



Leaking Petroleum Storage Tank

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October 31, 1997

Mr. Jay Harbin
TNRCC, PST Division
RPR Section, MC 137
P.O. Box 13087
Austin, Texas 78711-3087

Re: Additional Assessment with Workplans and Preapproval Forms for the Stroehrer
and Son, Inc. Bulk Terminal,
119 E. Park Street, Fredericksburg, Texas 78624
LPST ID. No.: 112204

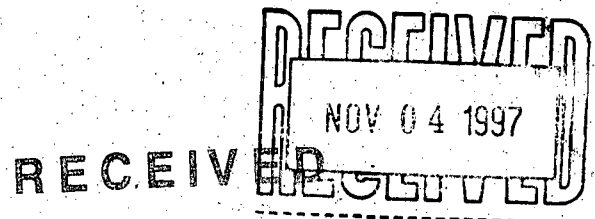
Dear Mr. Harbin:

Enclosed please find the Additional Assessment Report with Workplan and signed
Preapproval Forms for the above referenced site.

If you have any questions please do not hesitate to call me at (512)282-5997.

Sincerely,

Robert Bartels CAPM# 00201
Project Manager/Hydrogeologist
Enviro Source, Inc. RCAS# 00520



OCT 31 1997

TNRCC / PST
RPR

WST LPST/ REPORTS 10/31/1997

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**Additional Assessment Activities Report
for the
Stroher and Son Inc. Bulk Terminal
119 E. Park Street
Fredericksburg (Gillespie County), Texas**

October 27, 1997

LPST ID. No. 112204

Prepared for:

Mr. Roy Stroher
Stroher and Son, Inc.
509 S. Adams Street
Fredericksburg, Texas 78624

RECEIVED

OCT 31 1997

TNRCC / PS
RPR

Prepared by:

Mr. Robert Bartels CAPM# 00201
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Report Summary

Additional assessment activities were performed at the Stroeher and Son, Inc. Bulk Terminal on 119 E. Park Street, Texas on October 13-14, 1997. Groundwater samples were collected on October 14, 1997. The assessment activities consisted of drilling and sampling four(4) soil borings converted into four(4) monitor wells to assess the subsurface soils and groundwater offsite.

Seven(7) soil samples were collected during the drilling activities. All samples were analyzed for BTEX and TPH.

Soil samples collected from Boring B-9, sample S-1 from Boring B-10 and sample S-2 from B-12 analyzed below detectable limits for BTEX and TPH. Sample S-2(15.0-17.0') and sample S-3(20.0-22.0') from B-11 and sample S-1(13.5-15.5') from B-12 contained detectable concentrations of BTEX. The benzene concentrations ranged from 26.0 ug/kg to 12,000 ug/kg, toluene concentrations ranged from <10.0 ug/kg to 17,000 ug/kg, ethylbenzene concentrations ranged from 13.0 ug/kg to 19,000 ug/kg and xylene concentrations ranged from 33.0 to 66,000 ug/kg. All samples analyzed below corrective action levels for TPH except S-1(13.5-15.5') from Boring B-12 with 134 ug/g. Only the benzene concentrations in S-2(15.0-17.0') from B-11 and S-1(13.5-15.5') from B-12 were above the corrective action levels for a Category I site with 12,000 ug/kg and 7,700 ug/kg respectively.

Groundwater samples collected from Monitor Well MW-9 analyzed below the detectable limits for BTEX and TPH. Monitor Wells MW-10 through MW-12 contained detectable concentrations of BTEX and TPH. Benzene concentrations ranged from 1,600 ug/L to 14,000 ug/L, toluene concentrations ranged from 29.0 ug/L to 12,000 ug/L, ethylbenzene concentrations ranged from 1,000 ug/L to 5,200 ug/L and the xylene concentrations ranged from 690 ug/L to 21,000 ug/L. The TPH concentrations ranged from <1.0 mg/L to 28.0 mg/L. BTEX and TPH concentrations analyzed in samples collected from the newly installed offsite wells were above the corrective action levels for a Category I site.

During the vapor assessment, the measurements of the hydrocarbon vapors below the sewer manhole cover were 85% LEL and 0% oxygen. The calculated vapor values for the soil samples collected from Borings B-11 and B-12 showed benzene and xylene levels above the corrective action levels.

Since the BTEX and TPH concentrations in the groundwater from Monitor Wells MW-10(northwest laterally), MW-11 and MW-12(farthest down-gradient wells) were above the corrective action levels for a Category I site, it is recommended that up to two additional monitor wells be installed down-gradient and one installed laterally to further delineate the dissolved phase hydrocarbon plume. A Plan B Risk Assessment is also recommended to further assess the impacted groundwater, soil and vapors.

Introduction

Additional assessment activities were performed at the Stroehrer and Son , Inc. Bulk Terminal facility at 119 East Park Street in Fredericksburg, Texas on October 13-14, 1997 to further assess the subsurface soil and delineate the dissolved phase hydrocarbon plume in the groundwater off-site. The following report presents the findings of the assessment activities.

Subsurface Assessment

Enviro Source, Inc. and Vortex, Inc. arrived at the site on October 13, 1997 to drill and sample four off-site(4) soil borings and then install a monitor well into each of the borings to assess the soil and groundwater laterally and down-gradient of the site.

Drilling Activities

Borings B-9, B-10, B-11 and B-12 were drilled with a Mobile B-59 hollow stem auger drilling rig. Boring B-9(MW-9) was drilled approximately 120 southeast of Monitor Well MW-8 on the Bolton property to delineate the lateral edge of the dissolved phase hydrocarbon plume. The boring was drilled to a depth of 25.0 feet. Boring B-10 (MW-10) was drilled approximately 125 feet northwest of MW-7 on the Ottmer Chevron Bulk Terminal property. The boring was drilled/sampled to a depth of 22.0 feet. Boring B-11(MW-11) was drilled on the Bolton property downgradient approximately 148 feet northeast of MW-6 and Boring B-12(MW-12) was drilled further downgradient approximately 182 feet to the east. Both wells were installed to a depth of 20 feet and both were positioned to further delineate the downgradient dissolved phase hydrocarbon plume.

All the borings were continuously sampled and were logged by a qualified geologist. The samples were screened in the field with an photoionization detector(PID) to aid in sample collection. The boring logs/installation diagrams are included in the attachment section of this report.

Seven(7) soil sample were collected from Borings B-9, B-8, B-10 and B-11. All samples collected were analyzed for BTEX and TPH.

The soil cuttings from the drilling activities are containerized in 55-gallon barrels on-site.

All samples were collected using Enviro Source standard sampling protocol, included in the attachment section of this report, and were placed into clean jars with lids and placed on ice in a cooler for transport to EPIC Laboratory in Austin, Texas.

The soil sample analytical data is presented in the following table.

**Stroeher and Son Inc. Bulk Terminal
Soil Analytical Results
Samples Collected on October 13, 1997
(Additional Assessment)**

*Attachment
(5
(not cumulative))*

Sample Description	Benzene ug/Kg	Toluene ug/Kg	Ethyl Benzene ug/Kg	Xylenes ug/Kg	TPH ug/g
B-9, S-1, 16.0-18.0'	<10.0	<10.0	<10.0	<10.0	<10.0
B-9, S-2, 25.0-26.0'	<10.0	<10.0	<10.0	<10.0	<10.0
B-10, S-1, 16.0-18.0'	<10.0	<10.0	<10.0	<10.0	<10.0
B-11, S-2, 15.0-17.0'	12,000	4,800	6,900	22,000	11.0
B-11, S-3, 20.0-22.0'	26.0	<10.0	13.0	33.0	<10.0
B-12, S-1, 13.5-15.5'	7,700	17,000	19,000	66,000	134
B-12, S-2, 20.0-22.0'	<10.0	<10.0	<10.0	<30.0	<10.0

Copies of the laboratory analytical reports and chain of custody for the samples are attached. A soil contaminant concentration map is also attached.

Monitor Well Installation and Groundwater Sampling

Upon completion of the drilling activities, a monitor well was installed in Borings B-9(MW-9), B-10(MW-10), B-11(MW-11) and B-12(MW-12). Each monitor well consists of 2-inch diameter schedule 40 flush threaded PVC casing (5.0-10.0 feet) and well screen (15.0 feet). After the well screen and casing were placed into the boring, silica sand was slowly poured into the annulus and brought up to approximately 2 feet above the screened interval. Bentonite was then poured on top of the sand and brought up to a depth of approximately 2.0 feet. Concrete was then poured on top of the bentonite seal. The monitor wells were completed with a 4-foot x 4-foot concrete pad and bolted well cover.

The newly installed monitor wells were sampled by Enviro Source, Inc. personnel on October 14, 1997. Prior to sampling, the depth to water was measured using an interface probe. A well volume was calculated and approximately three to six well volumes were bailed from each monitor well using a clean polyethylene bailer. All bailed fluids were containerized in a 55-gallon barrel on-site. The well was then given time to recover and enough groundwater was collected to fill a one(1) liter amber glass bottle and two(2) VOA vials for analysis of BTEX, MTBE, and TPH. The monitor wells were sampled using Enviro Source and industry standard water sampling protocol. The groundwater samples were placed on ice and delivered to EPIC Laboratory in Austin, Texas.

The laboratory analytical results are presented in the following table.

Groundwater Analytical Results
Samples Collected on October 14, 1997

*Attachment 15
(not cumulative)*

Monitor Well	Benzene ug/L	Toluene ug/L	Ethyl Benzene ug/L	Xylenes ug/L	MTBE ug/L	TPH mg/L	TDS mg/L
MW-9	<2.0	<2.0	<2.0	<2.0	<5.0	<1.0	NA
MW-10	<u>1,600</u>	29.0	<u>1,000</u>	690	748	<1.0	NA
MW-11	<u>14,000</u>	<u>3,400</u>	<u>2,500</u>	5,800	6,200	7.2	NA
MW-12	<u>3,000</u>	<u>12,000</u>	<u>5,200</u>	<u>21,000</u>	1,100	<u>28.0</u>	NA

NA- Not Analyzed

Copies of the laboratory analytical reports and chain of custody are included in the attachment section at the end of this report. A groundwater contaminant concentration map is also attached.

Groundwater measurements and relative elevations are presented in the following table.

Attach 16

Groundwater Measurements and Elevations
Collected on October 14, 1997

Monitor Well	Relative Elevations** TOC* (ft)	Depth to Water TOC (ft)	Relative Groundwater Elevation (ft)
MW-1	94.41	15.18	79.23
MW-2	98.71	19.03	79.68
MW-3	96.33	16.73	79.60
MW-4	96.67	17.26	79.41
MW-5	100.00	20.13	79.87
MW-6	90.33	13.03	77.30
MW-7	97.28	17.63	79.65
MW-8	96.59	17.32	79.27
MW-9	96.34	17.49	78.85
MW-10	97.48	18.72	78.76
MW-11	86.83	13.33	73.50
MW-12	84.32	13.18	71.14

avg 16.5'

* TOC- Top of casing

** Casing elevations are referenced to a point arbitrarily set at 100 feet.

A groundwater gradient map is attached.

Vapor Assessment

A vapor Assessment was performed during the assessment activities using a calibrated LEL meter. The water meter vault was checked for vapors and also below the sewer manhole. No vapors were encountered within the water meter vault. The water line consists of a 6 inch diameter cast iron pipe buried to a depth of approximately 3 feet. Below the sewer manhole, hydrocarbon vapors were encountered with an 85% LEL and 0% oxygen reading. The sewer system consists of an 8 inch diameter PVC pipe at a depth of approximately 7.5 feet.

Vapor concentrations in ppmv were also calculated using the default parameters on samples B-11, S-2, 15.0-17.0' and B-12, S-1, 13.5-15.5'. The calculated benzene and xylene levels in B-11, S-2, 15.0-17.0' were above the corrective action levels with 3,495.66 ppmv and 2,598.77 ppmv respectively. The calculated xylene concentration in B-12, S-1, 13.5-15.5' was above the corrective action level with 7,796.33 ppmv.

All vapor data is included on the vapor contaminant concentration map attached.

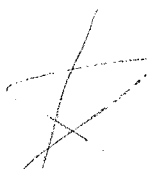
The updated TNRCC-0562 report forms are included in the attachment section of this report.

Conclusions and Recommendations

Soil samples collected from Boring B-9, sample S-1 from Boring B-10 and sample S-2 from B-12 analyzed below detectable limits for BTEX and TPH. Sample S-2(15.0-17.0') and sample S-3(20.0-22.0') from B-11 and sample S-1(13.5-15.5') from B-12 contained detectable concentrations of BTEX. The benzene concentrations ranged from 26.0 ug/kg to 12,000 ug/kg, toluene concentrations ranged from <10.0 ug/kg to 17,000 ug/kg, ethylbenzene concentrations ranged from 13.0 ug/kg to 19,000 ug/kg and xylene concentrations ranged from 33.0 to 66,000 ug/kg. All samples analyzed below corrective action levels for TPH except S-1(13.5-15.5') from Boring B-12 with 134 ug/g. Only the benzene concentrations in S-2(15.0-17.0') from B-11 and S-1(13.5-15.5') from B-12 were above the corrective action levels for a Category I site with 12,000 ug/kg and 7,700 ug/kg respectively.

Groundwater samples collected from Monitor Well MW-9 analyzed below the detectable limits for BTEX and TPH. Monitor Wells MW-10 through MW-12 contained detectable concentrations of BTEX and TPH. Benzene concentrations ranged from 1,600 ug/L to 14,000 ug/L, toluene concentrations ranged from 29.0 ug/L to 12,000 ug/L, ethylbenzene concentrations ranged from 1,000 ug/L to 5,200 ug/L and the xylene concentrations ranged from 690 ug/L to 21,000 ug/L. The TPH concentrations ranged from <1.0 mg/L to 28.0 mg/L. BTEX and TPH concentrations analyzed in samples collected from the newly installed offsite wells were above the corrective action levels for a Category I site.

The vapor assessment performed off-site showed high percent LEL(85%) below the manhole associated with the sanitary sewer system in East Park Street. Vapor calculations performed on soil samples from Borings B-11 and B-12 also showed an elevated vapor concentration for benzene and xylenes at a depth of 13.5-17.0'



Recommendations

Since the BTEX and TPH concentrations in the groundwater samples collected from the off-site monitor wells were above the corrective action levels for a Category I site, it is recommended that additional monitor wells(up to two) be installed down-gradient and one laterally to further delineate the dissolved phase hydrocarbon plume. One monitor well should be positioned approximately 150-200 feet northwest of monitor well MW-10. One down-gradient well will need to be installed approximately 210 feet down-gradient of monitor well MW-12(City of Fredericksburg property) and if needed a second well will be installed another 220 feet down-gradient to determine the down-gradient extent of the hydrocarbon plume. A Plan B Risk Assessment will also be performed to further assess the vapor and groundwater contamination.

LIMITATIONS AND SIGNATURES

This report has been prepared for the sole use and benefit of the client. Information contained herein was obtained from the client, public records review, on-site investigations, independent laboratory analysis of soil and/or water, and/or personal interviews. For the purpose of the report, Enviro Source Inc. considers this information to be valid.

The services performed by Enviro Source Inc. have been conducted in a professional manner within the scope of work defined by the client and/or the Texas Natural Resource and Conservation Commission. No warranty is expressed or implied.

Prepared by:



Robert Bartels

Project Manager/Hydrogeologist CAPM# 00201

Enviro Source, Inc. RCAS# 00520

QUALITY ASSURANCE/QUALITY CONTROL

A. Sampling Procedures

Soil Sampling Protocol

Soil samples from soil borings are collected by pushing a clean split-spoon sampler ahead of the drill bit. The split-spoon sampler is decontaminated by detergent washing prior to collecting each sample. After each boring is complete, the augers and samplers are cleaned with a steam cleaner and/or high pressure washings prior to initiating the next boring.

Soil samples collected from excavations and stockpiles are taken using new clean trowels and latex gloves to avoid incidental or cross contamination of samples.

After each sample is collected with the split-spoon sampler, it is visually inspected for evidence of hydrocarbons. The sample lithology, whether from a Shelby tube sample or a sample from an excavation wall or floor, is described and recorded in a field notebook or log. Each representative sample is collected using a dedicated sampling glove and placed in an approved sample container. After assuring there is minimal head space in the container, it is sealed with a Teflon-lined lid. The sample location, collection depth, date, and time of collection are included on the sample container label. This information is also recorded on the chain-of-custody. The sample is then placed on ice in a cooler until delivery to an approved laboratory for analysis.

Groundwater Sampling Protocol

Prior to the collection of groundwater samples from monitoring wells, the depth to water is measured from the top of casing (TOC) using an electric measuring tape (E-line or Interface Probe) and the volume of water that each well contains is calculated. Approximately three well volumes of water are removed from each monitoring well using disposable polyethylene or dedicated PVC bailers. Each well is evaluated for the presence of visible hydrocarbons. The recovered groundwater is stored in 55-gallon barrels on-site pending disposal. After bailing, the wells are allowed to recover to their approximate static level. When the wells have recovered, a sample is collected using a dedicated, disposable polyethylene bailer. A dedicated disposable latex glove is used for handling each sample.

After the sample has been collected, it is placed in the appropriate container. The sample container is sealed with a Teflon-lined lid after assuring that there is no head space within the container. The sample location, date, and time of collection are included on the sample container label. This data is also recorded on the chain of custody. The sample is then placed on ice in a cooler until delivery to an approved laboratory for analysis.

B. Laboratory Protocol

The following analytical methods are used for analysis of hydrocarbons in soil and groundwater.

BTEX, MTBE in Soil and Water
EPA Method 8020 (GC/PID)

TPH in Soil and Water
EPA Method 418.1 (IR Method) with EPA Method 3540 or 3550

PAH in Soil and Water
EPA Method 8310

Soil and water are analyzed within a maximum time period of 14 days from the date of collection.

ATTACHMENTS

LPST ID:

SOIL ASSESSMENT

SOIL DATA COLLECTION AND EVALUATION

Number of soil sampling points: 5 - on site 7 - off-site

Method of determination: ☐ Direct Push ☒ Borings ☐ Other:

Surface cover over affected soil zone (check all that apply):

☒ Concrete ☒ Asphalt ☒ Gravel ☐ Dirt ☐ Grass ☐ Other:

Percent of affected soil zone covered with impervious cover:

☐ 0-25 % ☐ 25-50 % ☐ 50-75 % ☒ 75-100% - on site

If there is no impervious surface cover, is there public access to the affected surface (0-2 ft.) soil? ☐ yes ☒ no

Affected soil zone thickness (ft.): Surface - 22.0'

*Affected soil zone surface area dimensions (ft.):

Maximum depth of contamination exceeding appropriate Plan A risk-based levels: 17.0' ft. BGS

*Estimated volume of soil exceeding Plan A target concentration (yd³):

*Minimum distance from affected soil zone to property boundary: ☐ 0-10 ft. ☐ 10-50 ft. ☐ 50-100 ft.
☐ 100-300 ft. ☐ 300-500 ft. ☐ > 500 ft. ☐ Extends beyond property boundary

Waste disposal: ☐ Landfill ☐ On-site treatment ☐ Off-site treatment
☐ Other ☒ Pending ☐ None

Maximum level of contamination detected in native soils (mg/kg):

Chemical of Concern	Sample Date	Sample Depth (ft.)	Sample ID	Laboratory Method Detection Limit	Max Conc. (mg/kg)	Target Cleanup Goals †
Benzene	10/13/97	13.5-15.5	B-11 5-1	8020, 0.010	12.0	0.13
Toluene	10/13/97	13.5-15.5	B-12 5-1	8020, 0.010	17.0	69.0
Ethylbenzene	10/13/97	13.5-15.5	B-12 5-1	8020, 0.010	19.0	160
Total Xylenes	10/13/97	13.5-15.5	B-12 5-1	8020, 0.010	66.0	588
TPH	10/13/97	13.5-15.5	B-12 5-1	418, 10.0	234	100
Total Lead						
Naphthalene	5/19/97	0.5-2.0	B-1 5-1	8310, 0.20	< 0.20	389
Other						
Other						

* Beyond the minimal requirements for a Site Assessment as defined by 30 TAC 334.

† Refer to Worksheets 11.1-5 and Risk-Based Corrective Action for Leaking Storage Tank Sites, RG-36, Table A-1.

LPST ID:

*** Geotechnical soil parameters:**

Parameter	Result	Depth	Location/Sample ID	Method of Determination
Dry Bulk Density (g/m^3):	<u>NA</u>			
Effective Porosity (%):				
Fraction Organic Carbon (g/g):				
Intrinsic Permeability (cm^2):				
Water Content (cm^3/cm^3):				
Other				

*** Biodegradation Indicators:**

Present spatial distribution of O_2 , CO_2 , CH_4 , etc. levels on map. (Attachment 9)

LPST ID:

GROUNDWATER ASSESSMENT

GROUNDWATER DATA AND EVALUATION

Groundwater affected by release: ☒ yes ☐ no (If no, complete only the Beneficial Groundwater Use Categories on this Worksheet.)

Site Hydrogeology	Upper Most Zone	Other
Depth to groundwater (ft.)	23-20	
Aquifer type (Perched, confined, unconfined)	unconfined	
*Estimated Aquifer thickness (ft.)		
*Water level fluctuations (+ ft.)		
Gradient (ft./ft.)/Direction	1	1
*Saturated hydraulic conductivity (ft./day)		
*Approximate well yield (gpd)		
Lithology	Clayey Sand, sand, sandy gravel	
Geologic Formation	Kenilworth Sand Member	Sandy clay
Major/minor aquifer name	Major Aquifer	Kenilworth - Trinity Aquifer
Total dissolved solids (mg/l)	872	
Confining layer depth (ft. BGS)	18-28	
Confining layer thickness (ft.)		

Beneficial Groundwater Use Categories

Mark the potential beneficial use category for the impacted zone and indicate the selection criteria. Complete the appropriate worksheet (Pl. 1-5) for the Category indicated.

<input checked="" type="checkbox"/> Category I	<input type="checkbox"/> Category II	<input type="checkbox"/> Category III	<input type="checkbox"/> Category IV
<input type="checkbox"/> Impacted or threatened water supply well(s)†	<input type="checkbox"/> Affected groundwater zone TDS <3,000 ppm, and no beneficial use† is documented within 0.5 miles of the site.	<input type="checkbox"/> Affected groundwater zone TDS 3,000 - 10,000 ppm, and no beneficial use† within 0.5 miles of the site.	<input type="checkbox"/> Affected groundwater zone TDS >10,000 ppm, and no beneficial use† is documented within 0.5 miles of the site.
OR <input checked="" type="checkbox"/> Affected groundwater zone TDS <3,000 ppm, and water well(s)† or water supply spring within 0.5 miles of the site. OR <input type="checkbox"/> Soils only affected. Regional groundwater beneficial use† cannot be established.	OR <input type="checkbox"/> TDS 3,000 - 10,000 ppm, and beneficial use† is documented within the 0.5 miles of the site.		OR <input type="checkbox"/> Well yield <150 gpd (i.e., affected zone is not considered to have a beneficial use†)

‡ If construction details of water well(s) are unknown or can not be proven, the interval is assumed to be connected.

† Applies to a drinking water source producing from the same or connected interval as the affected groundwater zone.

Groundwater Sampling Points

	On-Site (provide well ID)	*Beyond Property Boundary (provide well ID)
Number of Sampling points:	5	7
	(mw-1 - mw-5)	(mw-6 - mw-12)
Number of permanent monitoring wells:	5	7
Static water levels above screened intervals: <input type="checkbox"/> yes <input checked="" type="checkbox"/> no		

LPST ID: _____

DISSOLVED-PHASE PLUME

*Aerial extent of dissolved-phase plume (ft²): _____

*Distance from edge of plume to property boundary if on-site: ☐ < 10 ft. ☐ 10-50 ft. ☐ 50-100 ft. ☐ 100-300 ft. ☐ > 300 ft.

*Distance from property boundary to edge of plume if off-site: ☐ < 10 ft. ☐ 10-50 ft. ☐ 50-100 ft. ☐ 100-300 ft. ☐ > 300 ft.

Maximum level of contamination detected in groundwater (mg/l):

Contaminant	Sample Date	Sample ID	Laboratory Method Detection Limit	Maximum Concentration (mg/l)	Target Cleanup Goals†
Benzene	8/8/97	MW-6	8020, 0.002	20.0	0.005
Toluene	8/8/97	MW-6	8020, 0.002	39.0	1.0
Ethylbenzene	8/8/97	MW-6	8020, 0.002	5.9	0.7
Total Xylenes	8/8/97	MW-6	8020, 0.002	30.0	10.0
MTBE	5/20/97	MW-4	8020, 0.005	21.0	—
TPH	8/8/97	MW-6	418.1, 1.0	69.0	5.0
Naphthalene	8/8/97	MW-6	8310, 0.0650	0.501	1.46
Other _____					

† Refer to Worksheet 11.1-3 and the *Risk-Based Correction Action for Leaking Storage Tank Sites*, RG-36, Table A1.

NAPL PLUME

NAPL Present? ☐ yes ☒ no

	On-Site (provide well ID)	Thickness (ft.)	*Beyond Property Boundary (provide well ID)	Thickness (ft.)
Current maximum NAPL thickness (ft.):	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____

NAPL recovery method: ☐ hand bail ☐ passive skimmer ☐ sorbent socks ☐ automated system ☐ none

Volume recovered to date (gals.): _____

*Aerial extent of NAPL plume: (ft²) _____ ☐ beyond property boundary

*Distance from edge of NAPL plume to property boundary if on-site: ☐ < 10 ft. ☐ 10-50 ft. ☐ 50-100 ft. ☐ 100-300 ft. ☐ > 300 ft.

*Distance from edge of NAPL plume from property boundary if off-site: ☐ < 10 ft. ☐ 10-50 ft. ☐ 50-75 ft. ☐ 75-100 ft. ☐ > 100 ft.

*** Biodegradation Indicators:**

Present spatial distribution of dissolved Oxygen, dissolved CO₂, dissolved CH₄, Fe, SO₄, or other alternate electron acceptors on isoconcentration map. (Attachment 9)

LPST ID:

VAPOR ASSESSMENT

VAPOR DATA AND EVALUATION

Known vapor impact: ☒ yes ☐ no

Location: ☐ ambient air ☒ utilities ☐ residences
☐ hospital ☐ school/day care ☐ commercial buildings ☐ other: _____

Lower Explosive Limit (LEL) concentrations: ☐ not measured ☒ measured ☒ calculated¹

NAPL present or soil concentration near saturation (for calculating soil vapor concentrations, refer to *Risk-Based Correction Action for Leaking Storage Tank Sites*, RG-36): ☐ yes ☒ no Depth (ft. BGS): _____

Vapor monitoring data:

Sample No.	Location	Depth	% LEL	Total Organic Vapors (ppmv)	Benzene (ppmv)	Other
	Server Manhole	Reading ~ 7.5' deep	8.5%	(0.2002)		
B-11	S-2	15-17'		Toluene: 480.94	3,495.66	
B-11	"	"		Ethylbenzene: 185.84		
B-11	"	"		Xylenes: 2,598.77		
B-12	S-1	13.5-15.5'		Toluene: 1,738.80	2,243.04	
B-12	"	"		Ethylbenzene: 511.73		
B-12	"	"		Xylenes: 7,796.33		

If vapor concentrations exceed 25% of the LEL or other potential for explosive vapor exist in surface or subsurface structure, describe affected area, methods of determination, and any abatement measure. Identify and discuss any occupational or indoor air exposures to released contaminants. Provide all calculations for the determination of the target concentrations:

See following page for calculations
Vapor concentration map is attached

¹LEL% should reflect whole mixture evaluation. If more than one compound is present, actual measurement of vapors will typically be warranted.

LPST ID:

SURFACE WATER ASSESSMENT

SURFACE WATER DATA AND EVALUATION

Surface water(s) affected: ☐ yes ☒ no

Name: W4

Type: _____

Name: _____

Type: _____

NAPL present on surface water or run off: ☐ yes ☐ no

NAPL recovery method: ☐ passive skimmer ☐ sorbent socks ☐ automated system ☐ booms ☐ other _____ ☐ none

Volumes recovered to date (gals.): _____

Aerial extent of NAPL plume (ft.²): _____

Uses of affected surface water: ☐ drinking water ☐ contact recreation ☐ habitat for endangered species ☐ agriculture

Is a public or domestic surface water intake impacted? ☐ yes ☐ no

If impacted lake or pond, indicate affected surface area (ft.²): _____

Average depth of surface water (ft.): _____

Maximum level of contamination detected in surface water (mg/ℓ):

Contaminant	Sample Date	Sample Location & ID	Laboratory Method Detection Limit	Maximum Concentration (mg/ℓ)	Target Cleanup Goals†
Benzene					
Toluene					
Ethylbenzene					
Total Xylenes					
MTBE					
TPH					
Naphthalene					
Other _____					
Other _____					

† Refer to 30 TAC, Chapter 307, the MCL or the *Risk-Based Correction Action for Leaking Storage Tank Sites*, RG-36.

Describe affected area, methods of determination and any abatement measures. Discuss the migration pathway between the source of contamination and the surface water body.

Vapor Calculations

$$C_a = \frac{C \cdot H' \cdot \beta}{K_d \beta + \phi_w + \phi_a H'}$$

Defaults:

$$\beta = 1.8$$

$$\phi_w = 0.1$$

$$\phi_a = 0.2207$$

$$\phi = 0.3207$$

$$H' = 0.2323$$

$$K_d = 0.166$$

$$m_w = 78$$

Benzene: 12.0 mg/kg (B-11, S-2, 15-77')

$$C_a = \frac{(12.0 \text{ mg/kg})(0.232376)(1.8)}{(0.166)(1.8) + (0.1) + (0.22075)(0.232376)}$$

$$= \frac{5.01932}{0.45009} = 11.15181(1000) = 11,151.81 \text{ mg/m}^3$$

$$\text{TLV in ppm: } 11,151.81 \text{ mg/m}^3 (24.45) = x(78)$$

$$= \boxed{3,495.66 \text{ ppmv}}$$

Toluene: 4.8 mg/kg (B-11, S-2, 15-27')

$$H' = 0.2648$$

$$K_d = 0.6$$

$$m_w = 92$$

$$C_a = \frac{(4.8 \text{ mg/kg})(0.2648)(1.8)}{(0.6)(1.8) + (0.1) + (0.22075)(0.2648)}$$

$$= \frac{2.2878}{1.23845} = 1.8473(1000) = 1,847.30 \text{ mg/m}^3$$

$$\text{TLV in ppm: } 1,847.30 (24.45) = x(92)$$

$$= \boxed{480.94 \text{ ppmv}}$$

Ethylbenzene: 6.90 mg/kg (B-11, S-2, 15-17')

$$H' = 0.2672$$

$$K_d = 2.2$$

$$m_w = 106$$

$$K_{oc} = 1100$$

$$C_a = \frac{(6.90 \text{ mg/kg})(0.2672)(1.8)}{(2.2)(1.8) + (0.1) + (0.22075)(0.2672)}$$

$$= \frac{3.318624}{4.11898} = 0.80569(1000) = 805.69 \text{ mg/m}^3$$

$$\text{TLV in ppm: } 805.69 \text{ mg/m}^3 (24.45) = x(106)$$

$$= \boxed{185.84 \text{ ppmv}}$$

Xylenes: 22.0 mg/kg (B-11, S-2, 15-17')

$$m_w = 106$$

$$C_a = \frac{(22.0 \text{ mg/kg})(0.29265)(1.8)}{(0.48)(1.8) + (0.1) + (0.22075)(0.29265)}$$

$$= \frac{11,588.94}{1.028602} = 11,266.69(1000) = 11,266.69 \text{ mg/m}^3$$

$$\text{TLV in ppm: } 11,266.69 \text{ mg/m}^3 (24.45) = x(106)$$

$$= \boxed{2,558.77 \text{ ppmv}}$$

Vapor Calculations

$$C_a = \frac{C_T H' \beta}{K_d \beta + \phi_w + \phi_a H'}$$

Benzene: 7.7 mg/kg (B-12, S-1, 13.5-15.5')

$$C_a = \frac{(7.7 \text{ mg/kg})(0.232376)(1.8)}{(0.166)(1.8) + (0.1) + (0.22075)(0.232376)}$$

$$= \frac{3.22073}{0.45009} = 7.15574 (1000) = 7,155.74 \text{ mg/m}^3$$

Defaults:

$$\beta = 1.8$$

$$\phi_w = 0.1$$

$$\phi_a = 0.2207$$

$$H = 0.3207$$

$$H' = 0.2323$$

$$K_d = 0.166$$

$$MW = 78$$

$$T_{\text{v in ppm}}: 7,155.74 \text{ mg/m}^3 (24.45) = X (78)$$

$$= \boxed{2,243.04 \text{ ppmv}}$$

Toluene: 17.0 mg/kg (B-12, S-1, 13.5-15.5')

$$C_a = \frac{(17.0 \text{ mg/kg})(0.2648)(1.8)}{(0.6)(1.8) + (0.1) + (0.22075)(0.2648)}$$

$$= \frac{8.10288}{1.23845} = 6.542 (1000) = 6,542.75 \text{ mg/m}^3$$

$$H = 0.2648$$

$$K_d = 0.6$$

$$MW = 92$$

$$T_{\text{v in ppm}}: 6,542.75 \text{ mg/m}^3 (24.45) = X (92)$$

$$= \boxed{1,738.80 \text{ ppmv}}$$

Ethylbenzene: 19.0 mg/kg (B-12, S-1, 13.5-15.5')

$$C_a = \frac{(19.0 \text{ mg/kg})(0.2672)(1.8)}{(2.2)(1.8) + (0.1) + (0.22075)(0.2672)}$$

$$= \frac{9.13824}{4.11898} = 2,218.56 (1000) = 2,218.56 \text{ mg/m}^3$$

$$H' = 0.2672$$

$$K_d = 2.2$$

$$MW = 106$$

$$K_{oc} = 1100$$

$$T_{\text{v in ppm}}: 2,218.56 \text{ mg/m}^3 (24.45) = X \left(\frac{106}{511.73 \text{ ppmv}} \right)$$

Xylenes: 66.0 mg/kg (B-12, S-1, 13.5-15.5')

$$C_a = \frac{(66.0 \text{ mg/kg})(0.29265)(1.8)}{(0.48)(1.8) + (0.1) + (0.22075)(0.29265)}$$

$$= \frac{34.7668}{1.028602} = 33.80 (1000) = 33,800 \text{ mg/m}^3$$

$$MW = 106$$

$$T_{\text{v in ppm}}: 33,800 \text{ mg/m}^3 (24.45) = X (106)$$

$$= \boxed{7,796.33 \text{ ppmv}}$$

Groundwater Measurements and Elevations
Collected on June 2, 1997

Monitor Well	Relative Elevations** TOC* (ft)	Depth to Water TOC (ft)	Relative Groundwater Elevation (ft)
MW-1	94.41	14.93	79.48
MW-2	98.71	18.78	79.93
MW-3	96.33	16.44	79.89
MW-4	96.67	17.15	79.52
MW-5	100.00	19.88	80.12

* TOC- Top of casing

** Casing elevations are referenced to a point arbitrarily set at 100 feet.

DRILLER: VORTEX DRILLING

DRILLING METHOD: HOLLOW STEM AUGER

SAMPLE METHOD: SPLIT SPOON

RELATIVE ELEVATION:

MANHOLE= -

GRADE= 96.74'

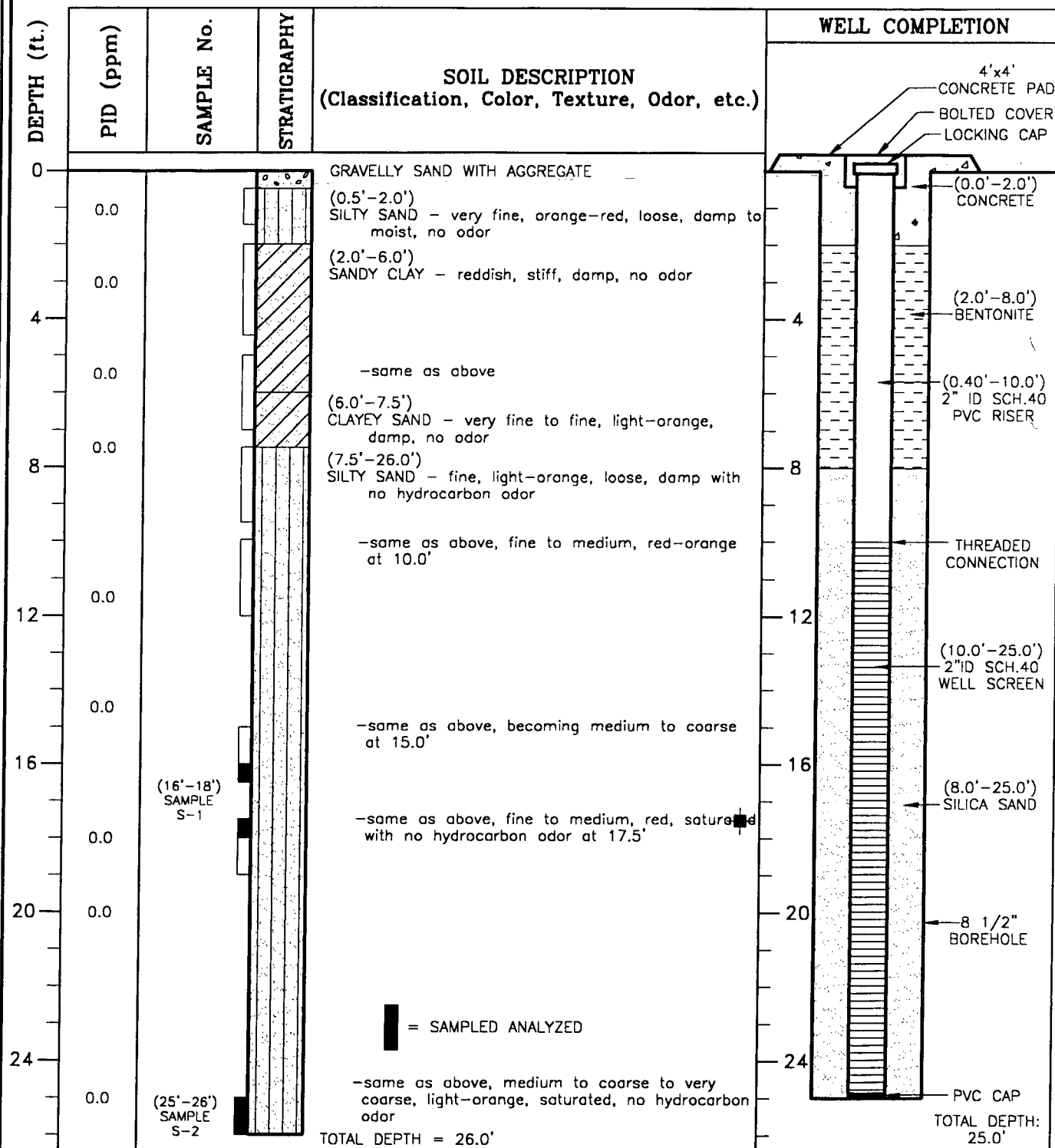
INITIAL WATER (FROM TOC)= -

STATIC WATER (FROM TOC)= 17.49' 10/14/97

TOP OF CASING (TOC)= 96.34'

CASING BOTTOM (FROM GRADE)= 25.0'

LOG BY: ROBERT BARTELS / ENVIRO SOURCE, INC.



STROEHER & SON
BULK TERMINAL
119 East Park Street
Fredericksburg, Texas

Job No: 1074 LPST ID No. 112204

MONITOR WELL
MW-9 (B-9)
COMPLETED 10/13/97



ENVIRO SOURCE, INC.
Environmental Consulting Services
P.O. Box 150696
Austin, Texas 78715-0696

DRILLER: VORTEX DRILLING

DRILLING METHOD: HOLLOW STEM AUGER

SAMPLE METHOD: SPLIT SPOON

RELATIVE ELEVATION:

MANHOLE= -

GRADE= 97.90'

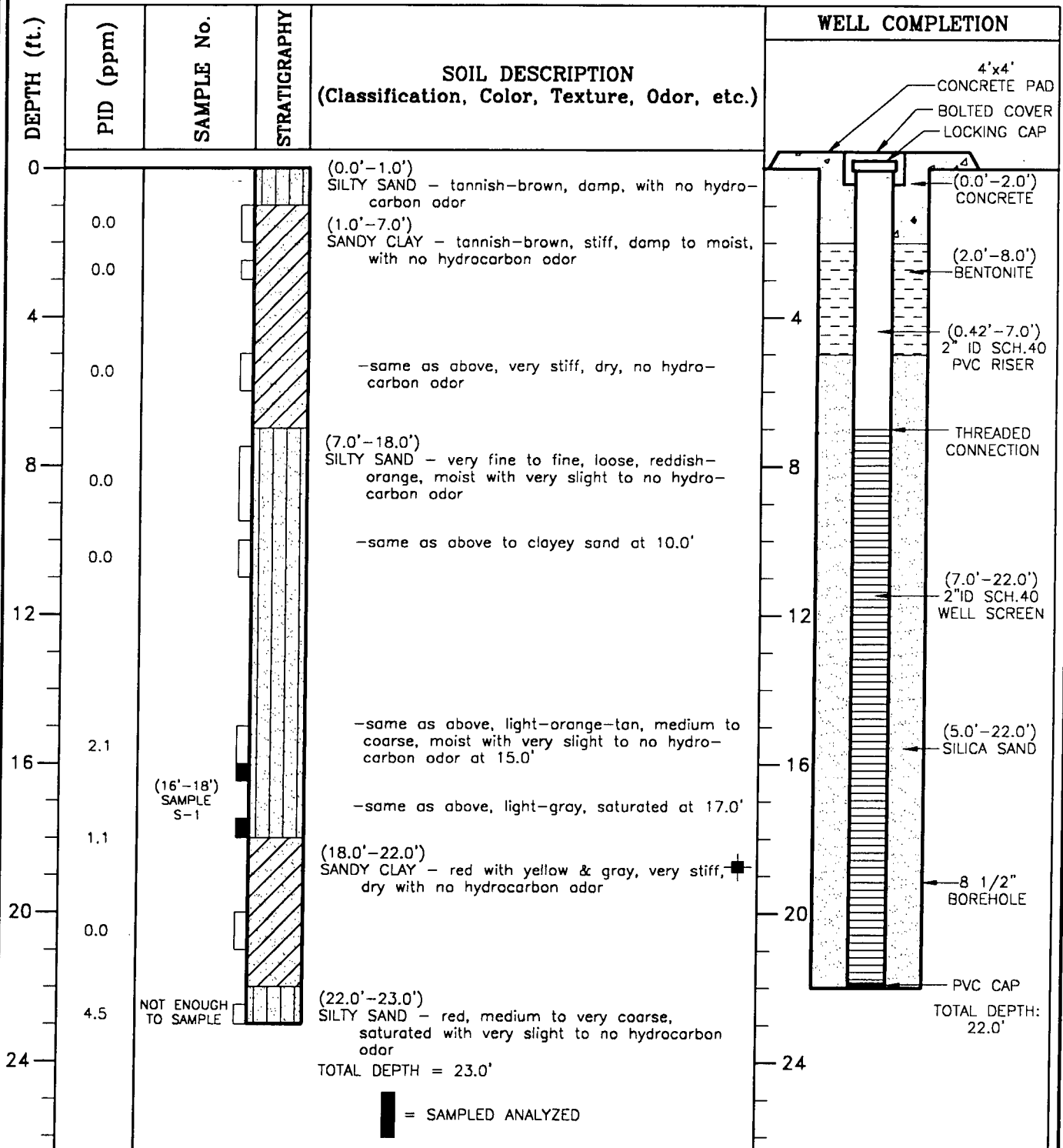
+ INITIAL WATER (FROM TOC)= -

+ STATIC WATER (FROM TOC)= 18.72' 10/14/97

TOP OF CASING (TOC)= 97.48'

CASING BOTTOM (FROM GRADE)= 22.0'

LOG BY: ROBERT BARTELS / ENVIRO SOURCE, INC.



STROEHER & SON
BULK TERMINAL
119 East Park Street
Fredericksburg, Texas

Job No: 1074 LPST ID No. 112204

MONITOR WELL
MW-10 (B-10)
COMPLETED 10/13/97



ENVIRO SOURCE, INC.
Environmental Consulting Services
P.O. Box 150696
Austin, Texas 78715-0696

DRILLER: VORTEX DRILLING

DRILLING METHOD: HOLLOW STEM AUGER

SAMPLE METHOD: SPLIT SPOON

RELATIVE ELEVATION:

MANHOLE= -

GRADE= 87.15'

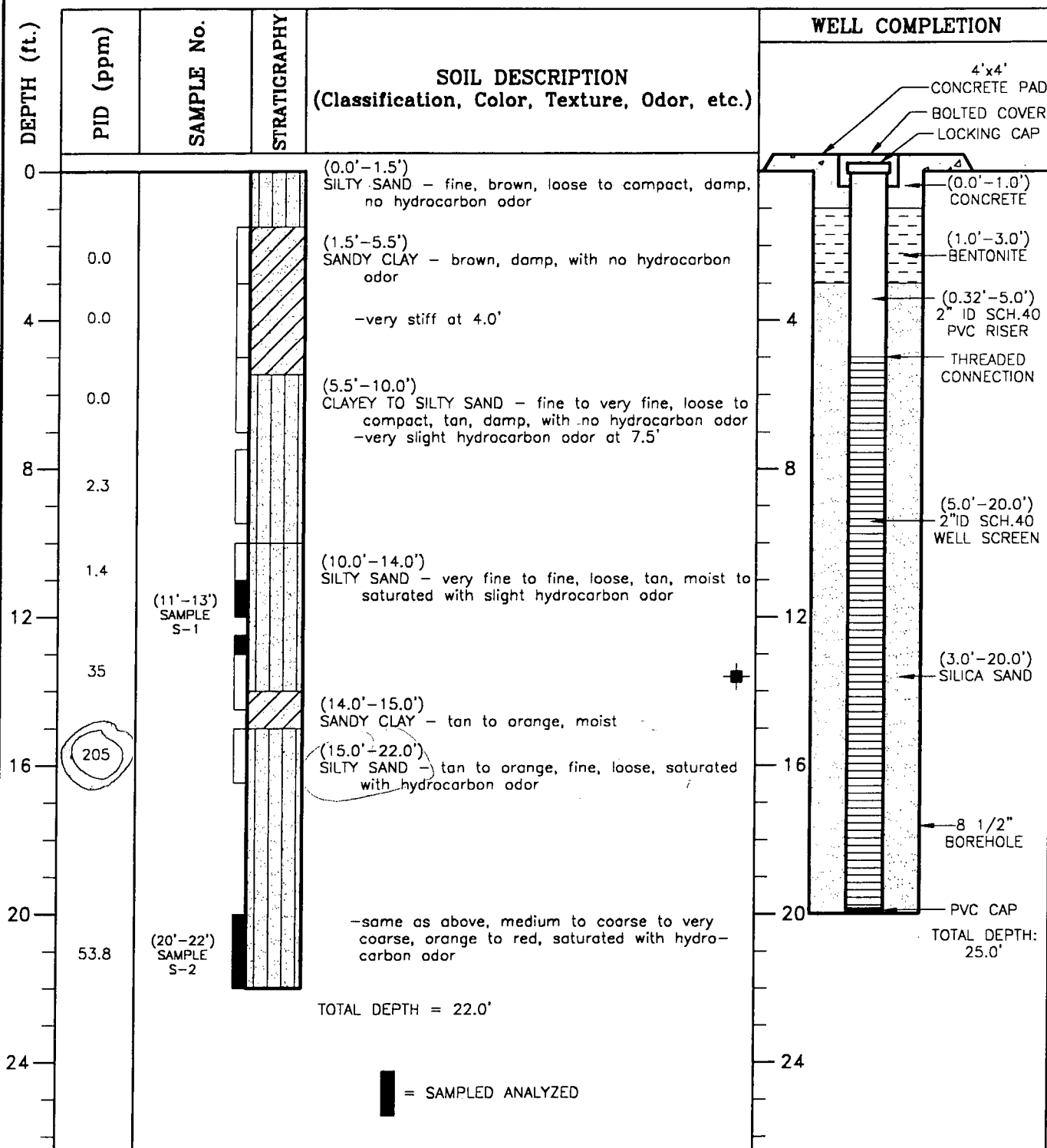
+ INITIAL WATER (FROM TOC)= -

+ STATIC WATER (FROM TOC)= 13.73' 10/14/97

TOP OF CASING (TOC)= 86.83'

CASING BOTTOM (FROM GRADE)= 20.0'

LOG BY: ROBERT BARTELS / ENVIRO SOURCE, INC.



STROEHER & SON
BULK TERMINAL
119 East Park Street
Fredericksburg, Texas

Job No: 1074

LPST ID No. 112204

MONITOR WELL
MW-11 (B-11)
COMPLETED 10/13/97



ENVIRO SOURCE, INC.
Environmental Consulting Services
P.O. Box 150696
Austin, Texas 78715-0696

DRILLER: VORTEX DRILLING

DRILLING METHOD: HOLLOW STEM AUGER

SAMPLE METHOD: SPLIT SPOON

RELATIVE ELEVATION:

MANHOLE= -

GRADE= 84.48'

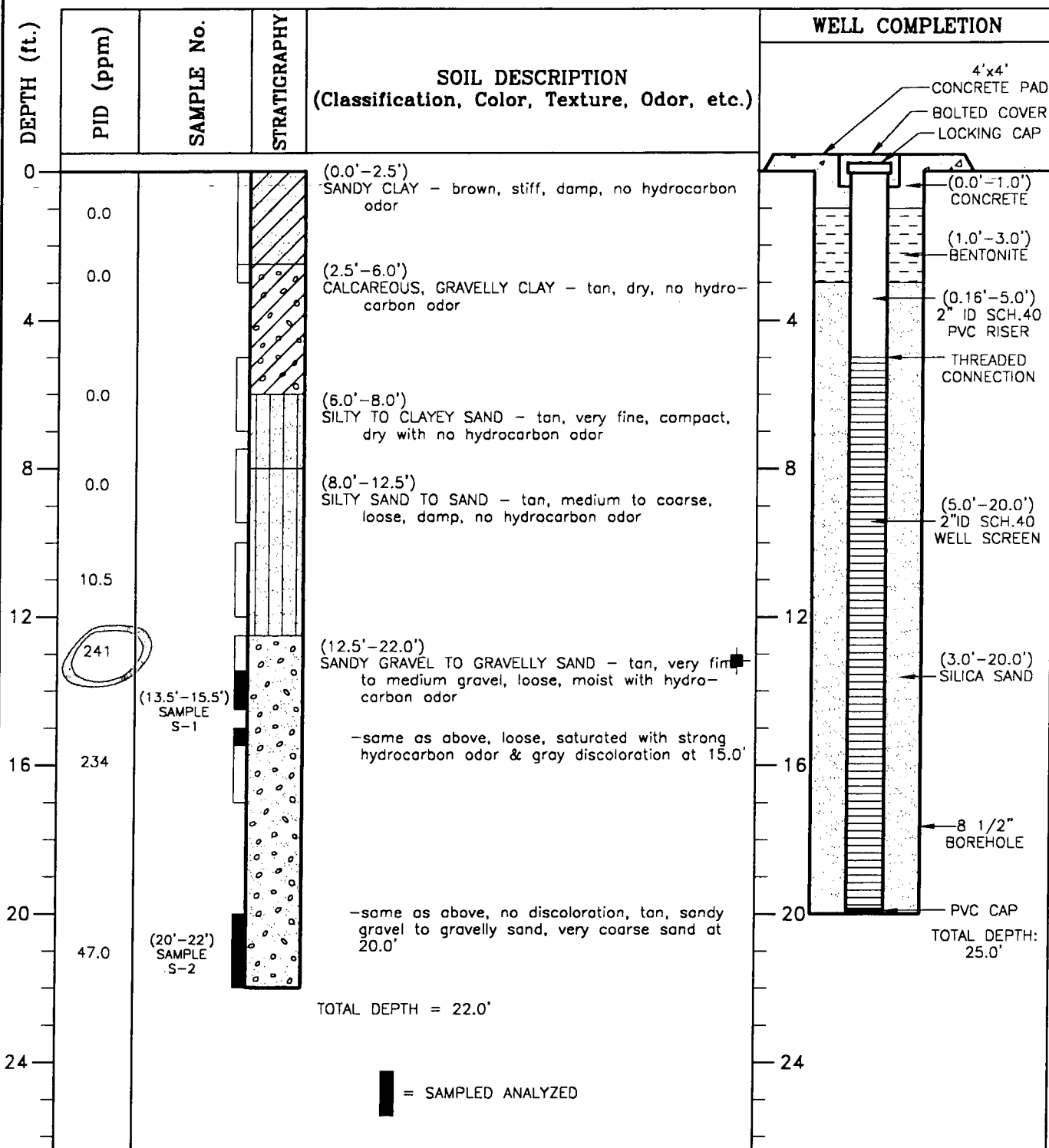
+ INITIAL WATER (FROM TOC)= -

+ STATIC WATER (FROM TOC)= 13.18' 10/14/97

TOP OF CASING (TOC)= 84.32'

CASING BOTTOM (FROM GRADE)= 20.0'

LOG BY: ROBERT BARTELS / ENVIRO SOURCE, INC.



STROEHER & SON
BULK TERMINAL
119 East Park Street
Fredericksburg, Texas

Job No: 1074

LPST ID No. 112204

MONITOR WELL
MW-12 (B-12)
COMPLETED 10/13/97



ENVIRO SOURCE, INC.
Environmental Consulting Services
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LABORATORIES, INC.

ANALYTICAL AND QUALITY CONTROL REPORT

Robert Bartels
ENVIRO SOURCE
P.O. Box 150696
Austin, TX 78715-0696

10/24/1997

EPIC Job Number: 97.04152

Page 1

Project Description: 1074-3 - Fred., TX
Job Description: Stroehrer & Son Bulk Term., E. Park St.

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to EPIC Laboratories, Inc. for analysis:

Sample Number	Sample Description	Date Taken	Time Taken	Date Received
340423	B-9, S-1, 16-18'	10/13/1997		10/15/1997
340424	B-9, S-2, 25-26'	10/13/1997		10/15/1997
340425	B-10, S-1, 16-18'	10/13/1997		10/15/1997
340426	B-11, S-2, 15-17'	10/13/1997		10/15/1997
340427	B-11, S-3, 20-22'	10/13/1997		10/15/1997
340428	B-12, S-1, 13.5-15.5'	10/13/1997		10/15/1997
340429	B-12, S-2, 20-22'	10/13/1997		10/15/1997
340430	MW-9	10/14/1997	11:30	10/15/1997
340431	MW-10	10/14/1997	11:45	10/15/1997
340432	MW-11	10/14/1997	11:10	10/15/1997
340433	MW-12	10/14/1997	10:45	10/15/1997

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Debby Skogen
Debby Skogen
Project Coordinator

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

1555 Valwood Parkway, Suite 100, Carrollton, Texas 75006
2621 Ridgepoint Drive, Suite 135, Austin, Texas 78754
13802 Placid Brook Court, Houston, Texas 77059

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ANALYTICAL RESULTS REPORT

Robert Bartels
ENVIRO SOURCE
P.O. Box 150696
Austin, TX 78715-0696

10/24/1997

EPIC Job Number: 97.04152
Sample Number: 340423

Page 2

Project Description: 1074-3 - Fred., TX
Job Description: Stroehrer & Son Bulk Term., E. Park St.

Sample Description: B-9, S-1, 16-18'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch Number	Run Batch Number	Reporting Limit
TPH-418.1 (Nonaqueous)		<10	ug/g	E-418.1		10/22/1997	bss		1355	10
EPA 8020-NONAQ										
Benzene		<10	ug/kg	S-8020A		10/17/1997	bwb		1045	10
Ethylbenzene		<10	ug/kg	S-8020A		10/17/1997	bwb		1045	10
Toluene		<10	ug/kg	S-8020A		10/17/1997	bwb		1045	10
Xylenes, Total		<10	ug/kg	S-8020A		10/17/1997	bwb		1045	10
SURR: a,a,a-TFT		75	% Rec			10/17/1997	bwb		1045	50-130

ANALYTICAL RESULTS REPORT

Robert Bartels
ENVIRO SOURCE
P.O. Box 150696
Austin, TX 78715-0696

10/24/1997

EPIC Job Number: 97.04152
Sample Number: 340424

Page 3

Project Description: 1074-3 - Fred., TX
Job Description: Stroehrer & Son Bulk Term., E. Park St.
Sample Description: B-9, S-2, 25-26'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch Number	Run Batch Number	Reporting Limit
TPH-418.1 (Nonaqueous)		<10	ug/g	E-418.1		10/22/1997	bwb		1355	10
EPA 8020-NCNAQ										
Benzene		<10	ug/kg	S-8020A		10/17/1997	bwb		1045	10
Ethylbenzene		<10	ug/kg	S-8020A		10/17/1997	bwb		1045	10
Toluene		<10	ug/kg	S-8020A		10/17/1997	bwb		1045	10
Xylenes, Total		<10	ug/kg	S-8020A		10/17/1997	bwb		1045	10
SURR: a,a,a-TFT		84	% Rec			10/17/1997	bwb		1045	50-130

ANALYTICAL RESULTS REPORT

Robert Bartels
ENVIRO SOURCE
P.O. Box 150696
Austin, TX 78715-0696

10/24/1997

EPIC Job Number: 97.04152
Sample Number: 340425

Page 4

Project Description: 1074-3 - Fred., TX
Job Description: Stroeher & Son Bulk Term., E. Park St.

Sample Description: B-10, S-1, 16-18'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch Number	Run Batch Number	Reporting Limit
TPH-418.1 (Nonaqueous)		<10	ug/g	E-418.1		10/22/1997	bss		2355	10
EPA 8020-NONAO										
Benzene		<10	ug/kg	S-8020A		10/17/1997	bwb		1045	10
Ethylbenzene		<10	ug/kg	S-8020A		10/17/1997	bwb		1045	10
Toluene		<10	ug/kg	S-8020A		10/17/1997	bwb		1045	10
Xylenes, Total		<10	ug/kg	S-8020A		10/17/1997	bwb		1045	10
SURR: a,a,a-TFT		104	% Rec			10/17/1997	bwb		1045	50-130

ANALYTICAL RESULTS REPORT

Robert Bartels
 ENVIRO SOURCE
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10/24/1997

EPIC Job Number: 97.04152
 Sample Number: 340426

Page 5

Project Description: 1074-3 - Fred., TX
 Job Description: Stroehrer & Son Bulk Term., E. Park St.

Sample Description: B-11, S-2, 15-17'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch Number	Run Batch Number	Reporting Limit
TPH-418.1 (Nonaqueous)		11	ug/g	E-418.1		10/22/1997	bss		1355	10
EPA 8020-NONAQ										
Benzene		12000	ug/kg	S-8020A		10/21/1997	bwb		1046	100
Ethylbenzene		6900	ug/kg	S-8020A		10/21/1997	bwb		1046	100
Toluene		4800	ug/kg	S-8020A		10/21/1997	bwb		1046	100
Xylenes, Total		22000	ug/kg	S-8020A		10/21/1997	bwb		1046	100
SURR: a,a,a-TFT		98	% Rec			10/21/1997	bwb		1046	50-130

ANALYTICAL RESULTS REPORT

Robert Bartels
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10/24/1997

EPIC Job Number: 97.04152
Sample Number: 340427

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Project Description: 1074-3 - Fred., TX
Job Description: Stroehrer & Son Bulk Term., E. Park St.
Sample Description: B-11, S-3, 20-22'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch Number	Run Batch Number	Reporting Limit
TPH-418.1 (Nonaqueous)		<10	ug/g	E-418.1		10/22/1997	bss		1354	10
EPA 8020-NONAQ										
Benzene		26	ug/kg	S-8020A		10/16/1997	bwb		1044	10
Ethylbenzene		13	ug/kg	S-8020A		10/16/1997	bwb		1044	10
Toluene		<10	ug/kg	S-8020A		10/16/1997	bwb		1044	10
Xylenes, Total		33	ug/kg	S-8020A		10/16/1997	bwb		1044	10
SURR: a,a,a-TPT		114	% Rec			10/16/1997	bwb		1044	50-130

ANALYTICAL RESULTS REPORT

Robert Bartels
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10/24/1997

EPIC Job Number: 97.04152
Sample Number: 340428

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Project Description: 1074-3 - Fred., TX
Job Description: Stroeher & Son Bulk Term., E. Park St.

Sample Description: B-12, S-1, 13.5-15.5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch Number	Run Batch Number	Reporting Limit
TPH-418.1 (Nonaqueous)		134	ug/g	E-418.1		10/22/1997	bas		1354	10
EPA 8020-NONAQ										
Benzene		7700	ug/kg	S-8020A		10/16/1997	bwb		1044	100
Ethylbenzene		19000	ug/kg	S-8020A		10/16/1997	bwb		1044	100
Toluene		17000	ug/kg	S-8020A		10/16/1997	bwb		1044	100
Xylenes, Total		66000	ug/kg	S-8020A		10/16/1997	bwb		1044	100
SURR: a,a,a-TFT		70	% Rec			10/16/1997	bwb		1044	50-130

ANALYTICAL RESULTS REPORT

Robert Bartels
ENVIRO SOURCE
P.O. Box 150696
Austin, TX 78715-0696

10/24/1997

EPIC Job Number: 97.04152
Sample Number: 340429

Page 8

Project Description: 1074-3 - Fred., TX
Job Description: Stroehrer & Son Bulk Term., E. Park St.

Sample Description: B-12, S-2, 20-22'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch Number	Run Batch Number	Reporting Limit
TPH-418.1 (Nonaqueous)		<10	ug/g	E-418.1		10/22/1997	bas		1354	10
EPA 8020-NONAO										
Benzene		<10	ug/kg	S-8020A		10/23/1997	bwb		1048	10
Ethylbenzene		<10	ug/kg	S-8020A		10/23/1997	bwb		1048	10
Toluene		<10	ug/kg	S-8020A		10/23/1997	bwb		1048	10
Xylenes, Total		<30	ug/kg	S-8020A		10/23/1997	bwb		1048	30
SURR: a,a,a-TFT		103	% Rec			10/23/1997	bwb		1048	50-130

ANALYTICAL RESULTS REPORT

Robert Bartels
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 Austin, TX 78715-0696

10/24/1997

EPIC Job Number: 97.04152
 Sample Number: 340430

Page 9

Project Description: 1074-3 - Fred., TX
 Job Description: Stroeher & Son Bulk Term., E. Park St.

Sample Description: MW-9

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch Number	Run Batch Number	Reporting Limit
TPH-418.1 (Aqueous)		<1.0	mg/L	E-418.1		10/22/1997	bee		1050	1.0
EPA-8020 AQ (PRESERVED)										
Benzene		<2	ug/L	S-8020M		10/21/1997	bwb		2888	2
Ethylbenzene		<2	ug/L	S-8020M		10/21/1997	bwb		2888	2
Toluene		<2	ug/L	S-8020M		10/21/1997	bwb		2888	2
Xylenes, Total		<6	ug/L	S-8020M		10/21/1997	bwb		2888	6
MTBE		<5	ug/L	S-8020M		10/21/1997	bwb		2888	5
SURR: a,a,a-TFT		124	% Rec	S-8020M		10/21/1997	bwb		2888	60-125

ANALYTICAL RESULTS REPORT

Robert Bartels
 ENVIRO SOURCE
 P.O. Box 150696
 Austin, TX 78715-0696

10/24/1997

EPIC Job Number: 97.04152
 Sample Number: 340431

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Project Description: 1074-3 - Fred., TX
 Job Description: Stroeher & Son Bulk Term., E. Park St.

Sample Description: MW-10

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch Number	Run Batch Number	Reporting Limit
TPH-418.1 (Aqueous)		<1.0	mg/L	B-418.1		10/22/1997	bs		1050	1.0
EPA-8020 AQ (PRESERVED)										
Benzene		1600	ug/L	S-8020M		10/23/1997	bwb		2892	20
Ethylbenzene		1000	ug/L	S-8020M		10/23/1997	bwb		2892	20
Toluene		29	ug/L	S-8020M		10/23/1997	bwb		2892	20
Xylenes, Total		690	ug/L	S-8020M		10/23/1997	bwb		2892	50
MTBE		748	ug/L	S-8020M		10/23/1997	bwb		2892	50
SURR: a,a,a-TFT		119	% Rec	S-8020M		10/23/1997	bwb		2892	60-125

ANALYTICAL RESULTS REPORT

Robert Bartels
 ENVIRO SOURCE
 P.O. Box 150696
 Austin, TX 78715-0696

10/24/1997

EPIC Job Number: 97.04152
 Sample Number: 340432

Page 11

Project Description: 1074-3 -- Fred., TX
 Job Description: Stroehrer & Son Bulk Term., E. Park St.
 Sample Description: MW-11

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch Number	Run Batch Number	Reporting Limit
TPH-418.1 (Aqueous)		7.2	mg/L	E-418.1		10/22/1997	bss		1050	1.0
EPA-8020 AQ (PRESERVED)										
Benzene		14000	ug/L	S-8020M		10/21/1997	bwb		2888	200
Ethylbenzene		2500	ug/L	S-8020M		10/21/1997	bwb		2888	200
Toluene		3400	ug/L	S-8020M		10/21/1997	bwb		2888	200
Xylenes, Total		5800	ug/L	S-8020M		10/21/1997	bwb		2888	600
MTBE		6200	ug/L	S-8020M		10/21/1997	bwb		2888	500
SURR: a,s,a-TFT		119	% Rec	S-8020M		10/21/1997	bwb		2888	60-125

ANALYTICAL RESULTS REPORT

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10/24/1997

EPIC Job Number: 97.04152
 Sample Number: 340433

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Project Description: 1074-3 - Fred., TX
 Job Description: Stroeher & Son Bulk Term., E. Park St.

Sample Description: MW-12

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch Number	Run Batch Number	Reporting Limit
TPH-418.1 (Aqueous)		28	mg/L	E-418.1		10/22/1997	bss		1050	1.0
EPA-8020 AQ (PRESERVED)										
Benzene		3000	ug/L	S-8020M		10/21/1997	bwb		2888	200
Ethylbenzene		5200	ug/L	S-8020M		10/21/1997	bwb		2888	200
Toluene		12000	ug/L	S-8020M		10/21/1997	bwb		2888	200
Xylenes, Total		21000	ug/L	S-8020M		10/21/1997	bwb		2888	600
MTBE		1100	ug/L	S-8020M		10/21/1997	bwb		2888	500
SURR: a,a,a-TFT		91	% Rec	S-8020M		10/21/1997	bwb		2888	60-125

QUALITY CONTROL REPORT BLANKS

Robert Bartels
ENVIRO SOURCE
P.O. Box 150696
Austin, TX 78715-0696

10/24/1997

EPIC Job Number: 97.04152

Project Description: 1074-3 - Fred., TX
Job Description: Stroeher & Son Bulk Term., E. Park St.

Parameter	Flag	Blank Result	Units	Reporting Limit	Date Analyzed	Prep Batch Number	Run Batch Number
TPH-418.1 (Aqueous)		<1.0	mg/L	1.0	10/22/1997		1050
TPH-418.1 (Nonaqueous)		<10	ug/g	10	10/17/1997		1354
TPH-418.1 (Nonaqueous)		<10	ug/g	10	10/21/1997		1355
EPA-8020 AQ (PRESERVED)							
Benzene		<2	ug/L	2	10/21/1997		2888
Ethylbenzene		<2	ug/L	2	10/21/1997		2888
MTBE		<5	ug/L	5	10/21/1997		2888
Toluene		<2	ug/L	2	10/21/1997		2888
Xylenes, Total		<6	ug/L	6	10/21/1997		2888
EPA-8020 AQ (PRESERVED)							
Benzene		<2	ug/L	2	10/23/1997		2892
Ethylbenzene		<2	ug/L	2	10/23/1997		2892
MTBE		<5	ug/L	5	10/23/1997		2892
Toluene		<2	ug/L	2	10/23/1997		2892
Xylenes, Total		<6	ug/L	6	10/23/1997		2892
EPA 8020-NONAQ							
Benzene		<10	ug/kg	10	10/16/1997		1044
Ethylbenzene		<10	ug/kg	10	10/16/1997		1044
Toluene		<10	ug/kg	10	10/16/1997		1044
Xylenes, Total		<10	ug/kg	10	10/16/1997		1044
EPA 8020-NONAQ							
Benzene		<10	ug/kg	10	10/17/1997		1045
Ethylbenzene		<10	ug/kg	10	10/17/1997		1045
Toluene		<10	ug/kg	10	10/17/1997		1045
Xylenes, Total		<10	ug/kg	10	10/17/1997		1045
EPA 8020-NONAQ							
Benzene		<10	ug/kg	10	10/21/1997		1046
Ethylbenzene		<10	ug/kg	10	10/21/1997		1046

All parameters should be less than the reporting limit.

QUALITY CONTROL REPORT BLANKS

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10/24/1997

EPIC Job Number: 97.04152

Project Description: 1074-3 - Fred., TX
Job Description: Stroehrer & Son Bulk Term., E. Park St.

Parameter	Flag	Blank Result	Units	Reporting Limit	Date Analyzed	Prep Batch Number	Run Batch Number
Toluene		<10	ug/kg	10	10/21/1997		1046
Xylenes, Total		<10	ug/kg	10	10/21/1997		1046
EPA 8020-NONAQ							
Benzene		<10	ug/kg	10	10/23/1997		1048
Ethylbenzene		<10	ug/kg	10	10/23/1997		1048
Toluene		<10	ug/kg	10	10/23/1997		1048
Xylenes, Total		<30	ug/kg	30	10/23/1997		1048

All parameters should be less than the reporting limit.

QUALITY CONTROL REPORT CONTINUING CALIBRATION VERIFICATION STANDARD

Robert Bartels
ENVIRO SOURCE
P.O. Box 150696
Austin, TX 78715-0696

10/24/1997

EPIC Job Number: 97.04152

Project Description: 1074-3 - Fred., TX
Job Description: Stroeher & Son Bulk Term., E. Park St.

Parameter	Flag	CCVS True Concentration Units	CCVS Concentration Found	CCVS Percent Recovery	Date Analyzed	Run Batch Number
TPH-418.1 (Aqueous)		114 mg/L	115	100.9	10/22/1997	1050
TPH-418.1 (Nonaqueous)		114 ug/g	116.1	101.8	10/17/1997	1354
TPH-418.1 (Nonaqueous)		114 ug/g	115.33	101.2	10/21/1997	1355
EPA-8020 AQ (PRESERVED)						
Benzene		20 ug/L	22	110.0	10/21/1997	2888
Ethylbenzene		20 ug/L	21	105.0	10/21/1997	2888
MTBE		20 ug/L	19	95.0	10/21/1997	2888
Toluene		20 ug/L	24	120.0	10/21/1997	2888
Xylenes, Total		60 ug/L	62	103.3	10/21/1997	2888
EPA-8020 AQ (PRESERVED)						
Benzene		20 ug/L	18	90.0	10/23/1997	2892
Ethylbenzene		20 ug/L	22	110.0	10/23/1997	2892
MTBE		20 ug/L	18	90.0	10/23/1997	2892
Toluene		20 ug/L	19	95.0	10/23/1997	2892
Xylenes, Total		60 ug/L	66	110.0	10/23/1997	2892
EPA 8020-NONAQ						
Benzene		20 ug/kg	19	95.0	10/16/1997	1044
Ethylbenzene		20 ug/kg	20	100.0	10/16/1997	1044
Toluene		20 ug/kg	22	110.0	10/16/1997	1044
Xylenes, Total		60 ug/kg	58	96.7	10/16/1997	1044
EPA 8020-NONAQ						
Benzene		20 ug/kg	22	110.0	10/17/1997	1045
Ethylbenzene		20 ug/kg	22	110.0	10/17/1997	1045
Toluene		20 ug/kg	24	120.0	10/17/1997	1045
Xylenes, Total		60 ug/kg	66	110.0	10/17/1997	1045
EPA 8020-NONAQ						
Benzene		20 ug/kg	23	115.0	10/21/1997	1046
Ethylbenzene		20 ug/kg	21	105.0	10/21/1997	1046

CCVS - Continuing Calibration Verification Standard

QUALITY CONTROL REPORT CONTINUING CALIBRATION VERIFICATION STANDARD

Robert Bartels
ENVIRO SOURCE
P.O. Box 150696
Austin, TX 78715-0696

10/24/1997

EPIC Job Number: 97.04152

Project Description: 1074-3 - Fred., TX
Job Description: Stroehrer & Son Bulk Term., E. Park St.

Parameter	Flag	CCVS True Concentration	Units	CCVS Concentration Found	CCVS Percent Recovery	Date Analyzed	Run Batch Number
Toluene		20	ug/kg	24	120.0	10/21/1997	1046
Xylenes, Total		60	ug/kg	62	103.3	10/21/1997	1046
EPA 8020-NONAQ							
Benzene		20	ug/kg	18	90.0	10/23/1997	1048
Ethylbenzene		20	ug/kg	22	110.0	10/23/1997	1048
Toluene		20	ug/kg	19	95.0	10/23/1997	1048
Xylenes, Total		60	ug/kg	67	111.7	10/23/1997	1048

CCVS - Continuing Calibration Verification Standard

QUALITY CONTROL REPORT MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Robert Bartels
ENVIRO SOURCE
P.O. Box 150696
Austin, TX 78715-0696

10/24/1997

EPIC Job Number: 97.04152

Project Description: 1074-3 - Fred., TX
Job Description: Stroehrer & Son Bulk Term., E. Park St.

Parameter	Flag	Units	Sample Result	Spike Amount Added	Matrix Spike Result	MS Percent Recovery	Duplicate Spike		MSD Percent Recovery	MS/MSD RPD	Date Analyzed	Prep Batch Number	Run Batch Number
							Amount Added	Result					
TPH-418.1 (Nonaqueous)		ug/g	<10	125	113	90.4	125	121	96.8	6.8	10/17/1997		1354
TPH-418.1 (Nonaqueous)		ug/g	<10	123	110	88.0	125	113	90.4	2.7	10/21/1997		1354
TPH-418.1 (Nonaqueous)		ug/g	<10	125	119	95.2	125	111	88.8	7.0	10/21/1997		1355
TPH-418.1 (Nonaqueous)		ug/g	11	125	119	86.4	125	117	84.8	1.9	10/22/1997		1355
EPA-8020 AQ (PRESERVED)													
Benzene		ug/L	<2	20	27	135.0	20	28	140.0	3.6	10/21/1997		2888
Ethylbenzene		ug/L	<2	20	24	120.0	20	24	120.0	0.0	10/21/1997		2888
Toluene		ug/L	<2	20	28	140.0	20	28	140.0	0.0	10/21/1997		2888
Xylenes, Total		ug/L	<6	40	48	120.0	40	50	125.0	4.1	10/21/1997		2888
MTBE		ug/L	<5	20	24	120.0	20	25	125.0	4.1	10/21/1997		2888
EPA 8020-NONAO													
Benzene		ug/kg	<10	100	108	108.0	100	110	110.0	1.8	10/16/1997		1044
Ethylbenzene		ug/kg	<10	100	108	108.0	100	110	110.0	1.8	10/16/1997		1044
Toluene		ug/kg	<10	100	118	118.0	100	116	116.0	1.7	10/16/1997		1044
Xylenes, Total		ug/kg	<10	200	212	106.0	200	213	106.5	0.5	10/16/1997		1044
EPA 8020-NONAO													
Benzene		ug/kg	<10	100	93	93.0	100	90	90.0	3.3	10/17/1997		1045
Ethylbenzene		ug/kg	<10	100	121	121.0	100	120	120.0	0.8	10/17/1997		1045
Toluene		ug/kg	<10	100	114	114.0	100	112	112.0	1.8	10/17/1997		1045
Xylenes, Total		ug/kg	<10	200	249	124.5	200	247	123.5	0.8	10/17/1997		1045

NOTE: The Quality Control data in this report reflects the batch in which your sample was prepped and/or analyzed.
The sample selected for QA may not necessarily be your sample.

QUALITY CONTROL REPORT LABORATORY CONTROL STANDARD

Robert Bartels
ENVIRO SOURCE
P.O. Box 150696
Austin, TX 78715-0696

10/24/1997

EPIC Job Number: 97.04152

Project Description: 1074-3 - Fred., TX
Job Description: Stroeher & Son Bulk Term., E. Park St.

Analyte	Prep Batch No.	Run Batch No.	LCS True Conc	Units	LCS Conc Found	LCS % Rec.	LCS Dup Conc. Found	LCS Dup % Rec	LCS RPD	Flag	Date Analyzed
TPH-418.1 (Aqueous)		1050	50	mg/L	57	114.0	56	112.0	1.8		10/22/1997
TPH-418.1 (Nonaqueous)		1354	2660	ug/g	2520	94.7					10/17/1997
TPH-418.1 (Nonaqueous)		1355	2660	ug/g	2402	90.3					10/21/1997
EPA-8020 AQ (PRESERVED)											
Benzene		2888	20	ug/L	28	140.0	27	135.0	3.6		10/21/1997
Ethylbenzene		2888	20	ug/L	26	130.0	24	120.0	8.0		10/21/1997
MTBE		2888	20	ug/L	24	120.0	24	120.0	0.0		10/21/1997
Toluene		2888	20	ug/L	29	145.0	24	120.0	18.9		10/21/1997
Xylenes, Total		2888	40	ug/L	49	122.5	48	120.0	2.1		10/21/1997
EPA-8020 AQ (PRESERVED)											
Benzene		2892	20	ug/L	23	115.0	23	115.0	0.0		10/23/1997
Ethylbenzene		2892	20	ug/L	27	135.0	24	120.0	11.8		10/23/1997
MTBE		2892	20	ug/L	24	120.0	23	115.0	4.3		10/23/1997
Toluene		2892	20	ug/L	23	115.0	24	120.0	4.3		10/23/1997
Xylenes, Total		2892	40	ug/L	56	140.0	52	130.0	7.4		10/23/1997
EPA 8020-NONAQ											
Benzene		1044	20	ug/kg	24	120.0	22	110.0	8.7		10/16/1997
Ethylbenzene		1044	20	ug/kg	21	105.0	20	100.0	4.9		10/16/1997
Toluene		1044	20	ug/kg	25	125.0	24	120.0	4.1		10/16/1997
Xylenes, Total		1044	40	ug/kg	44	110.0	39	97.5	11.9		10/16/1997
EPA 8020-NONAQ											
Benzene		1045	20	ug/kg	24	120.0					10/17/1997
Ethylbenzene		1045	20	ug/kg	23	115.0					10/17/1997
Toluene		1045	20	ug/kg	27	135.0					10/17/1997
Xylenes, Total		1045	40	ug/kg	49	122.5					10/17/1997
EPA 8020-NONAQ											
Benzene		1046	20	ug/kg	38	140.0	27	135.0	3.6		10/21/1997
Ethylbenzene		1046	20	ug/kg	26	130.0	24	120.0	8.0		10/21/1997
Toluene		1046	20	ug/kg	29	145.0	27	135.0	7.1		10/21/1997
Xylenes, Total		1046	40	ug/kg	53	132.5	48	120.0	9.9		10/21/1997

LCS - Laboratory Control Standard

For samples with insufficient sample volume, an LCS/LCS duplicate is reported instead of an MS/MSD.

QUALITY CONTROL REPORT LABORATORY CONTROL STANDARD

Robert Bartels
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P.O. Box 150696
Austin, TX 78715-0696

10/24/1997

EPIC Job Number: 97.04152

Project Description: 1074-3 - Fred., TX
Job Description: Stroehrer & Son Bulk Term., E. Park St.

Analyte	Prep Batch No.	Run Batch No.	LCS True Conc	Units	LCS Conc Found	LCS % Rec.	LCS Dup Conc. Found	LCS Dup % Rec	LCS RPD	Flag	Date Analyzed
EPA 8020-NONAQ											
Benzene		1040	20	ug/kg	23	115.0	23	115.0	0.0		10/23/1997
Ethylbenzene		1040	20	ug/kg	27	135.0	24	120.0	11.8		10/23/1997
Toluene		1048	20	ug/kg	23	115.0	24	120.0	4.3		10/23/1997
Xylenes, Total		1048	40	ug/kg	58	140.0	52	130.0	7.4		10/23/1997

LCS - Laboratory Control Standard

For samples with insufficient sample volume, an LCS/LCS duplicate is reported instead of an MS/MSD.

Attachment # 1

OVERSIZE DOCUMENTS, MAPS & PHOTOS

Record Series: LPST

Primary Filing ID: 0065564

Secondary Filing ID 112204

Box: RP 1712 ENV: 105

The below listed documents, from the above referenced file, that belong in this location in the file were not imaged because of their size and/or media format. See the Central File Room staff for the location of the following oversize documents and/or photographs:

DATE ON DOCUMENT

DESCRIPTION OF DOCUMENT

(6) Maps (Dimensions 24x36)

item barcode ~ 100185543

10/24/97

SITE MAP

12/18/97

SITE MAP

10/24/97

Soil Contaminant Concentration Map

10/24/97 (10/14/97 measured)

Ground Water Gradient Map

10/24/97

Vapor Contaminant Concentration Map

10/24/97

Groundwater Contaminant Concentration Map

(Stroemer & Son, Inc. Fredericksburg, Va

WORKPLAN AND PREAPPROVAL REQUEST

LPST ID No.: 112204

Responsible Party: Stroeher and Son, Inc.

Facility Name: Stroeher and Son, Inc. Bulk Terminal

Facility Address: 119 E. Park Street

Facility City: Fredericksburg, Texas

Facility County: Gillespie County

Facility ID No.: 0065564

TNRCC Region: 13

Case Priority: 2.5

WORKPLAN

Proposed Activity: Additional Assessment Activities and Plan B Risk Assessment

Goal of Proposed Activity

To further assess and delineate the off-site downgradient and lateral subsurface soil and groundwater.

Then perform a Plan B Risk Assessment at site to determine cleanup criteria.

Description of Activities

Drill and sample up to three(3) soil borings and install up to three(3) monitor wells to a depth of approximately 20.0 feet at the locations presented on the attached map. One to two wells will be installed downgradient from MW-12 to find the plumes downgradient edge. One will also be installed laterally approximately 150-200 feet northwest of MW-10.

Each monitor well will consist of 2-inch Sch. 40 PVC well casing with up to 15.0 feet of well screen. During the drilling activities, each boring will be continuously sampled. The soil samples will be screened in the field with a PID(photoionization detector) so that samples can be selected for analysis of BTEX, and TPH. The samples will be placed into clean labeled sample jars and then placed on ice in a cooler. All samples will be transported to Epic Laboratory in Austin, Texas for analysis.

Groundwater Monitoring

Upon completion of the monitor well installations, the depth to water from the top of casing will be measured in each monitor well with an interface probe and a well volume will be calculated. Three to six well volumes will then be bailed from each well. Each well will then be allowed to recover and then sampled using disposable bailers. The samples collected will be placed on ice in a cooler and transported to NET in Austin, Texas for analysis of BTEX, MTBE, and TPH.

All the newly installed monitor wells will be surveyed in so that relative elevations from top of casing can be established.

Reporting Activities

An Additional Assessment Report will be submitted upon completion of the additional assessment activities.

Waste Management

All soil cuttings and bailed fluids will be containerized in 55-gallon barrels and stored on-site.

Attachment

Site Assessment Preapproval Request Form
Site Map showing the proposed monitor well locations

Quarterly, Semi-, and Annual Groundwater Monitoring Preapproval Request LPST #11204

Mark appropriate activity

- ☒ 07-1 Quarterly Monitoring (4 events/yr, 3 MESSR's + Annual Report) *additional wells*
☐ 07-2 Semi-Annual Monitoring (1 event w/MESSR)
☐ 07-3 Annual Monitoring (1 event w/Annual Report)
☐ 07-4 Semi-Annual & Annual Monitoring (2 events, MESSR, + Annual Report)

A. Personnel

	Year	# of Wells	Avg. Depth	Total
1st Qtr-MESSR	<i>1997</i>	<i>7</i>	<i>20-22'</i>	<i>\$320.00</i>
2nd Qtr-MESSR	<i>1997</i>	<i>7</i>	<i>20-22'</i>	<i>\$320.00</i>
3rd Qtr-MESSR	<i>1998</i>	<i>7</i>	<i>20-22'</i>	<i>\$320.00</i>
Annual Report	<i>1998</i>	<i>7</i>	<i>20-22'</i>	<i>\$320.00</i>
Cost Prop. Prep.				<i>\$115.00</i>
A. Total Personnel				<i>\$1,095.00</i>

B. Lab Analysis

Type	# Samples	\$/Unit	Total
BTEX & TPH	<i>(3) 7</i>	<i>\$93.50</i>	<i>\$270.50</i>
PAH			
VOC			
TDS			
MTBE	<i>und</i>		
Shipping			
B. Total Lab Analysis			<i>\$270.50</i>

D. Equipment

	# Days	\$/Unit	Total
OVM			
Pump-pneu.			
Pump-sub.			
Probe			
Generator			
Truck			
Disposables	<i>3 (67)</i>	<i>8.00</i>	<i>\$148.00</i>
D. Total Equipment			<i>\$148.00</i>

E. Travel

	Units	\$/Unit	Total
Mileage			
Travel Time			
Per Diem			
Airfare			
Car Rental			
E. Total Travel			<i>Original \$0.00</i>

F. Total Groundwater Monitoring Proposed Cost =

A+B+C+D+E = ***\$3,436.50***

C. Other Expenses

	Units	Rate	Total
Vac Truck	<i>3 hrs</i>	<i>\$65/hr</i>	<i>\$195.00</i>
Disposal	<i>100</i>	<i>\$0.35/gal</i>	<i>\$35.00</i>
C. Total Other Expenses			<i>\$230.00</i>

Robert Butts (CAPM Name, Printed) *Robert Butts* (Signature) *Enviro Source, Inc.* (Company) *10/27/97* (Date)
572-282-5997 (Phone #) *572-444-1784* (Fax #) *00201* (CAPM #) *11/7/97* (Exp. Date)
Enviro Source Inc (RCAS Name, Printed) *Robert Butts* (Signature of Representative) *Enviro Source Inc* (Company) *10/27/97* (Date)
572-282-5997 (Phone #) *572-444-1784* (Fax #) *00520* (RCAS #) *8/31/98* (Exp. Date)

I acknowledge that the TNRCC may reimburse corrective action costs that are at or below the maximum reimbursable amount published in 30 TAC, Chapter 334, Subchapter M. The maximum reimbursable cost will be the amount approved for the activity unless the Executive Director determines that sound justification for a cost surplus exists. I understand that this certification is not intended to limit what a Registered Corrective Action Specialist, Corrective Action Project Manager, or Contractor may charge. I further understand that the amount of the reimbursement for the above activity will be determined after all receipts are submitted and subjected to technical and reimbursable cost review. I certify that this TNRCC form has not been altered.

Robert Butts (Name of Responsible Party) *Robert Butts* (Signature of Representative) *STROEHAUTSON INC.* (Company)
830-997-4382 (Phone #) *830-997-0137* (Fax #) *10/29/97* (Date)

Risk Assessment, RAP, and Site Closure Preapproval Proposal

LPST # 112204

Mark appropriate activity ☒ 05-1 Risk Assessment Plan A ☐ 08-1 Remedial Action Plan Preparation
☒ 05-2 Risk Assessment Plan B ☐ 1-1 Site Closure

RAP and Risk Assessment - Plans A and B

A. Personnel

Remedial Action Plan Preparation	\$	
Risk Assessment		
Plan A	\$	
Plan B	\$	7,830.00

Site Closure

A. Personnel

	Field	Non-Field
No System/Monitor Wells Only	\$	\$
Groundwater Extraction System	\$	\$
Soil Vapor Extraction System	\$	\$
Air Sparging System	\$	\$
Dual System	\$	\$
Triple System	\$	\$
Other - explain	\$	\$
Cost Proposal Preparation	\$	\$
A. Total Site Closure	\$	\$

B. Other Expenses

	Units	\$/Unit	Total
Remove Remediation Equipment	x	\$	\$
Plug and Abandon Wells	x	\$	\$
Cutting and Removal of Pavement	x	\$	\$
Disp. of Contaminated Material	x	\$	\$
Resurfacing	x	\$	\$
	x	\$	\$
	x	\$	\$
B. Total Other Expenses			\$

C. Equipment

	Units	\$/Unit	Total
OVM	x	\$	\$
	x	\$	\$
	x	\$	\$
	x	\$	\$
C. Total Equipment			\$

D. Travel

	Units	\$/Unit	Amount
Mileage	x	\$	\$
Travel Time	x	\$	\$
Per Diem	x	\$	\$
Airfare	x	\$	\$
Car Rental	x	\$	\$
	x	\$	\$
D. Total Travel			\$

E. Total Site Closure Proposed Cost = A+B+C+D = 7,830.00

Robert B. Burtels (CAPM Name, Printed) Robert Burtels (Signature) Enviro Sure, Inc. (Company) (Date)

572 832-1674 (Phone #) 572 444-1784 (Fax #) 00201 (CAPM #) 11/7/97 (Exp. Date)

Enviro Sure, Inc. (RCAS Rep. Name, Printed) Robert Burtels (Signature of Representative) Enviro Sure, Inc. (Company) (Date)

572 832-1674 (Phone #) 572 444-1784 (Fax #) 00520 (RCAS #) 8/31/98 (Exp. Date)

I acknowledge that the TNRCC may reimburse corrective action costs that are at or below the maximum reimbursable amount published in 30 TAC, Chapter 334, Subchapter M. The maximum reimbursable cost will be the amount approved for the activity unless the Executive Director determines that sound justification for a cost surplus exists. I understand that this certification is not intended to limit what a Registered Corrective Action Specialist, Corrective Action Project Manager, or Contractor may charge. I further understand that the amount of the reimbursement for the above activity will be determined after all receipts are submitted and subjected to technical and reimbursable cost review. I certify that this TNRCC form has not been altered.

ROBERT STROEHER (Name of Responsible Party) 832 997-4382 (Phone #) 832 997-0137 (Fax #) STROEHER & SON, INC. (Signature of Representative) 10/29/97 (Date)

WORKPLAN AND PREAPPROVAL REQUEST

LPST ID No.: 112204

Responsible Party: Stroeher and Son, Inc.

Facility Name: Stroeher and Son, Inc. Bulk Terminal

Facility Address: 119 E. Park Street

Facility City: Fredericksburg, Texas

Facility County: Gillespie County

Facility ID No.: 0065564

TNRCC Region: 13

Case Priority: 2.5

WORKPLAN

Proposed Activity: Additional monitor wells for the Quarterly Groundwater Monitoring(three quarters with annual)

Groundwater Monitoring

Seven(7) additional monitor wells will be sampled along with the eight(8) previously approved wells. The depth to water from the top of casing will be measured in each monitor well with an interface probe and a well volume will be calculated. Three to six well volumes will then be bailed from each well. Each well will then be allowed to recover and then sampled using disposable bailers. The samples collected will be placed on ice in a cooler and transported to EPIC in Austin, Texas for analysis of BTEX, MTBE, and TPH.

Reporting Activities

Quarterly reports will be submitted upon completion of each quarterly event since there is a water well and creek within 1200 feet of the site.

Waste Management

All bailed fluids will be containerized in 55-gallon barrels on-site.

Attachment

Quarterly Groundwater Monitoring Preapproval Request Form

Site Assessment Preapproval Proposal

LPST # 112204

Mark appropriate activity ☐ 06-1 Limited Site Assessment ☐ 06-3 Accelerated Site Characterization
☐ 06-2 Comprehensive Site Assessment ☐ 06-4 Other (expl. _____)

A. Personnel

Personnel	=	\$1810.00
Cost Proposal Preparation	=	\$117.00
Surveys		
Site and/or Monitor Wells	=	\$60.00
Water Well Search	=	\$
Walking Receptor	=	\$
A. Total Personnel		\$1987.00

B. Equipment

Rental	P.D. - 1 day, I.P. - 1 day & Survey	=	\$185.00
Disposable	3 buckets @ 8.00	=	\$24.00
B. Total Equipment			\$209.00

C. Drilling

Mob/Demob	=	\$ 227.00		
Matrix-Indicate Sand/Clay or Limestone (bedrock)	\$			
	#	Avg. Depth	Casing Diameter	
Borings	3	20-22'	N/A	= \$
Wells-Dia. 1	3	20-22'	2"	= \$2,820.00
Wells-Dia. 2				= \$
C. Total Drilling Costs \$ 3,075.00 + 1570 = \$3,526.25				

D. Waste Management

	Units	\$/Unit	Total
Soil Disposal	x		\$120.00
Water Truck/Disp	x		\$
Water Trt/Disch.	x		\$
D. Total Waste Management			\$120.00

E. Other Expenses

	Units	\$/Unit	Total
0150	x		\$25.00
00117	x		\$25.00
E. Total Other Expenses			\$50.00

F. Analyses

Type	# of Smpls.	\$/Unit	Total
BTEX soil	6	x \$50.00	= \$300.00
TPH soil	6	x \$43.50	= \$261.00
BTEX water	3	x \$50.00	= \$150.00
TPH water	3	x \$43.50	= \$130.50
MTBE water	incl.	x \$	= \$
PAH soil	x	\$	= \$
PAH water	x	\$	= \$
TDS	x	\$	= \$
VOC soil	x	\$	= \$
VOC water	x	\$	= \$
Total Metals	x	\$	= \$
Soil Parameters	x	\$	= \$
Shipping	x	\$	= \$
F. Total Lab Cost			\$841.50

G. Travel

	Units	\$/Unit	Total
Mileage	80	x \$0.31	= \$24.80
Travel time	3 hr	x \$65.00	= \$195.00
Per Diem	1	x \$70.00	= \$70.00
Airfare	x	\$	= \$
Equipment	x	\$	= \$
General Travel	x	\$140.00	= \$140.00
G. Total Travel			\$429.80

RECEIVED

OCT 31 1997

TNRCC / PSI
RPR

H. Total Site Assessment Proposed Cost = A + B + C + D + E + F + G =

6891.05
-721.55 =

Robert Bantels, Robert Bantels, EnviroSource, Inc., 10/27/97
 (CAPM Name, Printed) (Signature) (Company) (Date)
 572 832-1672, 572 444-1784, 00201, 11/3/97
 (Phone #) (Fax #) (CAPM #) (Exp. Date)
 EnviroSource, Robert Bantels, EnviroSource, Inc., 10/27/97
 (RCAS Name, Printed) (Signature of Representative) (Company) (Date)
 572 832-1672, 572 444-1784, 00520, 8/31/98
 (Phone #) (Fax #) (RCAS #) (Exp. Date)

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Roy E. Stroehrer, Roy E. Stroehrer, STROEHRER & SON, INC., 10/29/97
 (Name of Responsible Party) (Signature of Representative) (Company) (Date)
 830 997-4382, 830 997-0137, 10/29/97
 (Phone #) (Fax #) (Date)