
0.0	0.0	9.37			
			65		decreasing silt content
					medium grained
					increasing silt content
0.0	0.0	9.31			fine grained
					fine to medium grained
			70		
			75		
			80		

Eight-inch-diameter boring terminated at 68 feet. Groundwater encountered at 50 feet during drilling. Boring converted to ground-water monitoring well on 6/15/90.

Note: Eight-inch-diameter boring was overreamed with ten-inch-diameter augers to a total depth of 72 feet. Based on field observations, interpreted lithology in the overreamed interval is similar to that at last sampled depth.

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Log of Boring MK-MW-01 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

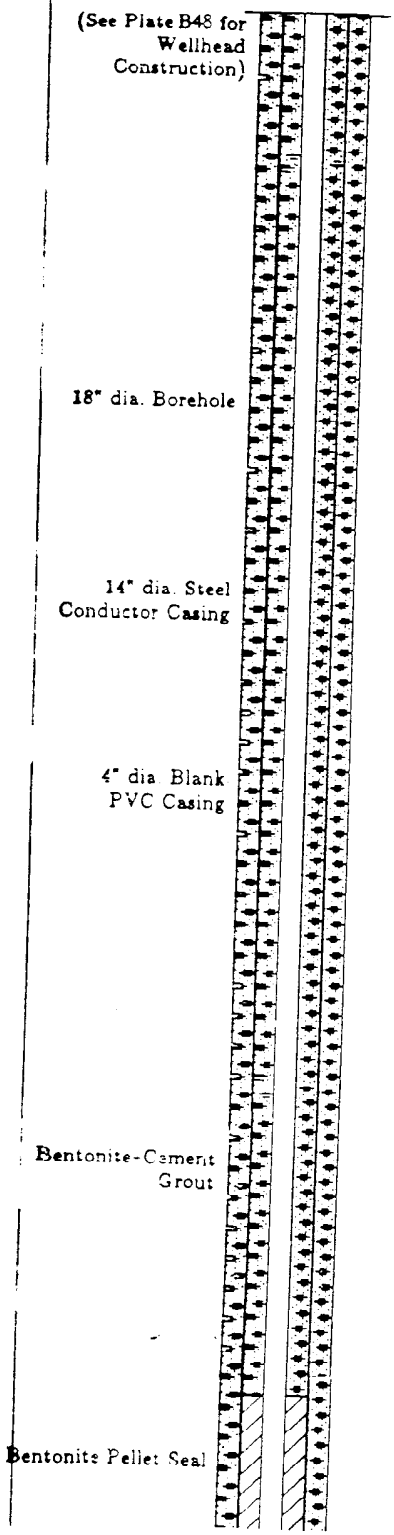
PLATE **B2a**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Top of Casing 147.28 ft

Equipment 8 & 10" Hollow Auger

Elevation 147.7 ft Date 6/14/90



PID	OVA	Soil pH
0.0	0.0	8.77
0.0	0.0	8.70
0.0	0.0	8.58
0.0	0.0	
0.0	0.0	9.62 *
0.0	0.0	9.01
0.0	0.0	8.11
0.0	0.0	8.19

Depth ft / Sample: 0, 5, 10, 15, 20, 25, 30, 35, 40

2.5" ASPHALTIC CONCRETE

DARK BROWN CLAY (CL)
moist, with some sand and silt

RED-BROWN SILTY SAND (SM)
moist, fine grained

DARK BROWN CLAY (CL)
moist, with some silt and minor sand

increasing silt content
color change to brown

BROWN SILT (ML)
moist, with some fine-grained sand and clay, micaceous

with trace of medium-grained sand
color change to orange-brown
bedding plane parting at 1/16-inch spacing
with trace of gravel

BROWN SAND (SP)
moist, very fine to fine grained with minor silt

increasing silt content

micaceous

color change to gray-brown, medium to coarse grained, with some rounded to subrounded gravel up to 1/4-inch diameter

BROWN SILTY SAND (SM)
moist, very fine to fine grained

color change to light brown
with some clay

MCK0002600

BROWN SAND (SP)
moist, very fine to fine grained with minor silt

BROWN SILTY SAND (SM)
moist, fine grained

BROWN SILT (ML)
moist, with some fine-grained sand

BROWN SILTY SAND (SM)
moist, very fine to fine grained with trace of clay, micaceous

BROWN LEAN CLAY WITH SAND (CL)
moist, fine- to medium-grained sand with trace of gravel

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Log of Boring MK-MW-02 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

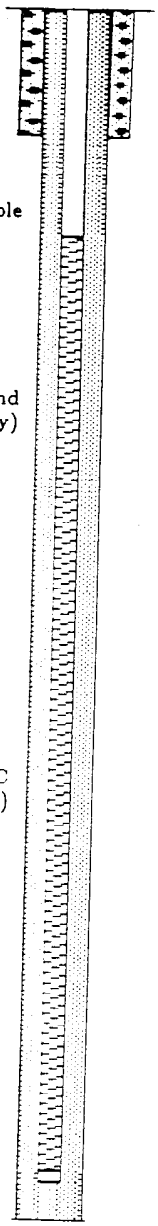
PLATE **B3**

DRAWN	JOB NUMBER	APPROVED	DATE	REV. SEC	DATE
HK	17333,168.11	THK	1/92		

Top of Casing 147.28 ft

Equipment 8 & 10" Hollow Auger

Elevation 147.7 ft Date 6/14/90



PID	OVA	Soil pH	Depth ft	Sample	
			40		increasing sand content BROWN SILTY SAND (SM) moist, fine grained with trace of clay decreasing silt content
0.0	0.0	8.43			
0.0	0.0	8.52 *	45		water level measured on 8/15/90 increasing silt content DARK BROWN SAND (SP) very moist, very fine to fine grained with minor silt, micaceous
0.0	0.0	8.91			
			50		saturated
0.0	0.0	9.32			
			55		color change to brown
0.0	19.0	8.26			increasing silt content
			60		decreasing silt content, fine to medium grained
0.0	0.0	9.41			
			65		
0.4	0.0	9.27			
			70		Eight-inch-diameter boring terminated at 68 feet. Groundwater encountered at 52 feet during drilling. Boring converted to ground-water monitoring well on 6/15/90.
			75		Note: Eight-inch-diameter boring was overreamed with ten-inch-diameter augers to a total depth of 72 feet. Based on field observations, interpreted lithology in the overreamed interval is similar to that at last sampled depth.
			80		

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Log of Boring MK-MW-02 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

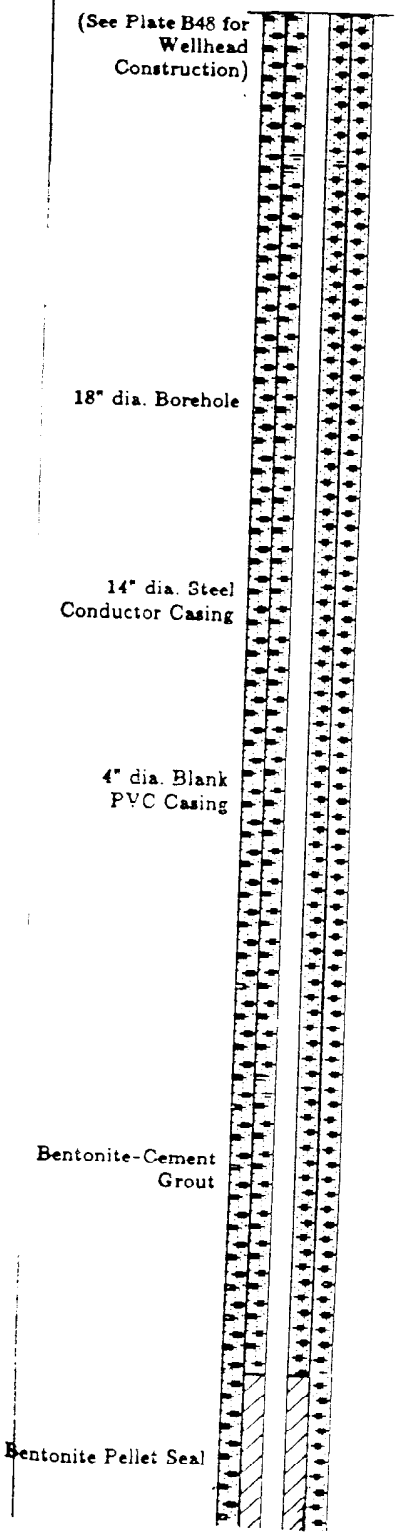
PLATE B3a

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Top of Casing 149.03 ft

Equipment 8 & 10" Hollow Auger

Elevation 149.7 ft Date 6/15/90



Depth ft Sample	PID	OVA	Soil pH	Description
0				4" ASPHALTIC CONCRETE
				BROWN SILTY SAND (SM) moist, fine to medium grained
	0.0	0.0	9.10	color change to red-brown
				color change to brown decreasing silt content
5				
	0.0	0.0	8.21	with trace of coarse-grained sand and few gravel
				color change to red-brown
10				increasing gravel content with minor clay
	0.0	0.0	8.26	
15				ORANGE-BROWN SAND (SP) moist, fine to coarse grained with trace of gravel and minor silt
	0.5	1.0	8.69	medium grained
20				
				increasing gravel content
	0.0	0.0	8.31	
25				BROWN SILTY SAND (SM) moist, fine grained with trace of gravel
	0.0	0.0	8.07	BROWN CLAYEY SAND (SC) moist, fine grained
				BROWN SILTY SAND (SM) moist, fine grained, micaceous
30				
	0.0	9.0	8.13	increasing silt content
	0.0	0.0		
35				RED-BROWN SANDY CLAY (CL) moist, fine grained with some coarse-grained sand and trace of gravel
	0.0	0.0	8.04	
40				BROWN SILTY SAND (SM)

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Log of Boring MK-MW-03 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

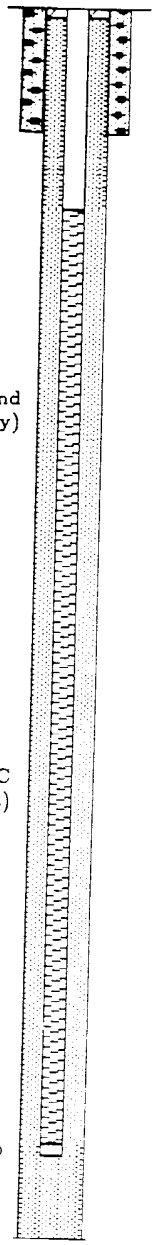
PLATE B4

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Top of Casing 149.03 ft

Equipment 8 & 10" Hollow Auger

Elevation 149.7 ft Date 6/15/90



Depth ft	PID	OVA	Soil pH	Sample	Description
40	0.0	1.4	8.23 *		moist, fine grained, micaceous
					BROWN SAND (SP) moist, medium grained
					BROWN SILTY SAND (SM) moist, fine to medium grained, micaceous
45	0.0	0.0			BROWN SAND (SP) wet, very fine to fine grained, micaceous
					water level measured on 8/15/90
50					saturated fine to medium grained 4-inch-thick silt lens
	0.0	0.0			
					with some silt
55					
	0.2	0.0			no silt
					with some gravel
60					
	0.0	0.0			
65					with some silt
					no silt
					medium grained
	0.0	0.0			
70					
75					
80					

Eight-inch-diameter boring terminated at 68 feet. Groundwater encountered at 51 feet during drilling. Boring converted to ground-water monitoring well on 6/18/90.

Note: Eight-inch-diameter boring was overreamed with ten-inch-diameter augers to a total depth of 72 feet. Based on field observations, interpreted lithology in the overreamed interval is similar to that at last sampled depth.

MCK0002603

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Log of Boring MK-MW-03 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B4a

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Equipment: 8" Hollow Auger

Elevation: 147.6 ft Date: 6/18/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft / Sample	Description
								0	4" ASPHALTIC CONCRETE
				15	0.2	0.0	8.93		GRAY GRAVELLY SAND (SP) moist, fine to medium grained
									DARK BROWN SANDY CLAY (CL) stiff, moist, fine- to medium-grained sand with minor silt
				12	0.0	0.0	8.86	5	medium stiff; color change to brown, decreasing sand content
				13	0.0	0.0	8.46	10	
									BROWN SILTY SAND (SM) medium dense, moist, fine to very fine grained
				11	0.0	0.0		15	
									MOTTLED ORANGE AND LIGHT BROWN SAND (SP) very dense, moist, fine grained with trace of gravel and silt
				>50	0.0	0.0	9.15	20	
				>50	0.0	0.0	8.66	25	LIGHT BROWN GRAVELLY SAND (SP) very dense, medium to coarse grained with subrounded gravel
				56	1.0	3.2	8.04	30	increasing silt content; BROWN SILT (ML) hard, moist, with some fine-grained sand
				24	2.0	7.4	8.07	35	color change to mottled orange-brown, very stiff, decreasing sand content; BROWN SANDY CLAY (CL) very stiff, moist, fine-grained sand
								40	

MCK0002604

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Log of Boring MK-SB-01 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B5**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Equipment 8" Hollow Auger

Elevation 147.6 ft Date 6/18/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample
				41	1.0	6.0	8.36 *	40	
								45	

Boring terminated at 45 feet.
Groundwater encountered at 45 feet during drilling.
Boring backfilled with bentonite-cement grout on 6/19/90.

MCK0002605

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Log of Boring MK-SB-01 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B5a**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Equipment: 8" Hollow Auger

Elevation: 147.8 ft Date: 6/19/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
30.0	11.0	16.4	108.7	4	0.0	0.0	8.67	0		MOTTLED DARK BROWN AND BROWN SANDY LEAN CLAY (CL) soft, moist, fine-grained sand
				9	0.0	0.0	8.91	5		decreasing sand content stiff
										RED-BROWN SILTY SAND (SM) medium dense, fine grained with minor mottling
				11	0.0	0.0	8.90	10		
				15	0.0	0.0	8.71	15		decreasing silt content with some clay
										BROWN SAND (SP) dense, moist, fine to medium grained with trace of coarse grained
				41	0.0	0.0	9.21 *	20		with some gravel and increasing coarse-grained sand content
				60	0.0	0.0	8.67	25		BROWN SILT (ML) very stiff, moist, with some fine-grained sand
42.0	14.0	27.3	96.7	28	0.0	0.0	8.16	30		decreasing sand content
				21	0.0	0.0	8.23	35		increasing sand content
								40		BROWN SANDY CLAY (CL) very stiff, fine-grained sand

MCK0002606

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Log of Boring MK-SB-02 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B6

JOB NUMBER	APPROVED	DATE	REVISED	DATE
17333,168.11	TAK	1/92		

Equipment 8" Hollow Auger

Elevation 147.8 ft Date 6/19/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample
				19	0.0	0.0	8.39 *	40	

Boring terminated at 41.5 feet.
Groundwater not encountered during drilling.
Approximately two hours after completion of drilling, groundwater level was measured at approximately 35 feet below ground surface.
Boring backfilled with bentonite-cement grout on 6/19/90.

45
50
55
60
65
70
75
80

MCK0002607

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Log of Boring MK-SB-02 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B6a

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Equipment: 8" Hollow Auger

Elevation: 147.2 ft Date: 7/6/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft / Sample	Description
								0	10" CONCRETE SLAB
									BROWN SILTY SAND (SM) loose, moist, very fine grained, micaceous
				7		26.0	7.44	5	
				9		4.8	7.26	10	color change to mottled red-brown and brown
				14		3.0	7.53	15	medium dense BROWN SAND (SP) medium dense, moist, very fine to fine grained color change to red-brown
				38		78.0	7.72 *	20	color change to brown, dense, with trace of medium grained and some gravel
				45		68.0	7.33	25	LIGHT BROWN SILTY SAND (SM) dense, moist, very fine to fine grained with trace of medium grained, micaceous
				21		200.0	7.25 *	30	color change to mottled red-brown and brown
				30		30.0	7.14	35	ORANGE-BROWN SANDY CLAY (CL) hard, moist, very fine-grained sand with trace of medium-grained sand, micaceous
								40	

MCK0002608

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Log of Boring MK-SB-03 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B7

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAC	1/92		

Equipment 8" Hollow Auger

Elevation 147.2 ft Date 7/6/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
				39		24.0	7.28	40		increasing sand content
								45		LIGHT RED-BROWN SILTY SAND (SM) medium dense, moist to wet, very fine to fine grained, micaceous
				23		14.0	7.23			BROWN SAND (SP) very dense, wet to saturated, fine to medium grained
				50		10.0		50		
								55		Boring terminated at 51 feet. Groundwater encountered at 48 feet during drilling. Boring backfilled with bentonite-cement grout on 7/6/90.
								60		
								65		
								70		
								75		
								80		

MCK0002609

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Log of Boring MK-SB-03 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B7a**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

00612/D:

Top of Casing 146.65 ft

Equipment 8 & 10" Hollow Auger

Elevation 147.2 ft Date 6/26/90

(See Plate B48 for Wellhead Construction)

10" dia. Borehole

4" dia. Blank PVC Casing

Bentonite-Cement Grout

Bentonite Pellet Seal

Blows/ft	PID	OVA	Soil pH
20	2.0	11.0	7.23
19	32.0	46.0	7.67
8	6.0	12.0	7.16
13	1.0	6.0	7.37
17	60.0	100.0	7.52
29	28.0	300.0	6.79 *
34	12.0	42.0	6.84
40	5.0	31.0	7.70

Depth ft / Sample: 0, 5, 10, 15, 20, 25, 30, 35, 40

4" ASPHALTIC CONCRETE

LIGHT BROWN GRAVELLY SAND (SP)
medium dense, dry, fine to medium grained

DARK BROWN SILT (ML)
stiff, moist, with some fine-grained sand

with some gravel

BROWN SILTY SAND (SM)
loose, moist, fine grained with trace of gravel, micaceous

medium dense, very fine- to fine-grained sand, no gravel

MOTTLED ORANGE AND BROWN SAND (SP)
medium dense, moist, very fine to fine grained, micaceous

BROWN SANDY SILT (ML)
very stiff, moist, very fine-grained sand

hard

RED-BROWN CLAYEY SAND (SC)
very dense, very fine to fine grained

BROWN SILT (ML)
very stiff, moist, with some very fine-grained sand

MCK0002610

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Log of Boring MK-SB-04 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B8**

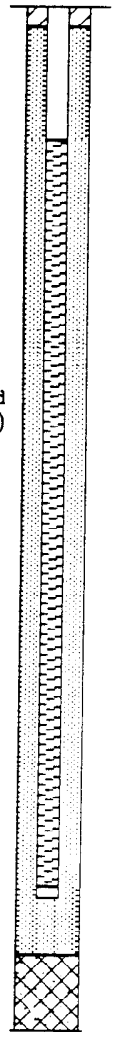
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

00612/D:

Top of Casing 146.65 ft

Equipment 8 & 10" Hollow Auger

Elevation 147.2 ft Date 6/26/90



Depth ft	Sample	Blows/ft	PID	OVA	Soil pH
40		18	13.0	7.0	7.29
45		17	3.2	10.0	7.10 *
50					
55		9	0.0	0.0	7.37
60		30	0.0	0.0	7.51
65					
70					
75					
80					

water level measured on 8/15/90

micaceous

BROWN SAND (SP)
loose, saturated, fine to medium grained, micaceous

Eight-inch-diameter boring terminated at 61.5 feet. Groundwater encountered at 47 feet during drilling. Boring converted to ground-water monitoring well on 6/26/90.

Note: Eight-inch-diameter boring was overreamed with ten-inch-diameter augers to a total depth of 67 feet. Based on field observations, interpreted lithology in the overreamed interval is similar to that at last sampled depth.

MCK0002611

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Log of Boring MK-SB-04 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B8a**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

00612/D:

Equipment: 8" Hollow Auger

Elevation: 148.1 ft Date: 6/27/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
								0		BROWN SILTY SAND (SM) moist, fine grained with trace of gravel
					1.0	2.0	8.11			
					0.0	1.0				
								5		
										color change to dark brown
					2.0	10.0	7.52			
								10		
					5.0	56.0	7.29			
								15		bedding plane parting at approximately 1/4- to 1/2-inch spacing
					12.0	12.0	7.30			
										ORANGE-BROWN SAND (SP) moist, very fine to medium grained, micaceous
								20		
					30.0	66.0	7.07			with some gravel and coarse-grained sand
										BROWN SILTY SAND (SM) moist, very fine to fine grained
								25		
					50.0	320.0	7.11			increasing silt content
								30		
					60.0	>1000				
					90.0	720.0	6.91 *			RED-BROWN SANDY CLAY (CL) moist, fine- to medium-grained sand with trace of gravel
								35		
					24.0	90.0				
										BROWN SILTY SAND (SM) moist, very fine grained
					16.0	180.0	7.03			
								40		

MCK0002612

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Log of Boring MK-SB-05 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B9**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAC	1/92		

00612/D:

Equipment: 8" Hollow Auger

Elevation: 148.1 ft Date: 6/27/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
								40		bedding plane parting at 1/4- to 1/6-inch spacing
										increasing silt content
					70.0	900.0	7.08			
								45		
					20.0	320.0	6.60			GRAY-BROWN SANDY SILT (ML) moist, fine-grained sand
								50		MOTTLED ORANGE-BROWN AND BROWN SILTY SAND (SM) wet, very fine grained, micaceous
					70.0	260.0	7.37			BROWN SAND (SP) saturated, very fine to fine grained, micaceous
								55		
					9.0	150.0	7.40			color change to light brown, fine to medium grained with trace of coarse grained
								60		
					16.0	52.0	7.53			
								65		Boring terminated at 64 feet. Groundwater encountered at 53.5 feet during drilling. Boring backfilled with bentonite-cement grout on 6/27/90.
								70		
								75		
								80		

MCK0002613

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Log of Boring MK-SB-05 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B9a**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TK	1/92		

00612/D:

Equipment: 8" Hollow Auger

Elevation: 148.2 ft Date: 6/28/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft / Sample	
				23	0.0	1.0	7.20	0	DARK BROWN SILTY SAND (SM) medium dense, moist, fine grained with trace of gravel
									BROWN SILT (ML) moist, with some very fine-grained sand
				7	0.0	0.8	7.44	5	
									RED-BROWN SILTY SAND (SM) medium dense, moist, fine to medium grained with trace of gravel
				25	0.0	0.2	7.51	10	
									ORANGE-BROWN SAND (SP) medium dense, moist, fine to medium grained with trace of gravel
				17	0.0	0.4	7.64	15	
				50	0.0	10.0	7.33	20	increasing gravel content ORANGE-BROWN GRAVELLY SAND (SP) very dense
		23.0	104.0	50	5.0	10.0	7.21 *	25	color change to brown, with silt
43.0	14.0	30.7	92.0	18	2.0	7.0	6.44	30	BROWN SILT (ML) very stiff, moist, micaceous
				28	0.0	9.4	6.88	35	MOTTLED BROWN AND BLACK SILTY SAND (SM) medium dense, moist, very fine grained
								40	

MCK0002614

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Log of Boring MK-SB-06 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B10

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAC	1/92		

00612/D:

Equipment 8" Hollow Auger

Elevation 148.2 ft Date 6/28/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	
				23	0.0	1.4	6.99	40		
				18	2.0	18.0	6.97 *	45		color change to gray-brown mottled, with orange brown
										BROWN SAND (SP) medium dense, saturated, fine to medium grained
				21	0.0	4.0	7.38	50		
										Boring terminated at 52 feet. Groundwater encountered at 48 feet during drilling. Boring backfilled with bentonite-cement grout on 7/3/90.
								55		
								60		
								65		
								70		
								75		
								80		

MCK0002615

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Log of Boring MK-SB-06 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B10a

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TK	1/92		

00612/D:

Top of Casing 147.77 ft

Equipment 8 & 10" Hollow Auger

Elevation 148.2 ft Date 6/28/90

(See Plate B48 for Wellhead Construction)

10" dia. Borehole

4" dia. Blank PVC Casing

Bentonite-Cement Grout

Bentonite Pellet Seal

Depth ft	Sample	Blows/ft	PID	OVA	Soil pH	Description
0		20	0.0	2.2	6.99	LIGHT BROWN SAND (SP) moist, medium to coarse grained with some gravel
						BROWN SILTY SAND (SM) loose, moist, fine grained, micaceous
5		5	2.0	7.2	6.93	
10		25	0.0	0.0	7.03	medium dense, with some clay and trace of gravel
						ORANGE-BROWN SAND (SP) medium dense, moist, fine to coarse grained with few gravel
15		20	0.0	3.0	7.31	
20		33	0.0	10.0	7.27	dense, fine grained, micaceous
						ORANGE SANDY GRAVEL (GP) very dense, moist, medium- to coarse-grained sand
25		50	1.0	9.0	7.60 *	
						BROWN SILTY SAND (SM) medium dense, moist, very fine grained with trace of coarse-grained sand and gravel, micaceous
30		16	0.0	5.6	6.76	
						RED-BROWN CLAY (CL) very stiff, moist, with some very fine-grained sand and trace of gravel
35		29	0.0	3.0	7.27	
						BROWN SILTY SAND (SM) medium dense, moist, fine grained
40						

MCK0002616

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Log of Boring MK-SB-07 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B11**

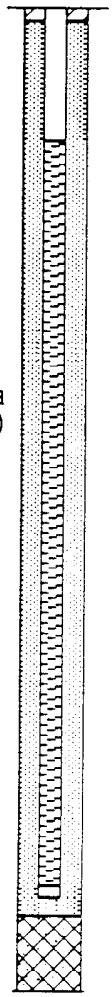
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAL	1/92		

00612/D:

Top of Casing 147.77 ft

Equipment 8 & 10" Hollow Auger

Elevation 148.2 ft Date 6/28/90



Depth ft	Blows/ft	PID	OVA	Soil pH	Sample
40	22	2.0	9.0	7.17	
45	41	8.0	20.0	7.08 *	
50	49	1.0	20.0	7.38	
55					
60					
65					
70					
75					
80					

MOTTLED ORANGE-BROWN AND BROWN SAND (SP)
dense, moist, fine to medium grained with trace of gravel, micaceous

▽ water level measured on 8/15/90

color change to light brown, saturated

Eight-inch-diameter boring terminated at 51.5 feet. Groundwater encountered at 48 feet during drilling. Boring converted to ground-water monitoring well on 6/29/90.

Note: Eight-inch-diameter boring was overreamed with ten-inch-diameter augers to a total depth of 66 feet. Based on field observations, interpreted lithology in the overreamed interval is similar to that at last sampled depth.

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Log of Boring MK-SB-07 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B11a**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

00612/D:

Equipment: 8" Hollow Auger

Elevation: 149.6 ft Date: 6/28/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft / Sample	
				33	0.0	0.0	7.76	0	BROWN SILTY SAND (SM) dense, moist, fine grained
				7	0.0	0.5	7.38	5	color change to dark brown, loose, very fine to fine grained, micaceous
				18	0.0	0.2	7.13	10	medium dense, with trace of coarse grained
				18	1.0	10.0	7.57	15	ORANGE-BROWN SAND (SP) medium dense, moist, fine to medium grained with trace of gravel and silt
				23	0.0	16.0	6.00	20	micaceous
				26	7.0	54.0	6.98 *	25	increasing gravel content
									BROWN SILTY SAND (SM) medium dense, moist, very fine grained, micaceous
				16	2.0	11.0	6.44	30	
				19	1.0	6.4	7.34	35	
								40	RED-BROWN CLAYEY SAND (SC) medium dense, moist, very fine to fine grained, mottled

MCK0002618

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Log of Boring MK-SB-08 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B12**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	JAK	1/92		

00612/D:

Equipment: 8" Hollow Auger

Elevation: 149.6 ft Date: 6/28/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft / Sample	
				26	130.0	1.0	7.47	40	BROWN SILTY SAND (SM) medium dense, moist, fine grained, micaceous
				22	3.0	1.0	7.30 *		
								45	Boring terminated at 44 feet. Groundwater not encountered during drilling. Boring backfilled with bentonite-cement grout on 7/2/90.
								50	
								55	
								60	
								65	
								70	
								75	
								80	

MCK0002619

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Log of Boring MK-SB-08 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B12a**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		

00612/D:

Equipment: 8" Hollow Auger

Elevation: 147.7 ft Date: 6/29/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft / Sample	Description
								0	GRAVEL (ARTIFICIAL FILL)
				22	6.0	0.0	7.15		DARK BROWN SILTY SAND (SM) medium dense, moist, very fine grained with trace of gravel
				8	0.6	0.0	7.45	5	BROWN SILT (ML) medium stiff, moist, with minor very fine-grained sand, micaceous
				28	0.0	0.6		10	ORANGE-BROWN SILTY SAND (SM) medium dense, moist, fine to medium grained
				22	0.0	4.0	7.29	15	ORANGE-BROWN SAND (SP) medium dense, moist, medium to fine grained with some silt and trace of gravel
		13.0	110.1	35	0.0	10.2	7.38 *	20	BROWN SILTY SAND (SM) dense, moist, fine to coarse grained with few gravel
34.0	14.0	12.3	109.2	24	1.0	2.7	6.95	25	BROWN CLAYEY SAND (SC) medium dense, moist, fine to coarse grained
				19	0.0	5.6	6.67	30	increasing silt content, with some clay
									BROWN CLAY WITH SAND (CL) very stiff, moist
36.0	16.0	16.9	116.6	29	0.0	0.0	7.05	35	
								40	BROWN SILTY SAND (SM) medium dense, moist, fine grained with trace of

MCK0002620

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Engineering and Environmental Services

Log of Boring MK-SB-09 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

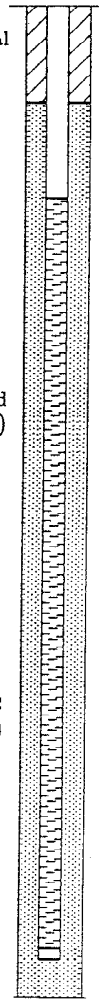
PLATE **B13**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Top of Casing 149.44 ft

Equipment 8 & 10" Hollow Auger

Elevation 149.9 ft Date 6/22/90



Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	
29	1.8	26.0	7.53	40		micaceous
30	2.0	42.0	8.03	45		LIGHT BROWN SAND (SP) dense, wet, fine grained, micaceous
						▽ water level measured on 8/15/90
16	0.0	0.0		50		
				55		
				60		
				65		
				70		
				75		
				80		

Eight-inch-diameter boring terminated at 51.5 feet. Groundwater encountered at 49 feet during drilling. Boring converted to ground-water monitoring well on 6/25/90.

Note: Eight-inch-diameter boring was overreamed with ten-inch-diameter augers to a total depth of 66 feet. Based on field observations, interpreted lithology in the overreamed interval is similar to that at last sampled depth.

MCK0002621

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Log of Boring MK-SB-10 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

FIG. B14a

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Equipment 8" Hollow Auger

Elevation 149.9 ft Date 6/22/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Description
				29	0.0	0.0		0	DARK BROWN SILTY SAND (SM) dense, moist, very fine to fine grained with trace of gravel
									DARK BROWN SILT (ML) stiff, moist, with some fine-grained sand and minor clay
				10	0.0	0.0	8.33	5	
				25	0.0	0.0	7.85	10	color change to red-brown, increasing sand content
				50	0.0	0.0	8.52	15	ORANGE-BROWN GRAVELLY SAND (SP) very dense, moist, medium to coarse grained with some silt
									BROWN SAND WITH SILT (SW-SM) very dense, moist, fine to coarse grained with few gravel
		4.6	110.6	50	0.0	0.0	8.83	20	
33.0	9.0	21.5	105.3	22	0.0	0.0	7.79	25	BROWN SILT (ML) very stiff, moist, with very fine-grained sand, micaceous
				23	0.0	0.0	7.45	30	decreasing sand content
									color change to mottled brown and gray
				33	0.0	0.0	7.33	35	
									increasing sand content
								40	

MCK0002622

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Log of Boring MK-SB-11 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B15**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		

Equipment 8" Hollow Auger

Elevation 149.9 ft Date 6/22/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft Sample
38.0	12.0	22.1	101.8	29	0.0	0.0	7.45 *	40

Boring terminated at 41.5 feet.
Groundwater not encountered during drilling.
Boring backfilled with bentonite-cement grout on 6/22/90.

45

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55

60

65

70

75

80

MCK0002623

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Engineering and Environmental Services

Log of Boring MK-SB-11 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

B15a

HK 17333,168.11 1/92

Equipment: 8" Hollow Auger

Elevation: 145.8 ft Date: 6/20/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft / Sample	Description
								0	5" ASPHALTIC CONCRETE
				9	2.0	0.2	8.62		DARK BROWN SILT (ML) stiff, moist, with fine-grained sand and some gravel, micaceous
				6	7.0	1.4	7.61	5	color change to brown, increasing sand content
									BROWN SILTY SAND (SM) loose, moist, fine grained with trace of gravel
				8	0.0	1.0	8.32	10	
									BROWN SAND WITH SILT (SW-SM) medium dense, moist, fine to medium grained with trace of gravel
		5.1	108.2	26	4.0	5.4	8.20	15	
				31	8.0	4.8	8.51	20	dense, decreasing silt content
									BROWN SANDY LEAN CLAY (CL) very stiff, moist, very fine to fine-grained sand with trace of coarse-grained sand
29.0	9.0	14.3	100.1	48	1.0	2.0	7.75	25	
34.0	11.0	23.2	97.5	31	1.0	9.0	7.72	30	color change to mottled gray and brown
									GRAY TO ORANGE-BROWN SILTY SAND (SM) moist, very fine grained
				46	1.0	1.0	7.53	35	
								40	

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Log of Boring MK-SB-12 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B16

DRAWN: HK JOB NUMBER: 17333,168.11 DATE: 1/92

Equipment 8" Hollow Auger

Elevation 145.8 ft Date 6/20/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample
				23	0.0	0.5	7.87 *	40	

Boring terminated at 41.5 feet.
Groundwater not encountered during drilling.
Boring backfilled with bentonite-cement grout on 6/20/90.

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Log of Boring MK-SB-12 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B-16a

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED	DATE
BK	17333,168.11	TPK	1/92		

Top of Casing 147.62 ft

Equipment 8 & 10" Hollow Auger

Elevation 148.0 ft Date 6/20/90

(See Plate B48 for Wellhead Construction)

10" dia. Borehole

4" dia. Blank PVC Casing

Bentonite-Cement Grout

Bentonite Pellet Seal

Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	
				0		5" ASPHALTIC CONCRETE
10	1.0	3.1	8.37			DARK GRAY SILTY SAND (SM) loose, fine to medium grained with trace of gravel
7	3.0	4.8	8.72	5		medium to coarse grained, increasing gravel content
17	6.0	17.0	7.80	10		color change to red-brown, medium dense, very fine grained
22	1.8	24.0	7.86	15		BROWN SAND WITH SILT (SW-SM) medium dense, moist, fine grained, micaceous
41	10.0	130.0	7.85	20		BROWN SAND WITH SILT (SP-SM) dense, moist, fine to coarse grained with trace of gravel
35	58.0	205.0	7.34 *	25		BROWN SILTY SAND (SM) dense, very fine to fine grained, micaceous
21	8.0	160.0	7.06	30		medium dense
46	24.0	170.0	7.25	35		BROWN SILT WITH SAND (ML) hard, moist, very fine grained, micaceous
				40		BROWN SILTY SAND (SM) medium dense, moist, very fine grained, micaceous

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Log of Boring MK-SB-13 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B17

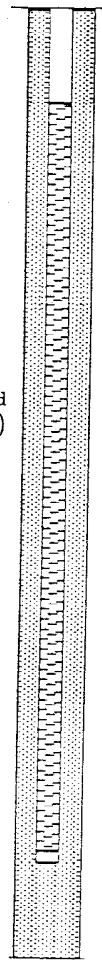
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THL	1/92		

Top of Casing 147.62 ft

Equipment 8 & 10" Hollow Auger

Elevation 148.0 ft Date 6/20/90

Blows/ft	PID	OVA.	Soil pH	Depth ft	Sample
20	16.2	190.0		40	
63	10.0	120.0		45	
19	4.0	92.0		50	
				55	
				60	
				65	
				70	
				75	
				80	



very dense, very fine to fine grained with trace of gravel

water level measured on 8/15/90

color change to light brown, medium dense, saturated, micaceous

Eight-inch-diameter boring terminated at 56.5 feet. Groundwater encountered at 48 feet during drilling. Boring converted to ground-water monitoring well on 6/21/90.

Note: Eight-inch-diameter boring was overreamed with ten-inch-diameter augers to a total depth of 65 feet. Based on field observations, interpreted lithology in the overreamed interval is similar to that at last sampled depth.

MCK0002627

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Log of Boring MK-SB-13 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B17a

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TPK	1/92		

Equipment 8" Hollow Auger

Elevation 149.2 ft Date 6/21/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
								0		5" ASPHALTIC CONCRETE
				20	0.0	0.0	8.70			LIGHT GRAY-BROWN GRAVELLY SAND (SP) medium dense, moist, fine to medium grained
										DARK BROWN SILTY SAND (SM) medium dense, moist, fine to medium grained with trace of gravel
										BROWN LEAN CLAY WITH SAND (CL) soft, moist, micaceous
34.0	12.0	20.6	86.7	4	0.0	0.0	8.62	5		
										BROWN SILTY SAND (SM) dense, moist, medium to coarse grained with trace of gravel
				17	0.0	0.6	7.82	10		
		4.3	110.3	33	0.0	0.0	7.79	15		
										ORANGE-BROWN SAND (SP) medium dense, moist, medium to coarse grained with trace of gravel
				32	0.0	0.9	8.00	20		decreasing gravel content
				35	0.0	1.1	7.68	25		BROWN SILTY SAND (SM) dense, moist, very fine grained, micaceous
										MOTTLED BROWN AND GRAY SANDY SILT (ML) stiff, moist, very fine-grained sand, micaceous
				15	0.0	0.0	7.61	30		
										color change to brown, very stiff, with trace of gravel
33.0	15.0	13.9	107.8	30	0.0	0.0	7.50	35		
										BROWN SILTY SAND (SM) medium dense, moist, very fine to fine grained with some clay
								40		

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Log of Boring MK-SB-14 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B18

JOB NUMBER 17333,168.11 APPROVED TAK DATE 1/92

Equipment 8" Hollow Auger

Elevation 149.2 ft Date 6/21/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample
				25	0.0	0.0	7.42 *	40	

Boring terminated at 41.5 feet.
Groundwater not encountered during drilling.
Boring backfilled with bentonite-cement grout on 6/21/90.

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Log of Boring MK-SB-14 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B18a

DRAWN	JOB NUMBER	APPROVED	DATE		DATE
HK	17333,168.11		1/92		

Equipment: 8" Hollow Auger

Elevation: 148.9 ft Date: 6/21/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft / Sample	Description
								0	5" ASPHALTIC CONCRETE
				10	0.0	0.0	7.85		DARK BROWN SILTY SAND (SM) medium dense, moist, very fine to fine grained, micaceous
									BROWN SANDY SILT (ML) medium stiff, moist, very fine-grained sand, micaceous
				7	0.0	1.8	8.76	5	
				28	0.0	0.0	7.53	10	stiff
				18	0.0	0.0	7.27	15	BROWN SAND (SP) medium dense, moist, medium to coarse grained with few gravel
				37	0.0	0.0	7.64	20	color change to brown, increasing gravel content; BROWN SILTY SAND (SM) dense, moist, very fine to fine grained, micaceous
				37	0.0	9.6	7.56	25	
32.0	9.0	25.5	100.6	21	0.0	0.2	7.65	30	BROWN LEAN CLAY (CL) very stiff, moist, with trace of sand
				43	0.0	[illegible]	7.62	35	BROWN SANDY SILT (ML) hard, moist, fine-grained sand
								40	

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Log of Boring MK-SB-15 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B19

DRAWN: HK JOB NUMBER: 17333,168.11 APPROVED: DATE: 1/92

Equipment 8" Hollow Auger

Elevation 148.9 ft Date 6/21/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample
		17.2	111.7	30	0.0	0.2	7.65 *	40	

Boring terminated at 41.5 feet.
Groundwater not encountered during drilling.
Boring backfilled with bentonite-cement grout on 6/21/90.

45
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55
60
65
70
75
80

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Log of Boring MK-SB-15 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B19a

BY	JOB NUMBER	APPROVED	DATE	REVISED	DATE
BK	17333,168.11		1/92		

Equipment: 8" Hollow Auger

Elevation: 148.1 ft Date: 7/2/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft / Sample	Description
								0	6" CONCRETE SLAB GRAVEL SUBBASE BROWN SILTY SAND (SM) very loose, moist, very fine to fine grained with some gravel
				3	0.0	0.2	4.51		
				6	0.0	0.0	4.29 *	5	color change to dark brown, loose, micaceous
				14	0.0	0.2	4.89	10	color change to red-brown, medium dense, with some medium-grained sand
				13	1.0	1.0	6.30	15	BROWN SAND WITH GRAVEL (SW) medium dense, moist, medium to coarse grained
		4.0							BROWN SAND (SP) medium dense, moist, fine to coarse grained
				29	0.0	1.6	6.93 *	20	
		5.0							
				20	8.0	5.2	6.33	25	BROWN SILTY SAND (SM) medium dense, moist, very fine to fine grained, micaceous
				25	2.0	8.0	7.39	30	color change to mottled orange-brown and brown
				25	0.0	4.0	7.08	35	color change to red-brown, increasing sand content, with some clay
				24	8.0	5.4	6.94	40	color change to mottled orange-brown and

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Log of Boring MK-SB-16 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B20

DRAWN	JOB NUMBER	APPROVED	DATE	REV.	DATE
HK	17333,168.11	TAK	1/92		

Equipment 8" Hollow Auger

Elevation 148.1 ft Date 7/2/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft / Sample	Description
								40	gray-brown
				65	20.0	140.0	7.96	45	BROWN SAND (SP) very dense, moist, fine to medium grained with trace of coarse grained
				30	0.0	0.2	7.86	50	color change to gray, saturated, with trace of silt and gravel
				39	0.0	0.2	7.83	55	
								60	Boring terminated at 58.5 feet. Groundwater encountered at 50 feet during drilling. Boring backfilled with bentonite-cement grout on 7/5/90.
								65	
								70	
								75	
								80	

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Log of Boring MK-SB-16 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B20a**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Top of Casing 148.63 ft

Equipment 8 & 10" Hollow Auger

Elevation 149.0 ft Date 7/3/90

(See Plate B48 for Wellhead Construction)

10" dia. Borehole

4" dia. Blank PVC Casing

Bentonite-Cement Grout

Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	
10	0.0	0.4	4.34 *	0		10" CONCRETE SLAB 4" GRAVEL SUBBASE DARK BROWN SILTY SAND (SM) medium dense, moist, very fine to fine grained with trace of gravel
7	0.0	0.2	7.20	5		loose, with some medium grained
16	0.0	12.0	6.89	10		color change to red-brown, decreasing silt content
27	3.0	2.4	7.97	15		ORANGE-BROWN GRAVELLY SAND (SP) medium dense, moist, medium to coarse grained with trace of silt
24	4.0	5.2	7.87	20		no gravel
30	6.0	3.8	7.41	25		MOTTLED ORANGE-BROWN AND BROWN SILT WITH SAND (SM) dense, moist, very fine grained, micaceous
24	4.0	9.0	7.40	30		
40	1.0	1.6	7.90	35		RED-BROWN CLAYEY SAND (SC) dense, moist, fine grained
				40		MOTTLED GRAY-BROWN AND ORANGE-BROWN SILTY SAND (SM) medium dense, moist, very fine to fine grained with trace of medium grained

MCK0002634

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Log of Boring MK-SB-17 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

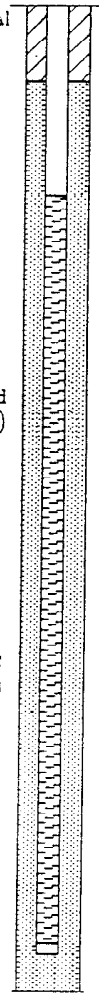
PLATE **B21**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
BK	17333,168.11	TAK	1/92		

Top of Casing 148.63 ft

Equipment 8 & 10" Hollow Auger

Elevation 149.0 ft Date 7/3/90



Depth ft	Sample	Blows/ft	PID	OVA	Soil pH	Description
40		21	0.0	1.8	8.74 *	
45		47	0.0	10.0	8.42	increasing sand content BROWN SAND (SP) dense, wet, fine grained water level measured on 8/15/90
50		75/6"	300.0	100.0	8.03	medium to coarse grained with some gravel
55		45	10.0	30.0	7.44	dense
60		26	2.0	8.2	7.03	medium dense
65						Eight-inch-diameter boring terminated at 65 feet. Ground water encountered at 48 feet during drilling. Boring converted to ground-water monitoring well on 7/3/90.
70						
75						Note: Eight-inch-diameter boring was overreamed with ten-inch-diameter augers to a total depth of 66 feet. Based on field observations, interpreted lithology in the overreamed interval is similar to that at last sampled depth.
80						

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Log of Boring MK-SB-17 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B21a

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TKK	1/92		

Top of Casing 149.56 ft

Equipment Bucket / Mud

Elevation 149.8 ft Date 1/30/91

(See Plate B48 for Wellhead Construction)

12" dia. Mild-Steel Conductor Casing

16" dia. Bucket Auger Borehole

Bentonite Volclay Grout

Depth ft	PID	OVA	Soil pH	Sample	Description
0					6" GRAVEL BASE BROWN SANDY SILT (ML) moist, fine-grained sand with trace of medium-grained sand
5	0.0	0.0			increase in sand content RED-BROWN SILTY SAND (SM) moist, fine grained with trace of medium-grained sand
10	0.0	0.0			increasing sand content RED-BROWN SAND (SP) moist, fine to medium grained with trace of coarse-grained sand, some silt and gravel
15	0.0	0.0			
20	0.0	0.0			decrease in gravel content BROWN SILT (ML) moist, with trace of fine-grained sand
25	0.0	0.0			
30	0.0	0.0			color change to orange-brown, increasing sand content, micaceous
35	0.0	0.0			decreasing sand content
40					16-inch-diameter bucket auger boring terminated at 40 feet. 12-inch-diameter mild-steel conductor casing installed to 40 feet. Boring continued below 41.5 feet with a 4-inch-diameter Christensen wireline coring system.

MCK0002636

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Log of Boring MK-SB17A (sheet 1 of 4)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B22

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
RK	17333,168.11	THC	1/92		

Top of Casing 149.56 ft

Equipment Bucket / Mud

Elevation 149.8 ft Date 1/30/91

Depth ft	Sample	PID	OVA	Soil pH	Description
40		0.0	0.0		color change to gray-brown with mottled orange iron-oxide staining
		0.0			BROWN SAND (SP) loose, wet to moist, fine grained with trace of medium grained, micaceous
		0.0	0.0		
45		0.0	0.0		
		0.0	0.0		water level measured on 4/11/91
		10.0	38.0		saturated, fine to medium grained with trace of coarse-grained sand
50		1.0	5.0		2-inch-thick fine-grained sand with silt lens fine- to medium-grained sand with trace of gravel
		0.0	0.2		stratified medium grained with fine-grained sand
		0.0	0.0		fine- to medium-grained sand
55		0.0	0.0		2-inch-thick silt lens
		0.0	0.0		predominantly medium-grained sand with some fine- and coarse-grained sand 3" silt lens fine-grained sand with some silt
60					
					fine grained with some medium-grained sand
		0.0	0.0		6" lens of predominantly medium-grained sand
65		0.0	0.0		color change to red-brown, fine grained with trace of silt, no medium-grained sand, micaceous, thin lenses of brown sand
		0.0	0.0		color change to gray with trace of gravel
					medium- to coarse-grained sand with some fine-grained sand and trace of fine rounded to subrounded gravel
70					
		0.0	0.0		fine grained with red-brown color laminations and minor silt
75					RED-BROWN SILTY SAND (SM) very dense, wet to saturated, fine grained, micaceous, laminated
80					

16" dia. Bucket Auger Borehole

Bentonite Volclay Grout

4" dia. Blank PVC Casing

9-7/8" dia. Borehole

4" dia. Blank PVC Casing

MCK0002637

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Engineering and Environmental Services

Log of Boring MK-SB17A (sheet 2 of 4)

McKes on Corporation Property
Santa Fe Springs, California

PLATE **B22a**

17333,168.11 1/92

Top of Casing 149.56 ft

Equipment Bucket / Mud

Elevation 149.8 ft Date 1/30/91

Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
	0.0	0.0		80		BROWN AND RED-BROWN SAND (SP) saturated, fine grained, micaceous with minor silt and trace of gravel, mottled and laminated
	0.0	0.0				
9-7/8" dia. Borehole				85		
	0.0	0.0				increasing silt content
	0.0	0.0		90		BROWN SILTY SAND (SM) fine grained, micaceous with minor sand
						BROWN SAND (SP) fine to medium grained, well sorted subangular to subrounded with trace of silt
	0.0	0.0				
Bentonite Volclay Grout	0.0	0.0		95		some fine- and coarse-grained sand with trace of fine subangular gravel
	0.0	0.0				fining downward fine-grained sand
				100		homogeneous fine-grained sand with some silt
Bentonite Pellet Seal	0.0	0.0				
	0.0	0.0				
	0.0	0.0		105		color change to gray, poorly sorted fine grained with some medium-grained sand, trace of coarse-grained sand and silt
Filter Sand (Monterey No. 3)	0.0	0.0				increasing silt content, with trace of gravel
						inferred gravelly horizon from drilling conditions; driller reports very loose material
				110		
4" dia. Wire Wound Stainless Steel Casing (0.020" Slots)						
	0.0	0.0				fine grained with some medium-grained sand
						color change to gray
				115		
Bottom Cap	0.0	0.0				
	0.0	0.0				BROWN SILT (ML) with very fine-grained sand micaceous
Bentonit Pellet Seal	0.0	0.0				with trace of clay
				120		

MCK0002638

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Log of Boring MK-SB17A (sheet 3 of 4)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B22b**

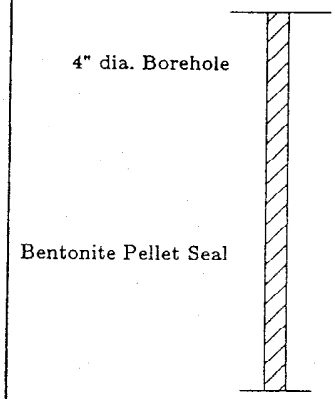
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	[illegible]	1/92		

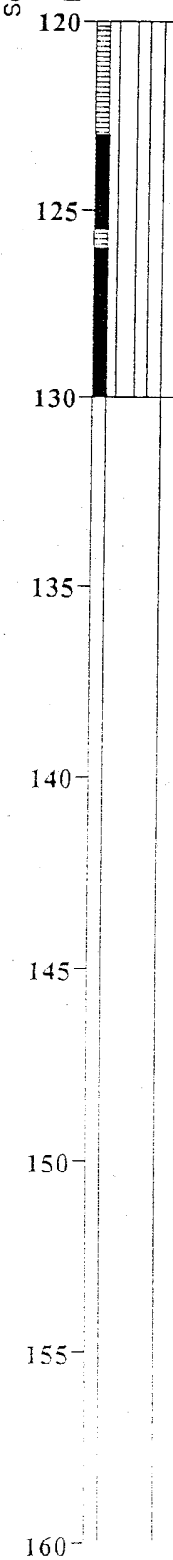
Top of Casing 149.56 ft

Equipment Bucket / Mud

Elevation 149.8 ft Date 1/30/91

Blows/ft	PID	OVA	Soil pH	Depth ft	Sample
	0.0	0.0		125	
	0.0	0.0		130	





4-inch-diameter Christensen wireline continuous cored borehole terminated at 130 feet.
Groundwater encountered at approximately 50 feet during drilling.
4-inch-diameter borehole backfilled from 118 to 130 feet with bentonite-pellet seal.
4-inch-diameter borehole overreamed with a 9-7/8 inches in diameter bit to 118 feet and converted to groundwater monitoring well on 1/30/91.

MCK0002639

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Log of Boring MK-SB17A (sheet 4 of 4)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B22c

HK 17333,168.11 1/92

Top of Casing 149.51 ft

Equipment Bucket / Mud

Elevation 149.9 ft Date 1/30/91

	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample
(See Plate B48 for Wellhead Construction)					0	
					5	
12" dia. Mild-Steel Conductor Casing					10	
					15	
16" dia. Bucket Auger Borehole					20	
					25	
Bentonite Volclay Grout					30	
9-7/8" dia. Borehole					35	
					40	

Note:
Not sampled due to proximity to Boring MK-SB-17A, see MK-SB-17A for lithologic log.

MCK0002640

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Log of Boring MK-SB17B (sheet 1 of 3)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B23**

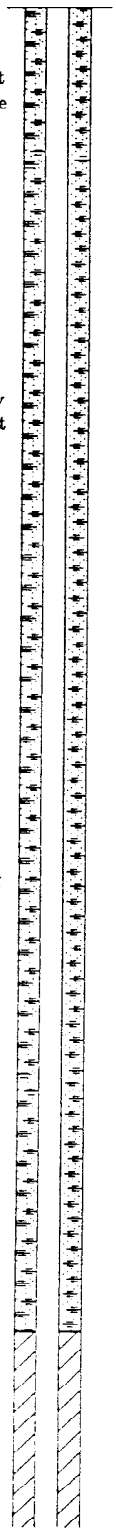
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Top of Casing 149.51 ft

Equipment Bucket / Mud

Elevation 149.9 ft Date 1/30/91

Blows/ft	PID	OVA	Soil pH	Depth ft	Sample



40

45

50

55

60

65

70

75

80

16-inch-diameter bucket auger boring terminated at 40 feet.
12-inch-diameter mild-steel conductor casing installed to 40 feet.
Boring converted below 40 feet with a 9-7/8 inches in diameter bit using mud rotary.

water level measured on 4/11/91

MCK0002641

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Log of Boring MK-SB17B (sheet 2 of 3)

McKesson Corporation Property
Santa Fe Springs, California

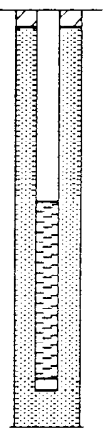
B23a

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TKL	1/92		

Top of Casing 149.51 ft

Equipment Bucket / Mud

Elevation 149.9 ft Date 1/30/91



Blows/ft	PID	OVA	Soil pH	Depth ft	Sample
				80	
				85	
				90	
				95	
				100	
				105	
				110	
				115	
				120	

Boring terminated at 91 feet.
Groundwater encountered at approximately 50 feet during drilling.
Boring converted to ground-water monitoring well on 2/7/91.

MCK0002642

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Log of Boring MK-SB17B (sheet 3 of 3)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B23b**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
BK	17333,168.11	[signature]	1/92		

Equipment: 8" Hollow Auger

Elevation: 148.5 ft Date: 7/3/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
								0		6" GRAVEL BASE
				10	0.0	1.4	6.39 *			LIGHT BROWN SANDY GRAVEL (GP) dry; BROWN SILTY SAND (SM) medium dense, moist, fine grained with trace of gravel
				12	0.0	0.0	7.07	5		micaceous
				13	4.0	9.0	7.29	10		color change to red-brown, with trace of coarse grained
				16	3.0	7.4	7.55	15		ORANGE-BROWN SAND (SP) medium dense, moist, fine to coarse grained with some silt and trace of gravel
				50	1.0	18.0	7.92	20		increasing gravel content to a gravelly sand
				24	1.0	1.8	7.28	25		MOTTLED RED-BROWN AND BROWN SILTY SAND (SM) medium dense, moist, very fine to fine grained, micaceous
				19	0.2	1.8	7.26	30		color change to dark red-brown; RED-BROWN CLAYEY SAND (SC) medium dense, moist, fine grained
				25	0.0	0.6	7.18	35		GRAY-BROWN SILTY SAND (SM) medium dense, moist, fine grained with trace of coarse grained
								40		

MCK0002643

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Log of Boring MK-SB-18 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

B24

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
BK	17333,168.11	TAL	1/92		

Equipment 8" Hollow Auger

Elevation 148.5 ft Date 7/3/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample
				17	0.0	0.4	7.35 *	40	

Boring terminated at 41.5 feet.
Groundwater not encountered during drilling.
Boring backfilled with bentonite-cement grout on 7/8/90.

45
50
55
60
65
70
75
80

MCK0002644

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Log of Boring MK-SB-18 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B24a

DRAWN	JOB NUMBER	DATE
HK	17333,168.11	1/92

Equipment: 8" Hollow Auger

Elevation: 149.1 ft Date: 6/26/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
								0		4" ASPHALTIC CONCRETE
				20	0.0	0.0	8.56			GRAY GRAVELLY SAND (SP) medium dense, moist, fine to coarse grained
										DARK BROWN SILTY SAND (SM) dense, moist, fine grained, with some clay
										DARK BROWN SANDY SILT (ML) medium stiff, very fine-grained sand
				6	0.0	0.0	7.67	5		
										BROWN SILTY SAND (SM) dense, moist, fine grained with trace of gravel
				40	0.4	3.0	7.09	10		increasing silt content
				28	4.0	20.0	7.14	15		ORANGE-BROWN SAND (SP) medium dense, moist, fine to coarse grained with trace of gravel
		3.8		40	19.5	36.0	7.33	20		color change to brown, dense
				44	31.0	50.0	6.98 *	25		BROWN SILTY SAND (SM) dense, moist, very fine grained, micaceous
										BROWN SILT (ML) stiff, moist, with very fine-grained sand
40.0	13.0	27.5	86.1	16	15.0	49.0	7.01	30		
										RED-BROWN CLAYEY SAND (SC) very stiff, moist, very fine to fine grained
				41	0.0	4.0	7.16	35		
										BROWN SILTY SAND (SM) dense, moist, fine to very fine grained
								40		

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Log of Boring MK-SB-19 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B25

JOB NO. 17333,168.11 APPROVED DATE 1/92 REVISED DATE

Equipment 8" Hollow Auger

Elevation 149.1 ft Date 6/26/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample
				39	0.0	0.2	7.06 *	40	

Boring terminated at 41.5 feet.
Groundwater not encountered during drilling.
Boring backfilled with bentonite-cement grout on 6/26/90.

45
50
55
60
65
70
75
80

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Log of Boring MK-SB-19 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B25a

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		

Top of Casing 149.52 ft

Equipment 8 & 10" Hollow Auger

Elevation 149.8 ft Date 7/13/90

(See Plate B48 for Wellhead Construction)

10" dia. Borehole

4" dia. Blank PVC Casing

Bentonite-Cement Grout

Depth ft	Sample	Blows/ft	PID	OVA	Soil pH	
0		12	0.0	0.0	7.25	DARK BROWN SILTY SAND (SM) dense, moist, fine grained with some gravel
5		9	7.0	7.2	7.55	loose, very fine to fine grained with trace of medium grained, micaceous
10		17	2.0	8.2	7.20 *	color change to red-brown
15		41	1.0	13.0	7.42	RED-BROWN GRAVELLY SAND (SP) dense, moist, medium to coarse grained with some silt
20		>50	7.0	34.0	7.78 *	very dense, decreasing gravel content
25		40	2.0	10.0	7.18	DARK BROWN SANDY SILT (ML) dense, moist, very fine-grained sand with trace of fine-grained sand, micaceous, highly mottled
30		18	20.0	22.0	7.21	medium dense, with trace of medium-grained sand
35		44	3.0	5.6	7.09	ORANGE SANDY CLAY (CL) hard, moist, very fine- to fine-grained sand, highly mottled
40						

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Log of Boring MK-SB-20 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

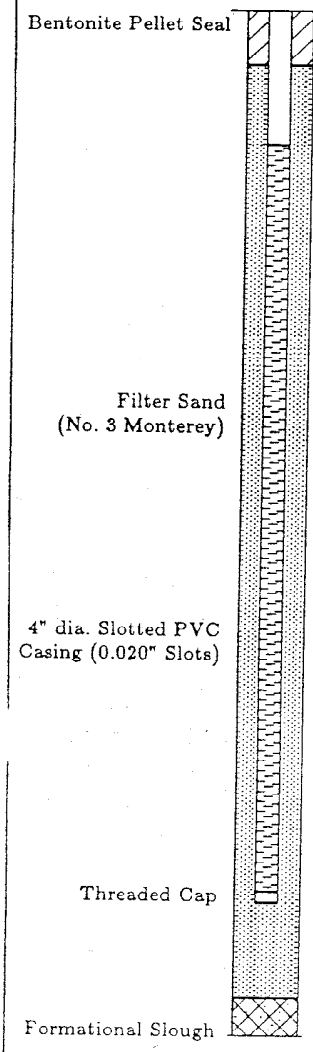
PLATE **B26**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Top of Casing **149.52 ft**

Equipment **8 & 10" Hollow Auger**

Elevation **149.8 ft** Date **7/13/90**



Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
30	2.5	8.2	7.51 *	40		BROWN SILTY SAND (SM) dense, moist, very fine grained, micaceous, slightly mottled
>50	6.0	16.0	8.16	45		LIGHT BROWN SAND (SP) very dense, moist, very fine to coarse grained with trace of silt
						saturated
						water level measured on 8/15/90
				50		heaving sands
				55		
				60		
				65		
				70		Boring terminated at 67 feet. Groundwater encountered at 48 feet during drilling. Boring converted to ground-water monitoring well on 7/13/90.
				75		
				80		

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Log of Boring MK-SB-20 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B26a**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
RK	17333,168.11	TAK	1/92		

Equipment: 8" Hollow Auger

Elevation: 148.1 ft Date: 7/9/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft / Sample	Description
				18	0.0	1.4	12.41	0	RED-BROWN SILTY SAND (SM) medium dense, moist, very fine to fine grained, micaceous
				8	20.0	20.4	12.40 *	5	color change to dark gray-brown, loose, with some gravel
				22	8.0	3.2	7.63	10	color change to red-brown, dense, decreasing silt content, highly mottled
				32	30.0	84.0	8.06	15	ORANGE-BROWN GRAVELLY SAND (SP) dense, moist, medium to coarse grained
				30	10.0	78.0	7.84 *	20	decreasing gravel content ORANGE-BROWN SAND (SP) fine to medium grained, with minor silt
				22	4.0	74.0	8.14	25	LIGHT BROWN SILT (ML) stiff, moist, with very fine-grained sand, micaceous
				15	40.0	88.0	7.28 *	30	
				30	11.0	36.0	7.18 *	35	ORANGE-BROWN SANDY CLAY (CL) hard, very fine-grained sand, highly mottled
								40	

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Log of Boring MK-SB-21 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B27

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Equipment 8" Hollow Auger

Elevation 148.1 ft Date 7/9/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
								40		GRAY-BROWN SAND (SP) dense, moist, very fine to fine grained
				46			6.58	45		
								50		Boring terminated at 46 feet. Groundwater not encountered during drilling. Boring backfilled with bentonite-cement grout on 7/11/90.
								55		
								60		
								65		
								70		
								75		
								80		

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Log of Boring MK-SB-21 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

B27a

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TK	1/92		

Top of Casing 149.16 ft

Equipment 8 & 10" Hollow Auger

Elevation 148.6 ft Date 7/5/90

(See Plate B47 for Wellhead Construction)

10" dia. Borehole

4" dia. Blank PVC Casing

Bentonite-Cement Grout

Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	
10	0.0	20.0	7.72	0		4" GRAVEL BASE DARK RED-BROWN SILTY SAND (SM) medium dense, moist, very fine to medium grained with minor gravel
8	50.0	120.0	6.96	5		color change to dark brown, loose, very fine grained
22	18.0	56.0	7.40	10		color change to red-brown, medium dense, very fine to fine grained
20	80.0	560.0	8.17	15		DARK RED-BROWN GRAVELLY SAND (SP) medium dense, moist, fine to coarse grained with trace of silt, micaceous
24	170.0	500.0	7.97	20		color change to orange, decreasing gravel content
40	110.0	>1000	7.87	25		increasing gravel content LIGHT BROWN SILT (ML) very stiff, moist, with some fine-grained sand, micaceous
19	40.0	480.0	7.32	30		
17	50.0	280.0	7.47	35		ORANGE-BROWN SANDY CLAY (CL) very stiff, very fine-grained sand with trace of fine-grained sand, highly mottled
				40		BROWN SILTY SAND (SM) medium dense, moist, very fine to fine grained with

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Log of Boring MK-SB-23 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

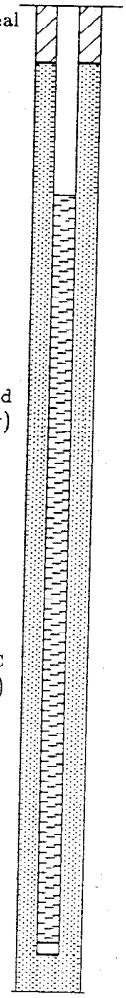
PLATE B28

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
BK	17333,168.11	TRC	1/92		

Top of Casing 149.16 ft

Equipment 8 & 10" Hollow Auger

Elevation 148.6 ft Date 7/5/90



Blows/ft	PID	OVA	Soil pH	Depth ft / Sample	
24	160.0	>1000	7.19 *	40	trace of medium grained, moderately mottled, micaceous
19	140.0	>1000	6.94	45	
35	62.0	>1000	7.11	50	water level measured on 8/15/90 LIGHT BROWN SAND (SP) dense, saturated, very fine to medium grained with some coarse grained, micaceous
				55	heaving sands
				60	
				65	Boring terminated at 66 feet. Groundwater encountered at 48 feet during drilling. Boring converted to ground-water monitoring well on 7/10/90.
				70	
				75	
				80	

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Log of Boring MK-SB-23 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

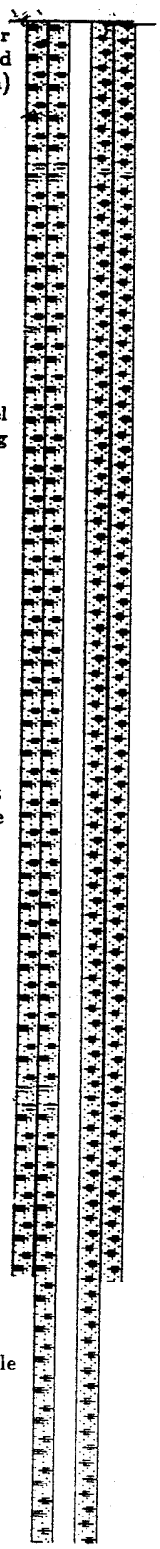
PLATE B28a

DRAWN	JOB NO.	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		

Top of Casing 148.43 ft

Equipment Bucket / Mud

Elevation 148.8 ft Date 2/5/91



PID	OVA	Soil pH	Depth ft	Sample	Description
			0		4" ASPHALTIC CONCRETE
55.0	60.0				DARK BROWN SILTY SAND (SM) moist, fine grained with some medium- and coarse-grained sand, micaceous
					BROWN SILT WITH SAND (ML) moist, fine-grained sand, micaceous
20.0	90.0		5		
					RED-BROWN SILTY SAND (SM) moist, fine grained with trace of medium-grained sand, mottled and oxidized
4.0	54.0		10		
					increasing gravel content
					decreasing silt content
7.0	200.0		15		YELLOW TO RED-BROWN SAND (SP) moist, fine to coarse grained with some subrounded gravel
17.0	140.0		20		
					BROWN SILT WITH SAND (ML) moist, fine-grained sand, micaceous
20.0	400.0		25		
					MCK0002653
					16-inch-diameter bucket auger boring terminated at 32 feet.
					12-inch-diameter mild-steel conductor casing installed to 33 feet.
25.0	>1000		30		Boring continued below 32 feet with a 4-inch-diameter Christensen wireline coring system.
22.0	700.0				color change to dark brown
1.2	53.0				BROWN SANDY SILT (ML) moist, fine-grained sand, micaceous with trace of clay
1.4	57.0		35		increasing sand content
					RED-BROWN SANDY CLAY (CL) fine-grained sand, mottled
					increasing sand content
3.0	61.0		40		RED-BROWN SANDY SILT (ML) very stiff, moist, fine-grained sand, mottled

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Log of Boring MK-SB23A (sheet 1 of 4)

McKesson Corporation Property
Santa Fe Springs, California

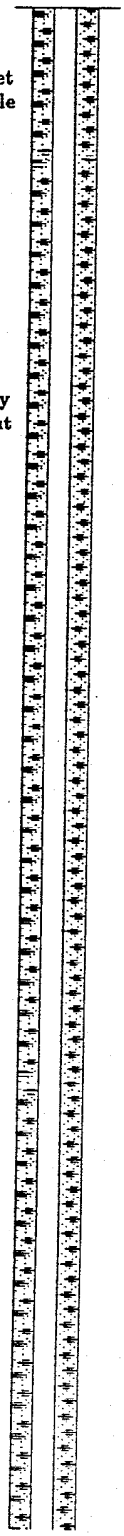
PLATE **B29**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Top of Casing 148.43 ft

Equipment Bucket / Mud

Elevation 148.8 ft Date 2/5/91



PID	OVA	Soil pH	Depth ft	Sample	Description
			40		increasing sand content
					2-inch-thick sand lenses
7.0	86.0		45		color change to gray-brown, mottled decreasing sand content
38.0	480.0				BROWN SAND (SP) moist to wet, fine to medium grained with minor silt water level measured on 4/11/91
1.8	15.0		50		increasing silt content color change to gray, no silt, saturated
5.5	48.0				predominantly fine-grained sand, micaceous
1.8	22.0		55		color change to brown, fine to medium grained with trace of gravel
11.0	97.0				2- to 3-inch-thick silt lenses interlaminated with fine-grained sand
			60		
0.2	2.0				predominantly fine-grained sand with trace of medium-grained sand, interlaminated with silt lenses
0.0	0.8				
0.0	0.1				
			65		
0.2	1.0				fine to medium grained trace of gravel
0.0	0.4				decreasing medium-grained sand content
			70		fine to coarse grained some gravel
0.0	0.4				fine to medium grained with trace of coarse-grained sand
			75		
0.0	0.2				
					BROWN AND RED-BROWN SILT (ML) wet, with some fine-grained sand, oxidized along fracture and bedding planes
0.2	0.1		80		

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Log of Boring MK-SB23A (sheet 2 of 4)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B29a**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		

Top of Casing 148.43 ft

Equipment Bucket / Mud

Elevation 148.8 ft Date 2/5/91

Depth ft	PID	OVA	Soil pH	Description
80	0.0	0.0		increasing sand content
85	0.0	0.0		increase in sand content BROWN SILTY SAND (SM) saturated, fine grained
	0.0	0.0		
90				decrease in silt content BROWN SAND (SP) saturated, very fine to fine grained with some silt, micaceous
	0.0	0.0		trace of gravel, increasing silt content
95				decreasing silt content 1-foot-thick silt lens with trace of gravel fine grained with some medium-grained sand, micaceous
	0.0	0.0		color change to gray-brown
100				3-inch-thick silt lens
	0.0	2.8		fine- to medium-grained sand with trace of silt
105	0.0	0.7		increasing silt content, fine-grained sand
	0.0	0.8		inferred gravelly horizons from drilling conditions drillers reports very loose material
110				
115	0.0	0.5		fine grained, with trace of medium-grained sand, micaceous color change to brown
	0.0	0.3		predominantly fine- to medium-grained sand with some silt fine grained, no silt
120				

9-7/8" dia. Borehole

Bentonite Pellet Seal

MCK0002655

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Engineering and Environmental Services

Log of Boring MK-SB23A (sheet 3 of 4)

McKesson Corporation Property
Santa Fe Springs, California

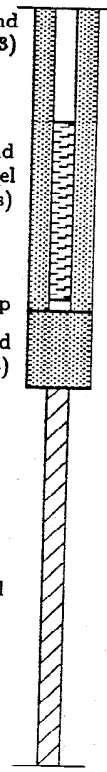
PLATE B29b

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Top of Casing 148.43 ft

Equipment Bucket / Mud

Elevation 148.8 ft Date 2/5/91



PID	OVA	Soil pH	Depth ft	Sample	Description
0.0	1.0		120		fine to medium grained with trace of gravel
0.0	0.6		125		with some silt, no gravel
0.0	0.2				increasing silt content
					BROWN SANDY CLAY (CL) wet, fine-grained sand, micaceous
0.0	0.0		130		BROWN SILT WITH SAND (ML) saturated, fine-grained sand, micaceous
			135		BROWN SILTY SAND (SM) saturated, fine grained, micaceous
					BROWN SAND (SP) saturated, fine grained with trace of silt, micaceous
0.0	0.0		140		
			145		
			150		
			155		
			160		

4-inch-diameter Christensen wireline continuous cored borehole terminated at 140 feet.
Groundwater encountered at approximately 50 feet during drilling.
4-inch-diameter borehole backfilled from 130 to 140 feet with bentonite-pellet seal.
4-inch-diameter borehole overreamed with a 9-7/8 inches in diameter bit to 130 feet and converted to groundwater monitoring well on 2/5/91.

MCK0002656

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Log of Boring MK-SB23A (sheet 4 of 4)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B29c**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Top of Casing 148.47 ft

Equipment Bucket / Mud

Elevation 148.8 ft Date 2/6/91

PID	OVA	Soil pH	Depth ft	Sample

(See Plate B48 for Wellhead Construction)

12" dia. Mild-Steel Conductor Casing

16" dia. Bucket Auger Borehole

Bentonite Volclay Grout

9-7/8" dia. Borehole

0 — 4" ASPHALTIC CONCRETE

5

10

15

20

25

30

35

40

Note:
Not sampled due to proximity to Boring MK-SB-23A, see MK-SB-23A for lithologic log.

16-inch-diameter bucket auger boring terminated at 32 feet.
12-inch-diameter mild-steel conductor casing installed to 33 feet.
Boring continued below 32 feet with a 9-7/8 inches in diameter using mud rotary.

MCK0002657

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Log of Boring MK-SB23B (sheet 1 of 3)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B30

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		

Top of Casing 148.47 ft

Equipment Bucket / Mud

Elevation 148.8 ft Date 2/6/91

Blows/ft	PID	OVA	Soil pH	Depth ft	Sample

16" dia. Bucket Auger Borehole

Bentonite Volclay Grout

9-7/8" dia. Borehole

4" dia. Blank PVC Casing

40

45

water level measured on 4/11/91

50

55

60

65

70

75

80

MCK0002658

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Log of Boring MK-SB23B (sheet 2 of 3)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B30a**

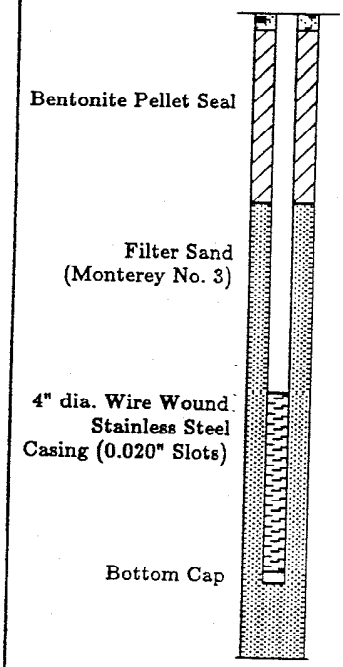
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Top of Casing 148.47 ft

Equipment Bucket / Mud

Elevation 148.8 ft Date 2/6/91

Blows/ft	PID	OVA	Soil pH	Depth ft	Sample



80
85
90
95
100
105
110
115
120

Boring terminated at 97 feet.
Groundwater encountered at approximately 50 feet during drilling.
Boring converted to ground-water observation well on 2/6/91.

MCK0002659

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Log of Boring MK-SB23B (sheet 3 of 3)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B30b

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Equipment 8" Hollow Auger

Elevation 148.0 ft Date 7/11/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
								0		5" CONCRETE SLAB
				4	130.0	>1000	7.70 *			RED-BROWN SILTY SAND (SM) loose, moist, fine grained with some gravel
				8	150.0	>1000	7.89	5		color change to dark brown, micaceous
				7	150.0	>1000	7.33	10		color change to brown, very fine to fine grained
				24	140.0	>1000	7.60	15		ORANGE-BROWN GRAVELLY SAND (SP) medium dense, moist, fine to coarse grained with some silt, micaceous
				19	190.0	>1000	6.63 *	20		color change to red-brown, fine to medium grained, moderately mottled
				21	150.0	>1000	6.67	25		very fine to fine grained
				19	120.0	>1000	6.48	30		DARK BROWN SILT (ML) medium dense, moist, with trace of very fine-grained sand, micaceous
				27	140.0	>1000	10.02	35		RED-BROWN SILTY SAND (SM) medium dense, moist, very fine grained, micaceous, moderately to highly mottled
								40		

MCK0002660

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Log of Boring MK-SB-24 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B31**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Equipment 8" Hollow Auger

Elevation 148.0 ft Date 7/11/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	
				21	80.0	>1000	8.92 *	40		
				31	7.0	>1000	8.17	45		dense, very fine to fine grained
								50		Boring terminated at 49 feet. Groundwater encountered at 48.7 feet during drilling. Boring backfilled with bentonite-cement grout on 7/11/90.
								55		
								60		
								65		
								70		
								75		
								80		

MCK0002661

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Log of Boring MK-SB-24 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B31a**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Top of Casing 147.84 ft

Equipment 8 & 10" Hollow Auger

Elevation 148.5 ft Date 7/13/90

(See Plate B48 for Wellhead Construction)

10" dia. Borehole

4" dia. Blank PVC Casing

Bentonite-Cement Grout

Bentonite Pellet Seal

Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	
				0		3" ASPHALTIC CONCRETE DARK BROWN SILTY SAND (SM) loose, moist, very fine grained, micaceous
8	30.0	120.0	7.15 *	5		
8	10.0	72.0	6.54	10		with trace of medium grained
42	25.0	120.0	5.07	15		RED-BROWN SAND (SP) dense, moist, fine to coarse grained with some gravel and silt, micaceous
36	75.0	380.0	4.94 *	20		with trace of gravel
>50	75.0	120.0	5.73	25		RED-BROWN GRAVELLY SAND (SP) very dense
28	65.0	380.0	5.05	30		DARK BROWN SILT WITH SAND (ML) medium dense, moist, fine-grained sand, micaceous, moderately mottled
20	30.0	240.0	4.42	35		DARK ORANGE-BROWN SANDY CLAY (CL) very stiff, very fine-grained sand, micaceous, highly mottled
				40		

MCK0002662

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Log of Boring MK-SB-25 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B32**

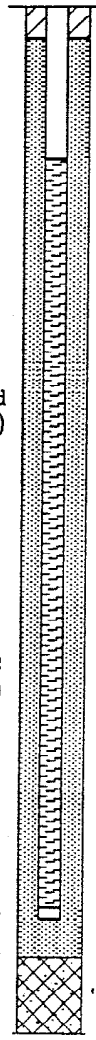
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TK	1/92		

Top of Casing 147.84 ft

Equipment 8 & 10" Hollow Auger

Elevation 148.5 ft Date 7/13/90

Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	
23	40.0	220.0	6.03 *	40		ORANGE-BROWN SILTY SAND (SM) medium dense, moist, very fine grained with trace of clay, micaceous, highly mottled
33	17.0	70.0	5.23	45		color change to dark brown, dense; water level measured on 8/15/90
				50		Eight-inch-diameter boring terminated at 50 feet. Groundwater encountered at 48 feet during drilling. Boring converted to ground-water monitoring well on 7/18/90.
				55		
				60		
				65		
				70		
				75		
				80		



Note: Eight-inch-diameter boring was overreamed with ten-inch-diameter augers to a total depth of 67 feet. Based on field observations, interpreted lithology in the overreamed interval is similar to that at last sampled depth.

MCK0002663

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Log of Boring MK-SB-25 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B32a**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Equipment 8" Hollow Auger

Elevation 147.9 ft Date 7/16/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
								0		4" ASPHALTIC CONCRETE DARK BROWN SILTY SAND (SM) medium dense, moist, very fine to medium grained with some coarse-grained sand and gravel
				23	3.0	14.0	7.87	5		
				11	5.0	50.0	7.59	10		
				33	25.0	160.0	7.81	15		ORANGE-BROWN SAND (SP) dense, moist, fine to coarse grained with some gravel and silt
				20	50.0	240.0	8.06 *	20		color change to light brown, medium dense, fine to medium grained
				30	18.0	120.0	7.38 *	25		BROWN SILT WITH SAND (ML) very stiff, moist, very fine- to fine-grained sand, mottled, micaceous
				11	19.0	130.0	6.83	30		stiff
				42	3.0	22.0	6.27	35		ORANGE-BROWN SANDY CLAY (CL) hard, moist, very fine- to fine-grained sand with trace of gravel, highly mottled
								40		

MCK0002664

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Log of Boring MK-SB-26 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B33**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Equipment 8" Hollow Auger

Elevation 147.9 ft Date 7/16/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
				16	3.5	34.0	7.23 *	40		DARK BROWN SILT WITH SAND (ML) very stiff, moist, very fine-grained sand with some clay, micaceous
				42	2.0	3.2	5.21	45		BROWN SAND (SP) dense, wet, very fine to fine grained, micaceous, highly mottled
								50		Boring terminated at 47.5 feet. Groundwater encountered at 47 feet during drilling. Boring backfilled with bentonite-cement grout on 7/17/90.
								55		
								60		
								65		
								70		
								75		
								80		

MCK0002665

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Log of Boring MK-SB-26 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B33a**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TMK	1/92		

Equipment 8" Hollow Auger

Elevation 147.6 ft Date 7/16/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft / Sample	Description
								0	4" ASPHALTIC CONCRETE DARK GRAY-BROWN SILTY SAND (SM) loose, moist, very fine to fine grained, micaceous
				6	40.0	28.0	8.76	5	
				9	13.0	30.0	8.36	10	color change to dark brown, with trace of coarse grained
				10	18.5	12.0	8.56	15	decreasing silt content
				35	130.0	580.0	8.45 *	20	ORANGE-BROWN SAND (SP) dense, moist, very fine grained with trace of fine grained, micaceous
				40	130.0	240.0	7.30	25	LIGHT BROWN GRAVELLY SAND (SP) fine to coarse grained RED-BROWN SILTY SAND (SM) dense, moist, very fine to fine grained with trace of medium grained, slightly mottled, micaceous
				31	40.0	260.0	7.57 *	30	fine grained
				19	50.0	340.0	7.32	35	ORANGE-BROWN SANDY CLAY (CL) very stiff, moist, very fine-grained sand with some gravel, highly mottled RED-BROWN SILTY SAND (SM) medium dense, moist, very fine to fine grained with
								40	

MCK0002666

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Log of Boring MK-SB-27 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B34**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THC	1/92		

Equipment 8" Hollow Auger

Elevation 147.6 ft Date 7/16/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
				24	50.0	300.0	6.51 *	40		trace of medium grained, micaceous
				20	80.0	640.0	7.11	45		color change to brown
								50		Boring terminated at 50 feet. Groundwater encountered at 47.5 feet during drilling. Boring backfilled with bentonite-cement grout on 7/17/90.
								55		
								60		
								65		
								70		
								75		
								80		

MCK0002667

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Log of Boring MK-SB-27 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B34a**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Equipment 8" Hollow Auger

Elevation 147.7 ft Date 7/12/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft / Sample	Description
								0	6" CONCRETE SLAB
				4	70.0	780.0	7.86 *		DARK BROWN SILTY SAND (SM) loose, moist, very fine to fine grained with trace of coarse grained
				9	70.0	>1000	7.06	5	stiff, fine grained
				8	60.0	>1000	7.78	10	
				32	200.0	>1000	6.83	15	RED-BROWN SAND (SP) dense, moist, very fine to fine grained with some gravel and silt
				26	170.0	>1000	6.42 *	20	color change to orange-brown, fine to medium grained, micaceous
				>50	150.0	>1000	7.00	25	ORANGE-BROWN GRAVELLY SAND (SP) very dense, medium to coarse grained
				21	110.0	>1000	6.16	30	DARK BROWN SILT WITH SAND (ML) medium dense, moist, very fine-grained sand, micaceous, slightly mottled
				27	110.0	>1000	6.80	35	DARK BROWN SILTY SAND (SM) medium dense, moist, very fine grained
								40	

MCK0002668

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Log of Boring MK-SB-30 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B35

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		

Equipment 8" Hollow Auger

Elevation 147.7 ft Date 7/12/90

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
				>30	40.0	600.0	7.13 *	40		ORANGE-BROWN SANDY CLAY (CL) hard, moist, very fine-grained sand, micaceous, highly mottled
				29	110.0	>1000	7.61	45		ORANGE-BROWN SILTY SAND (SM) medium dense, moist, very fine grained with trace of gravel, micaceous, highly mottled
				50	40.0	>1000	6.71	50		LIGHT BROWN SAND (SP) very dense, saturated, fine to medium grained
								55		Boring terminated at 51.5 feet. Groundwater encountered at 50.5 feet during drilling. Boring backfilled with bentonite-cement grout on 7/12/90.
								60		
								65		
								70		
								75		
								80		

MCK0002669

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Log of Boring MK-SB-30 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

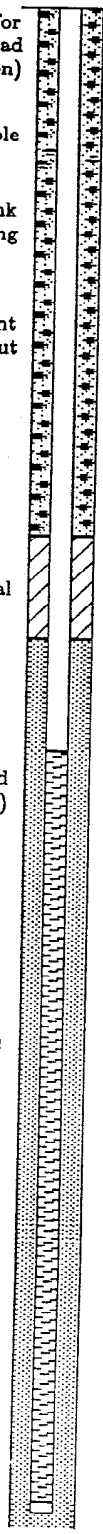
PLATE B35a

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		

Top of Casing 147.61 ft

Equipment 8 & 10" Hollow Auger

Elevation 147.6 ft Date 7/6/90



Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
				0		3" ASPHALTIC CONCRETE
6		0.0	8.38			DARK BROWN SANDY CLAY (CL) medium stiff, moist, fine-grained with trace of medium-grained sand, micaceous
						GRAY GRAVELLY SAND (SP) moist, fine to coarse grained
				5		BROWN SANDY CLAY (CL) stiff, moist with few gravel
10		0.0	8.62			
						BROWN SILTY SAND (SM) medium dense, moist, very fine to fine grained, micaceous
				10		
15		0.0	7.90			color change to mottled red-brown and brown
				15		
14		0.0	7.72			color change to red-brown, decreasing silt content
						BROWN SAND WITH SILT AND GRAVEL (SP-SM) dense, moist, fine to coarse grained
				20		
40		0.0	8.09			
				25		BROWN SILT WITH SAND (ML) very stiff, moist, fine to medium grained, micaceous
18		0.0	8.12			
				30		
27		2.8	9.06			increasing sand content
						BROWN SANDY SILT (ML)
						▽ water level measured on 8/15/90
				35		
25		2.0	8.96			with trace of gravel
						color change to mottled red-brown and gray
				40		

MCK0002670

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Log of Boring MK-SB-32 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B36**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		

Top of Casing 147.61 ft

Equipment 8 & 10" Hollow Auger

Elevation 147.6 ft Date 7/6/90

	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	
Fomrational Slough	15		0.3	10.07	40		BROWN LEAN CLAY WITH SAND (CL) very stiff, moist, very fine-grained sand, highly mottled
					45		
					50		
					55		
					60		
					65		
					70		
					75		
					80		

Boring terminated at 41.5 feet.
Groundwater not encountered during drilling.
Boring converted to ground-water monitoring well on 7/6/90.

MCK0002671

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Log of Boring MK-SB-32 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B36a

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Equipment 8" HSA

Elevation 148.6 ft Date 1/23/91

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
								0		6" GRAVEL BASE
				6	0.0	0.7	10.32 *			BROWN SILTY SAND (SM) loose, moist to wet, fine to medium grained with trace of coarse grained
										DARK BROWN SANDY CLAY (CL) stiff, moist, fine-grained sand with trace of medium- and coarse-grained sand, micaceous
				14	2.0	0.6	8.39	5		
										RED-BROWN SILTY SAND (SM) medium dense, fine to coarse grained
				20	30.0	14.0	8.44 *	10		
										RED-BROWN SAND (SP) medium dense, moist, fine to coarse grained with trace of gravel, micaceous
				29	55.0	500.0	8.35 *	15		
								20		
								25		
								30		
								35		
								40		

Boring terminated at 15.5 feet.
Groundwater not encountered during drilling.
Boring backfilled with bentonite-cement grout on 1/23/91.

MCK0002672

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Log of Boring MK-SB-33 (sheet 1 of 1)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B37**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		

Equipment 8" HSA

Elevation 149.1 ft Date 1/23/91

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
								0		6" GRAVEL BASE
										BROWN SANDY SILT (ML) stiff, moist, fine- to medium-grained sand with trace of gravel, micaceous
				13	0.0	0.0	5.11			
				19	0.0	0.0	4.84 *	5		decreasing sand content, hard
										RED-BROWN SILTY SAND (SM) dense, moist, fine to medium grained with trace of gravel, mottled
				30	4.0	3.4	7.48 *	10		
				25	7.5	11.0	7.11 *	15		BROWN SILT WITH SAND (ML) very stiff, moist, fine grained with trace of medium-grained sand, micaceous
								20		
								25		
								30		
								35		
								40		

Boring terminated at 15.5 feet.
Groundwater not encountered during drilling.
Boring backfilled with bentonite-cement grout on 1/23/91.

MCK0002673

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Engineering and Environmental Services

Log of Boring MK-SB-34 (sheet 1 of 1)

McKesson Corporation Property
Santa Fe Springs, California

PLATE B38

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		

Equipment 8" HSA

Elevation 148.6 ft Date 1/23/91

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
								0		6" GRAVEL BASE
				12	0.8	0.6	8.00 *			DARK BROWN SILT WITH SAND (ML) stiff, moist, fine-grained sand with trace of subrounded gravel, mottled, micaceous
				16	5.0	12.0	7.91	5		increasing sand content trace of medium- and coarse-grained sand
										RED-BROWN SILTY SAND (SM) dense, moist, fine to medium grained
				38	5.0	16.0	8.16 *	10		
										RED-BROWN SAND (SP) dense, moist, fine to coarse grained with trace of gravel
				42	100.0	200.0	8.90 *	15		
								20		
								25		
								30		
								35		
								40		

Boring terminated at 15 feet.
Groundwater not encountered during drilling.
Boring backfilled with bentonite-cement grout on 1/23/91.

MCK0002674

Harding Lawson Associates
Engineering and Environmental Services

Log of Boring MK-SB-35 (sheet 1 of 1)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B39**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		

Top of Casing 147.26 ft

Equipment 10" HSA

Elevation 147.6 ft Date 1/23/91

(See Plate B48 for Wellhead Construction)

10" dia. Borehole

4" dia. Blank PVC Casing

Bentonite-Cement Grout

Bentonite Pellet Seal

Blows/ft	PID	OVA	Soil pH
8	0.0	0.0	8.57
11	0.0	0.0	8.84
26	0.0	0.0	8.69
15	0.0	0.0	8.12
34	45.0	100.0	8.88
36	35.0	640.0	7.90
27	20.0	100.0	8.45
18	6.0	64.0	8.35
39	50.0	400.0	8.32

Depth ft / Sample: 0, 5, 10, 15, 20, 25, 30, 35, 40

8" GRAVEL BASE

DARK BROWN CLAY WITH SAND (CL)
medium stiff, moist, fine-grained sand with trace of gravel

BROWN SILT (ML)
stiff, moist, with trace of fine-grained sand and minor rootlets, micaceous

BROWN SILTY SAND (SM)
medium dense, fine grained with trace of medium grained, mottled

increasing silt content

GRAY-BROWN SAND (SP)
dense, moist, fine to coarse grained with trace of subrounded gravel, micaceous

BROWN SILTY SAND (SM)
dense, fine grained, mottled, micaceous

increasing silt content

BROWN SILT WITH SAND (ML)
very stiff, moist, fine-grained sand

decreasing sand content

RED-BROWN CLAY (CL)
hard, moist, with trace of fine-grained sand

MCK0002675

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Engineering and Environmental Services

Log of Boring MK-SB-36 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

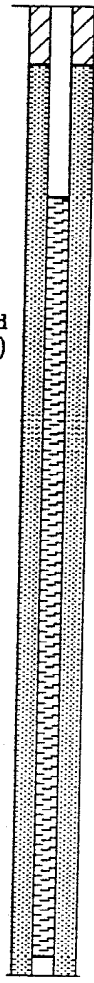
PLATE B40

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		

Top of Casing 147.26 ft

Equipment 10" HSA

Elevation 147.6 ft Date 1/23/91



Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	
				40		
48	20.0	100.0	8.58 *	45		BROWN SILT WITH SAND (ML) very dense, moist, fine-grained sand, micaceous, mottled; water level measured on 4/11/91
33	30.0	98.0	9.43	50		BROWN SAND (SP) dense, saturated, fine grained with trace of coarse grained and fine-grained gravel
33	18.0	60.0	9.22	55		color change to gray-brown, fine to medium grained
44	20.0	64.0	9.10	60		color change to brown, micaceous with some silt
39	3.0	12.0	9.08	65		
				70		
				75		
				80		

Boring terminated at 65 feet.
Groundwater encountered at approximately 48.5 feet during drilling.
Boring converted to ground-water monitoring well on 1/23/91.

MCK0002676

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Engineering and Environmental Services

Log of Boring MK-SB-36 (sheet 2 of 2)

McKesson Corporation Property
Santa Fe Springs, California

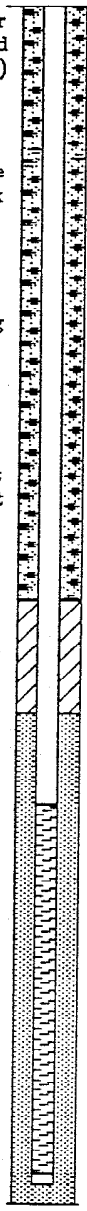
PLATE **B40a**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		

Top of Casing 149.30 ft

Equipment 8" & 10" HSA

Elevation 148.5 ft Date 1/24/91



Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
				0		6" GRAVEL BASE
12	50.0	130.0	8.23 *			BROWN SILTY SAND (SM) medium dense, moist, fine grained, micaceous
16	17.0	76.0	7.29 *	5		DARK BROWN SANDY CLAY (CL) very stiff, moist, fine-grained sand with trace of coarse-grained sand
30	35.0	540.0	7.51 *	10		RED-BROWN SILTY SAND (SM) dense, moist, fine grained with trace of medium grained and gravel
30	32.0	220.0	8.37 *	15		RED-BROWN SAND (SP) dense, moist, fine to medium grained with some silt and trace of gravel
30	45.0	920.0	7.92 *	20		decreasing silt content, fine-grained sand
50/6"	11.0	180.0	8.41 *	25		
				30		dry on 4/11/91
25	19.0	380.0	8.01			BROWN SILT (ML) very stiff, wet to saturated, with trace of very fine-grained sand, micaceous
				35		
				40		

Boring terminated at 31.5 feet.
Groundwater encountered at 27 feet during drilling.
Boring converted to ground water monitoring well on 1/24/91.

MCK0002677

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Log of Boring MK-SB-37 (sheet 1 of 1)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B41**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Equipment 8" HSA

Elevation 149.0 ft Date 1/24/91

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
								0		4" ASPHALTIC CONCRETE
				8	0.0	1.0	7.28			GRAY-BROWN SILTY SAND (SM) loose, moist, fine grained with trace of coarse grained, mottled
				8	9.0	39.0	6.88 *	5		increasing silt content
				16	14.0	56.0	6.97	10		color change to red-brown, medium dense; increasing coarse-grained sand content, trace of gravel
				23	92.0	480.0	7.50 *	15		YELLOW-BROWN SAND (SP) medium dense, moist, fine to medium grained with trace of coarse grained and minor silt, trace of gravel, mottled
				40	60.0	340.0	7.68 *	20		color change to red-brown, dense, fine-grained sand
				41	60.0	340.0	7.31 *	25		very dense, fine to medium grained; BROWN SILT (ML) very stiff, moist, with some fine-grained sand, mottled, micaceous
				16	30.0	300.0	6.99 *	30		
				24	16.0	54.0	6.84 *	35		RED-BROWN CLAY (CL) very stiff, moist, with some fine-grained sand, mottled; RED-BROWN SILTY SAND (SM) medium dense, moist, fine grained, mottled
								40		

MCK0002678

Harding Lawson Associates
Engineering and Environmental Services

Log of Boring MK-SB-38 (sheet 1 of 2)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B42**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Equipment 8" HSA

Elevation 149.0 ft Date 1/24/91

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
				28	13.0	20.0	6.71 *	40		
				41	50.0	100.0	7.71 *	45		decreasing silt content, dense
				44	45.0	240.0	7.39	50		color change to brown BROWN SAND (SP) dense, saturated, fine grained, micaceous
								55		
								60		
								65		
								70		
								75		
								80		

Boring terminated at 50 feet.
Groundwater encountered at 49.5 feet during drilling.
Boring backfilled with bentonite-cement grout on 1/24/91.

MCK0002679

Harding Lawson Associates
Engineering and Environmental Services

Log of Boring MK-SB-38 (sheet 2 of 2)

McKesson Corporation Propert
Santa Fe Springs, California

PLATE **B42a**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		

Equipment 8" HSA

Elevation 148.5 ft Date 1/25/91

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
								0		6" GRAVEL BASE SAND AND GRAVEL SUBBASE
				15	0.6	0.0	8.18			BROWN SILTY SAND (SM) medium dense, moist, fine grained with some coarse grained and trace of gravel BROWN SILT (ML) stiff, moist, with some fine-grained sand, micaceous
				12	2.2	0.0	8.13 *	5		
				12	0.8	0.0	8.02 *	10		BROWN SILTY SAND (SM) medium dense, moist, fine grained with trace of medium grained, oxidized and mottled
								15		Boring terminated at 10.5 feet. Groundwater not encountered during drilling. Boring backfilled with bentonite-cement grout on 1/25/91.
								20		
								25		
								30		
								35		
								40		

MCK0002680

Harding Lawson Associates
Engineering and Environmental Services

Log of Boring MK-SB-39 (sheet 1 of 1)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B43**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		

Equipment 8" HSA

Elevation 148.2 ft Date 1/25/91

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
								0		6" GRAVEL BASE SAND AND GRAVEL SUBBASE RED-BROWN SILTY SAND (SM) medium dense, moist, fine grained with trace of medium grained
				23	1.5	0.0				
										GRAY SILT (ML) very stiff, moist, with trace of fine-grained sand, micaceous, mottled
				17	17.0	25.0	*	5		
										RED-BROWN SILTY SAND (SM) medium dense, moist, fine grained with trace of medium grained, oxidized and mottled with trace of gravel
				27	17.0	25.0	*	10		
								15		
								20		
								25		
								30		
								35		
								40		

Boring terminated at 10.5 feet.
Groundwater not encountered during drilling.
Boring backfilled with bentonite-cement grout on 1/25/91.

MCK0002681

Harding Lawson Associates
Engineering and Environmental Services

Log of Boring MK-SB-40 (sheet 1 of 1)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B44**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		

Equipment 8" HSA

Elevation 147.9 ft Date 1/25/91

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
								0		4" ASPHALTIC CONCRETE
										GRAY SANDY SILT (ML) stiff, moist, with fine-grained sand, micaceous, mottled
				15	1.0	0.0				
				16	7.0	0.4	*	5		decreasing sand content color change to gray-brown, trace of gravel
										RED-BROWN SILTY SAND (SM) medium dense, moist, fine grained with trace of medium grained and gravel
				13	9.0	1.6	*	10		
								15		Boring terminated at 10.5 feet. Groundwater not encountered during drilling. Boring backfilled with bentonite-cement grout on 1/25/91.
								20		
								25		
								30		
								35		
								40		

MCK0002682

Harding Lawson Associates
Engineering and Environmental Services

Log of Boring MK-SB-41 (sheet 1 of 1)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B45**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TMK	1/92		

Equipment 8" HSA

Elevation 148.0 ft Date 1/25/91

Liquid Limit	Plasticity Index	Moisture Cont. (%)	Dry Dens. (pcf)	Blows/ft	PID	OVA	Soil pH	Depth ft	Sample	Description
								0		4" TO 6" GRAVEL BASE SAND AND GRAVEL SUBBASE BROWN SILTY SAND (SM) dense, moist to dry, fine grained with some coarse grained and trace of gravel
				42	1.2	0.2				
										GRAY SILT (ML) stiff, moist, minor fine-grained sand, micaceous, mottled
				9	6.0	0.4	*	5		
				20	50.0	7.2	*	10		RED-BROWN SILTY SAND (SM) medium dense, moist, fine grained with trace of medium grained, mottled
								15		Boring terminated at 10.5 feet. Groundwater not encountered during drilling. Boring backfilled with bentonite-cement grout on 1/25/91.
								20		
								25		
								30		
								35		
								40		

MCK0002683

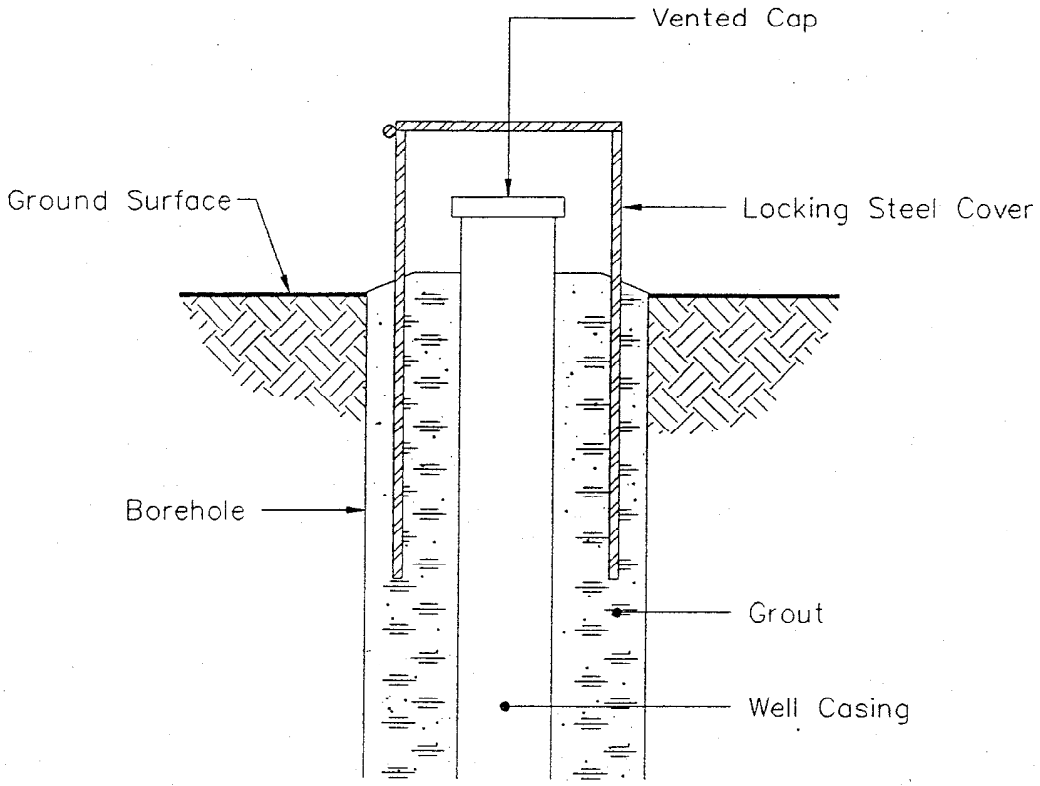
Harding Lawson Associates
Engineering and Environmental Services

Log of Boring MK-SB-42 (sheet 1 of 1)

McKesson Corporation Property
Santa Fe Springs, California

PLATE **B46**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAK	1/92		



WELLHEAD DETAIL

	Bentonite–Cement Grout
	Blank PVC Casing
	Bentonite Seal
	Filter Sand
	Slotted PVC Casing
	Slough

	Bentonite Grout

MCK0002684

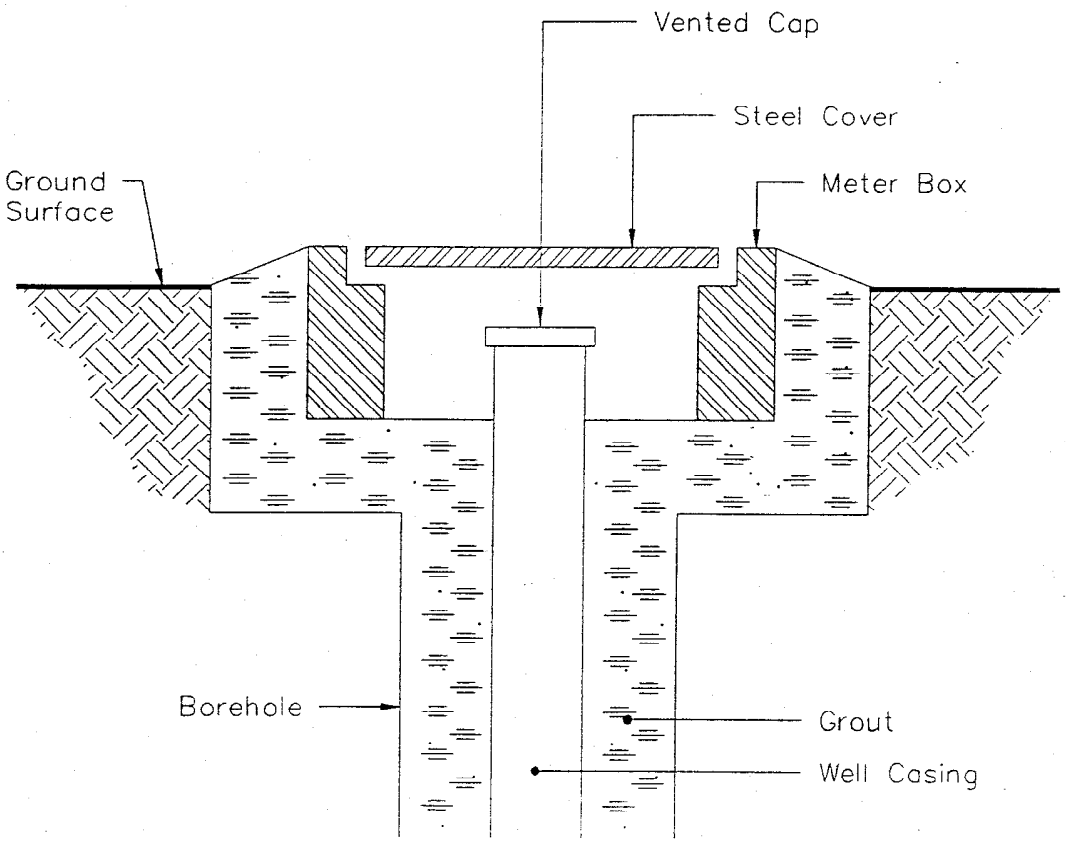
KEY TO WELL DETAIL (ON LOGS OF BORINGS)

Harding Lawson Associates
Engineering and Environmental Services

WELLHEAD DETAIL – ABOVEGROUND COMPLETION
McKesson Corporation Property
Santa Fe Springs, California

PLATE
B47

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	THK	1/92		



WELLHEAD DETAIL

	Bentonite–Cement Grout
	Blank PVC Casing
	Bentonite Seal
	Filter Sand
	Slotted PVC Casing
	Slough

	Bentonite Grout

MCK0002685

KEY TO WELL DETAIL (ON LOGS OF BORINGS)

Harding Lawson Associates
Engineering and Environmental Services

WELLHEAD DETAIL – BELOWGROUND COMPLETION
McKesson Corporation Property
Santa Fe Springs, California

PLATE
B48

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
HK	17333,168.11	TAL	1/92		

APPENDIX C

MCK0002686

APPENDIX C

CPT DATA

Printed on Recycled Paper.

CONE PENETRATION TEST

SOUNDING : CPT-1
PROJECT : HLA/MCKESSON
LOCATION : SANTA FE SPRINGS
DATE : 04-09-1991

PROJECT NO : 9110-09504
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : EC/DH/MR

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	.0	.0	.00	NA	
1.0	.0	.0	.00	NA	
1.5	.0	.0	.00	NA	
2.0	164.3	321.9	1.86	NA	*SAND to SILTY SAND
2.5	86.9	161.7	1.77	NA	SAND to SILTY SAND
3.0	49.6	88.5	1.16	NA	SAND to SILTY SAND
3.5	28.3	48.5	2.01	NA	SILTY SAND to SANDY SILT
4.0	27.8	46.2	1.13	NA	SILTY SAND to SANDY SILT
4.5	20.4	32.8	1.32	NA	SILTY SAND to SANDY SILT
5.0	20.3	31.6	2.09	NA	SILTY SAND to SANDY SILT
5.5	21.5	32.6	3.19	NA	SANDY SILT to CLAYEY SILT
6.0	20.5	30.3	3.98	NA	CLAYEY SILT to SILTY CLAY
6.5	17.6	25.5	4.30	NA	CLAYEY SILT to SILTY CLAY
7.0	15.4	21.7	4.58	NA	CLAYEY SILT to SILTY CLAY
7.5	16.2	22.4	4.58	NA	CLAYEY SILT to SILTY CLAY
8.0	19.1	26.0	3.96	NA	CLAYEY SILT to SILTY CLAY
8.5	29.5	39.3	3.85	NA	SANDY SILT to CLAYEY SILT
9.0	53.4	69.6	4.16	NA	*CLAYEY SAND to SANDY CLAY
9.5	75.6	96.9	5.45	NA	*SANDY CLAY to SILTY CLAY
10.0	63.9	80.5	6.46	NA	*SANDY CLAY to SILTY CLAY
10.5	84.4	104.6	6.85	NA	*SANDY CLAY to SILTY CLAY
11.0	103.0	125.5	7.25	NA	*SANDY CLAY to SILTY CLAY
11.5	132.8	159.2	5.89	NA	*SANDY CLAY to SILTY CLAY
12.0	151.1	178.4	4.70	NA	*CLAYEY SAND to SANDY CLAY
12.5	138.6	161.2	4.63	NA	*CLAYEY SAND to SANDY CLAY
13.0	121.5	139.2	3.30	NA	*CLAYEY SAND to SANDY CLAY
13.5	161.1	182.0	1.68	NA	SAND to SILTY SAND
14.0	204.2	227.3	1.38	NA	SAND to SILTY SAND
14.5	248.1	272.4	1.24	NA	SAND to SILTY SAND
15.0	263.9	285.9	1.05	NA	SAND to SILTY SAND
15.5	270.6	289.3	1.11	NA	SAND to SILTY SAND
16.0	264.9	279.6	.99	NA	SAND to SILTY SAND
16.5	256.2	267.0	1.00	NA	SAND to SILTY SAND
17.0	238.4	245.3	.84	NA	SAND to SILTY SAND
17.5	239.8	243.8	.78	NA	SAND to SILTY SAND
18.0	251.3	252.4	.77	NA	SAND to SILTY SAND
18.5	245.5	243.6	.84	NA	SAND to SILTY SAND
19.0	262.5	257.5	.76	NA	SAND to SILTY SAND
19.5	294.9	285.9	.94	NA	SAND to SILTY SAND
20.0	307.3	294.6	.63	NA	SANDY GRAVEL to SAND

NA = NOT APPLICABLE
TOP 1.5 FT IS DISTURBED SOIL
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002688

SOUNDING : CPT-1

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
20.5	325.1	308.1	.68	NA	SANDY GRAVEL to SAND
21.0	328.9	308.3	.74	NA	SANDY GRAVEL to SAND
21.5	272.7	252.8	.65	NA	SANDY GRAVEL to SAND
22.0	98.3	90.1	2.02	NA	SILTY SAND to SANDY SILT
22.5	150.0	136.1	1.62	NA	SAND to SILTY SAND
23.0	84.5	75.9	3.34	NA	SANDY SILT to CLAYEY SILT
23.5	88.8	78.9	2.69	NA	SILTY SAND to SANDY SILT
24.0	92.2	81.1	3.66	NA	*CLAYEY SAND to SANDY CLAY
24.5	96.4	83.9	5.16	NA	*SANDY CLAY to SILTY CLAY
25.0	81.8	70.5	4.95	NA	*SANDY CLAY to SILTY CLAY
25.5	94.3	80.4	3.94	NA	*CLAYEY SAND to SANDY CLAY
26.0	81.8	69.1	6.01	NA	*SANDY CLAY to SILTY CLAY
26.5	79.9	66.8	5.56	NA	*SANDY CLAY to SILTY CLAY
27.0	87.2	72.2	5.10	NA	*SANDY CLAY to SILTY CLAY
27.5	92.7	76.0	5.62	NA	*SANDY CLAY to SILTY CLAY
28.0	79.8	64.8	5.40	NA	*SANDY CLAY to SILTY CLAY
28.5	45.7	36.8	6.55	NA	*SANDY CLAY to SILTY CLAY
29.0	35.0	27.9	4.90	NA	CLAYEY SILT to SILTY CLAY
29.5	21.6	17.1	4.78	NA	CLAYEY SILT to SILTY CLAY
30.0	25.5	19.9	3.71	NA	CLAYEY SILT to SILTY CLAY
30.5	32.3	25.1	4.37	NA	CLAYEY SILT to SILTY CLAY
31.0	45.9	35.3	4.52	NA	CLAYEY SILT to SILTY CLAY
31.5	79.6	60.6	4.65	NA	*SANDY CLAY to SILTY CLAY
32.0	149.0	112.-	4.10	NA	*CLAYEY SAND to SANDY CLAY
32.5	202.4	151.-	3.13	NA	*SILTY SAND to CLAYEY SAND
33.0	130.2	96.5	5.79	NA	*SANDY CLAY to SILTY CLAY
33.5	92.2	67.7	5.83	NA	*SANDY CLAY to SILTY CLAY
34.0	86.7	63.2	5.27	NA	*SANDY CLAY to SILTY CLAY
34.5	96.1	69.-	6.38	NA	*SANDY CLAY to SILTY CLAY
35.0	74.8	53.6	5.67	NA	*SANDY CLAY to SILTY CLAY
35.5	98.5	69.9	4.07	NA	*CLAYEY SAND to SANDY CLAY
36.0	73.2	51.5	6.58	NA	*SANDY CLAY to SILTY CLAY
36.5	63.2	44.1	4.57	NA	*SANDY CLAY to SILTY CLAY
37.0	62.8	43.-	6.04	NA	*SANDY CLAY to SILTY CLAY
37.5	56.5	38.8	6.36	NA	*SANDY CLAY to SILTY CLAY
38.0	46.4	31.5	5.61	NA	*SANDY CLAY to SILTY CLAY
38.5	44.0	29.7	5.27	NA	*SANDY CLAY to SILTY CLAY
39.0	44.7	29.9	7.10	NA	*SANDY CLAY to SILTY CLAY
39.5	37.9	25.1	6.20	NA	*SANDY CLAY to SILTY CLAY
40.0	33.3	21.9	4.50	NA	CLAYEY SILT to SILTY CLAY
40.5	33.0	21.5	3.35	NA	SANDY SILT to CLAYEY SILT
41.0	33.6	21.8	3.92	NA	CLAYEY SILT to SILTY CLAY
41.5	32.2	20.6	3.67	NA	CLAYEY SILT to SILTY CLAY
42.0	34.9	22.2	3.99	NA	CLAYEY SILT to SILTY CLAY
42.5	40.0	25.3	3.68	NA	CLAYEY SILT to SILTY CLAY
43.0	35.5	22.2	4.76	NA	CLAYEY SILT to SILTY CLAY
43.5	32.4	20.1	4.94	NA	CLAYEY SILT to SILTY CLAY
44.0	33.5	20.7	4.38	NA	CLAYEY SILT to SILTY CLAY
44.5	42.6	26.0	4.59	NA	CLAYEY SILT to SILTY CLAY
45.0	169.0	102.5	2.88	NA	SILTY SAND to SANDY SILT

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

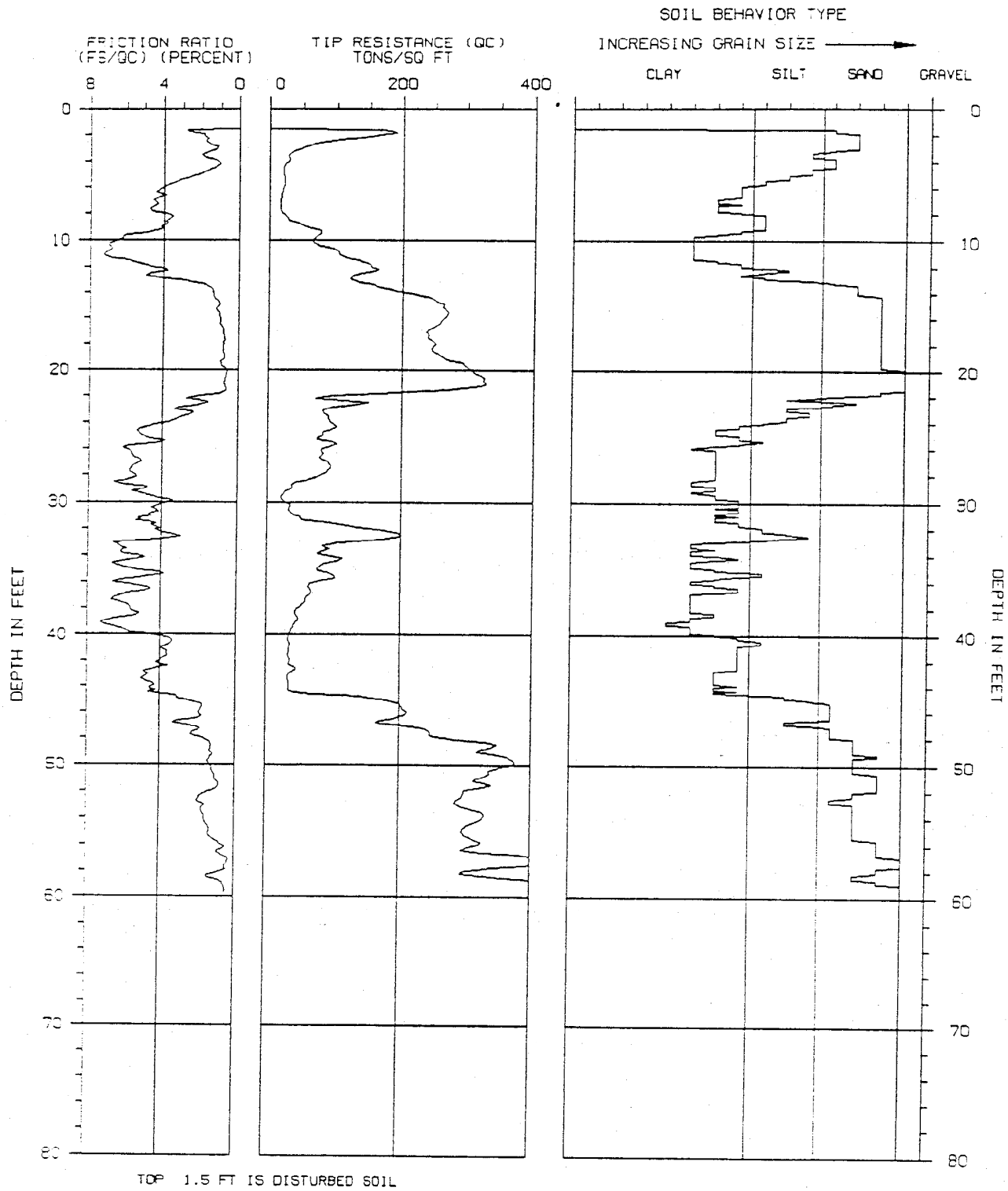
MCK0002689

SOUNDING : CPT-1

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
45.5	203.8	122.6	1.76	NA	SILTY SAND to SANDY SILT
46.0	212.8	127.0	1.91	NA	SILTY SAND to SANDY SILT
46.5	193.6	114.7	2.04	NA	SILTY SAND to SANDY SILT
47.0	199.4	117.1	2.66	NA	SILTY SAND to SANDY SILT
47.5	247.9	144.5	2.20	NA	SILTY SAND to SANDY SILT
48.0	269.5	155.9	1.77	NA	SAND to SILTY SAND
48.5	349.8	201.6	1.29	NA	SAND to SILTY SAND
49.0	320.6	184.2	1.29	NA	SAND to SILTY SAND
49.5	367.5	210.4	1.36	NA	SAND to SILTY SAND
50.0	372.2	212.4	1.30	NA	SAND to SILTY SAND
50.5	338.4	192.4	1.21	NA	SAND to SILTY SAND
51.0	322.4	182.7	1.08	NA	SAND to SILTY SAND
51.5	341.6	192.9	.87	NA	SAND to SILTY SAND
52.0	300.8	169.4	1.28	NA	SAND to SILTY SAND
52.5	296.9	166.6	1.92	NA	SILTY SAND to SANDY SILT
53.0	290.5	162.4	1.63	NA	SAND to SILTY SAND
53.5	324.1	180.7	1.78	NA	SAND to SILTY SAND
54.0	329.2	182.9	1.59	NA	SAND to SILTY SAND
54.5	308.4	170.7	1.47	NA	SAND to SILTY SAND
55.0	298.4	164.7	1.37	NA	SAND to SILTY SAND
55.5	311.2	171.1	1.25	NA	SAND to SILTY SAND
56.0	325.2	178.3	.77	NA	SAND to SILTY SAND
56.5	304.1	166.1	.93	NA	SAND to SILTY SAND
57.0	411.5	224.1	.42	NA	SANDY GRAVEL to SAND
57.5	412.9	224.1	.46	NA	SANDY GRAVEL to SAND
58.0	306.4	165.7	.54	NA	SAND to SILTY SAND
58.5	358.2	193.1	1.40	NA	SAND to SILTY SAND
59.0	441.6	237.3	.59	NA	SANDY GRAVEL to SAND
59.5	459.6	246.1	.47	NA	SANDY GRAVEL to SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002690



ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 48.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-1

PROJECT NAME : HLA/MCKESSON

PROJECT NUMBER : 9110-09504

LOCATION : SANTA FE SPRINGS

DATE : 04-09-1991

THE EARTH TECHNOLOGY CORPORATION

MCK0002691

CONE PENETRATION TEST

SOUNDING : CPT-2
PROJECT : HLA/MCKESSON
LOCATION : SANTA FE SPRINGS
DATE : 04-09-1991

PROJECT NO : 9110-09504
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : EC/DH/MR

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	1.2	3.2	15.00	NA	ORGANIC MATERIAL
1.0	37.8	85.4	2.22	NA	SILTY SAND to SANDY SILT
1.5	57.8	120.3	2.46	NA	SILTY SAND to SANDY SILT
2.0	44.3	86.7	3.75	NA	*CLAYEY SAND to SANDY CLAY
2.5	32.3	60.2	3.54	NA	SANDY SILT to CLAYEY SILT
3.0	25.9	46.2	4.67	NA	*SANDY CLAY to SILTY CLAY
3.5	18.2	31.2	3.98	NA	CLAYEY SILT to SILTY CLAY
4.0	12.0	19.8	5.50	NA	SILTY CLAY TO CLAY
4.5	15.2	24.4	5.38	NA	CLAYEY SILT to SILTY CLAY
5.0	15.9	24.9	5.07	NA	CLAYEY SILT to SILTY CLAY
5.5	12.0	18.2	5.17	NA	CLAYEY SILT to SILTY CLAY
6.0	15.0	22.3	6.01	NA	SILTY CLAY TO CLAY
6.5	14.3	20.7	6.10	NA	SILTY CLAY TO CLAY
7.0	11.3	16.0	6.49	NA	SILTY CLAY TO CLAY
7.5	10.6	14.6	5.79	NA	SILTY CLAY TO CLAY
8.0	18.3	24.8	4.69	NA	CLAYEY SILT to SILTY CLAY
8.5	29.8	39.6	2.48	NA	SANDY SILT to CLAYEY SILT
9.0	36.9	48.2	1.57	NA	SILTY SAND to SANDY SILT
9.5	34.0	43.6	1.06	NA	SILTY SAND to SANDY SILT
10.0	14.9	18.7	1.09	NA	SILTY SAND to SANDY SILT
10.5	28.0	34.7	1.69	NA	SILTY SAND to SANDY SILT
11.0	43.1	52.5	2.49	NA	SILTY SAND to SANDY SILT
11.5	48.6	58.2	1.55	NA	SILTY SAND to SANDY SILT
12.0	41.0	48.4	2.49	NA	SANDY SILT to CLAYEY SILT
12.5	55.6	64.7	2.02	NA	SILTY SAND to SANDY SILT
13.0	72.4	82.9	1.07	NA	SAND to SILTY SAND
13.5	105.2	118.8	1.47	NA	SAND to SILTY SAND
14.0	149.8	166.8	1.09	NA	SAND to SILTY SAND
14.5	173.8	190.9	.87	NA	SAND to SILTY SAND
15.0	179.0	193.9	1.05	NA	SAND to SILTY SAND
15.5	171.6	183.5	.99	NA	SAND to SILTY SAND
16.0	169.5	179.0	.97	NA	SAND to SILTY SAND
16.5	148.7	154.9	.76	NA	SAND to SILTY SAND
17.0	129.8	133.5	.69	NA	SAND to SILTY SAND
17.5	170.0	172.9	.75	NA	SAND to SILTY SAND
18.0	176.4	177.2	.88	NA	SAND to SILTY SAND
18.5	188.1	186.7	.88	NA	SAND to SILTY SAND
19.0	173.3	170.0	.75	NA	SAND to SILTY SAND
19.5	139.4	135.2	.98	NA	SAND to SILTY SAND
20.0	128.5	123.2	.89	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002692

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
20.5	126.4	119.8	.78	NA	SAND to SILTY SAND
21.0	132.1	123.8	.92	NA	SAND to SILTY SAND
21.5	149.8	138.9	.85	NA	SAND to SILTY SAND
22.0	164.5	150.9	.85	NA	SAND to SILTY SAND
22.5	156.4	141.9	.87	NA	SAND to SILTY SAND
23.0	165.3	148.4	.92	NA	SAND to SILTY SAND
23.5	181.4	161.2	.75	NA	SAND to SILTY SAND
24.0	193.9	170.5	.78	NA	SAND to SILTY SAND
24.5	194.2	169.1	.99	NA	SAND to SILTY SAND
25.0	263.7	227.2	.85	NA	SAND to SILTY SAND
25.5	486.9	415.4	.57	NA	SANDY GRAVEL to SAND
26.0	429.6	362.8	.84	NA	SANDY GRAVEL to SAND
26.5	252.7	211.4	1.98	NA	SAND to SILTY SAND
27.0	114.9	95.2	4.73	NA	*SANDY CLAY to SILTY CLAY
27.5	98.8	81.1	4.59	NA	*SANDY CLAY to SILTY CLAY
28.0	61.0	49.6	4.29	NA	*SANDY CLAY to SILTY CLAY
28.5	61.8	49.8	3.20	NA	SANDY SILT to CLAYEY SILT
29.0	68.8	54.9	3.88	NA	*CLAYEY SAND to SANDY CLAY
29.5	34.5	27.3	3.95	NA	CLAYEY SILT to SILTY CLAY
30.0	26.6	20.8	2.73	NA	SANDY SILT to CLAYEY SILT
30.5	34.4	26.7	3.53	NA	SANDY SILT to CLAYEY SILT
31.0	32.2	24.7	4.08	NA	CLAYEY SILT to SILTY CLAY
31.5	32.5	24.7	3.56	NA	SANDY SILT to CLAYEY SILT
32.0	45.6	34.4	4.37	NA	CLAYEY SILT to SILTY CLAY
32.5	38.1	28.5	4.66	NA	CLAYEY SILT to SILTY CLAY
33.0	48.1	35.6	4.87	NA	*SANDY CLAY to SILTY CLAY
33.5	40.2	29.5	4.91	NA	CLAYEY SILT to SILTY CLAY
34.0	39.3	28.6	4.78	NA	CLAYEY SILT to SILTY CLAY
34.5	37.2	26.8	3.43	NA	SANDY SILT to CLAYEY SILT
35.0	48.2	34.5	4.83	NA	*SANDY CLAY to SILTY CLAY
35.5	49.0	34.8	4.16	NA	CLAYEY SILT to SILTY CLAY
36.0	66.2	46.5	4.28	NA	*SANDY CLAY to SILTY CLAY
36.5	75.8	52.9	5.71	NA	*SANDY CLAY to SILTY CLAY
37.0	64.4	44.5	6.56	NA	*SANDY CLAY to SILTY CLAY
37.5	52.4	35.9	6.20	NA	*SANDY CLAY to SILTY CLAY
38.0	43.2	29.4	6.38	NA	*SANDY CLAY to SILTY CLAY
38.5	40.8	27.5	6.05	NA	*SANDY CLAY to SILTY CLAY
39.0	35.8	23.9	6.04	NA	*SANDY CLAY to SILTY CLAY
39.5	31.3	20.8	5.14	NA	CLAYEY SILT to SILTY CLAY
40.0	37.6	24.7	4.25	NA	CLAYEY SILT to SILTY CLAY
40.5	40.7	26.6	5.86	NA	*SANDY CLAY to SILTY CLAY
41.0	34.4	22.2	5.00	NA	CLAYEY SILT to SILTY CLAY
41.5	31.3	20.1	4.86	NA	CLAYEY SILT to SILTY CLAY
42.0	30.1	19.1	4.37	NA	CLAYEY SILT to SILTY CLAY
42.5	33.5	21.1	4.51	NA	CLAYEY SILT to SILTY CLAY
43.0	36.2	22.7	5.00	NA	CLAYEY SILT to SILTY CLAY
43.5	39.4	24.5	4.56	NA	CLAYEY SILT to SILTY CLAY
44.0	40.5	24.9	5.75	NA	*SANDY CLAY to SILTY CLAY
44.5	47.8	29.2	5.83	NA	*SANDY CLAY to SILTY CLAY
45.0	57.9	35.1	5.65	NA	*SANDY CLAY to SILTY CLAY

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

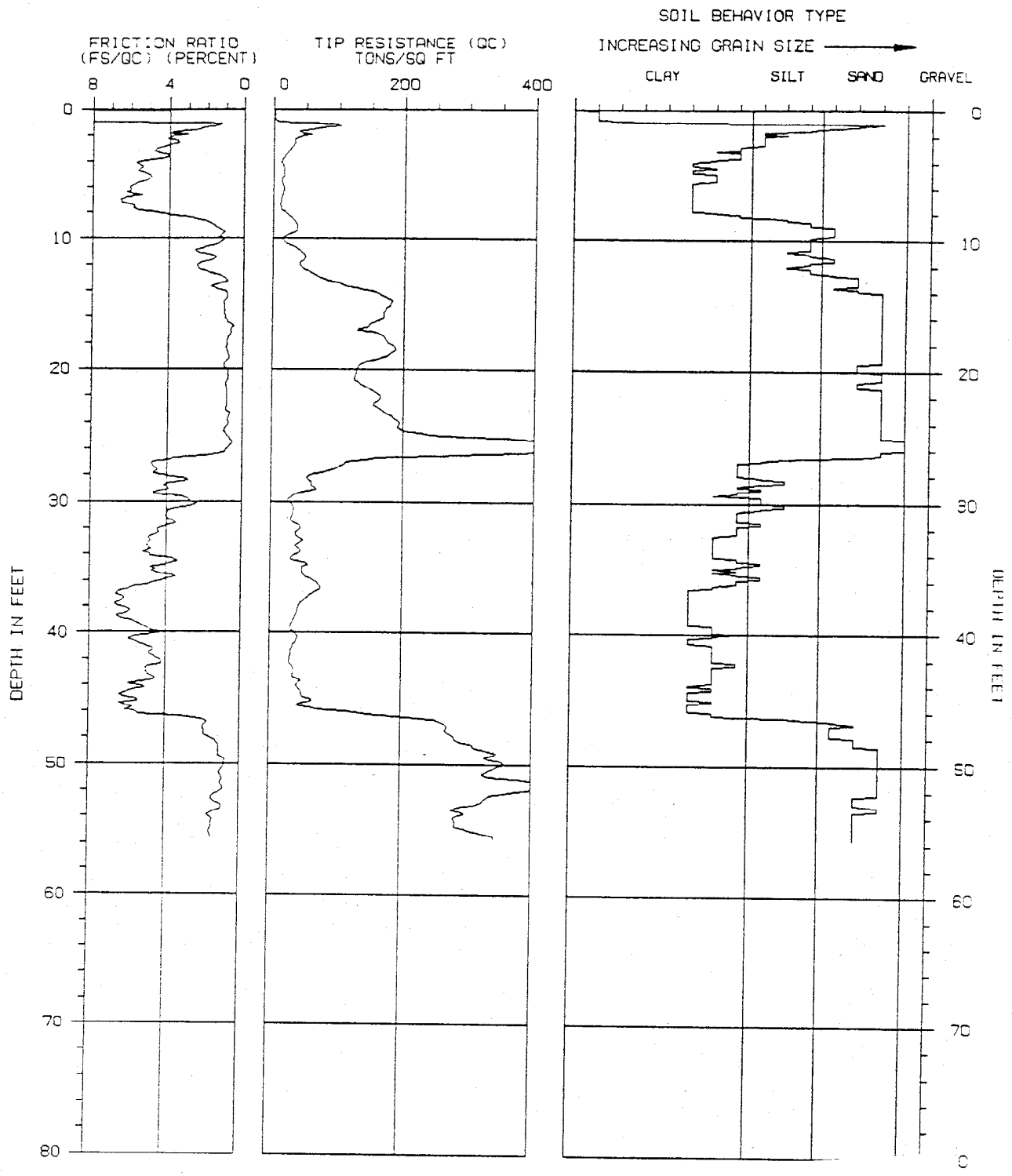
MCK0002693

SOUNDING : CPT-2

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
45.5	43.0	25.8	6.16	NA	*SANDY CLAY to SILTY CLAY
46.0	117.2	70.0	5.62	NA	*SANDY CLAY to SILTY CLAY
46.5	227.3	134.6	2.52	NA	SILTY SAND to SANDY SILT
47.0	268.8	157.9	1.89	NA	SILTY SAND to SANDY SILT
47.5	269.0	156.8	1.94	NA	SILTY SAND to SANDY SILT
48.0	282.4	163.3	1.68	NA	SAND to SILTY SAND
48.5	306.1	176.4	1.18	NA	SAND to SILTY SAND
49.0	334.6	192.2	1.12	NA	SAND to SILTY SAND
49.5	329.6	188.7	1.00	NA	SAND to SILTY SAND
50.0	359.5	205.2	.83	NA	SAND to SILTY SAND
50.5	334.9	190.5	1.00	NA	SAND to SILTY SAND
51.0	354.7	201.1	.97	NA	SAND to SILTY SAND
51.5	418.1	236.2	1.02	NA	SAND to SILTY SAND
52.0	393.2	221.3	.90	NA	SAND to SILTY SAND
52.5	332.9	186.8	1.49	NA	SAND to SILTY SAND
53.0	321.6	179.9	1.21	NA	SAND to SILTY SAND
53.5	280.7	156.5	1.09	NA	SAND to SILTY SAND
54.0	285.5	158.6	1.65	NA	SAND to SILTY SAND
54.5	286.4	158.6	1.50	NA	SAND to SILTY SAND
55.0	305.5	168.6	1.59	NA	SAND to SILTY SAND
55.5	344.0	189.2	1.53	NA	SAND to SILTY SAND

MCK0002694

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT



MCK0002695

ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 48.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-2

PROJECT NAME : HLA/MCKESSON

PROJECT NUMBER : 9110-09504

LOCATION : SANTA FE SPRINGS

DATE : 04-09-1991

THE EARTH TECHNOLOGY CORPORATION

CONE PENETRATION TEST

SOUNDING : CPT-3
PROJECT : HLA/MCKESSON
LOCATION : SANTA FE SPRINGS
DATE : 04-09-1991

PROJECT NO : 9110-09504
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : EC/DH/MR

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	.0	.0	.00	NA	
1.0	.0	.0	.00	NA	
1.5	102.6	213.8	3.48	NA	*CLAYEY SAND to SANDY CLAY
2.0	67.8	132.9	2.56	NA	SILTY SAND to SANDY SILT
2.5	45.8	85.3	4.57	NA	*SANDY CLAY to SILTY CLAY
3.0	31.3	55.8	4.84	NA	*SANDY CLAY to SILTY CLAY
3.5	23.8	40.8	4.05	NA	CLAYEY SILT to SILTY CLAY
4.0	20.4	33.8	4.57	NA	CLAYEY SILT to SILTY CLAY
4.5	20.7	33.3	4.50	NA	CLAYEY SILT to SILTY CLAY
5.0	19.0	29.6	4.69	NA	CLAYEY SILT to SILTY CLAY
5.5	21.7	33.0	6.41	NA	*SANDY CLAY to SILTY CLAY
6.0	20.1	29.8	6.66	NA	*SANDY CLAY to SILTY CLAY
6.5	20.4	29.6	6.45	NA	*SANDY CLAY to SILTY CLAY
7.0	16.3	23.1	7.08	NA	*SANDY CLAY to SILTY CLAY
7.5	14.0	19.4	7.24	NA	SILTY CLAY TO CLAY
8.0	12.9	17.5	7.74	NA	SILTY CLAY TO CLAY
8.5	16.5	22.0	7.44	NA	*SANDY CLAY to SILTY CLAY
9.0	25.9	33.8	4.79	NA	*SANDY CLAY to SILTY CLAY
9.5	42.3	54.3	4.35	NA	*SANDY CLAY to SILTY CLAY
10.0	49.1	61.8	3.63	NA	SANDY SILT to CLAYEY SILT
10.5	43.2	53.5	3.54	NA	SANDY SILT to CLAYEY SILT
11.0	41.4	50.5	5.39	NA	*SANDY CLAY to SILTY CLAY
11.5	45.6	54.7	6.20	NA	*SANDY CLAY to SILTY CLAY
12.0	35.1	41.5	7.61	NA	*SANDY CLAY to SILTY CLAY
12.5	29.5	34.3	7.78	NA	*SANDY CLAY to SILTY CLAY
13.0	7.5	8.6	8.42	NA	CLAY TO ORGANIC CLAY
13.5	8.0	9.1	8.18	NA	CLAY TO ORGANIC CLAY
14.0	15.5	17.3	7.27	NA	SILTY CLAY TO CLAY
14.5	22.2	24.4	6.87	NA	*SANDY CLAY to SILTY CLAY
15.0	35.2	38.1	6.39	NA	*SANDY CLAY to SILTY CLAY
15.5	70.7	75.6	3.27	NA	SANDY SILT to CLAYEY SILT
16.0	91.5	96.5	2.69	NA	SILTY SAND to SANDY SILT
16.5	90.1	93.9	2.76	NA	SILTY SAND to SANDY SILT
17.0	85.6	88.1	2.33	NA	SILTY SAND to SANDY SILT
17.5	75.6	76.8	2.48	NA	SILTY SAND to SANDY SILT
18.0	72.8	73.2	2.95	NA	SANDY SILT to CLAYEY SILT
18.5	73.4	72.8	3.34	NA	SANDY SILT to CLAYEY SILT
19.0	90.7	89.0	2.45	NA	SILTY SAND to SANDY SILT
19.5	104.3	101.2	2.35	NA	SILTY SAND to SANDY SILT
20.0	199.2	190.9	1.19	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
TOP 1.0 FT IS DISTURBED SOIL
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002696

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
20.5	311.6	295.4	.76	NA	SAND to SILTY SAND
21.0	413.4	387.5	.78	NA	SANDY GRAVEL to SAND
21.5	497.4	461.2	.66	NA	SANDY GRAVEL to SAND
22.0	519.4	476.4	.73	NA	SANDY GRAVEL to SAND
22.5	537.4	487.7	.87	NA	SANDY GRAVEL to SAND
23.0	447.2	401.6	.90	NA	SANDY GRAVEL to SAND
23.5	355.2	315.6	.72	NA	SANDY GRAVEL to SAND
24.0	352.6	310.1	.71	NA	SANDY GRAVEL to SAND
24.5	361.0	314.2	.98	NA	SAND to SILTY SAND
25.0	149.0	128.4	2.92	NA	*SILTY SAND to CLAYEY SAND
25.5	129.8	110.8	4.32	NA	*CLAYEY SAND to SANDY CLAY
26.0	191.9	162.1	3.38	NA	*CLAYEY SAND to SANDY CLAY
26.5	161.4	135.0	3.87	NA	*CLAYEY SAND to SANDY CLAY
27.0	162.4	134.5	4.34	NA	*CLAYEY SAND to SANDY CLAY
27.5	99.5	81.6	5.33	NA	*SANDY CLAY to SILTY CLAY
28.0	76.8	62.4	5.03	NA	*SANDY CLAY to SILTY CLAY
28.5	74.6	60.1	4.88	NA	*SANDY CLAY to SILTY CLAY
29.0	103.8	82.7	5.97	NA	*SANDY CLAY to SILTY CLAY
29.5	72.8	57.5	5.91	NA	*SANDY CLAY to SILTY CLAY
30.0	92.3	72.2	3.71	NA	*CLAYEY SAND to SANDY CLAY
30.5	63.2	49.0	5.58	NA	*SANDY CLAY to SILTY CLAY
31.0	63.0	48.4	4.53	NA	*SANDY CLAY to SILTY CLAY
31.5	54.0	41.1	5.78	NA	*SANDY CLAY to SILTY CLAY
32.0	47.5	35.8	5.18	NA	*SANDY CLAY to SILTY CLAY
32.5	43.7	32.7	5.41	NA	*SANDY CLAY to SILTY CLAY
33.0	36.2	26.8	5.00	NA	CLAYEY SILT to SILTY CLAY
33.5	34.4	25.3	5.57	NA	SILTY CLAY TO CLAY
34.0	36.2	26.4	5.40	NA	CLAYEY SILT to SILTY CLAY
34.5	44.7	32.3	7.19	NA	*SANDY CLAY to SILTY CLAY
35.0	44.2	31.7	7.52	NA	*SANDY CLAY to SILTY CLAY
35.5	34.9	24.8	7.78	NA	*SANDY CLAY to SILTY CLAY
36.0	46.6	32.8	3.84	NA	CLAYEY SILT to SILTY CLAY
36.5	38.4	26.8	4.57	NA	CLAYEY SILT to SILTY CLAY
37.0	65.9	45.5	5.44	NA	*SANDY CLAY to SILTY CLAY
37.5	50.2	34.4	5.44	NA	*SANDY CLAY to SILTY CLAY
38.0	46.9	31.9	5.46	NA	*SANDY CLAY to SILTY CLAY
38.5	50.6	34.1	6.29	NA	*SANDY CLAY to SILTY CLAY
39.0	61.4	41.1	8.11	NA	*SANDY CLAY to SILTY CLAY
39.5	51.5	34.2	7.71	NA	*SANDY CLAY to SILTY CLAY
40.0	47.9	31.5	6.66	NA	*SANDY CLAY to SILTY CLAY
40.5	40.1	26.2	7.69	NA	*SANDY CLAY to SILTY CLAY
41.0	35.6	23.0	6.19	NA	*SANDY CLAY to SILTY CLAY
41.5	32.3	20.7	5.62	NA	SILTY CLAY TO CLAY
42.0	28.1	17.9	4.33	NA	CLAYEY SILT to SILTY CLAY
42.5	31.5	19.9	4.72	NA	CLAYEY SILT to SILTY CLAY
43.0	34.8	21.8	4.63	NA	CLAYEY SILT to SILTY CLAY
43.5	48.7	30.2	5.20	NA	*SANDY CLAY to SILTY CLAY
44.0	67.3	41.5	6.92	NA	*SANDY CLAY to SILTY CLAY
44.5	34.0	20.8	7.22	NA	*SANDY CLAY to SILTY CLAY
45.0	36.4	22.1	5.84	NA	SILTY CLAY TO CLAY

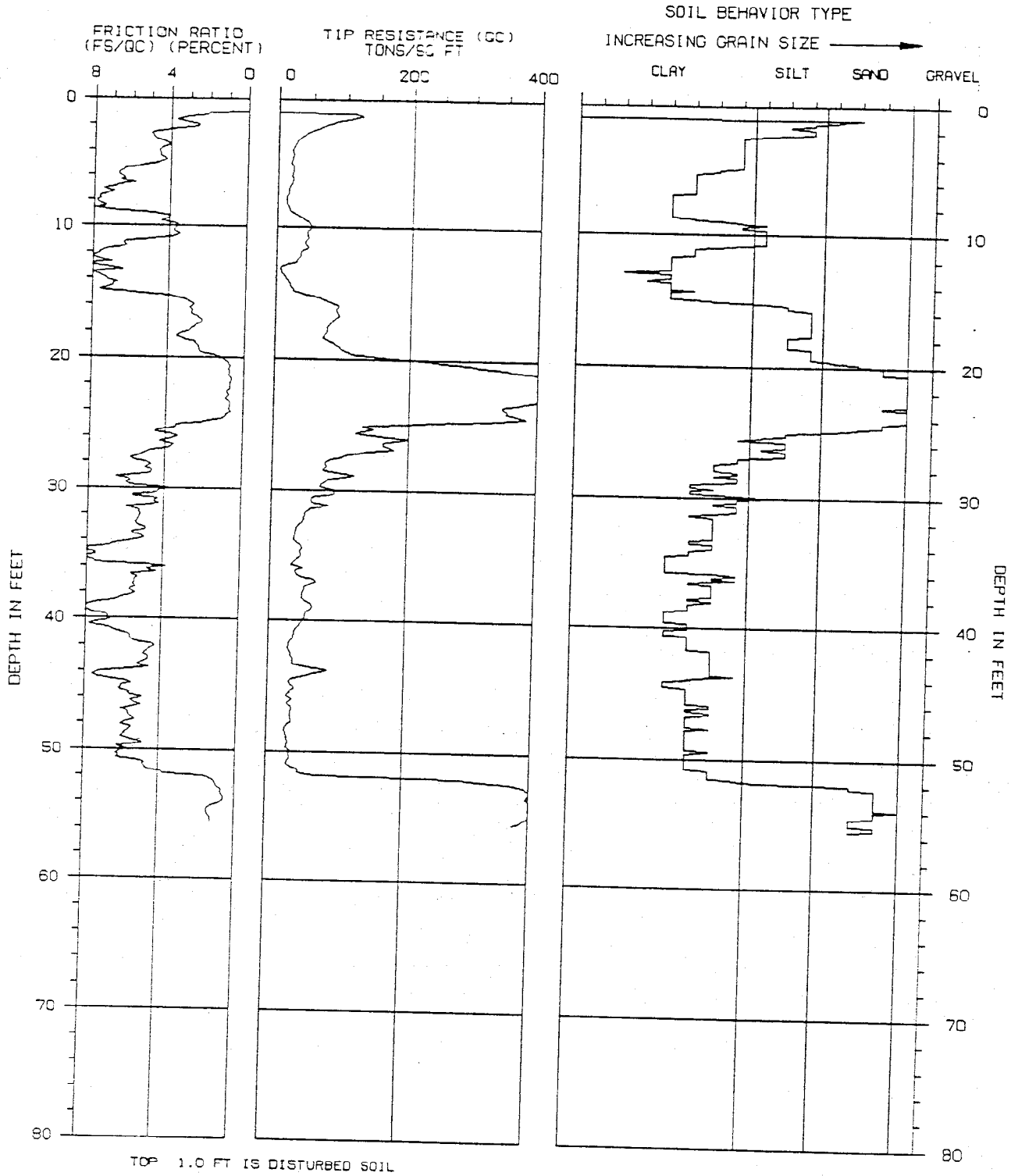
NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002697

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
45.5	31.6	19.0	5.70	NA	SILTY CLAY TO CLAY
46.0	34.6	20.6	4.89	NA	CLAYEY SILT to SILTY CLAY
46.5	32.2	19.0	5.07	NA	CLAYEY SILT to SILTY CLAY
47.0	33.7	19.8	5.74	NA	SILTY CLAY TO CLAY
47.5	33.4	19.5	5.49	NA	SILTY CLAY TO CLAY
48.0	29.0	16.8	5.88	NA	SILTY CLAY TO CLAY
48.5	25.7	14.8	5.59	NA	SILTY CLAY TO CLAY
49.0	28.8	16.5	5.96	NA	SILTY CLAY TO CLAY
49.5	29.1	16.7	4.87	NA	CLAYEY SILT to SILTY CLAY
50.0	34.5	19.7	5.72	NA	SILTY CLAY TO CLAY
50.5	33.5	19.1	6.11	NA	SILTY CLAY TO CLAY
51.0	29.8	16.9	4.70	NA	CLAYEY SILT to SILTY CLAY
51.5	45.5	25.7	4.49	NA	CLAYEY SILT to SILTY CLAY
52.0	228.9	128.9	1.73	NA	SAND to SILTY SAND
52.5	384.1	215.5	1.04	NA	SAND to SILTY SAND
53.0	403.2	225.5	.70	NA	SAND to SILTY SAND
53.5	395.2	220.3	.65	NA	SAND to SILTY SAND
54.0	448.5	249.1	.71	NA	SAND to SILTY SAND
54.5	450.0	249.2	1.47	NA	SAND to SILTY SAND
55.0	395.1	218.0	1.35	NA	SAND to SILTY SAND
55.5	376.5	207.0	1.26	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002698



ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 48.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-3

PROJECT NAME : HLA/MCKESSON

PROJECT NUMBER : 9110-09504

LOCATION : SANTA FE SPRINGS

DATE : 04-09-1991

THE EARTH TECHNOLOGY CORPORATION

MCK0002699

CONE PENETRATION TEST

SOUNDING : CPT-4
PROJECT : HLA/MCKESSON
LOCATION : SANTA FE SPRINGS
DATE : 04-09-1991

PROJECT NO : 9110-09504
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : EC/DH/MR

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	.0	.0	.00	NA	
1.0	.0	.0	.00	NA	
1.5	24.4	50.7	3.42	NA	SANDY SILT to CLAYEY SILT
2.0	101.8	199.5	2.52	NA	*SILTY SAND to CLAYEY SAND
2.5	55.7	103.8	2.87	NA	SILTY SAND to SANDY SILT
3.0	22.8	40.7	3.50	NA	SANDY SILT to CLAYEY SILT
3.5	20.0	34.3	3.42	NA	SANDY SILT to CLAYEY SILT
4.0	16.1	26.6	3.54	NA	SANDY SILT to CLAYEY SILT
4.5	14.2	22.8	4.79	NA	CLAYEY SILT to SILTY CLAY
5.0	14.7	22.9	4.37	NA	CLAYEY SILT to SILTY CLAY
5.5	13.9	21.1	4.70	NA	CLAYEY SILT to SILTY CLAY
6.0	15.3	22.6	3.98	NA	CLAYEY SILT to SILTY CLAY
6.5	11.1	16.1	6.41	NA	SILTY CLAY TO CLAY
7.0	8.9	12.5	7.05	NA	SILTY CLAY TO CLAY
7.5	6.2	8.6	8.64	NA	CLAY TO ORGANIC CLAY
8.0	4.9	6.7	8.65	NA	CLAY TO ORGANIC CLAY
8.5	3.7	4.9	9.14	NA	ORGANIC MATERIAL
9.0	4.5	5.9	7.30	NA	SILTY CLAY TO CLAY
9.5	25.5	32.6	5.17	NA	*SANDY CLAY to SILTY CLAY
10.0	49.7	62.7	6.25	NA	*SANDY CLAY to SILTY CLAY
10.5	79.4	98.3	7.04	NA	*SANDY CLAY to SILTY CLAY
11.0	113.6	138.3	6.34	NA	*SANDY CLAY to SILTY CLAY
11.5	95.6	114.6	6.79	NA	*SANDY CLAY to SILTY CLAY
12.0	102.9	121.5	4.54	NA	*SANDY CLAY to SILTY CLAY
12.5	103.3	120.1	2.42	NA	SILTY SAND to SANDY SILT
13.0	184.8	211.7	1.61	NA	SAND to SILTY SAND
13.5	192.6	217.5	1.69	NA	SAND to SILTY SAND
14.0	226.8	252.6	1.38	NA	SAND to SILTY SAND
14.5	254.0	279.0	1.24	NA	SAND to SILTY SAND
15.0	245.7	266.3	1.18	NA	SAND to SILTY SAND
15.5	225.0	240.6	1.50	NA	SAND to SILTY SAND
16.0	231.1	244.0	1.15	NA	SAND to SILTY SAND
16.5	254.0	264.7	.73	NA	SAND to SILTY SAND
17.0	258.2	265.7	.85	NA	SAND to SILTY SAND
17.5	242.8	246.8	.96	NA	SAND to SILTY SAND
18.0	223.5	224.4	1.21	NA	SAND to SILTY SAND
18.5	236.7	234.9	1.15	NA	SAND to SILTY SAND
19.0	265.2	260.2	1.31	NA	SAND to SILTY SAND
19.5	295.3	286.4	1.11	NA	SAND to SILTY SAND
20.0	293.4	281.2	1.08	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
TOP 1.0 FT IS DISTURBED SOIL
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002700

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
20.5	292.2	276.9	.96	NA	SAND to SILTY SAND
21.0	240.7	225.6	1.23	NA	SAND to SILTY SAND
21.5	291.6	270.4	.97	NA	SAND to SILTY SAND
22.0	247.5	227.0	1.13	NA	SAND to SILTY SAND
22.5	243.0	220.5	1.22	NA	SAND to SILTY SAND
23.0	242.6	217.8	1.20	NA	SAND to SILTY SAND
23.5	245.0	217.7	1.04	NA	SAND to SILTY SAND
24.0	241.9	212.7	1.17	NA	SAND to SILTY SAND
24.5	241.4	210.1	1.29	NA	SAND to SILTY SAND
25.0	230.9	199.0	1.31	NA	SAND to SILTY SAND
25.5	239.5	204.3	1.17	NA	SAND to SILTY SAND
26.0	176.1	148.7	1.18	NA	SAND to SILTY SAND
26.5	104.3	87.2	1.05	NA	SAND to SILTY SAND
27.0	53.0	43.9	2.36	NA	SILTY SAND to SANDY SILT
27.5	56.2	46.1	1.97	NA	SILTY SAND to SANDY SILT
28.0	155.6	126.4	1.92	NA	SILTY SAND to SANDY SILT
28.5	49.0	39.4	3.85	NA	SANDY SILT to CLAYEY SILT
29.0	47.1	37.5	3.20	NA	SANDY SILT to CLAYEY SILT
29.5	43.7	34.5	3.04	NA	SANDY SILT to CLAYEY SILT
30.0	44.0	34.5	3.77	NA	SANDY SILT to CLAYEY SILT
30.5	43.6	33.8	3.92	NA	CLAYEY SILT to SILTY CLAY
31.0	39.9	30.6	4.29	NA	CLAYEY SILT to SILTY CLAY
31.5	29.4	22.4	4.39	NA	CLAYEY SILT to SILTY CLAY
32.0	26.1	19.7	3.55	NA	CLAYEY SILT to SILTY CLAY
32.5	28.1	21.0	3.21	NA	SANDY SILT to CLAYEY SILT
33.0	35.4	26.2	3.17	NA	SANDY SILT to CLAYEY SILT
33.5	44.5	32.7	7.15	NA	*SANDY CLAY to SILTY CLAY
34.0	82.8	60.3	5.65	NA	*SANDY CLAY to SILTY CLAY
34.5	101.8	73.5	5.73	NA	*SANDY CLAY to SILTY CLAY
35.0	38.5	27.5	6.45	NA	*SANDY CLAY to SILTY CLAY
35.5	34.9	24.8	6.02	NA	*SANDY CLAY to SILTY CLAY
36.0	36.7	25.8	5.87	NA	*SANDY CLAY to SILTY CLAY
36.5	35.8	25.0	9.07	NA	*SANDY CLAY to SILTY CLAY
37.0	38.3	26.5	8.06	NA	*SANDY CLAY to SILTY CLAY
37.5	37.8	25.9	7.21	NA	*SANDY CLAY to SILTY CLAY
38.0	41.7	28.4	7.06	NA	*SANDY CLAY to SILTY CLAY
38.5	35.6	24.0	7.67	NA	*SANDY CLAY to SILTY CLAY
39.0	31.7	21.2	7.19	NA	*SANDY CLAY to SILTY CLAY
39.5	29.2	19.3	5.61	NA	SILTY CLAY TO CLAY
40.0	26.8	17.6	5.62	NA	SILTY CLAY TO CLAY
40.5	27.6	18.0	5.62	NA	SILTY CLAY TO CLAY
41.0	28.0	18.1	4.90	NA	CLAYEY SILT to SILTY CLAY
41.5	25.9	16.6	4.01	NA	CLAYEY SILT to SILTY CLAY
42.0	29.2	18.6	4.16	NA	CLAYEY SILT to SILTY CLAY
42.5	30.5	19.2	4.41	NA	CLAYEY SILT to SILTY CLAY
43.0	31.3	19.6	5.38	NA	SILTY CLAY TO CLAY
43.5	29.3	18.2	4.32	NA	CLAYEY SILT to SILTY CLAY
44.0	33.7	20.8	4.50	NA	CLAYEY SILT to SILTY CLAY
44.5	26.5	16.2	5.28	NA	SILTY CLAY TO CLAY
45.0	25.3	15.3	5.14	NA	SILTY CLAY TO CLAY

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

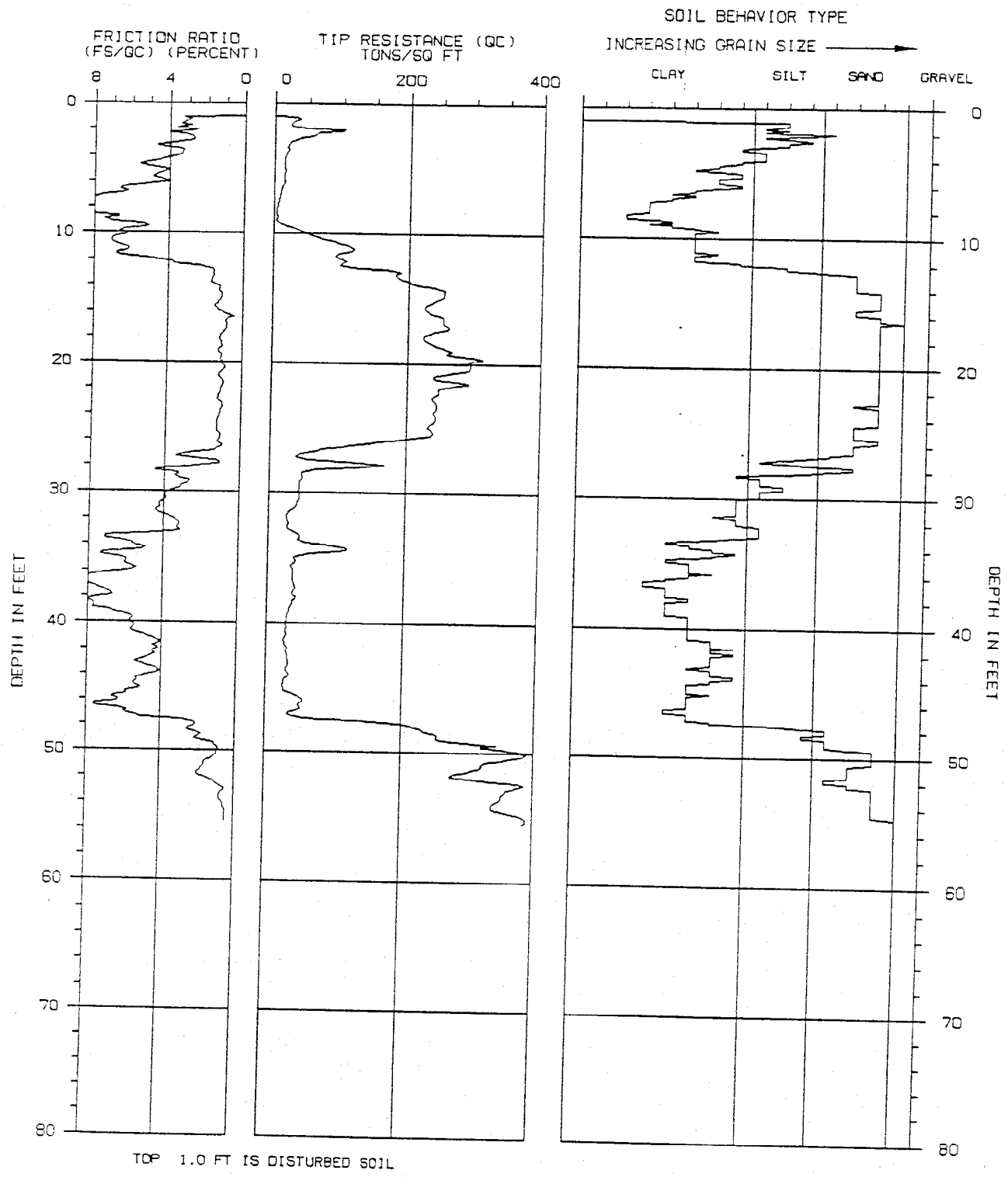
MCK0002701

SOUNDING : CPT-4

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
45.5	40.6	24.4	5.82	NA	*SANDY CLAY to SILTY CLAY
46.0	54.4	32.5	6.26	NA	*SANDY CLAY to SILTY CLAY
46.5	50.1	29.7	7.57	NA	*SANDY CLAY to SILTY CLAY
47.0	32.6	19.2	5.96	NA	SILTY CLAY TO CLAY
47.5	86.8	50.6	3.94	NA	SANDY SILT to CLAYEY SILT
48.0	211.8	122.5	2.13	NA	SILTY SAND to SANDY SILT
48.5	237.8	137.1	2.50	NA	SILTY SAND to SANDY SILT
49.0	255.6	146.9	2.08	NA	SILTY SAND to SANDY SILT
49.5	321.8	184.2	1.13	NA	SAND to SILTY SAND
50.0	384.5	219.4	.96	NA	SAND to SILTY SAND
50.5	363.3	206.6	1.13	NA	SAND to SILTY SAND
51.0	321.9	182.5	1.65	NA	SAND to SILTY SAND
51.5	300.5	169.8	1.85	NA	SAND to SILTY SAND
52.0	285.9	161.0	1.83	NA	SAND to SILTY SAND
52.5	386.1	216.6	1.03	NA	SAND to SILTY SAND
53.0	358.5	200.5	.56	NA	SAND to SILTY SAND
53.5	352.6	196.5	.80	NA	SAND to SILTY SAND
54.0	339.3	188.5	.63	NA	SAND to SILTY SAND
54.5	345.7	191.4	.56	NA	SAND to SILTY SAND
55.0	384.9	212.4	.48	NA	SANDY GRAVEL to SAND
55.5	384.8	211.7	.52	NA	SANDY GRAVEL to SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002702



ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 48.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-4

PROJECT NAME : HLA/MCKESSON

PROJECT NUMBER : 9110-09504

LOCATION : SANTA FE SPRINGS

DATE : 04-09-1991

THE EARTH TECHNOLOGY CORPORATION

MCK0002703

CONE PENETRATION TEST

SOUNDING : CPT-5
PROJECT : HLA/MCKESSON
LOCATION : SANTA FE SPRINGS
DATE : 04-09-1991

PROJECT NO : 9110-09504
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : EC/DH/MR

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
1.0	39.9	90.1	3.61	NA	*CLAYEY SAND to SANDY CLAY
2.0	67.7	132.7	2.30	NA	SILTY SAND to SANDY SILT
3.0	36.6	65.2	2.88	NA	SANDY SILT to CLAYEY SILT
4.0	61.1	101.3	2.67	NA	SILTY SAND to SANDY SILT
5.0	24.5	38.2	3.23	NA	SANDY SILT to CLAYEY SILT
6.0	15.1	22.3	3.13	NA	SANDY SILT to CLAYEY SILT
7.0	17.8	25.1	5.53	NA	SILTY CLAY TO CLAY
8.0	119.1	161.6	3.31	NA	*CLAYEY SAND to SANDY CLAY
9.0	113.1	147.7	5.01	NA	*SANDY CLAY to SILTY CLAY
10.0	100.6	126.7	5.06	NA	*SANDY CLAY to SILTY CLAY
11.0	109.7	133.6	3.46	NA	*CLAYEY SAND to SANDY CLAY
12.0	100.9	119.1	2.28	NA	SILTY SAND to SANDY SILT
13.0	125.3	143.5	1.46	NA	SAND to SILTY SAND
14.0	129.9	144.6	1.19	NA	SAND to SILTY SAND
15.0	206.8	224.0	.95	NA	SAND to SILTY SAND
16.0	325.3	343.3	.86	NA	SAND to SILTY SAND
17.0	345.4	355.5	.79	NA	SANDY GRAVEL to SAND
18.0	264.8	265.9	1.15	NA	SAND to SILTY SAND
19.0	281.4	276.1	.83	NA	SAND to SILTY SAND
20.0	305.9	293.2	.71	NA	SANDY GRAVEL to SAND
21.0	173.1	162.3	1.79	NA	SAND to SILTY SAND
22.0	145.4	133.4	3.06	NA	*SILTY SAND to CLAYEY SAND
23.0	123.3	110.7	4.18	NA	*CLAYEY SAND to SANDY CLAY
24.0	81.5	71.7	3.95	NA	*CLAYEY SAND to SANDY CLAY
25.0	61.1	52.6	4.40	NA	*SANDY CLAY to SILTY CLAY
26.0	59.9	50.6	4.39	NA	*SANDY CLAY to SILTY CLAY
27.0	58.6	48.5	4.04	NA	*CLAYEY SAND to SANDY CLAY
28.0	46.6	37.9	4.86	NA	*SANDY CLAY to SILTY CLAY
29.0	32.5	25.9	4.25	NA	CLAYEY SILT to SILTY CLAY
30.0	31.8	24.9	4.81	NA	CLAYEY SILT to SILTY CLAY
31.0	29.5	22.7	4.51	NA	CLAYEY SILT to SILTY CLAY
32.0	54.6	41.2	5.85	NA	*SANDY CLAY to SILTY CLAY
33.0	57.6	42.7	6.17	NA	*SANDY CLAY to SILTY CLAY
34.0	46.0	33.5	8.62	NA	*SANDY CLAY to SILTY CLAY
35.0	51.1	36.5	7.08	NA	*SANDY CLAY to SILTY CLAY
36.0	40.3	28.3	7.35	NA	*SANDY CLAY to SILTY CLAY
37.0	37.8	26.1	6.26	NA	*SANDY CLAY to SILTY CLAY
38.0	32.7	22.2	6.42	NA	*SANDY CLAY to SILTY CLAY
39.0	42.1	28.1	5.90	NA	*SANDY CLAY to SILTY CLAY
40.0	41.1	27.0	5.19	NA	CLAYEY SILT to SILTY CLAY

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

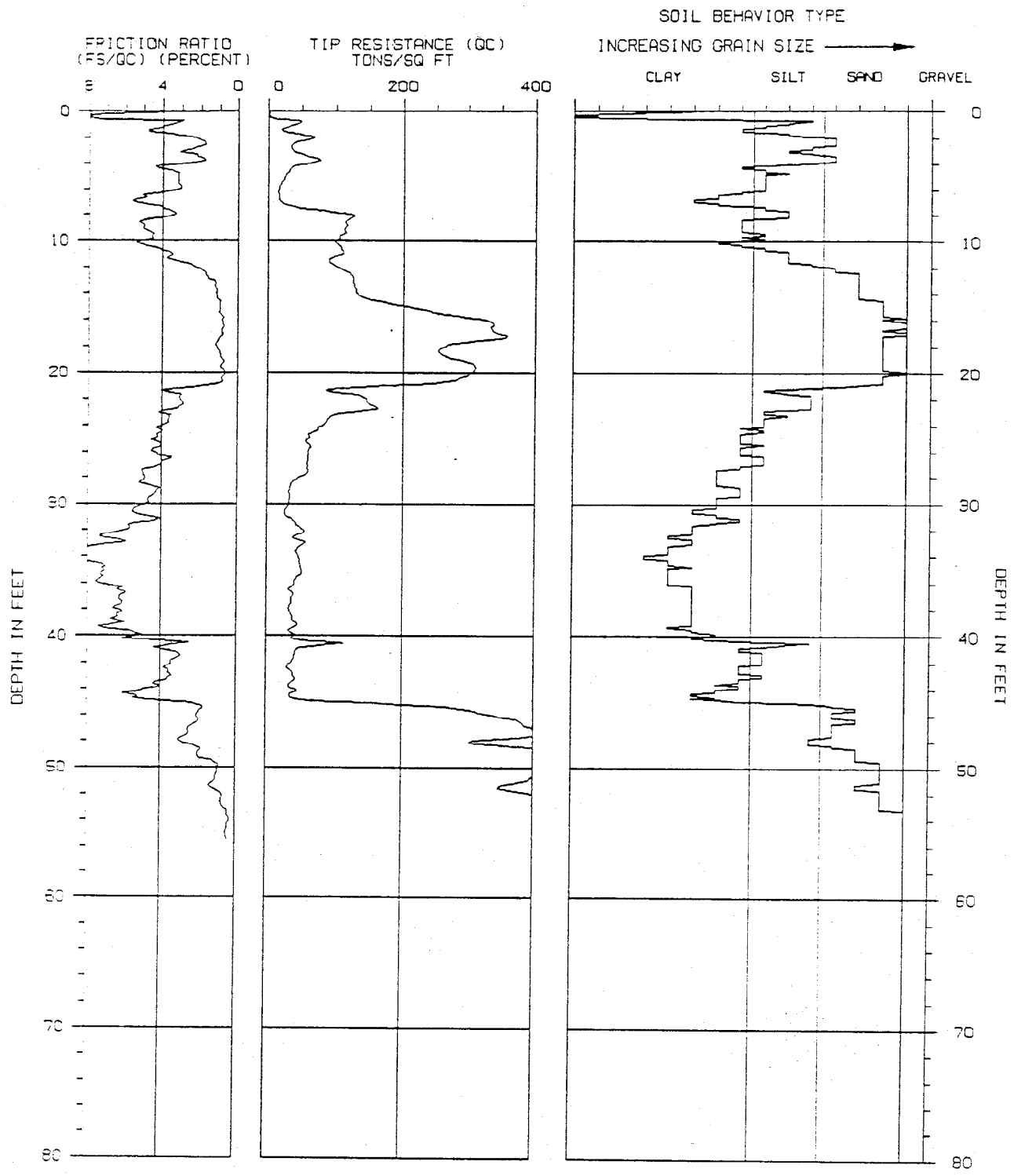
MCK0002704

SOUNDING : CPT-5

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
41.0	46.0	29.7	4.10	NA	CLAYEY SILT to SILTY CLAY
42.0	36.1	23.0	3.46	NA	SANDY SILT to CLAYEY SILT
43.0	39.8	24.9	3.42	NA	SANDY SILT to CLAYEY SILT
44.0	38.9	23.9	4.80	NA	CLAYEY SILT to SILTY CLAY
45.0	105.9	64.2	2.87	NA	SANDY SILT to CLAYEY SILT
46.0	338.5	202.0	2.11	NA	SILTY SAND to SANDY SILT
47.0	401.1	235.7	2.53	NA	*SILTY SAND to CLAYEY SAND
48.0	310.2	179.4	2.98	NA	*SILTY SAND to CLAYEY SAND
49.0	442.4	254.2	2.06	NA	*SAND to SILTY SAND
50.0	434.7	248.0	1.01	NA	SAND to SILTY SAND
51.0	392.4	222.4	1.12	NA	SAND to SILTY SAND
52.0	395.9	222.9	.75	NA	SAND to SILTY SAND
53.0	402.2	224.9	.69	NA	SAND to SILTY SAND
54.0	424.5	235.8	.35	NA	SANDY GRAVEL to SAND
55.0	455.3	251.2	.53	NA	SANDY GRAVEL to SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002705



ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 48.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-5

PROJECT NAME : HLA/MCKESSON

PROJECT NUMBER : 9110-09504

LOCATION : SANTA FE SPRINGS

DATE : 04-09-1991

THE EARTH TECHNOLOGY CORPORATION

MCK0002706

CONE PENETRATION TEST

SOUNDING : CPT-6
PROJECT : HLA/MCKESSON
LOCATION : SANTA FE SPRINGS
DATE : 04-10-1991

PROJECT NO : 9110-09504
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : EC/DH/MR

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	.0	.0	.00	NA	
1.0	.0	.0	.00	NA	
1.5	82.9	172.7	2.84	NA	*SILTY SAND to CLAYEY SAND
2.0	35.1	68.7	4.44	NA	*SANDY CLAY to SILTY CLAY
2.5	27.4	50.9	5.26	NA	*SANDY CLAY to SILTY CLAY
3.0	21.1	37.6	5.27	NA	*SANDY CLAY to SILTY CLAY
3.5	14.3	24.5	4.76	NA	CLAYEY SILT to SILTY CLAY
4.0	14.3	23.7	5.10	NA	CLAYEY SILT to SILTY CLAY
4.5	15.8	25.4	5.02	NA	CLAYEY SILT to SILTY CLAY
5.0	14.5	22.7	5.49	NA	SILTY CLAY TO CLAY
5.5	15.7	23.9	5.22	NA	CLAYEY SILT to SILTY CLAY
6.0	15.3	22.6	4.88	NA	CLAYEY SILT to SILTY CLAY
6.5	13.5	19.5	5.02	NA	CLAYEY SILT to SILTY CLAY
7.0	12.9	18.2	4.50	NA	CLAYEY SILT to SILTY CLAY
7.5	13.1	18.1	5.20	NA	CLAYEY SILT to SILTY CLAY
8.0	16.6	22.5	5.85	NA	SILTY CLAY TO CLAY
8.5	27.6	36.7	4.59	NA	*SANDY CLAY to SILTY CLAY
9.0	38.2	49.9	4.93	NA	*SANDY CLAY to SILTY CLAY
9.5	45.1	57.8	5.79	NA	*SANDY CLAY to SILTY CLAY
10.0	44.9	56.6	5.81	NA	*SANDY CLAY to SILTY CLAY
10.5	42.8	53.0	6.80	NA	*SANDY CLAY to SILTY CLAY
11.0	39.9	48.6	6.98	NA	*SANDY CLAY to SILTY CLAY
11.5	26.8	32.1	7.15	NA	*SANDY CLAY to SILTY CLAY
12.0	27.5	32.4	6.14	NA	*SANDY CLAY to SILTY CLAY
12.5	24.8	28.9	5.58	NA	*SANDY CLAY to SILTY CLAY
13.0	19.3	22.1	4.87	NA	CLAYEY SILT to SILTY CLAY
13.5	15.6	17.6	4.49	NA	CLAYEY SILT to SILTY CLAY
14.0	16.1	17.9	6.66	NA	SILTY CLAY TO CLAY
14.5	14.6	16.1	7.65	NA	SILTY CLAY TO CLAY
15.0	26.8	29.1	7.69	NA	*SANDY CLAY to SILTY CLAY
15.5	33.8	36.1	5.99	NA	*SANDY CLAY to SILTY CLAY
16.0	77.8	82.1	3.63	NA	*CLAYEY SAND to SANDY CLAY
16.5	149.9	156.2	1.62	NA	SAND to SILTY SAND
17.0	141.3	145.5	1.73	NA	SAND to SILTY SAND
17.5	98.6	100.2	3.71	NA	*CLAYEY SAND to SANDY CLAY
18.0	140.6	141.2	1.46	NA	SAND to SILTY SAND
18.5	132.7	131.7	1.35	NA	SAND to SILTY SAND
19.0	223.1	218.8	1.00	NA	SAND to SILTY SAND
19.5	320.7	310.9	.85	NA	SAND to SILTY SAND
20.0	383.3	367.5	1.20	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
TOP 1.0 FT IS DISTURBED SOIL
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002707

SOUNDING : CPT-6

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
20.5	319.6	302.9	1.64	NA	SAND to SILTY SAND
21.0	240.5	225.5	2.06	NA	SAND to SILTY SAND
21.5	281.3	260.8	1.33	NA	SAND to SILTY SAND
22.0	506.7	464.8	.72	NA	SANDY GRAVEL to SAND
22.5	546.1	495.6	.73	NA	SANDY GRAVEL to SAND
23.0	536.8	482.0	.69	NA	SANDY GRAVEL to SAND
23.5	519.7	461.8	.57	NA	SANDY GRAVEL to SAND
24.0	546.6	480.7	.78	NA	SANDY GRAVEL to SAND
24.5	488.7	425.4	.72	NA	SANDY GRAVEL to SAND
25.0	385.6	332.3	.93	NA	SAND to SILTY SAND
25.5	414.2	353.3	.64	NA	SANDY GRAVEL to SAND
26.0	441.7	373.1	1.01	NA	SAND to SILTY SAND
26.5	419.4	350.8	1.27	NA	SAND to SILTY SAND
27.0	128.5	106.5	3.53	NA	*CLAYEY SAND to SANDY CLAY
27.5	106.1	87.0	3.28	NA	*CLAYEY SAND to SANDY CLAY
28.0	90.3	73.4	2.88	NA	SANDY SILT to CLAYEY SILT
28.5	74.7	60.2	2.54	NA	SILTY SAND to SANDY SILT
29.0	66.5	53.0	1.80	NA	SILTY SAND to SANDY SILT
29.5	83.9	66.3	2.83	NA	SANDY SILT to CLAYEY SILT
30.0	106.9	83.7	2.56	NA	SILTY SAND to SANDY SILT
30.5	100.5	77.9	5.27	NA	*SANDY CLAY to SILTY CLAY
31.0	56.0	43.0	4.76	NA	*SANDY CLAY to SILTY CLAY
31.5	50.2	38.2	3.40	NA	SANDY SILT to CLAYEY SILT
32.0	53.1	40.0	4.25	NA	CLAYEY SILT to SILTY CLAY
32.5	52.0	38.9	4.60	NA	*SANDY CLAY to SILTY CLAY
33.0	65.5	48.5	3.86	NA	SANDY SILT to CLAYEY SILT
33.5	76.8	56.4	5.03	NA	*SANDY CLAY to SILTY CLAY
34.0	82.3	59.9	6.25	NA	*SANDY CLAY to SILTY CLAY
34.5	80.5	58.1	7.20	NA	*SANDY CLAY to SILTY CLAY
35.0	82.4	59.0	7.48	NA	*SANDY CLAY to SILTY CLAY
35.5	52.0	36.9	7.95	NA	*SANDY CLAY to SILTY CLAY
36.0	55.2	38.8	5.54	NA	*SANDY CLAY to SILTY CLAY
36.5	55.3	38.6	5.33	NA	*SANDY CLAY to SILTY CLAY
37.0	49.7	34.4	3.59	NA	SANDY SILT to CLAYEY SILT
37.5	53.6	36.8	4.46	NA	CLAYEY SILT to SILTY CLAY
38.0	55.5	37.8	4.37	NA	CLAYEY SILT to SILTY CLAY
38.5	51.9	35.0	4.11	NA	CLAYEY SILT to SILTY CLAY
39.0	55.1	36.9	4.16	NA	CLAYEY SILT to SILTY CLAY
39.5	52.8	35.0	4.55	NA	CLAYEY SILT to SILTY CLAY
40.0	52.1	34.3	4.47	NA	CLAYEY SILT to SILTY CLAY
40.5	45.1	29.4	4.95	NA	CLAYEY SILT to SILTY CLAY
41.0	41.0	26.5	4.22	NA	CLAYEY SILT to SILTY CLAY
41.5	43.0	27.6	4.55	NA	CLAYEY SILT to SILTY CLAY
42.0	32.9	20.9	4.56	NA	CLAYEY SILT to SILTY CLAY
42.5	31.2	19.7	4.43	NA	CLAYEY SILT to SILTY CLAY
43.0	31.3	19.6	4.08	NA	CLAYEY SILT to SILTY CLAY
43.5	27.9	17.4	4.54	NA	CLAYEY SILT to SILTY CLAY
44.0	29.0	17.9	4.35	NA	CLAYEY SILT to SILTY CLAY
44.5	32.9	20.1	4.32	NA	CLAYEY SILT to SILTY CLAY
45.0	38.0	23.0	4.70	NA	CLAYEY SILT to SILTY CLAY

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

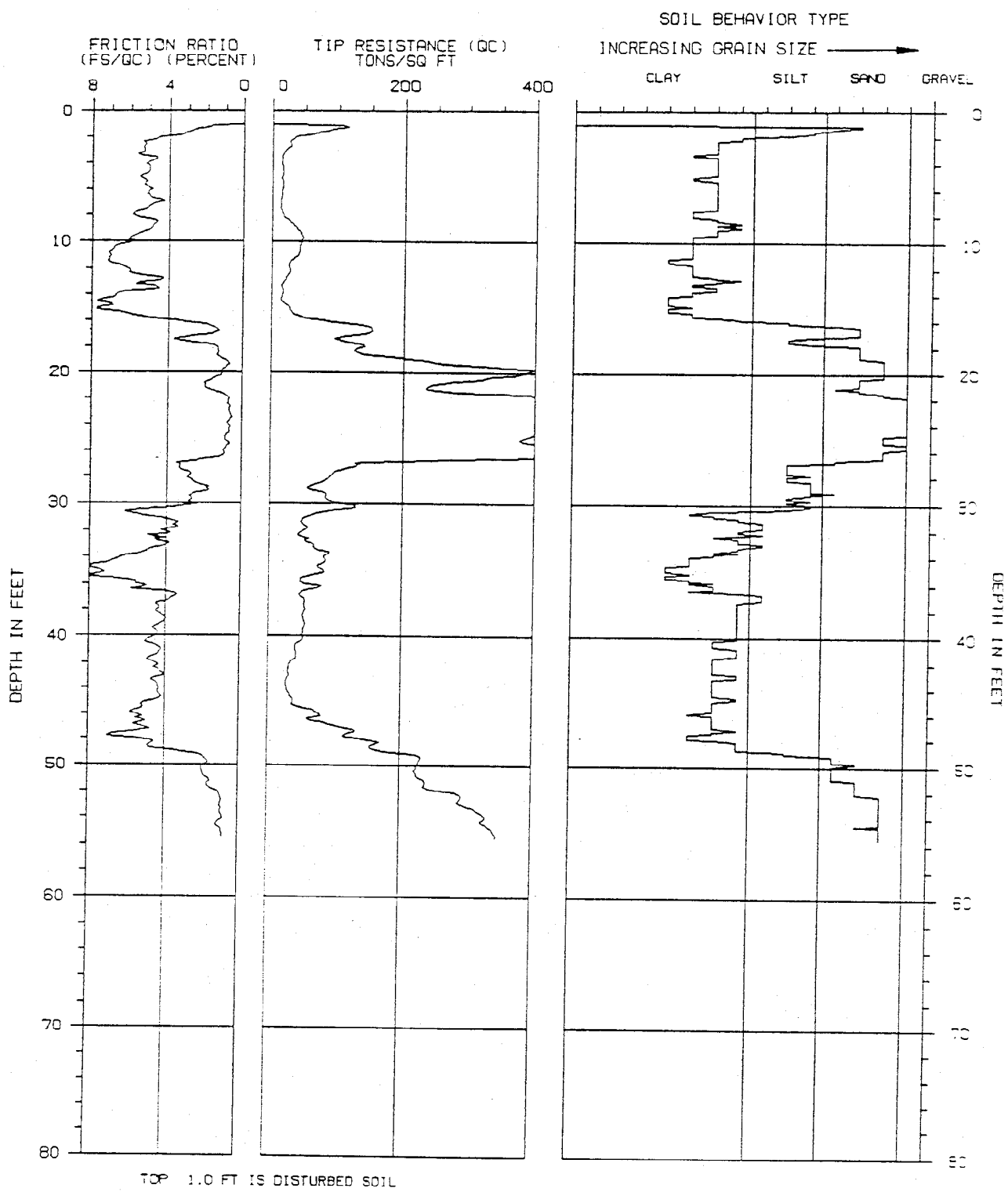
MCK0002708

SOUNDING : CPT-6

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
45.5	54.4	32.7	5.10	NA	*SANDY CLAY to SILTY CLAY
46.0	78.8	47.1	5.56	NA	*SANDY CLAY to SILTY CLAY
46.5	64.7	38.3	5.05	NA	*SANDY CLAY to SILTY CLAY
47.0	106.1	62.3	5.24	NA	*SANDY CLAY to SILTY CLAY
47.5	125.3	73.1	6.14	NA	*SANDY CLAY to SILTY CLAY
48.0	137.3	79.4	5.61	NA	*SANDY CLAY to SILTY CLAY
48.5	157.7	90.9	4.82	NA	*SANDY CLAY to SILTY CLAY
49.0	184.0	105.7	3.09	NA	*CLAYEY SAND to SANDY CLAY
49.5	231.0	132.2	1.86	NA	SILTY SAND to SANDY SILT
50.0	226.7	129.4	1.89	NA	SILTY SAND to SANDY SILT
50.5	223.0	126.9	2.01	NA	SILTY SAND to SANDY SILT
51.0	233.5	132.3	1.70	NA	SAND to SILTY SAND
51.5	237.7	134.3	1.74	NA	SAND to SILTY SAND
52.0	273.4	153.9	1.17	NA	SAND to SILTY SAND
52.5	293.7	164.8	.96	NA	SAND to SILTY SAND
53.0	295.4	165.2	1.00	NA	SAND to SILTY SAND
53.5	318.7	177.6	1.00	NA	SAND to SILTY SAND
54.0	331.4	184.1	.84	NA	SAND to SILTY SAND
54.5	330.8	183.2	1.19	NA	SAND to SILTY SAND
55.0	343.0	189.3	.92	NA	SAND to SILTY SAND
55.5	346.0	190.3	.87	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002709



ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 48.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-6

PROJECT NAME : HLA/MCKESSON

PROJECT NUMBER : 9110-09504

LOCATION : SANTA FE SPRINGS

DATE : 04-10-1991

THE EARTH TECHNOLOGY CORPORATION

MCK0002710

CONE PENETRATION TEST

SOUNDING : CPT-7
PROJECT : HLA/MC KESSON-II
LOCATION : SANTA FE SPRGS
DATE : 09-10-1991

PROJECT NO : 92-380-09501
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : MS/AF

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	.0	.0	.00	NA	
1.0	.0	.0	.00	NA	
1.5	.0	.0	.00	NA	
2.0	.0	.0	.00	NA	
2.5	.0	.0	.00	NA	
3.0	.0	.0	.00	NA	
3.5	.0	.0	.00	NA	
4.0	.0	.0	.00	NA	
4.5	.0	.0	.00	NA	
5.0	.0	.0	.00	NA	
5.5	.0	.0	.00	NA	
6.0	.0	.0	.00	NA	
6.5	.0	.0	.00	NA	
7.0	.0	.0	.00	NA	
7.5	49.8	68.9	1.78	NA	SILTY SAND to SANDY SILT
8.0	80.4	109.1	3.07	NA	*CLAYEY SAND to SANDY CLAY
8.5	64.9	86.3	4.62	NA	*SANDY CLAY to SILTY CLAY
9.0	54.5	71.2	4.24	NA	*CLAYEY SAND to SANDY CLAY
9.5	40.8	52.4	3.88	NA	SANDY SILT to CLAYEY SILT
10.0	30.8	38.7	2.89	NA	SANDY SILT to CLAYEY SILT
10.5	51.0	63.2	3.44	NA	SANDY SILT to CLAYEY SILT
11.0	48.0	58.5	5.69	NA	*SANDY CLAY to SILTY CLAY
11.5	53.0	63.6	4.72	NA	*SANDY CLAY to SILTY CLAY
12.0	66.1	78.0	4.09	NA	*CLAYEY SAND to SANDY CLAY
12.5	73.2	85.1	3.73	NA	*CLAYEY SAND to SANDY CLAY
13.0	113.0	129.5	1.60	NA	SAND to SILTY SAND
13.5	148.0	167.1	1.57	NA	SAND to SILTY SAND
14.0	136.8	152.4	1.51	NA	SAND to SILTY SAND
14.5	174.6	191.7	1.43	NA	SAND to SILTY SAND
15.0	214.2	232.1	1.35	NA	SAND to SILTY SAND
15.5	219.9	235.1	.80	NA	SAND to SILTY SAND
16.0	236.2	249.3	.86	NA	SAND to SILTY SAND
16.5	255.9	266.7	.80	NA	SAND to SILTY SAND
17.0	288.5	296.9	1.17	NA	SAND to SILTY SAND
17.5	253.1	257.3	.64	NA	SANDY GRAVEL to SAND
18.0	274.3	275.5	1.04	NA	SAND to SILTY SAND
18.5	360.8	358.0	.74	NA	SANDY GRAVEL to SAND
19.0	373.5	366.4	.81	NA	SANDY GRAVEL to SAND
19.5	417.4	404.7	.78	NA	SANDY GRAVEL to SAND
20.0	472.3	452.8	.80	NA	SANDY GRAVEL to SAND

NA = NOT APPLICABLE
TOP 7.0 FT IS DISTURBED SOIL
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

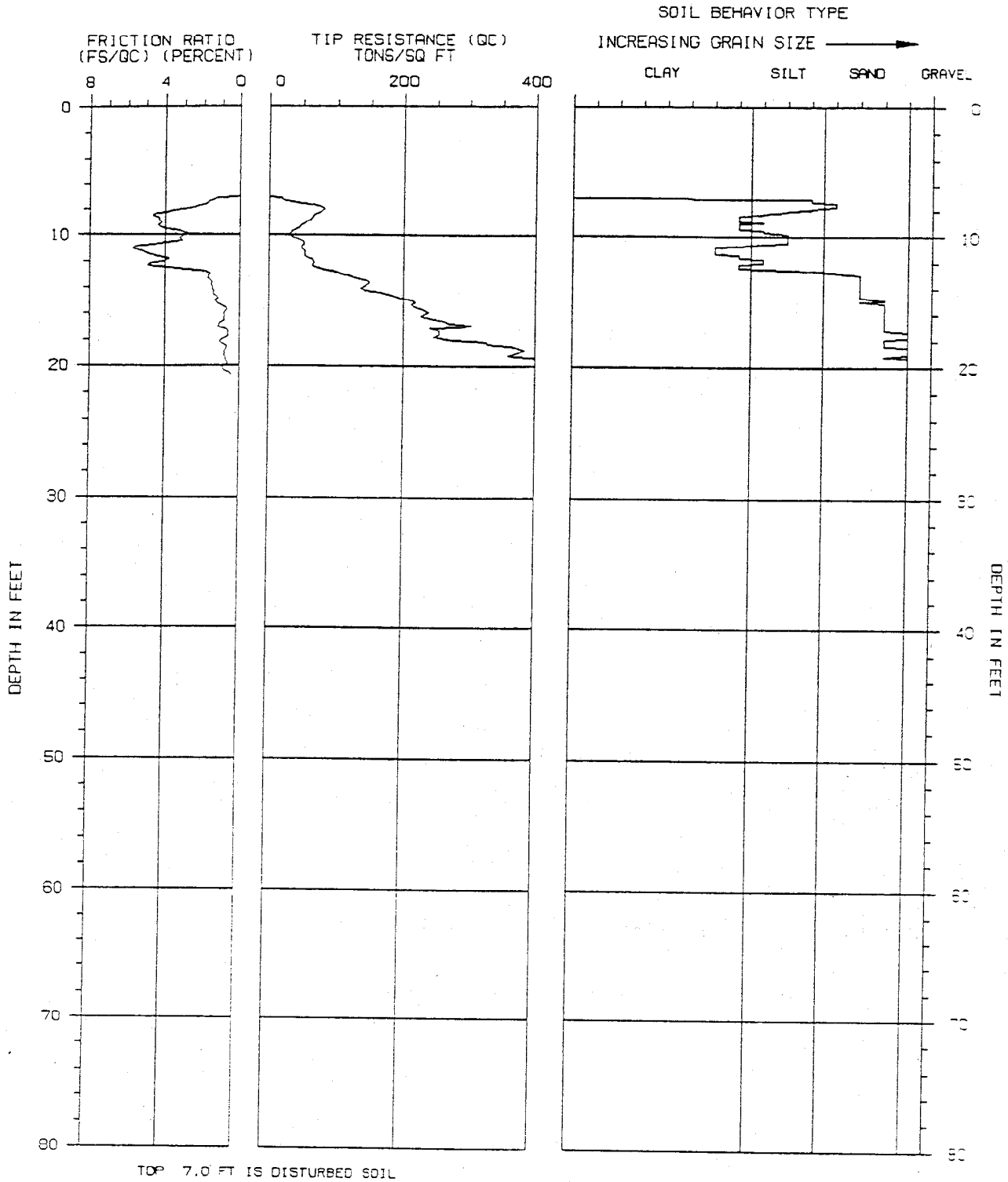
MCK0002711

SOUNDING : CPT-7

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
20.5	442.9	419.8	.49	NA	SANDY GRAVEL to SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002712



ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 48.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-7

PROJECT NAME : HLA/MC KESSON-II

PROJECT NUMBER : 92-380-09501

LOCATION : SANTA FE SPRGS

DATE : 09-10-1991

THE EARTH TECHNOLOGY CORPORATION

MCK0002713

CONE PENETRATION TEST

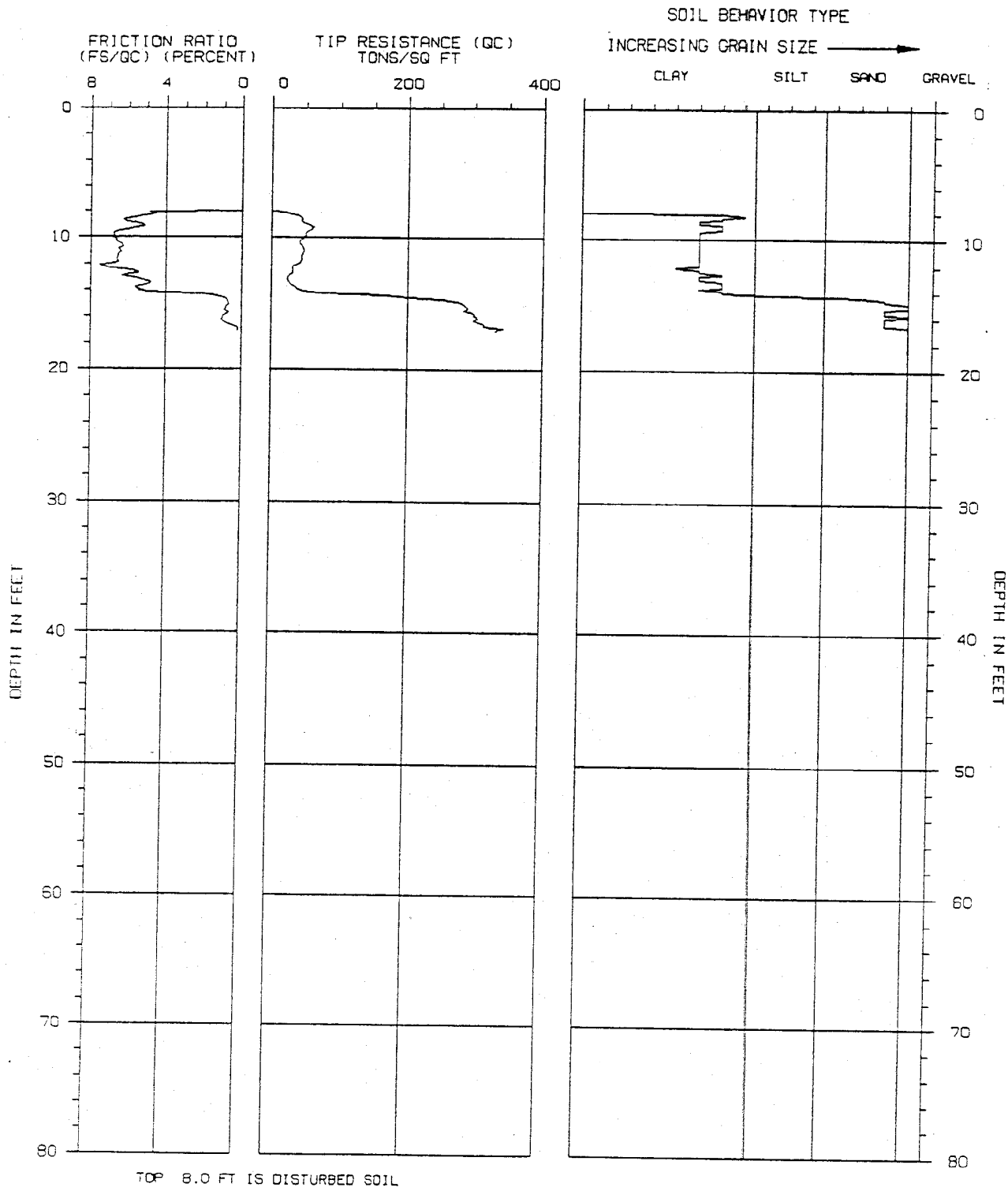
SOUNDING : CPT-8
PROJECT : HLA/MC KESSON-II
LOCATION : SANTA FE SPRGS
DATE : 09-10-1991

PROJECT NO : 92-380-09501
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : MS/AF

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	.0	.0	.00	NA	
1.0	.0	.0	.00	NA	
1.5	.0	.0	.00	NA	
2.0	.0	.0	.00	NA	
2.5	.0	.0	.00	NA	
3.0	.0	.0	.00	NA	
3.5	.0	.0	.00	NA	
4.0	.0	.0	.00	NA	
4.5	.0	.0	.00	NA	
5.0	.0	.0	.00	NA	
5.5	.0	.0	.00	NA	
6.0	.0	.0	.00	NA	
6.5	.0	.0	.00	NA	
7.0	.0	.0	.00	NA	
7.5	.0	.0	.00	NA	
8.0	.0	.0	.00	NA	
8.5	44.1	58.6	5.61	NA	*SANDY CLAY to SILTY CLAY
9.0	51.1	66.7	5.29	NA	*SANDY CLAY to SILTY CLAY
9.5	54.2	69.4	6.40	NA	*SANDY CLAY to SILTY CLAY
10.0	47.4	59.8	6.84	NA	*SANDY CLAY to SILTY CLAY
10.5	41.2	51.1	6.37	NA	*SANDY CLAY to SILTY CLAY
11.0	46.8	57.0	6.40	NA	*SANDY CLAY to SILTY CLAY
11.5	43.7	52.4	6.56	NA	*SANDY CLAY to SILTY CLAY
12.0	38.2	45.1	6.95	NA	*SANDY CLAY to SILTY CLAY
12.5	30.7	35.7	5.74	NA	*SANDY CLAY to SILTY CLAY
13.0	22.6	25.9	6.09	NA	*SANDY CLAY to SILTY CLAY
13.5	27.8	31.3	4.84	NA	CLAYEY SILT to SILTY CLAY
14.0	42.1	46.9	5.25	NA	*SANDY CLAY to SILTY CLAY
14.5	201.6	221.4	1.17	NA	SAND to SILTY SAND
15.0	283.1	306.7	.70	NA	SANDY GRAVEL to SAND
15.5	285.0	304.8	.91	NA	SAND to SILTY SAND
16.0	304.5	321.4	1.01	NA	SAND to SILTY SAND
16.5	313.4	326.6	.85	NA	SAND to SILTY SAND
17.0	331.5	341.1	.25	NA	SANDY GRAVEL to SAND

NA = NOT APPLICABLE
TOP 8.0 FT IS DISTURBED SOIL
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002714



ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 48.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-8

PROJECT NAME : HLA/MC KESSON-II

PROJECT NUMBER : 92-380-09501

LOCATION : SANTA FE SPRGS

DATE : 09-10-1991

THE EARTH TECHNOLOGY CORPORATION

MCK0002715

CONE PENETRATION TEST

SOUNDING : CPT-9
PROJECT : HLA/MC KESSON-II
LOCATION : SANTA FE SPRGS
DATE : 09-10-1991

PROJECT NO : 92-380-09501
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : MS/AF

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	.0	.0	.00	NA	
1.0	.0	.0	.00	NA	
1.5	.0	.0	.00	NA	
2.0	.0	.0	.00	NA	
2.5	.0	.0	.00	NA	
3.0	.0	.0	.00	NA	
3.5	.0	.0	.00	NA	
4.0	.0	.0	.00	NA	
4.5	.0	.0	.00	NA	
5.0	.0	.0	.00	NA	
5.5	.0	.0	.00	NA	
6.0	.0	.0	.00	NA	
6.5	.0	.0	.00	NA	
7.0	.0	.0	.00	NA	
7.5	.0	.0	.00	NA	
8.0	.0	.0	.00	NA	
8.5	11.3	15.0	1.39	NA	SILTY SAND to SANDY SILT
9.0	38.1	49.7	1.19	NA	SILTY SAND to SANDY SILT
9.5	33.8	43.3	1.42	NA	SILTY SAND to SANDY SILT
10.0	27.3	34.4	2.53	NA	SANDY SILT to CLAYEY SILT
10.5	24.0	29.7	2.85	NA	SANDY SILT to CLAYEY SILT
11.0	47.1	57.3	1.30	NA	SILTY SAND to SANDY SILT
11.5	68.1	81.6	1.70	NA	SILTY SAND to SANDY SILT
12.0	70.4	83.1	1.28	NA	SAND to SILTY SAND
12.5	82.0	95.3	1.17	NA	SAND to SILTY SAND
13.0	135.9	155.7	1.00	NA	SAND to SILTY SAND
13.5	210.9	238.2	.82	NA	SAND to SILTY SAND
14.0	224.0	249.4	1.02	NA	SAND to SILTY SAND
14.5	200.1	219.8	1.08	NA	SAND to SILTY SAND
15.0	166.0	179.9	1.01	NA	SAND to SILTY SAND
15.5	196.5	210.1	1.19	NA	SAND to SILTY SAND
16.0	220.4	232.7	1.02	NA	SAND to SILTY SAND
16.5	219.1	228.3	.95	NA	SAND to SILTY SAND
17.0	227.4	234.0	.76	NA	SAND to SILTY SAND
17.5	369.0	375.1	1.07	NA	SAND to SILTY SAND
18.0	375.9	377.6	.96	NA	SAND to SILTY SAND
18.5	331.4	328.9	1.00	NA	SAND to SILTY SAND
19.0	344.8	338.2	.76	NA	SANDY GRAVEL to SAND
19.5	380.1	368.5	.96	NA	SAND to SILTY SAND
20.0	391.0	374.8	.90	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
TOP 8.0 FT IS DISTURBED SOIL
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

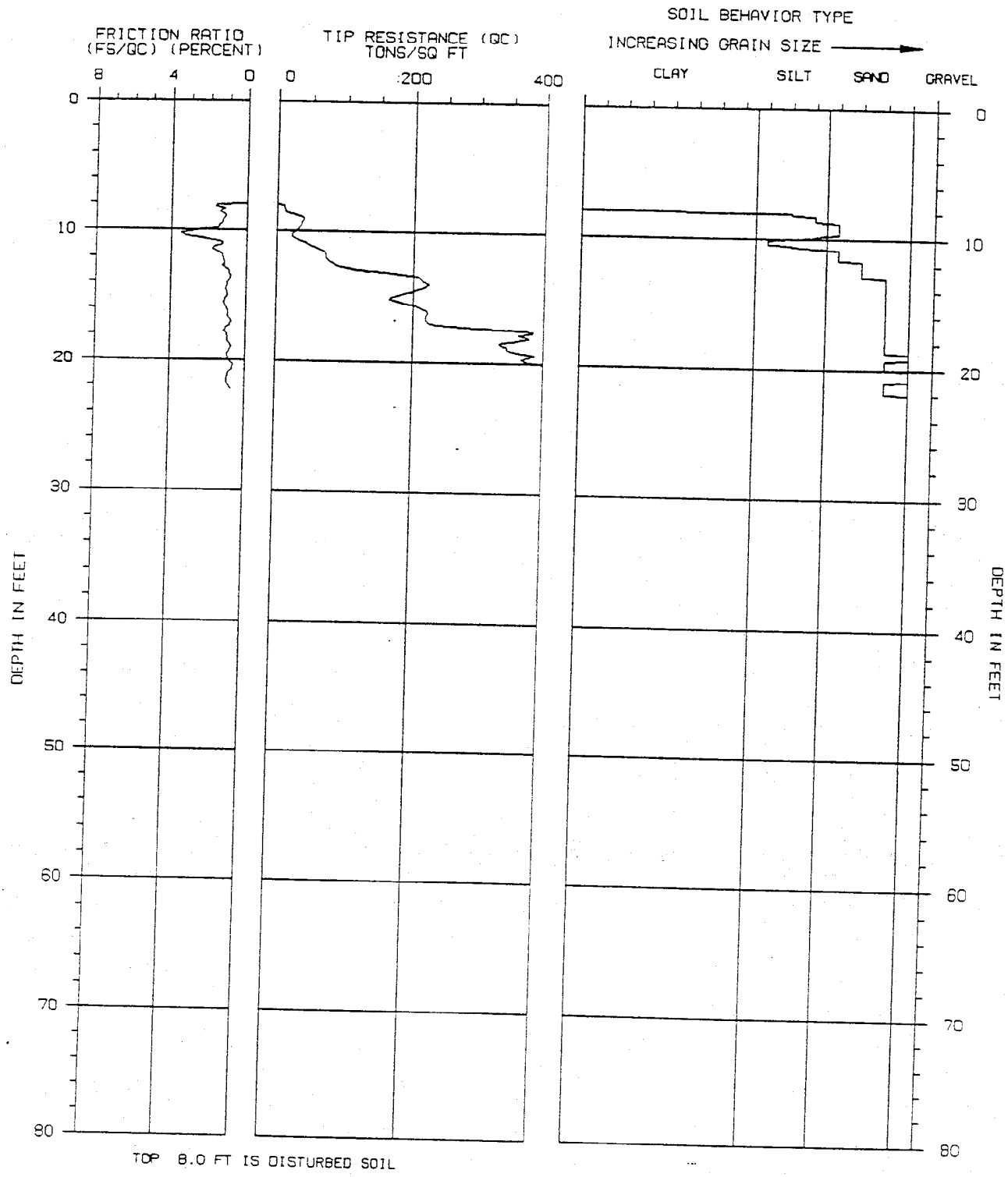
MCK0002716

SOUNDING : CPT-9

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
20.5	437.2	414.4	.71	NA	SANDY GRAVEL to SAND
21.0	422.8	396.3	.92	NA	SAND to SILTY SAND
21.5	410.3	380.4	.97	NA	SAND to SILTY SAND
22.0	436.4	400.3	.86	NA	SANDY GRAVEL to SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002717



ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 48.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-9

PROJECT NAME : HLA/MC KESSON-II

PROJECT NUMBER : 92-380-09501

LOCATION : SANTA FE SPRGS

DATE : 09-10-1991

THE EARTH TECHNOLOGY CORPORATION

MCK0002718

CONE PENETRATION TEST

SOUNDING : CPT-10
PROJECT : HLA/MC KESSON-II
LOCATION : SANTA FE SPRGS
DATE : 09-10-1991

PROJECT NO : 92-380-09501
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : MS/AF

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	.0	.0	.00	NA	
1.0	.0	.0	.00	NA	
1.5	.0	.0	.00	NA	
2.0	35.4	69.4	3.24	NA	SANDY SILT to CLAYEY SILT
2.5	17.9	33.4	.96	NA	SILTY SAND to SANDY SILT
3.0	30.0	53.5	2.27	NA	SILTY SAND to SANDY SILT
3.5	57.8	99.2	3.74	NA	*CLAYEY SAND to SANDY CLAY
4.0	45.0	74.6	3.79	NA	*CLAYEY SAND to SANDY CLAY
4.5	70.4	113.0	1.48	NA	SAND to SILTY SAND
5.0	119.9	187.2	2.52	NA	*SILTY SAND to CLAYEY SAND
5.5	90.9	138.1	5.53	NA	*SANDY CLAY to SILTY CLAY
6.0	91.4	135.4	6.22	NA	*SANDY CLAY to SILTY CLAY
6.5	98.1	141.9	4.98	NA	*SANDY CLAY to SILTY CLAY
7.0	99.9	141.4	3.66	NA	*CLAYEY SAND to SANDY CLAY
7.5	163.9	227.0	1.40	NA	SAND to SILTY SAND
8.0	174.4	236.6	1.33	NA	SAND to SILTY SAND
8.5	168.7	224.4	1.20	NA	SAND to SILTY SAND
9.0	151.0	197.1	1.16	NA	SAND to SILTY SAND
9.5	145.4	186.4	1.10	NA	SAND to SILTY SAND
10.0	162.9	205.3	.92	NA	SAND to SILTY SAND
10.5	169.8	210.3	.70	NA	SAND to SILTY SAND
11.0	195.5	238.2	.71	NA	SAND to SILTY SAND
11.5	206.5	247.6	.80	NA	SAND to SILTY SAND
12.0	210.0	247.8	.87	NA	SAND to SILTY SAND
12.5	225.7	262.4	.99	NA	SAND to SILTY SAND
13.0	244.3	279.9	1.07	NA	SAND to SILTY SAND
13.5	282.3	318.8	.89	NA	SAND to SILTY SAND
14.0	291.7	324.8	.87	NA	SAND to SILTY SAND
14.5	288.9	317.3	1.00	NA	SAND to SILTY SAND
15.0	308.4	334.2	1.20	NA	SAND to SILTY SAND
15.5	309.5	330.9	1.61	NA	SAND to SILTY SAND
16.0	293.9	310.2	1.86	NA	*SAND to SILTY SAND
16.5	345.9	360.5	1.41	NA	SAND to SILTY SAND
17.0	354.3	364.7	1.40	NA	SAND to SILTY SAND
17.5	319.8	325.1	2.07	NA	*SAND to SILTY SAND
18.0	323.1	324.5	1.82	NA	*SAND to SILTY SAND
18.5	365.0	362.2	1.81	NA	*SAND to SILTY SAND
19.0	342.8	336.3	2.20	NA	*SAND to SILTY SAND
19.5	337.3	327.1	1.76	NA	SAND to SILTY SAND
20.0	292.9	280.7	1.59	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
TOP 1.5 FT IS DISTURBED SOIL
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002719

SOUNDING : CPT-10

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
20.5	118.4	112.2	3.32	NA	*CLAYEY SAND to SANDY CLAY
21.0	92.0	86.3	3.09	NA	SANDY SILT to CLAYEY SILT
21.5	72.7	67.4	2.57	NA	SILTY SAND to SANDY SILT
22.0	64.9	59.5	2.29	NA	SILTY SAND to SANDY SILT
22.5	54.3	49.3	2.45	NA	SILTY SAND to SANDY SILT
23.0	45.5	40.8	2.17	NA	SILTY SAND to SANDY SILT
23.5	75.5	67.1	2.86	NA	SANDY SILT to CLAYEY SILT
24.0	70.0	61.5	2.88	NA	SANDY SILT to CLAYEY SILT
24.5	84.4	73.5	2.89	NA	SANDY SILT to CLAYEY SILT
25.0	67.7	58.3	3.27	NA	SANDY SILT to CLAYEY SILT
25.5	49.3	42.1	3.13	NA	SANDY SILT to CLAYEY SILT
26.0	46.2	39.1	2.53	NA	SANDY SILT to CLAYEY SILT
26.5	46.3	38.8	2.57	NA	SANDY SILT to CLAYEY SILT
27.0	39.3	32.5	3.16	NA	SANDY SILT to CLAYEY SILT
27.5	35.6	29.2	2.55	NA	SANDY SILT to CLAYEY SILT
28.0	45.2	36.8	3.15	NA	SANDY SILT to CLAYEY SILT
28.5	36.7	29.5	3.41	NA	SANDY SILT to CLAYEY SILT
29.0	48.0	38.3	3.45	NA	SANDY SILT to CLAYEY SILT
29.5	67.9	53.6	3.14	NA	SANDY SILT to CLAYEY SILT
30.0	60.7	47.5	4.20	NA	*SANDY CLAY to SILTY CLAY
30.5	64.6	50.1	4.81	NA	*SANDY CLAY to SILTY CLAY
31.0	70.7	54.3	4.37	NA	*SANDY CLAY to SILTY CLAY
31.5	67.3	51.3	4.29	NA	*SANDY CLAY to SILTY CLAY
32.0	69.9	52.7	4.43	NA	*SANDY CLAY to SILTY CLAY
32.5	68.1	50.9	4.46	NA	*SANDY CLAY to SILTY CLAY
33.0	73.4	54.4	4.09	NA	*CLAYEY SAND to SANDY CLAY
33.5	58.8	43.2	4.59	NA	*SANDY CLAY to SILTY CLAY
34.0	59.7	43.4	4.52	NA	*SANDY CLAY to SILTY CLAY
34.5	51.5	37.2	4.54	NA	*SANDY CLAY to SILTY CLAY
35.0	48.9	35.0	3.96	NA	CLAYEY SILT to SILTY CLAY
35.5	51.5	36.5	3.36	NA	SANDY SILT to CLAYEY SILT
36.0	46.6	32.8	4.39	NA	CLAYEY SILT to SILTY CLAY
36.5	37.2	25.9	3.82	NA	CLAYEY SILT to SILTY CLAY
37.0	31.9	22.0	3.63	NA	CLAYEY SILT to SILTY CLAY
37.5	30.3	20.7	3.21	NA	SANDY SILT to CLAYEY SILT
38.0	47.2	32.1	4.72	NA	CLAYEY SILT to SILTY CLAY
38.5	42.9	28.9	3.31	NA	SANDY SILT to CLAYEY SILT
39.0	37.7	25.2	3.90	NA	CLAYEY SILT to SILTY CLAY
39.5	32.2	21.3	3.46	NA	CLAYEY SILT to SILTY CLAY
40.0	59.2	38.9	3.65	NA	SANDY SILT to CLAYEY SILT
40.5	175.3	114.3	2.35	NA	SILTY SAND to SANDY SILT
41.0	295.2	190.9	2.00	NA	SILTY SAND to SANDY SILT
41.5	300.2	192.6	2.33	NA	*SILTY SAND to CLAYEY SAND
42.0	348.6	221.8	2.43	NA	*SILTY SAND to CLAYEY SAND
42.5	323.4	204.2	2.59	NA	*SILTY SAND to CLAYEY SAND
43.0	348.2	218.0	2.46	NA	*SILTY SAND to CLAYEY SAND
43.5	346.1	215.0	2.76	NA	*SILTY SAND to CLAYEY SAND
44.0	340.5	209.8	2.96	NA	*SILTY SAND to CLAYEY SAND
44.5	379.1	231.7	2.67	NA	*SILTY SAND to CLAYEY SAND
45.0	409.6	248.4	2.26	NA	*SILTY SAND to CLAYEY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

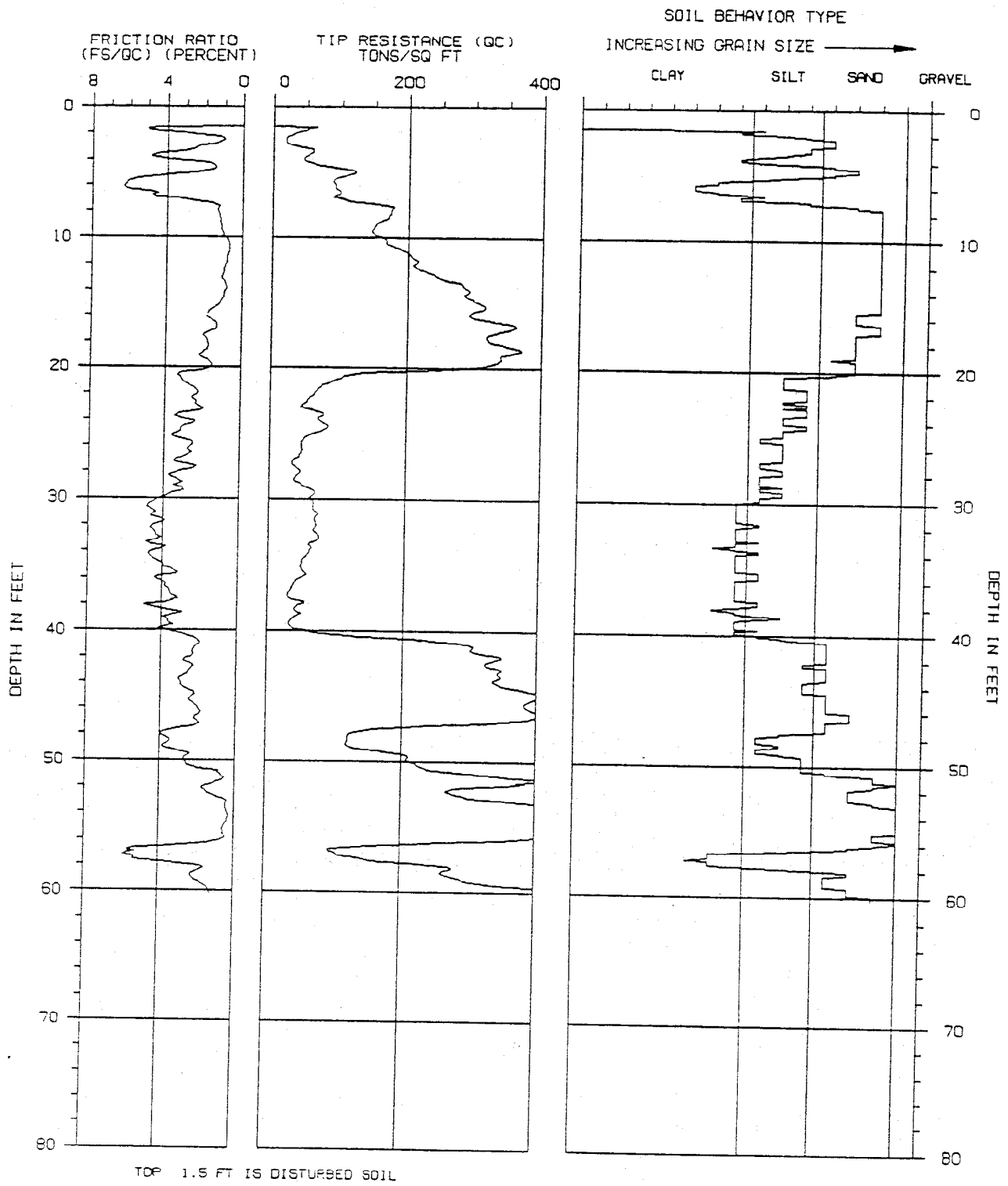
MCK0002720

SOUNDING : CPT-10

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
45.5	384.8	231.5	2.42	NA	*SILTY SAND to CLAYEY SAND
46.0	388.8	232.1	2.05	NA	SAND to SILTY SAND
46.5	404.0	239.2	1.97	NA	SAND to SILTY SAND
47.0	351.0	206.2	2.08	NA	SILTY SAND to SANDY SILT
47.5	176.0	102.6	2.69	NA	SILTY SAND to SANDY SILT
48.0	120.9	70.0	3.96	NA	*CLAYEY SAND to SANDY CLAY
48.5	118.6	68.3	3.46	NA	SANDY SILT to CLAYEY SILT
49.0	128.8	74.0	3.80	NA	*CLAYEY SAND to SANDY CLAY
49.5	206.2	118.0	2.43	NA	SILTY SAND to SANDY SILT
50.0	210.6	120.2	2.72	NA	SILTY SAND to SANDY SILT
50.5	232.7	132.4	2.27	NA	SILTY SAND to SANDY SILT
51.0	319.6	181.1	.87	NA	SAND to SILTY SAND
51.5	425.8	240.5	.72	NA	SAND to SILTY SAND
52.0	297.3	167.4	1.69	NA	SAND to SILTY SAND
52.5	278.9	156.5	1.43	NA	SAND to SILTY SAND
53.0	348.5	194.9	.53	NA	SAND to SILTY SAND
53.5	436.1	243.1	.50	NA	SANDY GRAVEL to SAND
54.0	458.5	254.7	.39	NA	SANDY GRAVEL to SAND
54.5	496.3	274.8	.41	NA	SANDY GRAVEL to SAND
55.0	472.6	260.8	.59	NA	SANDY GRAVEL to SAND
55.5	411.2	226.1	.62	NA	SAND to SILTY SAND
56.0	349.3	191.5	.63	NA	SAND to SILTY SAND
56.5	151.7	82.9	2.78	NA	SILTY SAND to SANDY SILT
57.0	104.4	56.8	5.24	NA	*SANDY CLAY to SILTY CLAY
57.5	148.1	80.4	5.32	NA	*SANDY CLAY to SILTY CLAY
58.0	267.8	144.8	2.36	NA	SILTY SAND to SANDY SILT
58.5	260.2	140.3	2.03	NA	SILTY SAND to SANDY SILT
59.0	292.1	157.0	2.20	NA	SILTY SAND to SANDY SILT
59.5	367.4	196.8	1.64	NA	SAND to SILTY SAND
60.0	466.7	249.1	1.30	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002721



MCK0002722

ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 48.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-10

PROJECT NAME : HLA/MC KESSON-II

PROJECT NUMBER : 92-380-09501

LOCATION : SANTA FE SPRGS

DATE : 09-10-1991

THE EARTH TECHNOLOGY CORPORATION

CONE PENETRATION TEST

SOUNDING : CPT-11
PROJECT : HLA/MCKESSON-II
LOCATION : SANTA FE SPRGS
DATE : 09-10-1991

PROJECT NO : 92-380-09501
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : EC/AF

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	115.2	295.1	1.52	NA	SAND to SILTY SAND
1.0	115.7	261.4	2.97	NA	*SILTY SAND to CLAYEY SAND
1.5	87.0	181.3	2.78	NA	*SILTY SAND to CLAYEY SAND
2.0	83.1	162.8	4.63	NA	*CLAYEY SAND to SANDY CLAY
2.5	70.5	131.2	4.88	NA	*SANDY CLAY to SILTY CLAY
3.0	68.6	122.3	3.05	NA	*SILTY SAND to CLAYEY SAND
3.5	101.9	174.8	1.51	NA	SAND to SILTY SAND
4.0	109.5	181.5	1.83	NA	SAND to SILTY SAND
4.5	93.7	150.6	1.87	NA	SILTY SAND to SANDY SILT
5.0	99.1	154.6	1.96	NA	SILTY SAND to SANDY SILT
5.5	97.9	148.7	4.62	NA	*CLAYEY SAND to SANDY CLAY
6.0	84.3	124.9	6.01	NA	*SANDY CLAY to SILTY CLAY
6.5	70.7	102.3	6.20	NA	*SANDY CLAY to SILTY CLAY
7.0	64.0	90.5	6.98	NA	*SANDY CLAY to SILTY CLAY
7.5	46.8	64.7	7.23	NA	*SANDY CLAY to SILTY CLAY
8.0	44.3	60.1	8.00	NA	*SANDY CLAY to SILTY CLAY
8.5	51.6	68.6	7.13	NA	*SANDY CLAY to SILTY CLAY
9.0	67.4	88.0	6.25	NA	*SANDY CLAY to SILTY CLAY
9.5	77.8	99.7	5.84	NA	*SANDY CLAY to SILTY CLAY
10.0	94.4	119.0	3.86	NA	*CLAYEY SAND to SANDY CLAY
10.5	93.0	115.2	2.59	NA	SILTY SAND to SANDY SILT
11.0	95.2	116.0	2.86	NA	*SILTY SAND to CLAYEY SAND
11.5	74.3	89.1	3.94	NA	*CLAYEY SAND to SANDY CLAY
12.0	76.9	90.8	1.56	NA	SILTY SAND to SANDY SILT
12.5	75.0	87.2	1.45	NA	SAND to SILTY SAND
13.0	75.6	86.6	1.30	NA	SAND to SILTY SAND
13.5	76.3	86.2	1.13	NA	SAND to SILTY SAND
14.0	67.3	74.9	1.36	NA	SAND to SILTY SAND
14.5	69.6	76.4	1.15	NA	SAND to SILTY SAND
15.0	100.6	109.0	.94	NA	SAND to SILTY SAND
15.5	95.3	101.9	1.14	NA	SAND to SILTY SAND
16.0	87.1	91.9	1.34	NA	SAND to SILTY SAND
16.5	109.0	113.6	1.07	NA	SAND to SILTY SAND
17.0	135.4	139.3	1.11	NA	SAND to SILTY SAND
17.5	156.8	159.4	1.12	NA	SAND to SILTY SAND
18.0	201.3	202.2	1.10	NA	SAND to SILTY SAND
18.5	213.9	212.3	1.39	NA	SAND to SILTY SAND
19.0	244.0	239.4	1.25	NA	SAND to SILTY SAND
19.5	298.0	288.9	1.18	NA	SAND to SILTY SAND
20.0	278.2	266.6	1.34	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002723

SOUNDING : CPT-11

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
20.5	304.5	288.7	1.38	NA	SAND to SILTY SAND
21.0	327.2	306.7	1.63	NA	SAND to SILTY SAND
21.5	351.6	326.0	1.66	NA	SAND to SILTY SAND
22.0	341.1	312.9	2.09	NA	*SAND to SILTY SAND
22.5	339.0	307.6	1.68	NA	SAND to SILTY SAND
23.0	276.3	248.1	1.80	NA	SAND to SILTY SAND
23.5	153.9	136.8	2.15	NA	SILTY SAND to SANDY SILT
24.0	58.4	51.4	2.66	NA	SANDY SILT to CLAYEY SILT
24.5	61.5	53.5	3.03	NA	SANDY SILT to CLAYEY SILT
25.0	81.4	70.2	3.54	NA	*CLAYEY SAND to SANDY CLAY
25.5	65.9	56.2	3.39	NA	SANDY SILT to CLAYEY SILT
26.0	58.5	49.4	3.74	NA	SANDY SILT to CLAYEY SILT
26.5	64.1	53.6	4.81	NA	*SANDY CLAY to SILTY CLAY
27.0	69.9	57.9	3.58	NA	SANDY SILT to CLAYEY SILT
27.5	72.3	59.3	4.97	NA	*SANDY CLAY to SILTY CLAY
28.0	67.7	55.0	4.72	NA	*SANDY CLAY to SILTY CLAY
28.5	49.2	39.6	4.58	NA	*SANDY CLAY to SILTY CLAY
29.0	42.6	34.0	3.92	NA	CLAYEY SILT to SILTY CLAY
29.5	39.4	31.1	3.63	NA	SANDY SILT to CLAYEY SILT
30.0	36.8	28.8	3.67	NA	SANDY SILT to CLAYEY SILT
30.5	33.6	26.0	3.87	NA	CLAYEY SILT to SILTY CLAY
31.0	30.7	23.6	4.10	NA	CLAYEY SILT to SILTY CLAY
31.5	28.9	22.0	3.74	NA	CLAYEY SILT to SILTY CLAY
32.0	34.1	25.7	3.04	NA	SANDY SILT to CLAYEY SILT
32.5	53.7	40.1	3.90	NA	SANDY SILT to CLAYEY SILT
33.0	57.2	42.4	4.71	NA	*SANDY CLAY to SILTY CLAY
33.5	76.2	56.0	5.29	NA	*SANDY CLAY to SILTY CLAY
34.0	78.5	57.2	6.21	NA	*SANDY CLAY to SILTY CLAY
34.5	63.1	45.6	5.52	NA	*SANDY CLAY to SILTY CLAY
35.0	65.2	46.6	4.20	NA	*SANDY CLAY to SILTY CLAY
35.5	57.1	40.5	5.91	NA	*SANDY CLAY to SILTY CLAY
36.0	39.6	27.8	4.59	NA	CLAYEY SILT to SILTY CLAY
36.5	37.0	25.8	4.21	NA	CLAYEY SILT to SILTY CLAY
37.0	50.7	35.1	4.18	NA	CLAYEY SILT to SILTY CLAY
37.5	48.4	33.2	5.18	NA	*SANDY CLAY to SILTY CLAY
38.0	47.2	32.1	4.88	NA	*SANDY CLAY to SILTY CLAY
38.5	45.5	30.7	5.02	NA	*SANDY CLAY to SILTY CLAY
39.0	78.6	52.5	4.58	NA	*SANDY CLAY to SILTY CLAY
39.5	90.7	60.1	4.76	NA	*SANDY CLAY to SILTY CLAY
40.0	260.1	171.1	2.27	NA	SILTY SAND to SANDY SILT
40.5	237.3	154.7	4.51	NA	*CLAYEY SAND to SANDY CLAY
41.0	192.9	124.3	3.96	NA	*CLAYEY SAND to SANDY CLAY
41.5	137.9	88.5	3.93	NA	*CLAYEY SAND to SANDY CLAY
42.0	263.0	167.4	2.26	NA	SILTY SAND to SANDY SILT
42.5	318.8	201.3	2.40	NA	*SILTY SAND to CLAYEY SAND
43.0	354.7	222.1	1.99	NA	SAND to SILTY SAND
43.5	360.9	224.2	1.94	NA	SAND to SILTY SAND
44.0	392.2	241.7	1.73	NA	SAND to SILTY SAND
44.5	279.5	170.8	1.91	NA	SAND to SILTY SAND
45.0	196.9	119.4	3.06	NA	*SILTY SAND to CLAYEY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

MCK0002724

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
45.5	221.2	133.1	2.86	NA	*SILTY SAND to CLAYEY SAND
46.0	174.3	104.0	3.14	NA	*CLAYEY SAND to SANDY CLAY
46.5	196.3	116.2	2.56	NA	SILTY SAND to SANDY SILT
47.0	345.7	203.1	2.02	NA	SILTY SAND to SANDY SILT
47.5	397.6	231.8	2.36	NA	*SILTY SAND to CLAYEY SAND
48.0	431.7	249.7	2.21	NA	*SILTY SAND to CLAYEY SAND
48.5	447.3	257.8	1.82	NA	SAND to SILTY SAND
49.0	449.9	258.4	2.34	NA	*SILTY SAND to CLAYEY SAND
49.5	463.5	265.4	2.14	NA	*SILTY SAND to CLAYEY SAND
50.0	468.2	267.2	1.93	NA	SAND to SILTY SAND
50.5	439.1	249.7	2.60	NA	*SILTY SAND to CLAYEY SAND
51.0	314.1	178.1	3.44	NA	*CLAYEY SAND to SANDY CLAY
51.5	360.4	203.6	1.70	NA	SAND to SILTY SAND
52.0	396.8	223.4	2.00	NA	SAND to SILTY SAND
52.5	382.5	214.6	1.14	NA	SAND to SILTY SAND
53.0	389.1	217.6	1.19	NA	SAND to SILTY SAND
53.5	466.9	260.2	1.57	NA	SAND to SILTY SAND
54.0	472.9	262.7	2.01	NA	*SAND to SILTY SAND
54.5	363.0	201.0	1.64	NA	SAND to SILTY SAND
55.0	268.2	148.0	2.38	NA	SILTY SAND to SANDY SILT
55.5	407.3	224.0	1.53	NA	SAND to SILTY SAND
56.0	422.8	231.8	.69	NA	SAND to SILTY SAND
56.5	492.4	269.0	.55	NA	SANDY GRAVEL to SAND
57.0	474.0	258.1	.60	NA	SANDY GRAVEL to SAND
57.5	448.5	243.4	.57	NA	SANDY GRAVEL to SAND
58.0	355.1	192.1	.44	NA	SANDY GRAVEL to SAND
58.5	244.0	131.6	1.54	NA	SAND to SILTY SAND
59.0	259.6	139.5	2.04	NA	SILTY SAND to SANDY SILT
59.5	289.0	154.8	1.48	NA	SAND to SILTY SAND
60.0	258.6	138.1	.97	NA	SAND to SILTY SAND
60.5	208.9	111.1	1.75	NA	SILTY SAND to SANDY SILT
61.0	194.6	103.2	1.72	NA	SILTY SAND to SANDY SILT
61.5	191.6	101.3	1.74	NA	SILTY SAND to SANDY SILT
62.0	210.7	111.0	2.41	NA	SILTY SAND to SANDY SILT
62.5	219.6	115.3	2.30	NA	SILTY SAND to SANDY SILT
63.0	227.9	119.3	2.49	NA	SILTY SAND to SANDY SILT
63.5	253.1	132.0	2.29	NA	SILTY SAND to SANDY SILT
64.0	301.3	156.6	2.27	NA	SILTY SAND to SANDY SILT
64.5	336.8	174.5	1.70	NA	SAND to SILTY SAND
65.0	301.3	155.6	1.69	NA	SAND to SILTY SAND
65.5	297.3	153.0	1.83	NA	SAND to SILTY SAND
66.0	137.0	70.3	6.05	NA	*SANDY CLAY to SILTY CLAY
66.5	149.0	76.2	5.50	NA	*SANDY CLAY to SILTY CLAY

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 110 PCF
ASSUMED DEPTH OF WATER TABLE = 48.0 FT

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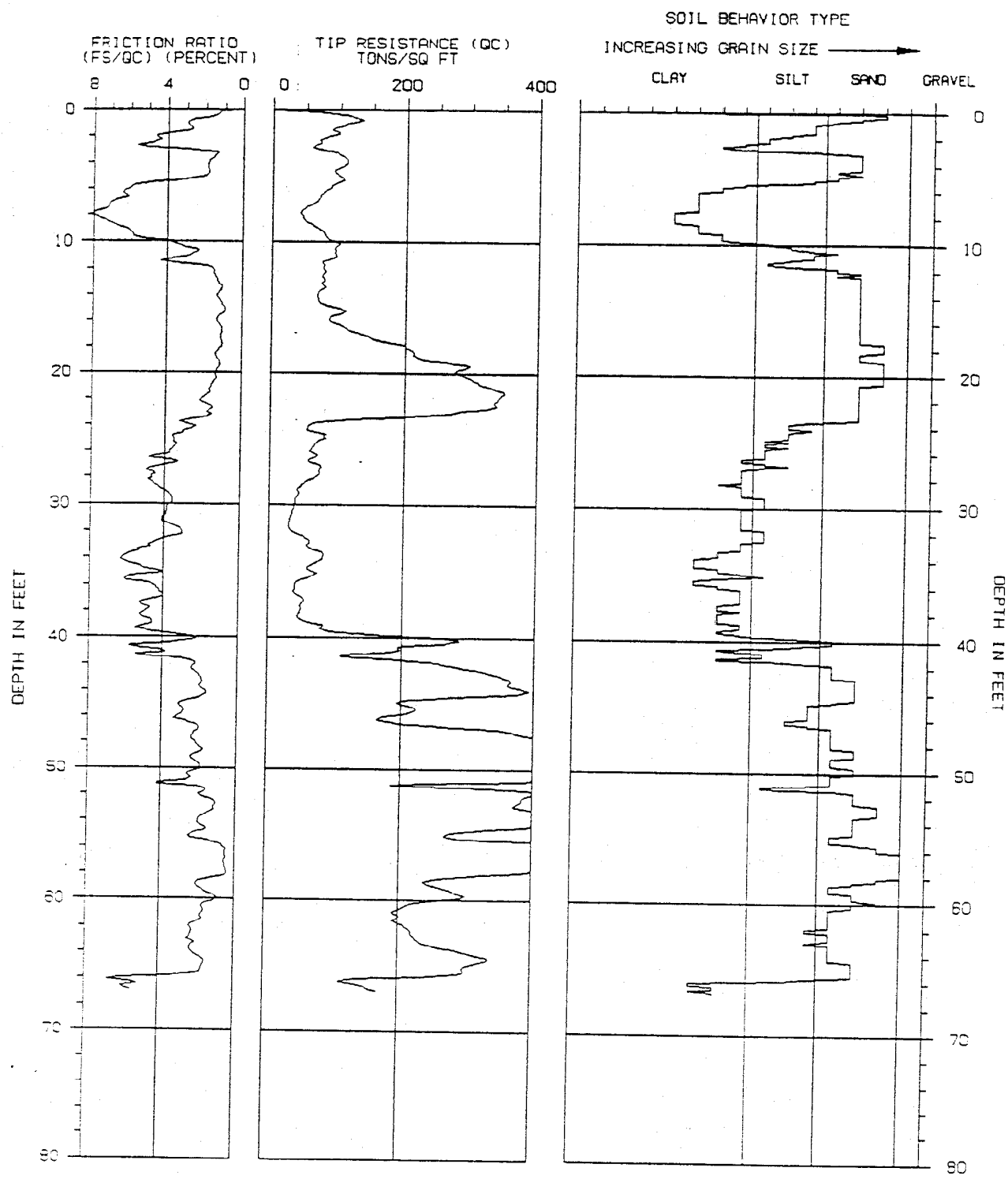


ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 48.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-11

PROJECT NAME : HLA/MCKESSON-II

PROJECT NUMBER : 92-380-09501

LOCATION : SANTA FE SPRGS

DATE : 09-10-1991

THE EARTH TECHNOLOGY CORPORATION

MCK0002726

CONE PENETRATION TEST

SOUNDING : CPT-12
PROJECT : HLA/MCKESSON-III
LOCATION : SANTA FE SPRGS
DATE : 10-28-1991

PROJECT NO : 92-380-09502
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : EC/MR

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	69.1	175.5	1.14	NA	SAND to SILTY SAND
1.0	148.7	333.1	1.39	NA	SAND to SILTY SAND
1.5	149.0	307.6	2.40	NA	*SILTY SAND to CLAYEY SAND
2.0	116.4	225.7	3.05	NA	*SILTY SAND to CLAYEY SAND
2.5	77.1	142.3	3.22	NA	*CLAYEY SAND to SANDY CLAY
3.0	53.7	94.7	2.49	NA	SILTY SAND to SANDY SILT
3.5	45.9	77.8	1.48	NA	SILTY SAND to SANDY SILT
4.0	39.0	63.9	2.28	NA	SILTY SAND to SANDY SILT
4.5	40.3	64.3	3.21	NA	SANDY SILT to CLAYEY SILT
5.0	35.7	55.1	4.94	NA	*SANDY CLAY to SILTY CLAY
5.5	33.7	50.5	4.87	NA	*SANDY CLAY to SILTY CLAY
6.0	35.3	51.5	4.54	NA	*SANDY CLAY to SILTY CLAY
6.5	36.0	51.4	6.31	NA	*SANDY CLAY to SILTY CLAY
7.0	30.5	42.6	6.71	NA	*SANDY CLAY to SILTY CLAY
7.5	26.3	36.3	5.66	NA	*SANDY CLAY to SILTY CLAY
8.0	31.6	42.3	4.04	NA	CLAYEY SILT to SILTY CLAY
8.5	124.9	163.7	3.55	NA	*CLAYEY SAND to SANDY CLAY
9.0	85.9	110.5	5.08	NA	*SANDY CLAY to SILTY CLAY
9.5	102.6	129.5	4.59	NA	*SANDY CLAY to SILTY CLAY
10.0	121.5	150.7	3.18	NA	*SILTY SAND to CLAYEY SAND
10.5	123.8	150.9	3.27	NA	*CLAYEY SAND to SANDY CLAY
11.0	104.4	125.3	3.22	NA	*CLAYEY SAND to SANDY CLAY
11.5	125.5	148.3	4.29	NA	*CLAYEY SAND to SANDY CLAY
12.0	154.3	179.2	3.95	NA	*CLAYEY SAND to SANDY CLAY
12.5	268.8	307.4	3.17	NA	*SILTY SAND to CLAYEY SAND
13.0	184.2	207.5	2.77	NA	*SILTY SAND to CLAYEY SAND
13.5	134.1	148.9	3.39	NA	*CLAYEY SAND to SANDY CLAY
14.0	121.2	132.6	5.19	NA	*SANDY CLAY to SILTY CLAY
14.5	96.7	104.4	4.21	NA	*CLAYEY SAND to SANDY CLAY
15.0	125.7	133.7	2.02	NA	SILTY SAND to SANDY SILT
15.5	220.1	231.1	2.12	NA	SILTY SAND to SANDY SILT
16.0	112.3	116.3	4.95	NA	*SANDY CLAY to SILTY CLAY
16.5	109.4	111.9	5.16	NA	*SANDY CLAY to SILTY CLAY
17.0	114.4	115.5	4.94	NA	*SANDY CLAY to SILTY CLAY
17.5	196.8	196.3	2.79	NA	*SILTY SAND to CLAYEY SAND
18.0	182.6	179.8	4.68	NA	*CLAYEY SAND to SANDY CLAY
18.5	195.5	190.3	4.93	NA	*SANDY CLAY to SILTY CLAY
19.0	177.8	171.3	4.14	NA	*CLAYEY SAND to SANDY CLAY
19.5	93.2	88.6	5.30	NA	*SANDY CLAY to SILTY CLAY
20.0	119.2	112.3	3.94	NA	*CLAYEY SAND to SANDY CLAY

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002727

SOUNDING : CPT-12

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
20.5	166.1	154.2	2.38	NA	SILTY SAND to SANDY SILT
21.0	216.1	198.4	2.37	NA	*SILTY SAND to CLAYEY SAND
21.5	116.9	106.2	4.73	NA	*SANDY CLAY to SILTY CLAY
22.0	82.5	74.1	4.86	NA	*SANDY CLAY to SILTY CLAY
22.5	112.4	99.8	4.70	NA	*SANDY CLAY to SILTY CLAY
23.0	142.5	125.2	2.80	NA	*SILTY SAND to CLAYEY SAND
23.5	93.3	81.1	3.27	NA	SANDY SILT to CLAYEY SILT
24.0	50.1	43.1	4.51	NA	*SANDY CLAY to SILTY CLAY
24.5	45.9	39.1	3.70	NA	SANDY SILT to CLAYEY SILT
25.0	50.6	42.6	3.72	NA	SANDY SILT to CLAYEY SILT
25.5	50.9	42.4	3.93	NA	SANDY SILT to CLAYEY SILT
26.0	51.4	42.5	4.78	NA	*SANDY CLAY to SILTY CLAY
26.5	51.4	42.0	4.95	NA	*SANDY CLAY to SILTY CLAY
27.0	38.4	31.0	5.98	NA	*SANDY CLAY to SILTY CLAY
27.5	31.5	25.2	4.13	NA	CLAYEY SILT to SILTY CLAY
28.0	44.8	35.5	4.36	NA	CLAYEY SILT to SILTY CLAY
28.5	36.7	28.8	6.26	NA	*SANDY CLAY to SILTY CLAY
29.0	23.9	18.6	5.34	NA	SILTY CLAY TO CLAY
29.5	26.4	20.3	4.63	NA	CLAYEY SILT to SILTY CLAY
30.0	28.6	21.8	6.03	NA	SILTY CLAY TO CLAY
30.5	31.5	23.8	5.64	NA	SILTY CLAY TO CLAY
31.0	28.7	21.5	5.31	NA	CLAYEY SILT to SILTY CLAY
31.5	39.1	29.0	4.64	NA	CLAYEY SILT to SILTY CLAY
32.0	28.5	20.9	6.29	NA	SILTY CLAY TO CLAY
32.5	33.6	24.5	5.82	NA	*SANDY CLAY to SILTY CLAY
33.0	62.0	44.8	4.77	NA	*SANDY CLAY to SILTY CLAY
33.5	47.0	33.6	5.09	NA	*SANDY CLAY to SILTY CLAY
34.0	55.9	39.6	4.26	NA	CLAYEY SILT to SILTY CLAY
34.5	62.9	44.2	6.26	NA	*SANDY CLAY to SILTY CLAY
35.0	68.8	47.9	7.22	NA	*SANDY CLAY to SILTY CLAY
35.5	69.7	48.1	8.08	NA	*SANDY CLAY to SILTY CLAY
36.0	62.2	42.5	7.03	NA	*SANDY CLAY to SILTY CLAY
36.5	63.9	43.3	7.95	NA	*SANDY CLAY to SILTY CLAY
37.0	57.3	38.5	7.40	NA	*SANDY CLAY to SILTY CLAY
37.5	49.1	32.7	7.76	NA	*SANDY CLAY to SILTY CLAY
38.0	56.7	37.4	7.24	NA	*SANDY CLAY to SILTY CLAY
38.5	38.2	25.0	8.70	NA	*SANDY CLAY to SILTY CLAY
39.0	34.2	22.2	6.43	NA	*SANDY CLAY to SILTY CLAY
39.5	36.1	23.2	5.90	NA	SILTY CLAY TO CLAY
40.0	35.2	22.4	5.35	NA	CLAYEY SILT to SILTY CLAY
40.5	31.3	19.8	4.86	NA	CLAYEY SILT to SILTY CLAY
41.0	38.0	23.8	5.61	NA	SILTY CLAY TO CLAY
41.5	40.0	24.9	5.99	NA	*SANDY CLAY to SILTY CLAY
42.0	73.8	45.6	5.48	NA	*SANDY CLAY to SILTY CLAY
42.5	80.1	49.0	5.87	NA	*SANDY CLAY to SILTY CLAY
43.0	118.3	71.8	4.06	NA	*CLAYEY SAND to SANDY CLAY
43.5	110.5	66.5	4.85	NA	*SANDY CLAY to SILTY CLAY
44.0	86.4	51.6	6.07	NA	*SANDY CLAY to SILTY CLAY
44.5	99.5	58.9	4.95	NA	*SANDY CLAY to SILTY CLAY
45.0	44.1	25.9	5.79	NA	*SANDY CLAY to SILTY CLAY

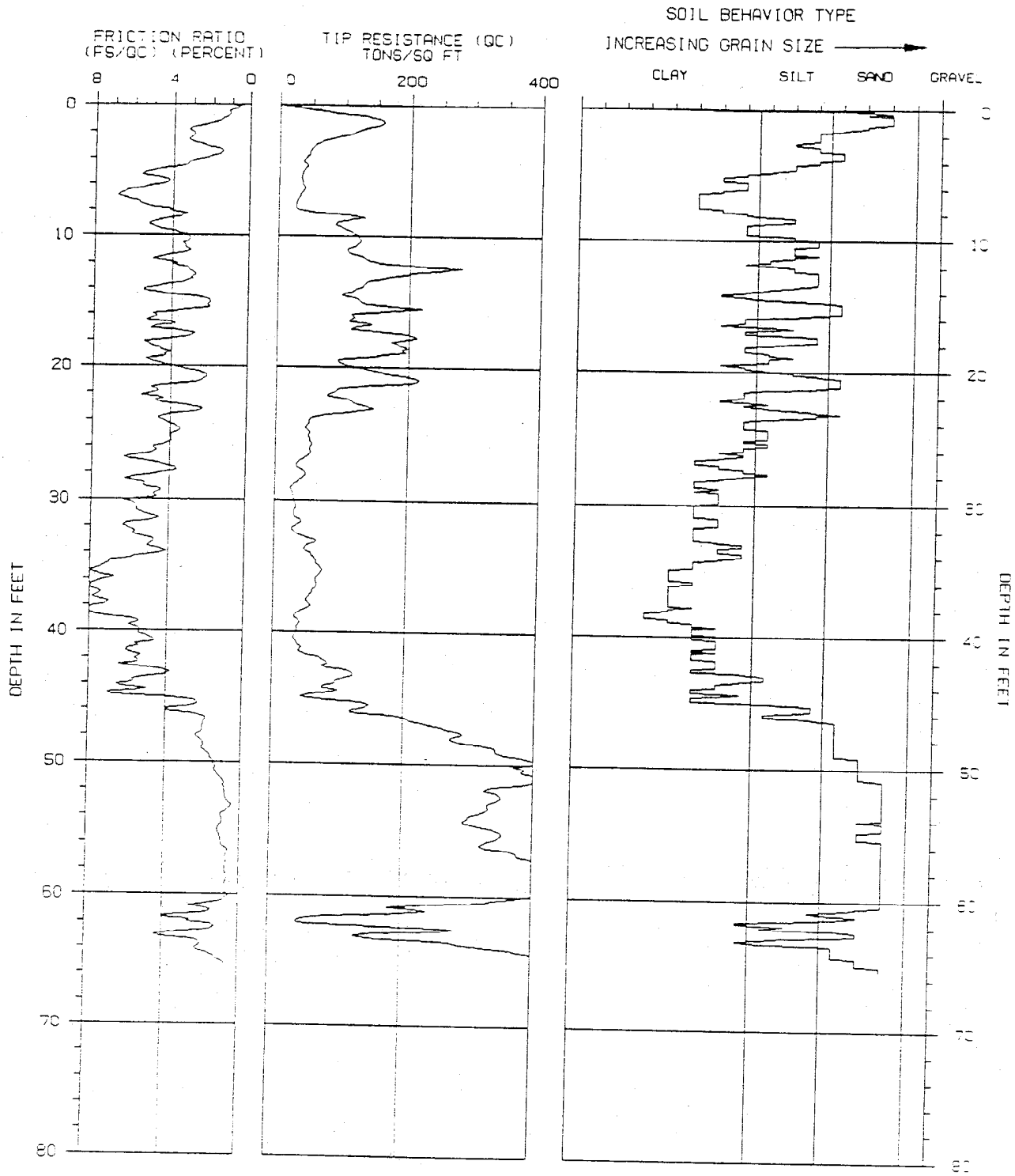
NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002728

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
45.5	145.9	85.0	2.36	NA	SILTY SAND to SANDY SILT
46.0	119.6	69.1	4.03	NA	*CLAYEY SAND to SANDY CLAY
46.5	198.3	113.6	2.16	NA	SILTY SAND to SANDY SILT
47.0	230.3	130.9	2.05	NA	SILTY SAND to SANDY SILT
47.5	272.0	153.3	2.07	NA	SILTY SAND to SANDY SILT
48.0	278.9	155.9	2.39	NA	SILTY SAND to SANDY SILT
48.5	301.9	167.4	2.06	NA	SILTY SAND to SANDY SILT
49.0	342.1	188.2	2.08	NA	SILTY SAND to SANDY SILT
49.5	380.2	207.5	1.68	NA	SAND to SILTY SAND
50.0	394.3	213.4	1.46	NA	SAND to SILTY SAND
50.5	381.9	205.1	1.41	NA	SAND to SILTY SAND
51.0	406.2	216.4	1.20	NA	SAND to SILTY SAND
51.5	380.4	201.1	.88	NA	SAND to SILTY SAND
52.0	331.6	173.9	.87	NA	SAND to SILTY SAND
52.5	352.7	183.4	.82	NA	SAND to SILTY SAND
53.0	332.0	171.3	.66	NA	SAND to SILTY SAND
53.5	328.4	168.2	.64	NA	SAND to SILTY SAND
54.0	302.9	153.9	1.05	NA	SAND to SILTY SAND
54.5	299.8	151.1	.96	NA	SAND to SILTY SAND
55.0	345.0	172.5	1.17	NA	SAND to SILTY SAND
55.5	349.5	174.1	1.08	NA	SAND to SILTY SAND
56.0	324.0	160.8	1.00	NA	SAND to SILTY SAND
56.5	362.4	179.3	.70	NA	SAND to SILTY SAND
57.0	388.6	191.5	.72	NA	SAND to SILTY SAND
57.5	411.5	202.0	.69	NA	SAND to SILTY SAND
58.0	415.1	203.1	.78	NA	SAND to SILTY SAND
58.5	432.5	210.8	.70	NA	SAND to SILTY SAND
59.0	449.7	218.5	.73	NA	SAND to SILTY SAND
59.5	435.5	210.8	.70	NA	SAND to SILTY SAND
60.0	391.1	188.6	.54	NA	SAND to SILTY SAND
60.5	294.5	141.5	1.07	NA	SAND to SILTY SAND
61.0	232.8	111.5	1.78	NA	SILTY SAND to SANDY SILT
61.5	93.9	44.8	2.99	NA	SANDY SILT to CLAYEY SILT
62.0	43.2	20.5	2.74	NA	SANDY SILT to CLAYEY SILT
62.5	282.7	133.9	1.33	NA	SAND to SILTY SAND
63.0	129.9	61.3	4.39	NA	*SANDY CLAY to SILTY CLAY
63.5	273.8	128.8	2.20	NA	SILTY SAND to SANDY SILT
64.0	354.1	165.9	2.21	NA	SILTY SAND to SANDY SILT
64.5	416.6	194.5	1.55	NA	SAND to SILTY SAND
65.0	410.5	191.0	1.10	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002729



ASSUMED TOTAL UNIT WT = 115 PCF

ASSUMED DEPTH OF WATER TABLE = 55.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-12

PROJECT NAME : HLA/MCKESSON-III

PROJECT NUMBER : 92-380-09502

LOCATION : SANTA FE SPRGS

DATE : 10-28-1991

THE EARTH TECHNOLOGY CORPORATION

MCK0002730

CONE PENETRATION TEST

SOUNDING : CPT-13
PROJECT : HLA/MCKESSON-III
LOCATION : SANTA FE SPRGS
DATE : 10-28-1991

PROJECT NO : 92-380-09502
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : EC/MR

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	39.3	99.8	1.27	NA	SAND to SILTY SAND
1.0	67.2	150.6	1.47	NA	SAND to SILTY SAND
1.5	52.8	109.0	2.68	NA	SILTY SAND to SANDY SILT
2.0	40.2	78.0	4.10	NA	*CLAYEY SAND to SANDY CLAY
2.5	49.9	91.9	3.37	NA	*CLAYEY SAND to SANDY CLAY
3.0	40.6	71.6	4.38	NA	*SANDY CLAY to SILTY CLAY
3.5	37.0	62.7	1.79	NA	SILTY SAND to SANDY SILT
4.0	34.5	56.5	1.42	NA	SILTY SAND to SANDY SILT
4.5	22.2	35.2	1.32	NA	SILTY SAND to SANDY SILT
5.0	14.9	23.0	1.37	NA	SILTY SAND to SANDY SILT
5.5	10.5	15.8	2.02	NA	SANDY SILT to CLAYEY SILT
6.0	28.3	41.4	1.71	NA	SILTY SAND to SANDY SILT
6.5	42.0	60.0	3.83	NA	*CLAYEY SAND to SANDY CLAY
7.0	53.7	74.9	4.36	NA	*SANDY CLAY to SILTY CLAY
7.5	35.0	47.8	3.01	NA	SANDY SILT to CLAYEY SILT
8.0	34.8	46.5	1.58	NA	SILTY SAND to SANDY SILT
8.5	59.3	77.7	1.21	NA	SAND to SILTY SAND
9.0	60.8	78.2	2.20	NA	SILTY SAND to SANDY SILT
9.5	86.8	109.5	.92	NA	SAND to SILTY SAND
10.0	122.3	151.7	.80	NA	SAND to SILTY SAND
10.5	137.5	167.6	.87	NA	SAND to SILTY SAND
11.0	164.9	197.6	.74	NA	SAND to SILTY SAND
11.5	261.1	308.0	.71	NA	SANDY GRAVEL to SAND
12.0	323.7	375.9	.87	NA	SANDY GRAVEL to SAND
12.5	374.0	427.6	1.04	NA	SAND to SILTY SAND
13.0	383.7	432.2	1.23	NA	SAND to SILTY SAND
13.5	383.4	425.6	1.03	NA	SAND to SILTY SAND
14.0	397.4	434.8	1.03	NA	SAND to SILTY SAND
14.5	390.7	421.5	1.06	NA	SAND to SILTY SAND
15.0	369.5	393.3	1.06	NA	SAND to SILTY SAND
15.5	273.1	286.8	1.31	NA	SAND to SILTY SAND
16.0	262.7	272.2	.85	NA	SAND to SILTY SAND
16.5	267.1	273.2	.70	NA	SANDY GRAVEL to SAND
17.0	315.9	319.1	.67	NA	SANDY GRAVEL to SAND
17.5	348.7	347.8	.97	NA	SAND to SILTY SAND
18.0	344.8	339.6	1.28	NA	SAND to SILTY SAND
18.5	305.9	297.7	1.54	NA	SAND to SILTY SAND
19.0	297.3	285.9	1.66	NA	SAND to SILTY SAND
19.5	303.7	288.6	1.60	NA	SAND to SILTY SAND
20.0	323.2	303.6	1.54	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002731

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
20.5	327.8	304.4	1.34	NA	SAND to SILTY SAND
21.0	333.9	306.6	1.48	NA	SAND to SILTY SAND
21.5	374.9	340.4	1.52	NA	SAND to SILTY SAND
22.0	390.2	350.3	1.57	NA	SAND to SILTY SAND
22.5	406.5	361.1	1.41	NA	SAND to SILTY SAND
23.0	236.0	207.3	2.46	NA	*SILTY SAND to CLAYEY SAND
23.5	107.2	93.1	2.83	NA	SILTY SAND to SANDY SILT
24.0	389.5	335.0	1.28	NA	SAND to SILTY SAND
24.5	169.9	144.6	3.27	NA	*CLAYEY SAND to SANDY CLAY
25.0	95.8	80.7	3.53	NA	*CLAYEY SAND to SANDY CLAY
25.5	106.6	88.9	3.61	NA	*CLAYEY SAND to SANDY CLAY
26.0	84.4	69.6	3.50	NA	*CLAYEY SAND to SANDY CLAY
26.5	65.6	53.6	3.03	NA	SANDY SILT to CLAYEY SILT
27.0	55.6	45.0	1.98	NA	SILTY SAND to SANDY SILT
27.5	60.2	48.2	2.77	NA	SANDY SILT to CLAYEY SILT
28.0	64.0	50.7	2.83	NA	SANDY SILT to CLAYEY SILT
28.5	65.8	51.7	2.89	NA	SANDY SILT to CLAYEY SILT
29.0	62.2	48.4	3.33	NA	SANDY SILT to CLAYEY SILT
29.5	54.2	41.7	3.35	NA	SANDY SILT to CLAYEY SILT
30.0	64.9	49.5	2.63	NA	SANDY SILT to CLAYEY SILT
30.5	65.3	49.4	3.08	NA	SANDY SILT to CLAYEY SILT
31.0	50.6	37.9	3.14	NA	SANDY SILT to CLAYEY SILT
31.5	44.0	32.7	3.32	NA	SANDY SILT to CLAYEY SILT
32.0	44.7	32.9	3.00	NA	SANDY SILT to CLAYEY SILT
32.5	42.2	30.7	3.16	NA	SANDY SILT to CLAYEY SILT
33.0	41.1	29.6	3.02	NA	SANDY SILT to CLAYEY SILT
33.5	38.5	27.6	3.43	NA	SANDY SILT to CLAYEY SILT
34.0	38.7	27.4	2.99	NA	SANDY SILT to CLAYEY SILT
34.5	39.9	28.0	2.68	NA	SANDY SILT to CLAYEY SILT
35.0	39.3	27.4	3.29	NA	SANDY SILT to CLAYEY SILT
35.5	42.5	29.3	2.72	NA	SANDY SILT to CLAYEY SILT
36.0	50.6	34.6	2.31	NA	SANDY SILT to CLAYEY SILT
36.5	57.0	38.6	3.76	NA	SANDY SILT to CLAYEY SILT
37.0	67.8	45.6	4.18	NA	*SANDY CLAY to SILTY CLAY
37.5	71.5	47.6	4.96	NA	*SANDY CLAY to SILTY CLAY
38.0	58.8	38.9	6.07	NA	*SANDY CLAY to SILTY CLAY
38.5	44.9	29.4	5.24	NA	*SANDY CLAY to SILTY CLAY
39.0	36.5	23.7	4.72	NA	CLAYEY SILT to SILTY CLAY
39.5	39.0	25.1	4.08	NA	CLAYEY SILT to SILTY CLAY
40.0	37.9	24.2	4.72	NA	CLAYEY SILT to SILTY CLAY
40.5	37.9	24.0	4.38	NA	CLAYEY SILT to SILTY CLAY
41.0	36.0	22.6	4.01	NA	CLAYEY SILT to SILTY CLAY
41.5	47.0	29.2	3.98	NA	CLAYEY SILT to SILTY CLAY
42.0	41.1	25.3	6.54	NA	*SANDY CLAY to SILTY CLAY
42.5	41.2	25.2	5.49	NA	SILTY CLAY TO CLAY
43.0	45.2	27.4	6.66	NA	*SANDY CLAY to SILTY CLAY
43.5	71.3	42.9	5.46	NA	*SANDY CLAY to SILTY CLAY
44.0	117.3	70.0	4.96	NA	*SANDY CLAY to SILTY CLAY
44.5	163.2	96.6	2.77	NA	SILTY SAND to SANDY SILT
45.0	203.8	119.6	1.87	NA	SILTY SAND to SANDY SILT

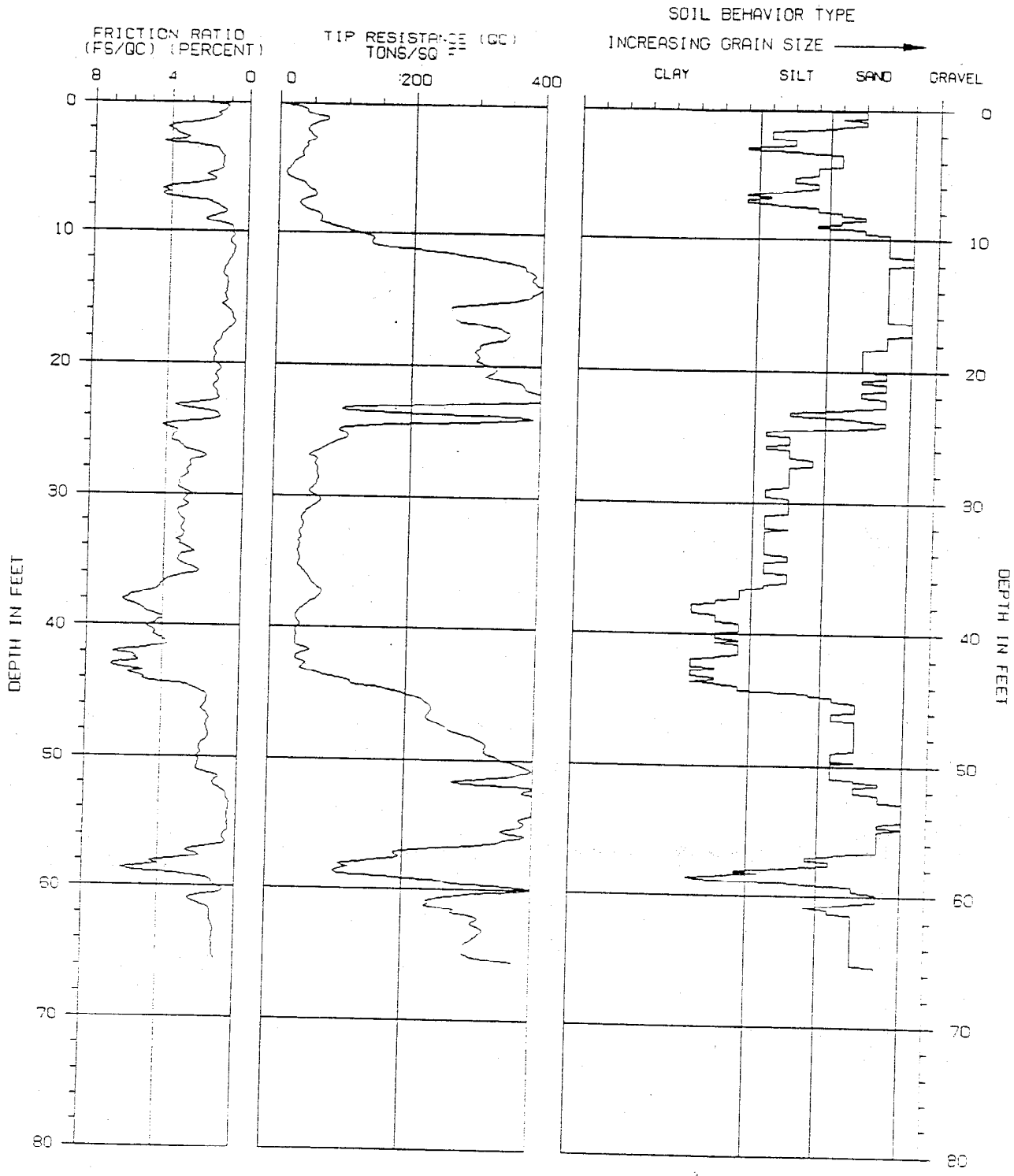
NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002732

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
45.5	228.2	132.9	1.71	NA	SAND to SILTY SAND
46.0	239.3	138.2	1.82	NA	SILTY SAND to SANDY SILT
46.5	233.9	134.0	1.85	NA	SILTY SAND to SANDY SILT
47.0	239.0	135.8	1.55	NA	SAND to SILTY SAND
47.5	261.2	147.2	1.70	NA	SAND to SILTY SAND
48.0	282.9	158.2	1.61	NA	SAND to SILTY SAND
48.5	316.1	175.3	1.62	NA	SAND to SILTY SAND
49.0	324.3	178.4	1.99	NA	SILTY SAND to SANDY SILT
49.5	325.2	177.5	2.00	NA	SILTY SAND to SANDY SILT
50.0	349.4	189.2	2.21	NA	SILTY SAND to SANDY SILT
50.5	385.7	207.1	2.08	NA	SILTY SAND to SANDY SILT
51.0	384.6	204.9	2.09	NA	SILTY SAND to SANDY SILT
51.5	307.0	162.3	.99	NA	SAND to SILTY SAND
52.0	366.0	191.9	1.29	NA	SAND to SILTY SAND
52.5	383.9	199.7	.79	NA	SAND to SILTY SAND
53.0	431.1	222.5	.53	NA	SANDY GRAVEL to SAND
53.5	411.6	210.7	.42	NA	SANDY GRAVEL to SAND
54.0	398.1	202.2	.44	NA	SANDY GRAVEL to SAND
54.5	379.0	191.0	.50	NA	SAND to SILTY SAND
55.0	384.7	192.3	.48	NA	SAND to SILTY SAND
55.5	350.4	174.5	.44	NA	SAND to SILTY SAND
56.0	381.8	189.5	.70	NA	SAND to SILTY SAND
56.5	331.7	164.1	.57	NA	SAND to SILTY SAND
57.0	200.4	98.7	2.11	NA	SILTY SAND to SANDY SILT
57.5	194.7	95.6	1.97	NA	SILTY SAND to SANDY SILT
58.0	114.2	55.9	3.99	NA	*CLAYEY SAND to SANDY CLAY
58.5	102.7	50.1	5.38	NA	*SANDY CLAY to SILTY CLAY
59.0	170.3	82.7	3.16	NA	SANDY SILT to CLAYEY SILT
59.5	276.6	133.9	1.22	NA	SAND to SILTY SAND
60.0	404.1	194.9	.94	NA	SAND to SILTY SAND
60.5	273.5	131.4	1.12	NA	SAND to SILTY SAND
61.0	242.0	115.9	2.35	NA	SILTY SAND to SANDY SILT
61.5	283.4	135.2	1.43	NA	SAND to SILTY SAND
62.0	311.2	148.0	1.30	NA	SAND to SILTY SAND
62.5	308.4	146.1	1.28	NA	SAND to SILTY SAND
63.0	325.7	153.7	1.16	NA	SAND to SILTY SAND
63.5	319.2	150.1	1.16	NA	SAND to SILTY SAND
64.0	304.4	142.6	1.17	NA	SAND to SILTY SAND
64.5	292.2	136.4	1.16	NA	SAND to SILTY SAND
65.0	302.6	140.8	1.14	NA	SAND to SILTY SAND
65.5	374.0	173.4	.98	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002733



ASSUMED TOTAL UNIT WT = 115 PCF

ASSUMED DEPTH OF WATER TABLE = 55.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-13

PROJECT NAME : HLA/MCKESSON-III

PROJECT NUMBER : 92-380-09502

LOCATION : SANTA FE SPRGS

DATE : 10-28-1991

THE EARTH TECHNOLOGY CORPORATION

MCK0002734

CONE PENETRATION TEST

SOUNDING : CPT-14
PROJECT : HLA/MCKESSON-III
LOCATION : SANTA FE SPRGS
DATE : 10-28-1991

PROJECT NO : 92-380-09502
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : EC/MR

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	34.5	87.6	1.14	NA	SAND to SILTY SAND
1.0	80.6	180.7	1.17	NA	SAND to SILTY SAND
1.5	68.2	140.8	2.48	NA	SILTY SAND to SANDY SILT
2.0	93.6	181.5	2.91	NA	*SILTY SAND to CLAYEY SAND
2.5	96.4	177.6	3.15	NA	*SILTY SAND to CLAYEY SAND
3.0	63.5	111.9	2.44	NA	SILTY SAND to SANDY SILT
3.5	85.5	145.0	1.80	NA	SAND to SILTY SAND
4.0	82.8	135.7	1.55	NA	SAND to SILTY SAND
4.5	85.6	135.8	1.69	NA	SAND to SILTY SAND
5.0	91.8	141.6	1.72	NA	SAND to SILTY SAND
5.5	46.9	70.4	2.63	NA	SILTY SAND to SANDY SILT
6.0	25.8	37.7	3.36	NA	SANDY SILT to CLAYEY SILT
6.5	30.9	44.1	3.11	NA	SANDY SILT to CLAYEY SILT
7.0	44.0	61.4	4.06	NA	*CLAYEY SAND to SANDY CLAY
7.5	58.6	80.0	4.57	NA	*SANDY CLAY to SILTY CLAY
8.0	84.5	113.0	4.79	NA	*SANDY CLAY to SILTY CLAY
8.5	131.6	172.5	4.70	NA	*SANDY CLAY to SILTY CLAY
9.0	143.4	184.5	4.74	NA	*SANDY CLAY to SILTY CLAY
9.5	174.5	220.3	2.86	NA	*SILTY SAND to CLAYEY SAND
10.0	166.3	206.2	1.81	NA	SAND to SILTY SAND
10.5	121.8	148.5	2.73	NA	*SILTY SAND to CLAYEY SAND
11.0	113.6	136.2	1.70	NA	SAND to SILTY SAND
11.5	142.7	168.4	1.69	NA	SAND to SILTY SAND
12.0	131.7	152.9	2.30	NA	SILTY SAND to SANDY SILT
12.5	97.8	111.8	4.20	NA	*CLAYEY SAND to SANDY CLAY
13.0	117.3	132.1	1.41	NA	SAND to SILTY SAND
13.5	131.4	145.9	.73	NA	SAND to SILTY SAND
14.0	138.6	151.6	.73	NA	SAND to SILTY SAND
14.5	164.1	177.0	.75	NA	SAND to SILTY SAND
15.0	167.2	178.0	.67	NA	SAND to SILTY SAND
15.5	138.5	145.4	.74	NA	SAND to SILTY SAND
16.0	129.6	134.3	.72	NA	SAND to SILTY SAND
16.5	77.7	79.4	.58	NA	SAND to SILTY SAND
17.0	69.5	70.2	1.63	NA	SILTY SAND to SANDY SILT
17.5	78.2	78.0	4.70	NA	*SANDY CLAY to SILTY CLAY
18.0	108.6	107.0	4.25	NA	*CLAYEY SAND to SANDY CLAY
18.5	72.6	70.7	6.10	NA	*SANDY CLAY to SILTY CLAY
19.0	47.3	45.4	5.99	NA	*SANDY CLAY to SILTY CLAY
19.5	128.7	122.3	4.14	NA	*CLAYEY SAND to SANDY CLAY
20.0	215.6	202.5	2.58	NA	*SILTY SAND to CLAYEY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002735

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
20.5	232.1	215.5	2.98	NA	*SILTY SAND to CLAYEY SAND
21.0	133.1	122.2	4.11	NA	*CLAYEY SAND to SANDY CLAY
21.5	79.9	72.5	4.25	NA	*CLAYEY SAND to SANDY CLAY
22.0	128.5	115.4	4.30	NA	*CLAYEY SAND to SANDY CLAY
22.5	139.8	124.2	4.69	NA	*SANDY CLAY to SILTY CLAY
23.0	145.3	127.7	4.25	NA	*CLAYEY SAND to SANDY CLAY
23.5	151.5	131.7	3.09	NA	*SILTY SAND to CLAYEY SAND
24.0	103.9	89.4	5.74	NA	*SANDY CLAY to SILTY CLAY
24.5	74.8	63.7	6.11	NA	*SANDY CLAY to SILTY CLAY
25.0	73.2	61.6	5.45	NA	*SANDY CLAY to SILTY CLAY
25.5	52.4	43.7	5.99	NA	*SANDY CLAY to SILTY CLAY
26.0	62.4	51.5	5.68	NA	*SANDY CLAY to SILTY CLAY
26.5	49.6	40.5	4.84	NA	*SANDY CLAY to SILTY CLAY
27.0	64.0	51.8	4.80	NA	*SANDY CLAY to SILTY CLAY
27.5	64.0	51.3	5.35	NA	*SANDY CLAY to SILTY CLAY
28.0	57.4	45.6	6.03	NA	*SANDY CLAY to SILTY CLAY
28.5	50.9	40.0	5.09	NA	*SANDY CLAY to SILTY CLAY
29.0	56.5	44.0	5.82	NA	*SANDY CLAY to SILTY CLAY
29.5	29.0	22.3	6.76	NA	*SANDY CLAY to SILTY CLAY
30.0	23.0	17.6	5.82	NA	SILTY CLAY TO CLAY
30.5	27.0	20.4	4.96	NA	CLAYEY SILT to SILTY CLAY
31.0	29.8	22.3	4.79	NA	CLAYEY SILT to SILTY CLAY
31.5	32.3	23.9	4.86	NA	CLAYEY SILT to SILTY CLAY
32.0	30.4	22.3	3.94	NA	CLAYEY SILT to SILTY CLAY
32.5	36.7	26.7	4.71	NA	CLAYEY SILT to SILTY CLAY
33.0	34.0	24.5	5.87	NA	*SANDY CLAY to SILTY CLAY
33.5	35.6	25.5	6.05	NA	*SANDY CLAY to SILTY CLAY
34.0	32.1	22.8	6.70	NA	*SANDY CLAY to SILTY CLAY
34.5	44.7	31.4	6.26	NA	*SANDY CLAY to SILTY CLAY
35.0	43.7	30.5	6.50	NA	*SANDY CLAY to SILTY CLAY
35.5	30.1	20.8	8.91	NA	*SANDY CLAY to SILTY CLAY
36.0	43.1	29.5	7.34	NA	*SANDY CLAY to SILTY CLAY
36.5	52.7	35.7	8.36	NA	*SANDY CLAY to SILTY CLAY
37.0	40.9	27.5	8.64	NA	*SANDY CLAY to SILTY CLAY
37.5	32.1	21.4	7.24	NA	*SANDY CLAY to SILTY CLAY
38.0	31.7	20.9	6.05	NA	SILTY CLAY TO CLAY
38.5	29.4	19.3	5.73	NA	SILTY CLAY TO CLAY
39.0	33.5	21.7	5.35	NA	SILTY CLAY TO CLAY
39.5	31.0	20.0	5.70	NA	SILTY CLAY TO CLAY
40.0	46.4	29.6	5.36	NA	*SANDY CLAY to SILTY CLAY
40.5	39.8	25.2	6.69	NA	*SANDY CLAY to SILTY CLAY
41.0	57.4	36.0	5.24	NA	*SANDY CLAY to SILTY CLAY
41.5	44.3	27.6	5.63	NA	*SANDY CLAY to SILTY CLAY
42.0	48.5	29.9	6.14	NA	*SANDY CLAY to SILTY CLAY
42.5	50.3	30.8	5.62	NA	*SANDY CLAY to SILTY CLAY
43.0	87.4	53.1	5.64	NA	*SANDY CLAY to SILTY CLAY
43.5	100.6	60.5	4.52	NA	*SANDY CLAY to SILTY CLAY
44.0	169.2	101.0	2.75	NA	SILTY SAND to SANDY SILT
44.5	153.7	91.0	3.62	NA	*CLAYEY SAND to SANDY CLAY
45.0	155.8	91.5	4.07	NA	*CLAYEY SAND to SANDY CLAY

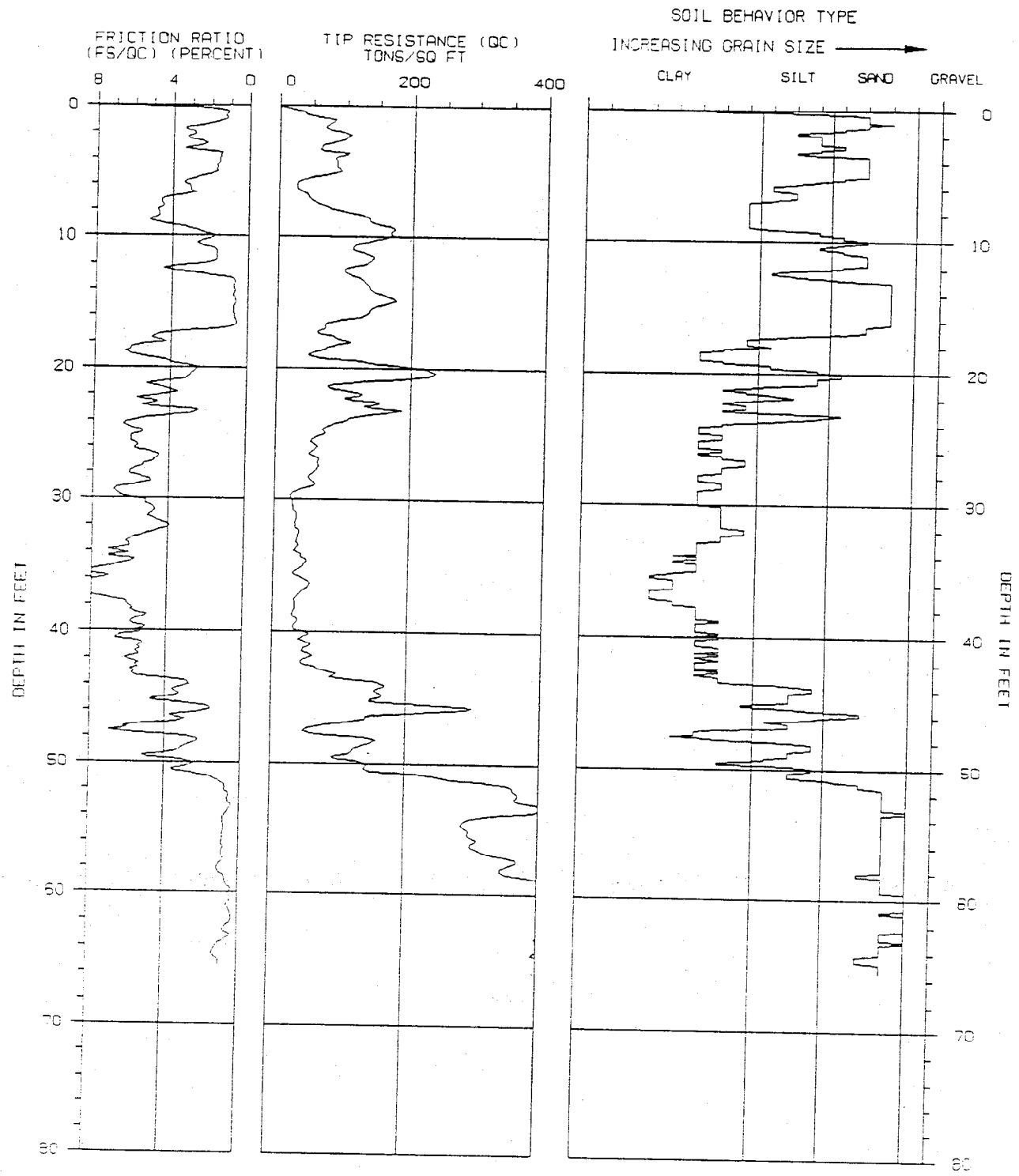
NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002736

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
45.5	250.0	145.6	2.54	NA	SILTY SAND to SANDY SILT
46.0	237.0	136.9	1.94	NA	SILTY SAND to SANDY SILT
46.5	140.0	80.2	3.42	NA	*CLAYEY SAND to SANDY CLAY
47.0	80.8	45.9	5.00	NA	*SANDY CLAY to SILTY CLAY
47.5	46.8	26.4	6.94	NA	*SANDY CLAY to SILTY CLAY
48.0	136.5	76.3	2.90	NA	SANDY SILT to CLAYEY SILT
48.5	142.5	79.0	2.57	NA	SILTY SAND to SANDY SILT
49.0	120.4	66.2	3.25	NA	SANDY SILT to CLAYEY SILT
49.5	91.7	50.0	5.12	NA	*SANDY CLAY to SILTY CLAY
50.0	142.0	76.9	2.51	NA	SILTY SAND to SANDY SILT
50.5	140.6	75.5	3.57	NA	*CLAYEY SAND to SANDY CLAY
51.0	247.6	131.9	1.80	NA	SILTY SAND to SANDY SILT
51.5	337.1	178.2	1.04	NA	SAND to SILTY SAND
52.0	362.0	189.8	.81	NA	SAND to SILTY SAND
52.5	368.3	191.6	.60	NA	SAND to SILTY SAND
53.0	383.8	198.1	.64	NA	SAND to SILTY SAND
53.5	411.7	210.8	.56	NA	SAND to SILTY SAND
54.0	330.9	168.1	.74	NA	SAND to SILTY SAND
54.5	289.6	145.9	.83	NA	SAND to SILTY SAND
55.0	292.9	146.4	.83	NA	SAND to SILTY SAND
55.5	296.8	147.9	.88	NA	SAND to SILTY SAND
56.0	308.8	153.3	.88	NA	SAND to SILTY SAND
56.5	305.0	150.9	.81	NA	SAND to SILTY SAND
57.0	336.8	166.0	.94	NA	SAND to SILTY SAND
57.5	369.0	181.2	.84	NA	SAND to SILTY SAND
58.0	348.2	170.4	1.12	NA	SAND to SILTY SAND
58.5	355.5	173.3	.98	NA	SAND to SILTY SAND
59.0	427.5	207.7	.69	NA	SAND to SILTY SAND
59.5	451.5	218.5	.53	NA	SANDY GRAVEL to SAND
60.0	458.7	221.2	.48	NA	SANDY GRAVEL to SAND
60.5	479.1	230.2	.42	NA	SANDY GRAVEL to SAND
61.0	453.5	217.1	.56	NA	SAND to SILTY SAND
61.5	424.9	202.7	.41	NA	SANDY GRAVEL to SAND
62.0	417.7	198.6	.31	NA	SANDY GRAVEL to SAND
62.5	430.4	203.9	.64	NA	SAND to SILTY SAND
63.0	412.3	194.6	.56	NA	SAND to SILTY SAND
63.5	405.3	190.6	.68	NA	SAND to SILTY SAND
64.0	422.5	198.0	1.13	NA	SAND to SILTY SAND
64.5	392.1	183.1	1.33	NA	SAND to SILTY SAND
65.0	432.1	201.1	.98	NA	SAND to SILTY SAND
65.5	424.5	196.8	1.00	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002737



ASSUMED TOTAL UNIT WT = 115 PCF

ASSUMED DEPTH OF WATER TABLE = 55.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-14

PROJECT NAME : HLA/MCKESSON-III

PROJECT NUMBER : 92-380-09502

LOCATION : SANTA FE SPRGS

DATE : 10-23-1991

THE EARTH TECHNOLOGY CORPORATION

MCK0002738

CONE PENETRATION TEST

SOUNDING : CPT-15
PROJECT : HLA/MCKESSON-III
LOCATION : SANTA FE SPRGS
DATE : 10-28-1991

PROJECT NO : 92-380-09502
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : EC/MR

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	28.0	71.2	1.60	NA	SILTY SAND to SANDY SILT
1.0	23.6	52.8	3.72	NA	SANDY SILT to CLAYEY SILT
1.5	57.8	119.4	1.66	NA	SAND to SILTY SAND
2.0	74.0	143.5	4.07	NA	*CLAYEY SAND to SANDY CLAY
2.5	99.8	183.9	4.04	NA	*CLAYEY SAND to SANDY CLAY
3.0	85.1	150.1	4.37	NA	*CLAYEY SAND to SANDY CLAY
3.5	82.3	139.6	4.80	NA	*SANDY CLAY to SILTY CLAY
4.0	60.8	99.6	5.51	NA	*SANDY CLAY to SILTY CLAY
4.5	77.0	122.2	2.19	NA	SILTY SAND to SANDY SILT
5.0	39.0	60.2	4.49	NA	*SANDY CLAY to SILTY CLAY
5.5	30.2	45.3	4.60	NA	*SANDY CLAY to SILTY CLAY
6.0	26.4	38.6	4.89	NA	*SANDY CLAY to SILTY CLAY
6.5	21.5	30.7	5.69	NA	*SANDY CLAY to SILTY CLAY
7.0	18.6	25.9	5.84	NA	*SANDY CLAY to SILTY CLAY
7.5	16.5	22.5	6.45	NA	*SANDY CLAY to SILTY CLAY
8.0	25.4	34.0	5.51	NA	*SANDY CLAY to SILTY CLAY
8.5	50.4	66.0	4.64	NA	*SANDY CLAY to SILTY CLAY
9.0	44.0	56.6	6.41	NA	*SANDY CLAY to SILTY CLAY
9.5	46.8	59.1	6.21	NA	*SANDY CLAY to SILTY CLAY
10.0	53.0	65.8	6.65	NA	*SANDY CLAY to SILTY CLAY
10.5	53.7	65.4	5.60	NA	*SANDY CLAY to SILTY CLAY
11.0	49.4	59.3	6.12	NA	*SANDY CLAY to SILTY CLAY
11.5	59.7	70.4	3.81	NA	*CLAYEY SAND to SANDY CLAY
12.0	48.0	55.8	1.02	NA	SAND to SILTY SAND
12.5	53.4	61.1	.70	NA	SAND to SILTY SAND
13.0	60.1	67.6	.68	NA	SAND to SILTY SAND
13.5	75.6	84.0	.56	NA	SAND to SILTY SAND
14.0	76.8	84.0	.67	NA	SAND to SILTY SAND
14.5	74.4	80.3	.72	NA	SAND to SILTY SAND
15.0	105.6	112.4	.69	NA	SAND to SILTY SAND
15.5	128.3	134.8	.68	NA	SAND to SILTY SAND
16.0	117.2	121.4	.84	NA	SAND to SILTY SAND
16.5	107.8	110.3	.78	NA	SAND to SILTY SAND
17.0	109.5	110.6	.65	NA	SAND to SILTY SAND
17.5	128.3	128.0	.68	NA	SAND to SILTY SAND
18.0	92.1	90.7	.76	NA	SAND to SILTY SAND
18.5	55.4	53.9	.79	NA	SAND to SILTY SAND
19.0	47.0	45.2	.63	NA	SAND to SILTY SAND
19.5	57.8	55.0	.62	NA	SAND to SILTY SAND
20.0	66.9	62.8	.70	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002739

SOUNDING : CPT-15

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
20.5	68.1	63.2	.81	NA	SAND to SILTY SAND
21.0	62.6	57.5	.82	NA	SAND to SILTY SAND
21.5	90.5	82.2	.72	NA	SAND to SILTY SAND
22.0	131.4	118.0	.68	NA	SAND to SILTY SAND
22.5	219.2	194.7	.76	NA	SAND to SILTY SAND
23.0	283.1	248.8	1.15	NA	SAND to SILTY SAND
23.5	290.9	252.8	1.17	NA	SAND to SILTY SAND
24.0	169.0	145.4	2.29	NA	SILTY SAND to SANDY SILT
24.5	64.0	54.4	4.48	NA	*SANDY CLAY to SILTY CLAY
25.0	55.4	46.7	3.38	NA	SANDY SILT to CLAYEY SILT
25.5	52.4	43.7	2.56	NA	SANDY SILT to CLAYEY SILT
26.0	89.6	73.9	2.94	NA	SANDY SILT to CLAYEY SILT
26.5	64.0	52.3	5.37	NA	*SANDY CLAY to SILTY CLAY
27.0	53.5	43.3	5.01	NA	*SANDY CLAY to SILTY CLAY
27.5	55.9	44.8	4.43	NA	*SANDY CLAY to SILTY CLAY
28.0	51.5	40.9	4.07	NA	CLAYEY SILT to SILTY CLAY
28.5	52.9	41.6	3.83	NA	SANDY SILT to CLAYEY SILT
29.0	51.5	40.1	3.61	NA	SANDY SILT to CLAYEY SILT
29.5	51.5	39.7	4.41	NA	*SANDY CLAY to SILTY CLAY
30.0	47.2	36.0	4.75	NA	*SANDY CLAY to SILTY CLAY
30.5	43.3	32.8	4.38	NA	CLAYEY SILT to SILTY CLAY
31.0	39.0	29.2	4.30	NA	CLAYEY SILT to SILTY CLAY
31.5	38.6	28.7	4.17	NA	CLAYEY SILT to SILTY CLAY
32.0	54.9	40.3	3.93	NA	CLAYEY SILT to SILTY CLAY
32.5	64.1	46.7	4.78	NA	*SANDY CLAY to SILTY CLAY
33.0	66.8	48.2	4.70	NA	*SANDY CLAY to SILTY CLAY
33.5	70.2	50.2	5.91	NA	*SANDY CLAY to SILTY CLAY
34.0	79.5	56.4	6.79	NA	*SANDY CLAY to SILTY CLAY
34.5	75.4	53.0	6.19	NA	*SANDY CLAY to SILTY CLAY
35.0	74.0	51.5	5.19	NA	*SANDY CLAY to SILTY CLAY
35.5	70.4	48.6	5.09	NA	*SANDY CLAY to SILTY CLAY
36.0	70.7	48.3	5.50	NA	*SANDY CLAY to SILTY CLAY
36.5	65.4	44.4	5.65	NA	*SANDY CLAY to SILTY CLAY
37.0	66.4	44.6	6.34	NA	*SANDY CLAY to SILTY CLAY
37.5	60.6	40.4	5.72	NA	*SANDY CLAY to SILTY CLAY
38.0	60.0	39.6	6.11	NA	*SANDY CLAY to SILTY CLAY
38.5	45.3	29.7	5.84	NA	*SANDY CLAY to SILTY CLAY
39.0	45.2	29.3	4.06	NA	CLAYEY SILT to SILTY CLAY
39.5	57.4	36.9	4.26	NA	CLAYEY SILT to SILTY CLAY
40.0	57.7	36.8	5.07	NA	*SANDY CLAY to SILTY CLAY
40.5	68.0	43.0	5.00	NA	*SANDY CLAY to SILTY CLAY
41.0	47.4	29.7	4.43	NA	CLAYEY SILT to SILTY CLAY
41.5	47.9	29.8	4.23	NA	CLAYEY SILT to SILTY CLAY
42.0	86.6	53.5	4.97	NA	*SANDY CLAY to SILTY CLAY
42.5	155.8	95.4	3.27	NA	*CLAYEY SAND to SANDY CLAY
43.0	131.0	79.5	3.99	NA	*CLAYEY SAND to SANDY CLAY
43.5	231.1	139.1	2.12	NA	SILTY SAND to SANDY SILT
44.0	223.3	133.2	2.55	NA	SILTY SAND to SANDY SILT
44.5	208.5	123.4	2.85	NA	*SILTY SAND to CLAYEY SAND
45.0	149.9	88.0	4.65	NA	*SANDY CLAY to SILTY CLAY

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

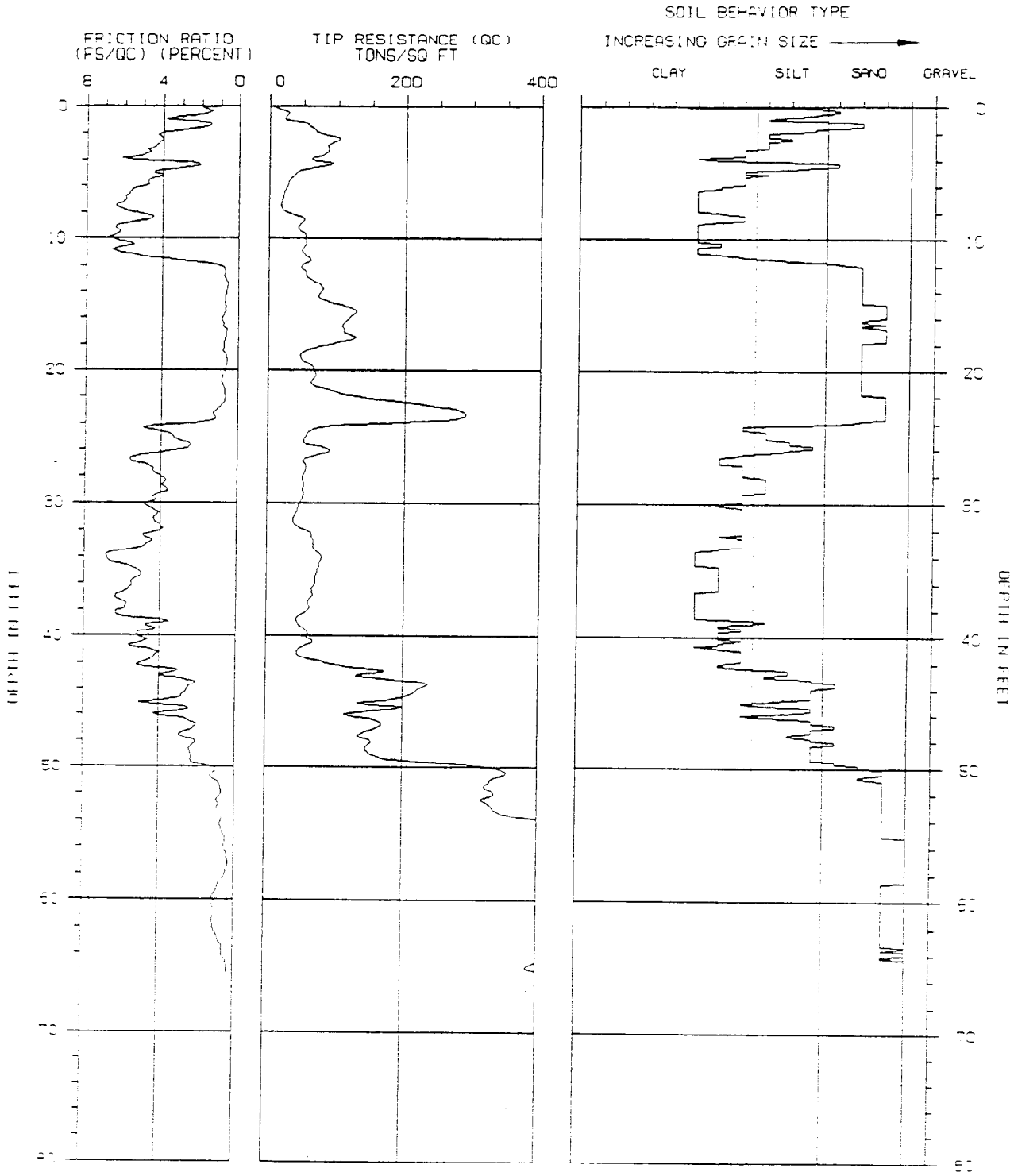
MCK0002740

SOUNDING : CPT-15

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
45.5	193.4	112.6	2.45	NA	SILTY SAND to SANDY SILT
46.0	114.8	66.3	4.30	NA	*SANDY CLAY to SILTY CLAY
46.5	163.8	93.9	2.48	NA	SILTY SAND to SANDY SILT
47.0	162.7	92.4	2.20	NA	SILTY SAND to SANDY SILT
47.5	134.7	75.9	2.97	NA	SANDY SILT to CLAYEY SILT
48.0	153.5	85.8	2.08	NA	SILTY SAND to SANDY SILT
48.5	145.7	80.8	2.36	NA	SILTY SAND to SANDY SILT
49.0	153.7	84.6	2.35	NA	SILTY SAND to SANDY SILT
49.5	204.0	111.3	2.32	NA	SILTY SAND to SANDY SILT
50.0	325.6	176.3	1.22	NA	SAND to SILTY SAND
50.5	354.6	190.4	1.15	NA	SAND to SILTY SAND
51.0	328.6	175.1	1.02	NA	SAND to SILTY SAND
51.5	321.1	169.7	.77	NA	SAND to SILTY SAND
52.0	336.4	176.4	.70	NA	SAND to SILTY SAND
52.5	318.7	165.8	.96	NA	SAND to SILTY SAND
53.0	333.2	171.9	.94	NA	SAND to SILTY SAND
53.5	348.9	178.6	.79	NA	SAND to SILTY SAND
54.0	417.5	212.1	.70	NA	SAND to SILTY SAND
54.5	438.6	221.0	.74	NA	SAND to SILTY SAND
55.0	427.9	213.9	.61	NA	SAND to SILTY SAND
55.5	458.1	228.2	.49	NA	SANDY GRAVEL to SAND
56.0	478.5	237.5	.54	NA	SANDY GRAVEL to SAND
56.5	495.8	245.2	.40	NA	SANDY GRAVEL to SAND
57.0	525.5	258.9	.32	NA	SANDY GRAVEL to SAND
57.5	577.9	283.8	.37	NA	SANDY GRAVEL to SAND
58.0	545.9	267.1	.48	NA	SANDY GRAVEL to SAND
58.5	549.2	267.8	.69	NA	SANDY GRAVEL to SAND
59.0	520.0	252.6	.87	NA	SAND to SILTY SAND
59.5	515.6	249.6	1.07	NA	SAND to SILTY SAND
60.0	497.4	239.9	1.05	NA	SAND to SILTY SAND
60.5	479.2	230.3	1.10	NA	SAND to SILTY SAND
61.0	480.2	229.9	1.08	NA	SAND to SILTY SAND
61.5	459.3	219.1	1.13	NA	SAND to SILTY SAND
62.0	467.2	222.1	1.07	NA	SAND to SILTY SAND
62.5	483.2	228.9	.94	NA	SAND to SILTY SAND
63.0	514.1	242.7	.77	NA	SAND to SILTY SAND
63.5	520.0	244.6	.62	NA	SANDY GRAVEL to SAND
64.0	494.8	231.9	.58	NA	SANDY GRAVEL to SAND
64.5	419.2	195.7	.41	NA	SANDY GRAVEL to SAND
65.0	384.4	178.8	.35	NA	SANDY GRAVEL to SAND
65.5	431.1	199.8	.31	NA	SANDY GRAVEL to SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002741



ASSUMED TOTAL UNIT WT = 115 PCF

ASSUMED DEPTH OF WATER TABLE = 88.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-16

PROJECT NAME : HLA/MCKESSON-III

PROJECT NUMBER : 92-380-09502

LOCATION : SANTA FE SPRGS

DATE : 10-28-1991

THE EARTH TECHNOLOGY CORPORATION

MCK0002742

CONE PENETRATION TEST

SOUNDING : CPT-16
PROJECT : HLA/MCKESSON-III
LOCATION : SANTA FE SPRGS
DATE : 10-28-1991

PROJECT NO : 92-380-09502
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : EC/MR

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	28.7	72.9	1.25	NA	SAND to SILTY SAND
1.0	27.1	60.7	1.73	NA	SILTY SAND to SANDY SILT
1.5	23.9	49.4	3.01	NA	SANDY SILT to CLAYEY SILT
2.0	19.5	37.8	3.73	NA	SANDY SILT to CLAYEY SILT
2.5	16.4	30.3	3.55	NA	SANDY SILT to CLAYEY SILT
3.0	12.9	22.8	5.50	NA	SILTY CLAY TO CLAY
3.5	12.6	21.3	5.25	NA	CLAYEY SILT to SILTY CLAY
4.0	10.0	16.4	7.44	NA	SILTY CLAY TO CLAY
4.5	9.0	14.3	7.96	NA	CLAY TO ORGANIC CLAY
5.0	9.6	14.8	6.89	NA	SILTY CLAY TO CLAY
5.5	21.8	32.7	4.28	NA	CLAYEY SILT to SILTY CLAY
6.0	44.1	64.5	5.80	NA	*SANDY CLAY to SILTY CLAY
6.5	52.0	74.3	6.71	NA	*SANDY CLAY to SILTY CLAY
7.0	71.5	99.7	5.85	NA	*SANDY CLAY to SILTY CLAY
7.5	69.4	94.8	7.13	NA	*SANDY CLAY to SILTY CLAY
8.0	52.4	70.1	7.29	NA	*SANDY CLAY to SILTY CLAY
8.5	89.5	117.3	5.02	NA	*SANDY CLAY to SILTY CLAY
9.0	113.9	146.5	2.78	NA	*SILTY SAND to CLAYEY SAND
9.5	98.6	124.5	1.88	NA	SILTY SAND to SANDY SILT
10.0	92.1	114.2	.97	NA	SAND to SILTY SAND
10.5	78.4	95.5	.93	NA	SAND to SILTY SAND
11.0	91.4	109.6	.84	NA	SAND to SILTY SAND
11.5	155.0	182.9	.86	NA	SAND to SILTY SAND
12.0	201.6	234.1	.85	NA	SAND to SILTY SAND
12.5	252.9	289.2	.85	NA	SAND to SILTY SAND
13.0	268.9	302.8	1.07	NA	SAND to SILTY SAND
13.5	258.5	287.0	.84	NA	SAND to SILTY SAND
14.0	289.7	317.0	.82	NA	SAND to SILTY SAND
14.5	293.0	316.1	1.07	NA	SAND to SILTY SAND
15.0	262.4	279.2	1.15	NA	SAND to SILTY SAND
15.5	225.5	236.8	1.11	NA	SAND to SILTY SAND
16.0	228.7	237.0	.99	NA	SAND to SILTY SAND
16.5	294.2	300.9	.76	NA	SANDY GRAVEL to SAND
17.0	265.2	267.8	.84	NA	SAND to SILTY SAND
17.5	270.4	269.7	.70	NA	SAND to SILTY SAND
18.0	290.7	286.4	.71	NA	SANDY GRAVEL to SAND
18.5	296.3	288.4	.72	NA	SANDY GRAVEL to SAND
19.0	284.8	273.8	.91	NA	SAND to SILTY SAND
19.5	274.3	260.7	.95	NA	SAND to SILTY SAND
20.0	286.9	269.5	.73	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002743

SOUNDING : CPT-16

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
20.5	145.2	134.8	2.10	NA	SILTY SAND to SANDY SILT
21.0	103.2	94.7	2.83	NA	SILTY SAND to SANDY SILT
21.5	74.2	67.3	4.52	NA	*SANDY CLAY to SILTY CLAY
22.0	64.3	57.7	4.93	NA	*SANDY CLAY to SILTY CLAY
22.5	40.4	35.9	3.82	NA	SANDY SILT to CLAYEY SILT
23.0	47.0	41.3	3.02	NA	SANDY SILT to CLAYEY SILT
23.5	68.2	59.3	4.32	NA	*SANDY CLAY to SILTY CLAY
24.0	62.9	54.1	4.33	NA	*SANDY CLAY to SILTY CLAY
24.5	54.1	46.0	4.14	NA	*SANDY CLAY to SILTY CLAY
25.0	62.2	52.4	3.59	NA	SANDY SILT to CLAYEY SILT
25.5	62.3	52.0	4.34	NA	*SANDY CLAY to SILTY CLAY
26.0	44.5	36.8	4.92	NA	*SANDY CLAY to SILTY CLAY
26.5	30.5	24.9	4.99	NA	CLAYEY SILT to SILTY CLAY
27.0	27.5	22.3	5.62	NA	SILTY CLAY TO CLAY
27.5	18.6	14.9	6.47	NA	SILTY CLAY TO CLAY
28.0	21.7	17.2	4.90	NA	CLAYEY SILT to SILTY CLAY
28.5	24.8	19.5	4.85	NA	CLAYEY SILT to SILTY CLAY
29.0	23.1	18.0	4.86	NA	CLAYEY SILT to SILTY CLAY
29.5	32.6	25.1	4.34	NA	CLAYEY SILT to SILTY CLAY
30.0	43.5	33.2	5.75	NA	*SANDY CLAY to SILTY CLAY
30.5	47.8	36.2	5.90	NA	*SANDY CLAY to SILTY CLAY
31.0	50.8	38.1	5.49	NA	*SANDY CLAY to SILTY CLAY
31.5	47.3	35.1	4.57	NA	CLAYEY SILT to SILTY CLAY
32.0	43.6	32.0	4.94	NA	*SANDY CLAY to SILTY CLAY
32.5	48.4	35.3	4.33	NA	CLAYEY SILT to SILTY CLAY
33.0	57.0	41.1	4.99	NA	*SANDY CLAY to SILTY CLAY
33.5	49.5	35.4	6.28	NA	*SANDY CLAY to SILTY CLAY
34.0	54.5	38.6	6.15	NA	*SANDY CLAY to SILTY CLAY
34.5	51.1	35.9	7.76	NA	*SANDY CLAY to SILTY CLAY
35.0	38.5	26.8	7.34	NA	*SANDY CLAY to SILTY CLAY
35.5	35.9	24.8	6.20	NA	*SANDY CLAY to SILTY CLAY
36.0	33.5	22.9	6.05	NA	SILTY CLAY TO CLAY
36.5	30.5	20.7	4.44	NA	CLAYEY SILT to SILTY CLAY
37.0	68.5	46.0	5.45	NA	*SANDY CLAY to SILTY CLAY
37.5	40.8	27.2	6.90	NA	*SANDY CLAY to SILTY CLAY
38.0	62.7	41.4	5.65	NA	*SANDY CLAY to SILTY CLAY
38.5	77.9	51.0	6.27	NA	*SANDY CLAY to SILTY CLAY
39.0	83.8	54.4	5.34	NA	*SANDY CLAY to SILTY CLAY
39.5	62.7	40.3	6.68	NA	*SANDY CLAY to SILTY CLAY
40.0	111.6	71.3	4.76	NA	*CLAYEY SAND to SANDY CLAY
40.5	169.2	107.1	3.46	NA	*CLAYEY SAND to SANDY CLAY
41.0	177.6	111.5	2.75	NA	SILTY SAND to SANDY SILT
41.5	146.8	91.3	3.91	NA	*CLAYEY SAND to SANDY CLAY
42.0	157.3	97.1	3.15	NA	*CLAYEY SAND to SANDY CLAY
42.5	191.5	117.2	2.60	NA	SILTY SAND to SANDY SILT
43.0	180.8	109.7	2.54	NA	SILTY SAND to SANDY SILT
43.5	154.4	92.9	2.53	NA	SILTY SAND to SANDY SILT
44.0	156.0	93.1	2.75	NA	SILTY SAND to SANDY SILT
44.5	211.3	125.1	2.08	NA	SILTY SAND to SANDY SILT
45.0	254.7	149.5	1.73	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

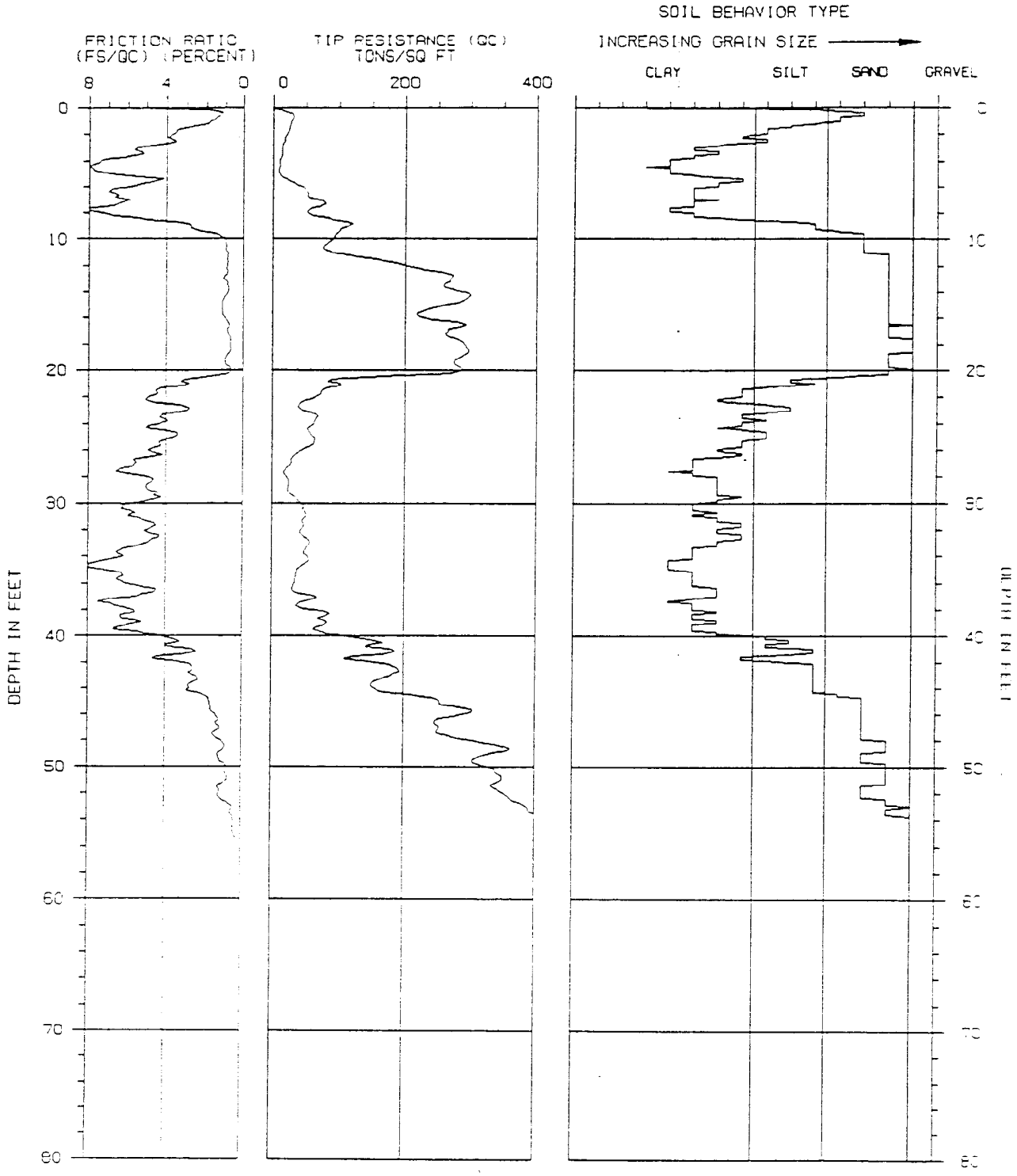
MCK0002744

SOUNDING : CPT-16

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
45.5	291.8	169.9	1.66	NA	SAND to SILTY SAND
46.0	288.5	166.6	1.42	NA	SAND to SILTY SAND
46.5	247.9	142.0	1.32	NA	SAND to SILTY SAND
47.0	253.8	144.2	1.18	NA	SAND to SILTY SAND
47.5	259.7	146.4	1.57	NA	SAND to SILTY SAND
48.0	304.8	170.4	1.11	NA	SAND to SILTY SAND
48.5	360.9	200.1	.90	NA	SAND to SILTY SAND
49.0	328.0	180.5	1.28	NA	SAND to SILTY SAND
49.5	305.4	166.6	1.17	NA	SAND to SILTY SAND
50.0	328.7	178.0	.83	NA	SAND to SILTY SAND
50.5	342.6	184.0	.88	NA	SAND to SILTY SAND
51.0	350.0	186.5	.79	NA	SAND to SILTY SAND
51.5	336.7	177.9	1.27	NA	SAND to SILTY SAND
52.0	352.2	184.7	1.22	NA	SAND to SILTY SAND
52.5	366.3	190.5	1.00	NA	SAND to SILTY SAND
53.0	388.2	200.4	.49	NA	SANDY GRAVEL to SAND
53.5	399.2	204.4	.58	NA	SAND to SILTY SAND
54.0	433.1	220.0	.46	NA	SANDY GRAVEL to SAND
54.5	454.0	228.8	.43	NA	SANDY GRAVEL to SAND
55.0	491.2	245.6	.41	NA	SANDY GRAVEL to SAND
55.5	520.2	259.2	.27	NA	SANDY GRAVEL to SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002745



ASSUMED TOTAL UNIT WT = 115 PCF

ASSUMED DEPTH OF WATER TABLE = 55.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-16

PROJECT NAME : HLA/MCKESSON-III

PROJECT NUMBER : 92-380-09502

LOCATION : SANTA FE SPRGS

DATE : 10-28-1991

THE EARTH TECHNOLOGY CORPORATION

MCK0002746

CONE PENETRATION TEST

SOUNDING : CPT-17
PROJECT : HLA/MCKESSON-III
LOCATION : SANTA FE SPRGS
DATE : 10-29-1991

PROJECT NO : 92-380-09502
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : EC/MR

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	33.7	85.5	1.83	NA	SILTY SAND to SANDY SILT
1.0	46.8	104.9	2.86	NA	SILTY SAND to SANDY SILT
1.5	27.1	56.0	5.40	NA	*SANDY CLAY to SILTY CLAY
2.0	19.9	38.6	5.76	NA	*SANDY CLAY to SILTY CLAY
2.5	16.9	31.1	5.98	NA	*SANDY CLAY to SILTY CLAY
3.0	14.5	25.5	6.18	NA	*SANDY CLAY to SILTY CLAY
3.5	14.3	24.3	5.11	NA	CLAYEY SILT to SILTY CLAY
4.0	14.1	23.2	5.42	NA	SILTY CLAY TO CLAY
4.5	12.4	19.7	4.60	NA	CLAYEY SILT to SILTY CLAY
5.0	15.2	23.5	4.35	NA	CLAYEY SILT to SILTY CLAY
5.5	18.0	27.0	4.71	NA	CLAYEY SILT to SILTY CLAY
6.0	32.8	47.9	3.78	NA	SANDY SILT to CLAYEY SILT
6.5	50.4	72.0	5.21	NA	*SANDY CLAY to SILTY CLAY
7.0	53.4	74.5	6.27	NA	*SANDY CLAY to SILTY CLAY
7.5	82.7	113.0	4.80	NA	*SANDY CLAY to SILTY CLAY
8.0	73.1	97.8	4.76	NA	*SANDY CLAY to SILTY CLAY
8.5	80.4	105.4	5.43	NA	*SANDY CLAY to SILTY CLAY
9.0	80.6	103.7	4.78	NA	*SANDY CLAY to SILTY CLAY
9.5	95.8	120.9	1.69	NA	SAND to SILTY SAND
10.0	96.1	119.2	.80	NA	SAND to SILTY SAND
10.5	113.4	138.2	.87	NA	SAND to SILTY SAND
11.0	202.7	243.0	.71	NA	SAND to SILTY SAND
11.5	240.0	283.1	.95	NA	SAND to SILTY SAND
12.0	230.0	267.1	1.03	NA	SAND to SILTY SAND
12.5	240.2	274.7	1.04	NA	SAND to SILTY SAND
13.0	251.7	283.5	.94	NA	SAND to SILTY SAND
13.5	261.7	290.5	.79	NA	SAND to SILTY SAND
14.0	258.3	282.7	.81	NA	SAND to SILTY SAND
14.5	274.5	296.1	.73	NA	SANDY GRAVEL to SAND
15.0	241.1	256.6	.76	NA	SAND to SILTY SAND
15.5	189.8	199.3	.86	NA	SAND to SILTY SAND
16.0	188.1	194.9	.73	NA	SAND to SILTY SAND
16.5	183.4	187.6	.62	NA	SAND to SILTY SAND
17.0	198.6	200.6	.60	NA	SAND to SILTY SAND
17.5	210.2	209.6	.72	NA	SAND to SILTY SAND
18.0	242.1	238.5	.73	NA	SAND to SILTY SAND
18.5	250.7	244.0	.83	NA	SAND to SILTY SAND
19.0	232.8	223.9	.82	NA	SAND to SILTY SAND
19.5	281.4	267.4	.71	NA	SAND to SILTY SAND
20.0	290.1	272.4	.67	NA	SANDY GRAVEL to SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002747

SOUNDING : CPT-17

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
20.5	196.9	182.8	1.68	NA	SAND to SILTY SAND
21.0	85.4	78.4	3.57	NA	*CLAYEY SAND to SANDY CLAY
21.5	72.3	65.7	3.05	NA	SANDY SILT to CLAYEY SILT
22.0	59.7	53.6	2.66	NA	SANDY SILT to CLAYEY SILT
22.5	56.1	49.9	2.53	NA	SANDY SILT to CLAYEY SILT
23.0	70.0	61.5	3.54	NA	SANDY SILT to CLAYEY SILT
23.5	66.8	58.1	3.46	NA	SANDY SILT to CLAYEY SILT
24.0	58.8	50.6	2.88	NA	SANDY SILT to CLAYEY SILT
24.5	62.1	52.8	3.04	NA	SANDY SILT to CLAYEY SILT
25.0	59.7	50.3	2.28	NA	SILTY SAND to SANDY SILT
25.5	61.6	51.4	3.30	NA	SANDY SILT to CLAYEY SILT
26.0	65.1	53.7	3.04	NA	SANDY SILT to CLAYEY SILT
26.5	61.3	50.1	3.41	NA	SANDY SILT to CLAYEY SILT
27.0	56.3	45.5	3.68	NA	SANDY SILT to CLAYEY SILT
27.5	43.2	34.6	3.90	NA	CLAYEY SILT to SILTY CLAY
28.0	46.9	37.2	3.38	NA	SANDY SILT to CLAYEY SILT
28.5	33.6	26.4	4.26	NA	CLAYEY SILT to SILTY CLAY
29.0	23.9	18.6	4.32	NA	CLAYEY SILT to SILTY CLAY
29.5	29.3	22.6	3.64	NA	CLAYEY SILT to SILTY CLAY
30.0	33.0	25.2	3.22	NA	SANDY SILT to CLAYEY SILT
30.5	38.4	29.0	3.36	NA	SANDY SILT to CLAYEY SILT
31.0	44.3	33.2	3.25	NA	SANDY SILT to CLAYEY SILT
31.5	48.7	36.1	3.62	NA	SANDY SILT to CLAYEY SILT
32.0	38.1	28.0	3.32	NA	SANDY SILT to CLAYEY SILT
32.5	48.9	35.7	3.35	NA	SANDY SILT to CLAYEY SILT
33.0	67.4	48.6	5.48	NA	*SANDY CLAY to SILTY CLAY
33.5	76.9	55.0	6.50	NA	*SANDY CLAY to SILTY CLAY
34.0	59.1	41.9	8.11	NA	*SANDY CLAY to SILTY CLAY
34.5	39.3	27.6	7.69	NA	*SANDY CLAY to SILTY CLAY
35.0	33.2	23.1	6.80	NA	*SANDY CLAY to SILTY CLAY
35.5	36.6	25.2	6.26	NA	*SANDY CLAY to SILTY CLAY
36.0	37.3	25.5	5.96	NA	*SANDY CLAY to SILTY CLAY
36.5	34.2	23.2	5.25	NA	CLAYEY SILT to SILTY CLAY
37.0	33.7	22.7	5.01	NA	CLAYEY SILT to SILTY CLAY
37.5	33.5	22.3	4.63	NA	CLAYEY SILT to SILTY CLAY
38.0	35.7	23.6	4.42	NA	CLAYEY SILT to SILTY CLAY
38.5	32.5	21.3	4.62	NA	CLAYEY SILT to SILTY CLAY
39.0	33.0	21.4	5.00	NA	CLAYEY SILT to SILTY CLAY
39.5	99.8	64.3	4.37	NA	*SANDY CLAY to SILTY CLAY
40.0	81.9	52.3	5.49	NA	*SANDY CLAY to SILTY CLAY
40.5	61.8	39.1	6.24	NA	*SANDY CLAY to SILTY CLAY
41.0	55.7	34.9	6.18	NA	*SANDY CLAY to SILTY CLAY
41.5	58.0	36.1	6.93	NA	*SANDY CLAY to SILTY CLAY
42.0	100.2	61.8	5.46	NA	*SANDY CLAY to SILTY CLAY
42.5	132.4	81.0	4.34	NA	*SANDY CLAY to SILTY CLAY
43.0	114.6	69.6	5.25	NA	*SANDY CLAY to SILTY CLAY
43.5	73.7	44.3	6.80	NA	*SANDY CLAY to SILTY CLAY
44.0	95.7	57.1	5.72	NA	*SANDY CLAY to SILTY CLAY
44.5	137.0	81.1	4.10	NA	*CLAYEY SAND to SANDY CLAY
45.0	197.8	116.1	2.73	NA	SILTY SAND to SANDY SILT

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

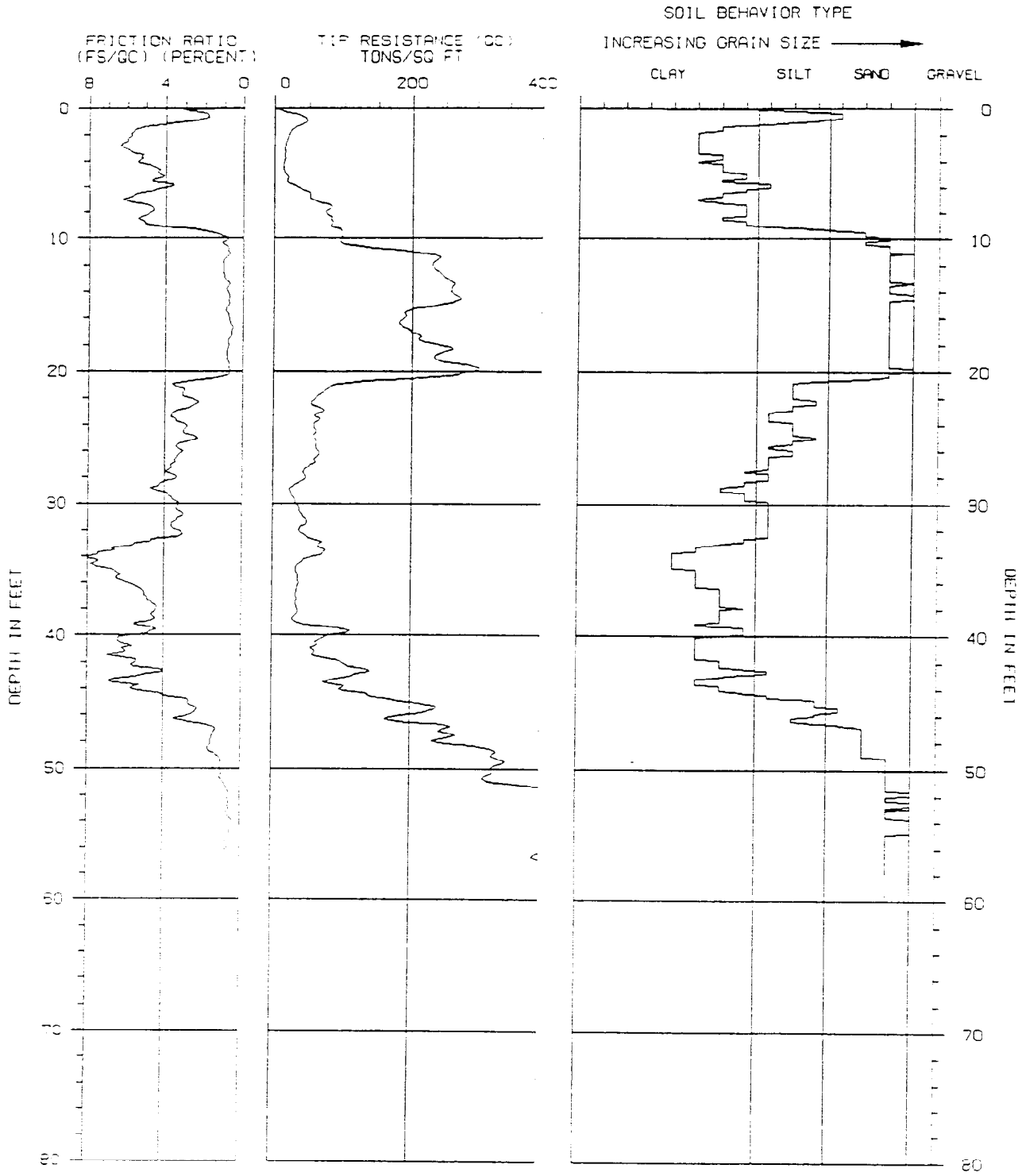
MCK0002748

SOUNDING : CPT-17

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
45.5	237.6	138.3	2.25	NA	SILTY SAND to SANDY SILT
46.0	187.4	108.2	2.67	NA	SILTY SAND to SANDY SILT
46.5	196.2	112.4	2.70	NA	SILTY SAND to SANDY SILT
47.0	250.7	142.5	1.29	NA	SAND to SILTY SAND
47.5	269.6	151.9	1.48	NA	SAND to SILTY SAND
48.0	237.8	132.9	1.54	NA	SAND to SILTY SAND
48.5	322.1	178.6	1.72	NA	SAND to SILTY SAND
49.0	325.0	178.8	1.23	NA	SAND to SILTY SAND
49.5	347.5	189.6	1.03	NA	SAND to SILTY SAND
50.0	324.9	175.9	1.07	NA	SAND to SILTY SAND
50.5	318.5	171.0	1.05	NA	SAND to SILTY SAND
51.0	334.4	178.2	.85	NA	SAND to SILTY SAND
51.5	451.1	238.4	.68	NA	SAND to SILTY SAND
52.0	465.2	243.9	.64	NA	SAND to SILTY SAND
52.5	459.0	238.8	.58	NA	SANDY GRAVEL to SAND
53.0	457.9	236.3	.61	NA	SAND to SILTY SAND
53.5	434.3	222.3	.64	NA	SAND to SILTY SAND
54.0	454.4	230.8	.44	NA	SANDY GRAVEL to SAND
54.5	425.5	214.4	.54	NA	SANDY GRAVEL to SAND
55.0	428.8	214.4	.62	NA	SAND to SILTY SAND
55.5	431.1	214.8	.76	NA	SAND to SILTY SAND
56.0	418.4	207.7	.64	NA	SAND to SILTY SAND
56.5	394.0	194.8	.73	NA	SAND to SILTY SAND
57.0	411.5	202.8	.74	NA	SAND to SILTY SAND
57.5	450.0	221.0	.81	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002749



ASSUMED TOTAL UNIT WT = 115 PCF

ASSUMED DEPTH OF WATER TABLE = 55.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-17

PROJECT NAME : HLA/MCKESSON-III

PROJECT NUMBER : 92-360-09502

LOCATION : SANTA FE SPRGS

DATE : 10-29-1991

THE EARTH TECHNOLOGY CORPORATION

MCK0002750

CONE PENETRATION TEST

SOUNDING : CPT-18
PROJECT : HLA/MCKESSON-III
LOCATION : SANTA FE SPRGS
DATE : 10-29-1991

PROJECT NO : 92-380-09502
INSTRUMENT : F15CKE091
SYSTEM : T-2
OPERATOR : EC/MR

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
.0	.0	.0	.00	NA	
.5	63.4	161.1	1.53	NA	SAND to SILTY SAND
1.0	54.8	122.9	1.81	NA	SILTY SAND to SANDY SILT
1.5	68.5	141.4	3.64	NA	*CLAYEY SAND to SANDY CLAY
2.0	75.3	146.0	3.56	NA	*CLAYEY SAND to SANDY CLAY
2.5	41.0	75.6	6.73	NA	*SANDY CLAY to SILTY CLAY
3.0	40.6	71.6	7.84	NA	*SANDY CLAY to SILTY CLAY
3.5	51.3	86.9	7.36	NA	*SANDY CLAY to SILTY CLAY
4.0	54.4	89.1	7.56	NA	*SANDY CLAY to SILTY CLAY
4.5	44.1	70.1	5.30	NA	*SANDY CLAY to SILTY CLAY
5.0	37.1	57.2	3.58	NA	SANDY SILT to CLAYEY SILT
5.5	33.2	49.8	1.36	NA	SILTY SAND to SANDY SILT
6.0	47.7	69.7	1.05	NA	SAND to SILTY SAND
6.5	125.1	178.5	1.08	NA	SAND to SILTY SAND
7.0	213.8	298.3	.80	NA	SAND to SILTY SAND
7.5	222.0	303.1	.89	NA	SAND to SILTY SAND
8.0	202.8	271.2	.93	NA	SAND to SILTY SAND
8.5	250.6	328.5	1.01	NA	SAND to SILTY SAND
9.0	305.2	392.5	.84	NA	SANDY GRAVEL to SAND
9.5	325.5	410.9	1.02	NA	SAND to SILTY SAND
10.0	323.1	400.7	.67	NA	SANDY GRAVEL to SAND
10.5	326.0	397.4	.81	NA	SANDY GRAVEL to SAND
11.0	337.6	404.8	.89	NA	SANDY GRAVEL to SAND
11.5	297.8	351.3	.81	NA	SANDY GRAVEL to SAND
12.0	287.9	334.2	.65	NA	SANDY GRAVEL to SAND
12.5	296.3	338.8	.64	NA	SANDY GRAVEL to SAND
13.0	284.3	320.3	.54	NA	SANDY GRAVEL to SAND
13.5	311.9	346.2	.71	NA	SANDY GRAVEL to SAND
14.0	319.4	349.5	.69	NA	SANDY GRAVEL to SAND
14.5	317.6	342.7	.73	NA	SANDY GRAVEL to SAND
15.0	297.7	316.8	.75	NA	SANDY GRAVEL to SAND
15.5	344.7	361.9	.69	NA	SANDY GRAVEL to SAND
16.0	341.3	353.7	.76	NA	SANDY GRAVEL to SAND
16.5	347.4	355.3	.60	NA	SANDY GRAVEL to SAND
17.0	371.3	375.0	.61	NA	SANDY GRAVEL to SAND
17.5	342.6	341.7	.66	NA	SANDY GRAVEL to SAND
18.0	449.5	442.7	.66	NA	SANDY GRAVEL to SAND
18.5	497.6	484.3	.78	NA	SANDY GRAVEL to SAND
19.0	437.9	421.1	.95	NA	SAND to SILTY SAND
19.5	402.9	382.9	.84	NA	SANDY GRAVEL to SAND
20.0	361.4	339.5	.86	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002751

SOUNDING : CPT-18

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
20.5	321.3	298.4	1.01	NA	SAND to SILTY SAND
21.0	374.5	343.9	1.06	NA	SAND to SILTY SAND
21.5	220.3	200.0	2.33	NA	*SILTY SAND to CLAYEY SAND
22.0	105.4	94.7	2.25	NA	SILTY SAND to SANDY SILT
22.5	98.8	87.8	2.58	NA	SILTY SAND to SANDY SILT
23.0	73.3	64.4	2.12	NA	SILTY SAND to SANDY SILT
23.5	52.7	45.8	3.30	NA	SANDY SILT to CLAYEY SILT
24.0	52.5	45.1	2.44	NA	SANDY SILT to CLAYEY SILT
24.5	62.6	53.3	2.44	NA	SILTY SAND to SANDY SILT
25.0	72.1	60.7	2.44	NA	SILTY SAND to SANDY SILT
25.5	76.0	63.4	2.85	NA	SANDY SILT to CLAYEY SILT
26.0	65.0	53.7	3.27	NA	SANDY SILT to CLAYEY SILT
26.5	63.2	51.6	2.98	NA	SANDY SILT to CLAYEY SILT
27.0	42.1	34.0	4.33	NA	CLAYEY SILT to SILTY CLAY
27.5	32.3	25.9	2.72	NA	SANDY SILT to CLAYEY SILT
28.0	28.6	22.7	3.05	NA	SANDY SILT to CLAYEY SILT
28.5	33.2	26.1	3.09	NA	SANDY SILT to CLAYEY SILT
29.0	39.1	30.4	2.64	NA	SANDY SILT to CLAYEY SILT
29.5	42.1	32.4	3.37	NA	SANDY SILT to CLAYEY SILT
30.0	39.1	29.9	4.22	NA	CLAYEY SILT to SILTY CLAY
30.5	54.2	40.9	3.09	NA	SANDY SILT to CLAYEY SILT
31.0	52.7	39.5	3.62	NA	SANDY SILT to CLAYEY SILT
31.5	48.1	35.7	4.04	NA	CLAYEY SILT to SILTY CLAY
32.0	49.2	36.2	3.92	NA	CLAYEY SILT to SILTY CLAY
32.5	56.5	41.2	4.72	NA	*SANDY CLAY to SILTY CLAY
33.0	49.0	35.4	5.73	NA	*SANDY CLAY to SILTY CLAY
33.5	52.0	37.2	6.07	NA	*SANDY CLAY to SILTY CLAY
34.0	57.3	40.6	5.79	NA	*SANDY CLAY to SILTY CLAY
34.5	55.8	39.2	6.04	NA	*SANDY CLAY to SILTY CLAY
35.0	52.4	36.5	6.14	NA	*SANDY CLAY to SILTY CLAY
35.5	60.9	42.1	5.58	NA	*SANDY CLAY to SILTY CLAY
36.0	61.4	42.0	5.84	NA	*SANDY CLAY to SILTY CLAY
36.5	51.2	34.7	5.43	NA	*SANDY CLAY to SILTY CLAY
37.0	53.5	36.0	5.84	NA	*SANDY CLAY to SILTY CLAY
37.5	54.9	36.5	4.79	NA	*SANDY CLAY to SILTY CLAY
38.0	44.3	29.2	5.45	NA	*SANDY CLAY to SILTY CLAY
38.5	37.6	24.6	4.73	NA	CLAYEY SILT to SILTY CLAY
39.0	44.0	28.6	4.59	NA	CLAYEY SILT to SILTY CLAY
39.5	55.3	35.6	4.80	NA	*SANDY CLAY to SILTY CLAY
40.0	68.3	43.6	5.13	NA	*SANDY CLAY to SILTY CLAY
40.5	70.6	44.7	4.53	NA	*SANDY CLAY to SILTY CLAY
41.0	96.1	60.3	5.25	NA	*SANDY CLAY to SILTY CLAY
41.5	82.7	51.5	5.80	NA	*SANDY CLAY to SILTY CLAY
42.0	103.5	63.9	4.33	NA	*SANDY CLAY to SILTY CLAY
42.5	165.7	101.4	3.14	NA	*CLAYEY SAND to SANDY CLAY
43.0	159.4	96.7	2.52	NA	SILTY SAND to SANDY SILT
43.5	120.7	72.6	4.06	NA	*CLAYEY SAND to SANDY CLAY
44.0	90.9	54.2	5.54	NA	*SANDY CLAY to SILTY CLAY
44.5	77.3	45.8	6.19	NA	*SANDY CLAY to SILTY CLAY
45.0	65.9	38.7	7.77	NA	*SANDY CLAY to SILTY CLAY

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

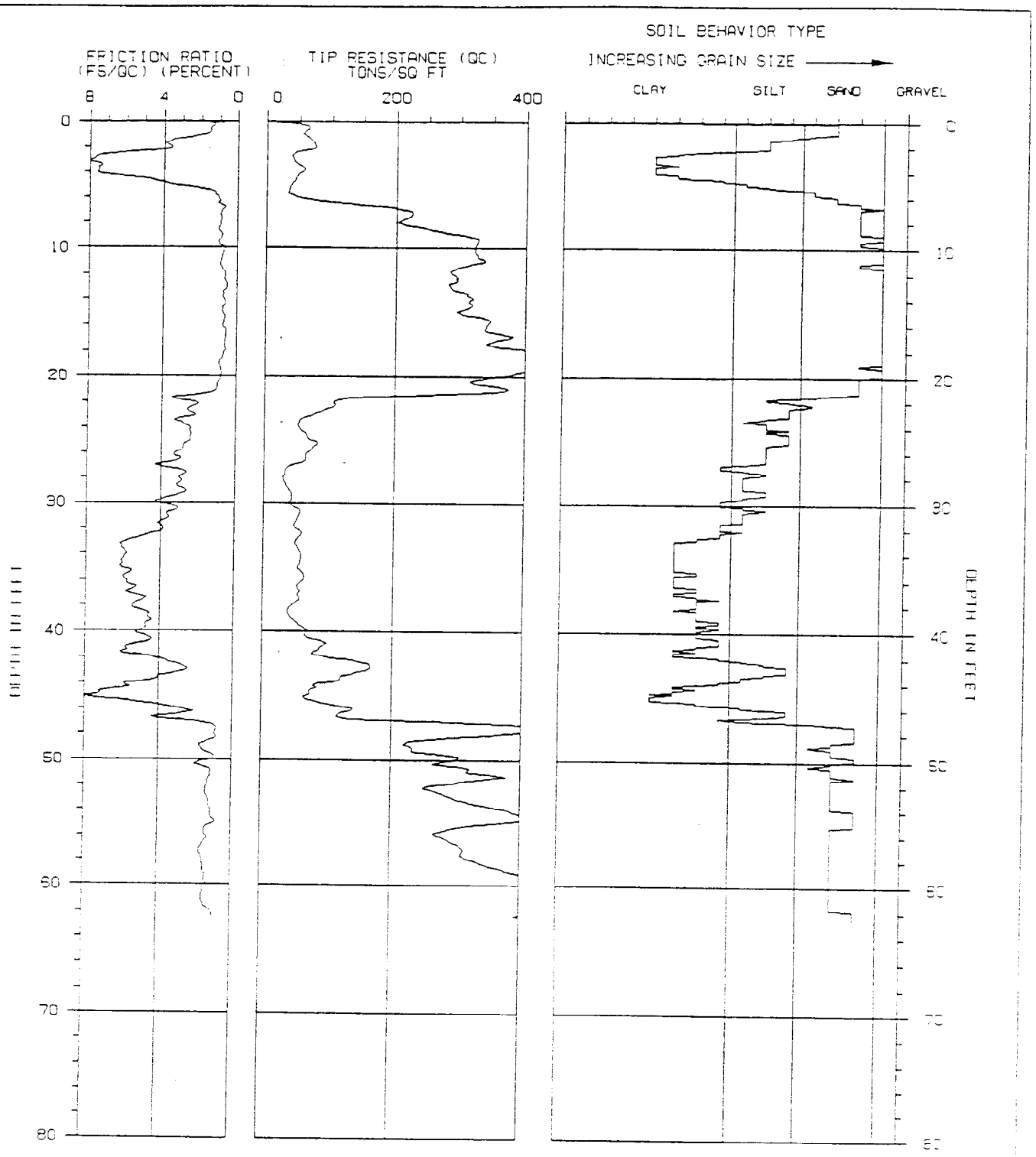
MCK0002752

SOUNDING : CPT-18

DEPTH (ft)	TIP RESISTANCE (tsf)	NORMALIZED TIP RESISTANCE (tsf)	FRICTION RATIO (%)	CONE PORE PRESSURE (tsf)	SOIL BEHAVIOR TYPE
45.5	91.1	53.0	5.09	NA	*SANDY CLAY to SILTY CLAY
46.0	141.6	81.8	2.81	NA	SILTY SAND to SANDY SILT
46.5	116.5	66.7	3.17	NA	SANDY SILT to CLAYEY SILT
47.0	259.4	147.4	2.17	NA	SILTY SAND to SANDY SILT
47.5	432.9	244.0	.86	NA	SAND to SILTY SAND
48.0	377.6	211.1	.96	NA	SAND to SILTY SAND
48.5	241.3	133.8	1.18	NA	SAND to SILTY SAND
49.0	233.1	128.2	1.70	NA	SAND to SILTY SAND
49.5	265.7	145.0	1.26	NA	SAND to SILTY SAND
50.0	299.9	162.3	1.16	NA	SAND to SILTY SAND
50.5	299.2	160.7	1.74	NA	SAND to SILTY SAND
51.0	324.4	172.8	1.18	NA	SAND to SILTY SAND
51.5	339.2	179.3	1.32	NA	SAND to SILTY SAND
52.0	265.0	139.0	1.36	NA	SAND to SILTY SAND
52.5	272.3	141.6	1.43	NA	SAND to SILTY SAND
53.0	297.1	153.3	1.25	NA	SAND to SILTY SAND
53.5	333.2	170.6	1.23	NA	SAND to SILTY SAND
54.0	382.0	194.0	1.15	NA	SAND to SILTY SAND
54.5	412.7	208.0	1.10	NA	SAND to SILTY SAND
55.0	359.8	179.9	.94	NA	SAND to SILTY SAND
55.5	291.1	145.0	1.44	NA	SAND to SILTY SAND
56.0	270.2	134.1	1.42	NA	SAND to SILTY SAND
56.5	292.0	144.4	1.43	NA	SAND to SILTY SAND
57.0	309.6	152.6	1.68	NA	SAND to SILTY SAND
57.5	310.3	152.4	1.68	NA	SAND to SILTY SAND
58.0	324.6	158.8	1.57	NA	SAND to SILTY SAND
58.5	353.6	172.4	1.52	NA	SAND to SILTY SAND
59.0	390.3	189.6	1.45	NA	SAND to SILTY SAND
59.5	444.2	215.0	1.40	NA	SAND to SILTY SAND
60.0	440.6	212.5	1.36	NA	SAND to SILTY SAND
60.5	463.6	222.8	1.51	NA	SAND to SILTY SAND
61.0	484.7	232.1	1.56	NA	SAND to SILTY SAND
61.5	470.4	224.4	1.47	NA	SAND to SILTY SAND
62.0	467.6	222.3	1.05	NA	SAND to SILTY SAND
62.5	404.7	191.7	.94	NA	SAND to SILTY SAND

NA = NOT APPLICABLE
*INDICATES OVERCONSOLIDATED OR CEMENTED MATERIAL
ASSUMED TOTAL UNIT WT = 115 PCF
ASSUMED DEPTH OF WATER TABLE = 55.0 FT

MCK0002753



ASSUMED TOTAL UNIT WT = 115 PCF

ASSUMED DEPTH OF WATER TABLE = 55.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-18

PROJECT NAME : HLA/MCKESSON-III

PROJECT NUMBER : 92-380-09502

LOCATION : SANTA FE SPRGS

DATE : 10-29-1991

THE EARTH TECHNOLOGY CORPORATION

MCK0002754

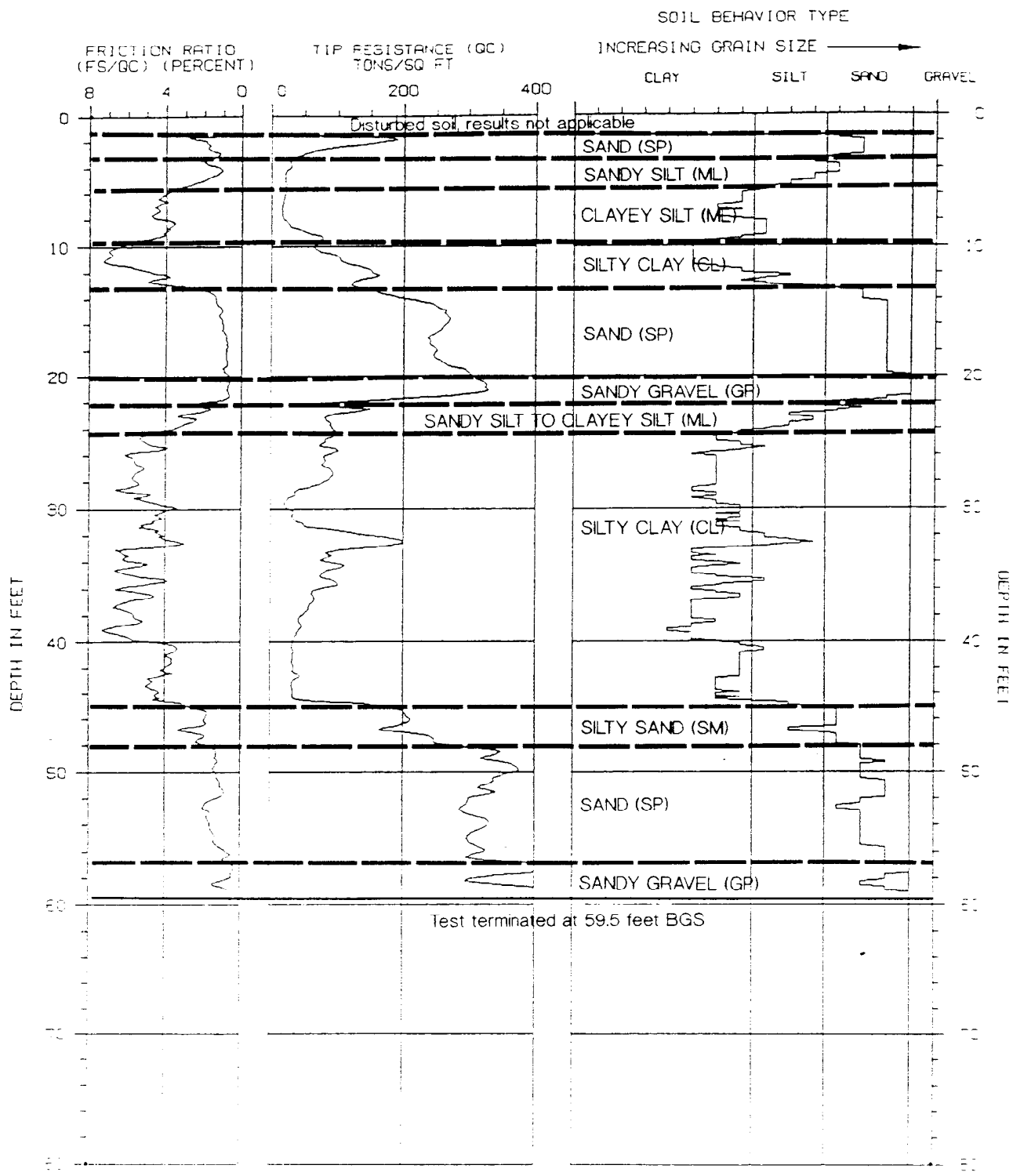
MCK0002755

APPENDIX D

APPENDIX D
INTERPRETED CPT DATA

MCK0002756

Printed on Recycled Paper.



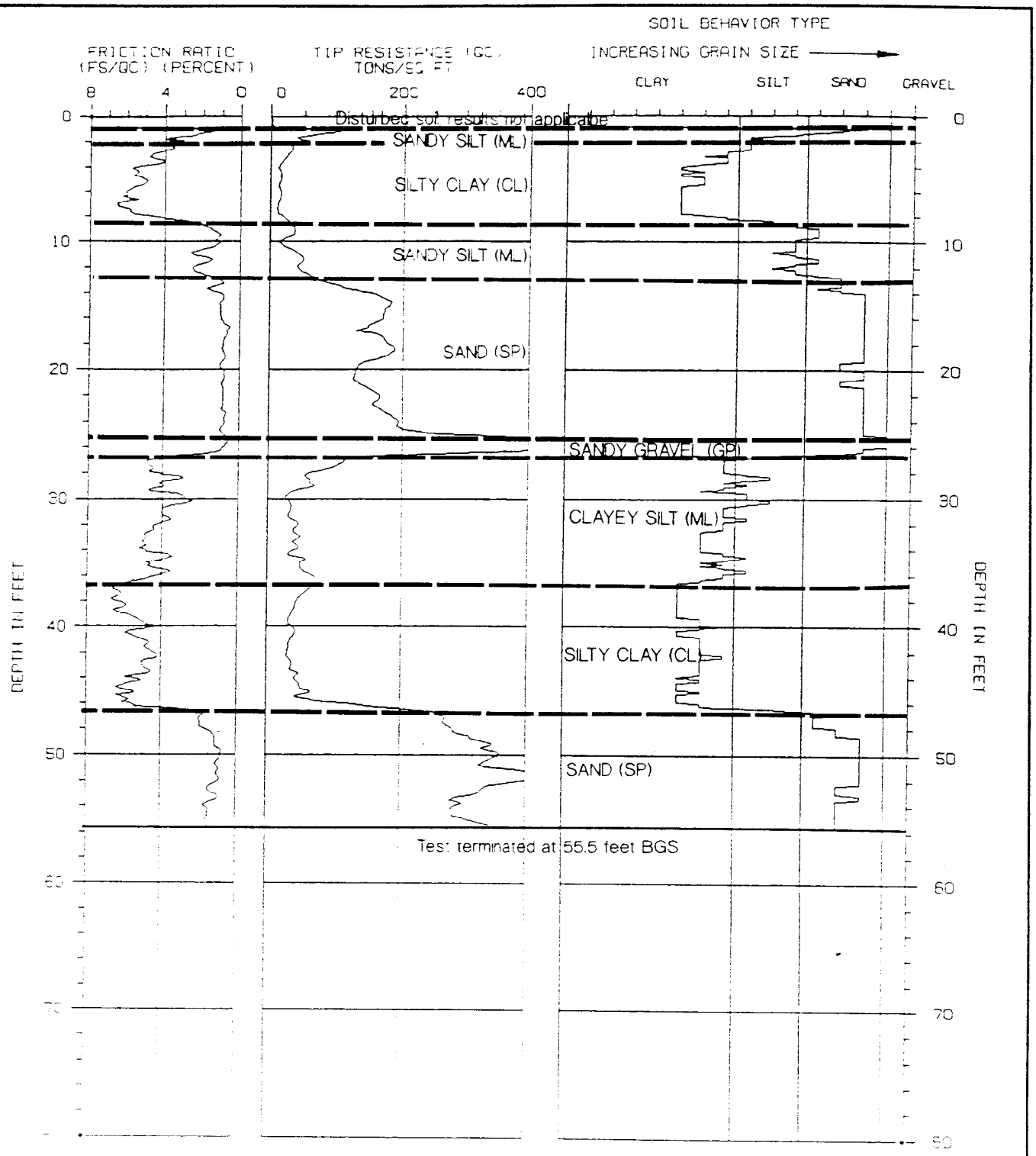
MCK0002757

Harding Lawson Associates
Engineering and Environmental Services

CPT-1, INTERPRETED LOG
Mckesson Corporation Property
Santa Fe Springs, California

D1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	THC	1/92		



MCK0002758

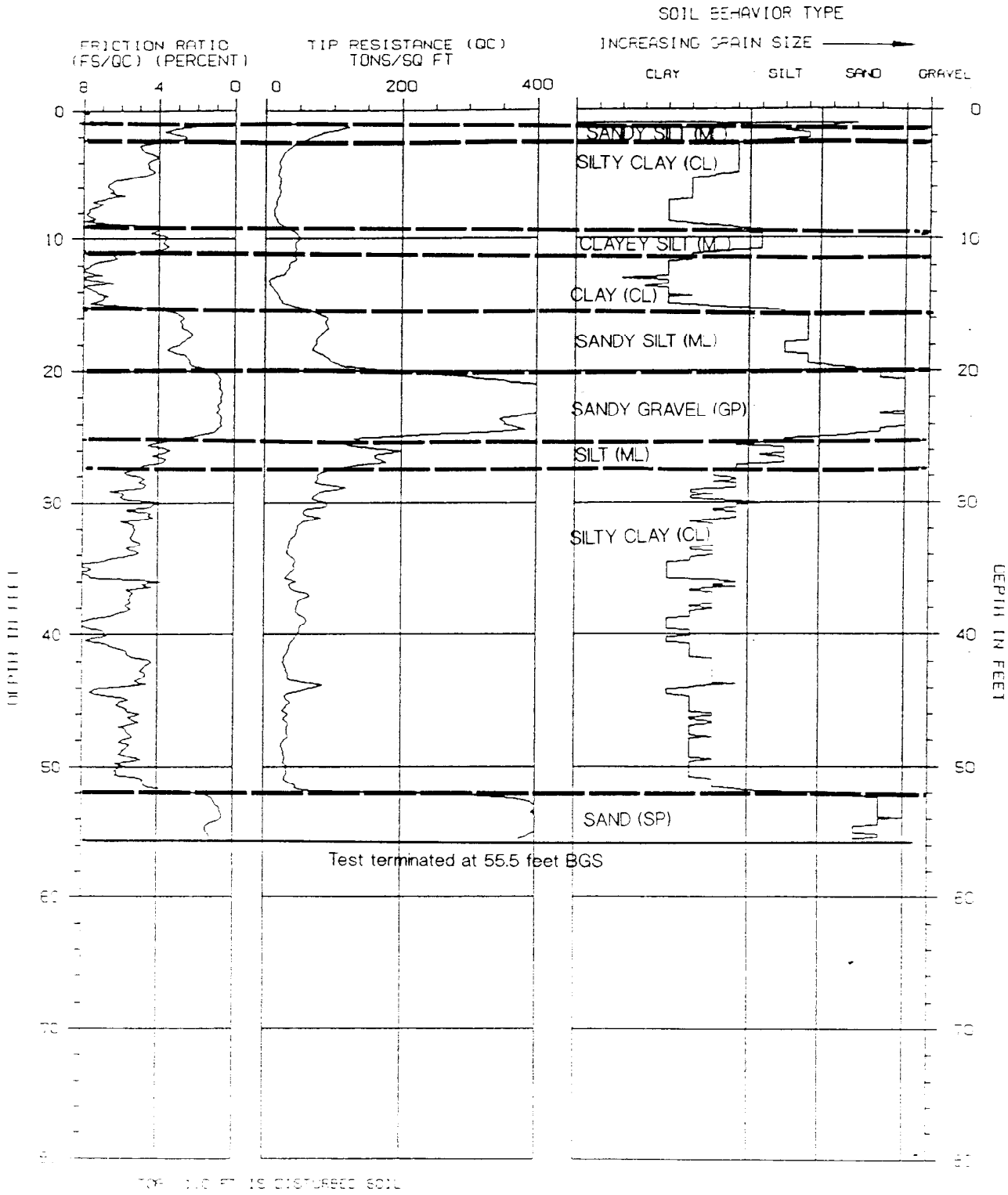
Harding Lawson Associates
Engineering and Environmental Services

CPT-2, INTERPRETED LOG

Mckesson Corporation Property
Santa Fe Springs, California

D2

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	1/92		



TOP 1.0 FT IS DISTURBED SOIL

Approximate surface elevation 148.14 feet, MSL

— — Approximate geologic contact

MCK0002759

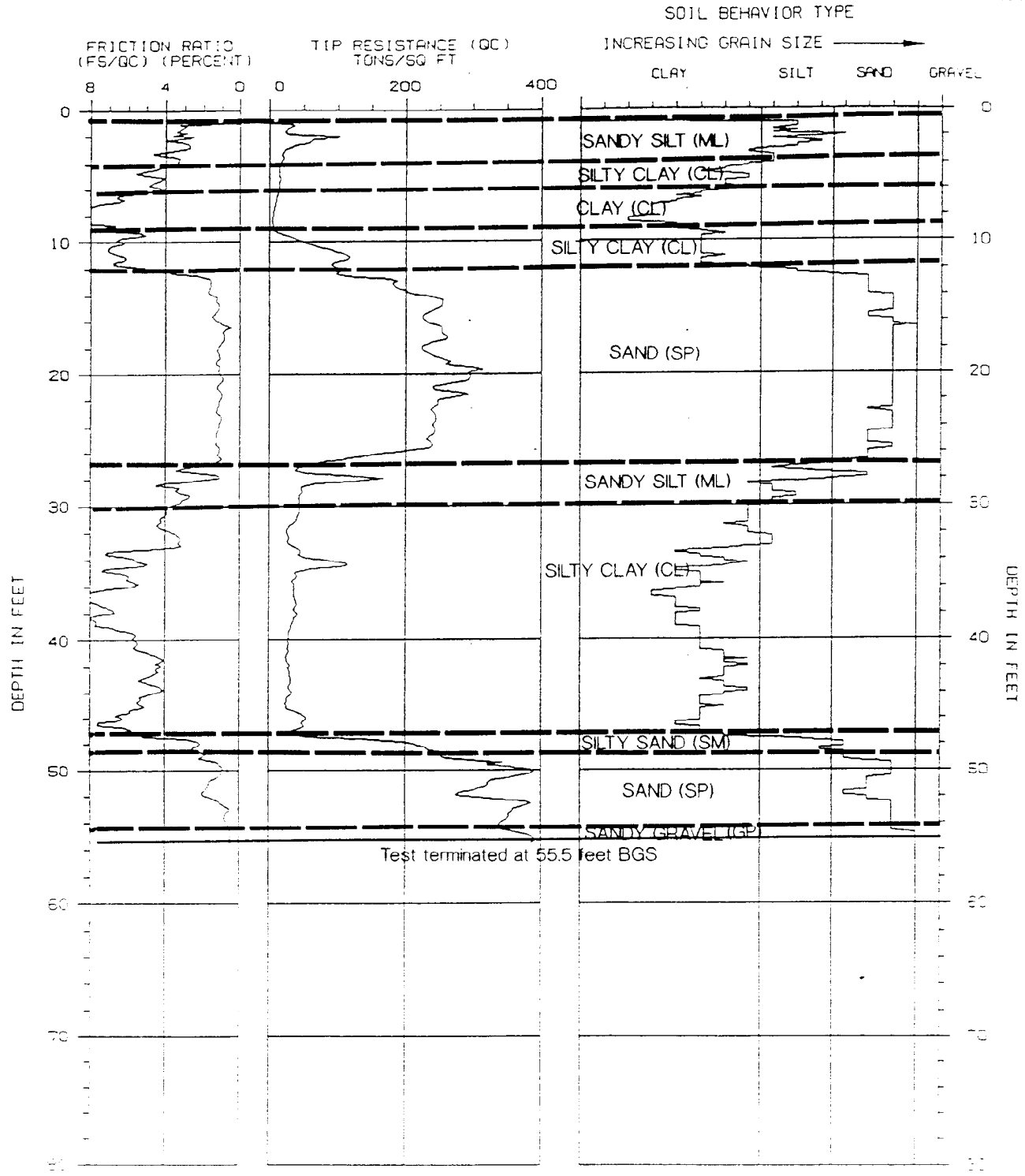
Harding Lawson Associates
Engineering and Environmental Services

CPT-3, INTERPRETED LOG
McKesson Corporation Property
Santa Fe Springs, California

D3

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
[illegible]	17333,168.11	TAK	1/92		

HDT\17333168\DIA2



TOP 3.0 FT IS DISTURBED SOIL

Approximate surface elevation 145.94 feet, MSL

Approximate geologic contact

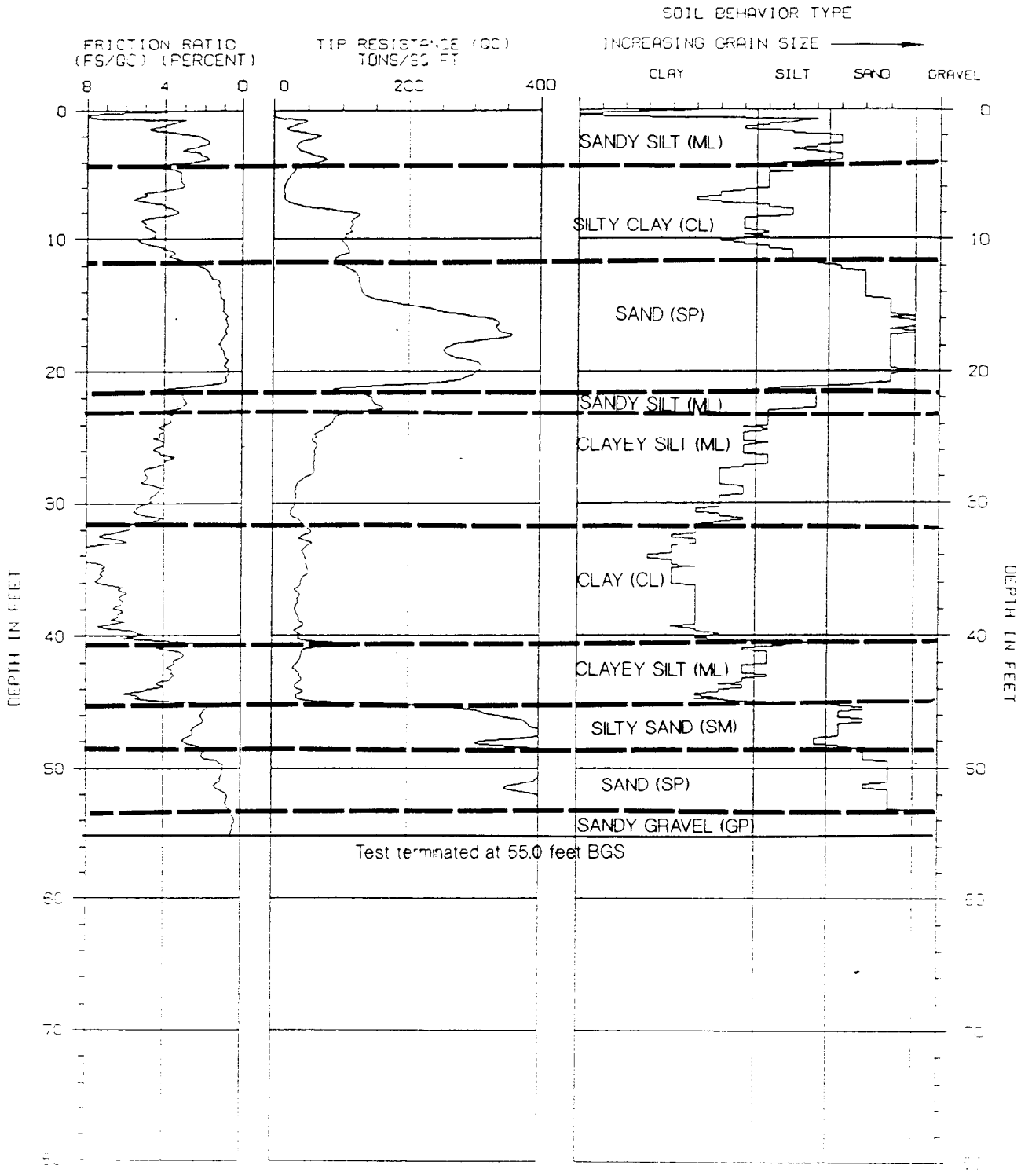
MCK0002760

Harding Lawson Associates
Engineering and Environmental Services

CPT-4, INTERPRETED LOG
McKesson Corporation Property
Santa Fe Springs, California

D4

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333.168.11	THK	1/92		



Approximate surface elevation 151.55 feet MSL

Approximate geologic contact

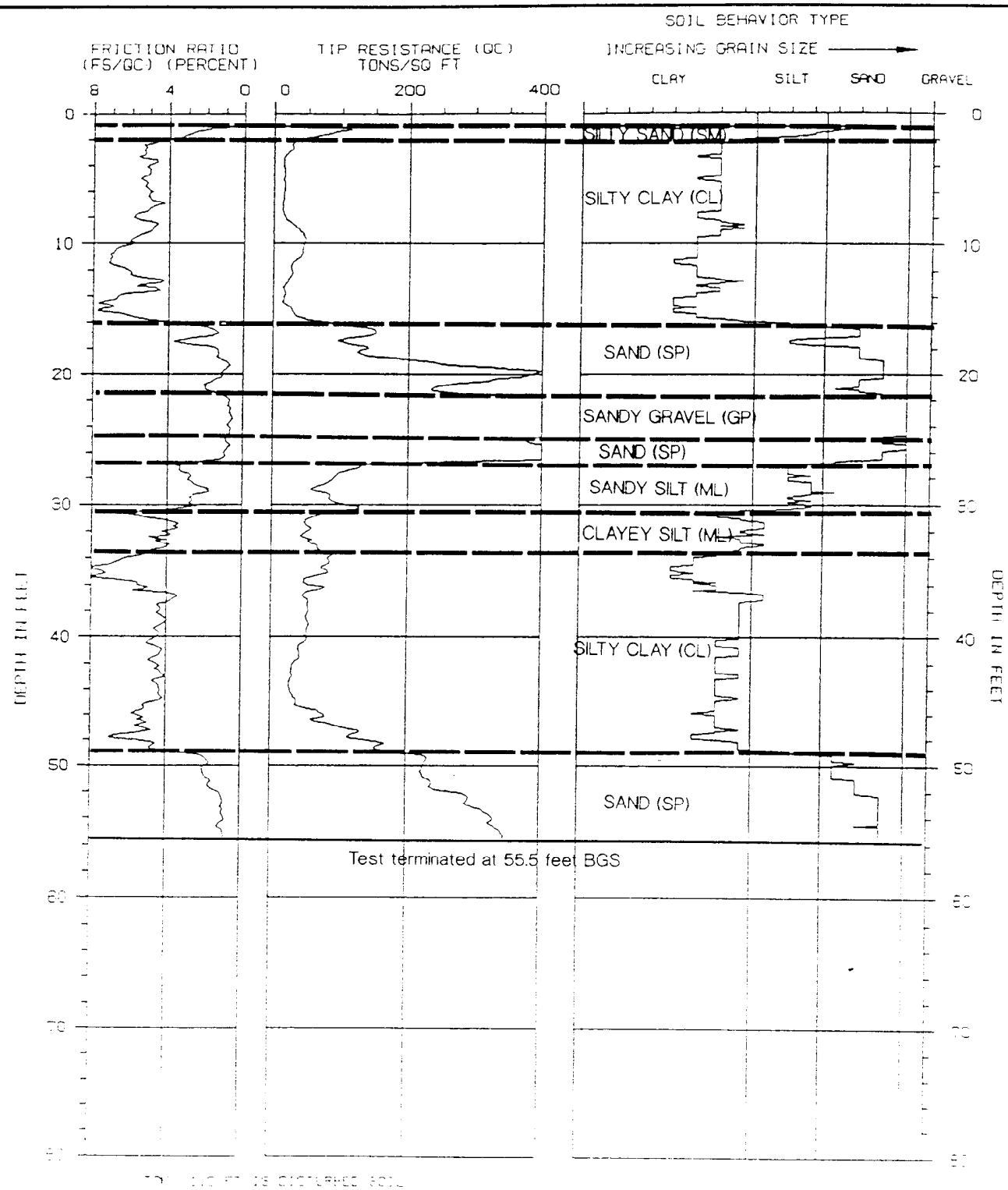
MCK0002761

Harding Lawson Associates
Engineering and Environmental Services

CPT-5, INTERPRETED LOG
Mckesson Corporation Property
Santa Fe Springs, California

D5

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAC	1/92		



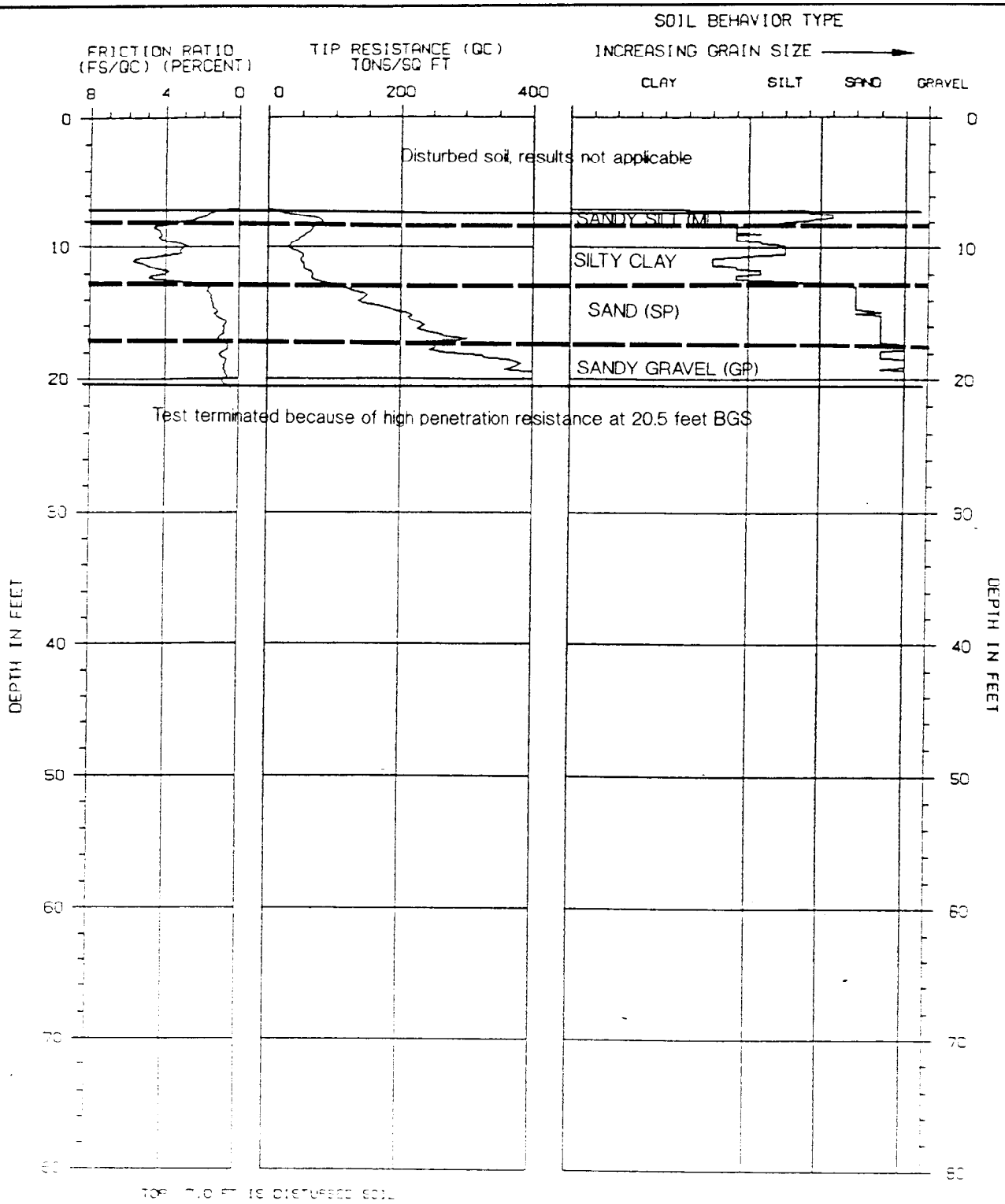
MCK0002762

Harding Lawson Associates
Engineering and Environmental Services

CPT-6, INTERPRETED LOG
McKesson Corporation Property
Santa Fe Springs, California

D6

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	1/92		



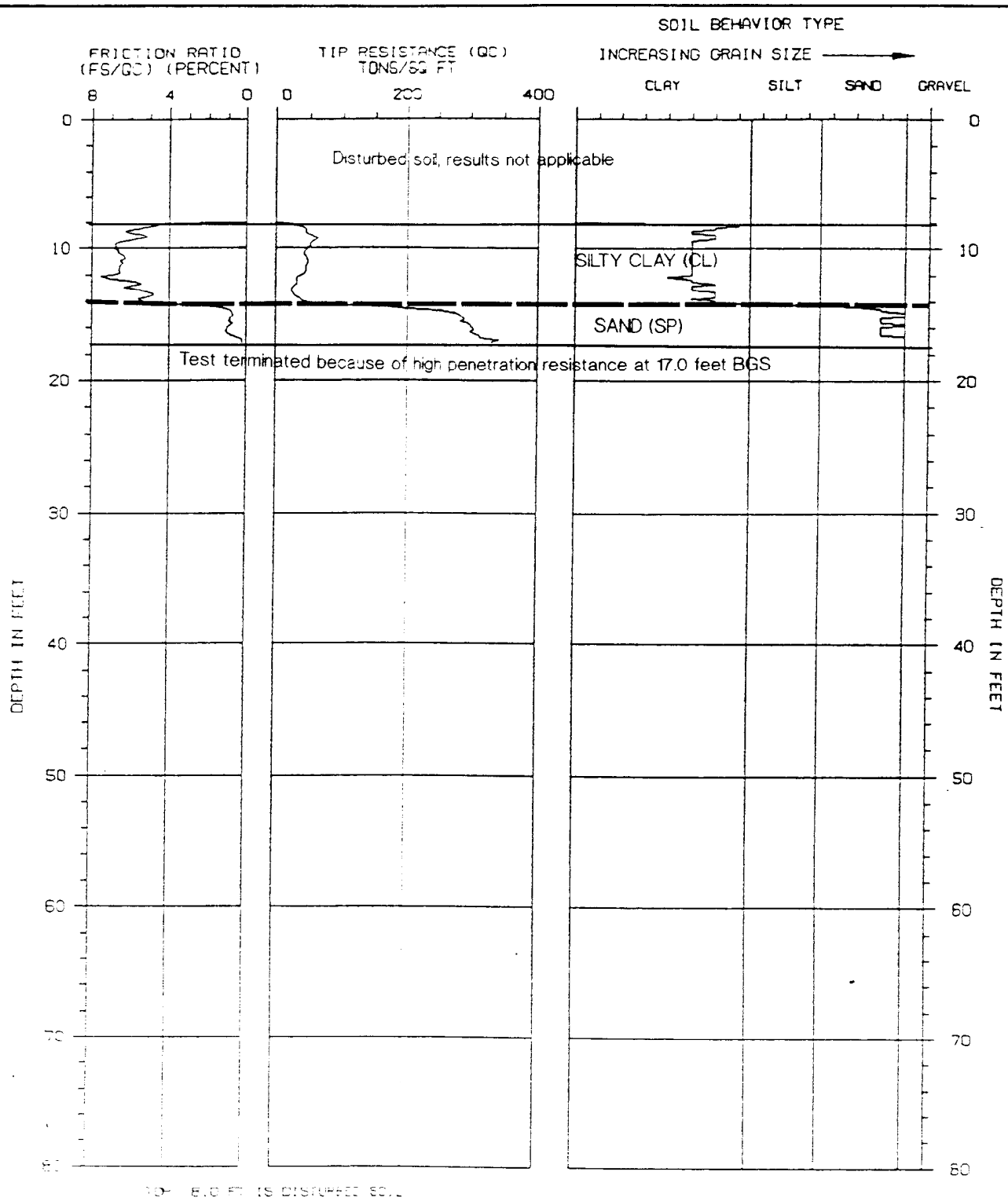
MCK0002763

Harding Lawson Associates
Engineering and Environmental Services

CPT-7, INTERPRETED LOG
McKesson Corporation Property
Santa Fe Springs, California

PLATE
D7

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	1/92		



TOP 8.0 FT IS DISTURBED SOIL

Approximate surface elevation 148.71 feet MSL

Approximate geologic contact

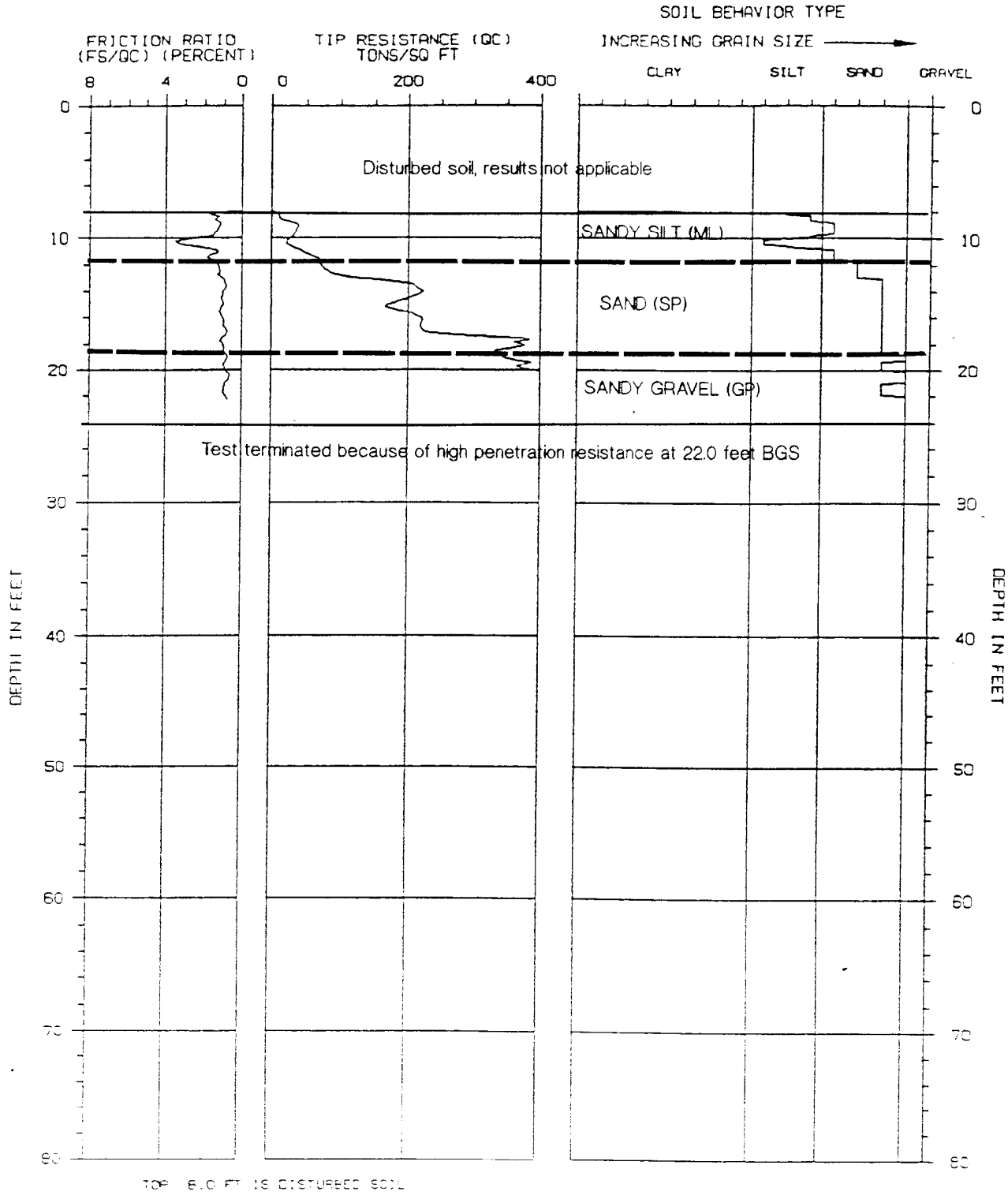
MCK0002764

Harding Lawson Associates
Engineering and
Environmental Services

CPT-8, INTERPRETED LOG
McKesson Corporation Property
Santa Fe Springs, California

D8

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	1/92		



Approximate surface elevation 146.80 feet, MSL

Approximate geologic contact

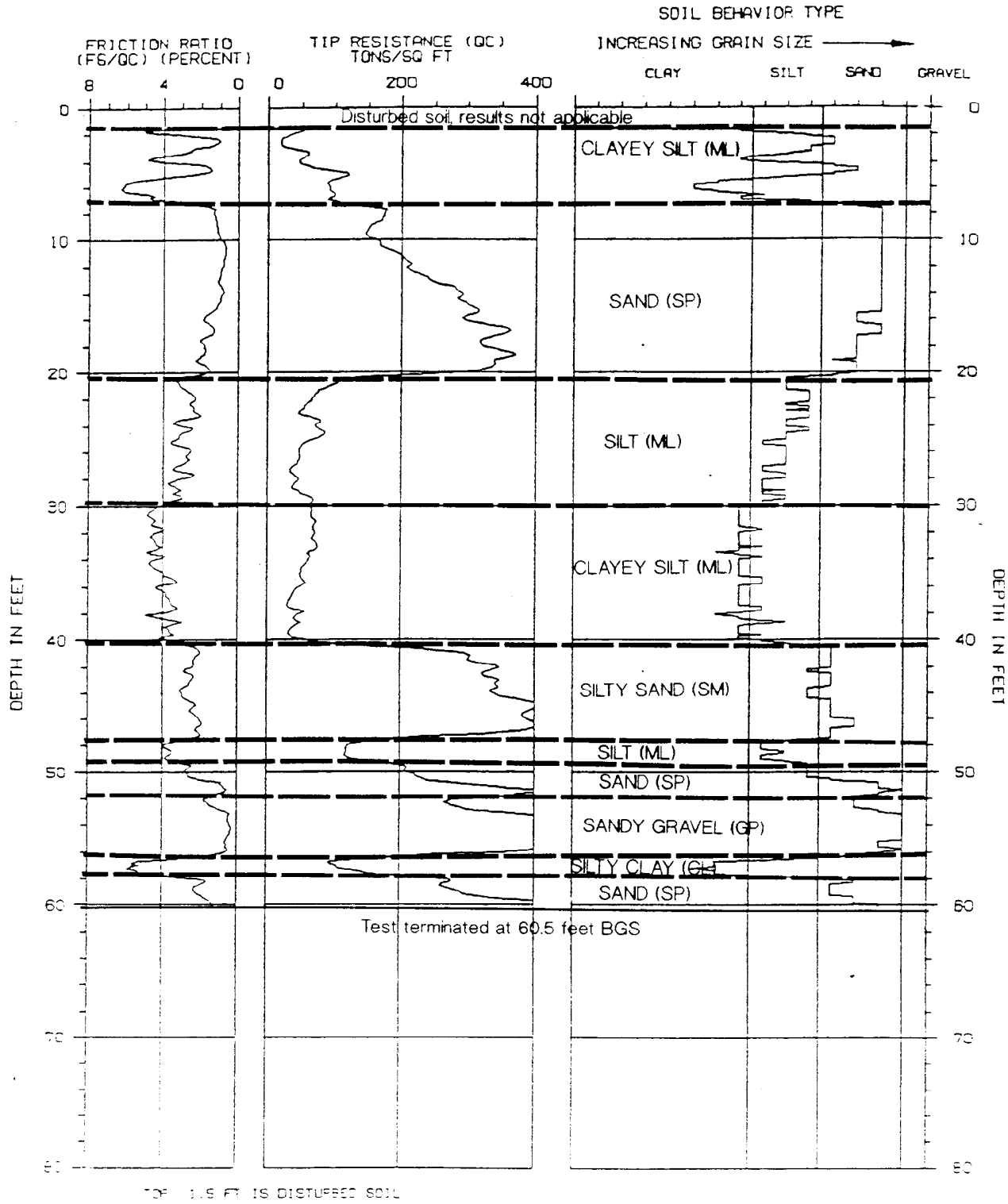
MCK0002765

Harding Lawson Associates
Engineering and Environmental Services

CPT-9, INTERPRETED LOG
McKesson Corporation Property
Santa Fe Springs, California

D9

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	THK	1/92		



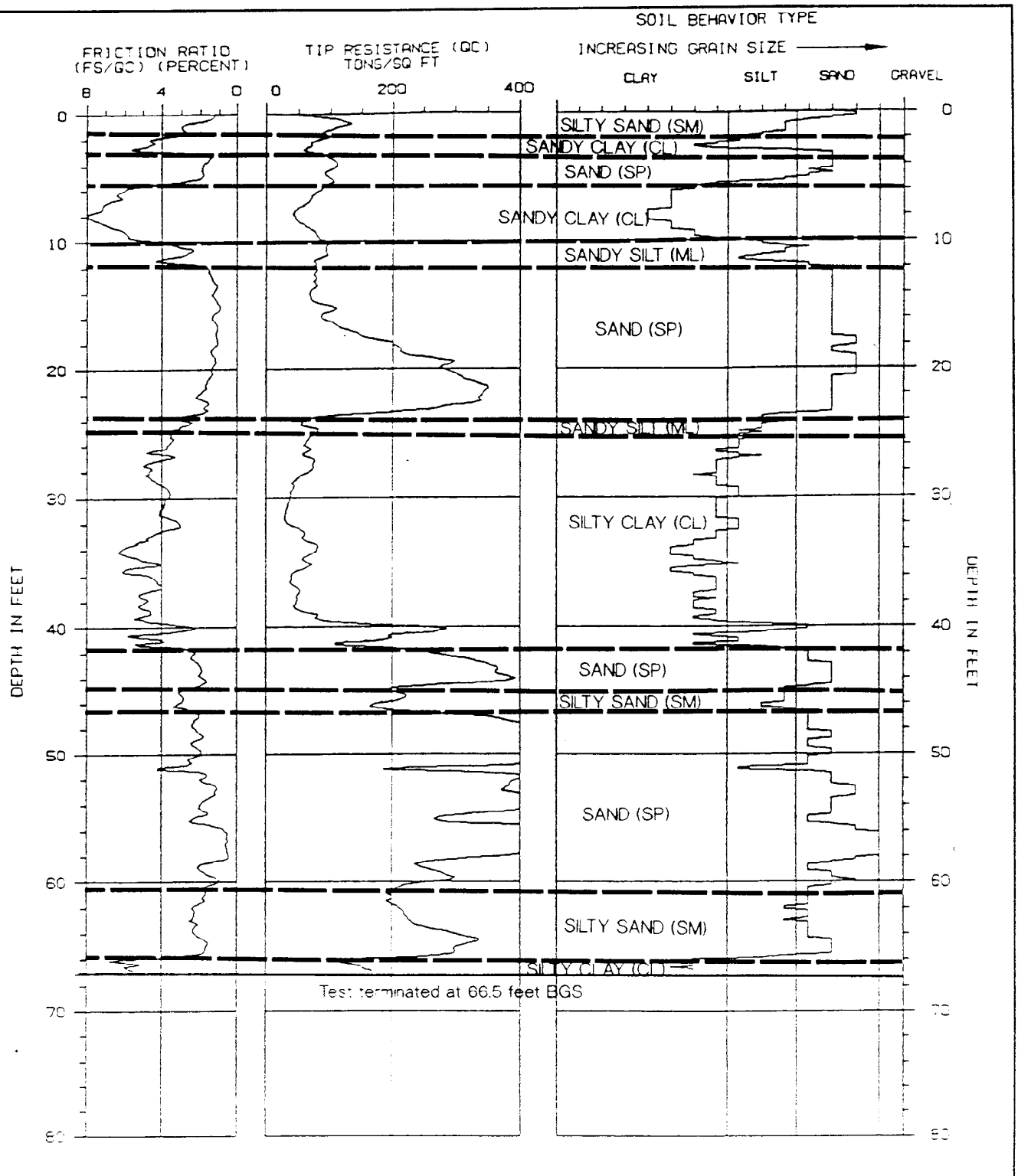
MCK0002766

Harding Lawson Associates
Engineering and Environmental Services

CPT-10, INTERPRETED LOG
McKesson Corporation Property
Santa Fe Springs, California

D10

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TH	1/92		



Approximate surface elevation 161.68 feet, MSL

— — Approximate geologic contact

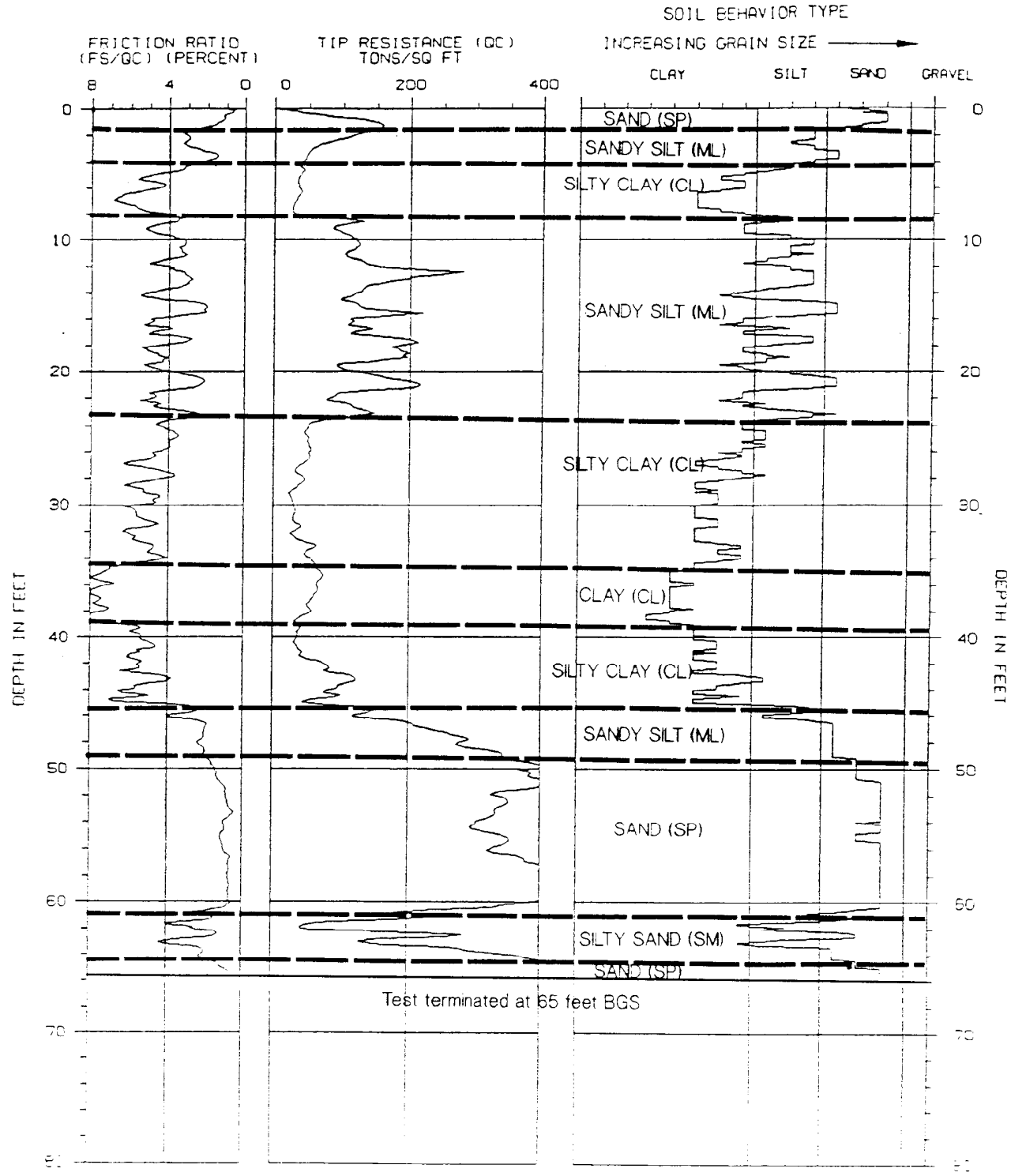
MCK0002767

Harding Lawson Associates
Engineering and Environmental Services

CPT-11, INTERPRETED LOG
McKesson Corporation Property
Santa Fe Springs, California

D11

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	1/92		



Approximate surface elevation 152.01 feet MSL

Approximate geologic contact

MCK0002768

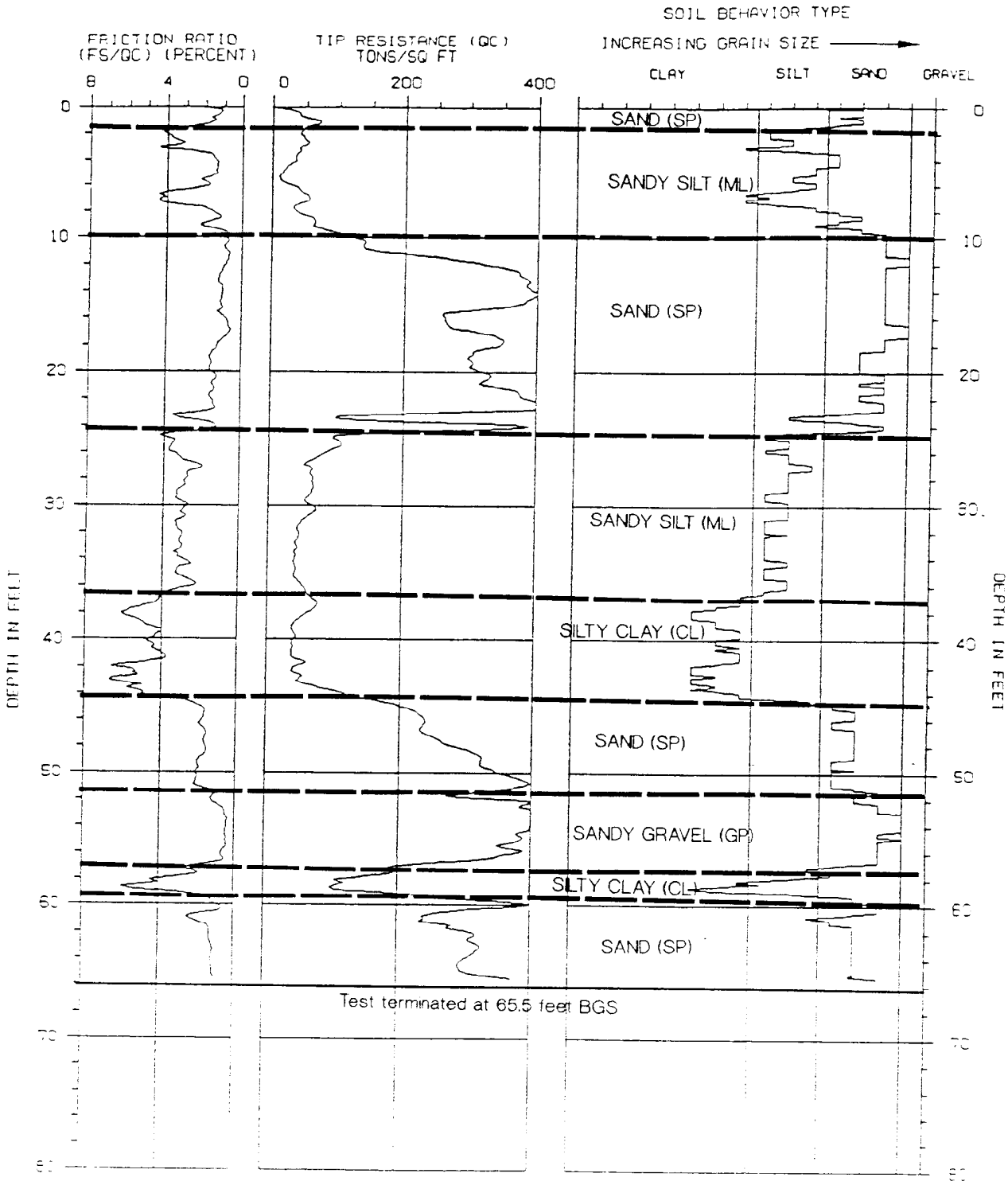
Harding Lawson Associates
Engineering and Environmental Services

CPT-12, INTERPRETED LOG
McKesson Corporation Property
Santa Fe Springs, California

D12

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	1/92		

HDR\17333168\DIA2



Approximate surface elevation 150.38 feet, MSL

— — Approximate geologic contact

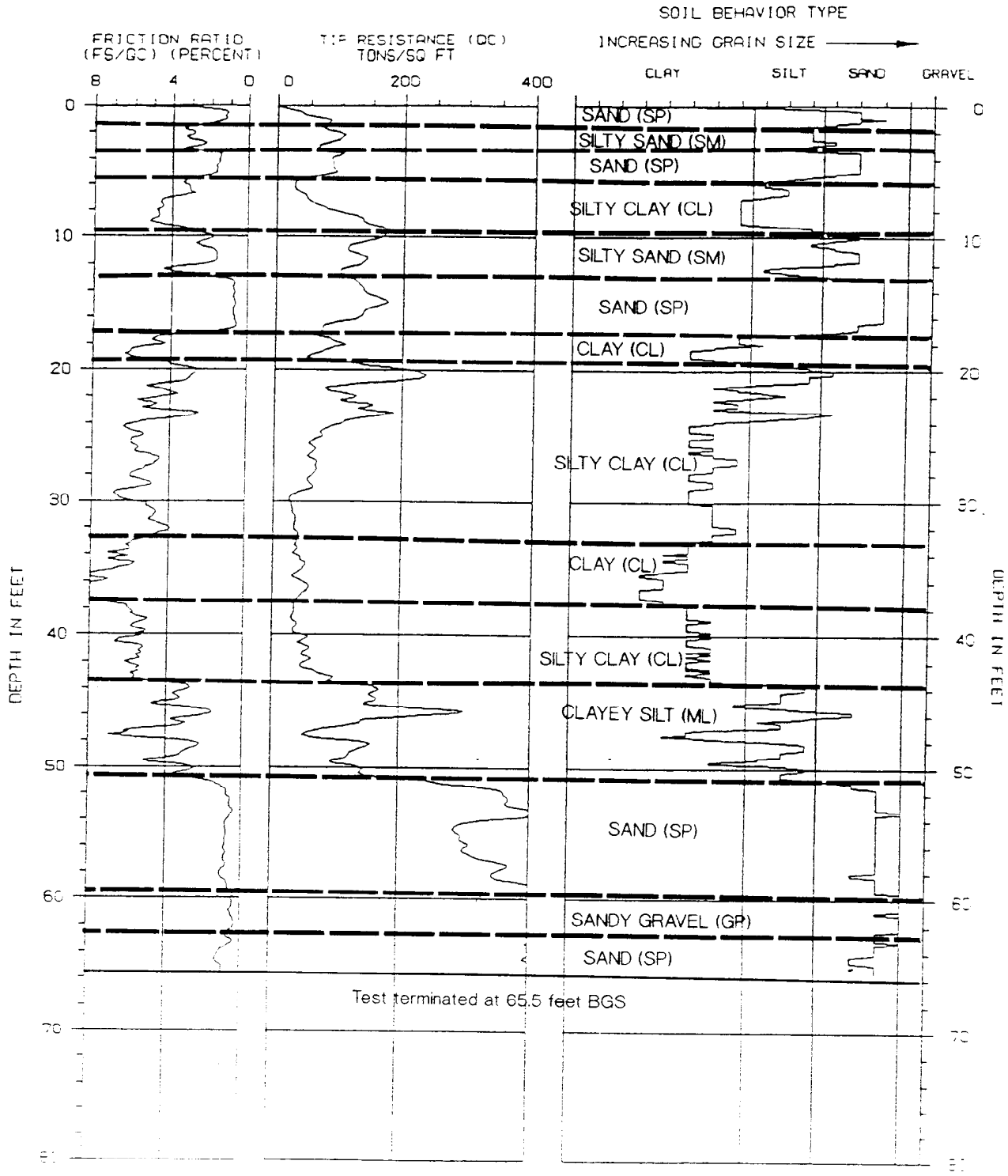
MCK0002769

Harding Lawson Associates
Engineering and
Environmental Services

CPT-13, INTERPRETED LOG
McKesson Corporation Property
Santa Fe Springs, California

D13

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JT	17333,168.11	TAK	1/92		



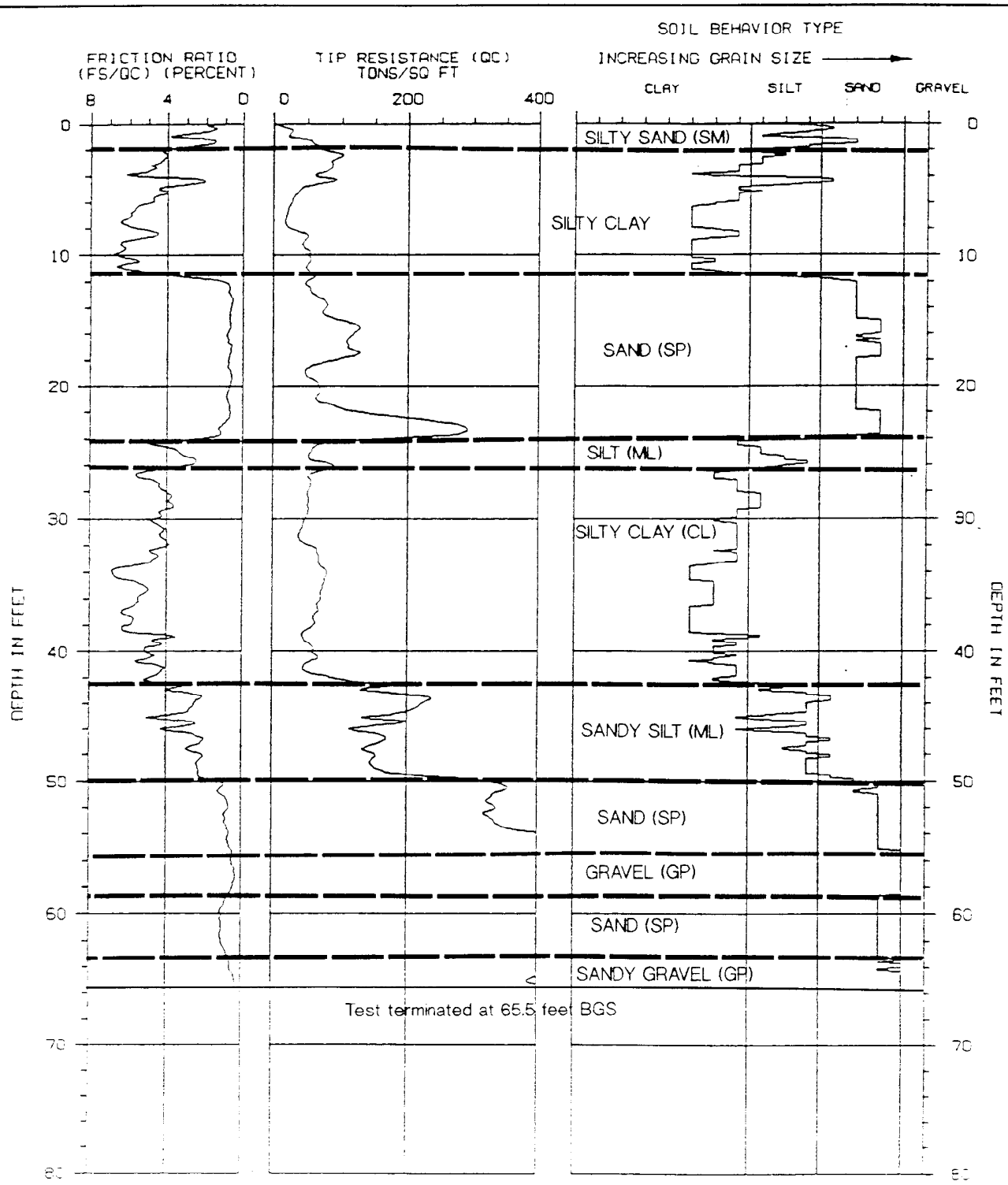
MCK0002770

Harding Lawson Associates
Engineering and Environmental Services

CPT-14, INTERPRETED LOG
McKesson Corporation Property
Santa Fe Springs, California

D14

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333.168.11	TAK	1/92		



Approximate surface elevation 151.28 feet, MSL

Approximate geologic contact

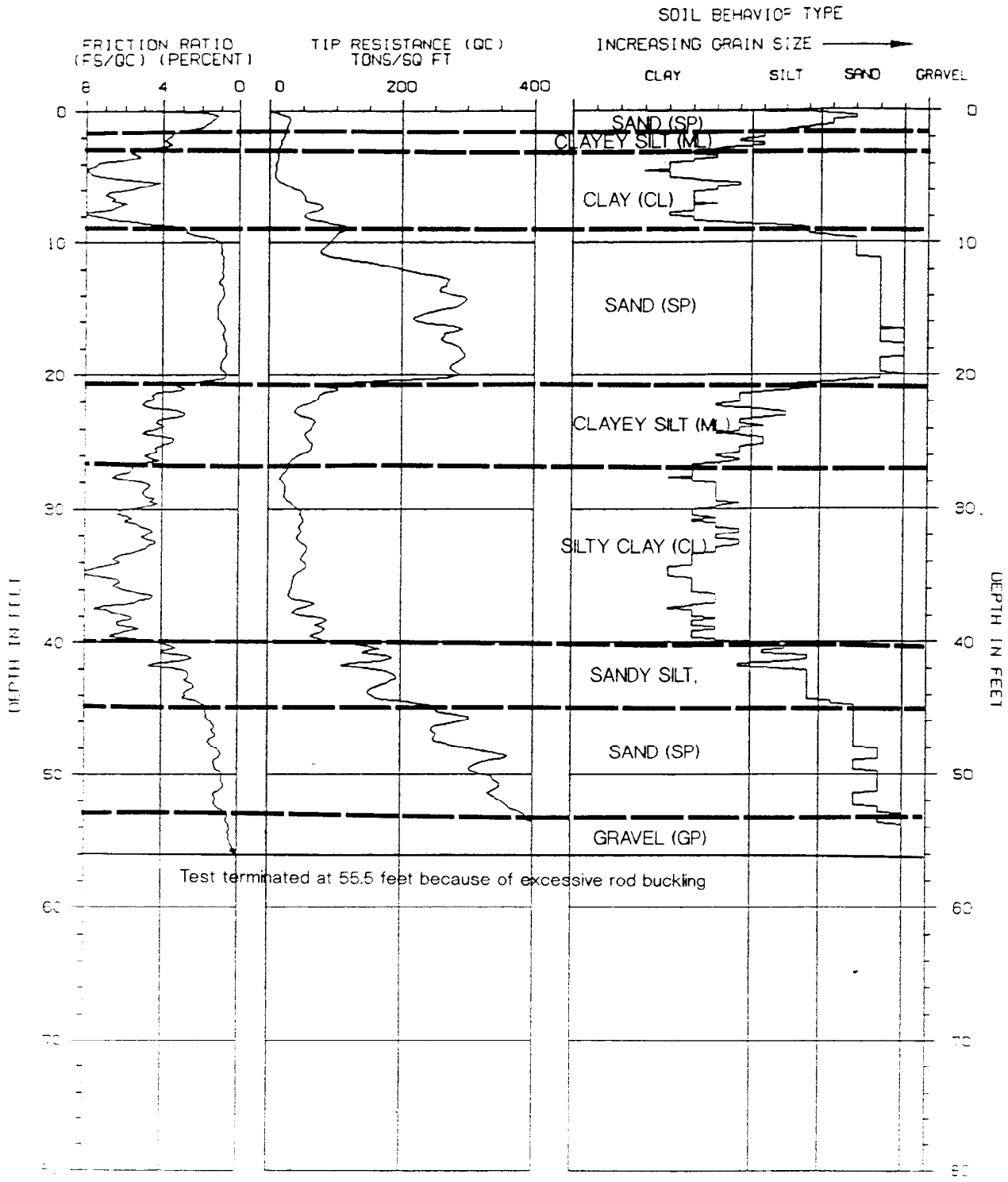
MCK0002771

Harding Lawson Associates
Engineering and Environmental Services

CPT-15, INTERPRETED LOG
McKesson Corporation Property
Santa Fe Springs, California

PLATE **D15**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	1/92		



Approximate surface elevation 147.33 feet, MSL

— — Approximate geologic contact

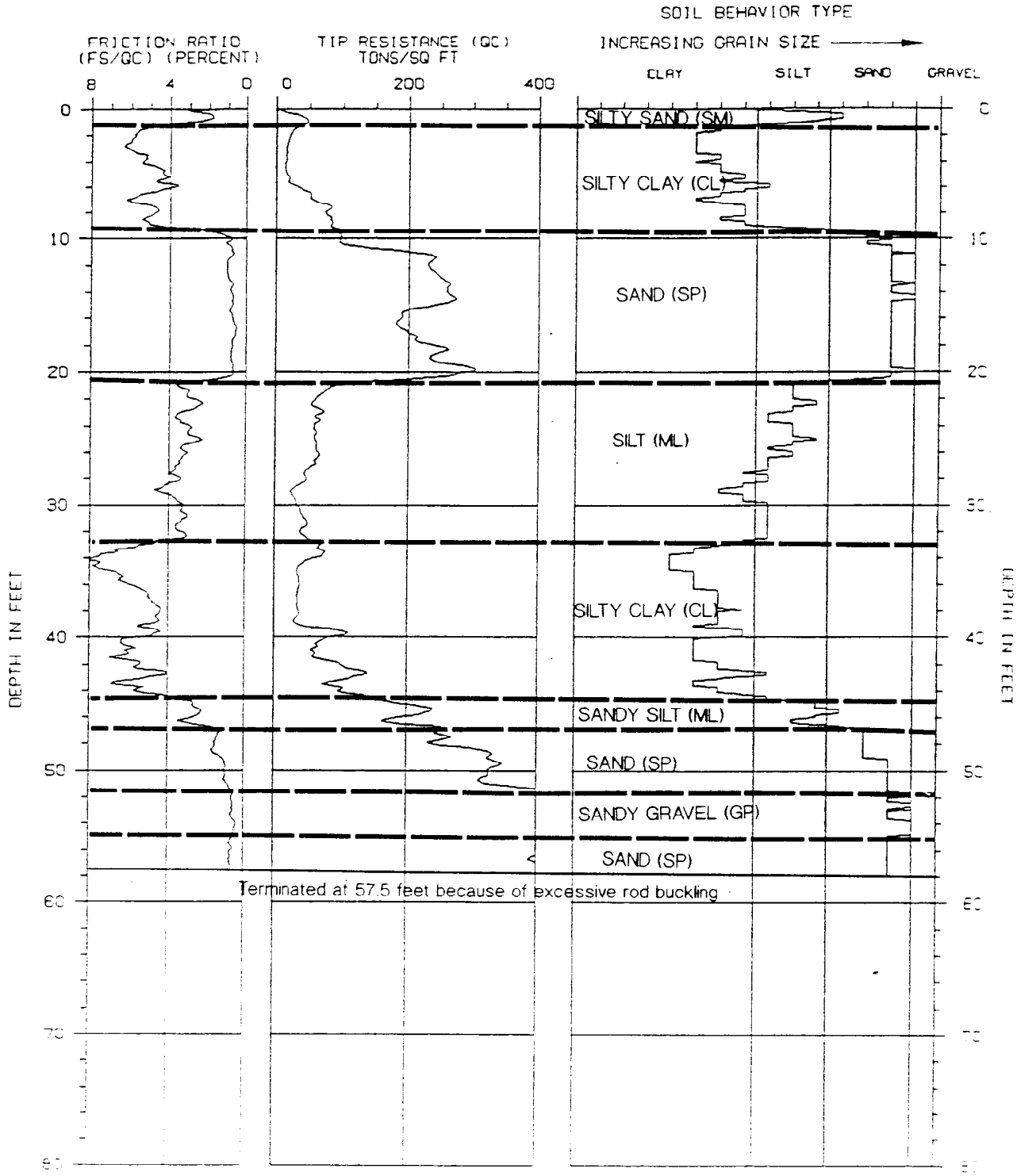
MCK0002772

Harding Lawson Associates
Engineering and Environmental Services

CPT-16, INTERPRETED LOG
McKesson Corporation Property
Santa Fe Springs, California

D16

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	1/92		



Approximate surface elevation 147.07 feet, MSL

Approximate geologic contact

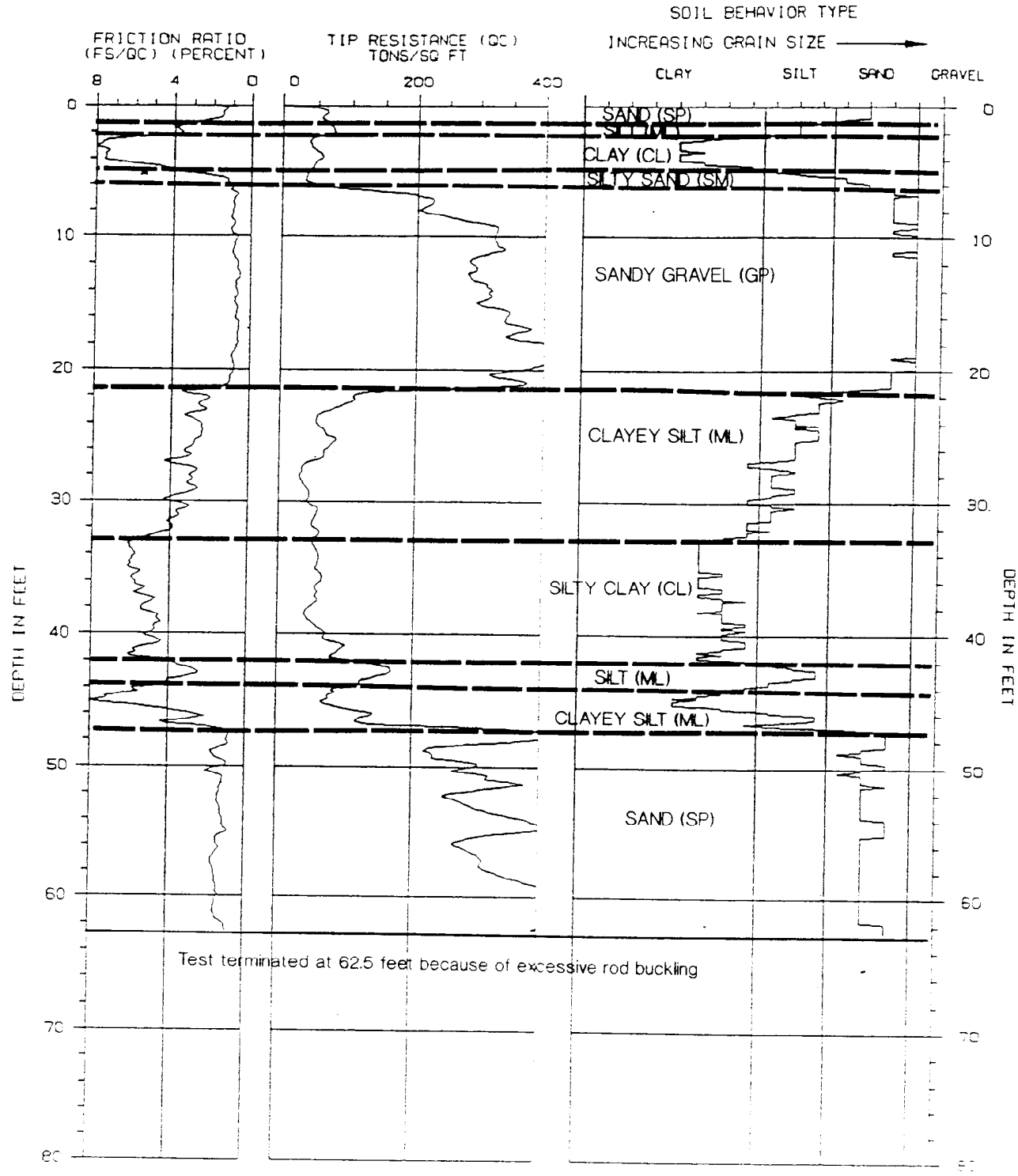
MCK0002773

Harding Lawson Associates
Engineering and Environmental Services

CPT-17, INTERPRETED LOG
McKesson Corporation Property
Santa Fe Springs, California

D17

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,169.11	THK	1/92		



Approximate surface elevation 148.72 feet MSL

Approximate geologic contact

MCK0002774

Harding Lawson Associates
Engineering and Environmental Services

CPT-18, INTERPRETED LOG
Mckesson Corporation Property
Santa Fe Springs, California

D18

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	1/92		

APPENDIX E

APPENDIX E
SURVEY INFORMATION

Printed on Recycled Paper.

TAIT & ASSOCIATES, INC

Consulting Engineers

HARDING LAWSON

McKESSON CORP. SITE

SORENSON AVENUE, SANTA FE SPRINGS, CA

Basis of Bearings: Centerline of Santa Fe Springs Road North 39°59'00" East, as shown on CSB (County Survey Book), 1435-5 A2, County of Los Angeles.

Five Additional CPT Points 9/12/91

	Northing (X)	Easting (Y)	Finish Surface Elevations	Top of Casing
MW-1	4,097,050	4,268,800	149.08	148.52
MW-2	4,097,223	4,269,057	147.67	147.28
MW-3	4,097,362	4,268,552	149.70	149.03
SB-1	4,097,284	4,269,072	147.64	
SB-2	4,097,297	4,269,017	147.82	
SB-3	4,097,303	4,268,948	147.17	
SB-4	4,097,290	4,268,908	147.22	146.65
SB-5	4,097,322	4,268,844	148.10	
SB-6	4,097,363	4,268,670	148.20	
SB-7	4,097,371	4,268,651	148.17	147.77
SB-8	4,097,368	4,268,597	149.58	
SB-9	4,097,396	4,268,576	147.70	
SB-10	4,097,251	4,268,572	149.88	149.44
SB-11	4,097,097	4,268,588	149.89	
SB-12	4,097,089	4,269,065	145.84	
SB-13	4,097,124	4,268,870	148.02	147.62
SB-14	4,097,105	4,268,716	149.15	
SB-15	4,097,149	4,268,729	148.85	
SB-16	4,097,083	4,268,661	148.11	
SB-18	4,097,143	4,268,629	148.45	
SB-19	4,097,161	4,268,682	149.05	
SB-20	4,097,194	4,268,599	149.83	149.52
SB-21	4,097,252	4,268,604	148.05	
SB-24	4,097,245	4,268,781	148.04	
SB-25	4,097,211	4,268,822	148.47	147.84
SB-26	4,097,199	4,268,874	147.92	
SB-27	4,097,296	4,268,849	147.56	
SB-30	4,097,291	4,268,786	147.68	
SB-32	4,097,294	4,269,048	147.64	147.61
SS-1	4,097,338	4,268,903	145.90	
SS-2	4,097,345	4,268,932	142.80	
SS-3	4,097,347	4,268,922	143.19	
SS-4	4,097,344	4,268,925	143.95	

MCK0002777

800 N. Eckhoff St. / P.O. Box 4429 / Orange, CA 92613 / (714) 634-4800 / (714) 634-0303 FAX

HARDING LAWSON
McKESSON CORP. SITE
SORENSON AVENUE, SANTA FE SPRINGS, CA

	Northing (X)	Easting (Y)	Finish Surface Elevations	Top of Casing
MK SB 17	4,097,124	4,268,625	149.01	148.63
MK SB 17-A	4,097,125	4,268,587	149.80	149.56
MK SB 17-B	4,097,117	4,268,586	149.90	149.51
MK SB 23	4,097,243	4,268,727	148.60	149.16
MK SB 23-A	4,097,209	4,268,720	148.80	148.43
MK SB 23-B	4,097,212	4,268,703	148.80	148.47
MK SB 33	4,097,257	4,268,642	148.60	
MK SB 34	4,097,177	4,268,619	149.10	
MK SB 35	4,097,208	4,268,625	148.60	
MK SB 36	4,097,351	4,268,808	147.60	147.26
MK SB 37	4,097,272	4,268,744	148.50	149.30
MK SB 38	4,097,289	4,268,667	149.00	
MK SB 39	4,097,336	4,268,765	148.50	
MK SB 40	4,097,327	4,268,816	148.20	
MK SB 41	4,097,304	4,268,813	147.90	
MK SB 42	4,097,314	4,268,873	148.00	
CPT 1	4,097,049	4,268,804	149.02	
CPT 2	4,097,201	4,268,904	147.94	
CPT 3	4,097,319	4,268,850	148.14	
CPT 4	4,097,317	4,268,656	148.94	
CPT 5	4,097,050	4,268,588	150.58	
CPT 6	4,097,285	4,269,068	147.42	
MK CPT 7	4,097,421	4,268,886	146.53	
MK CPT 8	4,097,452	4,268,766	146.71	
MK CPT 9	4,097,456	4,268,660	146.92	
MK CPT 10	4,096,679	4,268,671	149.37	
MK CPT 11	4,097,104	4,268,025	151.68	
MK CPT 12	4,097,013	4,268,310	152.21	
MK CPT 13	4,096,975	4,268,481	152.36	
MK CPT 14	4,097,090	4,268,478	151.64	
MK CPT 15	4,097,172	4,268,305	151.28	
MK CPT 16	4,097,256	4,268,439	147.33	
MK CPT 17	4,097,425	4,268,379	147.07	
MK CPT 18	4,097,334	4,268,251	148.72	

State plane coordinates obtained from Field Book 938, Page 114, Los Angeles County.

Monument: Whittier E-6
North 4,095,189.50
East 4,268,644.62

BENCH MARK:

"Los Angeles County Road Department, Bench Mark No. CY 7443."

L & BN West headwall 40.00 feet West of Centerline Sorenson Avenue and 0.25 miles Northeasterly Centerline John Street 28.00 feet South of Southern Pacific Railroad Track, marked Bench Mark.

Elevation = 148.64 feet MSL

Tait & Associates Job No.: SP2374
Harding-Lawson Job No.: 1733,153.11

LEG544
Revised
08/17/90
04/18/91
09/12/91
11/05/91
:MZ/RZ

APPENDIX F

MCK0002780

APPENDIX F

WELL DEVELOPMENT FORMS

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WELL DEVELOPMENT SUMMARY

WELL MK-MW-01

DEPTH 70.25

SCREENED INTERVAL

SLOT SIZE 0.02"

GRAVEL PACK Monterey #3

DATE 7-26-90

TIME 11:30

DEVELOPMENT METHOD Surge, bail & pump

FIELD SUPERVISION BY Tom Harder

CHECKED BY B.C 7/27/90

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
0	4 gpm (bail)	880	7.10	24.9		47.87	Opaque light brown
6	4	900	7.11	27.3			" " "
11							
15							Stopped ~~pumping~~ bailing → out of gas
16	4	900	7.11	25.1			Resumed bailing
20	4	910	7.13	24.6			Opaque light brown
22							" " "
28							Stopped bailing to surge.
33	4	890	7.14	24.1			Finished surging, began bailing
39	4	840	7.23	24.0			Opaque light brown
	Stopped	bailing	to	hook	up	submersible	" " " pump
	Approx	85	gallons	purged	to	this	point.
50							Began pumping
53	10gpm	820	7.16	25.4			Opaque light brown
58	10gpm	890	7.05	25.3			clear
61	10gpm	730	7.01	24.8			clear
INSTRUMENT NO.							

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PLATE F1

MCK0002782

WELL DEVELOPMENT SUMMARY

WELL MK-MW-01

DEPTH 70.25

SCREENED INTERVAL

SLOT SIZE 0.02

GRAVEL PACK Monterrey #3

DATE 7-26-90

TIME

DEVELOPMENT METHOD Surge, bail, & pump

FIELD SUPERVISION BY Tom Harder

CHECKED BY BC

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
66	10 gpm	840	7.08	24.4			Clear
70	"	780	7.04	24.6			"
73	"	780	7.06	24.7			"
							Stopped purging
	Total	of 390	gallons	purged			
INSTRUMENT NO.							

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F1a

MCK0002783

WELL DEVELOPMENT SUMMARY

WELL MK-MW-12

DEPTH 67.85

SCREENED INTERVAL

SLOT SIZE 0.02

GRAVEL PACK Monterrey #3

DATE 7-26-90

TIME 08:06

DEVELOPMENT METHOD Bail & Surge

FIELD SUPERVISION BY Tom Harder

CHECKED BY B.C 7/27/90

	TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
	0	3 gal/min	1000	7.12	22.5		44.54	Opaque Brown
	10	5 gpm	800	7.17	22.3		~49'	" "
	20	5 gpm	800	7.09	22.5			Translucent Brown
	23						44.72	Stopped bailing to install
	67	~~700~~ 10 gpm	800	7.24	24.2	Resumed pumping		Submersible pump
9:19	74	10 gpm	820	7.20	24.2			Murky water
9:25	80	10 gpm	830	7.27	23.9			" "
	87	10 gpm	900	7.20	24.0			almost clear
	90	10 gpm	880	7.08	23.6			clear
	93	10 gpm	880	7.17	24.0			clear
		Total of 330 gallons purged.						

INSTRUMENT NO.

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F2

MCK0002784

WELL DEVELOPMENT SUMMARY

WELL MK-MW-03
DEPTH 69.87
SCREENED INTERVAL
SLOT SIZE 0.02
GRAVEL PACK Monterrey #3

DATE 7-26-90
TIME 13:57
DEVELOPMENT METHOD Surge, bail, & pump
FIELD SUPERVISION BY Tom Harder
CHECKED BY BC 7/27/90

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
0						48.24	Began Surging
6							Finished Surging.
7	4	800	7.15	26.4			Began bailing. Opaque-Hbrn
11	4	870	7.18	24.1			Opaque brown
21	4	910	7.13	23.3			" "
23							Stopped bailing, began Surging
27							Finished surging, resumed bailing.
29	4	890	7.21	23.4			Opaque brown
34	4	970	7.18	23.5			" "
37							Finished bailing
50							Begin pumping
52	10 gpm	800	7.29	24.0			Opaque brown
57	10 gpm	900	7.27	23.8			murky brown
66	"	920	7.12	23.6			almost clear
70	"	840	7.13	23.6			clear
74	"	850	7.17	23.8			"
7TH							
INSTRUMENT NO.							

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PLATE F3

MCK0002785

WELL DEVELOPMENT SUMMARY

WELL MK-MW-03

DEPTH 69.87

SCREENED INTERVAL

SLOT SIZE 0.02"

GRAVEL PACK Monterey #3

DATE 7-26-90

TIME

DEVELOPMENT METHOD Surge, bail, & pump

FIELD SUPERVISION BY Tom Harder

CHECKED BY BK

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
77	10 gpm	880	7.08	23.7			Clear
79	10 gpm	870	7.08	23.8			clear → end pumping
						48.27	
Total of		385	gallons	purged			

INSTRUMENT NO.

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JOB NUMBER 17333,168.11

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DATE 1/92

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PLATE F3a

MCK0002786

WELL DEVELOPMENT SUMMARY

WELL MK-SB-4
DEPTH 63.9
SCREENED INTERVAL 43.5-63.5 ft
SLOT SIZE 0.02 inch
GRAVEL PACK Monterrey #3

DATE 7-30-90
TIME 0758
DEVELOPMENT METHOD Surge, bail, ~~purg~~ TH pump
FIELD SUPERVISION BY Tom Harder
CHECKED BY BC 7/31/90

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
0						44.36	Began surging
10							Finished surging
12	4 gpm	960	7.14	22.5			Began bailing: Opaque lt. brn
17	"	1000	7.22	22.4			Opaque brown
20	"	920	7.29	22.5			" "
22	"	910	7.28	22.5			" "
25	"	930	7.29	22.5			" "
28							Stopped bailing; began surging
33							Stopped surging
35	4 gpm	840	7.27	22.6			Began bailing: opaque brown
38	"	870	7.28	22.6			Opaque brown
41	"	900	7.25	22.6			" "
43	"	870	7.29	22.6			" "
							Stopped bailing
52	10 gpm	900	~~7.22~~ 7.29 TH	23.2			Began pumping: Opaque brn
55	"	860	7.18	22.8			Translucent brown
INSTRUMENT NO.		092088	S/N 7846	S/N 7846			

ATTACHMENT F - PROCEDURE A2

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PLATE F4

WELL DEVELOPMENT SUMMARY

WELL MK-SB-4

DEPTH 63.9

SCREENED INTERVAL 43.5-63.5 ft

SLOT SIZE 0.02 inch

GRAVEL PACK Monterrey #3

DATE 7-30-90

TIME

DEVELOPMENT METHOD surge, bail, & pump

FIELD SUPERVISION BY Tom Harder

CHECKED BY

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
57	10 gpm	900	7.14	23.1			Murky brown
60	"	880	7.12	23.2			Almost clear
63	"	900	7.22	23.5			" "
65	"	890	7.22	23.3			Clear
68	"	890	7.14	23.3			"
70	"	820	7.23	23.4			"
72	"	880	7.22	22.9			"
73						44.64	End pumping: ~385
						44.64	gallons purged.
						44.64	
INSTRUMENT NO.		022088	S/N 7846	S/N 7846			

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MCK0002788

F4a

PLATE

WELL DEVELOPMENT SUMMARY

WELL MK-SB-7
DEPTH 63.39
SCREENED INTERVAL 43.5-63.5 ft
SLOT SIZE 0.02 inch
GRAVEL PACK Monterrey #3

DATE 7-30-90
TIME 09:51
DEVELOPMENT METHOD Surge, bail, & pump
FIELD SUPERVISION BY Tom Harder
CHECKED BY 7/31/90 BC

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
0						TD 44.36	Began Surging
5						46.69	Finished Surging
7	4 gpm	840	7.28	22.6			Started bailing: opaque brn
11	"	910	7.32	22.5			Opaque brown
13	"	840	7.33	22.6			" "
16	"	920	7.32	22.4			" "
18	"	860	7.38	22.5			" "
20	"	890	7.38	22.4			" " End bailing
21							Began surging
26							End surging
27	4 gpm	870	7.32	22.7			Begin bailing: Opaque brn
30	"	870	7.34	22.6			Opaque brown
32	"	900	7.33	22.5			" "
35	"	910	7.39	22.5			" " End bailing
63	10 gpm	830	7.33	24.5			Began pumping: Opaque brn
66	"	880	7.31	23.4			Murky brown
INSTRUMENT NO.		092088	S/N 7846	S/N 7846			

ATTACHMENT F - PROCEDURE A2

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PLATE F5

WELL DEVELOPMENT SUMMARY

WELL MK-SB-7

DEPTH 63.39'

SCREENED INTERVAL 43.5 - 63.5 ft

SLOT SIZE 0.02 inch

GRAVEL PACK Monterrey #3

DATE 7-30-90

TIME

DEVELOPMENT METHOD surge, bail, & pump

FIELD SUPERVISION BY Tom Harder

CHECKED BY

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
69	10 gpm	870	7.24	23.7			Mucky
72	"	900	7.24	23.6			Clear
74	"	870	7.12	23.5			"
76	"	830	7.15	23.8			"
79	"	880	7.16	23.6			"
81	"	890	7.13	23.7			"
83	"	900	7.15	23.8			" End pumping
						46.83	~385 gallons purged
						46.83	
INSTRUMENT NO.		092088	S/N 7846	S/N 7846			

ATTACHMENT F - PROCEDURE A2

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PLATE F5a

MCK0002790

WELL DEVELOPMENT SUMMARY

WELL MK-SB-10
DEPTH 64.93
SCREENED INTERVAL 45-65 feet
SLOT SIZE 0.02 inch
GRAVEL PACK Monterrey #3

DATE 7-27-90
TIME 0823
DEVELOPMENT METHOD Surge, bail & pump
FIELD SUPERVISION BY Tom Harder
CHECKED BY BC 7/30/90

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
0						48.80	Began Surging
6							Finished Surging
9	4 gpm	930	7.34	22.6			Started bailing - Opaque lt. brn
14	"	880	7.29	22.4			Opaque light brown
19	"	840	7.28	22.4			" " "
23							Stopped bailing
24							Began Surging
28							Finished surging
30							Began bailing
31	4 gpm	910	7.36	22.7			Opaque lt. brown
36	4 gpm	860	7.36	22.4			" " "
37							Stopped bailing ~85 gal bailed
51							Began pumping
52	10 gpm	830	7.33	23.4			Opaque Lt. Brown
55	"	880	7.24	23.0			Translucent Lt. Brown
57	"	880	7.20	23.0			" " "
INSTRUMENT NO.		092088	S/N 7846	S/N 7846			

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DATE

F6

MCK0002791

WELL DEVELOPMENT SUMMARY

WELL MK-SB-10
DEPTH 64.93
SCREENED INTERVAL 45-65 ft.
SLOT SIZE 0.02
GRAVEL PACK Monterrey #3

DATE 7-27-90
TIME
DEVELOPMENT METHOD Surge, bail, & pump
FIELD SUPERVISION BY Tom Harder
CHECKED BY

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
60	10 gpm	860	7.25	23.3			Almost clear
64	"	880	7.28	23.6		~60'	Clear → ~~gr~~ a lot of drawdown
68	"	880	7.31	23.5			Clear
70	"	900	7.29	23.5			"
73	"	880	7.25	23.4			"
75	"	880	7.32	23.1			"
~~TH 76~~						48.90	Finished pumping. 385 gallons purged
INSTRUMENT NO.		092088	S/N 7846	S/N 7846			

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JOB NUMBER 17333,168.11
APPROVED TMK
DATE 1/92
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DATE
PLATE F6a

MCK0002792

WELL DEVELOPMENT SUMMARY

WELL MK-SB-13
DEPTH 62.08
SCREENED INTERVAL 42.5-62.5
SLOT SIZE 0.02 inch
GRAVEL PACK Monterrey #3

DATE 7-27-90
TIME 15:29
DEVELOPMENT METHOD Surge, bail, & pump
FIELD SUPERVISION BY Tom Harder
CHECKED BY BC 7/30/90

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
0						46.09	Start ~~swab~~ surging
6	4 gpm	780	7.06	24.5			Stop surging, begin bailing
10	"	900	7.20	23.7			Opaque brown
13	"	920	7.20	23.3			" "
15	"	920	7.23	23.5			" "
19	"	900	7.25	23.4			" "
23							Began surging stop bailing
26							Finished surging
27	4 gpm	920	7.13	23.5			Began bailing: Opaque brown
31	"	920	7.17	23.7			Opaque brown
33							Stopped bailing
42	10 gpm	890	7.19	24.2			Began pumping: Opaque brown
46	"	880	7.21	23.8			Murky brown
49	"	860	7.18	23.8			" "
51	"	890	7.14	23.8			" "
54	"	910	7.15	23.9			slightly murky
INSTRUMENT NO.		092088	S/N 7846	S/N 7846			

ATTACHMENT F - PROCEDURE A2

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DATE 1/92
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DATE
PLATE F7

pg. 2 of 2

WELL DEVELOPMENT SUMMARY

WELL MK-13-13

DEPTH 62.08

SCREENED INTERVAL 42.5 - 62.5

SLOT SIZE 0.02 inch

GRAVEL PACK #3 Monterrey

DATE 7-27-90

TIME

DEVELOPMENT METHOD Surge, bail & pump

FIELD SUPERVISION BY Tom Harder

CHECKED BY

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
58	10 gpm	~~7.90~~ 7.10	~~7.10~~ 7.10	23.8			Almost clear
61	"	880	7.18	23.8			clear
64	"	880	7.21	23.9			" : end pumping
						46.27	~385 gallons purged
INSTRUMENT NO.		092088	S/N 7846	S/N 7846			

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Santa Fe Springs, California

MCK0002794

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JOB NUMBER 17333,168.11

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DATE

PLATE F7a

WELL DEVELOPMENT SUMMARY

WELL MK-SB-17
DEPTH 63.80
SCREENED INTERVAL 45-65 ft
SLOT SIZE 0.02 inch
GRAVEL PACK Monterrey #3

DATE 7-27-90
TIME 13:32
DEVELOPMENT METHOD Surge, bail & pump
FIELD SUPERVISION BY Tom Harder
CHECKED BY 7/30/90 FK

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
0						48.13	Began surging
4							End surging
5	4 gpm	900	7.12	25.2			Began bailing: Opaque lt. Brn
10	"	880	7.12	24.2			Opaque lt. brown
18	"	960	7.16	23.8			" " "
21	"	850	7.13	23.8			" " "
23	"	920	7.11	23.4			Opaque lt Brown - Stopped bailing
24		9TH					Began surging
30							End surging Begin bailing
33	4 gpm	900	7.16	24.1			Opaque lt. brown
38	"	900	7.12	23.5			Translucent lt brown TH
39							End bailing: ~75 gallons bailed
46	10 gpm	920	7.08	25.0			Begin pumping, Translucent
49	"	880	6.99	24.2			TH Murky
51	"	910	6.86	24.1			Almost clear
56	"	870	6.89	24.0			Clear
INSTRUMENT NO.		092088	S/N 7846	S/N 7846			

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DATE 1/92
REVISED
DATE

MCK0002795

F8

WELL DEVELOPMENT SUMMARY

WELL MK-SB-17

DEPTH 63.80

SCREENED INTERVAL 45-65 ft

SLOT SIZE 0.02 inch

GRAVEL PACK #3 Monterrey

DATE 7-27-90

TIME

DEVELOPMENT METHOD Surge, bail, & pump

FIELD SUPERVISION BY Tom Harder

CHECKED BY

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
58	10 gpm	880	6.92	23.9			clear
61	"	920	6.90	23.9			clear
64	"	920	6.90	24.2			clear - end pumping
						48.22	385 gallons purged
INSTRUMENT NO.		092088	S/N 7846	S/N 7846			

ATTACHMENT F - PROCEDURE A2

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JOB NUMBER 17333,168.11

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PLATE F8a

MCK0002796

WELL DEVELOPMENT SUMMARY

WELL MK-2B-17A
DEPTH 116.04
SCREENED INTERVAL 111-116
SLOT SIZE 0
GRAVEL PACK Monterey #3

DATE 2-1-91
TIME 13:55
DEVELOPMENT METHOD Treat, Surge, bail, pump
FIELD SUPERVISION BY Tom Harder
CHECKED BY B. Chudwick 2/4/91

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
0/13:55						50.10	Treated well w/ phosphate soln.
16:08	15gal	2050	5.86	20.9			Began bailing: opaque
TH 16:16	~~10 gal~~ TH						Tan lt. brown
16:16	10gal	1650	6.17	20.1			Lt. Brown, opaque
16:20	"						Stopped bailing to set pump
16:58	TH ~~45.2gal~~	2510	6.06	19.9			Began pumping: Translucent brn
17:02	8.8gpm/45	1840	~~7.00~~	19.8		51.68'	Translucent brn - no odor
17:11	9.5/130.5	1970	7.25	19.1			Murky brn
17:17	9.5/187.5	1990	7.30	19.5		51.65	Murky - No odor - no OVA
17:28	9.5/292	1920	7.21	18.3			sltly murky
17:35	9.5/358.2	1970	7.27	19.4		51.64	" "
17:43	9.5/434	1940	7.32	19.6			" "
17:51	9.5/510	2010	7.37	19.4		51.64	
18:00	9.5/595.5	1990	7.07	18.7		51.64	sltly murky
							End development
							Total Purge Vol. 595.5 gals
INSTRUMENT NO.		9005	SN 7901	SN 7701			

ATTACHMENT F - PROCEDURE A2

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DATE
PLATE F9

MCK0002797

ATTACHMENT F - PROCEDURE A2

WELL DEVELOPMENT SUMMARY

WELL MK-SB-17B
DEPTH 85.74
SCREENED INTERVAL 80.74 - 85.74
SLOT SIZE 0.02 inch
GRAVEL PACK Monterey #3

DATE 2-1-91
TIME 15:00
DEVELOPMENT METHOD Treat, surge, bail,
FIELD SUPERVISION BY Tom Harder
CHECKED BY B. Chadwick 3/4/91

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
0/1500						50.27	Began treating well
1553							Finished surging well
1715	15 gal	2950	5.76	20.2			Began bailing, opaque
							lt. brown - no odor
1730	30 gal					78.68	well going dry - stopped
							bailing
1750							Resumed bailing
1755	50 gal	1230	6.47	20.4			Opaque brown
1758	55 gal	1260	6.41	20.5			" "
1800						77.34	Stopped bailing.
							Total Purge Vol.
							= 55 gals
INSTRUMENT NO.		9005	S/N 7701	S/N 7901			

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JOB NUMBER 17333,168.11
APPROVED
DATE 1/92
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DATE

MCK0002798

PLATE F10

WELL DEVELOPMENT SUMMARY

WELL MK-SB-20
DEPTH 63.78
SCREENED INTERVAL 43.5 - 63.5 ft.
SLOT SIZE 0.02 inch
GRAVEL PACK Monterrey #3

DATE 7-27-90
TIME 10:41
DEVELOPMENT METHOD Surge, bail, & pump
FIELD SUPERVISION BY Tom Harder
CHECKED BY BC 7/30/90

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
0						48.94	Began Surging
6							Finished Surging
7							Began bailing
8	4 gpm	900	7.02	23.0			Opaque lt. brown
12	"	820	7.18	26.0			" " "
24							Stopped bailing
TH ~~28~~ 25							Began surging
30							Stopped surging
33	4 gpm	920	7.08	23.8			Opaque lt. brown
35							Stopped bailing 60 gal purged
43	10 gpm	880	7.14	23.9			Began pumping - opaque lt. Brn
48	10 gpm	900	7.04	24.1			murky brown
50	"	880	7.01	23.6			almost clear
53	"	920	7.05	24.7			clear
56	"	880	7.02	24.0			clear
60	"	900	7.05	23.7			"
INSTRUMENT NO.		092088	S/N 1846	S/N 1846			

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Engineers, Geologists & Geophysicists

McKesson Corporation Property
Santa Fe Springs, California

JOB NUMBER 17333,168.11
APPROVED TMK
DATE 1/92
REVISED
DATE
PLATE F11

MCK0002799

WELL DEVELOPMENT SUMMARY

WELL MK-SB-20

DEPTH 63.78

SCREENED INTERVAL 43.5-63.5 ft.

SLOT SIZE 0.02 inch

GRAVEL PACK #3 Monterrey

DATE 7-27-90

TIME

DEVELOPMENT METHOD Surge, bail, & pump

FIELD SUPERVISION BY Tom Harder

CHECKED BY

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
63	10 gpm	900	7.04	23.8			Clear
66	"	820	7.04	23.7			"
67							Stopped pumping
						49.03	385 gallons purged
INSTRUMENT NO.		092088	S/N 7846	S/N 7846			

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Santa Fe Springs, California

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JOB NUMBER 17333,168.11

APPROVED TMK

DATE 1/92

REVISED

DATE

DATE

F11a

MCK0002800

1 of 2

WELL DEVELOPMENT SUMMARY

WELL MK-SB-23

DEPTH 64.70

SCREENED INTERVAL 45-65 ft

SLOT SIZE 0.02 inch

GRAVEL PACK Monterey #3

3.3.4

DATE 7-30-90

TIME 12:31

DEVELOPMENT METHOD Surge, bail, pump

FIELD SUPERVISION BY Tom Harder

CHECKED BY BC 7/31/90

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
0						48.09	Began Surging
5							End surging
6	4 gpm	1000	7.35	26.5			Began bailing: Opaque brn
15	"	900	7.25	24.4			Opaque brown
21	"	980	7.18	23.9			" "
26	"	1000	7.22	24.2			" " End bailing
27							Begin surging
31							End surging.
43	4 gpm	1000	7.17	25.6			Begin bailing: opaque brn
47	4 gpm	960	7.12	24.5			Opaque brn: end bailing
57	10 gpm	980	7.18	26.2			Began pumping: opaque brn
60	"	1020	7.14	24.9			Translucent
63	"	1020	7.13	24.7			"
65	"	1020	7.01	24.4			THE Murky brown
67	"	1000	7.02	24.6			" "
70	"	1000	7.03	24.1			"
INSTRUMENT NO.		092088	S/N 7846	S/N 7846			

ATTACHMENT F - PROCEDURE A2

Harding Lawson Associates
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McKesson Corporation Property
Santa Fe Springs, California

MCK0002801

DRAWN

JOB NUMBER 17333,168.11

APPROVED TAK

DATE 1/92

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DATE

PLATE F12

WELL DEVELOPMENT SUMMARY

WELL MK-SB-23
DEPTH 64.70
SCREENED INTERVAL 45-65 ft
SLOT SIZE 0.02 inch
GRAVEL PACK Monterey #3

DATE 7-30-92
TIME
DEVELOPMENT METHOD surge, bail, & pump
FIELD SUPERVISION BY Tom Harder
CHECKED BY

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
73	10 gpm	1000	7.11	24.7			Murky brown
	~~1000~~ TH	~~1000~~ TH					
77	10 gpm	1000	7.13	24.3			Murky brown
79	"	1000	7.11	23.7			" "
80							
						48.27	Finish pumping. ~385 gallons
						48.27	purged.

INSTRUMENT NO. 092088 | S/N 7846 | S/N 7846

MCK0002802

ATTACHMENT F - PROCEDURE A2

WELL DEVELOPMENT SUMMARY

WELL MK-SB-23A

DEPTH 127.82

SCREENED INTERVAL 122.82 - 127.82

SLOT SIZE 0.02 inch

GRAVEL PACK Monterey # 3

DATE 2-7-91

TIME 0844

DEVELOPMENT METHOD Treat, surge, bail, pump

FIELD SUPERVISION BY Tom Harder

CHECKED BY B. Chadwick 2/8/91

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
0/0844						48.14	Began treating well/added
~~TH/0847~~							5gal of S.A.P.P.
3/0847							Began surging well
48/0932							Stopped surging
114/1038	~5gal	2230	6.78	21.0	10%		Began bailing: opaque
119/1043	~10gal	2080	6.44	20.8	10%		brown: no odor
124/1048	~20gal	2040	6.51	21.3	5-10%		translucent brown
126/1050	~25gal						Stopped bailing
154/1118	9gpm/25	2220	6.82	22.6	3%	50.29	Translucent brown Began pumping
161/1125	9gpm/97	2200	7.21	21.9	<1%	50.31	murky,
166/1130	9/142	2100	7.19	21.9	"		murky
171/1135	9/187	2200	7.22	22.2	"	50.20	murky
181/1145	TH 9.65 252 ~~9/217~~	2180	7.27	22.3	"		"
191/1155	7.5/327	2320	7.27	22.2	"	50.10	clear
201/1205	7.5/402	2250	7.25	22.8	"	50.11	"
211/1215	7.5/477	2206	7.27	22.5	"	50.10	"
221/1225	7.5/552	2170	7.27	22.1	"	50.10	" END OF DEVELOPMENT
INSTRUMENT NO.		9005	S/N 7846	S/N 7846			

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McKesson Corporation Property
Santa Fe Springs, California

MCK0002803

DRAWN

JOB NUMBER 17333,168.11

APPROVED TAK

DATE 1/92

REVISED

DATE

PLATE F13

WELL DEVELOPMENT SUMMARY

WELL MK-SB-23R

DEPTH 95.43

SCREENED INTERVAL ~~0-02~~ 40.43-95.43

SLOT SIZE 0.02 inch

GRAVEL PACK Monterey #3

DATE 2-7-91

TIME 1200

DEVELOPMENT METHOD Treat, surge, bail, pump

FIELD SUPERVISION BY Tom Harder

CHECKED BY T. Chadwick 4/8/91

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
0/1200						49.57	Treated and began ~~bail~~ surging
30/1230							Finished surging
66/1236	5 gal	1930	6.63	22.5	10%		Began bailing: opaque
~~72/1242~~							brown - no odor
72/1242							Stopping bailing for repairs
79/1349	~10 gal	3850	5.19	22.3	10%		Resumed bailing: opaque
							brown
82/1352	~15 gal						Finished bailing
119/1429	7.5/15	2930	5.34	22.6	5-10%		Translucent brown Begin pump
125/1435	7.5/60	1830	6.67	22.1	1-5%	59.36	murky brown: no odor
130/1440	7.5/97.5	1830	6.60	21.9	<1%		" "
135/1445	7.5/134.0	1830	6.58	22.2	<1%	58.29	" "
140/1450	7.5/171.5	1830	6.67	21.9	<1%	58.26	" "
145/1455	7.5/209	1840	6.76	22.0	<1%	58.29	" "
150/1500	7.5/246.5	1850	6.62	21.9	<1%		Murky
160/1510	7.5/321.5	1860	6.72	21.7	<1%	58.18	"
INSTRUMENT NO.		9005	S/N 7846	S/N 7846			

ATTACHMENT F - PROCEDURE A2

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Santa Fe Springs, California

MCK0002804

DRAWN

JOB NUMBER 17333,168.11

APPROVED TMK

DATE 1/92

REVISED

DATE

PLATE F14

WELL DEVELOPMENT SUMMARY

WELL MK-SB-23B
DEPTH 95.43
SCREENED INTERVAL 90.43 - 95.43
SLOT SIZE 0.02 inch
GRAVEL PACK Monterey #3

DATE 2-7-91
TIME
DEVELOPMENT METHOD Treat, surge, bail pump
FIELD SUPERVISION BY Tom Harder
CHECKED BY RC 2/8/91

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
170 / 1520	7.5 / 365.5	1810	6.80	21.4	<1%	58.19	Murky
180 / 1530	7.5 / 440.5	1830	6.84	21.3	<1%	58.19	"
190 / 1540	7.5 / 515.5	1820	6.64	21.6	<1%	58.19	"
	END OF DEVELOPMENT						
INSTRUMENT NO.		7005	S/N 7846	S/N 7846			

MCK0002805

Harding Lawson Associates
Engineers, Geologists & Geophysicists

DRAWN
JOB NUMBER 17333,168.11
APPROVED TMK
DATE 1/92
REVISED
DATE

McKesson Corporation Property
Santa Fe Springs, California

PLATE F14a

ATTACHMENT F - PROCEDURE A2

WELL DEVELOPMENT SUMMARY

WELL MK-3B-25
DEPTH 63.39
SCREENED INTERVAL 44-64 ft
SLOT SIZE 0.02 inch
GRAVEL PACK Montercey #3

DATE 7-30-90
TIME 14:25
DEVELOPMENT METHOD Surge, bail, pump
FIELD SUPERVISION BY Tom Harder
CHECKED BY 7/31/90 BK

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
						46.28	Began surging
4							Finished surging.
5							Began bailing
7	4 gpm	920	7.07	26.1			Opaque brown
10	"	920	7.13	23.9			" "
12	"	960	7.18	24.1			" "
16	"	980	7.17	24.0			" "
19	"	910	7.19	24.1			" "
21							End bailing:
22							Start surging
29							Finished surging
31							Began bailing.
32	4 gpm	900	7.30	24.6			Opaque brown
35	"	920	7.20	23.8			" "
37	"	910	7.26	24.1			" "
39	"	980	7.26	23.9			" " : End bailing ~~pump~~ TH
INSTRUMENT NO.		092088	S/N 7846	S/N 7846			

ATTACHMENT F - PROCEDURE A2

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McKesson Corporation Property
Santa Fe Springs, California

DRAWN
JOB NUMBER 17333,168.11
APPROVED TMC
DATE 1/92
REVISED
DATE

MCK0002806

F15

WELL DEVELOPMENT SUMMARY

WELL MK-SB-25
DEPTH 63.39
SCREENED INTERVAL 44-64 ft
SLOT SIZE 0.02 inch
GRAVEL PACK Monterrey #3

DATE 7-30-90
TIME
DEVELOPMENT METHOD Surge, bail, pump
FIELD SUPERVISION BY Tom Harder
CHECKED BY

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
48	10 gpm	980	7.27	25.4			Began pumping: opaque bro
51	"	950	7.25	24.2			~~opa~~ Translucent brown
54	"	980	7.22	24.2			Murky brown
56	"	870	7.24	24.3			Almost clear
58	"	960	7.26	24.1			" "
61	"	1000	7.25	23.9			Clear
63	"	1000	7.25	23.7			"
65	"	960	7.25	23.9			"
67	"	1000	7.22	23.5			"
69	"	~~480~~ 960	7.27	23.6			"
70							End pumping: ~385
						46.63	gallons purged.
						46.63	
INSTRUMENT NO.		092088	S/N 7846	S/N 7846			

MCK0002807

ATTACHMENT F - PROCEDURE A2

Harding Lawson Associates
Engineers Geologists & Geophysicists

McKesson Corporation Property
Santa Fe Springs, California

DRAWN
JOB NUMBER 17333,168.11
APPROVED
DATE 1/92
REVISED
DATE
PLATE F15a

WELL DEVELOPMENT SUMMARY

WELL MK-SB-32
DEPTH 39.10
SCREENED INTERVAL
SLOT SIZE 0.02
GRAVEL PACK Monterey #3

DATE 7-26-90
TIME 10:47
DEVELOPMENT METHOD Surge & bail, then pump
FIELD SUPERVISION BY Tom Harder
CHECKED BY BC 7/30/90

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
0	5	1000	7.17	25.7		32.80'	Opaque light brown
4							Stopped bailing to let recharge
15:53	15 total gal	880	6.90	25.1		37.05'	Began bailing again
							Murky water after 1 bail
							Opaque lt. brn after 2 bails
16:00	20 total gal					38.98'	End bailing
INSTRUMENT NO		092088	S/N 7846	S/N 7846			

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Santa Fe Springs, California

JOB NUMBER 17333,168.11
APPROVED TKC
DATE 1/92
REVISED
DATE

PLATE F16

MCK0002808

WELL DEVELOPMENT SUMMARY

WELL MK-SB-36
DEPTH 64.83
SCREENED INTERVAL 45-65
SLOT SIZE 0.02 inch
GRAVEL PACK Monterey #3

DATE 2-1-91
TIME 08:40
DEVELOPMENT METHOD Surge / Bail / Submersible pump
FIELD SUPERVISION BY Tom Harder / Dan Johnson
CHECKED BY [illegible]

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
0							
18							Began surging
20	1.5	1790	6.71	21.5			Finished surging
			TH ~~7.12~~	~~21.0~~ TH			Began bailing - lt. Brown
26	TH ~~38~~	TH ~~1630~~	↓	↓			Opaque, slt odor (solvent)
28	38	1630	7.12	21.0			Stopped to put respirators on
36	48	1680	7.21	21.2			Opaque brown
40							" "
52							Stopped bailing to surge
~~TH 60~~ 65							Begun surging
66	60	1530	7.32	22.1			Finished surging
74	85	1660	7.41	22.0			Began bailing Opaque, brown
77	90		-	~~13.8~~ TH			Opaque brown
12:20	110	2180	7.42	23.8			Stopped bailing to put in submersible
12:25	130	1950	7.28	23.0			Translucent Brown
12:31	165	1900	7.23	22.8			" "
						45.1	murky Brown w.L. = 45.1
INSTRUMENT NO.		~~S/N 7901~~ TH 9005	S/N 7901	S/N 7901			

ATTACHMENT F - PROCEDURE A2

3.3.4

Harding Lawson Associates
Engineers, Geologists & Geophysicists

McKesson Corporation Property
Santa Fe Springs, California

DRAWN
JOB NUMBER 17333,168.11
APPROVED MK
DATE 1/92
REVISED
DATE
PLATE F17

MCK0002809

WELL DEVELOPMENT SUMMARY

WELL MK-SB-36
DEPTH 64.83
SCREENED INTERVAL 45-65
SLOT SIZE 0.02 inch
GRAVEL PACK Monterey #3

DATE 2-1-91
TIME
DEVELOPMENT METHOD Surge / bail / pump
FIELD SUPERVISION BY Tom Harder
CHECKED BY PK

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)/Total	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
12:36	8.5/205	1990	7.25	22.4		48.40	Clear
12:41	8.5/235	1950	7.23	22.9			"
12:46	8.5/275	1990	7.21	22.3		48.42	"
12:51	8.5/330	1940	7.27	22.5			"
12:57	8.5/385	2010	7.25	22.6		48.42	" Finished Development
							Total Purge Vol. = 385 gals
INSTRUMENT NO.		9005	S/N 7901	S/N 7901			

ATTACHMENT F - PROCEDURE A2

MCK0002810

Harding Lawson Associates
Engineers, Geologists & Geophysicists

DRAWN

JOB NUMBER 17333,168.11

APPROVED PK

DATE 1/92

REVISED

DATE

McKesson Corporation Property
Santa Fe Springs, California

PLATE F17a

ATTACHMENT F - PROCEDURE A2

WELL DEVELOPMENT SUMMARY

WELL MK-SB-37
DEPTH 32.09
SCREENED INTERVAL
SLOT SIZE 0.02
GRAVEL PACK Monterey #3

DATE 2-7-91
TIME 0729
DEVELOPMENT METHOD Surge & Bail
FIELD SUPERVISION BY Tom Harder
CHECKED BY B Chadwick 2/8/91

TIME SINCE DEVELOPMENT STARTED (minutes)	ESTIMATED DISCHARGE (gpm)	EC (umhos/cm)	pH	TEMPERATURE (°C)	SOLIDS (%)	DEPTH TO WATER (feet)	COMMENTS
0						30.10	Began Surging
9/07:38							Finished Surging
07:44		1800	4.21	20.1	40%	~~31.7~~ TH	Began Bailing: Opaque brown
07:47	1 gal.	2140	6.40	19.2	35%	31.76	well dry: recover .02 ft
							in 25 seconds

INSTRUMENT NO. 9005 S/N 7846 S/N 7846

MCK0002811

Harding Lawson Associates
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DRAWN

JOB NUMBER 17333,168.11

APPROVED

DATE 1/92

REVISED

DATE

McKesson Corporation Property
Santa Fe Springs, California

PLATE F18

APPENDIX G

APPENDIX G

WELL MONITORING/SAMPLING FORMS

Printed on Recycled Paper.

FIELD WATER-LEVEL MEASUREMENTS

3.3.2

SITE McKesson Santa Fe Spgs.

CHECKED BY B Chadwick 9/4/90

PROJECT NO. 17333, 158.11

FIELD PERSONNEL Tom Harder

WELL I.D.	DATE	TIME	REFERENCE ELEVATION (feet)	DEPTH TO WATER (feet)	WATER ELEVATION (feet)	INSTRUMENT NO.
MK-SB-32	8-7-90	07:47		33.27'		Keg # 76
MK-MW-02	"	07:58		44.77'		
MK-MW-01	"	08:11		47.81		
MK-MW-03	"	08:25		48.49		
MK-SB-10	"	08:34		49.05		
MK-SB-20	"	08:45		49.17		
MK-SB-17	"	09:17		48.32		
MK-SB-13	"	09:25		46.32		
MK-SB-4	"	09:40		44.62		
MK-SB-7	"	10:16		46.93		
MK-SB-23	"	10:25		48.32		
MK-SB-25	"	10:34		46.50		
MK-SB-32	8-7-90	14:06		33.27'		Tag # 76
MK-MW-02	8-7-90	14:13		44.72		
MK-SB-13	8-7-90	14:33		46.26		
MK-MW-01	"	14:38		47.73		
MK-SB-17	"	14:44		48.27		
MK-MW-03	"	14:49		48.42		
MK-SB-10	"	14:54		48.97		
MK-SB-20	"	15:00		49.10		
MK-SB-7	"	15:06		46.87		
MK-SB-23	"	15:10		48.26		
MK-SB-25	"	15:13		46.44		
MK-SB-4	"	15:18		44.55		

Solinst Elect Well Sounder from Geotechnical Services (Tag # 76)

MCK0002814

Harding Lawson Associates
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McKesson Corporation Property
Santa Fe Springs, California

PLATE G1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	17333,168.11	TAK	1/92		

FIELD WATER-LEVEL MEASUREMENTS

SITE McKesson S. Fe S.

CHECKED BY SC 8/17/90

PROJECT NO. 17333, 158.11

FIELD PERSONNEL Tom Harder Dan Johnson

Solinist

WELL ID.	DATE	TIME	REFERENCE ELEVATION (feet)	DEPTH TO WATER (feet)	WATER ELEVATION (feet)	INSTRUMENT NO.
MK-SB-4	8-15-90	09:08		44.77		Tag #76
MK-SB-7	8-15-90	09:18		47.11		
MK-MW-3	8-15-90	09:26		48.64		
MK-SB-10	8-15-90	09:36		49.19		
MK-SB-20	"	09:45		49.31		
MK-SB-17	"	09:54		48.47		
MK-MW-1	"	10:00		47.92		
MK-SB-13	"	10:08		46.45		
MK-MW-2	"	10:17		44.93		
MK-SB-32	"	10:26		33.47		
MK-SB-25	"	10:33		46.66		
MK-SB-23	"	10:38		48.48		

MCK0002815

Harding Lawson Associates
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McKesson Corporation Property
Santa Fe Springs, California

PLATE G2

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	17333,168.11	TAK	1/92		

ATTACHMENT A - PROCEDURE A4

FIELD WATER-LEVEL MEASUREMENTS

332

SITE McKesson Santa Fe Springs

CHECKED BY [illegible] 8/8/90

PROJECT NO. 17333, 158.11

FIELD PERSONNEL Tom Harder

WELL I.D.	DATE	TIME	REFERENCE ELEVATION (feet)	DEPTH TO WATER (feet)	WATER ELEVATION (feet)	INSTRUMENT NO.	8/15/90 DATA
MK-SB-32	8-17-90	07:13		33.51		Tag #76	33.4
MK-MW-02	"	07:23		44.93			44.
MK-MW-03	"	07:32		48.66			48.6
MK-MW-01	"	07:44		47.95			47.9
MK-SB-13	"	07:52		46.48			46.4
MK-SB-04	"	08:00		44.78			44.7
MK-SB-07	"	08:15		47.13			47.1
MK-SB-10	"	08:29		49.23			49.1
MK-SB-20	"	08:38		49.33			49.3
MK-SB-17	"	08:47		48.48			48.4
MK-SB-23	"	08:55		48.50			48.4
MK-SB-25	"	09:02		46.68			46.6

MCK0002816

Harding Lawson Associates
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McKesson Corporation Property
Santa Fe Springs, California

PLATE G3

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	17333,168.11		1/92		

ATTACHMENT A - PROCEDURE A4

FIELD WATER-LEVEL MEASUREMENTS

3.3.2 [illegible]

SITE McKesson Santa Fe Springs

CHECKED BY [illegible] 8/20/90

PROJECT NO. 17333,158.11

FIELD PERSONNEL Tom Harder

WL on 8/17/90

WELL I.D.	DATE	TIME	REFERENCE ELEVATION (feet)	DEPTH TO WATER (feet)	WATER ELEVATION (feet)	INSTRUMENT Sonic NO Service	
MK-SB-32	8-20-90	08:13		33.55		Tag #76	33.51
MK-MW-02	"	08:20		44.98			44.93
MK-SB-13	"	08:40		46.53			46.46
MK-MW-01	"	08:52		47.99			47.95
MK-SB-04	"	09:06		44.84			44.78
MK-SB-07	"	09:14		47.18			47.13
MK-MW-03	"	09:22		48.71			48.66
MK-SB-10	"	09:35		49.26			49.23
MK-SB-20	"	09:42		49.38			49.33
MK-SB-17	"	09:50		48.53			48.48
MK-SB-23	"	09:57		48.54			48.50
MK-SB-25	"	10:02		46.72			46.68
	Manual Well Sounder						
			Top of Casing	Tape reads	Depth to Water		
MK-MW-02	8-20-90	08:26	46	1.18	44.82		
MK-MW-01	"	08:55	49	1.16	47.84		
MK-MW-03	"	09:25	49	0.43	48.57		

MCK0002817

Harding Lawson Associates
Engineers, Geologists & Geophysicists

PLATE G4

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	17333,168.11	TMK	1/92		

ATTACHMENT A - PROCEDURE A4

FIELD WATER-LEVEL MEASUREMENTS

000038

3.3.2

SITE McKesson Santa Fe Springs

CHECKED BY B. Chadwick 8/28/90

PROJECT NO. 17333, 158.11

FIELD PERSONNEL Tom Harder

WELL I.D.	DATE	TIME	REFERENCE ELEVATION (feet)	DEPTH TO WATER (feet)	WATER ELEVATION (feet)	INSTRUMENT NO.
MK-SB-32	8-27-90	08:40		33.51		09468
MK-MW-02	"	08:45		44.92		(Solinst)
MK-MW-01	"	08:56		47.93		
MK-SB-13	"	09:07		46.45		
MK-SB-04	"	09:17		44.78		
MK-SB-07	"	09:27		47.12		
MK-MW-03	"	09:34		48.66		
MK-SB-10	"	09:42		49.21		
MK-SB-20	"	09:50		49.32		
MK-SB-17	"	09:59		48.46		
MK-SB-23	"	10:07		48.48		
MK-SB-25	"	10:13		46.66		
			TOC	Tape reads	Water Depth	
MK-MW-01	8-27-90	08:58	49	1.07	47.93	
MK-SB-13		09:09	47	0.54	46.46	
MK-SB-04		09:19	45	0.21	44.79	

MCK0002818

Harding Lawson Associates
Engineers, Geologists & Geophysicists

McKesson Corporation Property
Santa Fe Springs, California

PLATE G5

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	17333,168.11	TAK	1/92		

ATTACHMENT A - PROCEDURE A4

FIELD WATER-LEVEL MEASUREMENTS

3.3.2

C00[illegible]

SITE McKesson Santa Fe Springs

CHECKED BY BC 9/21/90

PROJECT NO. 17333, 158.11

FIELD PERSONNEL Tom Harder

WELL I.D.	DATE	TIME	REFERENCE ELEVATION (feet)	DEPTH TO WATER (feet)	WATER ELEVATION (feet)	INSTRUMENT NO.
MK-SB-32	9-21-90	10:23		34.24		Solinist
MK-MW-02	"	10:29		45.15		09468
MK-MW-01	"	10:36		48.17		
MK-SB-13	"	10:46		46.69		
MK-SB-4	"	10:55		45.02		
MK-SB-7	"	11:07		47.37		
MK-MW-03	"	11:12		48.92		
MK-SB-10	"	11:18		49.46		
MK-SB-20	"	11:23		49.57		
MK-SB-17	"	11:31		48.72		
MK-SB-23	"	11:37		48.72		
MK-SB-25	"	11:45		46.90		
PI, MW-2	"	11:51		26.85		
PI, MW-1	"	11:53		Dry		
PI, MW-3	"	11:57		Dry		
			Top of casing	Tape reads	Water Depth	
MK-MW-01	9-21-90	10:40	49.0	0.83	48.17	
MK-SB-13	"	10:49	47.0	0.31	46.69	
MK-SB-4	"	10:58	46.0	0.98	45.02	

MCK0002819

Harding Lawson Associates
Engineers, Geologists & Geophysicists

McKesson Corporation Property
Santa Fe Springs, California

PLATE G6

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	17333,168.11	TAK	1/92		

3.32

ATTACHMENT A - PROCEDURE A4

FIELD WATER-LEVEL MEASUREMENTS

CC3660

SITE McKesson Santa Fe Springs

CHECKED BY B. Chadwick 12/3/91

PROJECT NO. 17333, 158.11

FIELD PERSONNEL Tom Harder

WELL ID.	DATE	TIME	REFERENCE ELEVATION (feet)	DEPTH TO WATER (feet)	WATER ELEVATION (feet)	INSTRUMENT NO.
MK-SB-32	10-1-90	15:35		35.43		Site
MK-MW-02	"	15:42		45.01		dedicated
MK-MW-01	"	15:54		48.12		Solinst
MK-SB-13	"	16:05		46.61		
MK-SB-4	"	16:14		44.88		
MK-SB-7	"	16:20		47.25		
MK-MW-3	"	16:26		48.82		
MK-SB-10	"	16:32		49.38		
MK-SB-20	"	16:38		49.51		
MK-SB-17	"	16:44		48.68		
MK-SB-23	"	16:50		48.65		
MK-SB-25	"	16:55		46.82		
			Top of casing	Tape reads	water level	
MK-MW-2	10-1-90	15:45	46	0.98	45.02	
MK-MW-1	"	15:57	49	0.88	48.12	
MK-SB-13	"	16:07	47	0.38	46.62	

Solinst
45.01
48.12
46.61

MCK0002820

Harding Lawson Associates
Engineers, Geologists & Geophysicists

McKesson Corporation Property
Santa Fe Springs, California

PLATE G7

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	17333,168.11	TAK	1/92		

3.3.2

FIELD WATER-LEVEL MEASUREMENTS

SITE McKesson Santa Fe Springs

CHECKED BY B Chadwick 10/25/90

PROJECT NO. 17333, 158.11

FIELD PERSONNEL Tom Harder / Dan Johnson

WELL ID.	DATE	TIME	REFERENCE ELEVATION (feet)	DEPTH TO WATER (feet)	~~WATER ELEVATION (feet)~~ Total Depth	INSTRUMENT NO.
MK-MW-2	10-23-90	08:33		45.02	70.02	09468
MK-SB-13	"	08:53		46.60	measured w/ manual	
MK-MW-1	"	09:09		48.08	well sounder	
MK-MW-3	"	09:21		48.76	70.10	
MK-SB-10	"	09:30		49.33	65.50	
MK-SB-32	"	09:41		36.64	39.29	
MK-SB-4	"	09:51		44.88	64.21	
MK-SB-7	"	10:01		47.20	63.71	
MK-SB-20	"	10:12		49.45	64.02	
MK-SB-25	"	10:22		46.79	64.16	
MK-SB-17	"	10:35		48.61	64.10	
MK-SB-23	"	10:46		48.59'	65.08	
PIMW-2	"	10:59		26.825	27.26	0.44 feet
PIMW-4	"	11:07		—	40.79	Previous investigation wells
PIMW-3	"	11:11		—	26.95	
PIMW-1	"	11:15		—	25.39	
[illegible]			Top of casing	Tape Beads	Depth to Water	Total Depth
MK-MW-2	10-23-90	08:37	46'	0.98	45.02	70.26
MK-SB-13	"	08:56	47'	0.40	46.60	62.48
MK-MW-1	"	09:12	49'	0.92	48.08	70.03

MCK0002821

Harding Lawson Associates
Engineers, Geologists & Geophysicists

McKesson Corporation Property
Santa Fe Springs, California

PLATE G8

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	17333,168.11	TAK	1/92		

ATTACHMENT A - PROCEDURE A4 3.3.2

FIELD WATER-LEVEL MEASUREMENTS

C0[illegible]

SITE McKesson Santa Fe Springs

CHECKED BY B. Chadwick 11/14/91

PROJECT NO. 17333,158.11

FIELD PERSONNEL Tom Harder

WELL I.D.	DATE	TIME	REFERENCE ELEVATION (feet)	DEPTH TO WATER (feet)	WATER ELEVATION (feet)	INSTRUMENT NO.
MK-MW-2	11-16-90	10:29		44.99		09468
MK-MW-1	"	10:41		48.04		
MK-SB-13	"	10:52		46.55		
MK-MW-3	"	11:04		48.70		
MK-SB-10	"	11:11		49.27		
MK-SB-32	"	11:19		37.26		
MK-SB-4	"	11:27		44.84		
MK-SB-7	"	11:34		47.14		
MK-SB-20	"	11:43		49.39		
MK-SB-25	"	11:49		46.74		
MK-SB-17	"	12:05		48.57		
MK-SB-23	"	12:11		48.54		
PIMW-2	"	12:14		26.86		
PIMW-4	"	12:16		Dry		
PIMW-3	"	12:17		Dry		
			Top of Casing	Tape Reads	Depth to Water	
MK-MW-2	11-16-90	10:32	46'	1.01'	44.99	
MK-MW-1	"	10:44	49'	0.97'	48.03	
MK-SB-13	"	10:55	47'	0.46	46.54	
PIMW-1	11-16-90	12:19		Dry		

Calib. w/ calk & paste

MCK0002822

Harding Lawson Associates
Engineers Geologists & Geophysicists

McKesson Corporation Property
Santa Fe Springs, California

PLATE G9

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	17333,168.11	TAK	1/92		

ATTACHMENT A - PROCEDURE A4

FIELD WATER-LEVEL MEASUREMENTS

SITE McKesson Santa Fe Springs

CHECKED BY B Chadwick 1/23/91

PROJECT NO. 17333, ~~158~~ 162.11TH

FIELD PERSONNEL Tom Harder

WELL I.D.	DATE	TIME	REFERENCE ELEVATION (feet)	DEPTH TO WATER (feet)	WATER ELEVATION (feet)	INSTRUMENT NO.
MK-SB-32	1-22-91	13:48		33.09		09468
MK-MW-02	"	13:55		44.95		
MK-SB-13	"	14:27		46.56		
MK-MW-01	"	14:38		48.06		
MK-SB-4	"	14:47		44.78		
MK-SB-7	"	14:59		47.11		
MK-MW-03	"	15:08		48.69		
MK-SB-10	"	15:13		49.30		
MK-SB-17	"	15:24		48.62		
MK-SB-23	"	15:29		48.59		
MK-SB-25	"	15:34		46.75		* See Daily
MK-SB-20	"	15:20		49.44		
Well I.D.	Date	Time	Top of Casing	Tape Reads	Water Depth	Sounder
MK-SB-13	1-22-90	14:30	47.00	0.45	46.55	46.56 Manual Well
MK-MW-01	"	14:40	49.00	0.95	48.05	48.06
MK-SB-4	"	14:49	45.00	0.22	44.78	44.78

MCK0002823

Harding Lawson Associates
Engineers Geologists & Geophysicists

McKesson Corporation Property
Santa Fe Springs, California

PLATE G10

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	17333,168.11	TAK	1/92		

ATTACHMENT A - PROCEDURE A4

FIELD WATER-LEVEL MEASUREMENTS

SITE McKesson, Santa Fe Springs

CHECKED BY B Hardwick 1/31/91

PROJECT NO. 17333,164.11

FIELD PERSONNEL Tom Harder

WELL I.D.	DATE	TIME	REFERENCE ELEVATION (feet)	DEPTH TO WATER (feet)	WATER ELEVATION (feet)	INSTRUMENT NO.
MK-SB-32	1-30-91	13:10		33.49		09468
MK-MW-02	"	13:16		44.99		
MK-MW-01	"	13:31		48.05		
MK-SB-13	"	13:42		46.56		
MK-SB-4	"	13:52		44.83		
MK-SB-7	"	13:58		47.15		
MK-MW-03	"	14:06		48.71		
MK-SB-10	"	14:14		49.30		
MK-SB-20	"	14:22		49.43		
MK-SB-17	"	14:29		48.61		
MK-SB-23	"	14:37		48.57		
MK-SB-25	"	14:43		46.74		
P1MW-2	"	15:03		26.84		
Start P1MW-4	"	15:06		39.78		
P1MW-3	"	15:10		26.37		
P1MW-1	"	15:14		dry		
MK-SB-36	"	15:21	Not surveyed Not developed	46.84		
MK-SB-37	"	15:25	TD=31.4	28.19		
MK-MW-02	1-30-91	13:19	46	1.02	44.98	Manual Well Sounder
MK-MW-01	"	13:33	49	0.96	48.04	↓
MK-SB-13	"	13:44	47	0.44	46.56	↓

cf. Solin
44.99
48.05
46.56

Harding Lawson Associates
Engineers, Geologists & Geophysicists

McKesson Corporation Property
Santa Fe Springs, California

MCK0002824

LATE G11

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	17333,168.11	TAK	1/92		

ATTACHMENT A - PROCEDURE A4

FIELD WATER-LEVEL MEASUREMENTS

SITE McKesson Santa Fe Springs

CHECKED BY B Chadwick 2/13/91

PROJECT NO. 17333, 168.11

FIELD PERSONNEL Tom Harder / Don Johnson

PRE GW SAMPLING

WELL ID.	DATE	TIME	REFERENCE ELEVATION (feet)	DEPTH TO WATER (feet)	Total Depth WATER TH ELEVATION (feet)	INSTRUMENT NO.
MK-MW-2	2-11-91	0744		44.96	70.24	09468
MK-MW-3	"	0750		48.67	70.09	
MK-MW-1	"	0759		48.02	70.05	
MK-SB-13	"	0808		46.53	62.47	
MK-SB-7	"	0823		TH ~~44.8~~ 47.02	63.70	
MK-SB-4	"	0818		44.81	61.21	
MK-SB-10	"	0830		49.26	65.50	
MK-SB-32	"	0838		33.89	39.29	
MK-SB-20	"	0845		49.40	64.01	
MK-SB-25	"	0854		46.73	64.15	
MK-SB-17	"	0901		48.57	64.09	
MK-SB-23	"	0908		48.59	65.09	
MK-SB-17A	"	0918		49.85	4TH 116.19	
MK-SB-17B	"	0921		49.76	90.01	
MK-SB-27A	"	0923		48.12	127.81	
MK-SB-23B	"	0925		47.99	95.26	
MK-SB-36	"	0929		45.84	65.08	
MK-SB-37	"	0913		31.72	32.09	
FMW-2	"	0933		26.86		
FMW-4	"	0936		40.48		
FMW-3	"	0938		dry		
FMW-1	"	0940		dry		
MK-MW-03	2-11-91	0753	49 / 0.35	48.65		manual well sounder
MK-MW-01	"	0803	49 / 1.00	48.00		"
MK-SB-13	"	0810	47 / 0.48	46.52		"

MCK0002825

Harding Lawson Associates
Engineers, Geologists & Geophysicists

McKesson Corporation Property
Santa Fe Springs, California

PLATE G12

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	17333,168.11	TAK	1/92		

ATTACHMENT A - PROCEDURE A4

FIELD WATER-LEVEL MEASUREMENTS

SITE McKesson Santa Fe Springs

CHECKED BY B. Chadwick 9/11/91

PROJECT NO. 17333, 16.5.11

FIELD PERSONNEL Tom Harder

WELL ID.	DATE	TIME	REFERENCE ELEVATION (feet)	DEPTH TO WATER (feet)	WATER ELEVATION (feet)	INSTRUMENT NO.
MK-MW-2	4-11-91	08:20		43.73	47.32	09468
MK-MW-3	"	08:32		47.35	47.75	
MK-SB-17A	"	08:41		48.08	48.06	
MK-SB-17B	"	08:48		48.04		
MK-SB-23A	"	08:53		46.22		
MK-SB-23B	"	08:55		46.31		
MK-MW-1	"	08:58		46.92		
MK-SB-13	"	09:04		45.39		
MK-SB-4	"	09:07		43.51		
MK-SB-36	"	09:11		44.51		
MK-SB-7	"	09:15		45.77		
MK-SB-10	"	09:18		48.02		
MK-SB-32	"	09:23		31.42		
MK-SB-20	"	09:27		48.19		
MK-SB-17	"	09:31		47.42		
MK-SB-25	"	09:34		45.50		
MK-SB-23	"	09:39		47.30		
MK-SB-37	"	09:42		dry		
PIMW-2	"	09:45		26.86		
PIMW-4	"	09:47		40.38		Slant boring
PIMW-1	"	09:50		dry		
PIMW-3	"	09:51		26.65		
MK-MW-2	4-11-91	08:23	47-.28	43.72		manual well sounder
MK-MW-3	"	08:33	48-0.67	47.33		↓
MK-SB-17B	"	08:43	49-0.94	48.06		↓

Note: Major storm event occured in Southern California since last monitoring data collection on Feb. 11, 1991

MCK0002826

Harding Lawson Associates
Engineers Geologists & Geophysicists

McKesson Corporation Property
Santa Fe Springs, California

PLATE G13

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	17333,168.11	TMK	1/92		

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson S F S
Job Number 17353, 158.11
Recorded by Tom Harder (Signature)

Well No. MK-MW-01
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 8-1-90 Time 13:31
Sampled by TH (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 69.98
Water Level Depth (WL in feet BTOC): 47.56
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(69.98 TD (feet) - 47.56 WL (feet)) X 4 D (inches) ^{2} X 4 # Vols X 0.0408 = 58.5 gallons Calculated Purge Volume

PURGE TIME

13:31 Start 1347 Stop Elapsed

PURGE RATE

Initial 4.5 gpm Final gpm

ACTUAL PURGE VOLUME

~70 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
0	6.95	860	26.0	4.5 gpm
3	6.94	880	24.5	"
6	6.99	780	24.6	"
9	6.99	860	24.3	"
13	7.00	860	24.4	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
16	7.00	860	24.4	
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor): Clear, no odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-MW-01-080190	2 x 40ml	624	HCL	ATI	
"	~~2x~~ 1 pint	Inorganics	None		Field Filtered
"	2x 1 liter	625	None		
"	1 x 4oz	NO_3	H_2SO_4		
"	1 liter	418.1	H_2SO_4		
~~TH~~					
MK-MW-01-080190	1 pint	Metals	HNO_3		Field Filtered

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002827

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: McKesson S Fe S
Job Number: 17333, 158.11
Recorded by: Tom Harder / Dan Johnson (Signature)

Well No.: MK-MW-02
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date: 8-1-90 Time: ~~13:08~~ 15:08 TH
Sampled by: TH / DJ (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 70.33
Water Level Depth (WL in feet BTOC): 44.52
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(70.33 - 44.52) X 4 ^{2} X 4 X 0.0408 = 67.4 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

15:08 TH ~~15:08~~ Start 15:25 ~~15:25~~ Stop 17 min Elapsed

PURGE RATE

Initial 4.5 gpm Final 4.5 gpm

ACTUAL PURGE VOLUME

76.5 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
1	7.15	1200	26.2	very silty ≈4.5 gal/min
3	7.06	1250	24.3	moderately silty ≈4.5 gal/min
5	7.01	1350	24.4	slightly silty ≈4.5 gal/min
7	7.09	1400	24.4	murky (brn) 4.5
9	7.12	1350	24.3	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
11	7.10	1100	24.4	slightly murky 4.5 gal/min
13	7.10	1350	24.4	"
15	7.10	1350	24.4	Clear
17	7.10	1300	24.4	"
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor): Clear, no odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-MW-02-080190	2x40ml	624	HCL	ATI	
"	1 pint	Inorganics	None	↓	Field Filtered
"	1 pint	Metals	HNO_3		Field Filtered
"	2x1 liter	625	None		
"	4 oz	NO_3	H_2SO_4		
"	1 liter	418.1	H_2SO_4		

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.
~~MK-MW-04-080190D~~	TH
MK-MW-02-080190	MK-MW-04-080190D

Blank Samples

Type	Sample No.
Equip	MK-MW-02-080190E
Travel	MK-MW-05-080190B

Other Samples

Type	Sample No.

MCK0002828

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Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name Nickerson S Fes
Job Number 17333.158.11
Recorded by Tom Harder (Signature)

Well No. MK-MW-03
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 8-2-90 Time 6:45
Sampled by Dan Johnson (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 69.93
Water Level Depth (WL in feet BTOC): 48.42
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(69.93 - 48.42) X 4 ^{2} X 4 X 0.0408 = 56.2 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

6:58 Start 7:18 Stop 20 min Elapsed

PURGE RATE

Initial 4.5 gpm Final 4.5 gpm

ACTUAL PURGE VOLUME

≈ 64 gal gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
1	7.07	1300	22.3	slightly murky ≈ 4.5 gal/min
2	7.07	1400	22.2	murky, brn
4	7.09	1450	22.2	slightly murky
6	7.11	1450	22.2	"
8	7.09	1500	22.2	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
10	7.09	1400	22.2	clearing up "
12	7.11	1450	22.3	" 3 gal/min
14	7.11	1400	22.2	3 gal/min
20	~~7.09~~ 7.10	1400	22.1	clear 4.5 gal/min
Meter Nos.	Ph/temp S/N 7846		cond S/N 0481202	

Observations During Purging (Well Condition, Turbidity, Color, Odor): No odor, well in good condition, clear at end of purging!
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-MW-03-080290	2 x 40ml	624	HCL	ATI	
"	1 pint	Inorganics	None	↓	Field Filtered
"	1 pint	Metals	HNO_3	↓	Field Filtered
"	2 x 1 liter	625	None	↓	
"	1 liter	418.1	H_2SO_4	↓	
"	4 oz	NO_3	H_2SO_4	↓	

7.30
7.40

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
~~Equip.~~ TH	~~MK-SB-13-080290E~~ TH
~~Travel~~ TH	~~MK-SB-13-080290B~~ TH

Other Samples

Type	Sample No.

MCK0002829

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Harding Lawson Associates
Engineering and Environmental Services

3.3.5

GROUND-WATER SAMPLING FORM

Job Name McKesson Santa Fe Spgs
Job Number 17333, 158.11
Recorded by Tom Harder (Signature)

Well No. MK-SB-4
Well Type: ☑ Monitor ❑ Extraction ❑ Other
Well Material: ☑ PVC ❑ St. Steel ❑ Other
Date 8-3-96 Time 0752
Sampled by TH / DT (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
❑ 2-inch ☑ 4-inch ❑ 6-inch ❑ Other
Total Depth of Casing (TD in feet BTOC): 64.04
Water Level Depth (WL in feet BTOC): 44.57
Number of Well Volumes to be purged (# Vols)
❑ 3 ☑ 4 ❑ 5 ❑ 10 ❑ Other

PURGE METHOD

❑ Bailer - Type:
☑ Submersible ❑ Centrifugal ❑ Bladder; Pump No.:
❑ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ❑ Near Top ❑ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(64.04 - 44.57) X 4 ^{2} X 4 X 0.0408 = 50.8 gallons

TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

0752 Start 0805 Stop 13 Elapsed

PURGE RATE

Initial 4.5 gpm Final 4.5 gpm

ACTUAL PURGE VOLUME

~55 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ❑ °F	Other
2	6.99	1000	22.3	4.5 gpm
4	6.95	840	22.6	
6	6.99	910	22.6	Murky
8	7.02	850	22.7	"
11	7.02	860	22.7	slty murky

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ❑ °F	Other
13	7.04	930	22.5	clear
Meter Nos.	S/N 18046	092088	S/N 18046	

Observations During Purging (Well Condition, Turbidity, Color, Odor): Clear, no odor

Discharge Water Disposal: ❑ Sanitary Sewer ❑ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: 1" x 3' Stainless steel
❑ Submersible ❑ Centrifugal ❑ Bladder; Pump No.:
❑ Same As Above
❑ Grab - Type:
❑ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-04-080390	2 x 40ml	624	HCL	ATI	
"	1 ~~pint~~ liter	Inorganics	None		Field Filtered
"	1 pint	Metals	HNO_3		Field Filtered
"	2 x 1 liter	624	None		
"	1 liter	418.1	H_2SO_4		
"	4 oz	NO_3	H_2SO_4		

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Travel	MK-SB-4-080390B

Other Samples

Type	Sample No.

MCK0002830

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Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name Mckesson S Fe S
Job Number 17333, 158.11
Recorded by [signature] (Signature)

Well No. MK-SB-7
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 8-3-90 Time 9:16
Sampled by TH/DJ (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 63.53
Water Level Depth (WL in feet BTOC): 46.90
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(63.53 - 46.90) X 4 ^{2} X 4 X 0.0408 = 43.4 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

9.19 Start 9:31 Stop 12 min Elapsed

PURGE RATE

Initial 4.5 gpm Final 4.8 gpm

ACTUAL PURGE VOLUME

≈ 49 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
1	7.15	1400	22.3	slightly murky ≈4.5 gal/min
3	7.08	1450	22.2	"
5	7.01	950	22.2	"
7	7.09	1400	22.3	clearing up
10	7.09	1400	22.3	clear 4.8 gal/min

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
12	7.09	1400	22.3	Very clear ≈4.8 gal/min
Meter Nos.	S/N 7846	S/N 092088	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder: Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-7-080390	2 x 40ml	624	HCL	ATI	
	1 liter ~~pint~~	Inorganics	None		Field filtered
	1 pint	Metals	HNO_3		Field filtered
	2 x 1 liter	625	None		
	1 liter	418.1	H_2SO_4		
	4oz	4oz	H_2SO_4		

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002831

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name Mckesson-Santa Fe Springs
Job Number 17333, 158.11
Recorded by Don Johnson/Tom Hardie (Signature)

Well No. mk-SB-10
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 8-02-90 Time 8:25
Sampled by DJ/TH (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 65.47
Water Level Depth (WL in feet BTOC): 48.84
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(65.47 - 48.84) X 4 ^{2} X 4 X 0.0408 = 43.42 gallons
TD (feet) 16.63 WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

8:35 Start 8:47 Stop 12 min Elapsed

PURGE RATE

Initial 4.8 gpm Final 4.8 gpm

ACTUAL PURGE VOLUME

52 gal gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
1	7.15	1450	22.1	Very murky brn ≈ 4.8 gal/min
2	7.13	1450	22.0	moderately murky
4	7.15	1350	22.3	"
6	7.13	1050	22.1	Slightly murky
8	7.13	1350	22.3	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
10	7.14	1350	22.2	"
12	7.13	1350	22.2	Fairly clear ≈ 4.8 gal/min
—				
—				
Meter Nos.	pH/temp S/N 7846	Cond. S/N 0481203		

Observations During Purging (Well Condition, Turbidity, Color, Odor): well in good condition, steady flow, no odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☐ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: 1" x 3' stainless steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-10-080290	2 x 40ml	624	HCL	ATI	Field filtered
"	1 pt	Inorganics	None	↓	Field filtered
"	1 pt	Metals	HNO_3	↓	
"	2 x 1L	625	None	↓	
"	1L	418.1	H_2SO_4	↓	
"	4 oz	NO_3	H_2SO_4	↓	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002832

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: McKesson S Fe S
Job Number: 17333, 158.11
Recorded by: Tom Harder (Signature)

Well No.: MK-SB-13
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date: 8-2-90 Time: 13:46
Sampled by: TH (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 62.31
Water Level Depth (WL in feet BTOC): 46.21
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(62.31 - 46.21) X 4 ^{2} X 4 X 0.0408 = 42 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

13:46 Start 14:01 Stop 15 Elapsed

PURGE RATE

Initial 4.8 gpm Final 4.8 gpm

ACTUAL PURGE VOLUME

~55 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
2	7.02	960	25.4	
3	7.01	980	24.4	4.8 gpm
5	7.01	860	24.2	"
8	6.99	870	24.4	"
11	7.07	850	24.4	

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
15	7.08	900	24.6	
Meter Nos.	S/N 7846	092088	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): Murky, no odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-13-080290	2x40ml	624	HCL	ATI	
"	1 pint	Inorganics	None	↓	Field Filtered
"	1 pint	Metals	HNO_3	↓	Field Filtered
"	2 x 1 liter	625	None	↓	
"	1 liter	418.1	H_2SO_4	↓	
"	4 oz	NO_3	H_2SO_4	↓	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Equip	MK-SB-13-080290 E
Travel	MK-SB-13-080290 B

Other Samples

Type	Sample No.

MCK0002833

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0746

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson S Fe S
Job Number 17333, 158.11
Recorded by Tom Harder (Signature)

Well No MK-SB-17
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 8-2-90 Time 11:20
Sampled by TH / DS (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 64.1
Water Level Depth (WL in feet BTOC): 48.9
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(64.10 TD (feet) - 48.9' WL (feet)) X 4 D (inches)^2 X 4 # Vols X 0.0408 = 39.7 gallons Calculated Purge Volume

PURGE TIME

11:23 Start 11:35 Stop 12 min Elapsed

PURGE RATE

Initial 4.5 gpm Final 4.5 gpm

ACTUAL PURGE VOLUME

≈ 55 gal gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
1	7.02	1300	24.7	Fairly clear ≈ 4.5 gal/min
3	6.92	1400	23.3	"
5	6.81	1400	23.3	"
7	6.81	1400	23.4	clear ≈ 4.5 gal/min
10	6.84	1400	23.4	clear

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
12	6.84	1400	23.4	clear ≈ 4.5 gal/min
Meter Nos.	pH/temp S/N# 7846		cond meter S/N 0481203	

Observations During Purging (Well Condition, Turbidity, Color, Odor): Well in good condition, constant flow, no odor

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
11:30 MK-SB-17-080290	2 x 40ml	624	HCL	ATI	
"	1 pint	Inorganics	None		Field Filtered
"	1 pint	Metals	HNO_3		Field Filtered
"	2 x 1 liter	625	None		
"	1 liter	418.1	H_2SO_4		
"	4 oz	NO_3	H_2SO_4		

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.
MK-SB-17-080290	MK-SB-17-080290D

Blank Samples

Type	Sample No.

Other Samples

MCK0002834

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson S. Fe S.
Job Number 17333, 158.11
Recorded by Tom Harden (Signature)

Well No. MK-SB-20
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 8-2-90 Time 10:05
Sampled by TH / DJ (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 64.01
Water Level Depth (WL in feet BTOC): 48.95
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder: Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(64.01 TD (feet) - 48.95 WL (feet)) X 4 D (inches) ^{2} X 4 = Vols X 0.0408 = 39.32 gallons Calculated Purge Volume

PURGE TIME

1005 Start 1016 Stop Elapsed

PURGE RATE

Initial gpm Final gpm

ACTUAL PURGE VOLUME

n/a gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
1	6.96	930	24.2	4.5 gpm
5	6.95	920	23.3	"
7	6.96	860	23.3	"
9	6.94	880	23.5	
11	6.96	900	23.5	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	S/N 7846	092088	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): Slightly murky, slight odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-20-08290	2 x 40ml	624	HCL	ATT	
"	1 pint	inorganics	None		Field filtered
"	1 pint	metals	HNO_3		Field Filtered
"	3 x 1 liter	625	None		
"	1 liter	418.1	H_2SO_4		
"	4 oz	NO_3	H_2SO_4		

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Ty	Sample No.

MCK0002835

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson S Fe S
Job Number 17333, 158.11
Recorded by Tom Harder (Signature)

Well No. MK-SB-23
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 8-3-90 Time 10:41
Sampled by TH/DJ (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 65.09
Water Level Depth (WL in feet BTOC): 48.29
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(65.09 TD (feet) - 48.29 WL (feet)) X 4 D (inches)^2 X 4 # Vols X 0.0408 = 43.9 gallons Calculated Purge Volume

PURGE TIME

10:41 Start ~~10:55~~ TH Stop 14 Elapsed

PURGE RATE

Initial 4.5 gpm Final 4.5 gpm

ACTUAL PURGE VOLUME

~50 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
1	7.02	1000	24.9	murky
4	7.04	990	23.7	"
6	7.04	970	23.4	"
7	7.04	~~TH 880~~ 980	23.6	"
11	7.03	970	23.7	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
13	7.01	1000	23.7	slightly murky
Meter Nos.	S/N ~~7846~~	092088	S/N ~~7846~~	

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: 1"x3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-23-080390	2x40ml	624	HCL	ATI	
"	1 liter	Inorganics	None	↓	Field Filtered
"	1 pint	Metals	HNO_3		Field Filtered
"	2x1 liter	625	None		
"	1 liter	418.1	H_2SO_4		
"	4oz	NO_3	H_2SO_4		

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.
MK-SB-23-080390	MK-SB-23-080390D

Blank Samples

Type	Sample No.

Other Samples

MCK0002836

Original Copy - White Field Copy - Canary

0746

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson S Fe S
Job Number 17333,158.11
Recorded by [signature] (Signature)

Well No. MK-SB-25
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 8-3-90 Time
Sampled by TH / DJ (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 63.95
Water Level Depth (WL in feet BTOC): 46.44
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☑ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(63.95 TD (feet) - 46.44 WL (feet)) X 4 D (inches)^2 X 4 # Vols X 0.0408 = 45.7 gallons Calculated Purge Volume

PURGE TIME

12:46 Start 12:58 Stop 12 min Elapsed

PURGE RATE

Initial 4.5 gpm Final 4.5 gpm

ACTUAL PURGE VOLUME

≈ 54 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
1	7.05	1300	25.8	slightly murky ≈4.5 gal/min
3	7.03	1300	24.3	fairly clear
5	7.00	1350	25.0	clear
7	7.01	1350	24.3	clear
9	7.02	1400	24.3	clear

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
11	7.02	1400	24.3	very clear ≈4.5 gal/min
12	7.02	1400	24.3	"
Meter Nos.	S/N 7846	S/N 092088	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor):

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-25-080390	2x40ml	624	HCL	ATI	
"	1 liter	Inorganics	None		Field Filtered
"	1 pint	Metals	HNO_3		Field Filtered
"	3 x 1 liter	625	None		
"	1 liter	418.1	H_2SO_4		
"	4 oz	NO_3	H_2SO_4		
	(1 for 625 QC) internal lab				

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002837

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson SFeS
Job Number 17333, 158.11
Recorded by Tom Harder (Signature)

Well No. MK-SB-32
Well Type: ☑ Monitor ❑ Extraction ❑ Other
Well Material: ☑ PVC ❑ St. Steel ❑ Other
Date 8-3-90 Time 1436
Sampled by TH / DJ (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
❑ 2-inch ☑ 4-inch ❑ 6-inch ❑ Other
Total Depth of Casing (TD in feet BTOC): ~~34.45~~ 39.1
Water Level Depth (WL in feet BTOC): 34.45'
Number of Well Volumes to be purged (# Vols)
❑ 3 ☑ 4 ❑ 5 ❑ 10 ❑ Other

PURGE METHOD

❑ Bailer - Type:
❑ Submersible ❑ Centrifugal ❑ Bladder; Pump No.:
❑ Other - Type:

PUMP INTAKE SETTING

❑ Near Bottom ❑ Near Top ❑ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(39.1' TD (feet) - 34.45' WL (feet)) X ____ D (inches)^2 X ____ # Vols X 0.0408 = ____ gallons Calculated Purge Volume

PURGE TIME

Start Stop Elapsed

PURGE RATE

Initial gpm Final gpm

ACTUAL PURGE VOLUME

gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ❑ °C ❑ °F	Other

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ❑ °C ❑ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor):

Discharge Water Disposal: ❑ Sanitary Sewer ❑ Storm Sewer ❑ Other

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: 1" x 3' Stainless Steel
❑ Submersible ❑ Centrifugal ❑ Bladder, Pump No.:
❑ Same As Above
❑ Grab - Type:
❑ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-32-080390	2x40ml	624	HCL	ATI	
"	1 liter	Inorganics	None		Field Filtered
"	1 pint	Metals	HNO_3		Field Filtered
"	2x 1 liter	625	None		
"	1 liter	418.1	H_2SO_4		
"	4oz	NO_3	H_2SO_4		
"	4oz	8015	HCL		

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Equipment	MK-SB-32-080390 E

Other Samples

Type	Sample No.

MCK0002838

Harding Lawson Associates
Engineering and Environmental Services

C03504

GROUND-WATER SAMPLING FORM

Job Name: McKesson S. Fe S.
Job Number: 17333, 158.11
Recorded by: Tom Harder (Signature)

Well No.: MK-MW-01
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date: 10-24-90 Time: 9:05
Sampled by: TA/DJ (Initials) BC

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 70.03
Water Level Depth (WL in feet BTOC): 48.08
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(70.03 - 48.08) X 4 ^{2} X 4 X 0.0408 = 57.3 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

09:09 Start 09:22 Stop 13 Elapsed

PURGE RATE

Initial 6 gpm Final 6 gpm

ACTUAL PURGE VOLUME

~ 80 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
0	7.13	~~1020~~ 1200 TH	22.9	
2	7.10	~~1020~~ 1200 TH	22.2	murky
4	7.04	1200	22.2	sl murky
6	7.02	1200	22.3	"
8	7.02	1200	22.4	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
10	7.05	1200	22.4	clear
12	7.10	1200	22.1	"
13	End Pumping			
Meter Nos.	S/N 9701	0270887	9701	

Observations During Purging (Well Condition, Turbidity, Color, Odor): clear, no odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD @ 9:45

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type
☐ Other - Type

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-1-102490	1 liter	Gen Min	Unpress.	ATI	
	4 oz	NO_3	H_2SO_4	↓	
	4 oz	pH	Unpress		
	500 ml	metals	HNO_3		Field Filtered
	2 x 40 ml	8240/624	HCL		

QUALITY CONTROL SAMPLES

@ 9:50 Duplicate Samples

Original Sample No.	Duplicate Sample No.
MK-MW-1-102490	MK-MW-1-102490D

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002839

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson S. Fe S.
Job Number 17333, 158.11
Recorded by (Signature)

Well No. MK-MW-2
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 10-23-90 Time 7:10
Sampled by TH/DI (Initials) BL

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 70.26
Water Level Depth (WL in feet BTOC): 45.02
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(70.26 - 45.02) X 4 ^{2} X 4 X 0.0408 = 65.9 gallons

TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

7:12 Start 7:23 Stop 11 min Elapsed

PURGE RATE

Initial 7 gpm Final 7 gpm

ACTUAL PURGE VOLUME

≈78 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
7:12 (0.5)	6.95	1400	20.4	Opaque brown ≈3% sed.
2.5	7.02	1200	20.9	slightly murky brown
5	7.06	1200	21.1	≈7 gal/min
7	7.09	1200	21.3	clear pump surging
9	7.06	1200	21.4	clear ≈7 gal/min

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
11	7.05	1200	21.4	clear
Meter Nos. S/N 7901		0270887	S/N 7901	

Observations During Purging (Well Condition, Turbidity, Color, Odor): Constant flow (constant), no odor, well in good condition

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

Sampled @ 7:40 10/24/90

☐ Same As Above

☑ Bailer - Type: 1"x3' Stainless Steel
☐ Grab - Type:
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-2-102490	1 poly liter	General minerals	Unpress	ATI	
"	4 oz/poly	NO_3	H_2SO_4	"	Filtered (0.45 µ)
"	4 oz/poly	pH	Unpress	"	
"	500 ml/poly	metals	HNO_3	"	
"	2-40 ml	8240/624	HCL	"	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Travel	MK-MW-2-102490B

Other Samples

Type	Sample No.

MCK0002840

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: McKesson S. Fe S.
Job Number: 17333, 158.11
Recorded by: [signature] (Signature)

Well No.: MK-MW-3
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date: 10-24-90 Time: 10:30
Sampled by: TH/DJ (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 70.10
Water Level Depth (WL in feet BTOC): 48.76
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(70.10 − 48.76) × 4² × 4 × 0.0408 = 55.7 gallons

TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

10:37 Start 10:45 Stop 8 min Elapsed

PURGE RATE

Initial 7.5 gpm Final 7.5 gpm

ACTUAL PURGE VOLUME

≈ 60 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
10:37 (0.5)	7.20	1200	22.6	slightly opaque brn
2.5	7.15	1250	21.6	Fairly clear
5	7.09	1250	21.2	clear
7	7.08	1250	21.5	"
8	7.07	1250	21.5	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos. S/N	7901	0270887	7901	

Observations During Purging (Well Condition, Turbidity, Color, Odor): no odor, constant flow, well in good condition

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drums

WELL SAMPLING

SAMPLING METHOD

@ 11:00 10-24-90

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-MW-3-102490	4oz/poly	pH	Unpress.	ATI	
"	2-40ml/glass	8240/624	HCL	"	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002841

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson S. Fe S.
Job Number 17333, 158.11
Recorded by [signature] (Signature)

Well No. MK-SB-4
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 10-24-90 Time
Sampled by TH / DJ BC (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 64.21
Water Level Depth (WL in feet BTOC): 44.88
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(64.21 - 44.88) X 4 ^{2} X 4 X 0.0408 = 50.5 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

13:41 Start 13:52 Stop 11 min Elapsed

PURGE RATE

Initial 5 gpm Final 5 gpm

ACTUAL PURGE VOLUME

≈ 55 gall => gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
13:41 (0.5)	7.13	1100	25.0	Fairly clear
2.5	7.14	1200	24.6	slightly murky brn ≈10 gallons (opaque)
5	7.14	1200	23.1	Fairly clear
7	7.13	1200	22.9	clear ≈35 gallons
9.5	7.12	1200	22.8	very clear

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
11	7.12	1200	22.8	very clear
Meter Nos S/N	7901	0270887	7901	

Observations During Purging (Well Condition, Turbidity, Color, Odor): No odor, well in good condition, constant flow
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD @ 14:06 10-24-90

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-4-102490	2-40ml/glass	8240/624	HCL	ATI	
~~"~~	~~1-liter/poly~~	~~General minerals~~	~~Unpress~~ DJ	↓	
"	4oz/poly	pH	Unpress		
~~"~~	~~4oz/poly~~	~~Nitrates~~	~~H_2SO_4~~ DJ		
~~"~~	~~500ml/poly~~	~~Metals~~	~~HNO_3~~ DJ		

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.
MK-SB-4-102490	MK-SB-4-102490D

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002842

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: McKesson S. FeS.
Job Number: 17333, 158.11
Recorded by: Tom Harder (Signature)

Well No.: MK-SB-7
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date: 10-24-90 Time: 14:45
Sampled by: TH/DJ (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 63.71
Water Level Depth (WL in feet BTOC): 47.20
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(63.71 - 47.20) X 4 ^{2} X 4 X 0.0408 = 43.1 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

14:48 Start 14:56 Stop 8 Elapsed

PURGE RATE

Initial 5.7 gpm Final 5.7 gpm

ACTUAL PURGE VOLUME

~50 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
0	7.20	1000	26.5	murky
2	7.21	1100	23.3	"
3	7.20	1200	22.7	"
5	7.19	1200	22.6	"
6	7.18	1200	22.5	sl murky

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
8	7.16	1200	22.6	sl murky
Meter Nos S/N	7401	0270487	7401	

Observations During Purging (Well Condition, Turbidity, Color, Odor):
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD @ 18:00 10-24-90

☑ Bailer - Type 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-7-102490	2x40ml	8240/624	HCL	ATI	
	4oz	pH	None	ATI	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Equip	MK-SB-7-102490E

Other Samples

Type	Sample No.

MCK0002843

Office Copy - White Field Copy - Green 0746

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: McKesson S. Fe S.
Job Number: 17333, 158.11
Recorded by: Tom Harden (Signature)

Well No.: MK-SB-10
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date: 10-24-90 Time:
Sampled by: TH/DJ (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 65.50
Water Level Depth (WL in feet BTOC): 49.33
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(65.50 - 49.33) X 4 ^{2} X 4 X 0.0408 = 42.2 gallons

TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

11:25 Start 11:34 Stop 9 Elapsed

PURGE RATE

Initial gpm Final gpm

ACTUAL PURGE VOLUME

~55 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
1	7.28	1100	23.2	murky
3	7.23	1200	21.9	"
5	7.20	1200	21.8	sl murky
6	7.19	1200	21.5	"
8	7.17	1200	21.8	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos./S/N	7901	0270887	7901	

Observations During Purging (Well Condition, Turbidity, Color, Odor): sl murky, brown, no odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD @ 11:50 10-24-90

☐ Same As Above
☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Grab - Type:
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-10-1024	2x40ml	8240/624	HCL	ATI	
	4oz	NO_3	H_2SO_4		
	4oz	pH	none		
	500ml	metals	HNO_3		
	1 liter	Gen Min	None		

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002844

Office Copy Field Copy

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson S. Fe S.
Job Number 17333, 158, 11
Recorded by [signature] (Signature)

Well No. MK-SB-13
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 10-24-90 Time 8:15
Sampled by TH/DJ (Initials) BC

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 62.48
Water Level Depth (WL in feet BTOC): 46.60
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(62.48 - 46.60) X 4 ^{2} X 4 X 0.0408 = 41.5 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

8:20 Start 8:27 Stop Elapsed

PURGE RATE

Initial 7 gpm Final 7.2 gpm

ACTUAL PURGE VOLUME

≈ 52 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
8:20 (0.5)	7.10	1150	21.3	Slightly opaque brown
2.5	7.07	1200	21.9	≈ 20 gallons
5	7.08	1200	21.8	clear
7	7.08	1200	21.8	clear ≈ 50 gallons

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	S/N 7901	0270887	S/N 7901	

Observations During Purging (Well Condition, Turbidity, Color, Odor): no odor, well in good condition, constant flow
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

@ 8:40 10-24-90

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-13-102490	4oz poly	pH	Unpress	ATI	
"	2-40 ml V glass	8240/624	HCL	"	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002845

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: McKesson S. Fe S.
Job Number: 17333, 158.11
Recorded by: [signature] (Signature)

Well No.: MK-SB-17
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date: 10-25-90 Time: 10:00
Sampled by: TH / DJ (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 64.10
Water Level Depth (WL in feet BTOC): 48.61
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(64.10 - 48.61) X 4 ^{2} X 4 X 0.0408 = 40.4 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

10:05 Start 10:12 Stop 7 min Elapsed

PURGE RATE

Initial 7 gpm Final 7 gpm

ACTUAL PURGE VOLUME

≈50 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
10:05 (0.5)	6.96	1250	22.2	Clear litmus paper (LP) is yellow
2.5	6.88	1250	21.9	v. clear
5	6.86	1400	22.1	LP=> lt. orange v. clear
7	6.87	1400	22.1	" "

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
		EP-2		
Meter Nos. S/N	7901	0270887	7901	

Observations During Purging (Well Condition, Turbidity, Color, Odor): Slight sweet smell, constant flow, well in good condition
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD @ 10:30 10-25-90

☑ Bailer - Type: 1"x3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-17-102590	1-liter/poly	General minerals	Unpres	ATI	
"	500-ml/poly	Metals	HNO3	"	Filtered
"	2-40ml/glass	624/8240	HCL	"	(0.45 µ)
"	1-4oz/poly	pH	Unpress	"	
"	1-4oz/poly	Nitrates	H2SO4	"	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	

MCK0002846

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson Santa Fe Springs
Job Number 17333, 158.11
Recorded by [signature] (Signature)

Well No. MK-SB-20
Well Type: ☑ Monitor ❑ Extraction ❑ Other
Well Material: ☑ PVC ❑ St. Steel ❑ Other
Date 10-25-90 Time 8:15
Sampled by TH/DJ (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
❑ 2-inch ☑ 4-inch ❑ 6-inch ❑ Other
Total Depth of Casing (TD in feet BTOC): 64.02
Water Level Depth (WL in feet BTOC): 49.45
Number of Well Volumes to be purged (# Vols)
❑ 3 ☑ 4 ❑ 5 ❑ 10 ❑ Other

PURGE METHOD

❑ Bailer - Type:
☑ Submersible ❑ Centrifugal ❑ Bladder; Pump No.:
❑ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ❑ Near Top ❑ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(64.02 - 49.45) X 4 ^{2} X 4 X 0.0408 = 38 gallons

TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

8:17 Start 8:24 Stop 7 min Elapsed

PURGE RATE

Initial 7 gpm Final 7 gpm

ACTUAL PURGE VOLUME

≈ 48 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ❑ °C ❑ °F	Other
8:17 (0)		~~1800~~ 55	~~20.5~~	
1	6.57	1800	20.7	clear
3	6.74	1350	21.2	"
5	6.84	1200	21.1	very clear
7	6.88	1200	21.2	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ❑ °C ❑ °F	Other
		EP-2		
Meter Nos. S/N	7901	027088 7	7901	

Observations During Purging (Well Condition, Turbidity, Color, Odor): No odor, well in good condition, constant flow

Discharge Water Disposal: ❑ Sanitary Sewer ❑ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

@ 8:34 10-25-90

☑ Bailer - Type: 1"x3' Stainless Steel
❑ Submersible ❑ Centrifugal ❑ Bladder; Pump No.:
❑ Same As Above
❑ Grab - Type:
❑ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-20-102590	2x40ml	8240/624	HCL	ATI	
	4oz	pH	none	"	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Travel	MK-SB-20-102590B

Other Samples

Type	

MCK0002847

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson - Santa Fe Springs
Job Number 17333,158.11
Recorded by [signature] (Signature)

Well No. MK-SB-23
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 10-25-90 Time 11:00
Sampled by TH/DJ (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 65.08
Water Level Depth (WL in feet BTOC): 48.59
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

$(65.08 - 48.59) \times 4^2 \times 4 \times 0.0408 = 43.1$ gallons

(TD (feet) − WL (feet)) × D (inches)² × # Vols × 0.0408 = Calculated Purge Volume

PURGE TIME

11:05 Start 11:12 Stop 7 min Elapsed

PURGE RATE

Initial 7 gpm Final 7 gpm

ACTUAL PURGE VOLUME

≈ 50 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
11:05 (0.5)	6.97	1150	23.2	Slightly cloudy
2.5	7.04	1150	22.5	slightly orange to lt yellow
5	7.06	1150	22.3	up=> lt. orange v. clear
7	7.01	1150	22.3	v. clear

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
		EP-2		
Meter Nos. S/N	7901	027087	7901	

Observations During Purging (Well Condition, Turbidity, Color, Odor): slight sweet odor, well in good condition, constant flow
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD @ 11:15 10-25-90

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-23-102590	4-oz ~~poly~~	pH	Unpres.	ATJ	
—	~~poly~~ DJ			—	
"	2-40ml	624/8240	HCL	ATJ	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.
MK-SB-23-102590	MK-SB-23-102590D

Blank Samples

Type	Sample No.
Equipment	MK-SB-23-102590E

Other Samples

Type	Sample No.

MCK0002848

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson Santa Fe Springs
Job Number 17333, 158 11
Recorded by Tom Harder (Signature)

Well No. MK-SB-25
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 10-25-90 Time
Sampled by TH/DJ (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 64.16
Water Level Depth (WL in feet BTOC): 46.79
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(64.16 - 46.79) X 4 ^{2} X 4 X 0.0408 = 45 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

0912 Start 0919 Stop 7 Elapsed

PURGE RATE

Initial gpm Final gpm

ACTUAL PURGE VOLUME

~55 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos cm)	T ☑ °C ☐ °F	Other
0	7.19	1200	23.1	murky
2	7.06	1200	22.5	"
4	7.02	1300	22.3	clear
5	7.01	1300	22.3	"
7	6.99	1300	22.5	"

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos. S/N	7901	EP-2 0270887	7901	

Observations During Purging (Well Condition, Turbidity, Color, Odor): clear, no odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-25-102590	2x40ml	8240/624	HCL	ATI	
	4oz	pH	none	"	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002849

RL004

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0746

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Well No. MK-SB-32
Well Type: ☑ Monitor ❑ Extraction ❑ Other
Well Material: ☑ PVC ❑ St. Steel ❑ Other
Date 10-24-90 Time
Sampled by TH/PJ (Initials)

Job Name McKesson S, Fe S.
Job Number 17333, 158.11
Recorded by Tom Hardin (Signature)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
❑ 2-inch ☑ 4-inch ❑ 6-inch ❑ Other
Total Depth of Casing (TD in feet BTOC): 39.29
Water Level Depth (WL in feet BTOC): 36.64
Number of Well Volumes to be purged (# Vols)
❑ 3 ☑ 4 ❑ 5 ❑ 10 ❑ Other

PURGE METHOD

☑ Bailer - Type: 3" x 3' Stainless Steel
☑ Submersible ❑ Centrifugal ❑ Bladder; Pump No.:
❑ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ❑ Near Top ❑ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(39.29 - 36.64) X 4² X 4 X 0.0408 = 6.9 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

12:25 Start 12:29 Stop 4 Elapsed

PURGE RATE

Initial gpm Final gpm

ACTUAL PURGE VOLUME

~5 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ❑ °F	Other
0	6.93	900	25.8	clear
1	6.94	1000	22.7	murky
3	6.93	1100	23.0	"
4	well		Dry	5 gal

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ❑ °C ❑ °F	Other
		EP-2		
Meter Nos. S/N	7901	0270887	7901	

Observations During Purging (Well Condition, Turbidity, Color, Odor): Murky brown, no odor.
Discharge Water Disposal: ❑ Sanitary Sewer ❑ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: 1" x 3' Stainless Steel
❑ Submersible ❑ Centrifugal ❑ Bladder; Pump No.:
❑ Same As Above
❑ Grab - Type:
❑ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-32-102590	2x40ml	8240/624	HCL		
	4oz	NO_3	H_2SO_4		
	4oz	pH	None		
	500ml	Metals	HNO_3		
	1 l	Gen Min	None		

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002850

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson Santa Fe Springs
Job Number 17333, 166.11
Recorded by [signature] (Signature)

Well No. MK-MW-01
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 2-11-91 Time 12:10
Sampled by TH / DJ (Initials) check 2/12/91 BCh2 hwk

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 70.05
Water Level Depth (WL in feet BTOC): 48.67
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(70.05 - 48.67) X 4 ^{2} X 4 X 0.0408 = 56 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

12:17 Start 12:27 Stop Elapsed

PURGE RATE

Initial 7.9 gpm Final 7 gpm

ACTUAL PURGE VOLUME

≃ 73 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
1	6.99	1778	24.7	W.L @ 47.98 w/pump in slightly cloudy well
3	7.04	1720	24.4	W.L @ 48.74 ≃ 7.9 gal/min
6	7.05	1680	24.1	v. clear
9	7.04	1672	24.1	≃ 7.5 gal/min
10	7.05	1670	24.1	v. clear ≃ 48.76

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
	Orion	HyDac	Orion	
Meter Nos.	S/N 7846	S/N 9005	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): well is in good condition, v. clear water, low turbidity

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD @ 12:40

☑ Bailer - Type: 1" x 3' stainless steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-MW-01-021191	2-40ml/vol's	8240	HCL	ATI	
"	1-40z/poly	150.1 (pH)	Unpres.	"	

QUALITY CONTROL SAMPLES

Duplicate Samples @ 12:50

Original Sample No.	Duplicate Sample No.
MK-MW-01-021191	MK-MW-01-021191D (2-40ml/vol's)

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002851

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0746

Harding Lawson Associates
Engineering and
Environmental Services

3.3.5

GROUND-WATER SAMPLING FORM

Job Name: McKesson-Santa Fe Springs
Job Number: 17333, 166.11
Recorded by: [signature] (Signature)

Well No.: MK-MW-02
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date: 2-11-91 Time: 10:05
Sampled by: DJ & TH (Initials) check 4/2/91 BC

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 70.24
Water Level Depth (WL in feet BTOC): 44.96
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(70.24 - 44.96) X 4 ^{2} X 4 X 0.0408 = ≈ 66 gallons
TD (feet) 25.28 WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

10:21 Start 10:31 Stop 10 min Elapsed

PURGE RATE

Initial 7.5 gpm Final 7.5 gpm

ACTUAL PURGE VOLUME

≈ 75 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
0.5	7.08	1592	23.1	murky brn 7.5 gal/min
2.5	7.14	1655	23.1	slightly cloudy brn (murky)
5	7.13	1682	23.1	clearing up ≈7.5 gal/min
8	7.13	1685	23.2	clearing up ≈46.28 (WL)
10:31 10	7.14	1685	23.1	clear

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	S/N 7846	Hydac S/N 9005	Orion S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): well is in good condition, no odor, moderate turbidity

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD @ 10:45

☑ Bailer - Type: 1" x 3' stainless steel
☐ Submersible ☐ Centrifugal ☐ Bladder: Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-MW-02-021191	2-40ml VOA's	8240	HCL	ATI	
"	1-4oz/poly	150.1 (pH)	Unpres	"	
"	1-16oz/poly	Metals	HNO3	"	
"	1-liter/poly	Gen. minerals	Unpres	"	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Travel
Blank Samples

Type	Sample No.
Travel (2-40ml VOA's)	MK-MW-02-021191 B

Other Samples

Type	Sample No.

MCK0002852

RI 004

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0746

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson - Santa Fe Springs
Job Number 17333, 166.11
Recorded by Tom Harder (Signature)

Well No. MK-MW-03
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 2-11-91 Time
Sampled by TH & DJ (Initials) check 2/12/91 B Chatwick

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 70.09
Water Level Depth (WL in feet BTOC): 48.67
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(70.09 - 48.67) X 4 ^{2} X 4 X 0.0408 = 55.9 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

1332 Start 1340 Stop 8 Elapsed

PURGE RATE

Initial 6 gpm Final 7 gpm

ACTUAL PURGE VOLUME

~ 55 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
0	7.06	1875	24.2	w.l. @ 48.60 w/pump in well! mucky brown
3	7.12	1747	22.9	slightly mucky
5	7.15	1728	23.3	" w.l. = 48.95
7	7.14	1716	23.2	sltly mucky
8	7.16	1719	23.2	clear

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	S/N 7846	S/N 9005	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): Clear, slight organic? odor,
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD @ 13:50

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-MW-03-021191	2-40ml VOA	8240	HCL	ATI	
"	1-4oz/Poly	150.1 (pH)	Unpres	"	
"	1-16oz/poly	Metals	HNO_3	"	
"	1-liter/poly	Gen. Minerals	Unpres.	"	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002853

R-004 Office Copy - White Field Copy - Canary 0746

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson Santa Fe Springs
Job Number 17333, 166.11
Recorded by Tom Harder (Signature)

Well No. MK-SB-4
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 2-11-91 Time
Sampled by TH / DJ Check 2/12/91 Bchelmont (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 64.21
Water Level Depth (WL in feet BTOC): 44.81
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(64.21 - 44.81) X 4 ^{2} X 4 X 0.0408 = 50.66 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

15:38 Start 15:45 Stop 7 Elapsed

PURGE RATE

Initial 8 gpm Final gpm

ACTUAL PURGE VOLUME

~52 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
0	7.13	1706	23.0	44.71 = W.L. murky grn-brn
3	7.12	1698	22.8	W.L. = 46.23 murky
5	7.11	1689	22.7	slightly murky W.L. = 46.10
7	7.11	1680	22.8	Slightly murky W.L. = 46.14

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	S/N 7846	S/N 9005	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): Good Condition, Slightly murky, no odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD @ 15:55

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-4-021191	2 x 40ml	8240	HCL	ATI	
"	1-4oz/poly	150.1	Unpres.	"	
"					

QUALITY CONTROL SAMPLES

@ 16:00

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Equipment	MK-SB-04-021191E (2-40ml/VOA's)

Other Samples

Type	Sample No.

MCK0002854

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0746

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson Santa Fe Springs
Job Number 17333, 166.11
Recorded by [signature] (Signature)

Well No. MK-SB-7
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 2-12-91 Time
Sampled by TH / DJ (Initials) [initials] 2/15/91

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 63.70
Water Level Depth (WL in feet BTOC): 47.12
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(63.70 - 47.12) X 4 ^{2} X 4 X 0.0408 = 42.4 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

8:39 Start 8:45 Stop 6 Elapsed

PURGE RATE

Initial 8.5 gpm Final 8.5 gpm

ACTUAL PURGE VOLUME

≈ 52 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
8:39 0.5	692	1465	20.9	w ≈ 47.14' w/pumping slightly murky brn
3	695	1570	21.2	w ≈ 47.64' cloudy
6	693	1580	21.3	v clear

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	S/N 7846	S/N 9005	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): well is good condition, no odor, moderate turbidity

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

08.50

☑ Bailer - Type: 1"x3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-7-021291	2 x 40ml	8240	HCL	ATI	
"	4oz/poly	150.1 (pH)	Unpres	"	

QUALITY CONTROL SAMPLES

@ 8:00

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Travel	MK-SB-7-021291B

Other Samples

Type	Sample No.

MCK0002855

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson Santa Fe Springs
Job Number 17333, 166, 11
Recorded by [signature] (Signature)

Well No. MK-SB-10
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 2-11-91 Time 14:15
Sampled by TH / DT check 2/12/91 BC/12 check (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 65.50
Water Level Depth (WL in feet BTOC): 49.26
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(65.5 - 49.26) X 4 ^{2} X 4 X 0.0408 = 42.4 gallons

TD (feet) (16.24) WL (feet) D (inches) = Vols Calculated Purge Volume

PURGE TIME

14:30 Start 14:37 Stop 7 min Elapsed

PURGE RATE

Initial 7.9 gpm Final 7 gpm

ACTUAL PURGE VOLUME

50.7 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
0.5	7.11	1755	23.4	w.l. = 49.20 / Slightly cloudy
2.5	7.08	1700	22.8	w.l. = 52.46 " "
5.5	7.05	1684	22.5	w.l. = 52.57
7	7.04	1671	22.6	fairly clear = 7 gpm

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
pump in well				
Meter Nos.	Orion S/N 7846	HyDac S/N 9005	Orion S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): well in in good condition, no odor, moderate turbidity

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 5.5 gallon drum

WELL SAMPLING

SAMPLING METHOD @ 14:50

☑ Bailer - Type: 1" x 3' stainless steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-10-021191	2-40mL VOA's	8240	HCL	ATI	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002856

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson - Santa Fe Springs
Job Number 17333.166.11
Recorded by Tom Harder (Signature)

Well No. MK-SB-13
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 2-11-91 Time 11:10
Sampled by TH & DJ (Initials) check 2/12/91 [illegible]

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 62.49
Water Level Depth (WL in feet BTOC): 46.53
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(62.49 - 46.53) X 4 ^{2} X 4 X 0.0408 = 41.67 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

11:17 Start 11:23 Stop Elapsed

PURGE RATE

Initial 7.5 gpm Final 7.5 gpm

ACTUAL PURGE VOLUME

~ 42 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
0	7.11	1784	23.8	murky brn
2	7.05	1707	23.3	slty murky w.l.=49.00
4	7.05	1695	23.3	"
6	7.08	1689	23.5	slty murky w.l.=48.3

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	S/N 7846	Hydac S/N 9005	Orion S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): slightly murky, no odor, slight sheen
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD 11:35

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-13-021191	2 x 40ml VOA	8240	HCL	ATI	
"	1-4oz/poly	150.1 (pH)	Unpres	"	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002857

R-004
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0746

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: McKesson Santa Fe Springs
Job Number: 17333, 16641
Recorded by: [signature] (Signature)

Well No.: MK-SB-17
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date: 2-13-91 Time: 12:50
Sampled by: TH / DJ (Initials) 2/15/91 RC

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 64.09
Water Level Depth (WL in feet BTOC): 48.57
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(64.09 - 48.57) X 4 ^{2} X 4 X 0.0408 = 40.5 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

13:07 ~~12:43~~ 25 Start 13:17 Stop 10 min Elapsed

PURGE RATE

Initial 6.5 gpm Final 6.5 gpm

ACTUAL PURGE VOLUME

≈ 75 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
0.5	7.08	1739	24.4	Virtually clear moderate odor
4	6.96	1702	24.2	≈6 gpm
5	6.95	1701	23.9	W.L @ 49.14 clear
8	6.98	1698	23.9	clear slight odor
9	6.96	1695	23.7	clear W.L @ 49.2

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
10	6.96	1698	23.8	v. clear odor-less
11	Stopped pumping!			
(solinyst)				
	orion	Hydac	orion	
Meter Nos.	S/N 7846	S/N 9005	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): Well is in good condition, low turbidity, slight odor

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD @ 14:10

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-17-021391	2x40ml/VOA	8240	HCL	ATI	
"	4oz / Poly	150.1 (pH)	unpres	"	
"	4oz / Poly	NO_3	H_2SO_4	"	
"	1l / Poly	Gen minerals	unpres	"	
"	16oz / poly	Metals	HNO_3	"	Field Filtered

QUALITY CONTROL SAMPLES

@ 14:30

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Equipment	MK-SB-17-021391E

Other Samples

Type	Sample No.

MCK0002858

RI 004 Office Copy - White Field Copy - Green 0746

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson Santa Fe Springs
Job Number 17333, 166.11
Recorded by Tom Harder (Signature)

Well No. MK-SB-17A
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☑ St. Steel ☐ Other
Date 2-12-91 Time
Sampled by TH / DJ (Initials) BC 2/15/91

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): ~~64.69~~ TH 116.19
Water Level Depth (WL in feet BTOC): 49.85
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(116.19 TD (feet) - 49.85 WL (feet)) X 4 D (inches)^2 X 4 # Vols X 0.0408 = 173.23 gallons Calculated Purge Volume

PURGE TIME

10:26 Start 1107 Stop 41 Elapsed

PURGE RATE

Initial 7.5 gpm Final 7.5 gpm

ACTUAL PURGE VOLUME

TH ~~307.5~~ 420 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
0	5.52	1733	21.4	murky
3	6.95	1993	21.6	"
5	7.04	2030	21.7	slightly murky
8	7.07	2070	21.7	"
12	7.07	2050	21.5	clear

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
16	7.08	2060	21.6	clear w.l. 52.45
19	7.11	2060	21.9	"
25	7.11	2080	22.3	"
41	Stopped pumping			
Meter Nos.	S/N 7846	S/N 9005	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): well condition is good, no turbidity, no odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other Roll-off bin

WELL SAMPLING

SAMPLING METHOD @ 13:05

☑ Bailer - Type: 1"x3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

41 - 57 minutes = an additional 112.5 gallons were purged as an additional aquifer test in which pH Conductivity and temperature were not monitored.

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-17A-021291	2x40ml/VOA	8240	HCL	ATI	
"	40z/Poly	150.1 (pH)	Unpres	"	
"	40z/Poly	NO_3	H_2SO_4	"	
"	1L/poly	General Minerals	Unpress	"	
"	160z/poly	Metals	HNO_3	"	Field Filtered

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002859

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson Santa Fe Springs
Job Number 17333, 166.11
Recorded by Tom Harden (Signature)

Well No. MK-SB-17B
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☑ St. Steel ☐ Other
Date 2-12-91 Time 13:40
Sampled by TH/DJ (Initials) 2/15/91 BC

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 95.04
Water Level Depth (WL in feet BTOC): 49.76
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(95.04 TD (feet) - 49.76 WL (feet)) X 4 D (inches)^2 X 4 # Vols X 0.0408 = 118.2 gallons Calculated Purge Volume

PURGE TIME

1355 Start 14:38 Stop ~~14:38~~ 4/3 Elapsed TH

PURGE RATE

Initial 7.0 gpm Final 2.8 gpm

ACTUAL PURGE VOLUME

≈ 120 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
0	6.95	1615	22.6	mucky
4	7.05	1413	22.4	"
6	7.10	1392	22.5	" 2.8 gpm
9	7.20	1395	22.7	"
13	7.21	1334	22.9	" 2.8 gpm

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
17	7.23	1238	22.7	sltly mucky
25	-	1296	-	" pH meter not working
40	-	1300	-	sltly mucky
Meter Nos.	S/N 7846	S/N 9005	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): Good Condition, slightly turbid, no odor

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other Rolloff bin

WELL SAMPLING

SAMPLING METHOD @ 15:25

☑ Bailer - Type: 1"x3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-17B-021291	2x40ml/VOA	8240	HCL	ATI	
"	4oz/Poly	150.1 (pH)	unpress	"	
"	4oz/poly	NO3	H_2SO_4	"	
"	1L/poly	~~Unpres~~ TH Gen Min	unpress	"	
"	16oz/poly	Metals	HNO_3	"	Field Filtered

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.
MK-SB-17B-021291	05
	MK-SB-17B-021291 10

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002860

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson Santa Fe Springs
Job Number 17353.166.11
Recorded by Tom Harder (Signature)

Well No. MK-SB-20
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 2-13-91 Time 8:30
Sampled by TH / DJ (Initials) 2/15/91 BC

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 64.01
Water Level Depth (WL in feet BTOC): 49.40
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(64.01 - 49.40) X 4 ^{2} X 4 X 0.0408 = 38.15 gallons

TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

08:46 Start 08:54 Stop 8 Elapsed

PURGE RATE

Initial 7.0 gpm Final gpm

ACTUAL PURGE VOLUME

~4.5 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
0	6.52	1507	20.5	murky
2	Stopped purging to replace drum			
3	6.87	1608	21.2	clear
5	6.80	1673	21.2	" w.L = 49.88
8	6.82	1648	21.1	clear

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	S/N 7846	S/N 9005	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): good condition, no turbidity, no odor

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

09:05

☑ Bailer - Type: 1"x3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-20-021391	2x40ml/VOA	8240	HCL	ATI	
"	4oz/Poly	150.1 (pH)	unpress	"	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002861

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson Santa Fe Springs
Job Number 17333, 166.11
Recorded by [signature] (Signature)

Well No. MK-SB-23
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 2-14-91 Time 12:15
Sampled by TH/DJ (Initials) BC/2/15/91

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 65.09
Water Level Depth (WL in feet BTOC): 48.59
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(65.09 − 48.59) × 4² × 4 × 0.0408 = 43.1 gallons
TD (feet) − WL (feet); D (inches); # Vols; Calculated Purge Volume

PURGE TIME

12:38 Start 12:52 Stop Elapsed

PURGE RATE

Initial 6 gpm Final 6 gpm

ACTUAL PURGE VOLUME

~ 55 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
0.5	6.85	1755	25.0	very cloudy brn mod. odor
2.5	6.88	1710	23.6	clearing up w.L @ 49.69
5	6.76	1730	23.9	clear slight odor
7	6.78	1760	23.6	clear w.L @ 49.83
10	6.80	1780	23.8	clear w.L @ 49.84

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	S/N 7846	S/N 9005	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): moderate odor.
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

13:25

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-23-021491	2x40ml/VOA	8240	HCL	ATI	
"	4oz/poly	150.1 (pH)	unpres	"	
"	4oz/poly	NO_3	H_2SO_4	"	
"	1L/poly	Gen Min	unpres	"	
"	16oz/poly	Metals	HNO_3	"	Field Filtered

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.
TH ~~MK-SB-23-021491D~~	
MK-SB-23-021491	MK-SB-23-021491D

Blank Samples

Type	Sample No.
Equipment	~~MK-SB-23-021491E~~
Travel	MK-SB-23-021491B

Other Samples

Type	Sample No.

MCK0002862

Harding Lawson Associates
Engineering and Environmental Services

3.3.5

GROUND-WATER SAMPLING FORM

Job Name McKesson Santa Fe Springs
Job Number 17333, 166.H
Recorded by (Signature)

Well No. MK-SB-23A
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☑ St. Steel ☐ Other
Date 2-14-91 Time
Sampled by TH / DJ (Initials) 2/15/91 BC

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 127.81
Water Level Depth (WL in feet BTOC): 48.12
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

$(127.81 - 48.12) \times 4^2 \times 4 \times 0.0408 = 208.1$ gallons

TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

8:38 Start 9:05 Stop Elapsed

PURGE RATE

Initial 8 gpm Final 8 gpm

ACTUAL PURGE VOLUME

≈ 220 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
0.5	5.41	2200	21.4	slightly cloudy no odor
3	6.66	1885	20.9	opaque tan w.L@49.91
5	6.83	1900	21.0	cloudy w.L@49.99
7	6.92	1885	21.3	slightly cloudy ≈55 gallons purged
10	6.94	1920	21.1	w.L@49.96

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
13	6.95	1930	21.3	clear ≈105 gallons purged
15	7.03	1925	21.3	clear w.L@49.98
20	7.09	1940	21.5	clear
27	7.09	1920	21.5	clear ≈220 gallons purged
Meter Nos.	S/N 7846	S/N 9005	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): well is in great condition, no odor, high turbidity

Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 Gallon drums

WELL SAMPLING

SAMPLING METHOD @9:45

☑ Bailer - Type: 1"x3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-23A-021491	2x40ml/VOA	8240	HCL	ATI	
"	1-4oz/poly	pH (150.1)	Unpres.	"	
"	1-4oz/poly	NO3	H2SO4	"	
"	1-1liter/poly	General minerals	Unpres.	"	
"	1-1602	metals	HNO3	"	Field Filtered

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.
	MCK0002863

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name: McKesson Santa Fe Springs
Job Number: 17333, 166.11
Recorded by: Tom Harden (Signature)

Well No.: MK-SB-23B
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☑ St. Steel Screen ☐ Other
Date: 2-14-91 Time:
Sampled by: TH / DJ (Initials) 2/15/91 BC

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 95.26
Water Level Depth (WL in feet BTOC): 47.99
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(95.26 - 47.99) X 4² X 4 X 0.0408 = 123.4 gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

~~10:42~~ Start ~~10:56~~ 11:04 TH Stop ~~46~~ 22 TH Elapsed

PURGE RATE

Initial 5.75 gpm Final 5.25 gpm

ACTUAL PURGE VOLUME

~ 130 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
0	6.03	1742	23.2	murky white
3	6.27	1720	22.6	translucent tan WL=58.84
5	6.49	1771	22.7	murky tan WL=59.07
9	6.68	1778	22.6	murky 5.25 gpm
12	6.80	1760	23.0	sltly murky

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
16	6.88	1769	23.0	sltly murky WL=59.29
Meter Nos.	S/N 7846	S/N 9005	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): good condition, moderate turbidity, no odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD @ 11:45

☑ Bailer - Type: 1"x3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-23B021491	2x40ml / VOA	8240	HCL	ATI	
"	4oz / poly	150.1 (pH)	unpres.	"	
"	4oz / poly	NO_3	H_2SO_4	"	
"	1l / poly	Gen Min	unpres	"	
"	16oz / poly	Metals	HNO_3	"	Field Filtered

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002864

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson Santa Fe Springs
Job Number 17333, 166.11
Recorded by Tom Hardin (Signature)

Well No. MK-SB-25
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 2-13-91 Time 10:15
Sampled by TH / DJ (Initials) 2/15/91 BL

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 64.15
Water Level Depth (WL in feet BTOC): 46.73
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(64.15 - 46.73) X 4 ^{2} X 4 X 0.0408 = 45.5 gallons

TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

10:38 Start 10:47 Stop 9 Elapsed

PURGE RATE

Initial 6 gpm Final 6 gpm

ACTUAL PURGE VOLUME

~55 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
0	7.08	1629	22.2	murky brn
3	7.03	1634	22.7	clear w.l.=47.52
5	7.03	1646	22.8	clear
7	7.04	1665	23.0	clear w.l.=47.94
9	7.03	1663	22.9	clear

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	S/N 7846	S/N 9005	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): good condition, no turbidity, no odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD 11:00

☑ Bailer - Type: 1"x3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-25-021391	2x40ml/VOA	8240	HCL	ATI	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002865

Harding Lawson Associates
Engineering and Environmental Services

3.35

GROUND-WATER SAMPLING FORM

Job Name McKesson Santa Fe Springs
Job Number 17333, 166.11
Recorded by Tom Harden (Signature)

Well No. MK-SB-32
Well Type: ☑ Monitor ❑ Extraction ❑ Other
Well Material: ☑ PVC ❑ St. Steel ❑ Other
Date 2-12-91 Time
Sampled by TH / DJ (Initials) BC 2/15/91

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
❑ 2-inch ☑ 4-inch ❑ 6-inch ❑ Other
Total Depth of Casing (TD in feet BTOC): 39.29
Water Level Depth (WL in feet BTOC): 33.89
Number of Well Volumes to be purged (# Vols)
❑ 3 ☑ 4 ❑ 5 ❑ 10 ❑ Other

PURGE METHOD

☑ Bailer - Type:
❑ Submersible ❑ Centrifuga ❑ Bladder; Pump No.:
❑ Other - Type:

PUMP INTAKE SETTING

❑ Near Bottom ❑ Near Top ❑ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(39.29 - 33.89) X 4² X 4 X 0.0408 = 14.1 gallons

TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE TIME

0755 Start 0801 Stop 6 Elapsed

PURGE RATE

Initial 1 gpm Final gpm

ACTUAL PURGE VOLUME

~6 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ❑ °F	Other
0	6.56	1523	21.2	clear
4	6.71	1559	21.1	murky brn
6	6.74	1550	21.5	"
well	bailed	dry	after	6 gallons

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ❑ °C ❑ °F	Other
Meter Nos.	S/N 7846	S/N 9005	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): good condition, murky brown, no odor
Discharge Water Disposal: ❑ Sanitary Sewer ❑ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: 1" x 3' Stainless Steel
❑ Submersible ❑ Centrifugal ❑ Bladder; Pump No.:
❑ Same As Above
❑ Grab - Type:
❑ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-32-021291	2x 40ml VOA	8240	HCL	ATI	
"	1-4oz/poly	pH 150.1	unpres	"	

QUALITY CONTROL SAMPLES

@ 16:05 Equipment

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Equipment	MK-SB-32-021291-E
(2-40 ml VOA's) => 8240	

Other Samples

Type	Sample No.

MCK0002866

RL004

Office Copy - White Field Copy - Canary

0746

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name McKesson Santa Fe Springs
Job Number 17333, 16611
Recorded by [signature] (Signature)

Well No. MK-SB-36
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 2-13-91 Time 9:45
Sampled by TH/DJ (Initials) 2/15/91 BC

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 65.08
Water Level Depth (WL in feet BTOC): 45.84
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☑ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in Feet (BTOC) from to

PURGE VOLUME CALCULATION:

(65.08 − 45.84) × 4² × 4 × 0.0408 = 50.24 gallons
TD (feet) − WL (feet); D (inches); # Vols; Calculated Purge Volume

PURGE TIME

9:50 Start 9:57 Stop 7 Elapsed

PURGE RATE

Initial 7.5 gpm Final gpm

ACTUAL PURGE VOLUME

≈ 54 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other WLC w/pump in well! 45.86
0.5	7.00	1706	20.5	slightly opaque brown
3	7.06	1708	21.4	cloudy ≈ 7.5 gpm WL@47.93'
5	7.09	1696	21.5	fairly clear WL@48.02'
7	7.09	1698	21.4	clear WL@48.03'

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
	orion	Hydac	orion	
Meter Nos.	S/N 7846	S/N 9005	S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): well is in good condition, slight odor, moderate turbidity
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

10:05

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series:

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MK-SB-36-021391	2x40 ml VOA	8240	HCL	ATI	
"	4oz / Poly	150.1 (pH)	unpres.	"	

QUALITY CONTROL SAMPLES

Duplicate Samples @ 10:10

Original Sample No.	Duplicate Sample No.
MK-SB-36-021391	MK-SB-36-021391D

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

MCK0002867

Harding Lawson Associates
Engineering and
Environmental Services

3.35

GROUND-WATER SAMPLING FORM

Job Name McKesson Santa Fe Springs
Job Number 17333, 166.11
Recorded by _____ (Signature)

Well No. MK-SB-37
Well Type: ☑ Monitor ☐ Extraction ☐ Other _____
Well Material: ☑ PVC ☐ St. Steel ☐ Other _____
Date 2-13-91 Time 8:05
Sampled by TH / DJ (Initials) 2/15/91 BC

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other _____
Total Depth of Casing (TD in feet BTOC): 32.09
Water Level Depth (WL in feet BTOC): 31.74
Number of Well Volumes to be purged (# Vols)
☐ 3 ☑ 4 ☐ 5 ☐ 10 ☐ Other _____

PURGE METHOD

☑ Bailer - Type: _____
TH ☑ Submersible ☐ Centrifugal ☐ Bladder; Pump No.: _____
☐ Other - Type: _____

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other _____
Depth in feet (BTOC): _____ Screen Interval in Feet (BTOC) from _____ to _____

PURGE VOLUME CALCULATION:

(32.09 - 31.74) X 4 ^{2} X 4 X 0.0408 = 0.91 gallons

TD (feet) (0.35) WL (feet) D (inches) = Vols Calculated Purge Volume

PURGE TIME

8:16 Start 08:17 Stop 1 Elapsed

PURGE RATE

Initial _____ gpm Final _____ gpm

ACTUAL PURGE VOLUME

~~25~~ .5 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☑ °C ☐ °F	Other
0.5 gallons	6.56	2220	18.6	Very silty Dark murky brn -slight odor

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	Orion S/N 7846	Hydac S/N 9005	Orion S/N 7846	

Observations During Purging (Well Condition, Turbidity, Color, Odor): Well is in good condition murky brn, slight odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☑ Other 55 gallon drum

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: 1" x 3' Stainless Steel
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.: _____
☐ Same As Above
☐ Grab - Type: _____
☐ Other - Type: _____

SAMPLING DISTRIBUTION

Sample Series: _____

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
~~MK-SB-37-021391~~ TH	~~2x40ml/vial~~	TH ~~8240~~ TH	~~HCL~~ TH	~~ATI~~ TH	
		Not Sampled due to lack of water in well.			

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Travel	MK-SB-37-021391B

Other Samples

Type	Sample No.

MCK0002868

APPENDIX H

MCK0002869

APPENDIX H
AQUIFER TEST ANALYSIS

MCK0002870

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Table H1. Summary of Slug Test Data - Slug in (continued)

	Time From Start of Test (Minutes)	MW-1 *Change In Water Level (feet)	MW-2 *Change In Water Level (feet)	MW-3 *Change In Water Level (feet)	MW-32 *Change In Water Level (feet)
Static Water Level		47.95	44.92	48.62	33.46
Date/Time		8-16-90/09:30	8-16-90/10:50	8-15-90/11:41	8-16-90/16:00
	1.0833	0	0.01	0.01	0.21
	1.1667	0	0	0.01	0.21
	1.25	0	0	0.01	0.21
	1.3333	0	0	0.01	0.21
	1.4166	0	0	0.01	0.21
	1.5	0	0	0.01	0.2
	1.5833	0.01	0	0.01	0.21
	1.6667	0.01	0	0	0.21
	1.75	0.01	0	0.01	0.2
	1.8333	0.01	0	0.01	0.2
	1.9167	0.01	0	0.01	0.2
	2	0.01	0	0.01	0.2
	2.5	0.01	0	0.01	0.19
	3	0.01	0	0.01	0.17
	3.5	0.01	0	0	0.17
	4	0	0.01	0.01	0.17
	4.5	0.01	0.01	0.01	0.15
	5	0.01	0	0.01	0.15
	5.5	0.01	0.01	0	0.14
	6	0.01	0.01	0	0.15
	6.5	0	0.01	0.01	0.13
	7	0	0.01	0.01	0.13
	7.5	0	0.01	0.01	0.13
	8	0.01	0.01	0.01	0.13
	8.5	0	0	0	0.12
	9	0	0	0.01	0.12
	9.5	0	0	0.01	0.11
	10	0	0.01	0.01	0.1
	12	0	ND	0.01	0.1
	14	0	ND	ND	0.09
	16	ND	ND	ND	0.07
	18	ND	ND	ND	0.06
	20	ND	ND	ND	0.06
	22	ND	ND	ND	0.05
	24	ND	ND	ND	0.04
	26	ND	ND	ND	0.03
	28	ND	ND	ND	0.02
	30	ND	ND	ND	0.02
	32	ND	ND	ND	0.01

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* Water level deviation from static as measured with a Hermit Data Logger.
ND indicates no data available.

Table H2. Summary of Slug Test Data - Slug Out

	Time From Start of Test (Minutes)	MW-1 *Change In Water Level (feet)	MW-2 *Change In Water Level (feet)	MW-3 *Change In Water Level (feet)	SB-32 *Change In Water Level (feet)
Static Water Level		47.95	44.92	48.62	32.76
Date/Time		8-16-90/09:57	8-16-90/11:05	8-15-90/11:56	8-16-90/16:69
	0	0	0	0	1.59
	0.0033	0.01	0.11	0	2.56
	0.0066	0	0.49	0	0.46
	0.0099	0.02	0.93	0.07	1.53
	0.0133	0.32	0.49	0.45	2.17
	0.0166	0.59	0.09	0.42	2.11
	0.02	0.97	0.09	0.43	2.14
	0.0233	1.25	0.09	1.07	1.89
	0.0266	0.97	2.16	0.41	1.95
	0.03	0.1	3.74	0.34	1.97
	0.0333	0.58	4.19	0.75	1.91
	0.05	1.65	2.05	0.41	1.79
	0.0666	2.09	2.61	0.12	1.67
	0.0833	1.46	2.13	4.26	1.56
	0.1	1.04	1.77	2.32	1.47
	0.1166	0.76	1.48	1.52	1.38
	0.1333	0.57	1.25	1.43	1.3
	0.15	0.43	1.07	1.29	1.25
	0.1666	0.33	0.9	0.63	1.19
	0.1833	0.26	0.78	0.28	1.15
	0.2	0.21	0.68	0.09	1.12
	0.2166	0.16	0.6	0	1.09
	0.2333	0.13	0.55	0.06	1.07
	0.25	0.1	0.48	0.01	1.06
	0.2666	0.08	0.43	0.1	1.05
	0.2833	0.07	0.39	0.07	1.04
	0.3	0.06	0.35	0.06	1.02
	0.3166	0.05	0.31	0.05	1.02
	0.3333	0.04	0.28	0.06	1.01
	0.4167	0.02	0.15	0.03	0.99
	0.5	0.01	0.08	0.01	0.98
	0.5833	0.01	0.04	0.76	0.96
	0.6667	0	0.02	0.13	0.96
	0.75	0	0.01	0.17	0.95
	0.8333	0	0.01	0.01	0.94
	0.9167	0	0	0.01	0.94
	1	0	0	0.01	0.93

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* Water level deviation from static as measured with a Hermit Data Logger.
ND indicates no data available.

Table H2. Summary of Slug Test Data - Slug Out (continued)

	Time From Start of Test (Minutes)	MW-1 *Change In Water Level (feet)	MW-2 *Change In Water Level (feet)	MW-3 *Change In Water Level (feet)	SB-32 *Change In Water Level (feet)
Static Water Level		47.95	44.92	48.62	32.76
Date/Time		8-16-90/09:57	8-16-90/11:05	8-15-90/11:56	8-16-90/16:69
	1.0833	0	0.01	0.01	0.93
	1.1667	0.01	0.01	0.01	0.92
	1.25	0	0.01	0.01	0.92
	1.3333	0.01	0.01	0.01	0.91
	1.4166	0	0.01	0.01	0.91
	1.5	0	0.01	0.01	0.91
	1.5833	0	0.01	0.01	0.91
	1.6667	0	0.01	0.01	0.9
	1.75	0	0.02	0.01	0.9
	1.8333	0	0.02	0.01	0.9
	1.9167	0	0.02	0.01	0.9
	2	0	0.02	0.01	0.9
	2.5	0	0.02	0.01	0.89
	3	0.01	0.02	0.01	0.89
	3.5	0.01	0.02	0.01	0.88
	4	0.01	0.02	0.01	0.87
	4.5	0.01	0.02	0.01	0.86
	5	0.01	0.01	0.01	0.85
	5.5	0.01	0.02	0.01	0.85
	6	0.01	0.02	0.01	0.85
	6.5	0.01	0.03	0.01	0.85
	7	0.01	0.02	0.01	0.85
	7.5	0.01	0.02	0.01	0.85
	8	0.01	0.02	0.01	0.84
	8.5	0.01	0.03	0.01	0.84
	9	0.01	0.03	0	0.84
	9.5	0.01	0.02	0.01	0.84
	10	0.01	0.02	0.01	0.84
	12	0.01	0.02	0.01	0.84
	14	0.01	ND	0.01	0.83
	16	ND	ND	ND	0.83
	18	ND	ND	ND	0.82
	20	ND	ND	ND	0.8
	22	ND	ND	ND	0.81
	24	ND	ND	ND	0.81
	26	ND	ND	ND	0.8
	28	ND	ND	ND	0.81
	30	ND	ND	ND	0.8
	32	ND	ND	ND	0.8
	34	ND	ND	ND	0.78
	36	ND	ND	ND	0.78
	38	ND	ND	ND	0.79
	40	ND	ND	ND	0.78

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* Water level deviation from static as measured with a Hermit Data Logger.
ND indicates no data available.

Table H3. Summary of SB-23 Pump Test Data
Pumping SB-23A

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.46	48.46
Date/Time		2-14-91/12:30	2-14-91/12:52
	0	0	0
	0.0033	0	0
	0.0066	0	0
	0.0099	0	0
	0.0133	0	0
	0.0166	0	0
	0.02	0	0
	0.0233	0	0
	0.0266	0	0
	0.03	0	0
	0.0333	0	0
	0.05	0	0
	0.0666	0	0
	0.0833	0	0
	0.1	0	0
	0.1166	0	0
	0.1333	0	0
	0.15	0	0
	0.1666	0	0
	0.1833	0	0
	0.2	0	0
	0.2166	0	0
	0.2333	0	0
	0.25	0	0
	0.2666	0	0
	0.2833	0	0
	0.3	0	0
	0.3166	0	0
	0.3333	0	0
	0.4167	0	0
	0.5	0	0
	0.5833	0	0
	0.6667	0	0
	0.75	0	0
	0.8333	0	0
	0.9167	0	0
	1	0	0

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H3. Summary of SB-23 Pump Test Data (continued)
Pumping SB-23A

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.46	48.46
Date/Time		2-14-91/12:30	2-14-91/12:52
	1.0833	0	0
	1.1667	0	0
	1.25	0	0
	1.3333	0	0
	1.4166	0	0
	1.5	0	0
	1.5833	0	0
	1.6667	0	0
	1.75	0	0
	1.8333	0	0
	1.9167	0	0
	2	0	0
	2.5	0	0
	3	0	0
	3.5	0	0
	4	0	0
	4.5	0	0
	5	0	0
	5.5	0	0
	6	0	0
	6.5	0	0
	7	0	0
	7.5	0	0
	8	0	0
	8.5	0	0
	9	0	0
	9.5	0	0
	10	0	0
	11	0	0
	12	0	0
	13	0	0
	14	0	0
	15	0	0
	16	0	0
	17	0	0
	18	0	0

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H4. Summary of SB-23A Pump Test Data
Pumping SB-23A

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.08	48.08
Date/Time		2-14-91/12:30	2-14-91/12:52
	0	0	1.24
	0.0033	0.14	1.48
	0.0066	0.74	1.55
	0.0099	0.86	1.61
	0.0133	0.5	1.58
	0.0166	0.26	1.59
	0.02	0.28	1.57
	0.0233	0.32	1.55
	0.0266	0.37	1.51
	0.03	0.39	1.46
	0.0333	0.7	1.42
	0.05	0.92	1.24
	0.0666	1.14	1.08
	0.0833	1.24	0.95
	0.1	1.42	0.83
	0.1166	1.52	0.73
	0.1333	1.6	0.65
	0.15	1.75	0.58
	0.1666	1.63	0.51
	0.1833	1.68	0.46
	0.2	1.68	0.41
	0.2166	1.69	0.37
	0.2333	1.61	0.33
	0.25	1.67	0.3
	0.2666	1.65	0.27
	0.2833	1.64	0.25
	0.3	1.58	0.23
	0.3166	1.6	0.21
	0.3333	1.68	0.19
	0.4167	1.67	0.16
	0.5	1.61	0.12
	0.5833	1.66	0.1
	0.6667	1.64	0.09
	0.75	1.68	0.08
	0.8333	1.67	0.07
	0.9167	1.65	0.07
	1	1.68	0.07

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H4. Summary of SB-23A Pump Test Data (continued)
Pumping SB-23A

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.08	48.08
Date/Time		2-14-91/12:30	2-14-91/12:52
	1.0833	1.72	0.06
	1.1667	1.68	0.05
	1.25	1.7	0.05
	1.3333	1.72	0.05
	1.4166	1.71	0.05
	1.5	1.75	0.05
	1.5833	1.72	0.05
	1.6667	1.76	0.05
	1.75	1.72	0.04
	1.8333	1.7	0.04
	1.9167	1.71	0.04
	2	1.73	0.04
	2.5	1.73	0.04
	3	1.75	0.04
	3.5	1.71	0.02
	4	1.76	0.02
	4.5	1.76	0.02
	5	1.77	0.02
	5.5	1.77	0.02
	6	1.82	0.01
	6.5	1.82	0.01
	7	1.84	0.01
	7.5	1.86	0.01
	8	1.78	0.01
	8.5	1.8	0
	9	1.85	0
	9.5	1.83	0
	10	1.85	0
	11	1.81	0
	12	1.78	0
	13	1:83	0
	14	1.83	0
	15	1.83	0

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H3. Summary of SB-23 Pump Test Data
Pumping SB-23A

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.46	48.46
Date/Time		2-14-91/12:30	2-14-91/12:52
	0	0	0
	0.0033	0	0
	0.0066	0	0
	0.0099	0	0
	0.0133	0	0
	0.0166	0	0
	0.02	0	0
	0.0233	0	0
	0.0266	0	0
	0.03	0	0
	0.0333	0	0
	0.05	0	0
	0.0666	0	0
	0.0833	0	0
	0.1	0	0
	0.1166	0	0
	0.1333	0	0
	0.15	0	0
	0.1666	0	0
	0.1833	0	0
	0.2	0	0
	0.2166	0	0
	0.2333	0	0
	0.25	0	0
	0.2666	0	0
	0.2833	0	0
	0.3	0	0
	0.3166	0	0
	0.3333	0	0
	0.4167	0	0
	0.5	0	0
	0.5833	0	0
	0.6667	0	0
	0.75	0	0
	0.8333	0	0
	0.9167	0	0
	1	0	0

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H3. Summary of SB-23 Pump Test Data (continued)
Pumping SB-23A

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.46	48.46
Date/Time		2-14-91/12:30	2-14-91/12:52
	1.0833	0	0
	1.1667	0	0
	1.25	0	0
	1.3333	0	0
	1.4166	0	0
	1.5	0	0
	1.5833	0	0
	1.6667	0	0
	1.75	0	0
	1.8333	0	0
	1.9167	0	0
	2	0	0
	2.5	0	0
	3	0	0
	3.5	0	0
	4	0	0
	4.5	0	0
	5	0	0
	5.5	0	0
	6	0	0
	6.5	0	0
	7	0	0
	7.5	0	0
	8	0	0
	8.5	0	0
	9	0	0
	9.5	0	0
	10	0	0
	11	0	0
	12	0	0
	13	0	0
	14	0	0
	15	0	0
	16	0	0
	17	0	0
	18	0	0

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H4. Summary of SB-23A Pump Test Data (continued)
Pumping SB-23A

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.08	48.08
Date/Time		2-14-91/12:30	2-14-91/12:52
	1.0833	1.72	0.06
	1.1667	1.68	0.05
	1.25	1.7	0.05
	1.3333	1.72	0.05
	1.4166	1.71	0.05
	1.5	1.75	0.05
	1.5833	1.72	0.05
	1.6667	1.76	0.05
	1.75	1.72	0.04
	1.8333	1.7	0.04
	1.9167	1.71	0.04
	2	1.73	0.04
	2.5	1.73	0.04
	3	1.75	0.04
	3.5	1.71	0.02
	4	1.76	0.02
	4.5	1.76	0.02
	5	1.77	0.02
	5.5	1.77	0.02
	6	1.82	0.01
	6.5	1.82	0.01
	7	1.84	0.01
	7.5	1.86	0.01
	8	1.78	0.01
	8.5	1.8	0
	9	1.85	0
	9.5	1.83	0
	10	1.85	0
	11	1.81	0
	12	1.78	0
	13	1.83	0
	14	1.83	0
	15	1.83	0

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H5. Summary of SB-23B Pump Test Data
Pumping SB-23A

	Time From Start of Test (Minutes)	PUMP OUT **Change In Water Level (feet)	RECOVERY **Change In Water Level (feet)
Static Water Level		48.12	48.12
Date/Time		2-14-91/12:30	2-14-91/12:52
	0	0	0.04
	0.0033	0	0.05
	0.0066	0	0.05
	0.0099	0	0.05
	0.0133	0	0.05
	0.0166	0	0.05
	0.02	0	0.05
	0.0233	0	0.04
	0.0266	0.01	0.05
	0.03	0	0.04
	0.0333	0	0.05
	0.05	0.01	0.05
	0.0666	0.01	0.04
	0.0833	0.01	0.04
	0.1	0.01	0.04
	0.1166	0.01	0.05
	0.1333	0.01	0.04
	0.15	0.01	0.05
	0.1666	0.01	0.04
	0.1833	0.01	0.05
	0.2	0.01	0.04
	0.2166	0.01	0.05
	0.2333	0.02	0.04
	0.25	0.02	0.04
	0.2666	0.02	0.04
	0.2833	0.02	0.05
	0.3	0.02	0.04
	0.3166	0.02	0.05
	0.3333	0.01	0.04
	0.4167	0.02	0.04
	0.5	0.01	0.04
	0.5833	0.01	0.04
	0.6667	0.01	0.04
	0.75	0.01	0.04
	0.8333	0.01	0.04
	0.9167	0.01	0.04
	1	0.01	0.05

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H5. Summary of SB-23B Pump Test Data (continued)
Pumping SB-23A

	Time From Start of Test (Minutes)	PUMP OUT **Change In Water Level (feet)	RECOVERY **Change In Water Level (feet)
Static Water Level		48.12	48.12
Date Time		2-14-91/12:30	2-14-91/12:52
	1.3333	0.01	0.04
	1.4166	0.01	0.04
	1.5	0.01	0.04
	1.5833	0.01	0.04
	1.6667	0.01	0.04
	1.75	0.01	0.04
	1.8333	0.01	0.04
	1.9167	0.01	0.04
	2	0.01	0.04
	2.5	0.01	0.04
	3	0	0.04
	3.5	0	0.04
	4	0	0.04
	4.5	0	0.04
	5	0.01	0.03
	5.5	0.01	0.03
	6	0.01	0.03
	6.5	0.01	0.03
	7	0.01	0.03
	7.5	0.02	0.02
	8	0.02	0.02
	8.5	0.02	0.02
	9	0.03	0.02
	9.5	0.03	0.02
	10	0.03	0.02
	11	0.04	0.01
	12	0.04	0.01
	13	0.04	0.01
	14	0.04	0.01
	15	0.05	0
	16	0.04	0
	17	0.05	0

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H6. Summary of SB-23 Pump Test Data
Pumping SB-23B

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.52	48.52
Date/Time		2-14-91/10:42	2-14-91/11:04
	0	0	0.01
	0.0033	0	0.01
	0.0066	0	0.01
	0.0099	0	0.01
	0.0133	0	0.01
	0.0166	0	0.01
	0.02	0	0.01
	0.0233	0	0.01
	0.0266	0	0.01
	0.03	0	0.01
	0.0333	0	0.01
	0.05	0	0.01
	0.0666	0	0.01
	0.0833	0	0.01
	0.1	0	0.01
	0.1166	0	0.01
	0.1333	0	0.01
	0.15	0	0.01
	0.1666	0	0.01
	0.1833	0	0.01
	0.2	0	0.01
	0.2166	0	0.01
	0.2333	0	0.01
	0.25	0	0.01
	0.2666	0	0.01
	0.2833	0	0.01
	0.3	0	0.01
	0.3166	0	0.01
	0.3333	0	0.01
	0.4167	0	0.01
	0.5	0	0.01
	0.5833	0	0.01
	0.6667	0	0.01
	0.75	0	0.01
	0.8333	0	0.01
	0.9167	0	0.01
	1	0	0.01

---

* Water level deviation from static as measured with a Hermit Data Logger.

Table H6. Summary of SB-23 Pump Test Data (continued)
Pumping SB-23B

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.52	48.52
Date/Time		2-14-91/10:42	2-14-91/11:04
	1.0833	0	0.01
	1.1667	0	0.01
	1.25	0	0.01
	1.3333	0	0.01
	1.4166	0	0.01
	1.5	0	0.01
	1.5833	0	0.01
	1.6667	0	0.01
	1.75	0	0.01
	1.8333	0	0.01
	1.9167	0	0.01
	2	0	0.01
	2.5	0	0.01
	3	0	0.01
	3.5	0	0.01
	4	0	0.01
	4.5	0	0.01
	5	0	0.01
	5.5	0	0.01
	6	0	0.01
	6.5	0	0.01
	7	0	0.01
	7.5	0	0.01
	8	0	0.01
	8.5	0	0.01
	9	0	0.01
	9.5	0	0.01
	10	0.01	0.01
	11	0.01	0.01
	12	0.01	0.01
	13	0.01	0.01
	14	0.01	0.01
	15	0.01	0.01
	16	0.01	0.01
	17	0.01	0.01
	18	0.01	-
	19	0.01	-

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* Water level deviation from static as measured with a Hermit Data Logger.
- No data available.

Table H7. Summary of SB-23A Pump Test Data
Pumping SB-23B

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.13	48.13
Date/Time		2-14-91/10:42	2-14-91/11:04
	0	0	0.09
	0.0033	0	0.09
	0.0066	0	0.09
	0.0099	0.01	0.09
	0.0133	0	0.09
	0.0166	0	0.09
	0.02	0.01	0.09
	0.0233	0	0.09
	0.0266	0	0.09
	0.03	0	0.09
	0.0333	0.01	0.09
	0.05	0	0.09
	0.0666	0	0.09
	0.0833	0	0.09
	0.1	0	0.09
	0.1166	0.01	0.09
	0.1333	0	0.09
	0.15	0.01	0.09
	0.1666	0	0.09
	0.1833	0	0.09
	0.2	0	0.09
	0.2166	0	0.09
	0.2333	0	0.09
	0.25	0	0.09
	0.2666	0	0.09
	0.2833	0	0.09
	0.3	0.01	0.09
	0.3166	0.01	0.09
	0.3333	0.01	0.09
	0.4167	0.01	0.09
	0.5	0.01	0.08
	0.5833	0.01	0.08
	0.6667	0.02	0.07
	0.75	0.02	0.07
	0.8333	0.02	0.07
	0.9167	0.03	0.07
	1	0.03	0.07

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H7. Summary of SB-23A Pump Test Data (continued)
Pumping SB-23B

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.13	48.13
Date/Time		2-14-91/10:42	2-14-91/11:04
	1.0833	0.03	0.06
	1.1667	0.03	0.06
	1.25	0.04	0.06
	1.3333	0.04	0.06
	1.4166	0.04	0.06
	1.5	0.05	0.05
	1.5833	0.04	0.05
	1.6667	0.05	0.05
	1.75	0.05	0.05
	1.8333	0.06	0.04
	1.9167	0.05	0.04
	2	0.06	0.04
	2.5	0.06	0.03
	3	0.08	0.02
	3.5	0.08	0.02
	4	0.08	0.01
	4.5	0.09	0.01
	5	0.09	0.01
	5.5	0.09	0.01
	6	0.09	0.01
	6.5	0.09	0.01
	7	0.09	0.01
	7.5	0.1	0.01
	8	0.1	0.01
	8.5	0.11	0
	9	0.11	0
	9.5	0.11	0
	10	0.11	0
	11	0.11	0
	12	0.11	0
	13	0.11	0
	14	0.11	0
	15	0.12	0
	16	0.12	0
	17	0.13	0
	18	0.13	0
	19	0.13	0

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H8. Summary of SB-23B Pump Test Data
Pumping SB-23B

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		47.81	47.81
Date/Time		2-14-91/10:42	2-14-91/11:04
	0	0	10.39
	0.0033	0.01	10.99
	0.0066	0.13	10.88
	0.0099	0.11	10.82
	0.0133	0.09	10.77
	0.0166	0.18	10.75
	0.02	0.28	10.72
	0.0233	0.36	10.68
	0.0266	0.42	10.63
	0.03	0.5	10.6
	0.0333	0.58	10.56
	0.05	0.9	10.39
	0.0666	1.15	10.22
	0.0833	1.43	10.06
	0.1	1.69	9.89
	0.1166	1.89	9.73
	0.1333	2.12	9.57
	0.15	2.31	9.42
	0.1666	2.5	9.27
	0.1833	2.69	9.12
	0.2	2.79	8.97
	0.2166	2.87	8.82
	0.2333	2.99	8.68
	0.25	3.15	8.53
	0.2666	3.29	8.39
	0.2833	3.41	8.25
	0.3	3.5	8.12
	0.3166	3.57	7.98
	0.3333	3.73	7.85
	0.4167	4.33	7.21
	0.5	4.76	6.62
	0.5833	5.23	6.08
	0.6667	5.7	5.57
	0.75	6.1	5.1
	0.8333	6.48	4.67
	0.9167	6.84	4.27
	1	7.17	3.9

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H8. Summary of SB-23B Pump Test Data (continued)
Pumping SB-23B

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		47.81	47.81
Date/Time		2-14-91/10:42	2-14-91/11:04
	1.0833	7.45	3.56
	1.1667	7.7	3.26
	1.25	7.92	2.97
	1.3333	8.15	2.71
	1.4166	8.33	2.47
	1.5	8.57	2.25
	1.5833	8.78	2.07
	1.6667	8.89	1.87
	1.75	9.03	1.73
	1.8333	9.18	1.57
	1.9167	9.23	1.43
	2	9.36	1.3
	2.5	9.89	0.74
	3	10.13	0.43
	3.5	10.48	0.26
	4	10.6	0.16
	4.5	10.68	0.11
	5	10.77	0.08
	5.5	10.77	0.07
	6	10.76	0.05
	6.5	10.81	0.05
	7	10.84	0.04
	7.5	10.85	0.04
	8	10.87	0.04
	8.5	10.87	0.03
	9	10.92	0.03
	9.5	10.93	0.03
	10	10.94	0.03
	11	10.87	0.02
	12	10.79	0.02
	13	10.79	0.02
	14	10.8	0.02
	15	10.85	0.01
	16	10.95	0.01
	17	10.97	0.01
	18	11.03	-
	19	11	-

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* Water level deviation from static as measured with a Hermit Data Logger.
- No data available.

Table H9. Summary of SB-23 Pump Test Data
Pumping SB-23

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.46	48.46
Date/Time		2-14-91/12:38	2-14-91/12:52
	0	0	1.44
	0.0033	0.26	1.29
	0.0066	0.23	1.25
	0.0099	0.11	1.28
	0.0133	0.03	1.26
	0.0166	0	1.22
	0.02	0.03	1.19
	0.0233	0.07	1.18
	0.0266	0.13	1.17
	0.03	0.16	1.14
	0.0333	0.18	1.12
	0.05	0.34	1.04
	0.0666	0.45	0.98
	0.0833	0.51	0.92
	0.1	0.56	0.87
	0.1166	0.59	0.83
	0.1333	0.62	0.8
	0.15	0.64	0.77
	0.1666	0.66	0.74
	0.1833	0.68	0.71
	0.2	0.62	0.68
	0.2166	0.58	0.65
	0.2333	0.56	0.63
	0.25	0.55	0.61
	0.2666	0.55	0.58
	0.2833	0.54	0.56
	0.3	0.55	0.54
	0.3166	0.55	0.52
	0.3333	0.55	0.5
	0.4167	0.59	0.42
	0.5	0.63	0.36
	0.5833	0.65	0.31
	0.6667	0.67	0.28
	0.75	0.68	0.24
	0.8333	0.71	0.22
	0.9167	0.73	0.2
	1	0.73	0.18

---

* Water level deviation from static as measured with a Hermit Data Logger.

Table H9. Summary of SB-23 Pump Test Data (continued)
Pumping SB-23

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.46	48.46
Date/Time		2-14-91/12:38	2-14-91/12:52
	1.0833	0.74	0.17
	1.1667	0.74	0.16
	1.25	0.78	0.15
	1.3333	0.91	0.14
	1.4166	0.88	0.13
	1.5	0.85	0.13
	1.5833	0.85	0.12
	1.6667	0.85	0.11
	1.75	0.85	0.11
	1.8333	0.86	0.11
	1.9167	0.86	0.11
	2	0.85	0.1
	2.5	0.87	0.09
	3	0.89	0.08
	3.5	0.92	0.07
	4	0.94	0.07
	4.5	0.94	0.06
	5	0.98	0.06
	5.5	0.97	0.05
	6	0.98	0.05
	6.5	0.99	0.05
	7	1	0.05
	7.5	1	0.04
	8	1.01	0.04
	8.5	1.01	0.04
	9	1.03	0.03
	9.5	1.05	0.03
	10	1.06	0.03
	11	1.07	0.03

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H10. Summary of SB-23A Pump Test Data
Pumping SB-23

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.46	48.46
Date/Time		2-14-91/12:38	2-14-91/12:52
	0	0	0.02
	0.0033	0	0.02
	0.0066	0	0.02
	0.0099	0	0.02
	0.0133	0	0.02
	0.0166	0	0.02
	0.02	0	0.02
	0.0233	0	0.02
	0.0266	0	0.02
	0.03	0	0.02
	0.0333	0	0.02
	0.05	0	0.02
	0.0666	0	0.02
	0.0833	0	0.02
	0.1	0	0.02
	0.1166	0	0.02
	0.1333	0	0.02
	0.15	0	0.02
	0.1666	0	0.02
	0.1833	0	0.02
	0.2	0	0.02
	0.2166	0	0.02
	0.2333	0	0.02
	0.25	0	0.02
	0.2666	0	0.02
	0.2833	0	0.02
	0.3	0	0.02
	0.3166	0	0.02
	0.3333	0	0.02
	0.4167	0	0.02
	0.5	0	0.02
	0.5833	0	0.02
	0.6667	0	0.02
	0.75	0	0.02
	0.8333	0	0.02
	0.9167	0	0.02
	1	0	0.02

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H10. Summary of SB-23A Pump Test Data (continued)
Pumping SB-23

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.08	48.08
Date/Time		2-14-91/12:38	2-14-91/12:52
	1.0833	0	0.02
	1.1667	0	0.02
	1.25	0	0.02
	1.3333	0	0.02
	1.4166	0	0.02
	1.5	0.01	0.02
	1.5833	0.01	0.02
	1.6667	0	0.02
	1.75	0.01	0.02
	1.8333	0	0.02
	1.9167	0.01	0.02
	2	0	0.02
	2.5	0.01	0.02
	3	0.01	0.02
	3.5	0.01	0.02
	4	0.01	0.02
	4.5	0.01	0.02
	5	0.01	0.02
	5.5	0.01	0.02
	6	0.01	0.02
	6.5	0.01	0.02
	7	0.01	0.02
	7.5	0.01	0.02
	8	0.01	0.01
	8.5	0.01	0.01
	9	0.02	0.01
	9.5	0.02	0.01
	10	0.02	0.01
	11	0.02	0.01

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H11. Summary of SB-23B Pump Test Data
Pumping SB-23

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.12	48.12
Date/Time		2-14-91/12:38	2-14-91/12:52
	0	0	0.01
	0.0033	0	0.01
	0.0066	0	0.01
	0.0099	0	0.01
	0.0133	0	0.01
	0.0166	0	0.01
	0.02	0	0.01
	0.0233	0	0.01
	0.0266	0	0.01
	0.03	0	0.01
	0.0333	0	0.01
	0.05	0	0.01
	0.0666	0	0.01
	0.0833	0	0.01
	0.1	0	0.01
	0.1166	0	0.01
	0.1333	0	0.01
	0.15	0	0.01
	0.1666	0	0.01
	0.1833	0	0.01
	0.2	0	0.01
	0.2166	0	0.01
	0.2333	0	0.01
	0.25	0	0.01
	0.2666	0	0.01
	0.2833	0	0.01
	0.3	0	0.01
	0.3166	0	0.01
	0.3333	0	0.01
	0.4167	0.01	0.01
	0.5	0.01	0.01
	0.5833	0.01	0.01
	0.6667	0.01	0.01
	0.75	0.01	0.01
	0.8333	0.01	0.01
	0.9167	0.01	0.01
	1	0.01	0.01

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H11. Summary of SB-23B Pump Test Data (continued)
Pumping SB-23

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.12	48.12
Date/Time		2-14-91/12:38	2-14-91/12:52
	1.0833	0.01	0.01
	1.1667	0.01	0.01
	1.25	0.01	0.01
	1.3333	0.01	0.01
	1.4166	0.01	0.01
	1.5	0.01	0.01
	1.5833	0.01	0.01
	1.6667	0.01	0.01
	1.75	0.01	0.01
	1.8333	0.01	0.01
	1.9167	0.01	0.01
	2	0.01	0.01
	2.5	0.01	0.01
	3	0.01	0.02
	3.5	0.01	0.02
	4	0.01	0.02
	4.5	0.01	0.02
	5	0.01	0.02
	5.5	0.01	0.02
	6	0.01	0.02
	6.5	0.01	0.02
	7	0.01	0.02
	7.5	0.01	0.01
	8	0.01	0.02
	8.5	0.01	0.01
	9	0.01	0.01
	9.5	0.01	0.01
	10	0.01	0.01
	11	0.02	0.01

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H12. Summary of SB-17 Pump Test Data
Pumping SB-17A

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.54	48.54
Date/Time		2-12-91/11:58	2-12-91/12:18
	0	0	0.01
	0.0033	0	0.01
	0.0066	0	0.01
	0.0099	0	0.01
	0.0133	0	0.01
	0.0166	0	0.01
	0.02	0	0.01
	0.0233	0	0.01
	0.0266	0	0.01
	0.03	0	0.01
	0.0333	0	0.01
	0.05	0	0.01
	0.0666	0	0.01
	0.0833	0	0.01
	0.1	0	0.01
	0.1166	0	0.01
	0.1333	0	0.01
	0.15	0	0.01
	0.1666	0	0.01
	0.1833	0	0.01
	0.2	0	0.01
	0.2166	0	0.01
	0.2333	0	0.01
	0.25	0	0.01
	0.2666	0	0.01
	0.2833	0	0.01
	0.3	0	0.01
	0.3166	0	0.01
	0.3333	0	0.01
	0.4167	0	0.01
	0.5	0	0.01
	0.5833	0	0.01
	0.6667	0	0.01
	0.75	0	0.01
	0.8333	0	0.01
	0.9167	0	0.01
	1	0	0.01

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H12. Summary of SB-17 Pump Test Data (continued)
Pumping SB-17A

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.54	48.54
Date/Time		2-12-91/11:58	2-12-91/12:18
	1.0833	0	0.01
	1.1667	0	0.01
	1.25	0	0.01
	1.3333	0	0.01
	1.4166	0	0.01
	1.5	0	0.01
	1.5833	0	0.01
	1.6667	0	0.01
	1.75	0	0.01
	1.8333	0	0.01
	1.9167	0	0.01
	2	0	0.01
	2.5	0	0.01
	3	0	0.01
	3.5	0	0.01
	4	0	0.01
	4.5	0	0.01
	5	0	0.01
	5.5	0	0.01
	6	0	0.01
	6.5	0	0.01
	7	0	0.01
	7.5	0	0.01
	8	0	0.01
	8.5	0	0.01
	9	0	0.01
	9.5	0	0.01
	10	0	0.01
	11	0	0.01
	12	0	0.01
	13	0	0.01
	14	0	0.01
	15	0	0.01
	16	0	0.01
	17	0	0.01
	18	0	0.01

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H13. Summary of SB-17A Pump Test Data
Pumping SB-17A

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		49.90	49.90
Date/Time		2-12-91/11:58	2-12-91/12:18
	0	0	0.77
	0.0033	0.19	0.8
	0.0066	0.16	0.77
	0.0099	0	0.74
	0.0133	0.08	0.73
	0.0166	0.05	0.71
	0.02	0.11	0.67
	0.0233	0.11	0.64
	0.0266	0.18	0.61
	0.03	0.24	0.58
	0.0333	0.27	0.55
	0.05	0.45	0.44
	0.0666	0.55	0.35
	0.0833	0.69	0.28
	0.1	0.74	0.23
	0.1166	0.83	0.18
	0.1333	0.77	0.15
	0.15	0.85	0.13
	0.1666	0.76	0.11
	0.1833	0.75	0.1
	0.2	0.73	0.09
	0.2166	0.76	0.08
	0.2333	0.72	0.07
	0.25	0.73	0.06
	0.2666	0.76	0.06
	0.2833	0.69	0.06
	0.3	0.71	0.05
	0.3166	0.69	0.05
	0.3333	0.76	0.05
	0.4167	0.67	0.05
	0.5	0.67	0.04
	0.5833	0.65	0.03
	0.6667	0.69	0.03
	0.75	0.63	0.03
	0.8333	0.67	0.02
	0.9167	0.67	0.02
	1	0.66	0.02

---

* Water level deviation from static as measured with a Hermit Data Logger.

Table H13. Summary of SB-17A Pump Test Data (continued)
Pumping SB-17A

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		49.90	49.90
Date/Time		2-12-91/11:58	2-12-91/12:18
	1.0833	0.67	0.01
	1.1667	0.66	0.01
	1.25	0.67	0.01
	1.3333	0.72	0.01
	1.4166	0.7	0.01
	1.5	0.71	0.01
	1.5833	0.69	0.01
	1.6667	0.7	0.01
	1.75	0.67	0.01
	1.8333	0.71	0.01
	1.9167	0.69	0
	2	0.67	0
	2.5	0.68	0
	3	0.69	0
	3.5	0.71	0
	4	0.7	-
	4.5	0.69	-
	5	0.73	-
	5.5	0.75	-
	6	0.73	-
	6.5	0.74	-
	7	0.72	-
	7.5	0.71	-
	8	0.66	-
	8.5	0.72	-
	9	0.71	-
	9.5	0.67	-
	10	0.73	-
	11	0.76	-
	12	0.73	-
	13	0.72	-
	14	0.74	-
	15	0.69	-
	16	0.74	-

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* Water level deviation from static as measured with a Hermit Data Logger.
- No data available.

Table H14. Summary of SB-17B Pump Test Data
Pumping SB-17A

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		49.83	49.83
Date/Time		2-12-91/11:58	2-12-91/12:18
	0	0	0.02
	0.0033	0	0.03
	0.0066	0	0.03
	0.0099	0	0.03
	0.0133	0	0.02
	0.0166	0	0.02
	0.02	0	0.02
	0.0233	0	0.02
	0.0266	0	0.03
	0.03	0	0.03
	0.0333	0	0.03
	0.05	0.01	0.03
	0.0666	0.01	0.02
	0.0833	0.01	0.02
	0.1	0.01	0.02
	0.1166	0.01	0.03
	0.1333	0.01	0.02
	0.15	0.01	0.03
	0.1666	0.01	0.02
	0.1833	0.01	0.02
	0.2	0.01	0.02
	0.2166	0.01	0.03
	0.2333	0.02	0.03
	0.25	0.02	0.03
	0.2666	0.02	0.04
	0.2833	0.02	0.04
	0.3	0.02	0.04
	0.3166	0.02	0.05
	0.3333	0.01	0.04
	0.4167	0.02	0.04
	0.5	0.01	0.04
	0.5833	0.01	0.04
	0.6667	0.01	0.04
	0.75	0.01	0.04
	0.8333	0.01	0.04
	0.9167	0.01	0.04
	1	0.01	0.03

---

* Water level deviation from static as measured with a Hermit Data Logger.

Table H14. Summary of SB-17B Pump Test Data (continued)
Pumping SB-17A

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		49.83	49.83
Date/Time		2-12-91/11:58	2-12-91/12:18
	1.0833	0.01	0.03
	1.1667	0.01	0.02
	1.25	0.01	0.02
	1.3333	0.01	0.02
	1.4166	0.01	0.02
	1.5	0.01	0.02
	1.5833	0.01	0.02
	1.6667	0.01	0.02
	1.75	0.01	0.02
	1.8333	0.01	0.02
	1.9167	0.01	0.02
	2	0.01	0.02
	2.5	0.01	0.02
	3	0	0.02
	3.5	0	0.02
	4	0	0.02
	4.5	0.01	0.02
	5	0.01	0.02
	5.5	0.01	0.02
	6	0.01	0.01
	6.5	0.01	0.01
	7	0.01	0.01
	7.5	0.02	0.01
	8	0.02	0.01
	8.5	0.02	0.01
	9	0.03	0.01
	9.5	0.03	0.01
	10	0.03	0.01
	11	0.04	0.01
	12	0.04	0
	13	0.04	0
	14	0.04	0.01
	15	0.05	0.01
	16	0.05	0.01

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H15. Summary of SB-17 Pump Test Data
Pumping SB-17B

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.61	48.61
Date/Time		2-12-91/10:32	2-12-91/11:12
	0	0	0.01
	0.0033	0	0.01
	0.0066	0	0.01
	0.0099	0	0.01
	0.0133	0	0.01
	0.0166	0	0.01
	0.02	0	0.01
	0.0233	0	0.01
	0.0266	0	0.01
	0.03	0	0.01
	0.0333	0	0.01
	0.05	0	0.01
	0.0666	0	0.01
	0.0833	0	0.01
	0.1	0	0.01
	0.1166	0	0.01
	0.1333	0	0.01
	0.15	0	0.01
	0.1666	0	0.01
	0.1833	0	0.01
	0.2	0	0.01
	0.2166	0	0.01
	0.2333	0	0.01
	0.25	0	0.01
	0.2666	0	0.01
	0.2833	0	0.01
	0.3	0	0.01
	0.3166	0	0.01
	0.3333	0	0.01
	0.4167	0	0.01
	0.5	0	0.01
	0.5833	0	0.01
	0.6667	0	0.01
	0.75	0	0.01
	0.8333	0	0.01
	0.9167	0	0.01
	1	0	0.01

---

* Water level deviation from static as measured with a Hermit Data Logger.

Table H15. Summary of SB-17 Pump Test Data (continued)
Pumping SB-17B

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.61	48.61
Date/Time		2-12-91/10:32	2-12-91/11:12
	1.0833	0	0.01
	1.1667	0	0.01
	1.25	0	0.01
	1.3333	0	0.01
	1.4166	0	0.01
	1.5	0	0.01
	1.5833	0	0.01
	1.6667	0	0.01
	1.75	0	0.01
	1.8333	0	0.01
	1.9167	0	0.01
	2	0	0.01
	2.5	0	0.01
	3	0	0.01
	3.5	0	0.01
	4	0	0.01
	4.5	0	0.01
	5	0	0.01
	5.5	0	0.01
	6	0	0.01
	6.5	0	0.01
	7	0	0.01
	7.5	0	0.01
	8	0	0.01
	8.5	0	0.01
	9	0	0.01
	9.5	0	0.01
	10	0.01	0.01
	11	0.01	0.01
	12	0.01	0.01
	13	0.01	0.01
	14	0.01	0.01
	15	0.01	0.01
	16	0.01	0.01
	17	0.01	0.01
	18	0.01	0.01
	19	0.01	0.01

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H16. Summary of SB-17A Pump Test Data
Pumping SB-17B

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		49.94	49.94
Date/Time		2-12-91/10:32	2-12-91/11:12
	0	0	0.09
	0.0033	0	0.09
	0.0066	0	0.09
	0.0099	0.01	0.09
	0.0133	0	0.09
	0.0166	0	0.09
	0.02	0.01	0.09
	0.0233	0	0.09
	0.0266	0	0.09
	0.03	0	0.09
	0.0333	0.01	0.09
	0.05	0	0.09
	0.0666	0	0.09
	0.0833	0	0.09
	0.1	0	0.09
	0.1166	0.01	0.09
	0.1333	0	0.09
	0.15	0.01	0.09
	0.1666	0	0.09
	0.1833	0	0.09
	0.2	0	0.09
	0.2166	0	0.09
	0.2333	0	0.09
	0.25	0	0.09
	0.2666	0	0.09
	0.2833	0	0.09
	0.3	0.01	0.09
	0.3166	0.01	0.09
	0.3333	0.01	0.09
	0.4167	0.01	0.09
	0.5	0.01	0.08
	0.5833	0.01	0.08
	0.6667	0.02	0.07
	0.75	0.02	0.07
	0.8333	0.02	0.07
	0.9167	0.03	0.07
	1	0.03	0.07

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H16. Summary of SB-17A Pump Test Data (continued)
Pumping SB-17B

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		49.94	49.94
Date/Time		2-12-91/10:32	2-12-91/11:12
	1.0833	0.03	0.06
	1.1667	0.03	0.06
	1.25	0.04	0.06
	1.3333	0.04	0.06
	1.4166	0.04	0.06
	1.5	0.05	0.05
	1.5833	0.04	0.05
	1.6667	0.05	0.05
	1.75	0.05	0.05
	1.8333	0.06	0.04
	1.9167	0.05	0.04
	2	0.06	0.04
	2.5	0.06	0.03
	3	0.08	0.02
	3.5	0.08	0.02
	4	0.08	0.01
	4.5	0.09	0.01
	5	0.09	0.01
	5.5	0.09	0.01
	6	0.09	0.01
	6.5	0.09	0.01
	7	0.09	0.01
	7.5	0.1	0.01
	8	0.1	0.01
	8.5	0.11	0
	9	0.11	0
	9.5	0.11	0
	10	0.11	0
	11	0.11	0
	12	0.11	0
	13	0.11	0
	14	0.11	0
	15	0.12	0
	16	0.12	0
	17	0.13	0
	18	0.13	0
	19	0.13	0

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H17. Summary of SB-17B Pump Test Data
Pumping SB-17B

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		49.87	49.87
Date/Time		2-12-91/10:32	2-12-91/11:12
	0	0	10.39
	0.0033	0.01	10.99
	0.0066	0.13	10.88
	0.0099	0.11	10.82
	0.0133	0.09	10.77
	0.0166	0.18	10.75
	0.02	0.28	10.72
	0.0233	0.36	10.68
	0.0266	0.42	10.63
	0.03	0.5	10.6
	0.0333	0.58	10.56
	0.05	0.9	10.39
	0.0666	1.15	10.22
	0.0833	1.43	10.06
	0.1	1.69	9.89
	0.1166	1.89	9.73
	0.1333	2.12	9.57
	0.15	2.31	9.42
	0.1666	2.5	9.27
	0.1833	2.69	9.12
	0.2	2.79	8.97
	0.2166	2.87	8.82
	0.2333	2.99	8.68
	0.25	3.15	8.53
	0.2666	3.29	8.39
	0.2833	3.41	8.25
	0.3	3.5	8.12
	0.3166	3.57	7.98
	0.3333	3.73	7.85
	0.4167	4.33	7.21
	0.5	4.76	6.62
	0.5833	5.23	6.08
	0.6667	5.7	5.57
	0.75	6.1	5.1
	0.8333	6.48	4.67
	0.9167	6.84	4.27
	1	7.17	3.9

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H17. Summary of SB-17B Pump Test Data (continued)
Pumping SB-17B

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		49.87	49.87
Date/Time		2-12-91/10:32	2-12-91/11:12
	1.0833	7.45	3.56
	1.1667	7.7	3.26
	1.25	7.92	2.97
	1.3333	8.15	2.71
	1.4166	8.33	2.47
	1.5	8.57	2.25
	1.5833	8.78	2.07
	1.6667	8.89	1.87
	1.75	9.03	1.73
	1.8333	9.18	1.57
	1.9167	9.23	1.43
	2	9.36	1.3
	2.5	9.89	0.74
	3	10.13	0.43
	3.5	10.48	0.26
	4	10.6	0.16
	4.5	10.68	0.11
	5	10.77	0.08
	5.5	10.77	0.07
	6	10.76	0.05
	6.5	10.81	0.05
	7	10.84	0.04
	7.5	10.85	0.04
	8	10.87	0.04
	8.5	10.87	0.03
	9	10.92	0.03
	9.5	10.93	0.03
	10	10.94	0.03
	11	10.87	0.02
	12	10.79	0.02
	13	10.79	0.02
	14	10.8	0.02
	15	10.85	0.01
	16	10.95	0.01
	17	10.97	0.01
	18	11.03	0.01
	19	11	0.01

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* Water level deviation from static as measured with a Hermit Data Logger.

Table H18. Summary of SB-17 Pump Test Data
Pumping SB-17

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.51	48.51
Date/Time		2-12-91/13:07	2-12-91/13:23
	0	0	1.44
	0.0033	0.26	1.29
	0.0066	0.23	1.25
	0.0099	0.11	1.28
	0.0133	0.03	1.26
	0.0166	0	1.22
	0.02	0.03	1.19
	0.0233	0.07	1.18
	0.0266	0.13	1.17
	0.03	0.16	1.14
	0.0333	0.18	1.12
	0.05	0.34	1.04
	0.0666	0.45	0.98
	0.0833	0.51	0.92
	0.1	0.56	0.87
	0.1166	0.59	0.83
	0.1333	0.62	0.8
	0.15	0.64	0.77
	0.1666	0.66	0.74
	0.1833	0.68	0.71
	0.2	0.62	0.68
	0.2166	0.58	0.65
	0.2333	0.56	0.63
	0.25	0.55	0.61
	0.2666	0.55	0.58
	0.2833	0.54	0.56
	0.3	0.55	0.54
	0.3166	0.55	0.52
	0.3333	0.55	0.5
	0.4167	0.59	0.42
	0.5	0.63	0.36
	0.5833	0.65	0.31
	0.6667	0.67	0.28
	0.75	0.68	0.24
	0.8333	0.71	0.22
	0.9167	0.73	0.2
	1	0.73	0.18

---

* Water level deviation from static as measured with a Hermit Data Logger.

Table H18. Summary of SB-17 Pump Test Data
Pumping SB-17

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		48.51	48.51
Date/Time		2-12-91/13:07	2-12-91/13:23
	1.0833	0.74	0.17
	1.1667	0.74	0.16
	1.25	0.78	0.15
	1.3333	0.91	0.14
	1.4166	0.88	0.13
	1.5	0.85	0.13
	1.5833	0.85	0.12
	1.6667	0.85	0.11
	1.75	0.85	0.11
	1.8333	0.86	0.11
	1.9167	0.86	0.11
	2	0.85	0.1
	2.5	0.87	0.09
	3	0.89	0.08
	3.5	0.92	0.07
	4	0.94	0.07
	4.5	0.94	0.06
	5	0.98	0.06
	5.5	0.97	0.05
	6	0.98	0.05
	6.5	0.99	0.05
	7	1	0.05
	7.5	1	0.04
	8	1.01	0.04
	8.5	1.01	0.04
	9	1.03	0.03
	9.5	1.05	0.03
	10	1.06	0.03
	11	1.07	0.03

---

* Water level deviation from static as measured with a Hermit Data Logger.

Table H19. Summary of SB-17A Pump Test Data
Pumping SB-17

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		49.82	49.82
Date/Time		2-12-91/13:07	2-12-91/13:23
	0	0	0.02
	0.0033	0	0.02
	0.0066	0	0.02
	0.0099	0	0.02
	0.0133	0	0.02
	0.0166	0	0.02
	0.02	0	0.02
	0.0233	0	0.02
	0.0266	0	0.02
	0.03	0	0.02
	0.0333	0	0.02
	0.05	0	0.02
	0.0666	0	0.02
	0.0833	0	0.02
	0.1	0	0.02
	0.1166	0	0.02
	0.1333	0	0.02
	0.15	0	0.02
	0.1666	0	0.02
	0.1833	0	0.02
	0.2	0	0.02
	0.2166	0	0.02
	0.2333	0	0.02
	0.25	0	0.02
	0.2666	0	0.02
	0.2833	0	0.02
	0.3	0	0.02
	0.3166	0	0.02
	0.3333	0	0.02
	0.4167	0	0.02
	0.5	0	0.02
	0.5833	0	0.02
	0.6667	0	0.02
	0.75	0	0.02
	0.8333	0	0.02
	0.9167	0	0.02
	1	0	0.02

---

* Water level deviation from static as measured with a Hermit Data Logger.

Table H19. Summary of SB-17A Pump Test Data (continued)
Pumping SB-17

	Time From Start of Test (Minutes)	PUMP OUT *Change In Water Level (feet)	RECOVERY *Change In Water Level (feet)
Static Water Level		49.82	49.82
Date/Time		2-12-91/13:07	2-12-91/13:23
	1.0833	0	0.02
	1.1667	0	0.02
	1.25	0	0.02
	1.3333	0	0.02
	1.4166	0	0.02
	1.5	0.01	0.02
	1.5833	0.01	0.02
	1.6667	0	0.02
	1.75	0.01	0.02
	1.8333	0	0.02
	1.9167	0.01	0.02
	2	0	0.02
	2.5	0.01	0.02
	3	0.01	0.02
	3.5	0.01	0.02
	4	0.01	0.02
	4.5	0.01	0.02
	5	0.01	0.02
	5.5	0.01	0.02
	6	0.01	0.02
	6.5	0.01	0.02
	7	0.01	0.02
	7.5	0.01	0.02
	8	0.01	0.01
	8.5	0.01	0.01
	9	0.02	0.01
	9.5	0.02	0.01
	10	0.02	0.01
	11	0.02	0.01

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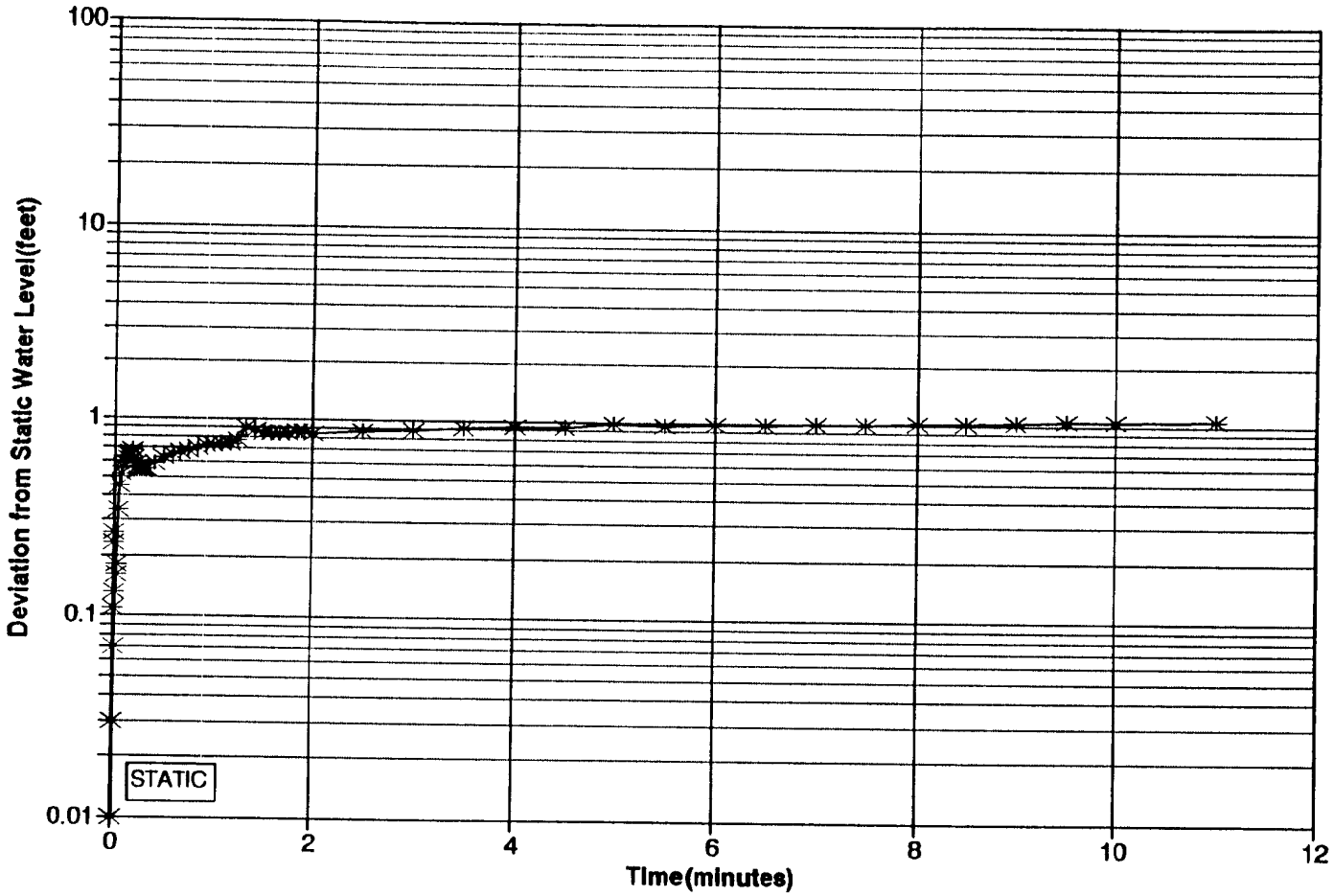
* Water level deviation from static as measured with a Hermit Data Logger.

HDT\17333168\PUMP

McKESSON-SANTA FE SPRINGS
SB-17 PUMP OUT (PUMPING)



MCK0002912

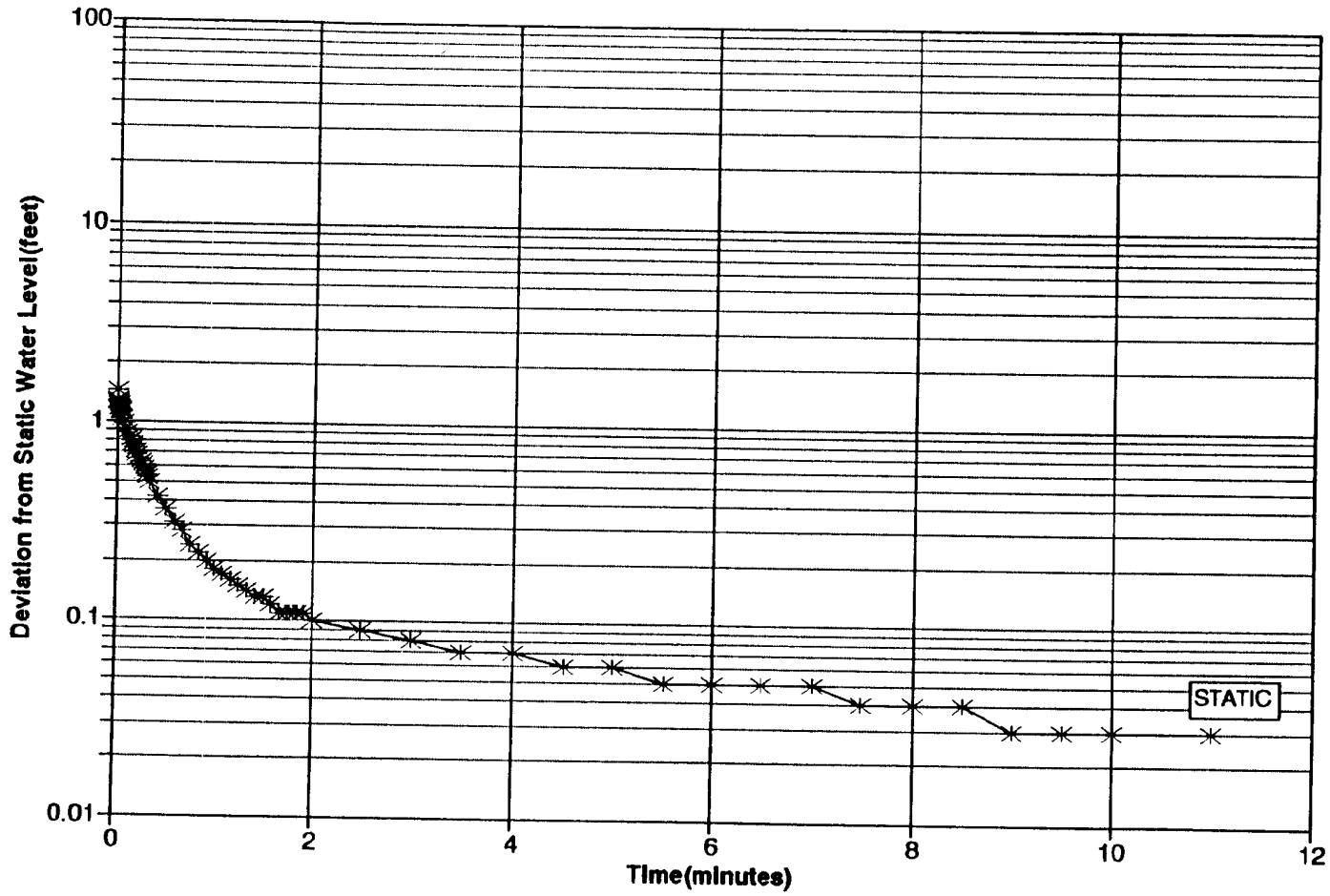
Harding Lawson Associates
Engineering and Environmental Services

SB-17 PUMP OUT TEST
PUMPING WELL HYDROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H1**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	2/92		

McKESSON-SANTA FE SPRINGS
SB-17 RECOVERY (AFTER PUMPING)



MCK0002913

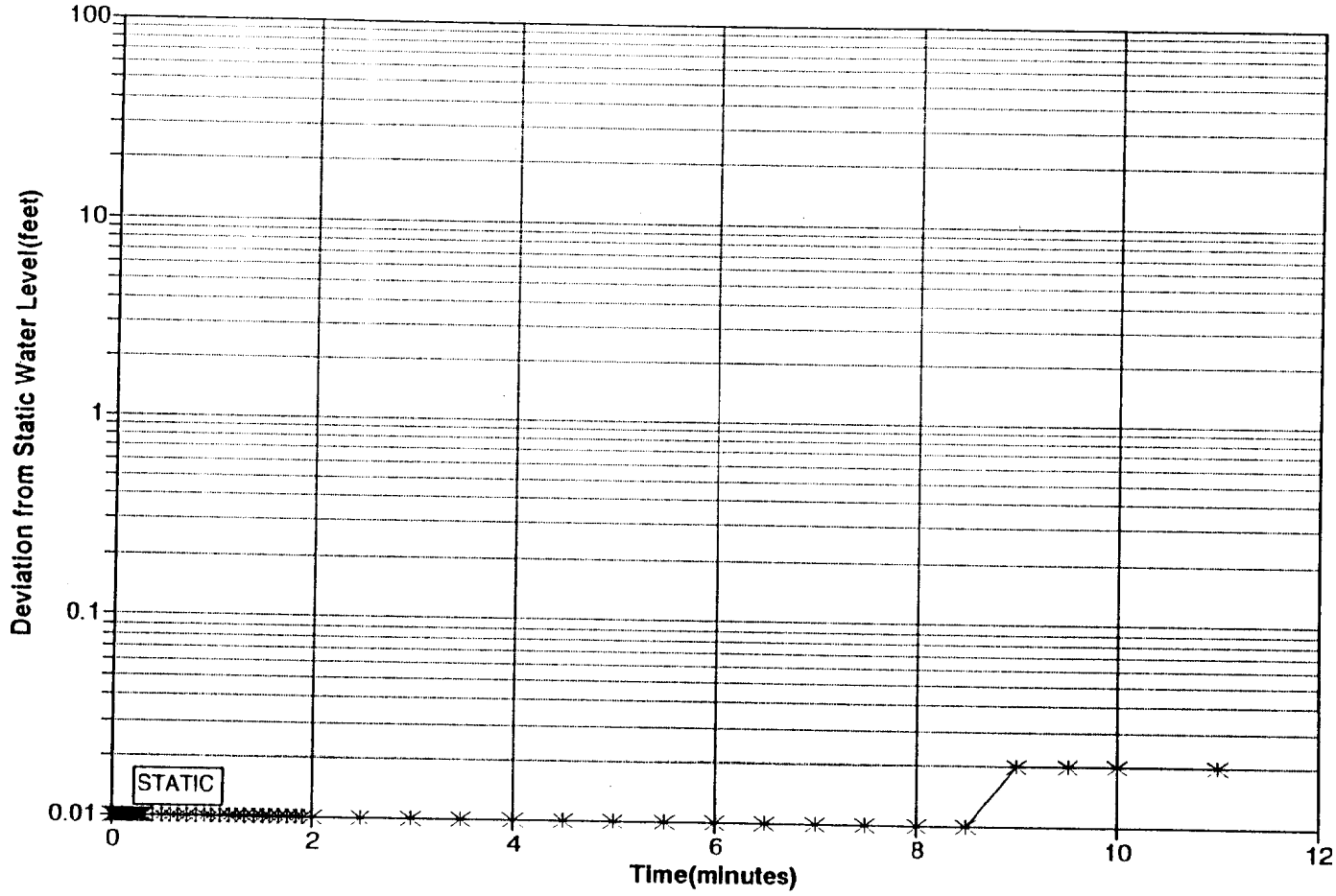
Harding Lawson Associates
Engineering and Environmental Services

SB-17 PUMP OUT TEST
PUMPING WELL HYDROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H2**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TMK	2/92		

McKESSON-SANTA FE SPRINGS
SB-17A PUMP OUT (PUMPING SB-17)



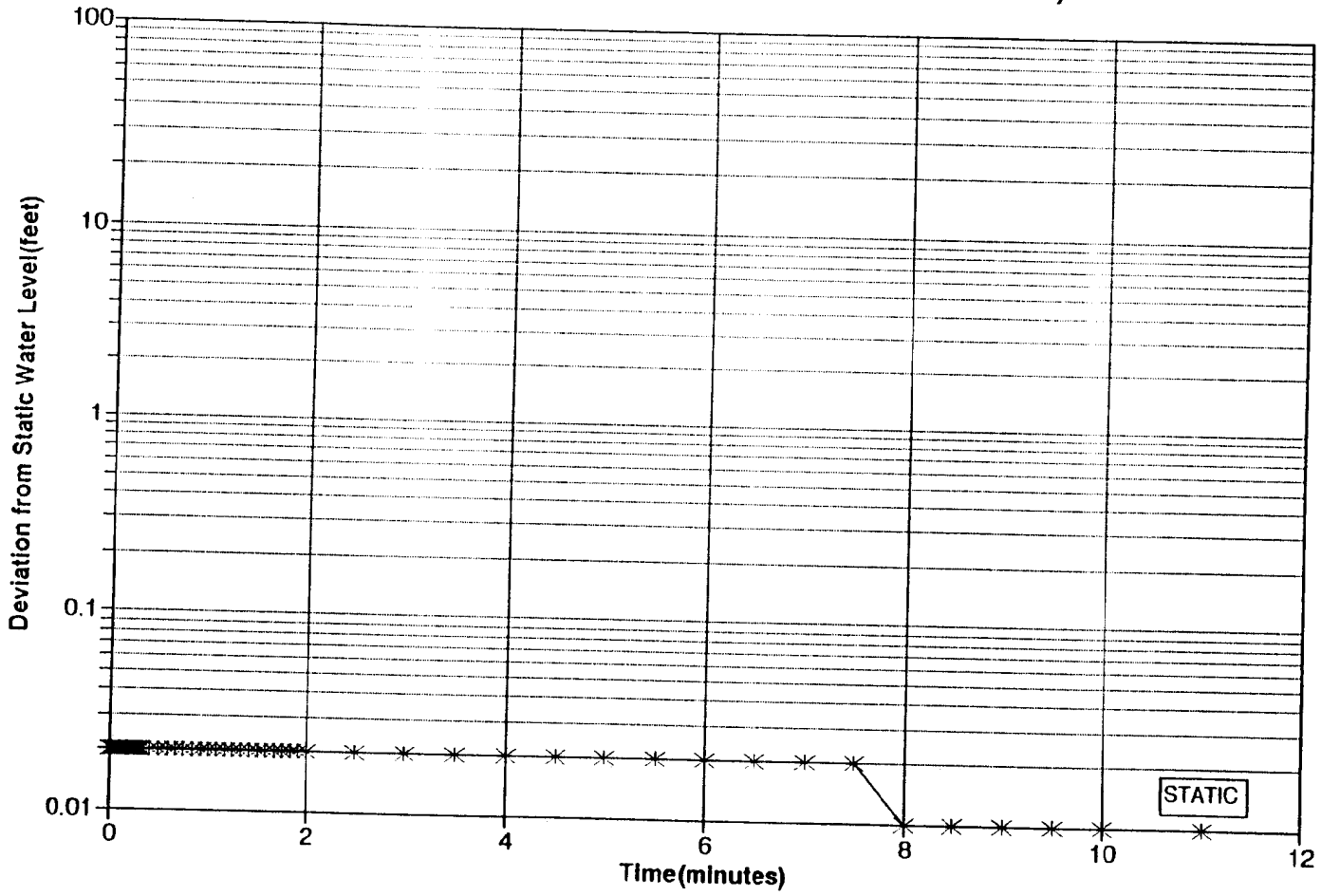
Harding Lawson Associates
Engineering and Environmental Services

SB-17A PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H3**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	2/92		

McKESSON-SANTA FE SPRINGS
SB-17A RECOVERY (AFTER PUMPING SB-17)



MCK0002915

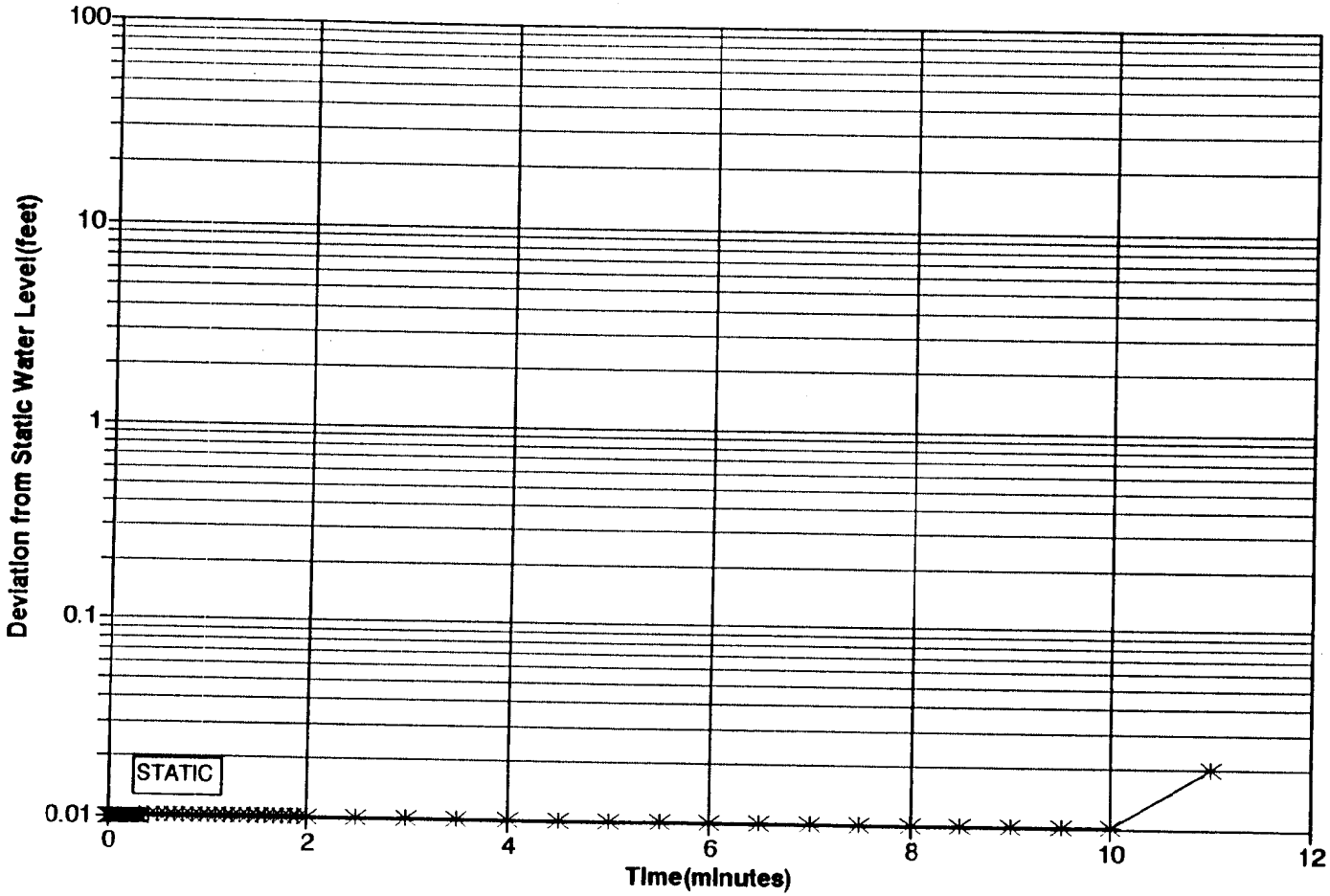
Harding Lawson Associates
Engineering and Environmental Services

SB-17A PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H4**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	THK	2/92		

McKESSON-SANTA FE SPRINGS
SB-17B PUMP OUT (PUMPING SB-17)



MCK0002916

Harding Lawson Associates
Engineering and Environmental Services

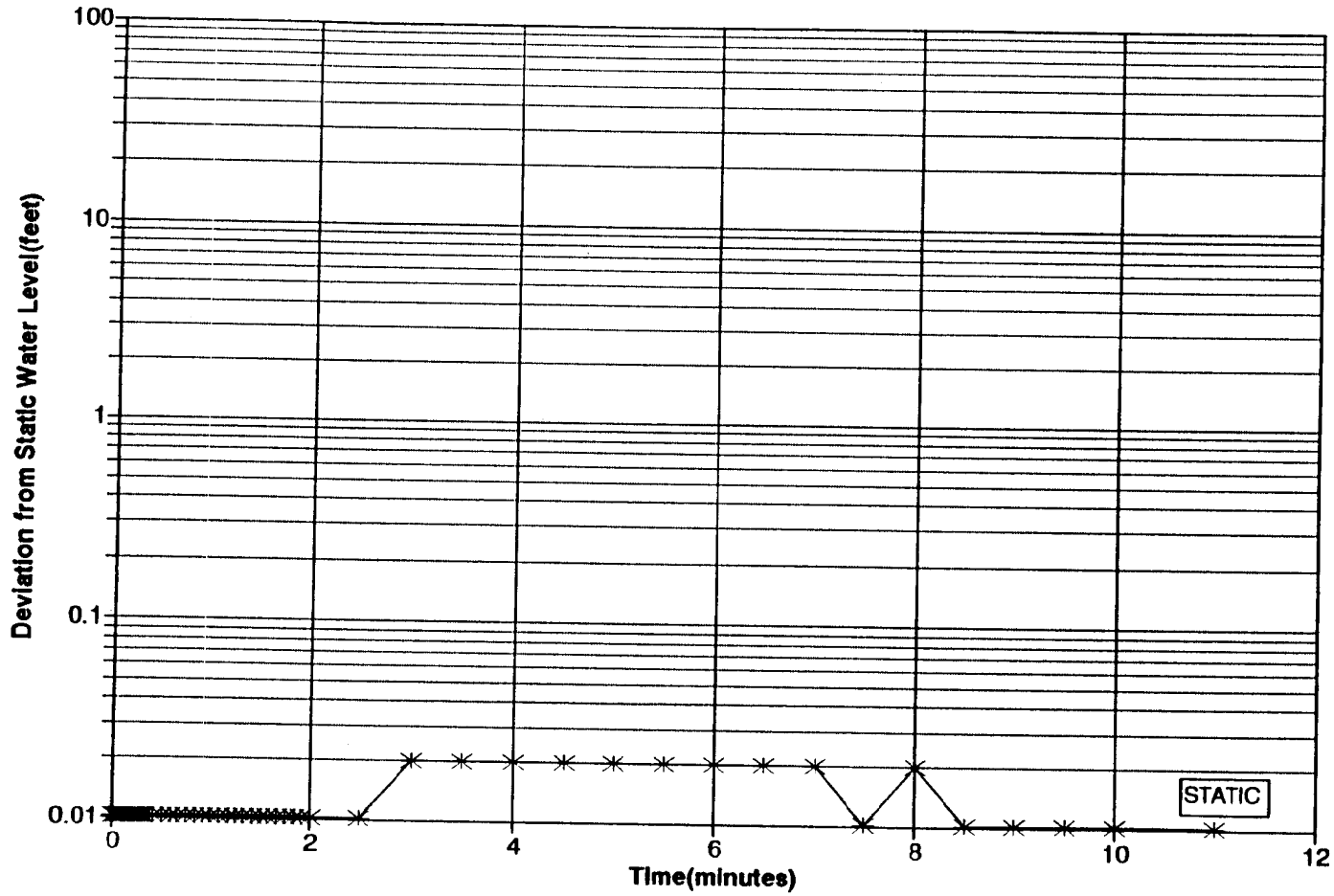
SB-17B PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H5**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	THC	2/92		

HDT\17333168\PUMP

McKESSON-SANTA FE SPRINGS
SB-17B RECOVERY (AFTER PUMPING SB-17)



MCK0002917

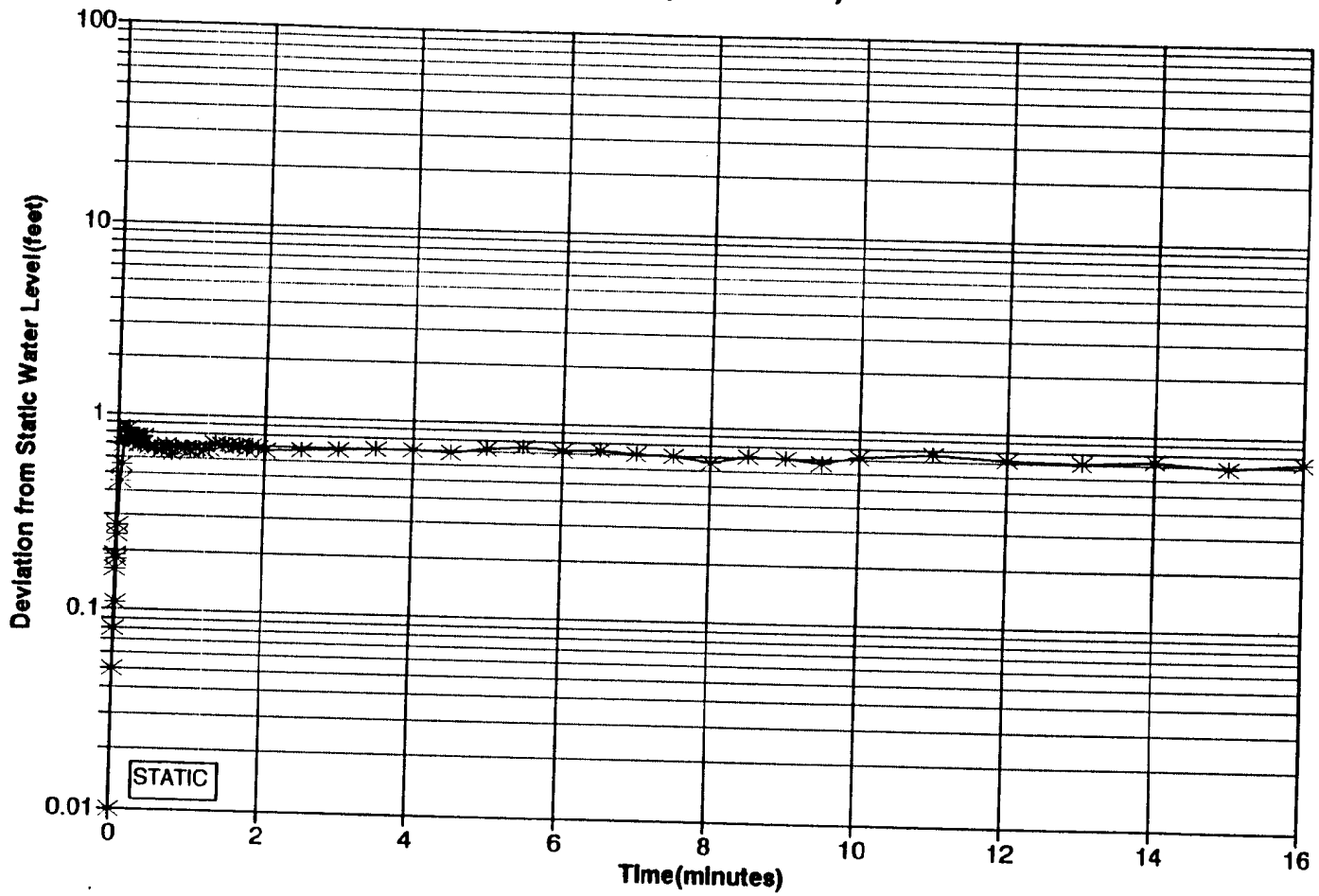
Harding Lawson Associates
Engineering and Environmental Services

SB-17B PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H6**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	2/92		

McKESSON-SANTA FE SPRINGS
SB-17A PUMP OUT (PUMPING)



Harding Lawson Associates
Engineering and Environmental Services

SB-17A PUMP OUT TEST
PUMPING WELL HYDROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

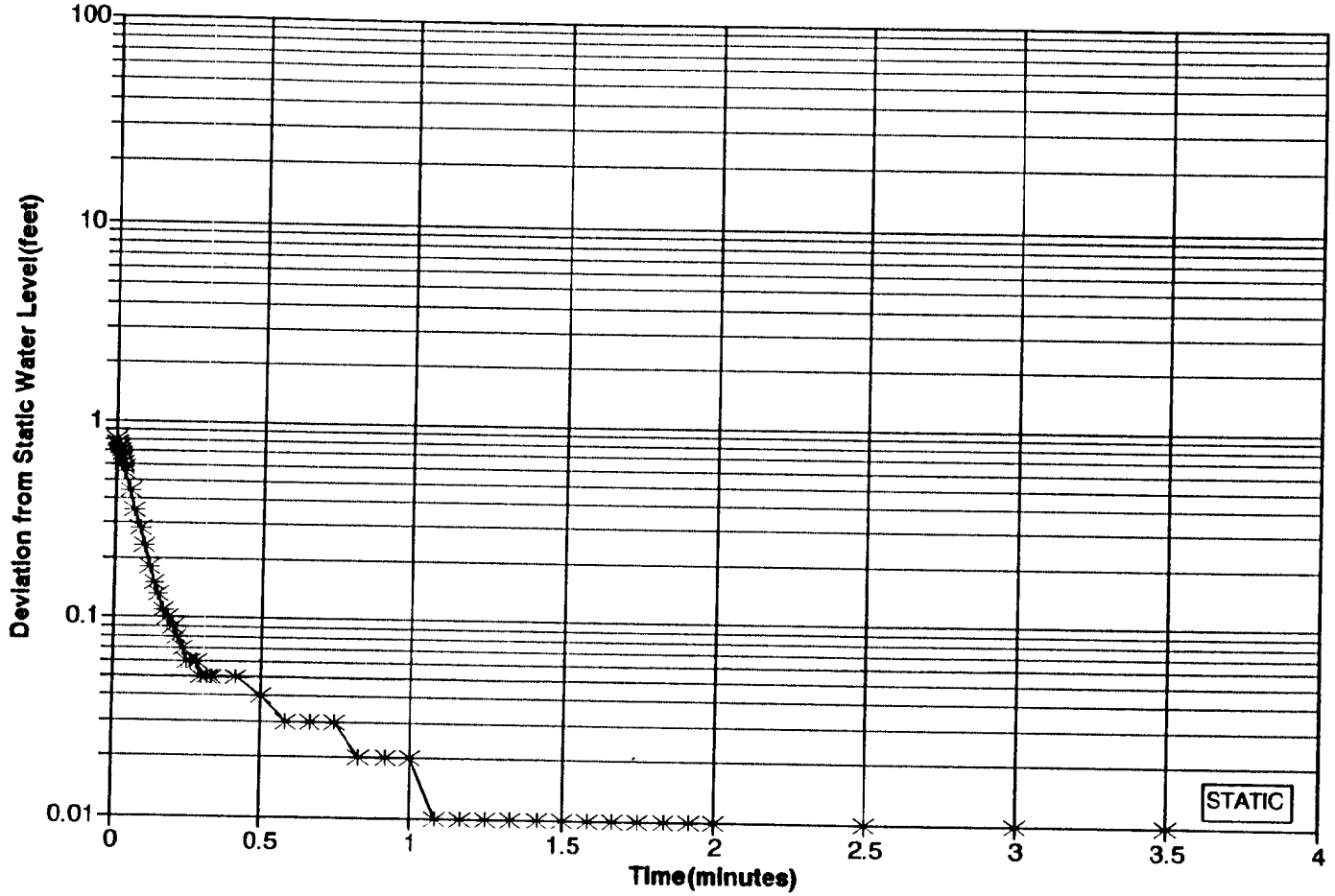
PLATE **H7**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	2/92		

MCK0002918

HDT\17333168\PUMP

McKESSON-SANTA FE SPRINGS
SB-17A RECOVERY (AFTER PUMPING)



MCK0002919

Harding Lawson Associates
Engineering and Environmental Services

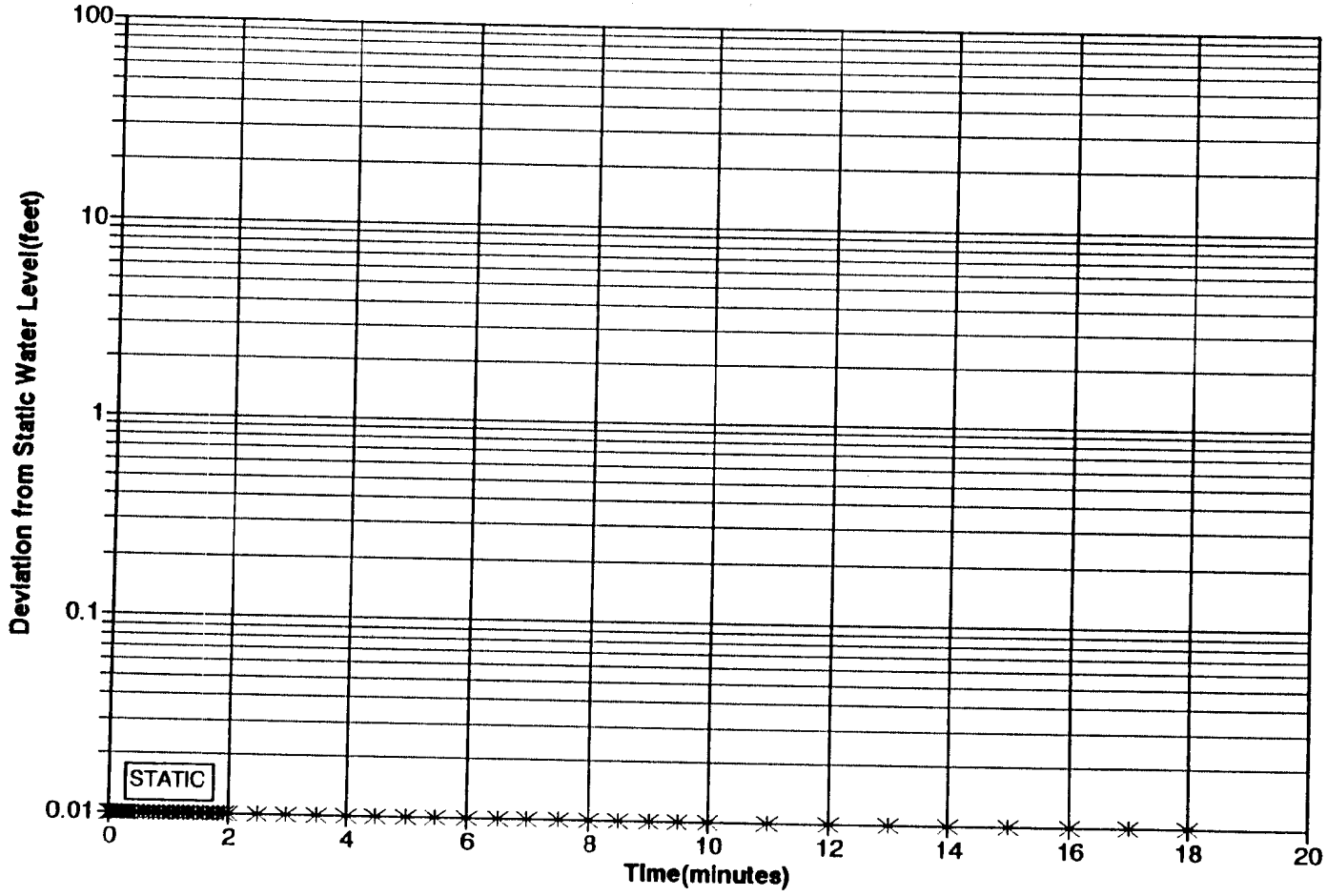
SB-17A PUMP OUT TEST
PUMPING WELL HYDROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H8**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TMK	2/92		

HDT\17333168\PUMP

McKESSON-SANTA FE SPRINGS
SB-17 PUMP OUT (PUMPING SB-17A)



Harding Lawson Associates
Engineering and Environmental Services

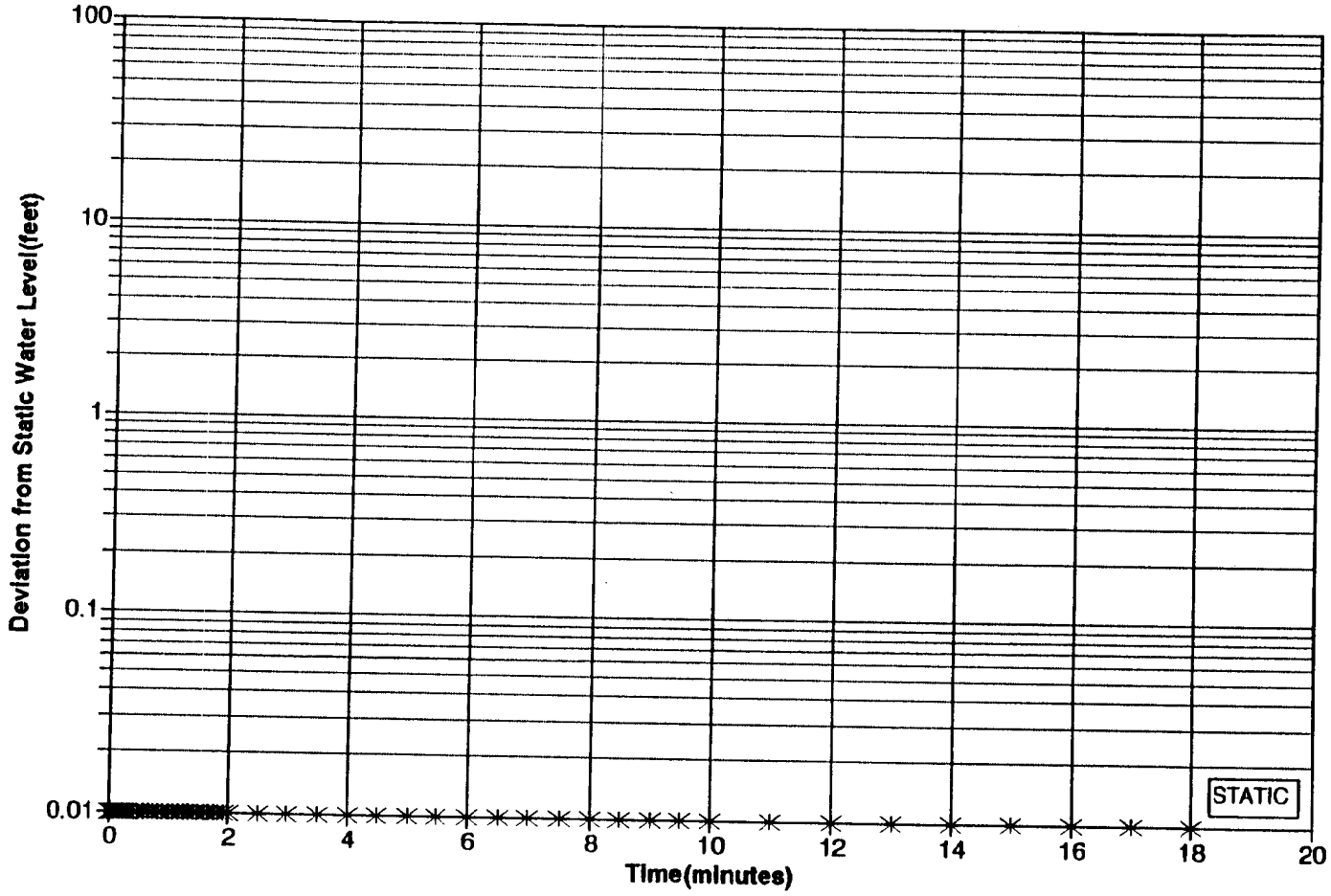
SB-17 PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H9**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAC	2/92		

MCK0002920

McKESSON-SANTA FE SPRINGS
SB-17 RECOVERY (AFTER PUMPING SB-17A)



MCK0002921

Harding Lawson Associates
Engineering and Environmental Services

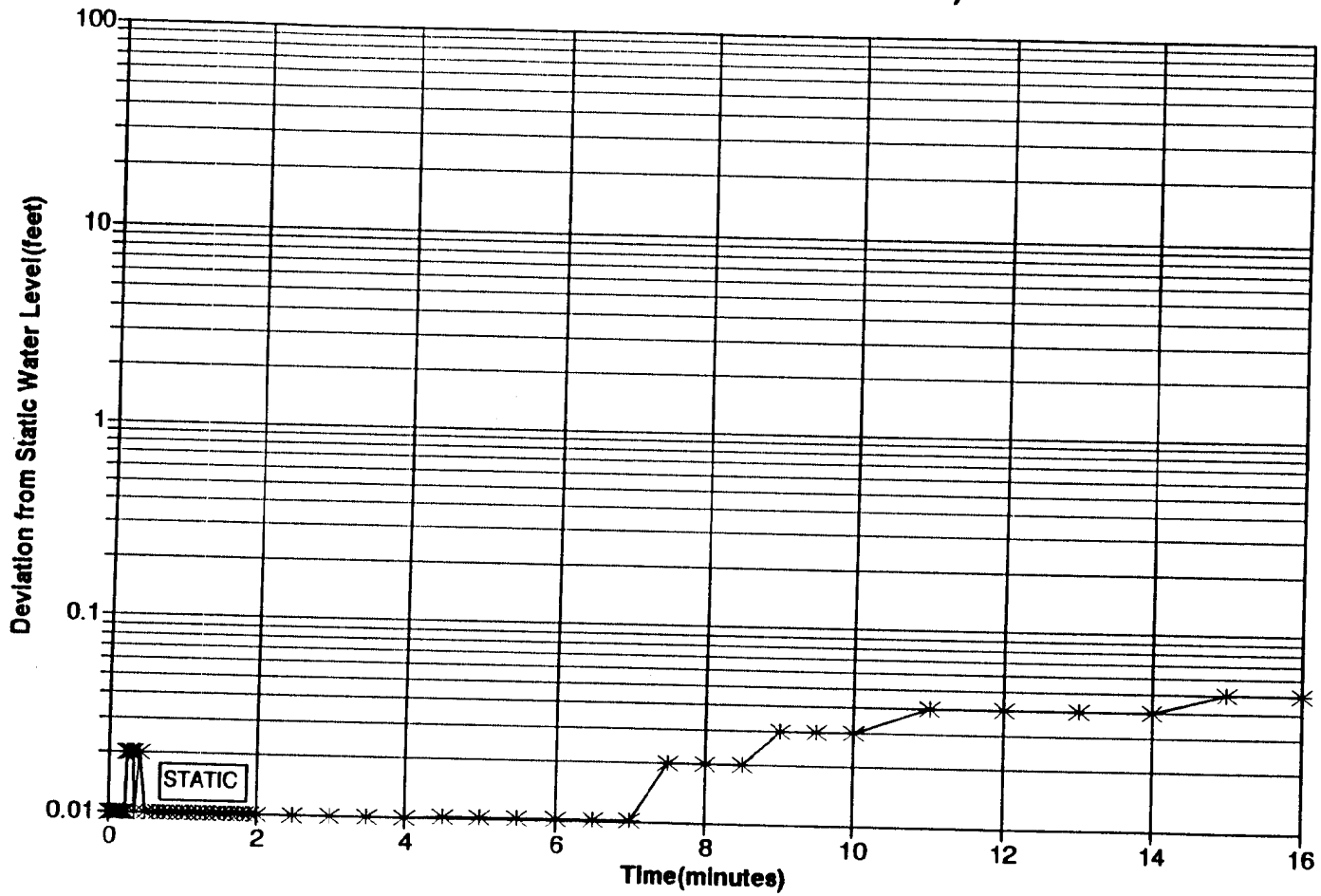
SB-17 PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE
H10

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAC	2/92		

HDT\17333168\PUMP

McKESSON-SANTA FE SPRINGS
SB-17B PUMP OUT (PUMPING SB-17A)



Harding Lawson Associates
Engineering and Environmental Services

SB-17B PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

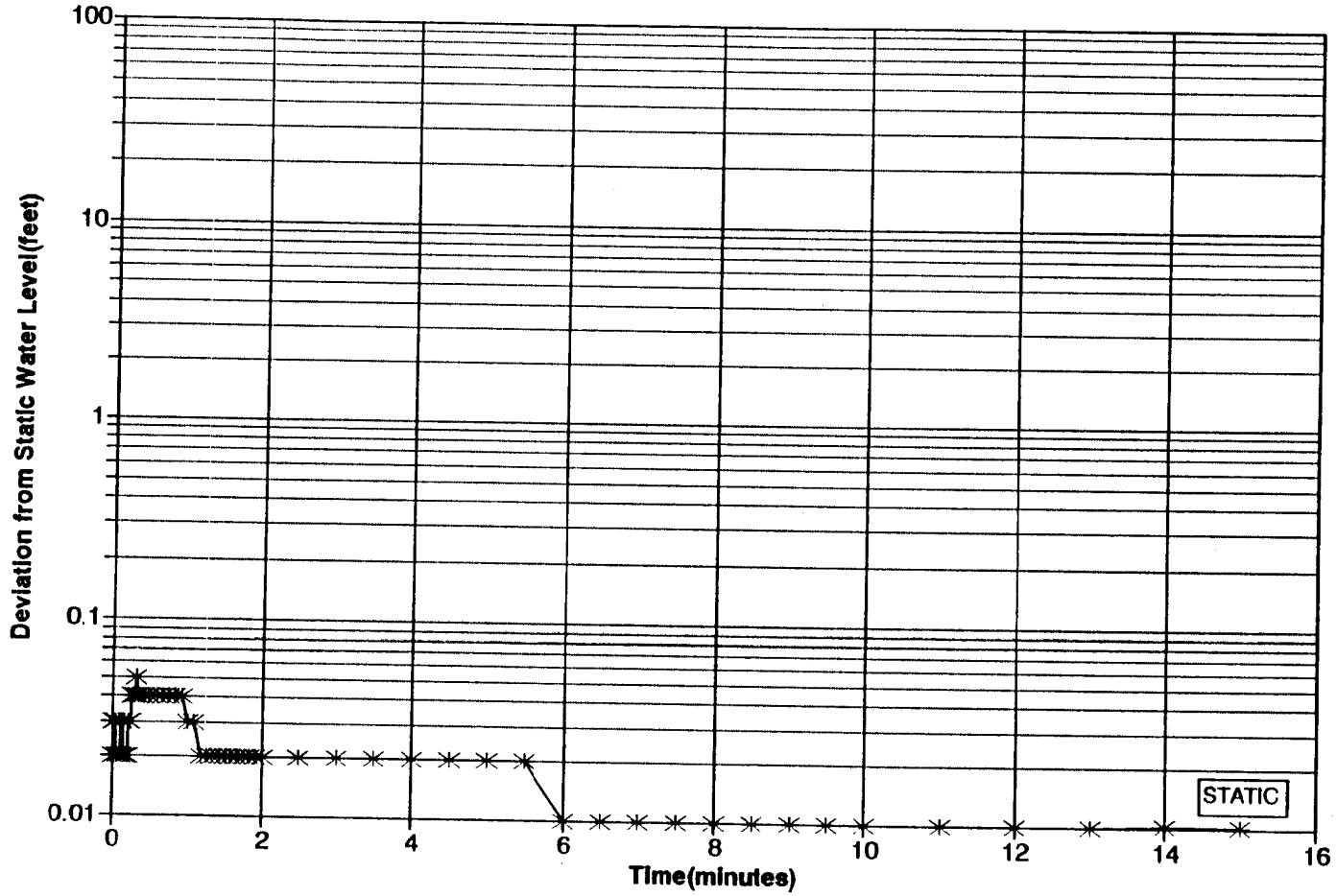
PLATE **H11**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	2/92		

MCK0002922

HDT\17333168\PUMP

McKESSON-SANTA FE SPRINGS
SB-17B RECOVERY (AFTER PUMPING SB-17A)



MCK0002923

Harding Lawson Associates
Engineering and Environmental Services

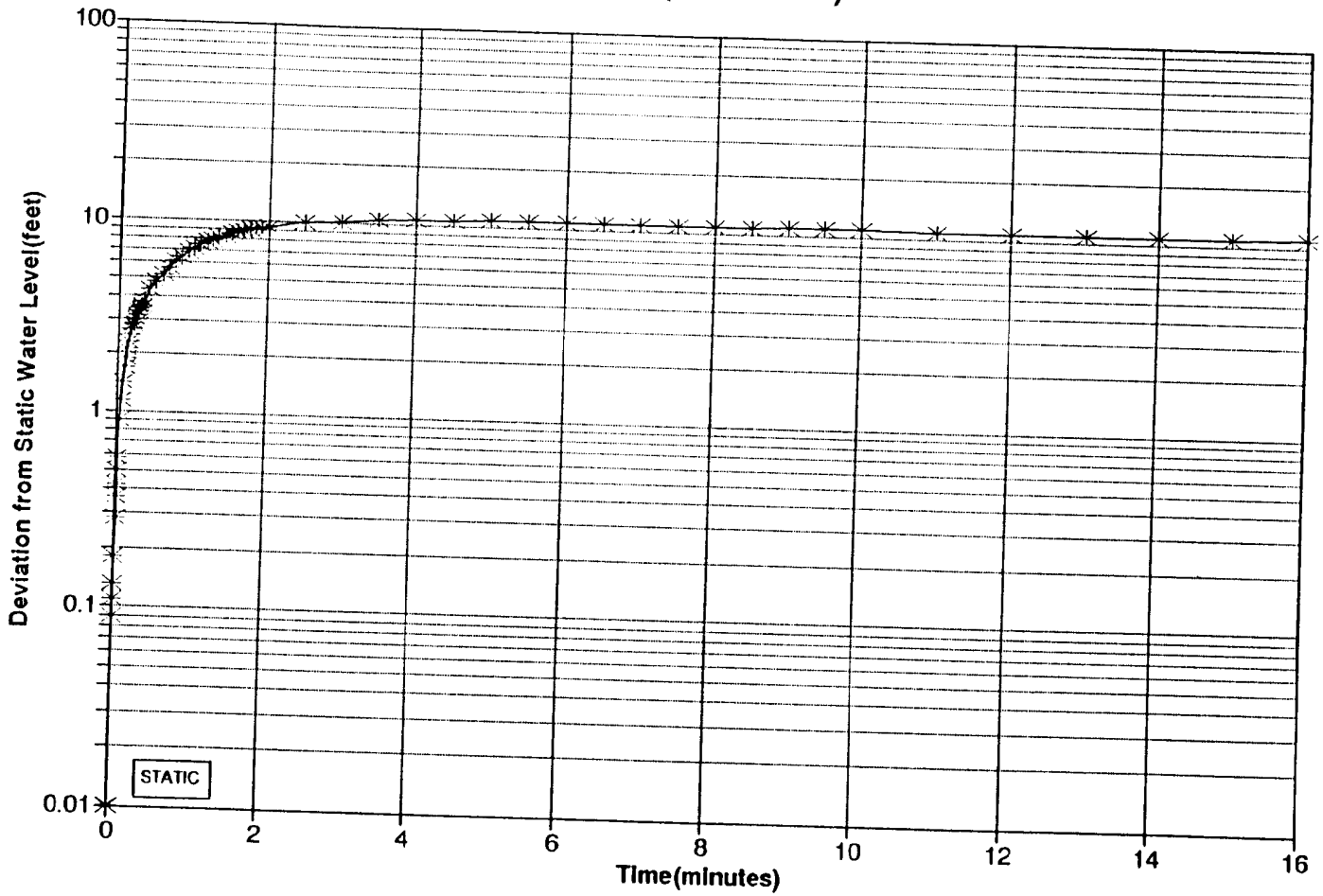
SB-17B PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H12**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	2/92		

HDT\17333168\PUMP

McKESSON-SANTA FE SPRINGS
SB-17B PUMP OUT (PUMPING)



MCK0002924

Harding Lawson Associates
Engineering and Environmental Services

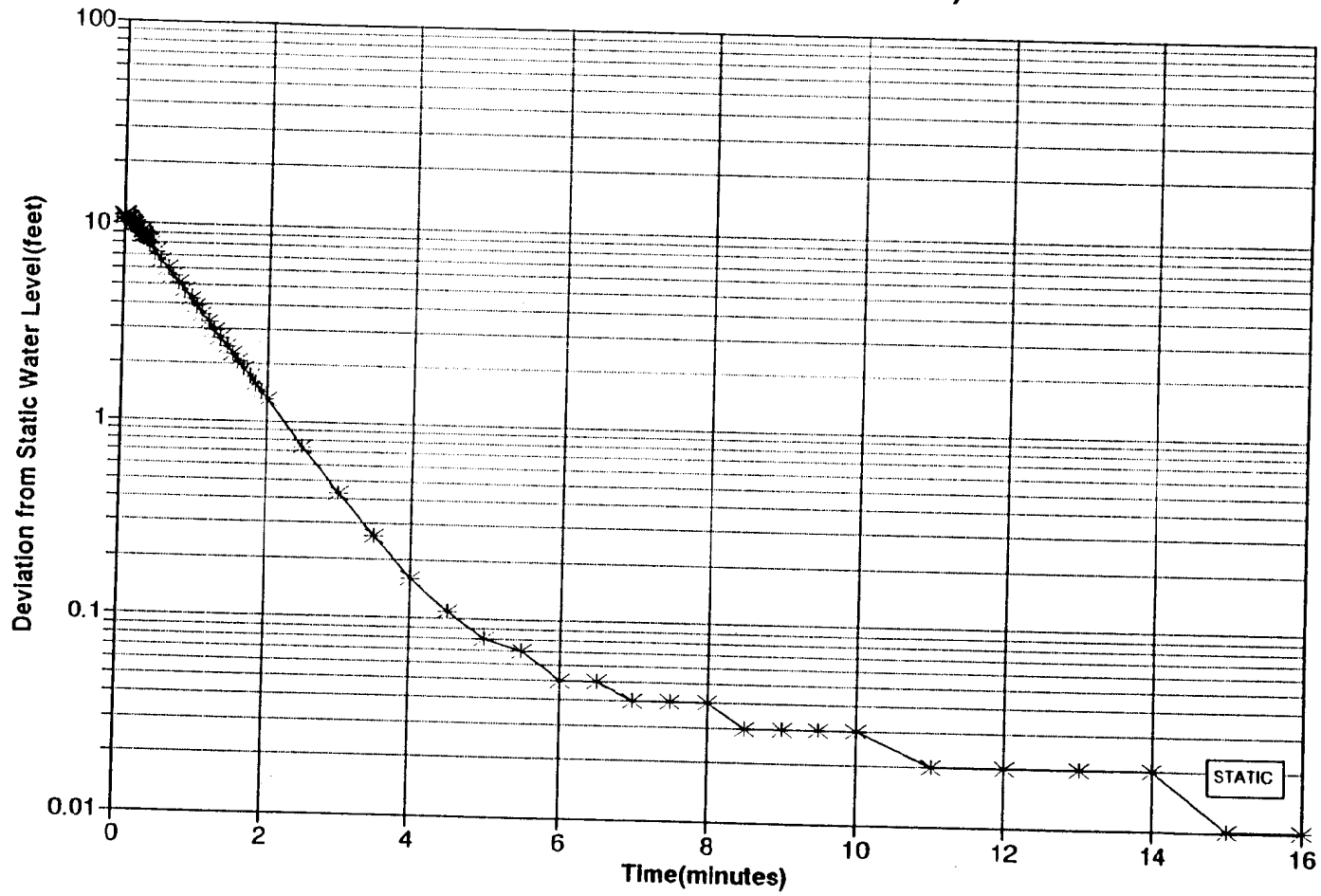
SB-17B PUMP OUT TEST
PUMPING WELL HYDROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H13**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	THC	2/92		

HDT\17333168\PUMP

McKESSON-SANTA FE SPRINGS
SB-17B RECOVERY (AFTER PUMPING)



Harding Lawson Associates
Engineering and Environmental Services

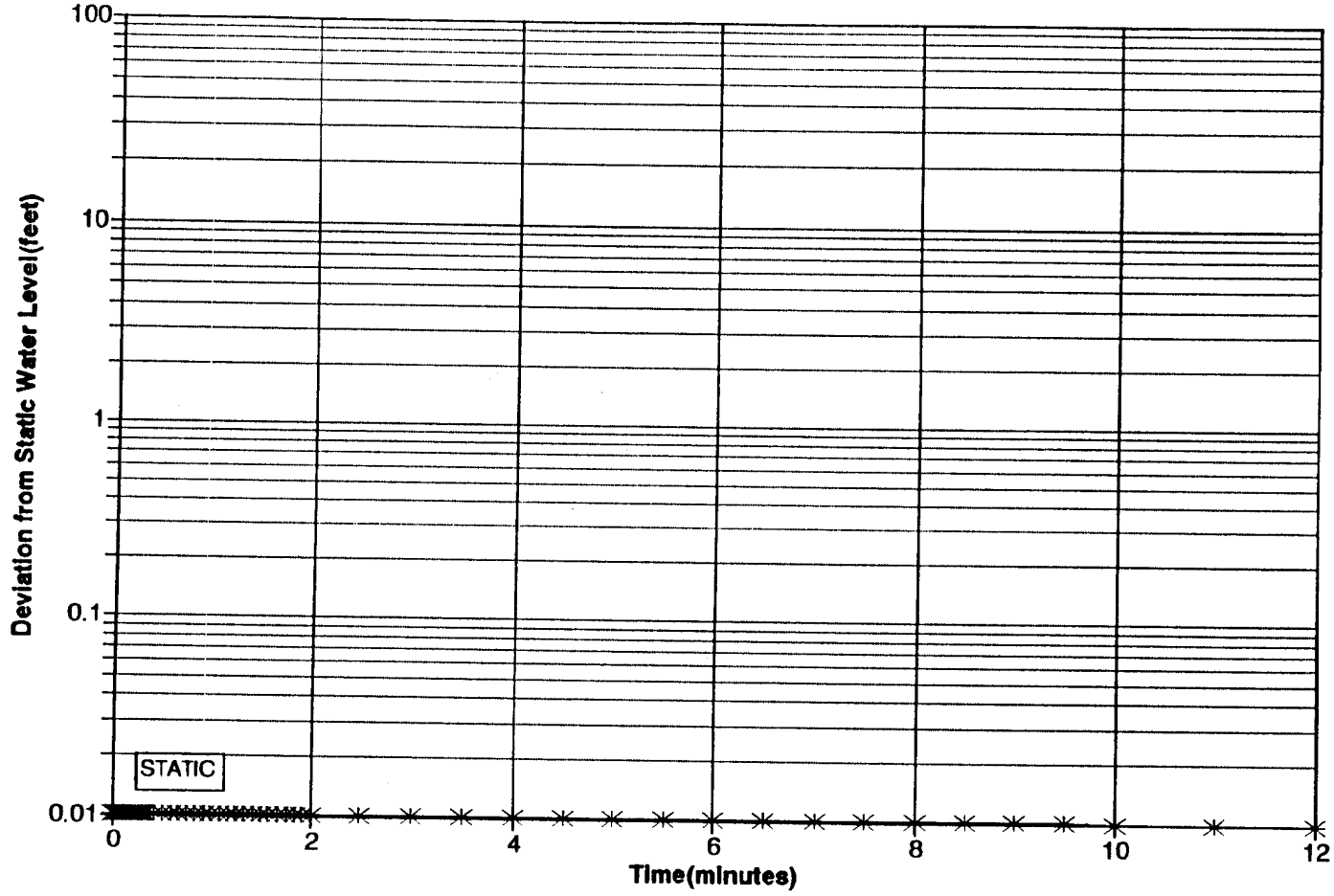
SB-17B PUMP OUT TEST
PUMPING WELL HYDROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H14**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	2/92		

MCK0002925

McKESSON-SANTA FE SPRINGS
SB-17 PUMP OUT (PUMPING SB-17B)



MCK0002926

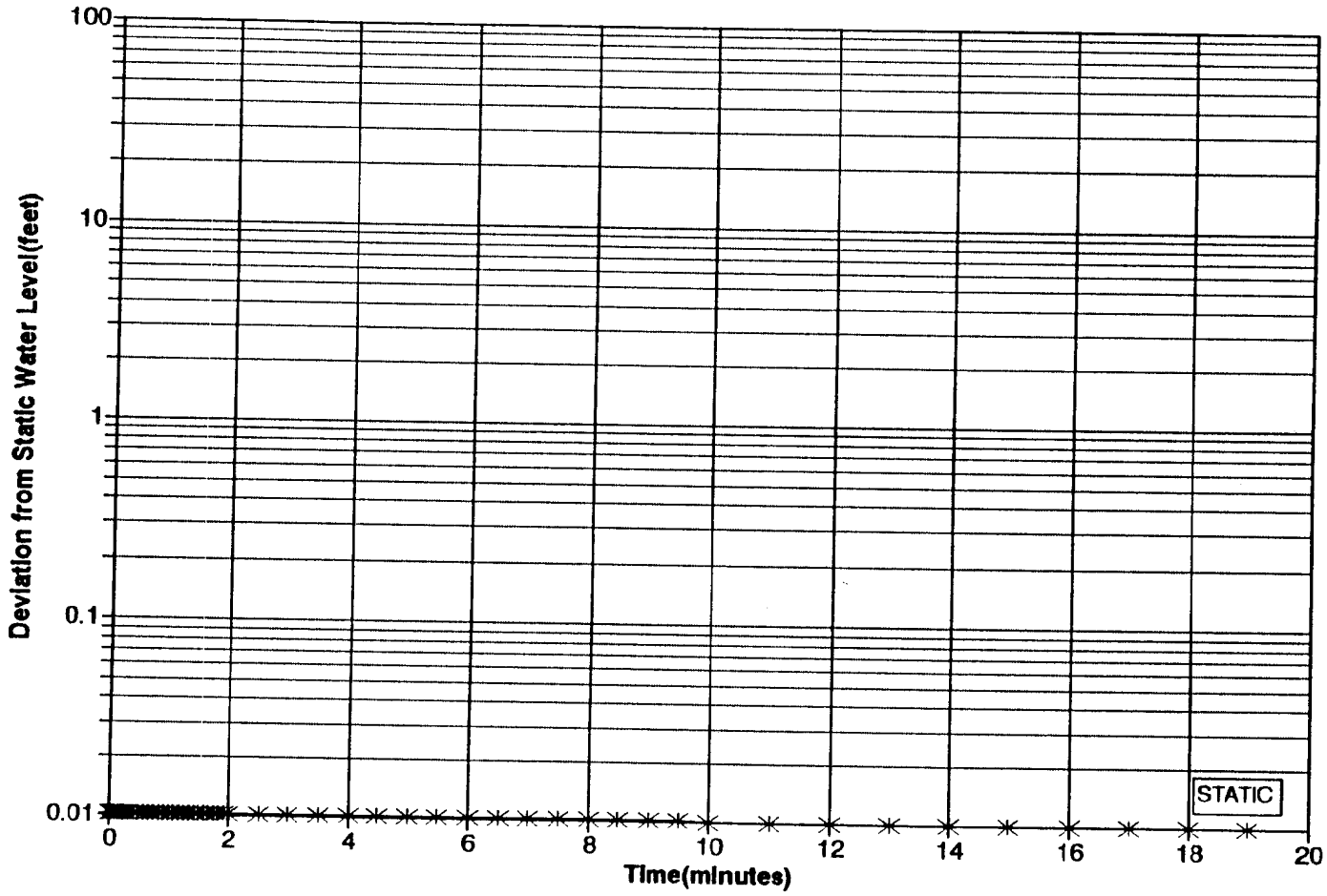
Harding Lawson Associates
Engineering and Environmental Services

SB-17 PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H15**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	THL	2/92		

McKESSON-SANTA FE SPRINGS
SB-17 RECOVERY (AFTER PUMPING SB-17B)



MCK0002927

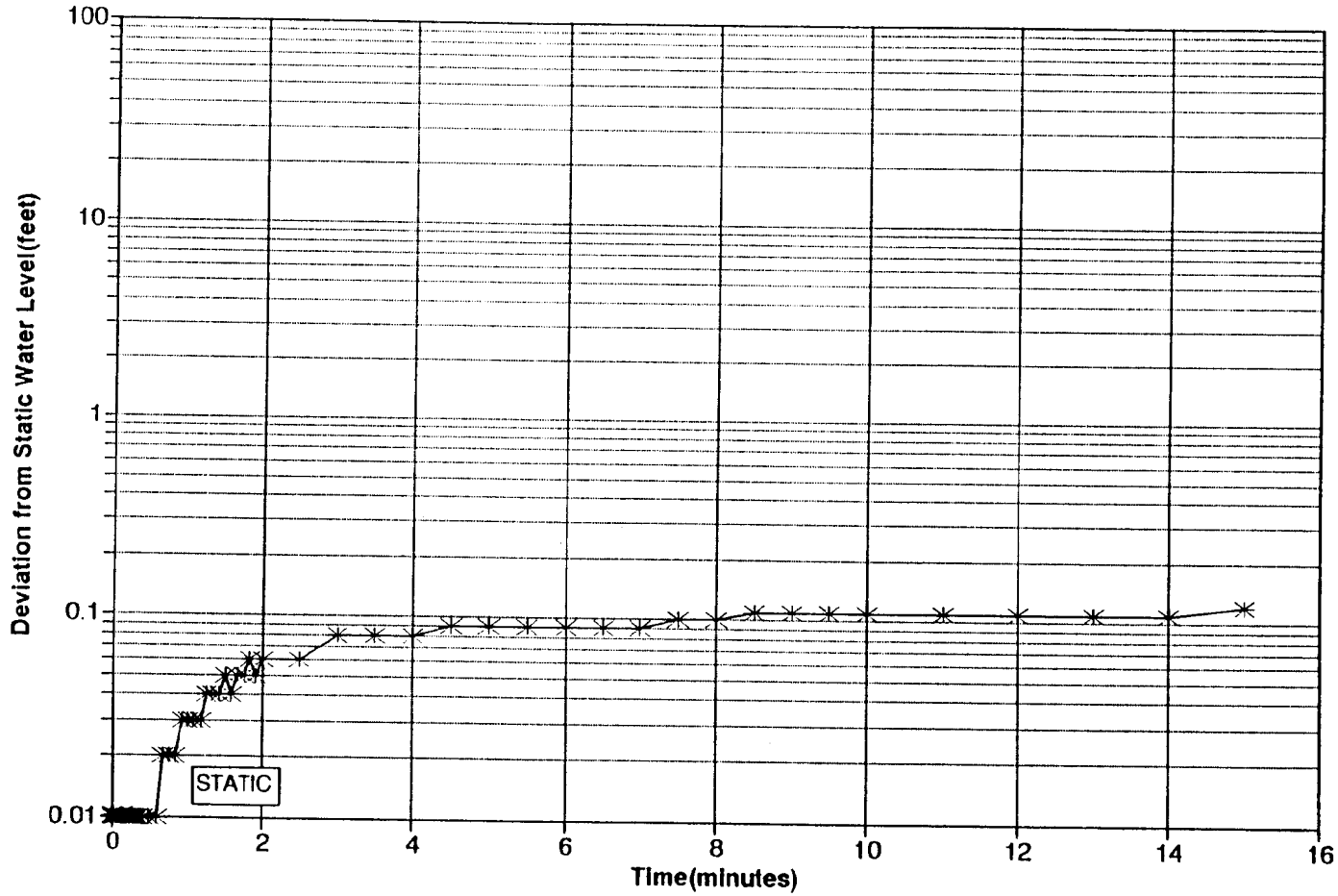
Harding Lawson Associates
Engineering and Environmental Services

SB-17 PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE
H16

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	2/92		

McKESSON-SANTA FE SPRINGS
SB-17A PUMP OUT (PUMPING SB-17B)



MCK0002928

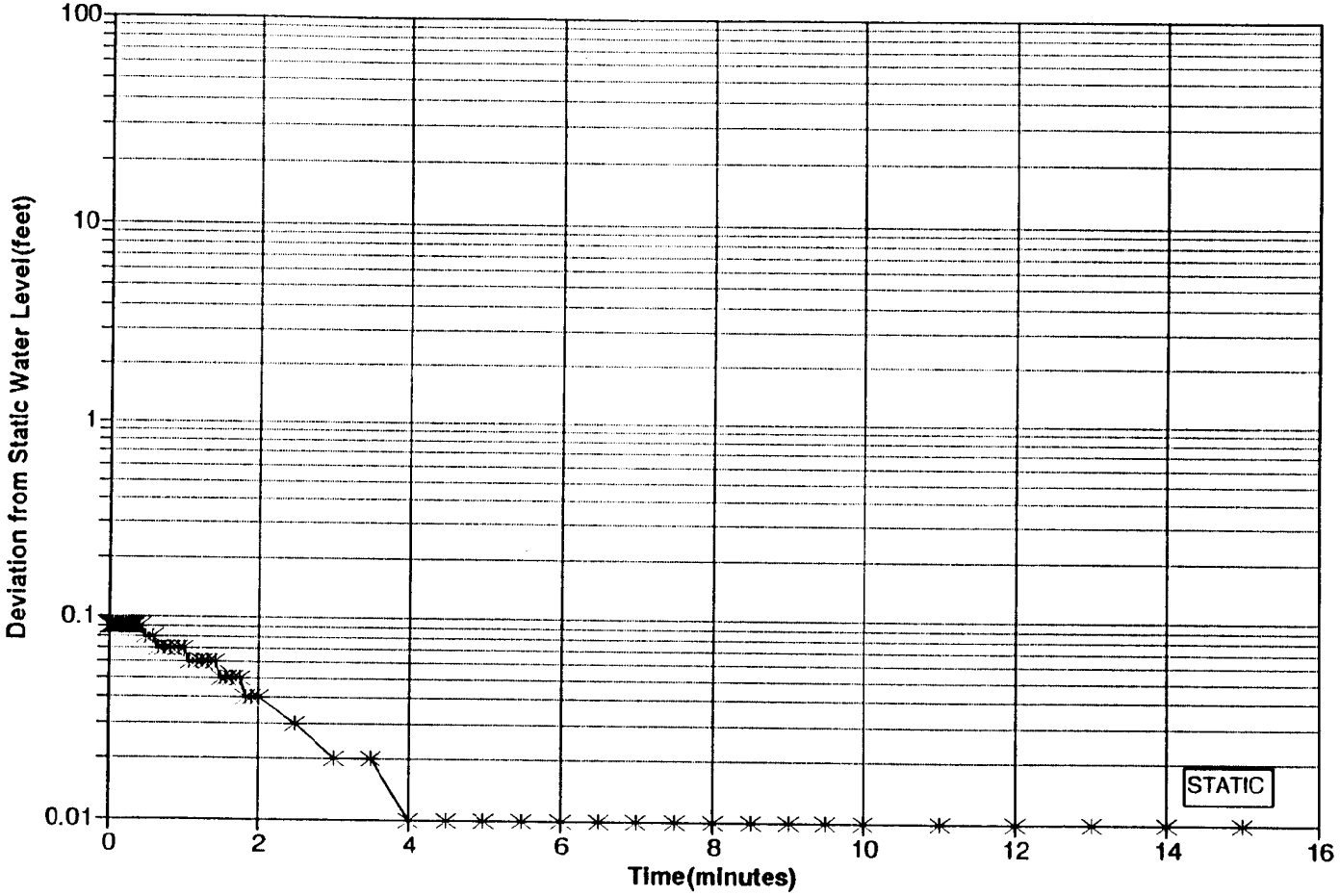
Harding Lawson Associates
Engineering and Environmental Services

SB-17A PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H17**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JIL	17333,168.11	THC	2/92		

McKESSON-SANTA FE SPRINGS
SB-17A RECOVERY (AFTER PUMPING SB-17B)



Harding Lawson Associates
Engineering and Environmental Services

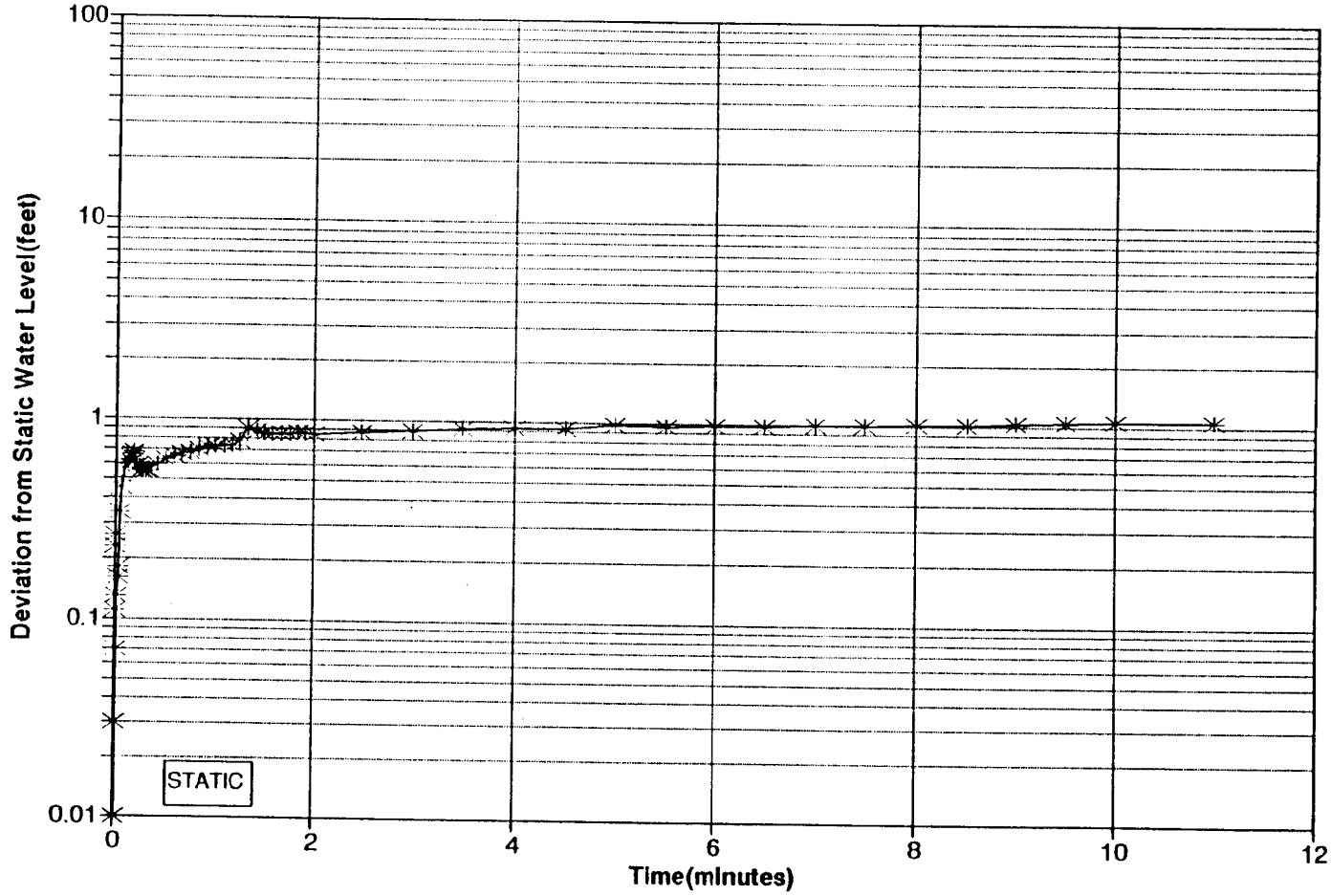
SB-17A PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H18**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TMC	2/92		

MCK0002929

McKESSON-SANTA FE SPRINGS
SB-23 PUMP OUT(PUMPING)



Harding Lawson Associates
Engineering and Environmental Services

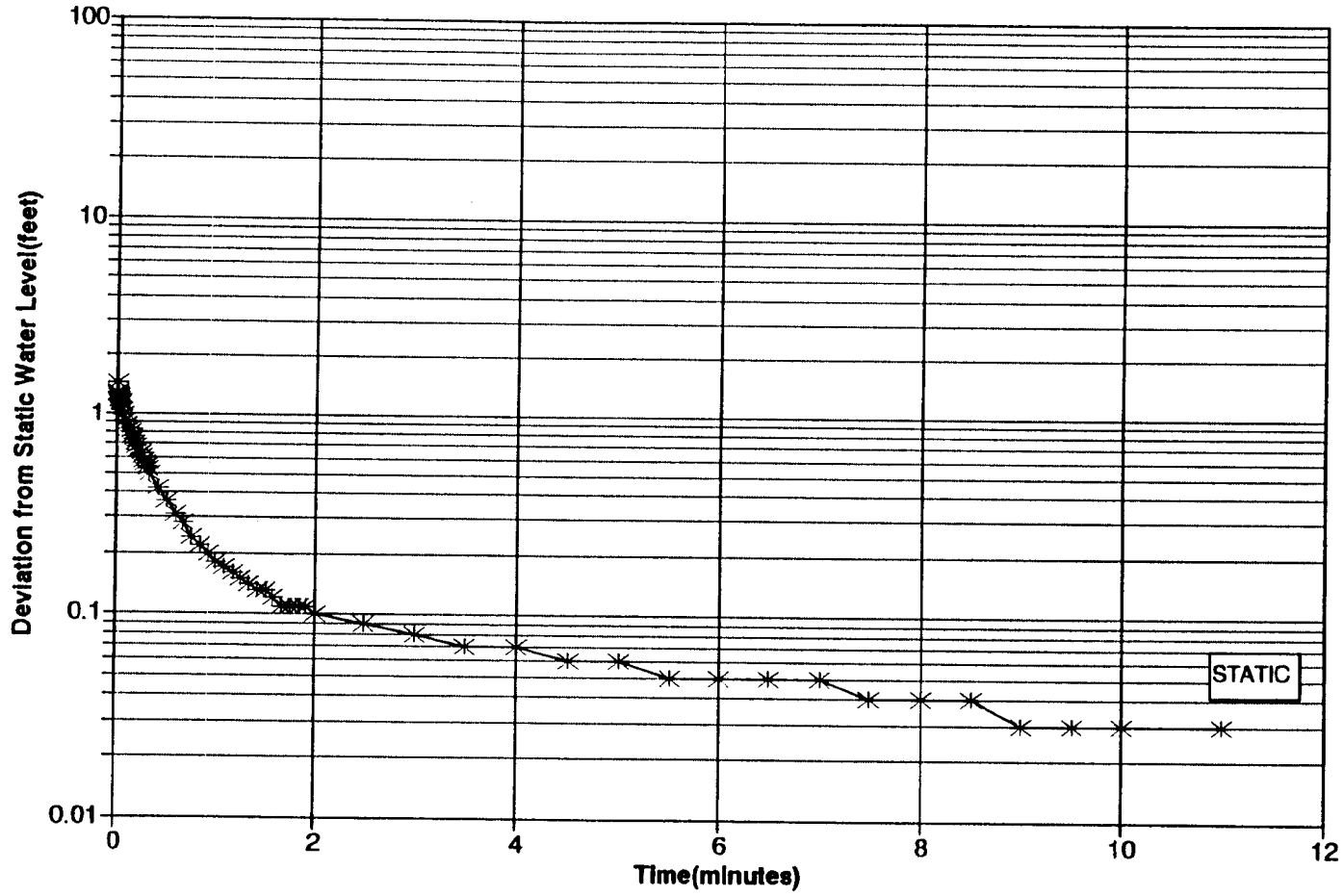
SB-23 PUMP OUT TEST
PUMPING WELL HYDROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H19**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	THK	2/92		

MCK0002930

McKESSON-SANTA FE SPRINGS
SB-23 RECOVERY(AFTER PUMPING)



MCK0002931

Harding Lawson Associates
Engineering and Environmental Services

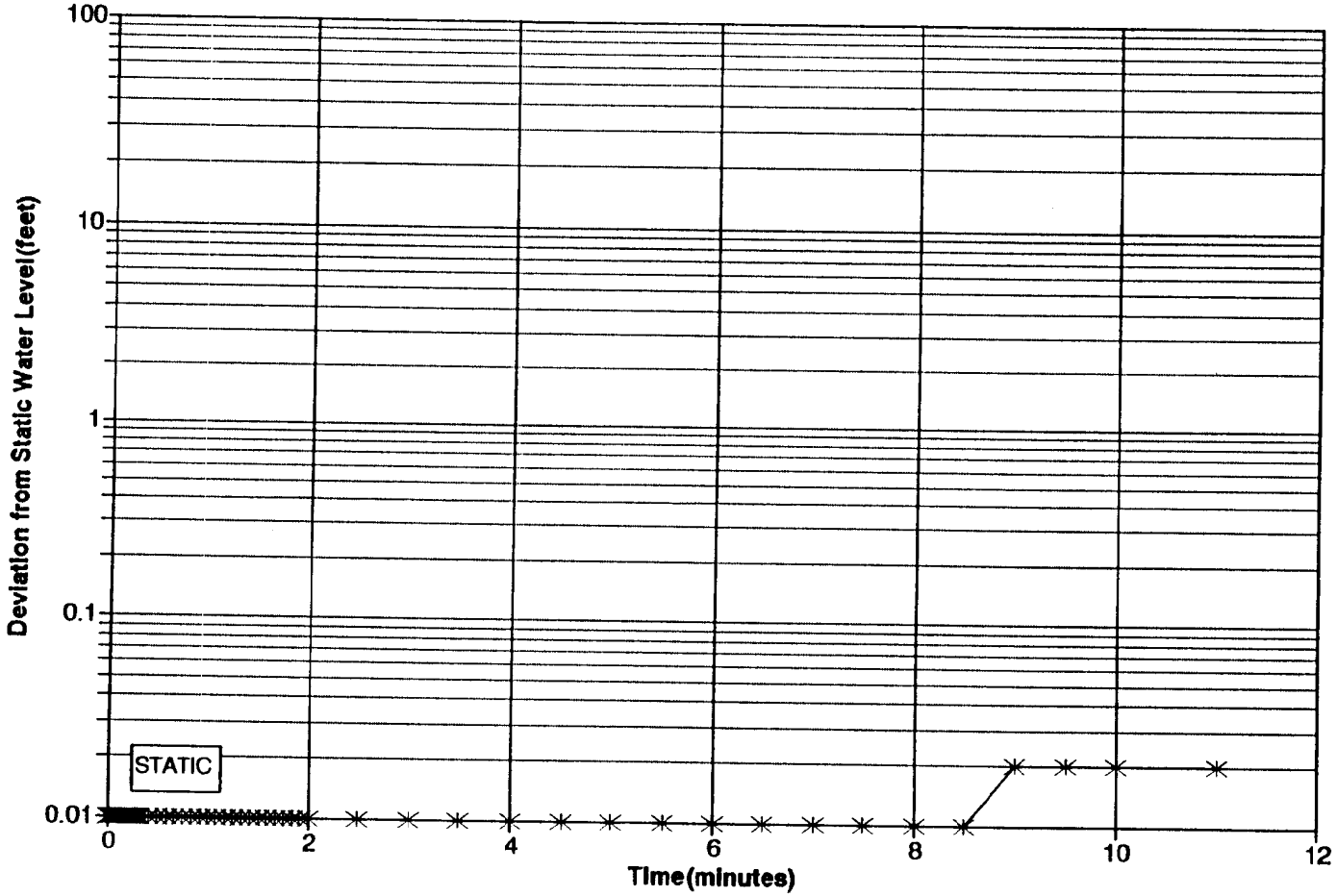
SB-23 PUMP OUT TEST
PUMPING WELL HYDROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H20**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TML	2/92		

HDT\17333168\PUMP

McKESSON-SANTA FE SPRINGS
SB-23A PUMP OUT(PUMPING SB-23)



MCK0002932

Harding Lawson Associates
Engineering and Environmental Services

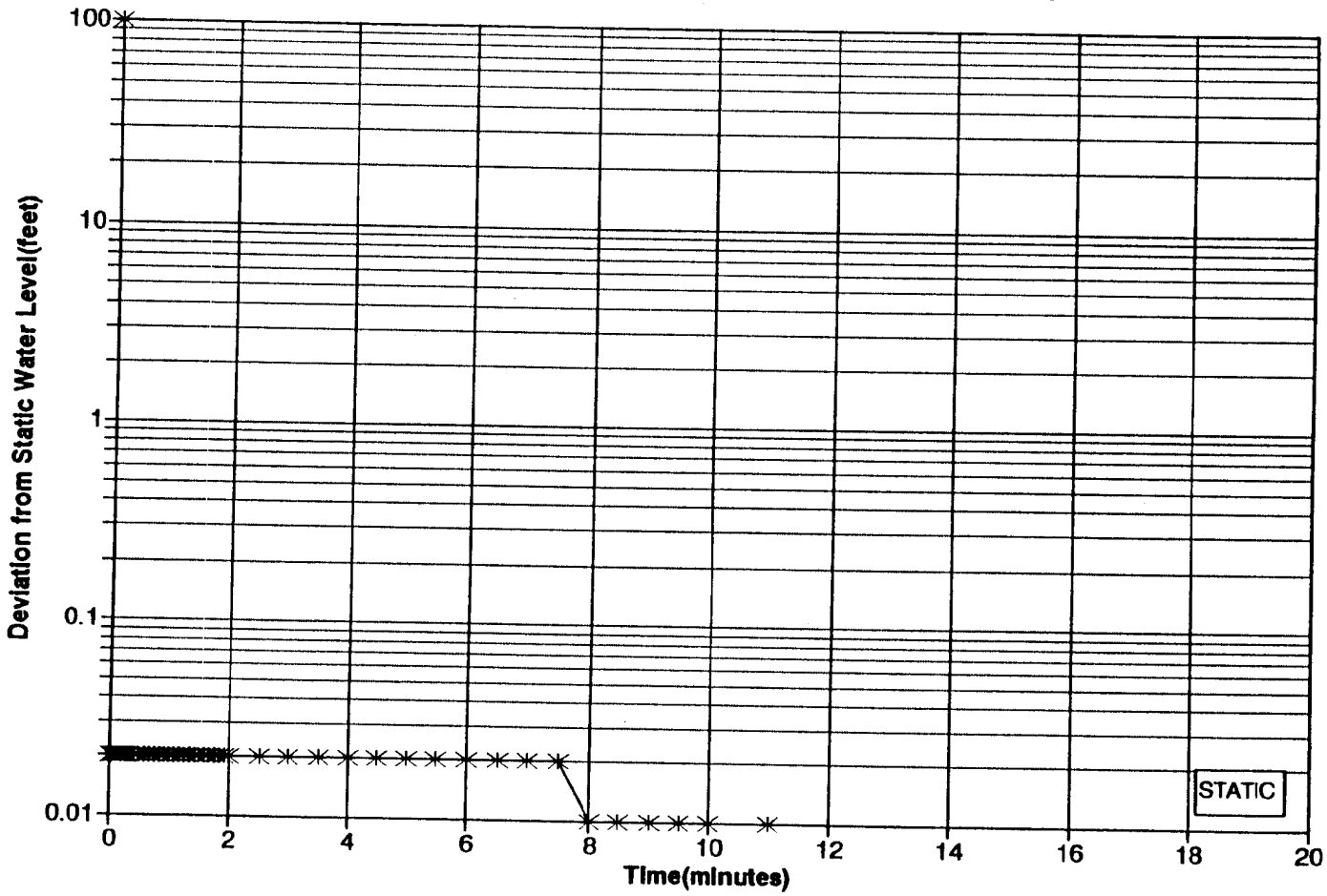
SB-23A PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H21**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	2/92		

HDT\17333168\PUMP

McKESSON-SANTA FE SPRINGS
SB-23A RECOVERY(AFTER PUMPING SB-23)



MCK0002933

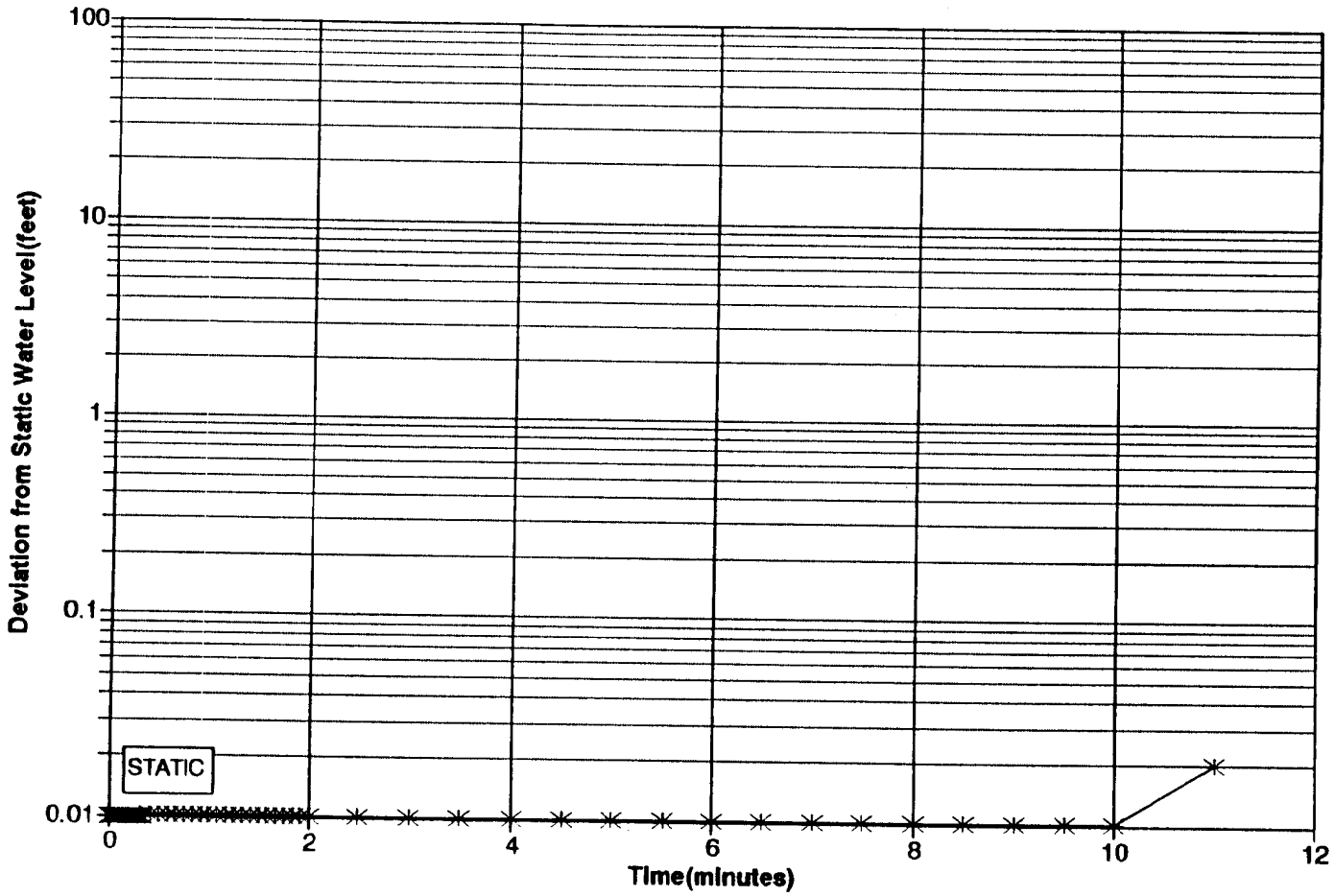
Harding Lawson Associates
Engineering and Environmental Services

SB-23A PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H22**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	2/92		

McKESSON-SANTA FE SPRINGS
SB-23B PUMP OUT(PUMPING SB-23)



MCK0002934

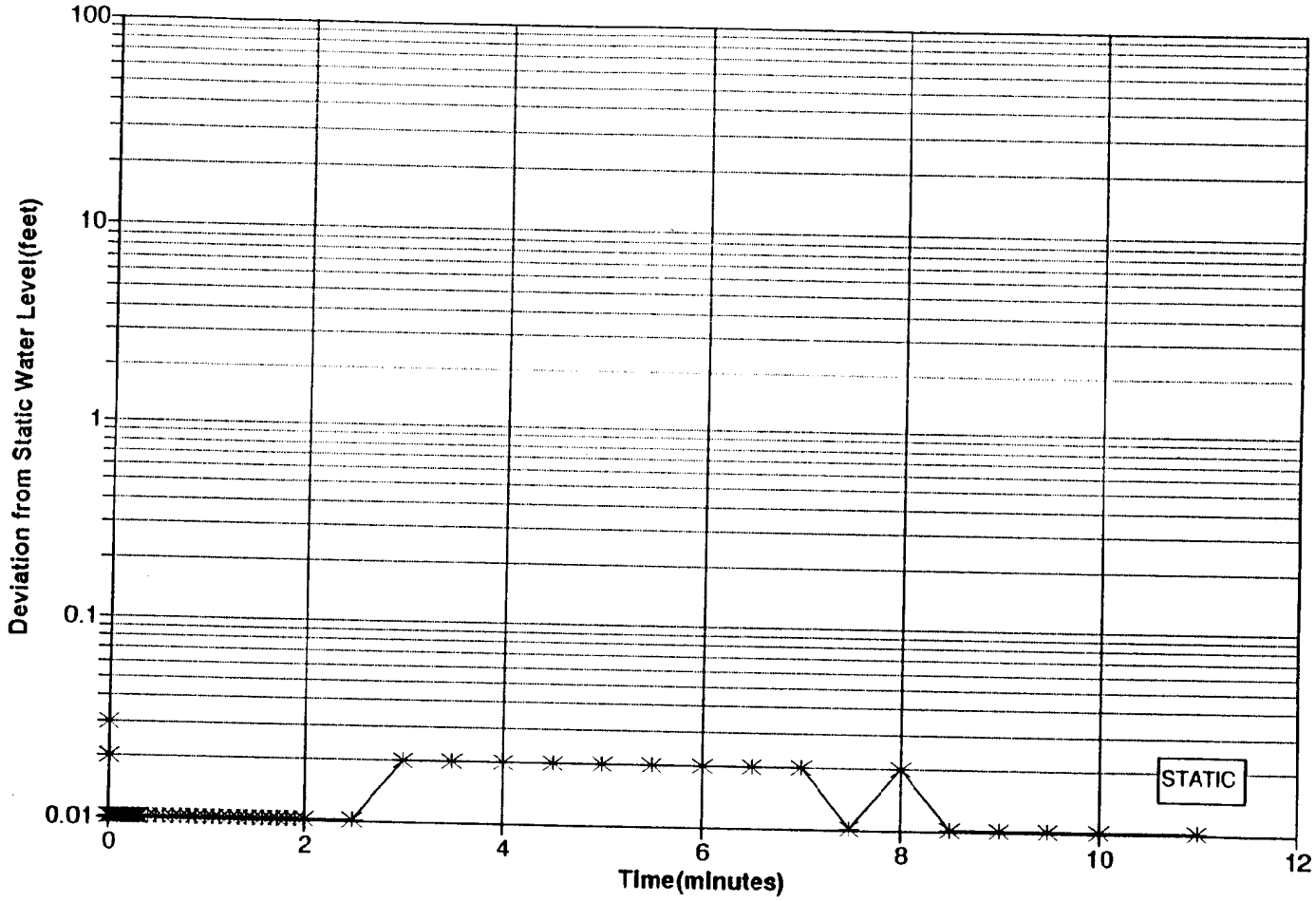
Harding Lawson Associates
Engineering and Environmental Services

SB-23B PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H23**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	THK	2/92		

McKESSON-SANTA FE SPRINGS
SB-23B RECOVERY(AFTER PUMPING SB-23)



MCK0002935

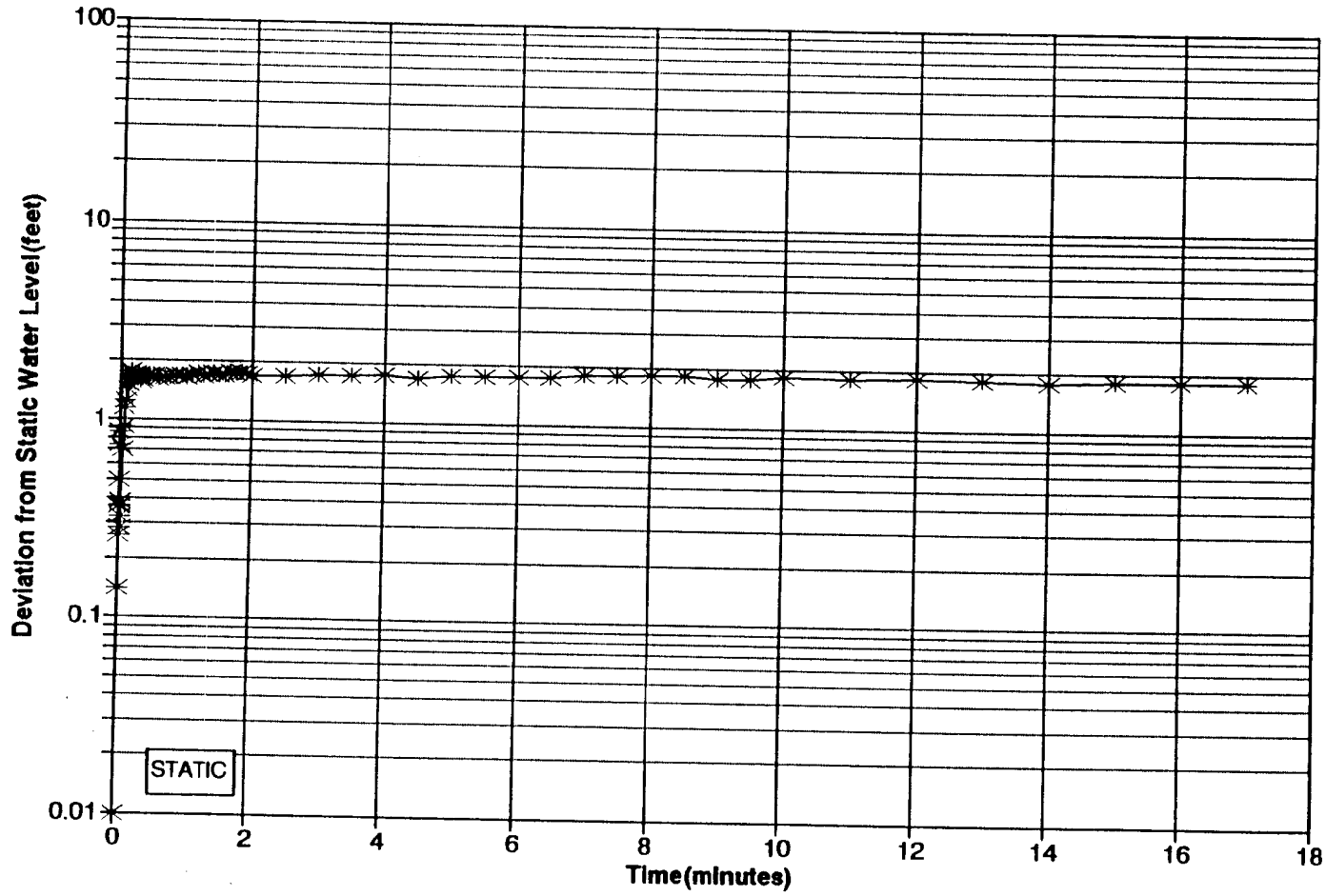
Harding Lawson Associates
Engineering and Environmental Services

SB-23B PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE
H24

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	MK	2/92		

McKESSON-SANTA FE SPRINGS
SB-23A PUMP OUT (PUMPING)



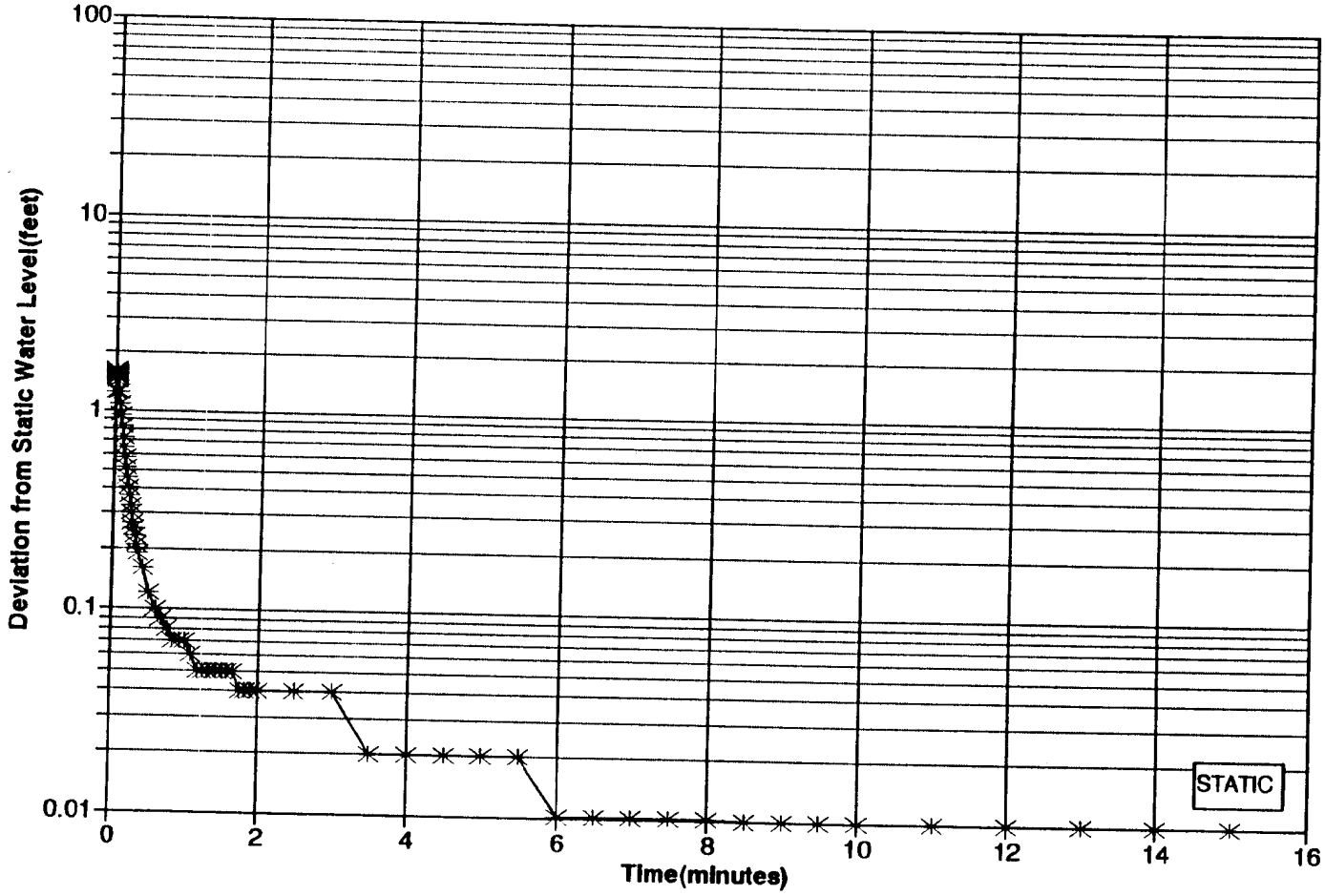
Harding Lawson Associates
Engineering and Environmental Services

SB-23A PUMP OUT TEST
PUMPING WELL HYDROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H25**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TMK	2/92		

McKESSON-SANTA FE SPRINGS
SB-23A RECOVERY (AFTER PUMPING)



MCK0002937

Harding Lawson Associates
Engineering and Environmental Services

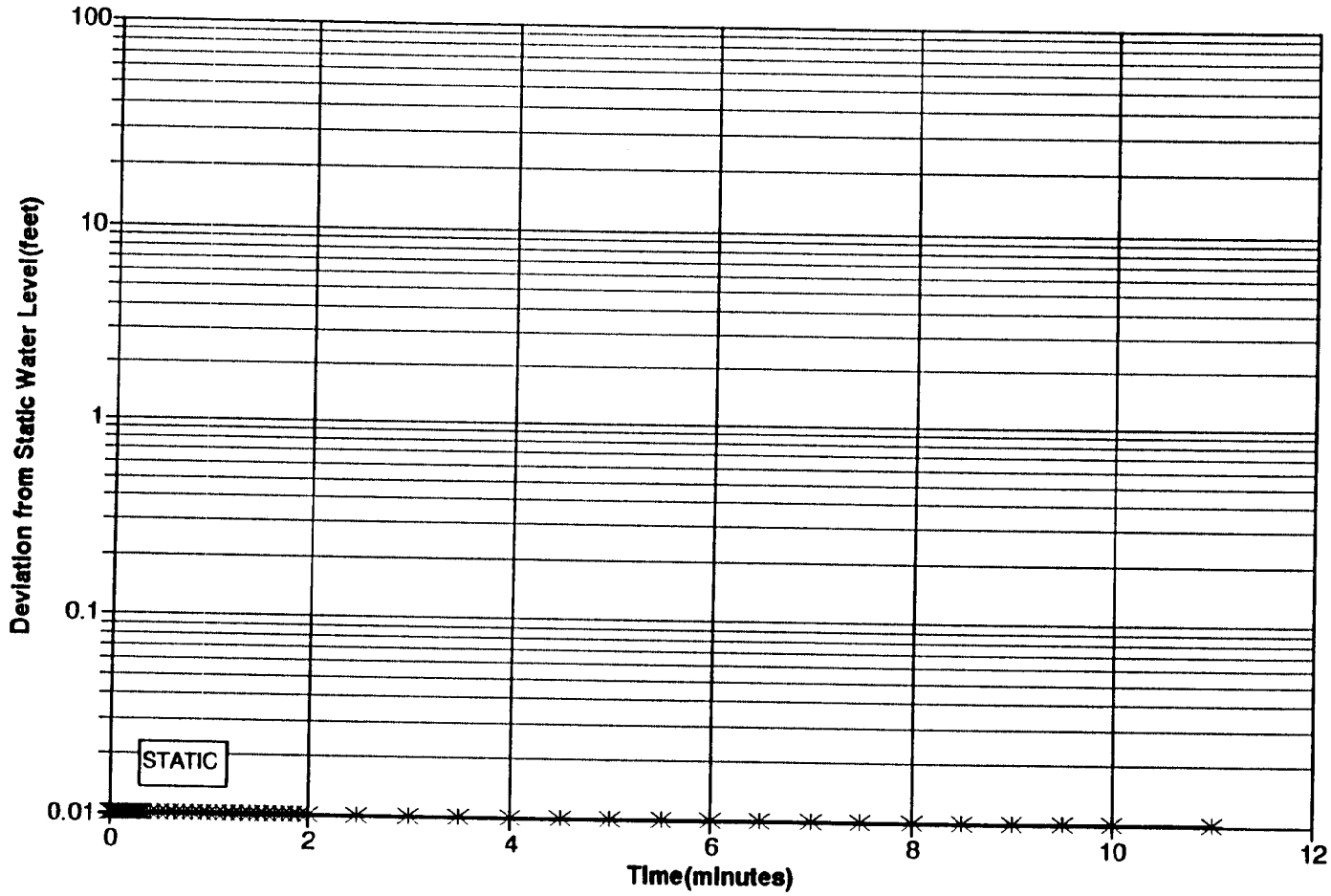
SB-23A PUMP OUT TEST
PUMPING WELL HYDROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H26**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	MK	2/92		

HDT\17333168\PUMP

McKESSON-SANTA FE SPRINGS
SB-23 PUMP OUT(PUMPING SB-23A)



MCK0002938

Harding Lawson Associates
Engineering and Environmental Services

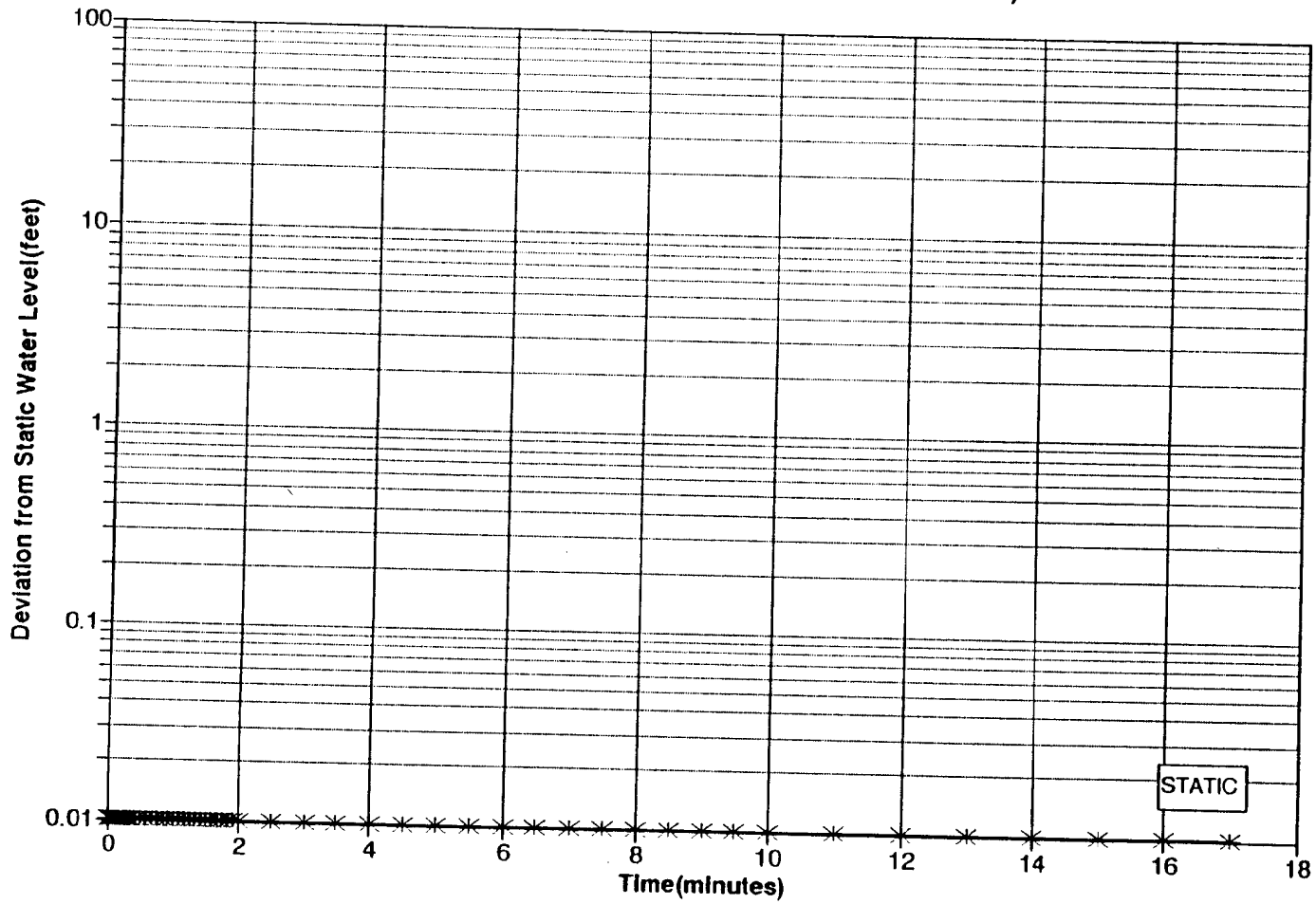
SB-23 PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H27**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	2/92		

HDT\17333168\PUMP

McKESSON-SANTA FE SPRINGS
SB-23 RECOVERY (AFTER PUMPING SB-23A)



MCK0002939

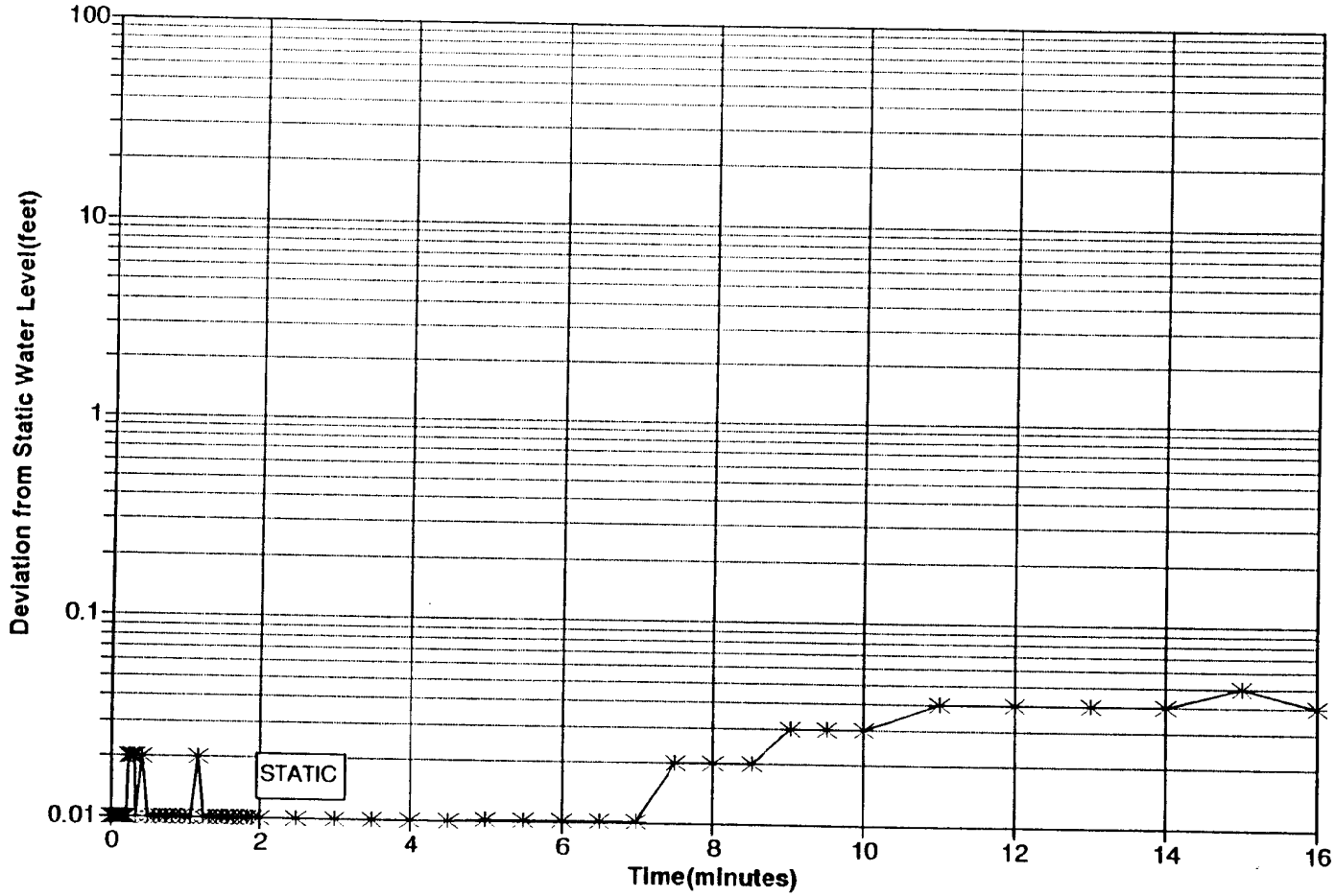
Harding Lawson Associates
Engineering and Environmental Services

SB-23 PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H28**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	THK	2/92		

McKESSON-SANTA FE SPRINGS
SB-23B PUMP OUT(PUMPING SB-23A)



MCK0002940

Harding Lawson Associates
Engineering and Environmental Services

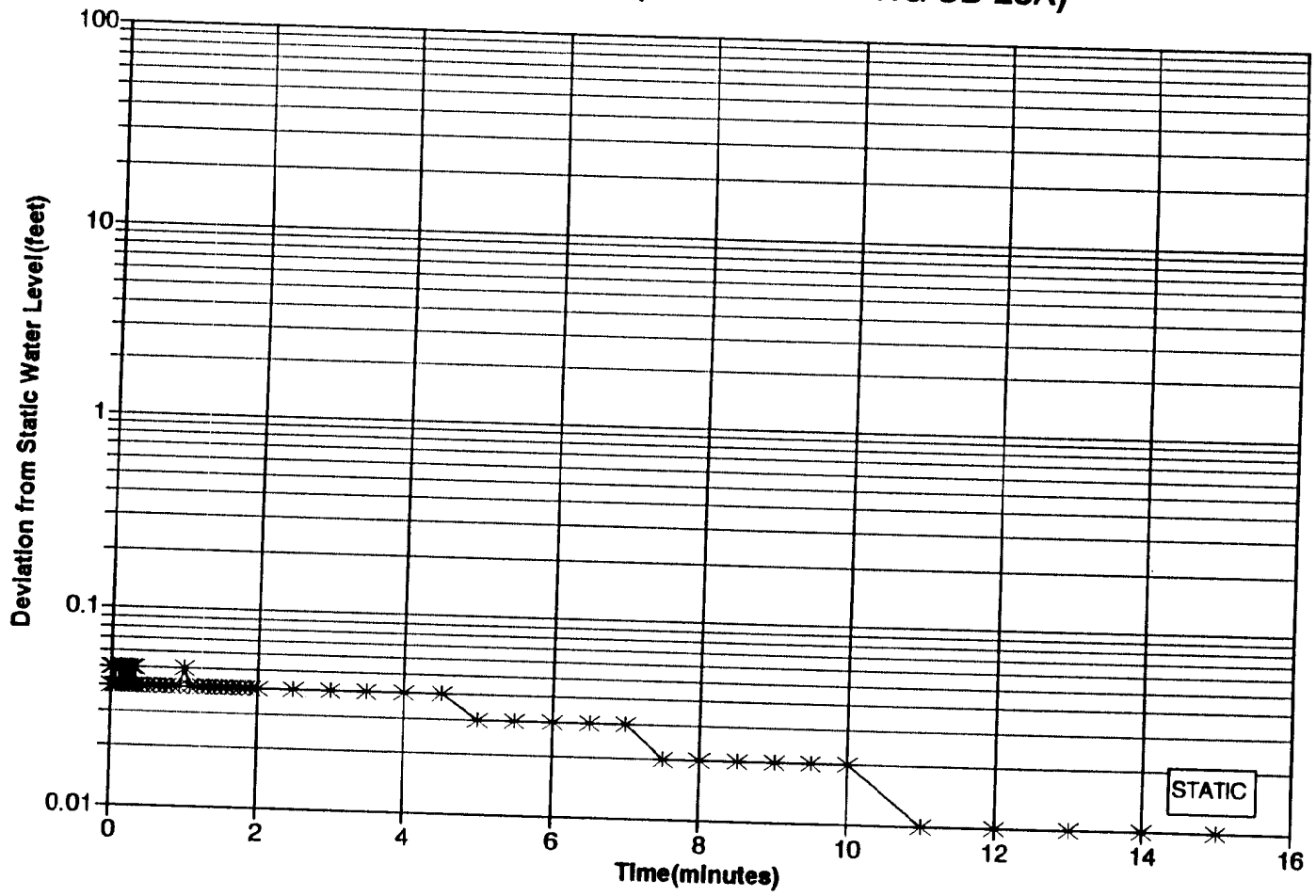
SB-23B PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H29**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	2/92		

HDT\17333168\PUMP

McKESSON-SANTA FE SPRINGS
SB-23B RECOVERY(AFTER PUMPING SB-23A)



MCK0002941

Harding Lawson Associates
Engineering and Environmental Services

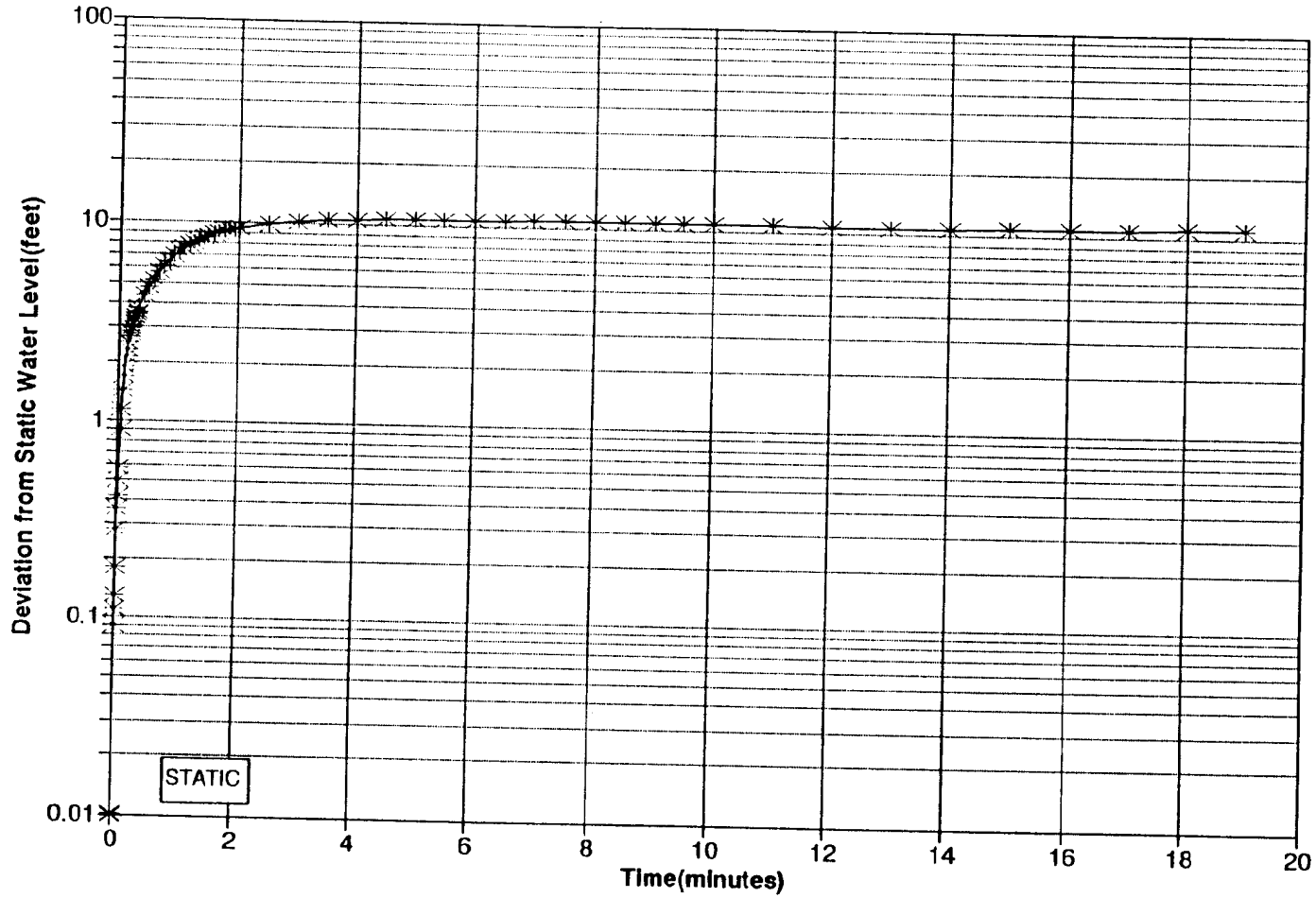
SB-23B PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE
H30

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TMK	2/92		

HDT\17333168\PUMP

McKESSON-SANTA FE SPRINGS
SB-23B PUMP OUT(PUMPING)



MCK0002942

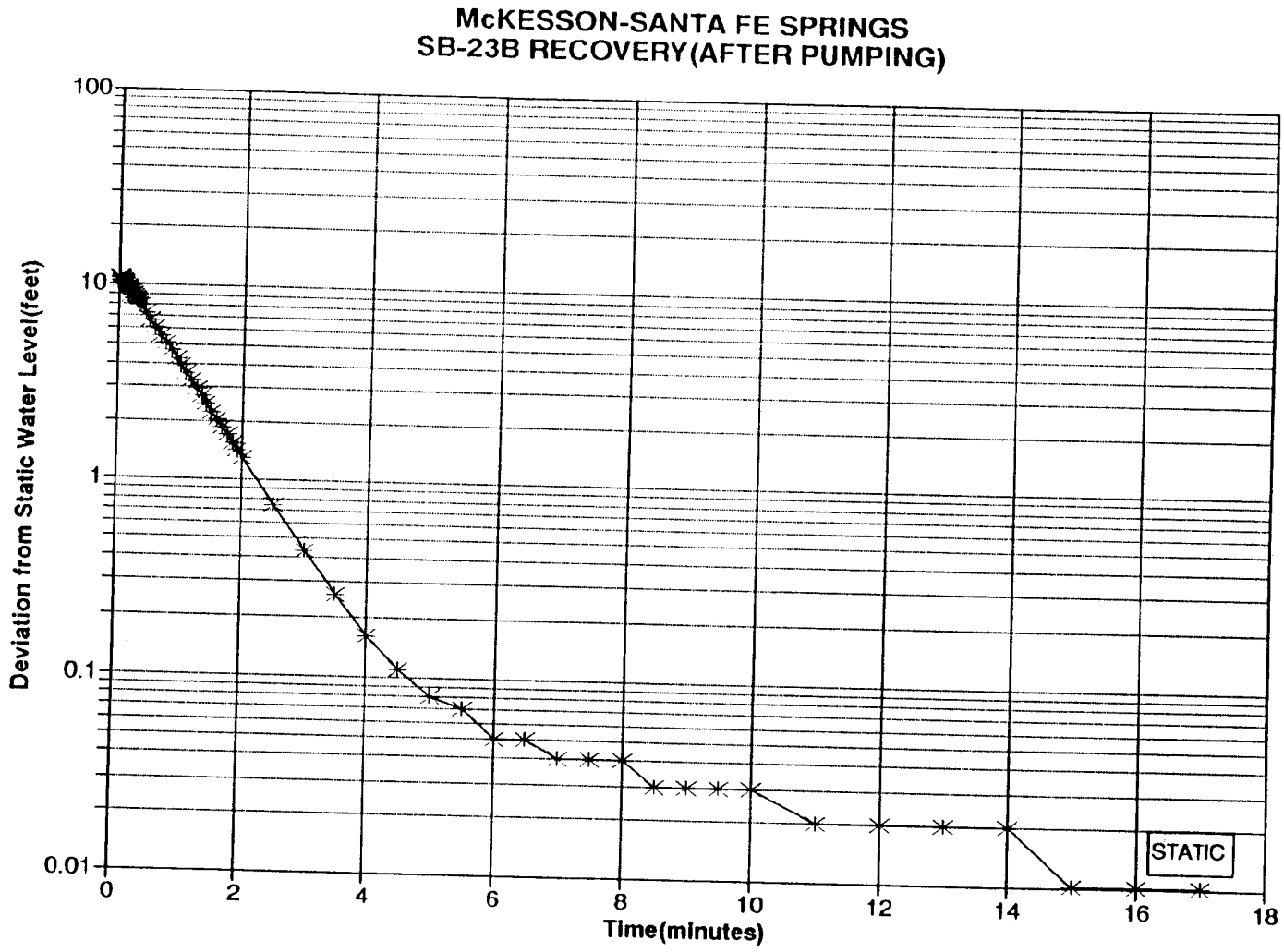
Harding Lawson Associates
Engineering and Environmental Services

SB-23B PUMP OUT TEST
PUMPING WELL HYDROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H31**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	2/92		

HDT\17333168\PUMP



MCK0002943

Harding Lawson Associates
Engineering and Environmental Services

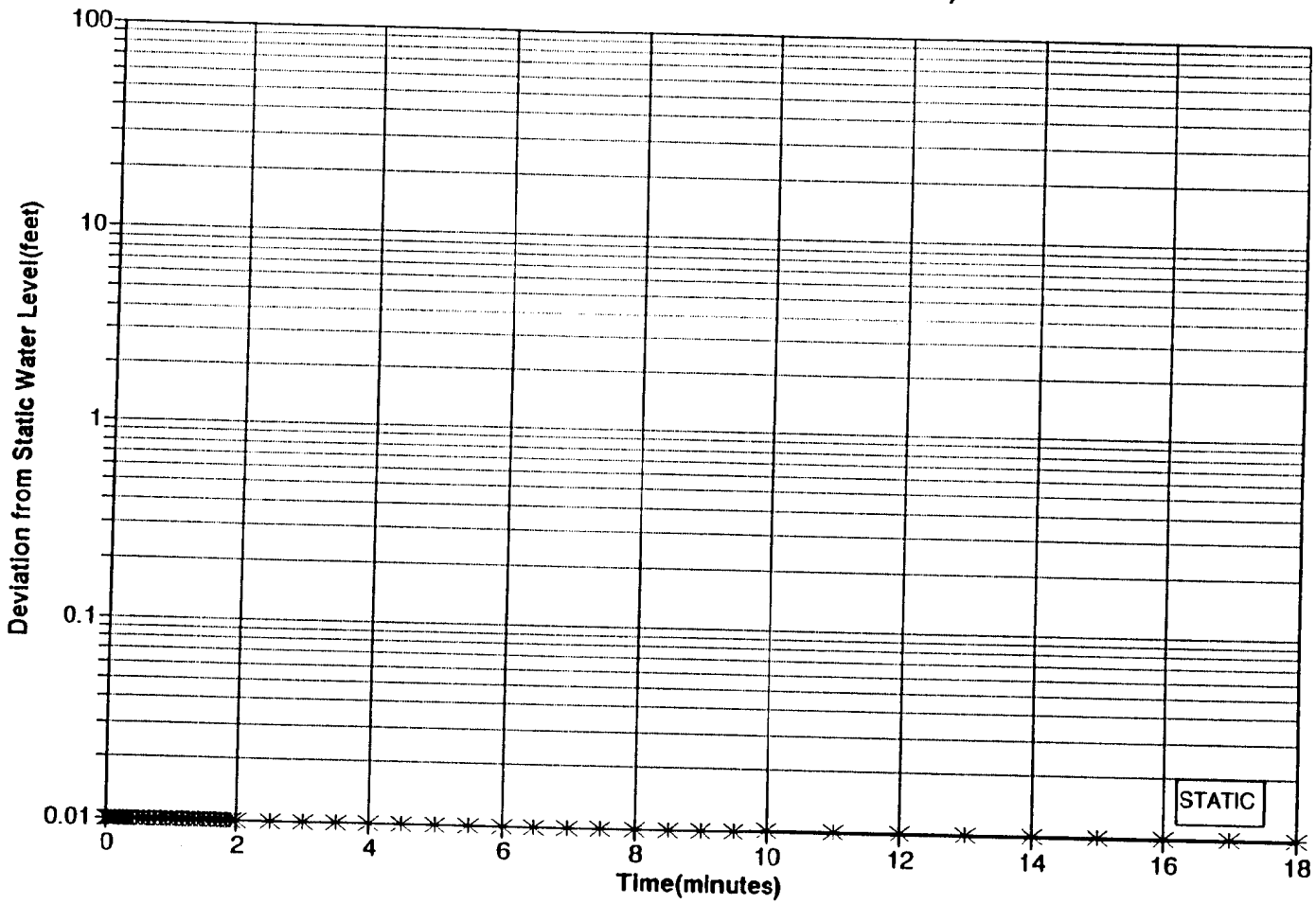
SB-23B PUMP OUT TEST
PUMPING WELL HYDROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H32**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	2/92		

HDT\17333168\PUMP

McKESSON-SANTA FE SPRINGS
SB-23 PUMP OUT (PUMPING SB-23B)



MCK0002944

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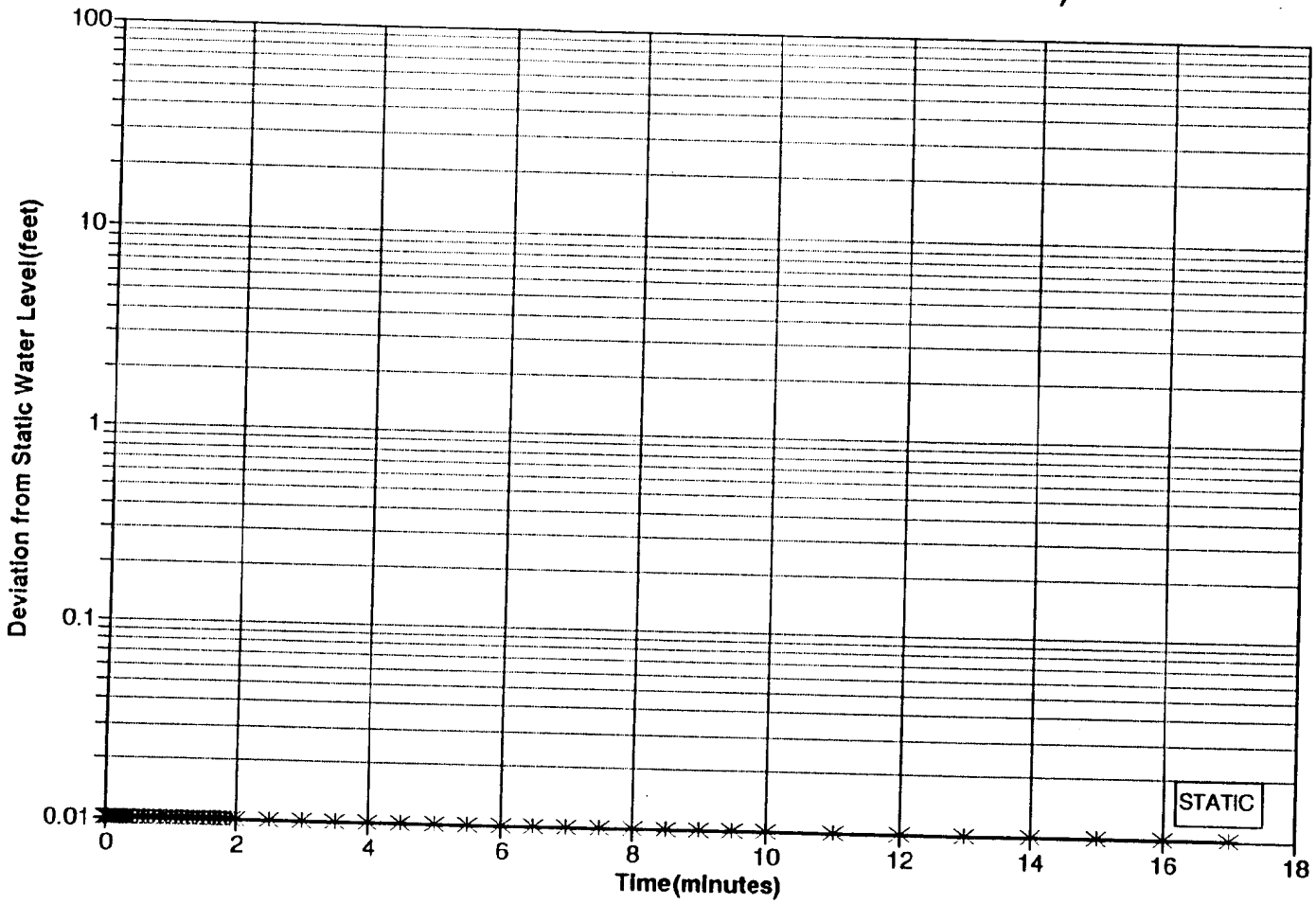
SB-23 PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H33**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	THK	2/92		

McKESSON-SANTA FE SPRINGS
SB-23 RECOVERY (AFTER PUMPING SB-23B)



Harding Lawson Associates
Engineering and Environmental Services

SB-23 PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

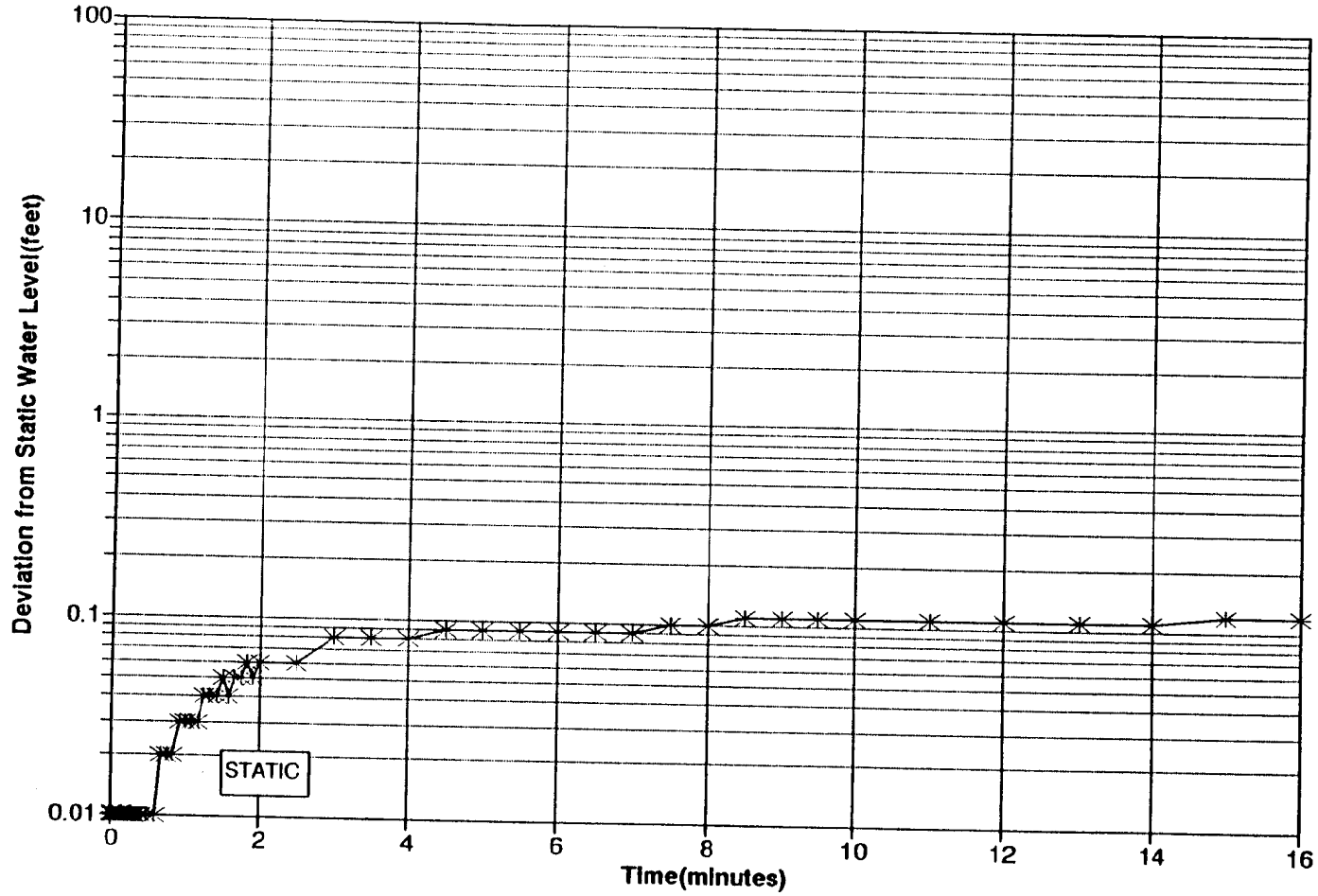
PLATE **H34**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	THC	2/92		

MCK0002945

HDT\17333168\PUMP

McKESSON-SANTA FE SPRINGS
SB-23A PUMP OUT(PUMPING SB-23B)



MCK0002946

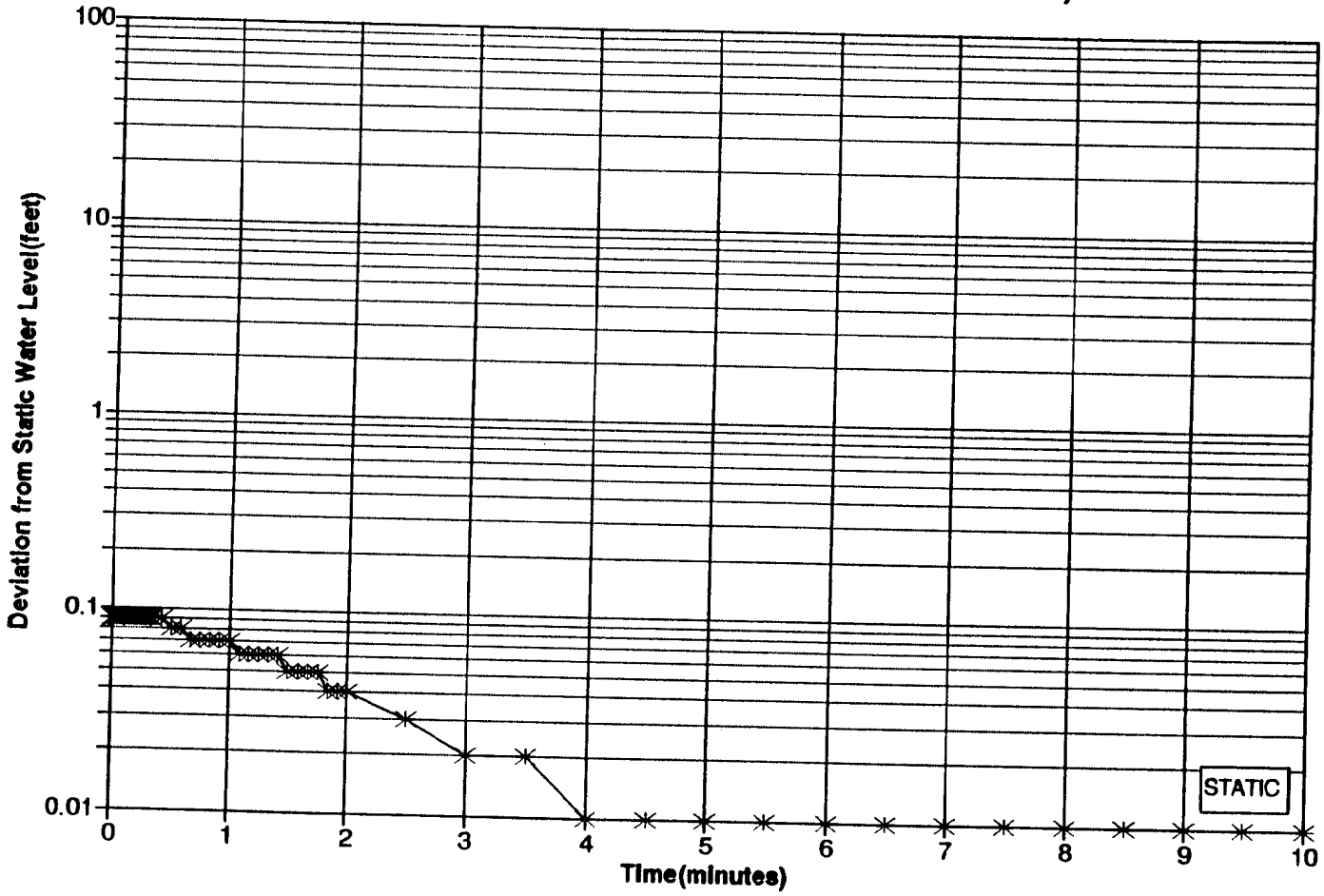
Harding Lawson Associates
Engineering and Environmental Services

SB-23A PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H35**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	TAK	2/92		

McKESSON-SANTA FE SPRINGS
SB-23A RECOVERY(AFTER PUMPING SB-23B)



MCK0002947

Harding Lawson Associates
Engineering and Environmental Services

SB-23A PUMP OUT TEST
OBSERVATION WELL HDYROGRAPH
McKesson Corporation Property
Santa Fe Springs, California

PLATE **H36**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JTL	17333,168.11	MK	2/92		

Table H1. Summary of Slug Test Data - Slug in

	Time From Start of Test (Minutes)	MW-1 *Change In Water Level (feet)	MW-2 *Change In Water Level (feet)	MW-3 *Change In Water Level (feet)	MW-32 *Change In Water Level (feet)
Static Water Level		47.95	44.92	48.62	33.46
Date/Time		8-16-90/09:30	8-16-90/10:50	8-15-90/11:41	8-16-90/16:00
	0	0.01	0.01	0	0.7
	0.0033	0.01	0	0.01	0.7
	0.0066	0.01	0	1.86	0.69
	0.0099	0.01	0	1.88	0.69
	0.0133	0.01	0	0.98	0.7
	0.0166	0.01	0.01	1.17	0.69
	0.02	0.01	0	1.42	0.7
	0.0233	0.01	0.01	1.83	0.69
	0.0266	0.01	0.01	2.18	0.7
	0.03	1.13	0	1.38	0.7
	0.0333	1.04	0.01	0.53	0.69
	0.05	1.75	0.01	1.14	0.7
	0.0666	1.44	0.09	3.09	0.69
	0.0833	1.35	0.09	1.36	0.69
	0.1	0.51	0.09	1.39	0.69
	0.1166	0.76	0.07	0.72	0.69
	0.1333	0.63	0.09	0.5	0.01
	0.15	0.52	0.09	0.25	0.19
	0.1666	0.42	0.09	0.08	0.82
	0.1833	0.34	0.09	0.01	1.91
	0.2	0.28	0.09	0.03	0.01
	0.2166	0.23	0.09	0.04	0.16
	0.2333	0.19	0.09	0.04	0.19
	0.25	0.16	0.09	0.04	0.23
	0.2666	0.13	0.09	0.04	0.23
	0.2833	0.11	0.09	0.04	0.23
	0.3	0.09	0.09	0.04	0.22
	0.3166	0.08	0.09	0.04	0.22
	0.3333	0.07	0.09	0.04	0.22
	0.4167	0.04	0.09	0.03	0.22
	0.5	0.03	0.09	0.02	0.22
	0.5833	0.02	0.08	0.02	0.21
	0.6667	0.01	0.05	0.02	0.21
	0.75	0.01	0.03	0.01	0.21
	0.8333	0	0.01	0.01	0.21
	0.9167	0	0.01	0.01	0.2
	1	0	0.01	0.02	0.21

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* Water level deviation from static as measured with a Hermit Data Logger.
ND indicates no data available.

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Civil Engineer - 22026

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